

FINAL

**INITIAL STUDY / MITIGATED NEGATIVE DECLARATION
California Environmental Quality Act (CEQA)**

WASTEWATER COLLECTIONS YARD RELOCATION - H.A.R.R.F.

Assessor Parcel Numbers: 235-051-03, -04, and -05

1521 S. Hale Avenue

Escondido, California

Project Case # PHG 15-0018; ENV 15-0008

Submitted to: City
of Escondido
Planning Division
201 North Broadway
Escondido, CA 92025-2798

Prepared for: City of
Escondido Utilities
Department
201 North Broadway
Escondido, CA 92025-2798

Prepared by:
Michael Baker International
9755 Clairemont Mesa Blvd, Suite 100
San Diego, California 92124
Contact: Michael Gonzales
858-614-5000

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CITY OF ESCONDIDO
PLANNING DIVISION
201 NORTH BROADWAY
ESCONDIDO, CA 92025-2798
(760) 839-4671

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION (Wastewater Collection Yard – HARRF)

CASE NOS.: ENV15-0008 and PHG15-0018

DATE ISSUED: March 17, 2016

PUBLIC REVIEW PERIOD: March 22, 2016 – April 20, 2016

LOCATION: The project site is located within the southwestern portion of the City of Escondido, County of San Diego, and generally located at the intersection of Avenida Del Diablo and Citracado Parkway, south of Pacific Oaks Place, west of Hale Avenue, and east of Harmony Grove Road, addressed as 1521 S. Hale Avenue (County APNs 235-051-03, -04, and -05).

PROJECT DESCRIPTION: The project includes development of approximately 1.8 acres of a larger, approximately 15.4-acre site (overall parcel; APN 235-051-05) for the construction of a new wastewater collections yard for the City of Escondido's existing Hale Avenue Resource Recovery Facility (HARRF). The HARRF is an activated sludge, secondary wastewater treatment facility designed to treat a flow of up to 18 million gallons per day (MGD). The project is intended to provide a new location for maintenance activities associated with the City's Wastewater Collections Division (routine maintenance of equipment and vehicles associated with the HARRF). The proposed new facilities will consist of three separate pre-fabricated metal buildings:

- Building 1 would be 3,735 square feet (SF) in size, up to approximately 34 feet in height to the roof ridgeline, and would be used for collections. The building would include an outdoor storage area, indoor equipment storage, and one work bay. The work bay would be utilized for regular maintenance of vehicles and equipment associated with operations at HARRF.
- Building 2 would be 5,470 SF in size, up to approximately 34 feet in height to the roof ridgeline, and would be used as a warehouse. The building would contain restrooms as well as areas for indoor storage of small-scale equipment, tools, and materials used for routine maintenance. Covered outdoor storage also would be provided.
- Building 3 would be 5,670 SF in size, up to approximately 34 feet in height to the roof ridgeline, and would be used as a maintenance workshop. The building would contain two workshops: one for pump, motor, and valve rebuilding, and one for welding and fabrication activities required for routine maintenance of equipment associated with operations. Covered outdoor storage also would be provided.

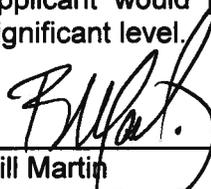
The new structures would be occupied by an estimated 40-45 employees that would be relocated from existing off-site City facilities. Paved parking spaces also would be provided, and employees working at the new facility either would utilize the new parking spaces or the existing parking areas at the adjacent HARRF facility located immediately north of the project site. Access to the site would be provided from the existing driveway access from Citracado Parkway along the southern area of the property, or from the existing driveways from Hale Avenue through the HARRF facility. A security gate would be installed along the access drive near the entrance off of Citracado Parkway. Two onsite bioretention areas are also proposed for purposes of stormwater treatment.

The project would require the processing of a Conditional Use Permit (CUP) in conjunction with a General Plan Amendment (GPA). The existing Specific Plan land use designation (SPA 8, Escondido Research and Technology Center/Harmony Grove) on APNs 235-051-03, -04, and -05 would remain unchanged; however, a GPA is required to add the Public Facilities Overlay (PF-O) land use designation to these three parcels. Similarly, the existing Open Space/Park (OS-P) zoning would remain unchanged on the three affected parcels; however, a rezone would be required to add the Public Facility Overlay (PF-O) zoning classification. The proposed improvements will be limited to APN 235-051-05. No physical development or other disturbance of any kind is proposed on APNs 235-051-03 or -04.

APPLICANT: City of Escondido

An Initial Study has been prepared to assess this project as required by CEQA, the State CEQA Guidelines (as amended), and the City of Escondido CEQA Guidelines (Escondido Municipal Code, Ord. No. 95-2, §1, 2-15-95; Ord. No. 2013-12, §4, 12-11-13). The Initial Study is on file in the City of Escondido Planning Division and can be viewed on the City of Escondido web Site at: <http://www.escondido.org/planning.aspx>. In addition, the analysis in this Initial Study/Draft Mitigated Negative Declaration appropriately incorporates by reference the environmental findings from the Citracado Parkway Extension Final EIR (City File No. ER 2006-10) that are applicable to the Project and Project site, pursuant to Section 15150 of the State CEQA Guidelines.

Findings: The findings of this review are that the Initial Study identified effects related to biological resources, cultural and tribal cultural resources that might be potentially significant. However, design and minimization measures, revisions in the project plans and/or mitigation measures agreed to by the applicant would provide mitigation to a point where potential impacts are reduced to less than a significant level.



Bill Martin
Assistant Director of Planning

MITIGATION MONITORING PROGRAM

City of Escondido
Wastewater Collections Yard –HARRF
Project Case #s PHG 15-0018; ENV 15-0008

TABLE 1: MITIGATION MONITORING PROGRAM

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
IV. Biology	Nesting Birds	<p>BIO-1A: Upon completion of Project grading/construction activities, the City shall demonstrate that Project impacts to 0.31 acre of non-native grassland shall involve the planting of 0.15 acre of native grassland species under the canopies of the two adjacent oaks to remain, as part of the Project's landscaping plan. The City shall be responsible for landscape maintenance obligations (i.e. normal replacement of dead, damaged, and/or diseased plants) to ensure that successful establishment and longevity of such plantings is achieved over the long-term.</p> <p>BIO-1B: Alternatively, p prior to commencement of grading/construction activities, the City shall demonstrate that purchase of credits at an approved offsite mitigation bank at a ratio of 0.5:1 (0.15 acre total) to offset Project impacts to 0.31 acre of onsite non-native grassland has been achieved, in order to ensure the long-term management of such resources in perpetuity.</p>	<p>Onsite replanting of native grassland or</p> <p>P Purchase of offsite credits in an approved offsite mitigation bank</p>	Applicant	City of Escondido	Post-construction or Prior to commencement of grading/construction	Pursuant to measure
IV. Biology	Nesting Birds	<p>If Project grading/construction activities are scheduled to occur during the nesting season for breeding birds, the following mitigation measures shall be implemented:</p> <p>BIO-2: Within seven days prior to commencement of grading/construction activities, a qualified biologist shall perform</p>	Pre-construction surveys if construction occurs between January and	Applicant	City of Escondido	Pre-construction	Pursuant to measure

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		<p>a preconstruction survey within 500 feet from the proposed work limits.</p> <p>BIO-3: If active avian nest(s) are discovered within or 500 feet from the work limits, a buffer shall be delineated around the active nest(s) measuring 300 feet for passerines and 500 feet for raptors. A qualified biologist shall monitor the nest(s) weekly after commencement of grading/construction to ensure that nesting behavior is not adversely affected by such activities.</p> <p>BIO-4: If the qualified biologist determines that nesting behavior is adversely affected by grading/construction activities, then a noise mitigation program shall be implemented in consultation with CDFW, to allow such activities to proceed. Once the young have fledged and left the nest(s), then grading/construction activities may proceed within 300 feet (500 feet for raptor species) of the fledged nest(s).</p> <p>BIO-5: Raptor nests are protected under California Fish and Game Code Section 3503.5 (California Law 2011) which makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes; or to take, possess, or destroy the nests or eggs of any such birds. Consultation with CDFW shall be required prior to the removal of any raptor nest(s) observed during the pre-construction clearance surveys.</p>	<p>September. Avoidance and/or buffer if nests are found.</p>				
IV. Biology	Coast live oak woodland	<p>BIO-6: Temporary indirect impacts to coast live oak woodland (0.01 acre) may result from the trimming of several limbs (if necessary) to accommodate the proposed structures. Prior to any onsite vegetation</p>	<p>Pre-construction installation of signage to buffer</p>	Applicant	City of Escondido	Pre-construction	Prior to/During Project Construction

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		clearing during Project construction, permanent protective fencing and “Keep Out” signage shall be installed at a distance of 50 feet from the canopy edge of potentially affected coast live oak woodland to avoid temporary indirect impacts to the root zones (e.g., soil compaction). The trimming of any onsite coast live oak trees shall be performed under the supervision of a certified arborist.	construction activity				
V. Cultural Resources	Potential historic/pre-historic cultural resources	<p>CUL-1: Prior to vegetation clearance, grubbing and grading, a qualified professional archaeologist shall conduct a pedestrian inventory survey to determine the horizontal extent of Site P-37-008280/CA-SDI-8280 within the Project’s APE. The archaeologist shall subsequently conduct a subsurface testing program to determine the presence (and integrity) or absence of <i>in situ</i> buried archaeological deposits. The results and an evaluation of eligibility shall be reported in a separate document.</p> <p>CUL-2: Implement Mitigation Measures CUL-5 to CUL-14 for the discovery, treatment, and/or recordation of unknown cultural deposits, or potential cultural deposits, encountered during Project ground-disturbing activities and consistent with the <i>Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites</i> established by the Native American Heritage Commission (NAHC).</p>	Monitoring During Ground Disturbance	Applicant/Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities
V. Cultural Resources	Cultural Resources	<p>CUL-3: Implement Mitigation Measures CUL-5 to CUL-14 for the discovery, treatment, and/or recordation of unknown cultural deposits, or potential cultural</p>	Monitoring During Ground Disturbance	Applicant/Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		deposits, encountered during Project ground-disturbing activities and consistent with the <i>Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites</i> established by the Native American Heritage Commission.					
V. Cultural Resources	Human Remains	CUL-4: Implement Mitigation Measures CUL-5 to CUL-14 for the discovery, treatment, and/or recordation of unknown cultural deposits, or potential cultural deposits, encountered during Project ground-disturbing activities and consistent with the <i>Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites</i> established by the Native American Heritage Commission.	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities
V. Cultural Resources	Tribal Cultural Resources	CUL-5: The City of Escondido Planning Division (“City”) recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the Project Location (“TCA Tribe”) prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the Applicant/Owner and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas and cultural items, located and/or discovered through a monitoring program in conjunction with the	Monitoring During Ground Disturbance	Applicant/Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.					
V. Cultural Resources	Tribal Cultural Resources	CUL-6: Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor is associated with a TCA Tribe. The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities
V. Cultural Resources	Tribal Cultural Resources	CUL-7: The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities
V. Cultural Resources	Tribal Cultural Resources	CUL-8: During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily monitoring during Project construction

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.					
V. Cultural Resources	Tribal Cultural Resources	CULT-9: In the event that previously unidentified tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor, shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities
V. Cultural Resources	Tribal Cultural Resources	CUL-10: If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the tribal cultural resource’s treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor and be submitted to the City for review and approval.	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities
V. Cultural Resources	Tribal Cultural Resources	CUL-11: The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated as required by CEQA. Where any significant tribal cultural resources and/or unique	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.					
V. Cultural Resources	Tribal Cultural Resources	CUL-12: As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		<p>findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.</p>					
V. Cultural Resources	Tribal Cultural Resources	<p>CUL-13: If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the qualified Archaeologist does not collect the cultural resources that are unearthed during the ground disturbing activities, the Native American monitor, may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe’s cultural and spiritual traditions. Any tribal cultural resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological</p>	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities

TABLE 1, CONTINUED

Issue	Potential Impact	Mitigation Measures	Action	Implementing Entity	Governing Agency	Implementation Timing	Monitoring Frequency
		Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources, shall be curated at the San Diego Archaeological Center.					
V. Cultural Resources	Tribal Cultural Resources	CUL-14: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report shall include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.	Monitoring During Ground Disturbance	Applicant/ Contractor	City of Escondido	Ground Disturbance	Daily During Ground Disturbing Activities

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INITIAL STUDY / ENVIRONMENTAL CHECKLIST

PROJECT TITLE

Wastewater Collections Yard – HARRF; APNs 235-051-03, -04, -05

Case Numbers: PHG 15-0018; ENV 15-0008

LEAD AGENCY

City of Escondido
201 North Broadway
Escondido, CA 92025

Prepared by:

Michael Baker International
9755 Clairemont Mesa Boulevard, Suite 100
San Diego, CA 92124

PROJECT CONTACT

Jay Paul, Associate Planner
City of Escondido
Planning Division
jpaul@escondido.org
(760) 839-4537

PROJECT LOCATION

The proposed Project site is located within the southwestern portion of the City of Escondido (City); refer to *Exhibit 1, Regional Vicinity*, and *Exhibit 2, Site Vicinity*. The Project site is comprised of a portion of County APN 235-051-05 (total of approximately 15.4 acres). The Project site is located just north of the intersection of Avenida del Diablo and Citracado Parkway, south of Pacific Oaks Place (cul-de-sac), west of South Hale Avenue, and east of Harmony Grove Road. The approximately 1.82-acre area affected by the proposed improvements (development footprint) is located within the larger Escondido Research Tech Center/Harmony Grove Specific Plan Area. The existing HARRF is located to the north/northeast of the Project site at 1521 South Hale Avenue.

PROJECT PROPONENT

City of Escondido
201 North Broadway
Escondido, CA 92025

GENERAL PLAN / ZONING

Existing:

Zoning: Open Space – P (OS-P); Public Utilities and Utility Easements are Permitted Uses

General Plan Designation: Specific Plan (SPA 8)

Special Districts: Odor Ring Overlay

Proposed:

Zoning: Open Space – P (OS-P); Public Facilities Overlay (PF-O)

General Plan Designation: Specific Plan (SPA 8); Public Facilities Overlay

PROJECT DESCRIPTION

Background

The HARRF Wastewater Collections Yard Relocation Project (“Project”) proposes construction of a new Collections Yard to support existing operations at the City of Escondido’s (“City”) HARRF, located adjacent to the north of the Project site. Currently, the City operates and maintains approximately 360 miles of pipelines and 14 pumping stations which serve as the sanitary collection system and which direct domestic and industrial wastewater generated to the HARRF treatment plant.

The HARRF is an activated sludge, secondary treatment facility capable of treating wastewater flows of up to 18 million gallons per day (MGD). The facility operates 24 hours a day, with an average daily flow of 15.6 MGD. Such flows are generally comprised of flows generated by the City of Escondido and the community of Rancho Bernardo (in the City of San Diego), with flows of approximately 11.8 MGD and 3.8 MGD, respectively.

The wastewater treatment process at the existing HARRF involves physical, biological, and chemical methods including screening, sedimentation, chemical precipitation, and biological processes. Following complex treatment, the wastewater (effluent), has been treated to a high quality. After treatment, the effluent is discharged from the HARRF via a 14-mile long land outfall pipeline that connects to an ocean outfall pipeline near San Elijo Lagoon. The effluent exits the outfall pipeline into the Pacific Ocean 1.5 miles offshore via diffuser ports located approximately 110-feet deep in the Pacific Ocean. The organic material generated through this process (referred to as biosolids) is transported to the City of Yuma, Arizona for reuse as a soil amendment.

In 1998, the existing HARRF underwent Phase I of a rehabilitation project to improve the City’s existing wastewater treatment facilities and secondary treatment efficiency. Phase II of the rehabilitation efforts, completed in 2001, added tertiary treatment capability to allow for high-quality water production for reuse as irrigation on local golf courses, parks, school grounds, green belts, roadway medians, open spaces, and industrial use. Phase III includes construction of a replacement administration building and rebuilding of the influent pump station and primary treatment building.¹

Proposed Project

The proposed Project would be constructed just south of the existing HARRF and northwest of the Citracado Parkway/Avenida Del Diablo intersection; refer to *Exhibit 3, Surrounding Land Uses*. The Project would affect approximately 1.8 acres (development footprint) of a larger 15.4-acre parcel. The Project is intended to provide a new location for maintenance activities associated with the City’s Wastewater Collections Division. Such operations are presently housed at the City’s Public Works Maintenance Yard located at 475 North Spruce Street, approximately 1.7 miles to the northwest of the Project site. Activities at the Project site would be limited to routine maintenance of equipment and vehicles associated with

1 City of Escondido – HARRF. <http://www.escondido.org/harrf.aspx>. Accessed July 27, 2015.

the HARRF; the treatment of wastewater would not occur onsite, and none of the improvements proposed would increase demand for wastewater treatment or the City's capacity to provide wastewater treatment services for the community.

The proposed Project would result in construction of three individual pre-fabricated steel buildings on the site, as described below (refer also to Exhibit 4A, Preliminary Grading Plan, Exhibit 4B, Site Plan, and Exhibit 4C, Visual Simulation: View Looking North from Citracado Parkway, for proposed conditions). Refer also to Appendix H of this Initial Study which provides floor plans and exterior elevations for each of the proposed buildings.

- Building A would be 3,735 square feet (s.f.) in size and would be used by Collections staff. The building would include an area for indoor equipment storage and one work bay. The work bay would be utilized for regular maintenance of vehicles and equipment associated with operations at HARRF. A covered outdoor storage area is also proposed.
- Building B would be 5,470 s.f. and would be used as a warehouse. The building would contain restrooms (men's and women's) indoor storage of small-scale equipment, tools, and materials used for routine maintenance. Covered and uncovered outdoor storage areas are also proposed.
- Building C would be 5,670 s.f. and would be used as a maintenance workshop. The building would contain two workshops: one for pump, motor, and valve rebuilding, and one for welding and fabrication activities required for routine maintenance of equipment associated with operations at the HARRF. Additional areas for storage of materials and equipment would also be provided within the interior. A covered outdoor area for storage is also proposed.

Surface parking would be provided adjacent to the proposed buildings and/or access drive. A total of 33 parking spaces (31 standard/2 American Disability Act compliant) are proposed for use by employees and visitors; refer to Exhibit 4A, Preliminary Grading Plan. The onsite parking areas would be surfaced with gravel, as shown on Exhibit 4A.

Access to the Project site would occur from either Citracado Parkway or from the HARRF to the north. An existing paved access drive currently extends through the site from Citracado Parkway and connects to the HARRF. An approximately 400-foot long segment of the existing onsite drive would be repaved as part of the Project to ensure that it can adequately accommodate Project-related traffic and emergency vehicles; refer to Exhibit 4A.

To allow for the proposed improvements, Project grading would require an estimated 3,400 cubic yards (c.y.) and 3,800 c.y. of fill. Approximately 400 c.y. of soil would therefore be transported offsite and properly disposed of at an approved facility in accordance with local and State regulations, as applicable. Proposed cut slope height would be a maximum of approximately 10 feet; proposed fill slope height would be a maximum of approximately 7.2 feet.

A 4-inch sewer force main and a 1-inch water line would be extended into the site from the existing HARRF to serve the three proposed buildings. Lighting would be installed on the exterior of the structures for purposes of worker safety and site security. No new lighting is proposed along the onsite access drive. A security gate would be installed along the access drive near the entrance off of Citracado Parkway; an existing security gate is currently located at the northern end of the access drive where it provides connection to the HARRF. Two onsite bioretention areas are also proposed for purposes of storm water treatment.

Landscaping would be installed adjacent to the existing chain-link fence that runs along the Project boundary on Citricado Parkway. Such landscaping is intended to enhance public views of the site from the

adjacent public roadway, as well as to screen public views into the site from offsite public and private vantage points; refer to *Exhibit 5, Preliminary Landscape Plan*.

The Project would not generate new employees. Approximately 40-45 City employees have been relocated from the City's existing maintenance facility on North Spruce Street to the new Administration Building recently constructed at the existing HARRF site to the north. These employees would be responsible for operations and maintenance activities at the proposed wastewater collections yard.

Phasing

The Project would not be phased. No demolition would be required, as no physical structures are present onsite. Project construction is anticipated to be completed in approximately six months from initial site grading to end of building construction. Painting of the structures would occur subsequent to installation and would be minimal.

General Plan Amendment and Rezone

The Project would require the processing of a Conditional Use Permit (CUP) in conjunction with a General Plan Amendment (GPA). The Project site is located within Specific Planning Area 8 (SPA 8), and therefore would be subject to the uses and design criteria of the Specific Plan; however, a Specific Plan Amendment is not required. The Project would amend existing General Plan land use designation to add the Public Facility Overlay (no change in existing underlying land use designation of SPA 8) and Zone Change (rezone) to add the Public Facilities Overlay (no change in existing underlying zone of Open Space/Park, OS-P). The facility is an allowed land use under the proposed zoning with City approval of a Conditional Use Permit.

ENVIRONMENTAL SETTING

Onsite Conditions

The Project site is located along the southeastern side of a low hill. Existing onsite topography is gently to moderately steep to gently inclined to the south and east. Onsite elevations range from approximately 645 feet above mean sea level (amsl) in the northern portion of the development area to approximately 622 feet amsl in the northeastern portion of the site.

Portions of the site are disturbed/developed. A limited area in the central portion of the site is presently used for (surface) storage of materials (i.e. soil stockpiles); refer to *Exhibit 3, Surrounding Land Uses*. As stated above, an existing paved access drive traverses the easterly portion of the affected parcel and provides access to the HARRF site to the north. Refer also to *Exhibit 6A, Photo Location Map*, and *Exhibits 6B and 6C, Onsite Photographs*.

Onsite vegetation communities within the proposed development area consist of disturbed habitat and eucalyptus woodland. Adjacent offsite vegetation communities include non-native grassland, coast live oak woodland, and southern willow riparian forest which are considered to be sensitive habitats. An offsite drainage is present to the north/northeast and several offsite rock outcroppings are located to the northwest.

Surrounding Land Uses

The site is located within the larger Escondido Research Tech Center/Harmony Grove Specific Plan Area. The existing HARRF is located immediately to the north/northeast of the Project site. To the west are large-acre single-family residential uses, with mobile home parks to the south/southeast. Adjacent to the

east of the site ~~is~~ are a commercial mini-storage facility and a large-acre parcel with a residential use. Further to the north (beyond the existing HARRF) is a mobile home park, and further to the northeast and southwest are single-family residential uses. Citracado Parkway runs generally southeast/northwest adjacent to the southwest boundary of the Project site and bisects the approximately 15.4-acre parcel; refer to Exhibit 3, Surrounding Land Uses.

REQUIRED AGENCY APPROVALS

- *Federal Agencies:* None
- *State Agencies:* NPDES Construction General Permit and SWPPP (Regional Water Quality Control Board)
- *City/County Agencies:* Site Plan, GPA, Rezone, Grading and Building Permits (City of Escondido)

PROPOSED ACTIONS

- Approval of Site Plan, GPA, Rezone, Conditional Use Permit
- Construction of various onsite utility improvements
- Certification and adoption of Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program (MMRP)

COMMENTS RECEIVED ON THE DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Per Section 15073 of the California Environmental Quality Act (CEQA), a draft version of the Initial Study/Mitigated Negative Declaration (IS/MND) for the City of Escondido HARRF Wastewater Collections Yard Relocation Project was circulated for public review from March 22, 2016 to April 20, 2016 (30-day review period). A total of two (2) written comment letters were received by the City of Escondido during this time period [from the California Department of Fish and Wildlife (CDFW) and the County of San Diego Department of Environmental Health (DEH)]. In response to the comments received on the Draft IS/MND, City staff has made minor revisions to the Draft IS/MND text in order to clarify specific project issues and/or mitigation measures. These changes to the text are indicated herein by strikeout (deleted text) and underlined (inserted text) markings in this Final IS/MND document. The revisions to the IS/MND do not rise to the level of requiring recirculation of the document because the document has not been substantially revised in accordance with Section 15073.5(c) of the CEQA Guidelines. The comment letters received are provided as Appendix I, Responses Received During 30-day Public Review Period, of this Final IS/MND for reference.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors, as marked below, would potentially be affected by this Project.

- | | |
|---|--|
| ■ Aesthetics | ■ <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Air Quality | ■ Noise |
| ■ Biological Resources | <input type="checkbox"/> Population/Housing |
| ■ Cultural Resources | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Utilities/Service Systems |
| <input type="checkbox"/> Hydrology/Water Quality | ■ Mandatory Findings of Significance |

DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

- I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the Project. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed Project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Signature:  _____ Date: 4-29-16 (Final MND)

Printed Name: Jay Paul Title: Associate Planner

INITIAL STUDY CHECKLIST

I. Aesthetics

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Aesthetics Discussion

a) Would the Project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. According to the City’s General Plan and General Plan Final EIR (FEIR), the Project site is not located within the vicinity of a designated scenic vista. Views to the site may occur from the residential uses to the south, across Avenida del Diablo (refer also to Exhibit 3, Surrounding Land Uses); however, the proposed buildings would be setback from the entrance driveway and partially screened by proposed onsite landscaping to reduce potential views of the development. The buildings would also be of a neutral color to further reduce their visibility within the visual landscape. Views of the site would be altered with construction of the new buildings. Although views across the Project site may occur (i.e. from the adjacent residential uses located to the south), more prominent hillside areas offering views are generally distanced from the site further to the west and north, thereby diminishing potential visibility of the proposed improvements. Further, the Project would alter the existing undeveloped (although generally disturbed) open-space character of the site with development of the new structures; however, the proposed buildings have been designed (i.e. with regard to architectural character and color) to provide an appropriate visual transition between the mobilehome park and single-family development to the south/southwest, estate/semi-rural residential uses to the west, and the industrial-type HARRF use to the north; refer also to Exhibit 4C, Visual Simulation: View Looking North from Citracado Parkway.

Views into the site from the east would be partially obscured by existing vegetation, as well as by the existing fence located along the Project frontage onto Citracado Parkway for screening purposes, as shown in Exhibit 4C, Visual Simulation: View Looking North from Citracado Parkway, and Exhibit 6B. Landscaping plantings are proposed adjacent to the existing fence to enhance the Project frontage as well as to screen views into the site, in particular, from the roadway; refer to Exhibit 5, Preliminary Landscape Plan. Landscaping installed within the ROW and medians as part of planned construction of Citracado Parkway would also visually enhance views experienced by travelers. Further, landscape plantings installed within the median would help to screen views into the site from offsite public and private vantage points. As such, the Project would not have a substantial adverse effect on a scenic vista. A less than significant impact would occur.

b) Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less than Significant Impact. There are no designated State scenic highways located within the Project vicinity that would afford views to the site. The nearest scenic highway is State Route 78 (SR 78), which is located approximately 1.5 miles to the north of the Project site at its nearest point. Due to intervening topography and development, it is not anticipated that views to the site would occur from this roadway.

Several mature trees within proximity to the proposed development area (refer to Attachment 1 of [Appendix B-1](#) of this Initial Study) are considered a local scenic resource; however, the Project has been designed to avoid such resources, and therefore, the removal of trees is not anticipated with the Project. Although no regionally significant visual resources (i.e. scenic corridors, visual gateways, ridgelines, scenic viewsheds, or unique landforms) occur onsite, an outcropping of rocks adjacent to the northwest is considered a local scenic resource. The Project has been designed to avoid this scenic resource; therefore, the removal of rock outcroppings is not anticipated with Project implementation. No historic buildings are located onsite or on adjacent properties which would otherwise be considered a locally significant scenic resource.

Therefore, the Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, or historic buildings within a State scenic highway. Impacts would be less than significant.

c) Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. As stated previously, the Project site consists primarily of undeveloped/disturbed land. A limited portion of the site is periodically used for (surface) storage of materials (wooden pallets, concrete and PVC pipe sections, soil stockpiles, etc.) associated with operation of the existing HARRF located to the north. Other surrounding land uses include large-acre single-family residential uses to the west; residential uses (mobile home parks) to the south/southeast; [and, a large-acre parcel with a single-family residential use](#) and, a commercial mini-storage facility to the east. Citracado Parkway runs generally southeast/northwest adjacent to the southern boundary of the Project site. The proposed Project would be similar in character to the existing HARRF to the north, which is generally utilitarian in appearance.

As stated above, the Project would not remove or substantially damage adjacent offsite scenic resources, including rock outcroppings and a number of mature trees; refer to [Exhibit 3](#). Existing mature vegetation to the east and north would also help to screen views of the Project from offsite public viewing locations. Further, ornamental landscaping would be planted onsite in the vicinity of the proposed buildings, consistent with the City's landscaping requirements, to screen and blend the facility into the surrounding visual setting. As stated above, the proposed onsite structures would be of a neutral color to reduce their visibility. Further, building height would be up to approximately 34 feet (as measured from ground elevation to ridgeline of the roof), or of lesser overall height than the adjacent trees. Therefore, the structures would not represent elements of substantial height or scale within the landscape.

For the above reasons, the Project would not substantially degrade the existing visual character or quality of the area. Impacts would be less than significant.

d) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact. Sources of light within the Project area include the existing HARRF facility to the north, a commercial mini-storage facility further to the east, and residential uses to the southwest/south/southeast, as well as vehicles traveling along Citracado Parkway and Avenida del Diablo. No sensitive land uses are located immediately adjacent to the west or north of the site, and the proposed onsite structures would be distanced from the residential uses located to the southwest/south/southeast by roadways (identified as City General Plan Circulation Element roadways) illuminated by streetlights for purposes of public safety and to enable safe circulation. Additionally, the property immediately adjacent to the east of the site is vacant [and generally screened by stands of mature trees \(on- and offsite\)](#).

Minimal outdoor lighting would be required with the Project and would be for purposes of security, onsite pedestrian and vehicular circulation, and public safety. All Project lighting would be shielded and directed downward to minimize the potential for adverse effects on neighboring sensitive receptors or on wildlife in adjacent open space lands. All Project lighting would be required to conform to the City of Escondido Outdoor Lighting Ordinance (Escondido Zoning Code Article 35), as well as with the County of San Diego’s Division 9 Light Pollution Code (adverse effects on dark skies and viewing conditions at County observatories), to ensure that potential impacts resulting from light or glare are minimized. Further, the proposed structures would be utilitarian in nature and would not integrate large expanses of glass or use of highly-reflective building materials that would have the potential to result in glare effects. Therefore, the Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Project impacts with regard to light and glare would be less than significant.

II. Agricultural and Forest Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing agricultural zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Agricultural and Forest Resources Discussion

a) The Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

No Impact. The California Department of Conservation (CDC) is responsible for preparation of maps and statistical data that is used to categorize types of agricultural land and assessing whether impacts to such lands may occur. The CDC uses a rating system which considers various factors including soil quality and irrigation status. According to the Farmland Mapping and Monitoring Program (FMMP), the Project site does not support Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; lands classified as such are otherwise considered important agricultural resources. In addition, as shown in Figure 4.2-1, FMMP Resources, of the General Plan FEIR, the site does not support any lands designated as Prime, Unique, or Farmland of Statewide Importance. Lands onsite are identified as “Other Land” and “Urban and Built-Up Land.” Therefore, construction and/or operation of the proposed Project would not result in the conversion of designated Farmland to a non-agricultural use. No impact would occur.

b) Would the Project conflict with existing agriculture zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project site is currently zoned Open Space – P (OS-P) with a General Plan land use designation of Specific Plan (SPA 8) (Special Districts: Odor Ring Overlay). In addition, the site is not subject to a Williamson Act contract or other agricultural land contract. The property is therefore not intended by the City for agricultural use or production. The Project site does not presently (and has not previously) been used for agricultural purposes, and no part of the property is being actively farmed or used to support agricultural production. As such, the proposed Project would not conflict with existing agriculture zoning for agricultural use, or a Williamson Act contract. No impact would occur.

c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. The Project site does not contain lands designated as timberland or forest land. Project implementation would not result in the conversion of forest land. No impact would occur.

d) Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project site does not contain any designated forest land. Project implementation would therefore not result in the conversion of forest land to a non-forest use. No impact would occur.

e) Would the Project involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. Refer to Responses a) to d), above. No designated Farmland is located onsite or on adjacent lands, and therefore, no such lands would be directly or indirectly affected by Project implementation. Therefore, the Project does not propose construction of buildings or infrastructure improvements that would have the potential to result in other changes in the existing environment which, due to their location or nature, would result in conversion of

Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

III. Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Air Quality Discussion

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The proposed Project is located in the San Diego Air Basin (SDAB), which is administered by the San Diego Air Pollution Control District (SDAPCD). The SDAPCD is responsible for protecting the public health and welfare within the County of San Diego through the administration of federal and State air quality laws, regulations, standards, and policies. The SDAPCD monitors air pollution, implementation of the County's portion of the State Implementation Plan (SIP), and application of the SDAPCD Rules and Regulations. The SIP contains strategies and tactics to be applied in order to attain and maintain acceptable air quality in the County, called the *Regional Air Quality Strategy* (RAQS). The RAQS is the applicable air quality plan for the proposed Project.

Consistency with the RAQS is determined by two standards: (1) whether the proposed project would exceed assumptions contained in the RAQS; and, (2) whether a project would increase the frequency or severity of violations of existing air quality standards, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as contained in the RAQS.

The air quality emission projections and emission reduction strategies in the RAQS are based on information from the California Air Resources Board (CARB) and San Diego Association of Governments (SANDAG) regarding mobile and area source emissions, as well as growth in the County (including the City of Escondido). The CARB mobile source emissions projections and SANDAG growth projections are derived from population and vehicle use trends, and land use plans developed by the cities and County as part of their general plans. A project that proposes development consistent with the growth anticipated in a general plan would be consistent with the RAQS.

According to the *Escondido Land Use and Community Form Element* (May 2012), the existing General Plan land use designation for the site (Escondido Research Tech Center/Harmony Grove) envisions business park, medical office, and industrial park uses. As the proposed Project would include warehouse and workshop buildings and covered/uncovered outdoor storage areas, all considered industrial type uses, it would comply with the existing General Plan land use designation for the site. In addition, as discussed in Section III.b), construction and operational emissions would not exceed the SDAPCD thresholds. As the Project would not result in air quality violations or affect air quality attainment status in the SDAPCD, it would not conflict with or obstruct implementation of the RAQS. No impact would occur.

b) Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact.

Construction: The Project would involve grading, paving, and building construction activities that would result in temporary increases in air pollutant emissions. Construction activities would require the import of approximately 400 cubic yards, and 3,400 cubic yards of cut and fill onsite. Construction equipment would include tractors/loaders/backhoes, pavers, forklifts, rollers, rubber tired dozers, concrete/industrial saws, cranes, and cement and mortar mixers. Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model (CalEEMod) program defaults. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site. The analysis of daily construction emissions has been prepared utilizing CalEEMod. Refer to [Appendix A](#) of this Initial Study for the CalEEMod outputs and results. [Table III-1, Construction Air Emissions](#), depicts the construction emissions associated with the Project. Emitted pollutants would include volatile organic compounds (VOCs), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_x), coarse particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}). PM₁₀ and PM_{2.5} emissions would occur from fugitive dust (due to earthwork and excavation) and from construction equipment exhaust. The majority of PM₁₀ and PM_{2.5} emissions would be generated by fugitive dust from earthwork activities.

TABLE III-1: CONSTRUCTION AIR EMISSIONS

Emissions Source	Pollutant (pounds/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2016						
Unmitigated Emissions	2.83	21.45	22.0	0.03	2.61	1.94
Mitigated Emissions	2.83	21.45	22.0	0.03	2.03	1.66
<i>SDAPCD Threshold</i>	<i>75</i>	<i>250</i>	<i>550</i>	<i>250</i>	<i>100</i>	<i>55</i>
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No

Fugitive Dust Emissions

Construction activities are a source of fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living

and working in the Project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading, excavation and construction is expected to be short-term and would cease upon Project completion. Additionally, most of this material consists of inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Of particular health concern is the amount of PM₁₀ generated as a part of fugitive dust emissions. PM₁₀ poses a serious health hazard alone or in combination with other pollutants. PM_{2.5} is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. PM_{2.5} is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_x and SO_x combining with ammonia. PM_{2.5} components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

The Project would be required to ensure compliance with SDAPCD fugitive dust control measures during all construction activities to minimize fugitive dust emissions to the extent feasible. As depicted in [Table III-1](#), total PM₁₀ and PM_{2.5} emissions would not exceed the SDAPCD adopted thresholds during construction. Therefore, short-term (construction-related) air quality impacts from fugitive dust emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced onsite as the equipment is used, and emissions from trucks transporting materials to/from the site. As presented in [Table III-1](#), construction equipment and worker vehicle exhaust emissions would be below the established SDAPCD thresholds. Therefore, short-term (construction-related) air quality impacts from equipment and vehicle exhaust emissions would be less than significant.

Naturally Occurring Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, Federal, and international agencies and was identified as a toxic air contaminant by CARB in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such

rock is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), serpentinite and ultramafic rocks are not known to occur within the Project area. No impact would occur.

Total Daily Construction Emissions

As depicted in *Table III-1*, unmitigated construction-related emissions would not exceed the established SDAPCD thresholds for criteria pollutants. Therefore, short-term air quality impacts from construction of the proposed Project would be less than significant, and the Project would not violate any air quality standard or contribute substantially to an existing or Project-related air quality violation.

Operation:

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, VOCs, NO_x, SO₂, PM₁₀, and PM_{2.5} are all pollutants of regional concern (NO_x and VOCs react with sunlight to form O₃ [photochemical smog], and wind currents readily transport SO_x, PM₁₀, and PM_{2.5}); however, CO tends to be a localized pollutant, dispersing rapidly at the source.

Table III-2, Long-Term Air Emissions, presents the anticipated mobile source emissions quantified using CalEEMod. As shown in *Table III-2*, emissions generated by vehicle traffic associated with Project operations would not exceed established SDAPCD thresholds. It is noted that the Project would not generate any new vehicle trips, as the current employees at the existing HARRF to the north of the Project site would utilize the new buildings associated with the Project. As such, new mobile emissions would not occur with implementation of the Project as there would not be an increase in trips or vehicle miles traveled compared to existing conditions. Therefore, long-term (operational) air quality impacts from mobile source air emissions would be less than significant.

Area Source Emissions

Area source emissions are typically generated from hearths, consumer products, architectural coatings, and landscaping equipment. The primary area source emissions from the Project would be from consumer products, architectural coating, and landscaping. As shown in *Table III-2*, unmitigated area source emissions from the proposed Project would not exceed SDAPCD thresholds for VOCs, NO_x, CO, SO_x, PM₁₀, or PM_{2.5}. Therefore, long-term (operational) air quality impacts from area source air emissions would be less than significant.

TABLE III-2: LONG-TERM AIR EMISSIONS

Emissions Source	Pollutant (pounds/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Proposed Unmitigated Emissions						
Area	0.39	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.03	0.03	0.00	0.00	0.00

TABLE II-2, CONTINUED

Emissions Source	Pollutant (pounds/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Mobile ¹	0.00	0.00	0.00	0.00	0.00	0.00
Total Proposed Unmitigated Emissions	0.39	0.03	0.03	0.00	0.00	0.00
<i>SDAPCD Threshold</i>	<i>75</i>	<i>250</i>	<i>550</i>	<i>250</i>	<i>100</i>	<i>55</i>
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No

Note:

1. The Project would not generate any new vehicle trips or vehicle miles traveled.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas usage associated with the proposed Project. The primary use of electricity and natural gas by the Project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in *Table III-2*, unmitigated energy source emissions from the proposed Project would not exceed SDAPCD thresholds for VOCs, NO_x, CO, SO_x, PM₁₀, or PM_{2.5}. Therefore, long-term (operational) air quality impacts from energy source air emissions would be less than significant.

Stationary Source Emissions

If stationary sources, such as backup generators, are installed onsite, they would be required to obtain the applicable permits from SDAPCD for operation of such equipment. The SDAPCD is responsible for issuing permits for the operation of stationary sources in order to reduce air pollution, and to attain and maintain the national and California ambient air quality standards in the SDAB. Backup generators would be used only in emergency situations, and would not contribute a substantial amount of emissions capable of exceeding SDAPCD thresholds. Thus, long-term (operational) air quality impacts from stationary source air emissions would be less than significant.

Total Long-term Operational Emissions

As indicated in *Table III-2*, unmitigated operational emissions from the proposed Project would not exceed SDAPCD thresholds. Therefore, long-term (operational) air quality impacts from mobile-, area-, energy-, and stationary-source air emissions would be less than significant, and the Project would not violate any air quality standard or contribute substantially to an existing or Project-related air quality violation.

c) Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. The County of San Diego is designated as non-attainment area for the federal ozone standard, and is also a non-attainment area for the state standards for ozone, PM₁₀, and PM_{2.5}. As such, significant cumulative baseline impacts to air quality for VOCs (an ozone precursor), NO_x (an ozone precursor), PM₁₀, and PM_{2.5} exist in the SDAB. The greatest concern involving criteria air pollutants is whether a project would result in a cumulatively considerable net increase of PM₁₀ and/or PM_{2.5}, or exceed screening level thresholds of ozone precursors (VOCs

and NO_x). According to the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements for Air Quality*, cumulatively considerable net increases during the construction phase would typically happen if two or more additional projects nearby are also under simultaneous construction, or if a project's PM₁₀, PM_{2.5}, NO_x, and/or VOCs emissions are in exceedance of SDAPCD thresholds.

As discussed previously, the proposed Project would not result in short-term (construction-related) and long-term (operational) air quality impacts, as emissions would not exceed the SDAPCD adopted thresholds. Additionally, the Project is expected to comply with SDAPCD rules and regulations, as emission reduction technology, strategies, and plans are constantly being developed, which would alleviate potential impacts related to cumulative conditions. As a result, the proposed Project would not contribute a cumulatively considerable net increase to the SDAB nonattainment status for the federal ozone standard and the state standards for ozone, PM₁₀, and PM_{2.5}. Therefore, cumulative air quality impacts associated with implementation of the proposed Project would be less than significant.

d) Would the Project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant than is the population at large.² Sensitive receptors are in locations such as day care centers, schools, retirement homes, and hospitals or medical patients in residential homes close to major roadways or stationary sources, which could be impacted by air pollutants. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The closest sensitive receptors to the Project site ([and the area where construction would occur](#)) include single-family residential uses approximately 135 feet to the south, and multi-family residential uses approximately 220 feet to the east. Construction activities in close proximity to these locations would potentially expose residents to fugitive dust. As noted above, the Project would be required to ensure compliance with SDAPCD fugitive dust control measures during all construction activities to minimize fugitive dust emissions to the extent feasible. As depicted in [Table III-1](#), total PM₁₀ and PM_{2.5} emissions would be below SDAPCD thresholds during construction. Therefore, short-term (construction-related) air quality impacts from fugitive dust emissions would be less than significant, and the Project would not expose nearby sensitive receptors to substantial pollutant concentrations.

e) Would the Project create objectionable odors affecting a substantial number of people?

No Impact. Potential odors could arise from the diesel construction equipment used onsite, as well as from off-gassing from asphalt paving operations. Odors generated from these sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. The nearest sensitive receptors to the Project site ([and the area where construction would occur](#)) are residential uses located approximately 135 feet to the south and 220 feet to the east. At these distances, odors would disperse rapidly from the source (i.e., construction equipment at the Project site) and would not be detectable.

2 South Coast Air Quality Management District, CEQA Air Quality Handbook per City of San Diego, CEQA Significance Determination Thresholds, January 2011.

Land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding². The proposed Project includes the construction of warehouse and workshop facilities at the Project site and would not expand the operational capacity of the HARRF. These proposed uses are not associated with generation of odors. Therefore, the Project would not create objectionable odors affecting a substantial number of people. No impact would occur.

IV. Biological Resources

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on biological resources involved within a jurisdictional water feature as defined by federal, state or local regulations (e.g., Section 404 of the Clean Water Act, Section 401 of the Clean Water Act, Section 1602 of California Fish and Game Code, Porter-Cologne Water Quality Control Act, etc.) through direct removal, filing, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Biological Resources Discussion

A Biological Resources Technical Report was prepared for the Project by Michael Baker International (MBI) in February 2016 [and revised in April 2016](#); refer to [Appendix B-1](#) of this Initial Study. The biological survey area (approximately 11.2 acres) includes the 1.82-acre Project development footprint. In addition to a paved road that provides access to the HARRF from Citracado Parkway, the vegetation communities onsite consist of disturbed habitat, eucalyptus woodland, and non-native grassland, with coast live oak woodland and southern willow riparian forest occurring adjacent to the site within the larger overall parcel. [Table IV-1](#) shows the habitats present within the survey area.

TABLE IV-1. HABITAT TYPES BY ACREAGE

Habitat Type	Acreage within the Survey Area (Onsite and Offsite) ¹
Developed	3.30
Disturbed	1.95

Eucalyptus Woodland	2.11
Non-native Grassland	2.21
Coast live oak woodland	1.02
Southern Arroyo Willow Riparian Forest (offsite)	0.64
TOTAL	11.23

1. Refer to Exhibit 4, Existing Vegetation, of [Appendix B-1](#) of this Initial Study.

a) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

Less than Significant with Mitigation. The Project would not directly or indirectly adversely affect any candidate, sensitive, or special-status species, as none were observed onsite. One special-status species, four individuals of Palmer's sagewort, was observed within the offsite southern arroyo willow riparian forest habitat adjacent to the east side of the paved access road. This species is a California Native Plant Society List (CNPS) List 4.2. These same plants were recorded in the Biological Technical Report for the *Citracado Parkway Extension Final EIR*. As designed, the Project would avoid direct and indirect impacts to this species. No impact would occur.

Breeding birds and/or raptors may forage and nest within the onsite and offsite trees and habitats. Such species are protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (Sections 3500 et seq. and 3800 et seq.). The proposed Project would result in permanent loss of eucalyptus woodland (0.19 acre) and non-native grassland (0.31 acre) which could indirectly affect foraging/nesting habitats for birds and raptors.

Eucalyptus woodland is considered important raptor nesting and foraging habitat; however, the Project's direct loss of this habitat (0.19 acre) would not be significant given the large expanses of existing raptor habitat in the region. Although the removal of mature eucalyptus trees would not be considered a significant biological impact, it is recommended that one oak for each eucalyptus removed should be planted within the proposed landscaping areas of the new storage yard facility for consistency with the City's Tree Preservation requirements. Eucalyptus replacement plantings are not recommended onsite due to their invasiveness (i.e., propensity for quickly spreading into adjacent native habitats) and safety concerns (i.e., propensity for producing weak limbs which easily break and fall during windy conditions or inclement weather).

~~Project impacts to non-native grassland would be significant. Mitigation for~~ [The Project as designed would impact the loss of 0.31 acre of non-native grassland onsite, and such impacts would be considered significant.](#) ~~would require the planting of 0.15 acre of native grassland species under the canopies of the two adjacent oaks to remain as part of the Project's landscaping plan. Implementation of this mitigation would be consistent with the 0.5:1 compensation ratio for this habitat type according to the MHCP and would reduce Project impacts on avian species due to the loss of non-native grassland habitat to a level below significance. Successful establishment and longevity of such plantings would be guaranteed through subsequent City landscape maintenance obligations (i.e. normal replacement of dead, damaged, and/or diseased plants). Alternatively, the [As mitigation, the City may opt to propose to purchase credits at a ratio of 0.5:1 \(or 0.15 acre total\) at an approved offsite mitigation bank in order to offset the loss of non-native grassland.](#) ~~to ensure that Project impacts to non-native grassland are reduced to less than significant.~~ Refer to Mitigation Measure BIO-1, below, which would reduce Project impacts on avian species from the loss of non-native grasslands to less than significant.~~

Additionally, if Project grading/construction activities occur during the nesting season for breeding birds/raptors (typically January through September annually), such species may be affected by short-term construction-related noise levels which can cause disruption of foraging, nesting, and reproductive activities resulting in significant temporary, indirect impacts to these species. Mitigation Measures BIO-2 to BIO-5 shall be implemented to reduce such potential impacts to less than significant.

~~**BIO-1A:** Upon completion of Project grading/construction activities, the City shall demonstrate that Project impacts to 0.31 acre of non-native grassland shall involve the planting of 0.15 acre of native grassland species under the canopies of the two adjacent oaks to remain, as part of the Project's landscaping plan. The City shall be responsible for landscape maintenance obligations (i.e. normal replacement of dead, damaged, and/or diseased plants) to ensure that successful establishment and longevity of such plantings is achieved over the long term.~~

BIO-1B: ~~Alternatively, prior~~ **Prior** to commencement of grading/construction activities, the City shall demonstrate that purchase of credits at an approved offsite mitigation bank at a ratio of 0.5:1 (0.15 acre total) to offset Project impacts to 0.31 acre of onsite non-native grassland has been achieved, in order to ensure the long-term management of such resources in perpetuity.

BIO-2: Within seven days prior to commencement of grading/construction activities, a qualified biologist shall perform a preconstruction survey within 500 feet from the proposed work limits.

BIO-3: If active avian nest(s) are discovered within or 500 feet from the work limits, a buffer shall be delineated around the active nest(s) measuring 300 feet for passerines and 500 feet for raptors. A qualified biologist shall monitor the nest(s) weekly after commencement of grading/construction to ensure that nesting behavior is not adversely affected by such activities.

BIO-4: If the qualified biologist determines that nesting behavior is adversely affected by grading/construction activities, then a noise mitigation program shall be implemented in consultation with CDFW, to allow such activities to proceed. Once the young have fledged and left the nest(s), then grading/construction activities may proceed within 300 feet (500 feet for raptor species) of the fledged nest(s).

BIO-5: Raptor nests are protected under California Fish and Game Code Section 3503.5 (California Law 2011) which makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes; or to take, possess, or destroy the nests or eggs of any such birds. Consultation with CDFW shall be required prior to the removal of any raptor nest(s) observed during the preconstruction clearance surveys.

b) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation. The proposed Project would not impact the offsite southern arroyo willow riparian forest. The Project would result in permanent loss of disturbed

habitat (1.06 acres), eucalyptus woodland (0.19 acre), and non-native grassland (0.31 acre). Impacts to disturbed habitat and eucalyptus woodland would be less than significant because they are not considered sensitive vegetation communities; refer to *Exhibit 7, Biological Impacts*. Impacts to non-native grassland would be reduced to less than significant with implementation of Mitigation Measure BIO-1, above. The potential impact to coast live oak woodland (0.01 acre) would not be permanent; rather, it would result from the trimming of several limbs (if necessary) to accommodate proposed structures. If any trimming of coast live oak trees is necessary, such work would be performed under the supervision of a certified arborist to avoid long-term damage to the trees. Prior to vegetation clearing in this area, permanent protective fencing and “Keep Out” signage would be installed at a distance of 50 feet from the canopy edge of these trees to avoid indirect impacts to the root zones (e.g., soil compaction) which could eventually result in tree mortality. Further, it is recommended that two oaks be planted within the proposed landscaping areas of the new storage yard facility in the event that trimming of limbs or compaction near the root zone of the two existing onsite trees would eventually cause damage or illness to the trees in accordance with the City’s Grading Ordinance (Article 55, Grading and Erosion Control) for the trimming of protected mature trees. With implementation of Mitigation Measure BIO-6, potential impacts to coast live oak woodland and oak trees would be less than significant.

BIO-6: Temporary indirect impacts to coast live oak woodland (0.01 acre) may result from the trimming of several limbs (if necessary) to accommodate the proposed structures. Prior to any onsite vegetation clearing during Project construction, permanent protective fencing and “Keep Out” signage shall be installed at a distance of 50 feet from the canopy edge of potentially affected coast live oak woodland to avoid temporary indirect impacts to the root zones (e.g., soil compaction). The trimming of any onsite coast live oak trees shall be performed under the supervision of a certified arborist.

c) Would the Project have a substantial adverse effect on biological resources involved within a jurisdictional water feature as defined by federal, state or local regulations (e.g., Section 404 of the Clean Water Act, Section 401 of the Clean Water Act, Section 1602 of California Fish and Game Code, Porter-Cologne Water Quality Control Act, etc.) through direct removal, filing, hydrological interruption, or other means?

No Impact. A Jurisdictional Delineation was completed by MBI (January 2015) to determine the regulatory authority of two offsite adjacent drainage features (refer to Drainages “A” and “B” in Exhibit 7 of *Appendix B-2* of this Initial Study) with respect to Sections 404 and 401 of the federal Clean Water Act [i.e., U.S. Army Corps of Engineers (ACOE) and California Regional Water Quality Control Board (RWQCB), respectively]; and, Section 1602 of the California Fish and Game Code (i.e., California Department of Fish and Wildlife [CDFW]); refer to Attachment 6 of *Appendix B-1* of this Initial Study. Due to their hydrological connections to downstream waters (i.e., Escondido Creek, Pacific Ocean), Drainage A (0.05 acre) and Drainage B (0.21 acre) are considered “Waters of the U.S.” under both USACE and RWQCB jurisdictions. In addition, due to the presence of a defined bed and bank, Drainage A (0.13 acre) and Drainage B (0.34 acre) are considered “jurisdictional streambeds” under CDFW, with another 0.44 acre of CDFW jurisdictional riparian vegetation associated with Drainage B.

As designed, the Project would not result in placement of fill and/or alteration within the offsite riparian/wetland/jurisdictional areas, and thus, would not be subject to USACE, Regional Board,

or CDFW jurisdiction. In addition, Project grading would maintain a 100-foot buffer as measured from the jurisdictional limits associated with Drainage B (refer to Exhibit 7 of [Appendix B-2](#) of this Initial Study). Regulatory agency permits or authorizations are therefore not required for the Project. As such, the Project would not have a substantial adverse effect on biological resources associated with a jurisdictional water feature as defined by federal, State, or local regulations through direct removal, filling, hydrological interruption, or other means. No impact would occur.

d) Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. Based on a review of the online U.S. Fish and Wildlife Service (USFWS) Critical Habitat Mapper, the nearest critical habitats to the Project site are located: (1) approximately 2.75 miles to the west for coastal California gnatcatcher, between Deadwood Drive and Crestwind Drive; (2) approximately 3.25 miles to the east for coastal California gnatcatcher, between South Centre City Parkway and South Juniper Street; and, (3) approximately 3.50 miles to the southeast for coastal California gnatcatcher, south of Quiet Hills Drive. Further, as the onsite and adjoining offsite habitats are considered good avian and raptor nesting and foraging habitats, providing a good prey base and suitable hunting habitat for resident, wintering, and transient bird populations, portions of the property could be used as a significant “local” or “regional” wildlife corridor and/or linkage to Escondido Creek located approximately 500 feet west of the site; however, due to the limited development proposed onsite, by siting of the proposed wastewater collections yard adjacent to Citracado Parkway leaving intact the majority of the undeveloped (open space) portion of the City parcel to the north/northwest of the development footprint, and by retaining the existing Arizona crossings for the access road to HARRF as it passes through the above-described drainages, the Project is not anticipated to obstruct potential “local” wildlife movements onsite or potential “regional” wildlife movements in the surrounding area (i.e., towards Escondido Creek to the west). As such, the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Impacts would be less than significant, and no mitigation measures are required.

e) Would the Project conflict with any local policies or ordinance protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact with Mitigation. The Resource Conservation Element (Chapter VII) of the General Plan identifies Biological and Open Space Resources Policy 1.9 which states that the City shall “Encourage proposed development projects to minimize the removal of significant stands of trees unless needed to protect public safety and to limit tree removal to the minimum amount necessary to assure continuity and functionality of building spaces.” Any onsite eucalyptus trees removed with the Project that are considered to be mature trees per the City’s Municipal Code would require replacement at a 1:1 ratio, per City requirements. Therefore, the Project would also be in conformance with this policy.

The Project’s direct loss of approximately 0.19 acre of eucalyptus woodland as potential raptor habitat would not be significant given the large expanses of existing raptor habitat in the region, and no mitigation is required; however, as eucalyptus trees would be removed with the Project, is recommended that one oak for each eucalyptus removed should be planted within the

proposed landscaping areas of the new storage yard facility for consistency with the City’s Tree Preservation requirements.

The Project may also result in temporary impacts (0.01 acre) to coast live oak woodland in the form of possible disturbance caused by tree trimming. Impacts would be reduced to less than significant with implementation of Mitigation Measure BIO-6, as described above. As such, the Project would not conflict with the City’s Mature Tree Preservation requirements, and the replacement of mature trees at an appropriate ratio onsite would not be required. Therefore, the Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy. Impacts would be less than significant with mitigation.

f) Would the Project conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. As stated in Section 4.4. Biological Resources, of the City’s General Plan FEIR, the City of Escondido is located within the boundary of the Multiple Habitat Conservation Program (MHCP) adopted in 2003 for the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista (SANDAG 2003). The MHCP is a comprehensive planning program intended to establish, manage, and monitor an ecosystem preserve in the northwestern portion of San Diego County. Each of the participating jurisdictions in the program is required to prepare a subarea plan in order to implement the MHCP within its jurisdictional boundaries. The City of Escondido has prepared a Draft Subarea Plan; however, to date, the Plan has not been adopted. The Subarea Plan affects the entirety of the City as well as an additional 3,000 acres of unincorporated County of San Diego lands that lie within the City’s sphere of influence. These lands are within the boundaries of the Draft North County Multiple Species Conservation Program (MSCP) Subarea Plan, and adjacent to the City of San Diego’s MSCP Cornerstone Lands at Hodges Reservoir and San Pasqual Valley. The Draft Subarea Plan identifies the Project site as Native Habitat and does not indicate that the property is intended for preservation.

As shown in Figure 4.4-1 of the City’s General Plan FEIR, the Project site is not located within a MHCP preserve area. Nevertheless, the Project would not conflict with the provisions of an otherwise applicable HCP because the City’s Draft MHCP Subarea Plan has not yet been adopted. No impact would occur.

V. Cultural Resources

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Cultural Resources Discussion

A Cultural Resources Inventory was prepared for the Project by Spindrift Archaeological Consulting, LLC in October 2015 (refer to [Appendix C](#) of this Initial Study), which incorporates the findings from a recent cultural resources study prepared for the *Citracado Parkway Extension Final EIR* that are applicable to the Project site. The Project's Area of Potential Effects (APE)³ considered for this cultural resources evaluation totals approximately 1.8 acres. A pedestrian field survey of the Project APE was deemed unnecessary because [Appendix C](#) incorporates the results of recent cultural resources surveys of the site as part of the above-referenced *Citracado Parkway Extension Final EIR*.

Based on the results of a records search, 13 previous surveys were conducted within a 0.25-mile radius of the Project site, with one prehistoric/historic archaeological resource previously-documented within the Project's APE (Site P-37-008280/CASDI-8280) and seven previously documented sites in the vicinity; refer to Tables 1-2 in Appendix A of [Appendix C](#) of this Initial Study.

Historic references were also reviewed including the California Inventory of Historic Resources (March 1976); Historic Property Data File for San Diego County (Office of Historic Preservation 2013a); National Register Information System website (National Park Service 2013); Office of Historic Preservation, California Historical Landmarks website (Office Historic Preservation 2013b); California Historical Landmarks (Office of Historic Preservation 1996 and updates); and, California Points of Historical Interest (Office of Historic Preservation 1992 and updates). Based on the results of these reviews, no additional historic archaeological sites or historic architectural resources have been previously-documented in the Project's APE and in the vicinity, aside from Site P-37-008280/CASDI-8280.

Based on the results of the above-referenced records search, no traditional cultural properties and no known sacred lands have been previously-documented in the Project's APE and in the vicinity. Consistent with State tribal consultation requirements, the City of Escondido contacted all persons or organizations on the City's AB 52 and SB 18 consultation lists on July 9, 2015 to request information on unrecorded cultural resources that may exist within the Project APE and to inquire about any concerns regarding sacred sites or traditional cultural properties in the vicinity that might be affected by the proposed Project; refer also to [Appendix C](#) of this Initial Study.

a) Would the Project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less Than Significant with Mitigation. One prehistoric/historic archaeological resource has been previously recorded within the Project's APE (Site P-37-008280/CASDI-8280). Documented historic resources associated with this site include two concrete structures, concrete rubble, fence posts, lumber, nails, and possible animal cages. This site has been heavily disturbed by graffiti, vandalism, trash dumping, foot and vehicle traffic, agriculture, and construction activities.

In 2010, as part of the Citracado Parkway Extension Project, portions of Site P-37-008280/CASDI-8280 outside the Project's APE were tested for significance following standard professional archaeological field protocol and City guidelines. Analysis of the historic archaeological information recovered during the testing programs indicated that the site has significant subsurface deposits, and therefore, it has the potential to further answer questions related to the understanding of history for the region, State, and/or nation [CEQA Section 15064.5 (c)]. As such, the site was recommended as eligible for the California Register of Historic Resources (CRHR) (Brian F. Smith and Associates, 2012); however, it is unknown whether the State Historic

³ Land area where any Project-related disturbance activities would occur.

Preservation Officer (SHPO) has concurred with this recommendation, as no documentation was provided by the records search. Additionally, mitigation measures were identified in the *Citracado Parkway Extension Final EIR* to reduce significant impacts to this site from road construction.

The portion of Site P-37-008280/CASDI-8280 within the Project's APE has not been evaluated for eligibility to the CRHR; however, due to the extent of previously-identified historic archaeological resources in portions of this site directly adjacent to the Project's APE, the potential for encountering subsurface historic-period cultural resources during earth disturbance activities associated with the Project is considered high, and the proposed Project could cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines. To ensure the proper identification, evaluation, and handling of such resources, the following mitigation measures which are consistent with those adopted for the *Citracado Parkway Extension Final EIR* MMRP shall be implemented to reduce this potential impact to less than significant:

- CUL-1:** Prior to vegetation clearance, grubbing and grading, a qualified professional archaeologist shall conduct a pedestrian inventory survey to determine the horizontal extent of Site P-37-008280/CA-SDI-8280 within the Project's APE. The archaeologist shall subsequently conduct a subsurface testing program to determine the presence (and integrity) or absence of *in situ* buried archaeological deposits. The results and an evaluation of eligibility shall be reported in a separate document.
- CUL-2:** Implement Mitigation Measures CUL-5 to CUL-14 for the discovery, treatment, and/or recordation of unknown cultural deposits, or potential cultural deposits, encountered during Project ground-disturbing activities and consistent with the *Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites* established by the Native American Heritage Commission (NAHC).

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than Significant with Mitigation. One prehistoric/historic archaeological resource has been previously recorded within the Project's APE (Site P-37-008280/CASDI-8280). Documented prehistoric resources associated with this site include rock art, bedrock milling features, midden deposits, flakes, scrapers, manos, metates, planes, arrowheads, a "trail shrine," water cisterns, a prehistoric rock alignment, and fire-affected rocks. As stated above, this site has been heavily disturbed by graffiti, vandalism, trash dumping, foot and vehicle traffic, agriculture, and construction activities.

Analysis of the prehistoric archaeological information recovered during the testing programs for Site P-37-008280/CASDI-8280 as part of the Citracado Parkway Extension Project (refer to Response V.a), above), indicated that the site has significant subsurface deposits, large quantities of bedrock milling, and associated pictograph loci. Therefore, it has the potential to further answer questions related to the understanding of prehistory for the region, State, and/or nation [CEQA Section 15064.5 (c)]; it was recommended as eligible for the CRHR (Brian F. Smith and Associates, 2012); and, mitigation measures were identified in the *Citracado Parkway Extension Final EIR* to reduce significant impacts to this site from road construction.

As stated in Response V.a), above), although the portion of Site P-37-008280/CASDI-8280 within the Project's APE has not been evaluated for eligibility to the CRHR, the potential for encountering

subsurface prehistoric-period cultural resources during earth disturbance activities associated with the Project is considered high, and the proposed Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines. Implementation of Mitigation Measure CUL-3 would reduce this potential impact to less than significant.

CUL-3: Implement Mitigation Measures CUL-5 to CUL-14 for the discovery, treatment, and/or recordation of unknown cultural deposits, or potential cultural deposits, encountered during Project ground-disturbing activities and consistent with the *Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites* established by the Native American Heritage Commission.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant. According to the Geotechnical Report prepared for the Project by West Coast Geotechnical Consultants, Inc. in July 2015 (refer to [Appendix D](#) of this Initial Study), one of the underlying soils onsite includes Colluvium Over Granitic Rock (Qc/Kg), and Figure 4.5-2, Geological Formations, in the City's General Plan EIR indicates the site is underlain by Old Alluvial Valley Deposits (Qoa), both of which are considered to have a "Moderate" sensitivity for the potential to contain paleontological resources. As such, there is a potential for discovery of unknown fossils during Project ground disturbance activities which could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; however, the City of Escondido and the general Project area are not known to have produced any significant or substantial paleontological discoveries. Additionally, previous grading/ground disturbance on and around the Project site and the adjacent section of the Citracado Parkway widening project did not uncover any paleontological resources. As such, the potential for discovery of unknown fossils during Project ground disturbance activities is considered relatively low to negligible. No significant impacts are anticipated, and the implementation of mitigation measures is not proposed; however, as a Best Management Practice (BMP), the Project would be subject to all requirements and standard protocols pertaining to the protection and handling of paleontological resources, should any resource be uncovered during ground disturbance activities.

As indicated in the General Plan EIR, a number of regulations provide for the protection of paleontological resources, such as Public Resources Code (PRC) Section 5097, the City's Municipal Code, and CEQA. PRC Section 5097 makes it a misdemeanor criminal violation to disturb or remove paleontological resources without authorization. For areas subject to the City Municipal Code, grading designs should be sensitive to natural topographic, cultural, or environmental features, and certain features should be preserved in permanent open space easements, or such other means to ensure their preservation, including unusual rock outcroppings. Additionally, recommendations identified in the Project-specific geotechnical report would also be implemented; refer to [Appendix D](#) of this Initial Study.

Therefore, with conformance to applicable plans, policies, regulations to protect paleontological resources, and implementation of standard grading recommendations in [Appendix D](#) of this Initial Study, potential impacts on paleontological resources would be less than significant.

d) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant with Mitigation. No human remains are known to exist onsite, and therefore, no direct impacts on such resources are expected to occur. To ensure that potential impacts on any unknown human are minimized to the extent feasible, all applicable requirements

and protocols would be adhered to during ground disturbance activities resulting with Project construction. In compliance with California State Health and Safety Code Section 7050.5, if human remains are encountered during earth disturbance activities for the Project, the County Coroner shall be notified immediately and proper steps taken for evaluation and handling of the find(s). No further earth disturbance shall occur in the area of the find(s) until the County Coroner makes a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be prehistoric, the Coroner is required to notify the Native American Heritage Commission (NAHC), which will identify and notify a Most Likely Descendant (MLD). The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. With implementation of the standard provisions of California State Health and Safety Code Section 7050.5, potential impacts to human remains encountered during earth disturbance activities for the Project would be less than significant; however, Mitigation Measure CUL-4 is proposed to further ensure that impacts remain less than significant in the event that human remains are encountered.

CUL-4: Implement Mitigation Measures CUL-5 to CUL-14 for the discovery, treatment, and/or recordation of unknown cultural deposits, or potential cultural deposits, encountered during Project ground-disturbing activities and consistent with the *Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites* established by the Native American Heritage Commission.

e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074?

Less than Significant with Mitigation. The Project is subject to Native American consultation requirements per Assembly Bill 52 (AB 52) and Senate Bill 18 (SB (18)). These legislative actions and the results of City compliance with Native American consultation requirements are further described below.

Assembly Bill 52 (AB 52)

Assembly Bill 52 (AB 52) went into effect on July 1, 2015. The Bill applies to any project for which a Notice of Preparation (NOP), Notice of Mitigated Negative Declaration, or Notice of Negative Declaration is filed and is aimed at the identification and protection of Tribal Cultural Resources. The goals of the AB 52 Tribal Consultation process are to discuss mandatory and discretionary topics requested by a tribe, particularly the significance of Tribal Cultural Resources, avoidance, preservation in place, and/or mitigation measures; to achieve resolution on such topics; and, if resolution is not possible, to document why not and what efforts were undertaken.

In order to participate in AB 52 Tribal consultation, a tribe must request, in writing, to be notified by lead agencies through formal notification of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated. Without this request, there is no requirement that a lead agency engage in AB 52 Tribal consultation; however, failure to request notification does not preclude non-AB 52 tribal consultation. Consultation is concluded when the parties involved reach a mutual agreement concerning appropriate measures for preservation of or mitigation for impacts on Tribal Cultural Resources, or when either party, acting in good faith or after reasonable effort, concludes that mutual agreement cannot be reached concerning appropriate measures of preservation or mitigation. During the AB 52 consultation process, the City received request from the San Luis Rey Band of Indians for tribal consultation under the provisions of CEQA [Public Resources Code Section 21080.3.1 Subdivisions (b), (d) and (e)] for the

mitigation of potential Project impacts to tribal cultural resources. The San Luis Band of Indians requested formal consultation with regards to the significant effects of the Project, recommended mitigation measures, and potential Project alternatives. Consistent with CEQA requirements, the City has completed the consultation requirements and has reached agreement with the San Luis Band of Indians as to the desired mitigation measures that will be implemented in order to ensure that significant known and unknown tribal cultural resources are effectively protected and that potential Project impacts are reduced to below a level of significance. Such mitigation measures have been incorporated herein as Mitigation Measures CUL-5 to CUL-14.

Senate Bill 18 (SB 18)

Government Code §65352.3 (State Senate Bill 18, or SB 18) requires that local government undertake consultation with California Native American tribes, as identified by the Native American Heritage Commission (NAHC), to protect and/or mitigate potential effects of a project on cultural places. Pursuant to State Public Resources Code §21070, those projects that require adoption or amendment of general plans or specific plans or that designate open space are subject to the consultation requirements of SB 18.

The NAHC is considered the State "trustee agency" responsible for protection of Native American Cultural Resources. As a State agency, the NAHC maintains jurisdiction over Native American resources that may be impacted by development projects (1985 Appellate Court decision (170 Cal App 3rd 604). Such resources may include archaeological resources, places having religious significance, and/or Native American burial sites. The SB 18 consultation process requires a government to government process initiated by the local governmental agency. The City initiated and completed Native American consultation consistent with SB 18 requirements.

One request for consultation was received by the tribes contacted during the 90-day period during which they have the opportunity to request such consultation. The Pauma Band of Luiseno Indians requested to visit the Project site. The City sent correspondence back to the Pauma Band of Luiseno Indians to schedule a site visit; however, to date, the City has not yet received a response from the tribe. As such, consultation has been concluded, in conformance with the allowances of SB 18.

No direct impacts would occur to known tribal resources with Project implementation; however, the Project would have the potential to result in significant impacts on unknown tribal cultural resources which may include Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas and cultural items during construction. As such, mitigation measures are proposed to ensure the discovery, treatment, and/or recordation of unknown tribal cultural deposits, or potential tribal cultural deposits, encountered during Project ground-disturbing activities. Project impacts on tribal cultural resources would be reduced to less than significant with implementation of Mitigation Measures CUL-5 to CUL-14.

CUL-5: The City of Escondido Planning Division ("City") recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources, and (2) to formalize protocols and procedures between the Applicant/Owner and the TCA Tribe for the

protection and treatment of, including but not limited to, Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas and cultural items, located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

- CUL-6:** Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor is associated with a TCA Tribe. The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.
- CUL-7:** The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.
- CUL-8:** During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.
- CUL-9:** In the event that previously unidentified tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor, shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.
- CUL-10:** If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the tribal cultural resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor and be submitted to the City for review and approval.
- CUL-11:** The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated as required by CEQA. Where any significant tribal cultural resources and/or unique archaeological resources have been discovered and avoidance and/or

preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

CUL-12: As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

CUL-13: If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the qualified Archaeologist does not collect the cultural resources that are unearthed during the ground disturbing activities, the Native American monitor, may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. Any tribal cultural resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources, shall be curated at the San Diego Archaeological Center.

CUL-14: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the

project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report shall include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

VI. Geology and Soils

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a Known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994 or most current edition), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Geology and Soils Discussion

a) Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than Significant. As stated in Section 4.6, Geology and Soils, of the City of Escondido General Plan FEIR, no active faults are known to occur within or immediately adjacent to the City. The Geotechnical Investigation (West Coast Geotechnical Consultants, Inc., July 2015) prepared for the site indicates that no known Earthquake Fault Hazard Zones as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act are located within the boundaries of

the site; refer to [Appendix D](#) of this Initial Study. Nearby faults include: the Elsinore fault zone, located approximately 18 miles to the northeast; the Rose Canyon fault zone, located approximately 16 miles offshore to the west; and the Coronado Bank fault zone, located approximately 24 miles to the southwest (offshore); however, other faults within the southern California and northern Baja California area are also considered potential generators of significant ground motion within the City, as these faults could create moderate to large earthquake events.

All onsite development is required to comply with applicable local and State building codes (i.e. California Building Code) to minimize the risk of damage or loss due to a seismic event. Additionally, all Project construction would occur in conformance with design recommendations made in the Geotechnical Investigation; refer to [Appendix D](#). Therefore, with implementation of the standard provisions of the California Building Code and recommended design measures, potential impacts from ground rupture in the event of a strong to moderate earthquake along one of regional fault zones would be less than significant.

ii) Strong seismic ground shaking?

Less than Significant. The City of Escondido is located in southern California which is a seismically-active region that typically experiences relatively small to larger earthquakes on a frequent basis. The Project site is not located within a known fault zone or within one-half mile of a known fault, as discussed above in VI.a.i), above. No geologic conditions that would contribute to strong seismic ground shaking are present onsite. All future structures proposed onsite would be built to comply with applicable local and State building codes (i.e. California Building Code) and the design recommendations of the Geotechnical Investigation to minimize the potential risk of damage or loss from strong seismic ground shaking and to resist the effects of seismic ground shaking. Therefore, with implementation of the standard provisions of California Building Code and the recommended design measures, potential impacts from strong seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant. Seismically-induced liquefaction generally occurs where shallow groundwater and poorly consolidated, well-sorted, fine grained sands and silts are present. The potential for liquefaction decreases with increasing density, grain size, clay content, and gravel content. Conversely, liquefaction potential increases as the ground acceleration and duration of seismic shaking increase.

According to the Geotechnical Investigation ([Appendix D](#) of this Initial Study), groundwater was not observed during onsite exploratory excavations. The Project site is underlain by dense granitic bedrock at relatively shallow depths. Per recommendations in the Geotechnical Investigation, poorly consolidated overburden soils shall be removed and/or appropriately compacted, thereby minimizing the potential for seismic-related ground failure, including liquefaction. Therefore, with implementation of the standard soil remediation recommendations in [Appendix D](#) of this Initial Study, potential impacts associated with generalized liquefaction and/or seismic settlement in the event of a strong to moderate earthquake along one of regional fault zones would be less than significant.

iv) Landslides?

Less than Significant. No evidence of deep-seated landslides was observed on or in the immediate vicinity of the site during the Geotechnical Investigation ([Appendix D](#) of this Initial Study). The

potential for deep-seated slope failure is therefore considered to be low. It is anticipated that constructed slopes would be approximately 10 feet or less in vertical height. The onsite soils that may be used for fill embankments or exposed in cut slopes are granular with high frictional shear strength. As such, there is a low probability of slope failure in manufactured slopes if constructed consistent with recommendations of the Geotechnical Investigation. Therefore, with implementation of the standard soil remediation recommendations identified in Appendix D of this Initial Study, potential impacts associated with manufactured slope failures from seismically-induced landslides would be less than significant.

b) Would the Project result in substantial soil erosion or the loss of topsoil?

Less than Significant. Project grading would require approximately 3,400 c.y. of cut and 3,800 c.y. of fill to accommodate the proposed improvements onsite. The grading/construction contractor is required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) according to the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (Order No. 2001-01) provisions enforced by the RWQCB, which will include standard Best Management Practices (BMPs) to be implemented during the grading/construction phase to minimize the potential for erosion to occur. To reduce the potential for post-construction erosion and loss of topsoil, any exposed slopes and graded areas shall be planted as soon as possible after grading. Slope erosion, including sloughing, rilling, and slumping of surface soils may be anticipated if the slopes are left unplanted for a long period of time, especially during rainy seasons. As stated in the Geotechnical Investigation (Appendix D of this Initial Study), concrete swales are recommended at the top of all permanent slopes to prevent surface water runoff from overtopping the slopes. All erosion control and drainage devices shall be installed in compliance with local, State, and federal requirements, as applicable. Therefore, with implementation of standard erosion control BMPs per the required SWPPP, post-construction landscaping requirements, and drainage recommendations in Appendix D of this Initial Study, potential impacts due to substantial soil erosion and loss of topsoil would be less than significant.

c) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in, on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant. Artificial fill material is present onsite and is not considered suitable for the support of proposed structures, as this material may be prone to collapse. Project construction would follow recommendations for site preparation and grading included in the Geotechnical Investigation (Appendix D of this Initial Study). Any loose topsoil would be excavated; all existing fill, colluvium or otherwise unsuitable material would be completely removed to firm, unyielding, undisturbed bedrock at the location of planned improvements; and appropriate fill materials compacted consistent with Project grading plans. Additionally, all future development onsite would be required to comply with the California Building Code and City of Escondido grading and building requirements. Therefore, with implementation of the standard soil remediation recommendations in Appendix D of this Initial Study and the standard California Building Code and City grading/building requirements, potential impacts due to unstable geologic units or soil would be less than significant.

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks of life or property?

Less than Significant. Detrimentially expansive soils (Expansion Index of 21 or greater) were encountered in the subsurface explorations for the Geotechnical Investigation (Appendix D of this Initial Study). Onsite soils were found to have a medium to high expansion potential (Expansion Indices of 54 and 87), occurring as sandy clay and very clayey sand deposited in the southern portion of the property. The vertical thickness of the expansive soils varies from approximately one to two feet in depth. The Geotechnical Investigation provides measures to be implemented during construction to reduce the potential for damage caused by expansive soils. All future development onsite would also be required to comply with the California Building Code and City of Escondido grading and building requirements. Therefore, with implementation of the standard soil remediation recommendations in Appendix D of this Initial Study and the standard California Building Code and City grading/building requirements, potential impacts due to expansive soils would be less than significant.

e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed Project would be served by the City’s public water / wastewater system and would not require the use of septic tanks or alternative wastewater disposal systems. No impact would occur.

VII. Greenhouse Gas Emissions

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Greenhouse Gas Emissions Discussion

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact.

Global Climate Change

California is a substantial contributor of global greenhouse gases (GHGs), emitting over 400 million tons of carbon dioxide (CO₂) per year.⁴ Climate studies indicate that California is likely to see an increase of three to four degrees Fahrenheit (°F) over the next century. Methane is also an important GHG that potentially contributes to global climate change. GHGs are global in their effect, increasing the earth’s ability to absorb heat in the atmosphere. As primary GHGs have a

4 California Energy Commission, California Greenhouse Gas Inventory for 2000-2012 – Trends of Emissions and Other Indicators, May 2014.

long lifetime in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere is mostly independent of the point of emission.

The impact of human activities on global climate change is apparent in the observational record. Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO₂, methane (CH₄), and nitrous oxide (N₂O) from before the start of industrialization (approximately 1750) to over 650,000 years ago. For that period, it was found that global CO₂ concentrations ranged from 180 parts per million (ppm) to 300 ppm. For the period from approximately 1750 to the present, the increase in global CO₂ concentrations ranged from 280 ppm to 379 ppm.

Regulations and Significance Criteria

The Intergovernmental Panel on Climate Change (IPCC) has concluded that a stabilization of GHG concentrations at 400 to 450 ppm carbon dioxide equivalent (CO₂eq)⁵ is required to keep global mean warming below 2 degrees Celsius (°C), above which is assumed to result in dangerous climate change.

Executive Order S-3-05 was issued in June 2005, which established the following GHG emission reduction targets:

- 2010: Reduce GHG emissions to 2000 levels;
- 2020: Reduce GHG emissions to 1990 levels; and,
- 2050: Reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill (AB) 32 requires CARB to determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. CARB has approved a 2020 emissions limit of 427 million metric tons (MMT) of CO₂eq.

Due to the nature of global climate change, it is not anticipated that any single development project would have a substantial effect. In actuality, GHG emissions from the proposed Project would combine with emissions emitted across California, the United States, and the world to cumulatively contribute to global climate change.

In June 2008, the California Governor's Office of Planning and Research (OPR) published a Technical Advisory, which provides informal guidance for public agencies as they address the issue of climate change in CEQA documents.⁶ This is assessed by determining whether a proposed project is consistent with or obstructs the 39 Recommended Actions identified by CARB in its Climate Change Scoping Plan which includes nine Early Action Measures (qualitative approach). The Attorney General's Mitigation Measures identify areas where GHG emissions reductions can achieve the goals of AB 32. As set forth in the OPR Technical Advisory and in the amendments to the CEQA Guidelines Section 15064.4, the following analysis examines whether the Project's GHG emissions are significant based on a qualitative and performance based standard (CEQA Guidelines Section 15064.4[a][1] and [2]).

5 Carbon Dioxide Equivalent (CO₂eq) – A metric used to compare the emissions from various GHGs based upon their global warming potential.

6 Governor's Office of Planning and Research, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, 2008.

City of Escondido Significance Criteria

The City of Escondido adopted their GHG CEQA Thresholds and Screening Tables in December 2013 which provides guidance on how to analyze GHG emissions and determine the significance of those emissions during CEQA review of proposed development projects within the City. The analysis, methodology, and significance determination (thresholds) are based upon the *City of Escondido Adopted Climate Action Plan* (CAP, December 2013), the GHG emission inventories within the CAP, and the measures that would reduce emissions to the AB-32 compliant reduction target of the CAP. A threshold level of 2,500 MTCO₂eq/year was established for projects that require the use of screening tables to quantify and mitigate GHG emissions.⁷

Based on Appendix B of the CEQA Thresholds and Screening Tables document, it is concluded that the GHG emissions generated by the Project would not exceed 2,500 MTCO₂eq/year. Thus, GHG emissions from the Project would be less than significant. Nonetheless, pursuant to full disclosure under CEQA, the estimated construction and operational GHG emissions associated with the Project have been quantified to further confirm that the total annual emissions of the Project would not exceed 2,500 MTCO₂eq/year.

Project-Related Sources of Greenhouse Gases

The proposed Project would result in direct and indirect emissions of CO₂, N₂O, and CH₄. Therefore, this analysis focuses on these three forms of GHG emissions. Direct Project-related GHG emissions would occur from construction activities, area sources, and mobile sources,⁸ while indirect emissions would occur from electricity consumption, water demand, and solid waste generation. Operational GHG estimations are based on energy emissions from natural gas usage and automobile emissions. CalEEMod relies upon trip data from the Project applicant and Project-specific land use data to calculate emissions. *Table VII-1, Estimated Greenhouse Gas Emissions*, presents the estimated CO₂, N₂O, and CH₄ emissions of the proposed Project. The CalEEMod outputs are contained in *Appendix A* of this Initial Study.

Direct Project-Related Sources of Greenhouse Gases

- *Construction Emissions.* Construction GHG emissions are typically summed and amortized over the lifetime of the Project (assumed to be 30 years), then added to the operational emissions.⁹ As seen in *Table VII-1*, the proposed Project would result in 2.57 MTCO₂eq when amortized over 30 years.
- *Area Source.* The Project would not directly result in any GHG emissions from area sources.

7 In determining this level of emissions, the City used an analysis completed by the County of San Diego that reviewed projects within San Diego County (both incorporated and unincorporated areas) and used a 90th percentile capture rate of emissions. The analysis of projects within the County of San Diego sample population combined commercial, residential, and light industrial projects. The 2,500 MTCO₂eq/year value is used in defining small projects that are considered less than significant and do not need to use the Screening Tables or alternative GHG mitigation analysis.

8 It is noted that the Project would not result in any new trips, as the current employees at the existing HARRF facility to the north of the Project site would utilize the new buildings associated with the Project. As such, no mobile source GHG emissions would be generated by the proposed Project.

9 The Project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District ([http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-13/ghg-meeting-13-minutes.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-13/ghg-meeting-13-minutes.pdf?sfvrsn=2)).

- **Mobile Source.** CalEEMod relies upon traffic information from the Project applicant and Project-specific land use data to calculate mobile source emissions. The Project would not result in any new mobile source-generated GHG emissions (as the Project would not result in any new vehicle trips or vehicle miles traveled); refer to [Table VII-1](#).

TABLE VII-1: ESTIMATED GREENHOUSE GAS EMISSIONS

Emissions Source	CO ₂		CH ₄		N ₂ O		Total Metric Tons of CO ₂ eq
	Metric Tons/yr	Metric Tons/yr	Metric Tons of CO ₂ eq ¹	Metric Tons/yr	Metric Tons of CO ₂ eq	Metric Tons of CO ₂ eq	
Direct Emissions							
▪ Construction (amortized over 30 years)	2.57	0.00	0.00	0.00	0.00	0.00	2.57
▪ Area Source	0.00	0.00	0.00	0.00	0.00	0.00	0.00
▪ Mobile Source ³	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Unmitigated Emissions ²	2.67	0.00	0.00	0.00	0.00	0.00	2.67
Indirect Emissions							
▪ Energy	38.61	0.00	0.00	0.00	0.00	0.00	38.61
▪ Waste	3.21	0.19	4.80	0.00	0.00	0.00	8.20
▪ Water Demand	14.88	0.11	2.80	0.00	0.00	0.00	17.79
Total Unmitigated Indirect Emissions ²	56.7	0.30	7.60	0.00	0.00	0.00	64.60
Total Unmitigated Project Related Emissions²			62.17 MTCO₂eq/yr				
Is 2,500 MTCO₂eq/yr Threshold Exceeded?			No				

Notes: 1. CO₂ Equivalent values calculated using the U.S. EPA Website, *Greenhouse Gas Equivalencies Calculator*, <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>, accessed October 2015.

2. Totals may be slightly off due to rounding. Due to rounding, the results given by the equation calculations used in the Greenhouse Gas Equivalencies Calculator may not return the exact results shown in CalEEMod.

3. The Project would not result in any new vehicle trips or vehicle miles traveled, and therefore, no mobile source GHG emissions would occur.

Indirect Project-Related Sources of Greenhouse Gases

- **Energy Consumption.** Energy Consumption emissions were calculated using CalEEMod and Project-specific land use data. Electricity would be provided to the Project site via San Diego Gas & Electric. The Project would indirectly result in 38.61 MTCO₂eq/year due to energy consumption; refer to [Table VII-1](#).
- **Water Demand.** The City would be the main water supply provider to the Project. The Project's water supply would be provided by imported sources and local water supply facilities from local watersheds and recycled water. Emissions from indirect energy impacts due to water supply would result in 17.79 MTCO₂eq/year.
- **Solid Waste.** Solid waste associated with operations of the Project would result in 8.20 MTCO₂eq/year; refer to [Table VII-1](#).

Total Project-Related Sources of Greenhouse Gases

As shown in [Table VII-1](#), because the total amount of Project-related GHG emissions from direct and indirect sources combined is estimated at 62.17 MTCO₂eq/yr, well below the 2,500

MTCO₂eq/yr threshold, potential impacts associated with GHG emissions would be less than significant.

b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. As discussed above, the GHG emissions generated by the proposed Project would not exceed the City’s 2,500 MT of CO₂e per year screening threshold. As such, the Project would not interfere with implementation of the CAP. Additionally, the Project’s annual GHG emissions would not exceed the County of San Diego’s 900 MTCO₂eq/year screening threshold. Consequently, implementation of the proposed Project would not conflict with AB 32’s goal of achieving 1990 levels of GHG emissions by 2020. In addition, once the energy and water consumption reductions from compliance with the mandatory requirements of CALGreen¹⁰ are accounted for, the GHG emissions associated with the proposed Project would be even lower.

Consistency with City of Escondido Climate Action Plan: As discussed previously, the CAP acts as an implementation tool of the City General Plan to guide development in the City to meet the objectives of conserving resources and reducing GHG emissions. The CAP sets a goal (i.e., a 15 percent decrease from 2005 levels) to reduce its GHG emissions back to 1990 levels by the year 2020 in cooperation with the State’s adopted AB 32 GHG reduction target. In order to achieve this goal, the City quantified the community-wide emissions for the year 2020, based on population and housing growth projections in the City’s General Plan Update. Because development of the proposed Project would be consistent with the recommended land uses of Specific Plan Area 8 (Escondido Research Tech Center/Harmony Grove), as identified in the City’s General Plan Land Use and Community Form Element, the GHG emissions associated with the Project would have already been accounted for in the City’s future emissions forecast. As such, implementation of the proposed Project would be consistent with the CAP. Additionally, because the GHG emissions generated by the proposed Project would not exceed the 2,500 MTCO₂eq/yr threshold established in the CEQA Thresholds and Screening Tables document, the Project would not hinder the City’s ability to reduce its GHG emissions in accordance with AB 32 requirements. Therefore, implementation of the proposed Project would not adversely affect the Statewide attainment of GHG emission reduction goals of AB 32. No impact would occur.

VIII. Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

10 CALGreen is a stringent building code that requires, at a minimum, that every new building after January 1, 2011 meet a certain baseline of efficiency and sustainability standards. CALGreen consists of two components; (1) mandatory measures that establish minimum baselines which must be met for a building to be approved; and (2) voluntary measures that are described in the code.

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Hazards and Hazardous Materials Discussion

a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant. Presently, the Project site is undeveloped, with exception for the onsite paved roadway which provides connection to the existing HARRFF to the north from Citracado Parkway. As such, no known hazardous materials (i.e. asbestos, lead paint, etc.) occur onsite.

With development of the site as proposed, the use, storage, handling, transport, or removal of hazardous materials or substances (i.e. diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and other petroleum based products) would occur during construction and operational activities. Mandatory compliance with applicable local, State, and federal standards for the safe handling of these materials would ensure that potential impacts to the public are minimized to the extent feasible. Additionally, the federal government and the State of California require businesses that handle more than a specified amount of hazardous or extremely hazardous materials to file a Business Risk Management Plan with the City of Escondido and the San Diego County Department of Environmental Health (DEH). With implementation of standard regulations for safe handling of hazardous materials, potential impacts from hazardous materials would be less than significant, and the Project is not expected to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant. Refer to Response VIII.a), above.

c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant. The Project site is located within the Escondido Union School District for elementary and middle school services (kindergarten to grade 8) and the Escondido Union High School District for high school services (grades 9-12). The closest school to the Project site is the Little Country Preschool, located approximately 0.18 mile to the east. As stated above, any use, storage, handling, transport, or removal of hazardous materials onsite during Project construction or operation shall comply with local, State, and federal regulations. With implementation of the required SPCCP and the standard regulations for safe handling of hazardous materials, potential impacts from hazardous materials would be less than significant and the Project is not expected to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

d) Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. None of the materials currently stored onsite that are associated with HARRF operations (e.g., soil stockpiles, concrete blocks, PVC pipe sections) are hazardous materials. In addition, the Project site is not included on a list of hazardous materials sites based on a review of the following databases: Envirostor (California Department of Toxic Substances Control) and GeoTracker (California State Water Resources Control Board)¹¹. Therefore, Project grading/excavation activities are not expected to create a significant hazard to the public or the environment from exposure to hazardous materials. No impact would occur.

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

No Impact. The Project site is located outside the sphere of influence for the McClellan-Palomar Airport, which is the closest airport, located approximately 9.2 miles to the west. As such, the site is not located within an airport land use plan or any safety zones identified in the Airport Land Use Compatibility Plan adopted to guide McClellan Airport operations. The Project would not result in future development that may cause aviation safety hazards for people residing or working in the Project area. No impact would occur.

f) For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?

No Impact. No private airstrips are located within the City of Escondido or within the vicinity of the site. The nearest private airstrip is located approximately 8.2 miles to the northeast at Lake Wohlford Resort. The Project would not result in future development that may cause aviation safety hazards for people residing or working in the Project area. No impact would occur.

¹¹ Envirostor – http://www.envirostor.dtsc.ca.gov/public/search.asp?CMD=search&city=Escondido&zip=&county=San+Diego&case_number=&business_name=&FEDERAL_SUPERFUND=True&STATE_RESPONSE=True&VOLUNTARY_CLEANUP=True&SCHOOL_CLEANUP=True&CORRECTIVE_ACTION=True&tiered_permit=True&evaluation=True&operating=True&post_closure=True&on_operating=True&inspections=True. Accessed October 28, 2015. GeoTracker - <http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=escondido>. Accessed October 28, 2015.

g) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The San Diego County Multi-Jurisdictional Hazard Mitigation Plan was prepared through participation of all jurisdictions in the County of San Diego, including Escondido. The Plan identifies the risk assessment process, hazards within each jurisdiction, hazard profiles, and vulnerability assessments, and also identifies goals, objectives, and actions for each jurisdiction. The plan reduces the possibility of damage and losses to people and critical facilities or infrastructure. San Diego County also implements its Operational Area Emergency Plan (OAEP) which provides a comprehensive emergency management system for planned responses to major emergencies or disaster situations associated with natural disasters, technological incidents, terrorism, and nuclear-related incidents. The OAEP is implemented by the County and the 18 incorporated cities within the County, including the City of Escondido. Additionally, the City of Escondido implements its Emergency Response Team (CERT) program, which is a joint effort between the Escondido Fire Department and City residents to provide residents with emergency preparedness.

Project access would occur from either the adjacent Citracado Parkway from the south or from the existing gated access to the HARRF from the north. All proposed improvements would occur onsite and would not affect existing access routes, nor would it alter or impede existing evacuation routes shown in Figure VI-1, Emergency Evacuation Routes, of the General Plan Community Protection Element. Therefore, the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No impact would occur.

h) Would the Project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant. Wildland urban interface (WUI) areas typically occur where development is bordered by undeveloped wildland areas and/or highly flammable vegetation including chaparral, sage scrub, and woodland areas. Figure 4.8-2, Wildfire Risk, of the General Plan FEIR (Section 4.8, Hazards) identifies areas with the greatest risk for wildfire to occur. The Project site is identified as having a Fire Hazard Zone Rating of “High.” Lands with a “Moderate” to “Very High” rating are located just to the north and west, respectively.

The subject property is currently served by the City of Escondido Fire Department from its Station #6, located at 1735 Del Dios Highway, approximately 0.75 mile to the east. The City also maintains mutual aid agreements with fire departments in surrounding areas to ensure that efficient and thorough fire service coverage can be provided at all times.

The San Diego County Multi-Jurisdictional Hazard Mitigation Plan described above addresses, among other issues, wildfire, structure fire, disaster prevention, and reducing the possibility of damage and losses to people and critical facilities or infrastructure as a result of structural fire/wildfire. In addition, Future development on the Project site would be required to conform to local and State fire code requirements including provision of adequate defensible space (i.e. brush clearing, fire-resistant landscaping materials) around proposed facilities to reduce the potential for wildfire damage. Further, a limited number of employees would be present at the proposed facility at any one time, and not during nighttime hours. Therefore, with conformance to the Hazard Mitigation Plan and standard fire codes and regulations, potential impacts from

wildland fires would be less than significant and the Project is not expected to expose people or structures to a significant risk of loss, injury or death involving wildland fires.

IX. Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate or conflict with any adopted water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of a watercourse or wetland, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on Federal Flood Hazard boundary of Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place structures or fill within a 100-year flood hazard area, which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Hydrology and Water Quality Discussion

A Drainage Study, Stormwater Management Plan (SWMP), and Hydromodification Mitigation Plan (HMP) were prepared by MBI in October 2015 to analyze the Project’s potential impacts to Hydrology and Water Quality; refer to Appendices E-1, E-2, and E-3, respectively, of this Initial Study.

a) Would the Project violate or conflict with any adopted water quality standards or waste discharge requirements?

Less than Significant. Project construction would comply with the NPDES Construction General Permit (Order No. 2001-01) which requires a SWPPP to: identify potential pollutant sources during

construction, as well as potential non-stormwater discharges; identify, implement, and maintain appropriate BMPs to minimize erosion and prevent discharge of potential runoff pollutants associated with Project construction; and provide a water quality monitoring and sampling plan.

The Project would add approximately 0.52 acre of total impervious area in the form of rooftops, loading areas, and access roads, as compared to current onsite conditions (generally undeveloped). As such, under the Municipal Separate Storm Sewer Systems [MS4] Permit, and the City of Escondido Standard Urban Stormwater Mitigation Plan (SUSMP) and Hydromodification Plan (HMP), the Project is considered a Priority Development Project, and is subject to hydromodification controls. The SWMP identifies Low Impact Development (LID) ~~Best Management Practices (BMPs)~~ onsite to ensure that polluted stormwater does not exit the site and that water quality in downstream waters is maintained. The LID BMPs include three proposed bioretention areas and permeable gravel surface for the proposed parking lot. The three bioretention basins would be strategically located to intercept runoff from proposed impervious surfaces; refer also to *Appendix E-3* of this Initial Study. The bioretention basins would serve as a surface and sub-surface water filtration system by utilizing both plants and underlying soils to allow for controlled removal of potential pollutants from stormwater and sediments.

It should also be noted that, during Project construction and operation, there is a potential for standing water to be intermittently present in onsite during or following storm events. Such conditions may represent a potential breeding source for mosquitoes. To minimize the potential for the breeding of mosquitoes onsite, all Project-related construction and operation activities would occur in conformance with the City's standard operational and maintenance procedures, proposed stormwater controls, and standard BMPs, as well as with consideration for the County of San Diego's Guidelines for Determining Significance for Vectors and the California Department of Public Health Best Management Practices for Mosquito Control in California. Such measures may include ensuring that construction-related depressions created during grading activities and/or by tires of construction vehicles, tree pits, or landscaping do not result in depressions that will hold standing water, and ensuring that the proposed onsite bioretention areas or rip-rap do not create a potential mosquito breeding source.

~~Therefore,~~ W with implementation of a SWPPP during construction and incorporation of LID BMPs (bioretention basins) into the Project design, in combination with compliance with the MS4 Permit, potential water quality impacts would be less than significant and the Project would not violate or conflict with any adopted water quality standards or waste discharge requirements.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No Impact. The Project would be served by the City's municipal public water system and would not require the use of groundwater. Therefore, the project would not deplete groundwater supplies and would not interfere with groundwater recharge by building additional wells or by altering a stream, wetland, or existing groundwater recharge facility because these resources/facilities are not found within the Project Area. No impact would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of a watercourse or wetland, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than Significant. The Project would not affect the alignment and profile of existing natural drainage paths adjacent to the site. As stated above, Project construction would comply with the NPDES Construction General Permit (Order No. 2001-01) which requires a SWPPP to implement and maintain appropriate BMPs to minimize erosion. For post-construction conditions, the Drainage Study (Appendix E-1 of this Initial Study) demonstrates that the Project would not increase the peak 100-year storm discharge rate from the developed site. While the proposed development would add impervious area onsite, the increase in peak flows would be mitigated to pre-development levels by first passing through the three proposed onsite bioretention areas prior to leaving the site, such that no significant erosion and/or siltation is expected to occur.

Therefore, the Project would not alter the course of a stream or river and would not substantially alter existing drainage patterns of the site or area in a manner that would result in substantial erosion or siltation. With implementation of a SWPPP during construction and incorporation of LID BMPs (bioretention basins) into Project design, potential erosion/siltation impacts would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less than Significant. The Project would add impervious surfaces on the site, thereby increasing the volume and rate of runoff. As stated above, the Project would not increase the peak 100-year storm discharge rate from the developed site because peak flows would be mitigated to pre-development levels via the proposed bioretention areas which would capture and attenuate flows for the majority of site runoff prior to their ultimate discharge north of the site into Drainage A via storm drain piping outletting to a rip-rap energy dissipater.

Therefore, the Project would not alter the course of a stream or river and would not substantially alter the existing drainage pattern of the site or area in a manner which would result in flooding on- or offsite. With incorporation of LID BMPs (bioretention basins) into Project design, the development would not substantially increase the rate or amount of surface runoff, and associated hydrologic impacts would be less than significant.

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant. Refer to Responses IX.a) and IX.d), above.

f) Otherwise substantially degrade water quality?

Less than Significant. Refer to Responses IX.a) and IX.c), above.

g) Would the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. According to Appendix B-2 of this Initial Study, the Federal Emergency Management Agency (FEMA) Map Flood Insurance Rate Map No. 06073C1076G identifies the Project site as located within Zone X, which is considered to have minimal potential for flooding to occur. The Project does not propose any structures within the 100-year floodway or 100-year floodplain or

other Special Flood Hazard Area (SFHA) designated by FEMA or the County of San Diego. No impact would occur.

h) Would the Project place structures or fill within a 100-year flood hazard area, which would impede or redirect flood flows?

No Impact. As stated above in Response IX.g), the Project site does not propose any structures within a FEMA 100-year floodway or 100-year floodplain. As a result, no flows within any such areas would be impeded or redirected. No impact would occur.

i) Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. As stated above in Response IX.d), the Project would not result in flooding on- or offsite. Regarding potential losses resulting from the failure of a levee or dam, as identified in the Community Protection Element of the City's General Plan, Lake Wohlford and Dixon Lake are located in the northeastern portion of the City's General Plan boundary, and dam failure at either facility would likely result in extensive downstream flooding along Escondido Creek, which flows just to the west of the Project site. A portion of the Project site is located within a dam inundation zone according to Figure VI-8, Dam Failure Inundation Areas, of the City General Plan. To minimize potential damage and risk caused by dam failure, these facilities are routinely inspected by local, State, and federal officials. The proposed facility would be occupied by a limited number of workers, generally for purposes of ongoing maintenance as needed. Therefore, the Project would not expose a substantial number of people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam. No impact would occur.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. As stated above in Response IX.i), a portion of the site Project site is located in a dam inundation zone. As such, there is potential for a seiche to occur at these water bodies during a seismic event. As stated above, routine measures are taken to ensure that risk of failure of these local dams is minimized to the extent feasible. No impact would occur.

No Impact. The Project site is located approximately 11.6 miles east of the Pacific Ocean, and therefore, the risk for inundation by tsunami is considered very low to non-existent. No impact would occur.

Less than Significant. Slope instability tends to increase in areas where oversaturated (e.g., landscape irrigation, excessive rainfall) slopes exceeding 25 percent may be subject to surficial failures, mudflows, debris flows, rock falls, soil creep, and/or erosion; however, this condition is not expected to occur onsite because there are no steep hillsides on or adjacent to the property. In addition, there is no evidence of deep-seated landslides on or in the immediate vicinity of the site, according to Appendix D of this Initial Study, and therefore the potential for deep-seated slope failure resulting in mudflows is considered to be low. Constructed slopes would generally be 10 feet or less in vertical height. Both the onsite soils that may be used for fill embankments, as well as the naturally occurring material that is expected to be exposed in cut slopes, are granular with high frictional shear strength. As such, there is a low probability of failure of manufactured slopes resulting in mudflows if they are constructed in accordance with the recommendations in Appendix D of this Initial Study. Therefore, with implementation of the standard soil remediation recommendations in Appendix D of this Initial Study and the standard

California Building Code and City grading/building requirements, potential impacts due to mudflows would be less than significant.

X. Land Use Planning

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Land Use Planning Discussion

a) Would the Project physically divide an established community?

No Impact. Access to the proposed wastewater collections yard would be provided from Citracado Parkway. As such, no new offsite roadways or offsite roadway improvements are proposed or required as part of the Project, and none of the improvements proposed onsite would create an obstacle with regard to existing access or circulation patterns within the surrounding area. Further, the Project would be adjacent to the south of the existing HARRF and would therefore represent a similar (and compatible) land use to those already present on surrounding lands. A limited number of residential uses are located within the vicinity of the Project site (refer to *Exhibit 3, Surrounding Land Uses*); however, the proposed facility would not interfere with surrounding industrial-type or residential land uses with regard to operating characteristics or the introduction of any physical obstructions. All proposed development would occur onsite and set back off of Citracado Parkway. Therefore, the Project would not physically divide an established community. No impact would occur.

b) Would the Project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The site is identified as being within a Special District (Odor Ring Overlay). The current General Plan land use designation that applies to the site [Specific Plan Area 8 (Escondido Research Technology Center/Harmony Grove)] allows for industrial-type land use; however, the Project will require City approval a CUP and a GPA to add the Public Facility Overlay land use designation. Additionally, a rezone is also required to add the Public Facilities Overlay zoning designation. With approval of the proposed amendments to the existing land use designation and zoning, the Project would not represent a land use that would conflict with surrounding uses.

The Project does not propose new residential housing units or an increase in allowed density, and therefore, would not conflict with the City’s Growth Management Ordinance. In addition, due to its inland location and distance from the Pacific Ocean, the site is not subject to a local coastal

program. Therefore, the Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. Refer to Response IV.f), above. No impact would occur.

XI. Mineral Resources

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Mineral Resources Discussion

a) Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. As shown on Figure 4.11-1, Existing and Past Extraction Facilities, of the City's General Plan Update FEIR (Section 4.11, Minerals), no existing or past mineral extraction facilities (i.e. gold, granite, perlite, sand, gravel, etc.) are located on the Project site or within the surrounding vicinity. Additionally, Appendix D of this EIR did not identify evidence of mineral resources on or near the site. Therefore, the Project would not result in loss of availability of any known mineral resources of value to the region or residents of the State. No impact would occur.

b) Would the Project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. Refer to Response XI.a), above. No impact would occur.

XII. Noise

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Noise Discussion

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air, and is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear deemphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) has been developed. On this scale, the human range of hearing extends from approximately three dBA to around 140 dBA.

Noise is generally defined as unwanted or excessive sound, which can vary in intensity by over one million times within the range of human hearing; therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between three dBA and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of three dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6 dBA and about 7.5 dBA per doubling of distance.

There are a number of metrics used to characterize community noise exposure, which fluctuate constantly over time. One such metric, the equivalent sound level (L_{eq}), represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. Noise exposure over a longer period of time is often evaluated based on the Day-Night Sound Level (L_{dn}). This is a measure of 24-hour noise levels that incorporates a 10-dBA penalty for sounds occurring between 10:00 p.m. and 7:00 a.m. The penalty is intended to reflect the increased human sensitivity to noises occurring during nighttime hours, particularly at times when people are sleeping and there are lower ambient noise conditions. Typical L_{dn} noise levels for light and medium density residential areas range from 55 dBA to 65 dBA. Two of the primary factors that reduce levels of environmental sounds are increasing the distance between the sound source to the receiver and having intervening obstacles such as walls, buildings, or terrain features between the sound source and the receiver. Factors that act to increase the loudness of environmental sounds include moving the sound source closer to the receiver, sound enhancements caused by reflections, and focusing caused by various meteorological conditions.

REGULATORY FRAMEWORK

State of California

The State Office of Planning and Research Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a land use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the Community Noise Equivalent Level (CNEL).

City of Escondido

General Plan

Applicable policies and standards governing environmental noise in the City of Escondido are set forth in the Community Protection Element of the *City of Escondido General Plan* (General Plan). Section G, *Noise*, of the Community Protection Element is a comprehensive program to limit the exposure of the community to excessive noise levels. Section G contains noise and land use compatibility standards for general planning/land use decisions. Table XII-1, Noise and Land Use Compatibility Standards, categorize the City's land uses in terms of community noise exposure.

Municipal Code

The City's standards for governing environmental noise are set forth in Article 12, Noise Abatement and Control (Noise Control) of the *Escondido Municipal Code* (Municipal Code). The City has also adopted community noise standards within Article 1, Section 17-229 (Sound Level Limits) of the Municipal Code in order to limit unnecessary, excessive and annoying noise in the City; refer to Table XII-2, Escondido Municipal Code Noise Standards.

Section 17-234 (Construction equipment) of the Municipal Code specifies the following construction-related noise standards:

Except for emergency work, it shall be unlawful for any person, including the City of Escondido, to operate construction equipment as follows:

- (a) *It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of seven (7) a.m. and six (6) p.m. and on Saturdays between the hours of nine (9) a.m. and five (5) p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (d) of this section.*

TABLE XII-1: NOISE AND LAND USE COMPATIBILITY STANDARDS

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Single-Family, Duplex, Mobile Home	50 - 60	60 - 70	70-75	75-85
Residential – Multi-Family, Residential Mixed Use	50 - 65	60 - 70	70 - 75	70 – 85
Transient Lodging, Motels, Hotels	50 - 65	60 - 70	70 - 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	65 - 85	NA

TABLE XII-1, CONTINUED

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	NA	50 - 75	70 - 85	NA
Playgrounds, Parks	50 - 70	NA	67.5 - 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75	NA	70 - 80	80 - 85
Office Buildings, Business Commercial, Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	80 - 85	NA

NA: Not Applicable

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable – New construction or development should generally not be undertaken.

Source: City of Escondido, *City of Escondido Community Protection Element*, May 2012

TABLE XII-2: ESCONDIDO MUNICIPAL CODE NOISE STANDARDS

Zone	Time	Applicable Limit One-hour Average Sound Level (Decibels)
Residential zones	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
Multi-residential zones	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial zones	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Light Industrial	Anytime	70
Industrial park zones		
General industrial zones	Anytime	75

Source: City of Escondido, *Section 17-229, Escondido Municipal Code*, current through Ordinance No. 2015-16 and September 2015 code supplement.

- (a) *It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the president, governor or city council as public holidays.*
- (b) *A person may operate construction equipment at his/her residence or for the purpose of constructing or modifying a residence for himself/herself on Monday through Friday of a week between the hours of seven (7) a.m. and six (6) p.m., and on Saturdays, Sundays, and holidays between the hours of nine (9) a.m. and five (5) p.m.; provided, that such operation of construction equipment is not carried on for profit or livelihood and complies with the requirements of subsection (d) of this section.*

- (c) No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of seventy-five (75) dB at any time, unless a variance has been obtained in advance from the city manager.
- (d) Persons engaged in construction for profit or as a business shall post signs at conspicuous places on a construction site, indicating hours of work as prescribed by this article or authorized by permit and the applicable noise level limits. (Ord. No. 90-8, § 2, 3-28-90)

Section 17-235 (Containers and construction material), provides the following provision regarding noise associated with transportation and hauling of construction materials in the City:

It shall be unlawful for any person to handle or transport or cause to be handled or transported in any public place, any container or any construction material in such a way as to create a disturbing, excessive or offensive noise as defined under section 17-227 (k) of this article. (Ord. No. 90-8, § 2, 3-28-90).

EXISTING CONDITIONS

Existing Noise Sources

The predominant source of mobile noise in the Project area is traffic on Citracado Parkway and Avenida Del Diablo to the south of the Project site. According to the General Plan Community Protection Element, the site is within the 60-65 dBA CNEL noise contour of Citracado Parkway. The primary sources of stationary noises in the Project vicinity are urban-related activities (i.e., mechanical equipment, commercial areas, parking areas, and pedestrians). The noise associated with these sources may represent a single-event noise occurrence, short-term, or long-term/continuous noise.

Noise Measurements

In order to quantify existing ambient noise levels in the Project area, MBI conducted three noise measurements on September 30, 2015; refer to *Table XII-3, Noise Measurements*. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the site. Ten-minute measurements were taken, between 10:00 a.m. and 11:00 a.m., at each site during the day. Short-term (L_{eq}) measurements are considered representative of the noise levels throughout the day.

TABLE XII-3: NOISE MEASUREMENTS

Site No.	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Peak (dBA)	Time
1	Central portion of the Project site	59.8	42.4	85.1	110.4	10:05 a.m.
2	Mountain Shadows residential neighborhood to the south of the Project site.	49.6	36.7	71.7	95.5	10:30 a.m.
3	Residential uses near Shadow Glen/Avenida Del Diablo, to the west of the Project site.	47.4	33.5	73.5	95.6	10:48 a.m.

SOURCE: Michael Baker International, September 30, 2015.

Meteorological conditions during noise measurements included clear skies, warm temperatures, with light wind speeds (0 to 5 miles per hour), and low humidity. Measured noise levels during the daytime were 47.4 to 59.8 dBA L_{eq} . Noise monitoring equipment used for the ambient noise survey consisted of a Brüel & Kjær Hand-held Analyzer Type 2250 equipped with a Type 4189 pre-polarized microphone. The monitoring equipment complies with applicable requirements of the American National Standards

Institute (ANSI) for Type I (precision) sound level meters. The results of the field measurements are included in Appendix F of this Initial Study.

a) Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant.

Construction: Construction activities generally are temporary and have a short duration, resulting in periodic increases in the ambient noise environment. Construction activities associated with the Project would include grading, building construction, and paving. Ground-borne noise and other types of construction-related noise impacts would typically occur during the initial construction phases. These phases of construction have the potential to create the highest levels of noise. Typical noise levels generated by construction equipment are shown in Table XII-4, Maximum Noise Levels Generated by Construction Equipment. It should be noted that the noise levels identified in Table XII-4 are maximum sound levels (L_{max}), which are the highest individual sound occurring at an individual time period; it is not anticipated that all equipment would be operated at any given time. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

In addition, Section 17-234 of the City Municipal Code stipulates that construction equipment or a combination of equipment are not allowed to operate so as to cause noise in excess of a one-hour average sound level limit of 75 dB at any time, unless a variance has been obtained in advance from the City Manager; however, pursuant to the Escondido Municipal Code, all construction activities may only occur between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m. Construction is not allowed on Sundays or public holidays. These permitted hours of construction are required in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption.

TABLE XII-4: MAXIMUM NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT

Type of Equipment	L_{max} at 50 Feet (dBA)	L_{max} at 135 Feet (dBA)	L_{max} at 220 Feet (dBA)
Concrete Saw	90	81.4	77.1
Crane	81	72.4	68.1
Concrete Mixer Truck	79	70.4	66.1
Backhoe	78	69.4	65.1
Dozer	82	73.4	69.1
Excavator	81	72.4	68.1
Forklift	78	69.4	65.1
Paver	77	68.4	64.1
Roller	80	71.4	67.1
Tractor	84	75.4	71.1
Water Truck	80	71.4	67.1
Grader	85	76.4	72.1
General Industrial Equipment	85	76.4	72.1

Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, 2006.

The adjacent 4.5-acre parcel to the east supports several structures. The main (residential) structure is located approximately 220 feet from the proposed limits of Project grading/development. The nearest (secondary) structure to the Project boundary is distanced approximately 20 feet from the property line and is presently boarded up and vacant. A third (secondary) structure is located in the northeastern portion of the parcel and is buffered by a grove of trees. This parcel currently has a General Plan land use designation of SPA 8 (Escondido Research and Technology Center/Harmony Grove), which is an industrial land use designation; however, the zone is R-1-10, which allows for single-family residential use.

~~Therefore, the~~The nearest sensitive receptors (residential uses) ~~are~~are located approximately 135 feet to the south, and 220 feet to the east of the ~~Project site~~limits where proposed grading/development associated with Project construction would occur. At ~~this~~these distances, noise levels from construction equipment would be approximately 64.1 to 81.4 dBA; refer to Table XII-4. As such, the City's maximum allowable noise levels for multi-family residential uses could be exceeded during construction of the Project resulting in potentially significant noise impacts due to exposure of persons to or generation of noise levels in excess of standards established in the Escondido General Plan and Noise Ordinance; however, ~~these two~~residential uses/structures to the south and southwest are separated from the Project site by two Circulation Element Streets (Avenida Del Diablo and Citracado Parkway). ~~Further, the adjacent residentially-zoned property to the east is presently vacant, and has a General Plan land use designation of SPA 8 (Escondido Research and Technology Center/Harmony Grove), which is an industrial land use designation.~~

Construction of the proposed Project would require the use of heavy equipment during grading and excavation activities at the Project Area, installation of new utilities, paving, and building fabrication for the proposed industrial buildings. Development activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of development, there would be a different mix of equipment. As such, construction activity noise levels at and near the Project area would fluctuate depending on the particular type, number, and duration of use of the various pieces of construction equipment. Overall, construction of the ~~Development~~proposed development is anticipated to occur over an approximately 6-month period and would therefore be short-term in nature.

Construction of the proposed Project would generate noise that could expose nearby noise-sensitive receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of any such impacts would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. As stated above, the City of Escondido Noise Ordinance limits construction activities to Mondays through Fridays between the hours of 7:00 a.m. and 6:00 p.m. The proposed Project would comply with these restrictions. No evening or nighttime construction would be necessary. The Noise Ordinance also prohibits noise levels from construction from exceeding a one-hour average sound level limit of 75 dBA at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes. Although the noise analysis assumes a worst-case scenario of all equipment operating at one time, in actuality, uUse of construction equipment would ~~also~~ occur in various areas of the site and at varying times, while ~~and~~ generally being distanced from neighboring properties; refer to Exhibit 3, Surrounding Land Uses. The noise study indicated that although temporary construction noise levels could potentially reach up to 81.4 dBA (during intermittent increases, or "spikes," in noise levels) as equipment is utilized and moved around within the limits of the proposed grading/development area; however, due to existing conditions and distance to

sensitive receptors, it is not anticipated that the average ~~noise~~ one-hour noise level would not exceed the one-hour average sound level limit of 75 dBA. In addition, with implementation of the following avoidance measures, potential Project impacts on adjacent residential land uses would be further reduced.

- Construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- Construction haul routes shall be designed to avoid noise sensitive uses (e.g., residences, convalescent homes, etc.), to the extent feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

Construction activities shall not take place outside of the allowable hours specified by the City of Escondido Municipal Code Section 17-234, Construction equipment (7:00 a.m. and 6:00 p.m. Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays; construction activities are not permitted on Sundays or on legal holidays).

With such avoidance measures, Project impacts would be less than significant.

Environmentally Sensitive Habitats

According to Appendix B-1 of this Initial Study, there are three environmentally sensitive habitats adjacent to the north of the Project site: non-native grassland, coast live oak woodland, and southern willow riparian forest. In addition, mature trees on and adjacent to the site could provide habitat for nesting birds and raptors.

Construction activities associated with the Project would produce noise levels that could temporarily impact wildlife using these environmentally sensitive habitats; however, as discussed in Section IV, Biological Resources, of this Initial Study, such potential impacts would be reduced to less than significant through implementation of Mitigation Measures BIO-2 through BIO-5.

No Impact.

Operation: Operations at the developed site would include the use of mechanical and industrial equipment during normal daytime hours that would generate noise levels above the existing condition; however, the proposed warehouse and workshop buildings would be fully enclosed, which would effectively attenuate noise levels at the ~~multi-family~~ residential uses to the south and east.

The Project would not add new vehicles onto surrounding roadways, as employees currently traveling to and from the existing HARRF to the north of the site would utilize the new buildings associated with the Project. No new employees would visit the site with Project implementation, and no additional trips would be generated. As indicated in the Traffic Assessment, it is anticipated that approximately one-third of existing HARRF-generated vehicle trips would be diverted to the new Project parking lot. Redistributed trips would result in an estimated 32 inbound trips and 2 outbound trips in the peak a.m. hours and 2 inbound and 32 outbound trips in the peak p.m. hours, distributed on Citracado Parkway at the southern access point; refer to Appendix G, Traffic Assessment. Therefore, the number of trips involved in the redistribution would be relatively small, with the change in traffic patterns confined to a relatively small area. As such, traffic-generated noise levels would not substantially increase as a result of Project operations. The

anticipated Project-related trips would be minimal and would have a negligible impact on noise levels along the roadways, as HARRF employees and related vehicles already use these roadways.

It is noted that the Citracado Parkway Extension Project (adjoining the site to the south) would result in approximately 2,063 peak hour traffic trips along Citracado Parkway. According to the General Plan FEIR (dated April 23, 2012), the site is within the 60-70 dBA CNEL noise contour of Citracado Parkway. As such, traffic noise along Citracado Parkway would also mask operational noise from the Project at sensitive receptors to the south. Therefore, noise levels from Project operations would not result in exposure of persons to or generation of noise levels in excess of standards established in the Escondido General Plan and Noise Ordinance. No impact would occur.

b) Would the Project result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Less than Significant Impact: Project construction can generate varying degrees of ground-borne vibrations, depending on the construction procedures and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibrations from construction activities rarely reach levels that damage structures.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.20 inch/second) appears to be conservative. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Typical vibration produced by construction equipment is illustrated in Table XII-5, Typical Vibration Levels for Construction Equipment.

TABLE XII-5: TYPICAL VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Type of Equipment	Approximate peak particle velocity at 25 feet (inches/second)	Approximate peak particle velocity at 135 feet (inches/second) ¹	Approximate peak particle velocity at 220 feet (inches/second) ¹
Large bulldozer	0.089	0.007	0.003
Loaded trucks	0.076	0.006	0.003
Small bulldozer	0.003	0.000	0.000
Jackhammer	0.035	0.003	0.001

SOURCE: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.

1. Calculated using the following formula:

$$PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$$

where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance

PPV (ref) = the reference vibration level in in/sec from Table 12-2 of the FTA Transit Noise and Vibration Impact Assessment Guidelines

D = the distance from the equipment to the receiver

Ground-borne vibration decreases rapidly with distance. As indicated in *Table XII-5*, based on the FTA data, vibration velocities from typical heavy construction equipment operations that would be used during Project construction range from 0.003 to 0.089 inch-per-second peak particle velocity (PPV) at 25 feet from the source of activity. The nearest sensitive receptors (residential uses to the south and east) are located approximately 135 and 220 feet from the Project boundary, respectively. As noted in *Table XII-5*, vibrations from construction activities experienced at these sensitive receptors would be below the 0.20 inch-per-second PPV significance threshold. Therefore, potential impacts associated with ground-borne vibration or ground-borne noise levels from Project construction would be less than significant, and the Project would not result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

c) Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Less than Significant Impact. Refer to Section XII.a), above. No impact would occur.

d) Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Less than Significant Impact. Refer to Sections XII.a) and XII.b), above.

e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

No Impact. Refer to Sections VIII.e) and VII.f), above. No impact would occur.

f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

No Impact. Refer to Sections VIII.e) and VII.f), above. No impact would occur.

XIII. Population and Housing

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Population and Housing Discussion:

a) Would the Project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Project is intended to support maintenance and operations of the City’s wastewater treatment facilities and would not increase the capacity of the HARRF to accommodate new demand or treat additional quantities of wastewater, which could then spur additional population growth within the community due to expanded capacity. No new residential housing is proposed as part of the Project, and therefore, the Project would not directly result in population growth within the area, due to new residents moving into the area. No impact would occur.

Access to the proposed wastewater collections yard would be provided from Citracado Parkway or from the HARRF to the north. As such, no new offsite roadways or offsite roadway improvements are proposed or required as part of the Project. In addition, water and sewer lines would be extended to the site from the existing HARRF to the north; refer to Exhibit 4A, Preliminary Grading Plan. Water and sewer demands generated by the Project would be minimal, due to the nature of the proposed land use, and would generally involve operation of the proposed restrooms and for miscellaneous maintenance activities. Therefore, the Project would not indirectly induce substantial population growth in the area. No impact would occur.

b) Would the Project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project site is generally disturbed/undeveloped. No residential housing is present onsite, and the construction of residential housing is not required or proposed with the Project. Therefore, the Project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere. No impact would occur.

c) Would the Project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. Refer to Response XIII.b), above. No impact would occur.

XIV. Public Services

a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Public Services Discussion:

a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services?

i) Fire protection

No Impact. According to the Community Protection Element of the City's General Plan, fire protection services for the City are adequate to serve the local population. In urbanized areas, the City maintains the goal of achieving an initial response time of 7.5 minutes for all structure fire and emergency Paramedic Assessment Unit (PAU) calls and a maximum response time of 10 minutes for supporting companies.

The Project site would be served by the City of Escondido Fire Department. The Project area, including the existing HARRF, is currently served by Fire Station No. 1, located at 310 Quince Street, and Fire Station No. 6, located at 1735 Del Dios Road. All improvements onsite would be constructed in conformance with applicable Fire Code requirements.

The proposed Project would not result in a substantial increase in demand on existing fire protection services (i.e. require new equipment, facilities, or staff) because no new residential structures are proposed onsite that would directly increase local population and/or adversely affect the City's ability to provide fire protection services. City Fire Department response to the developed site may be necessary in the event of emergencies related to onsite storage and/or use of limited quantities of hazardous materials associated with daily maintenance procedures (i.e. limited quantities of fuel for maintenance equipment and machinery, oil, cleaning supplies, etc.); however, the storage and use of any hazardous materials associated with the Project would be consistent with local, State, and federal regulations pertaining to the use, handling, and storage of hazardous materials, as applicable. No impact would occur.

In addition, the Project would not result in the provision of new or physically altered fire protection facilities or the need for new or physically altered fire protection facilities, the construction of which could otherwise cause significant environmental impacts.

ii) Police protection

No Impact. The Escondido Police Department would provide services to the Project from the City's police and fire headquarters located at 1163 North Centre City Parkway, approximately 2.5 miles to the northeast of the site. According to the Community Protection Element of the City's General Plan, the City strives to maintain an initial response time for Priority 1 calls (crimes in progress or life threatening) of no more than five minutes and an initial response time for Priority 2 calls (serious calls requiring rapid response but not life threatening incidents) of no more than 6.5 minutes.

The Project site would be gated along the onsite access drive at both entrances (Citracado Parkway and at the entrance to the adjacent HARRF). Additionally, the perimeter of the site would be fenced for security purposes. Due to the nature of the proposed land use, the Project is not anticipated to adversely affect existing police protection services, and no substantial increase in the demand for police services (i.e. equipment or staff) or adverse effects on police response times would occur. No impact would occur.

In addition, the Project would not result in the provision of new or physically altered police protection facilities or the need for new or physically altered police protection facilities, the construction of which could otherwise cause significant environmental impacts.

iii) Schools

No Impact. The Project site is located within the Escondido Union School District for elementary and middle school services (kindergarten to grade 8) and the Escondido Union High School District for high school services (grades 9-12). The site is within the service boundaries of the Miller Elementary School, located at 1975 Miller Avenue, for grades kindergarten to 6; Del Dios Middle School, located at 1400 W. 9th Avenue, for grades 6 to 8; and, Orange Glen High School, located at 2200 Glen Ridge Road, for grades 10 to 12.

As indicated in the City of Escondido Citywide Facilities Plan, as new development within the City is approved, additional local funds will be required to accommodate new students generated by future residential and/or commercial projects. Further, the General Plan Public Services Element indicates that in order to maintain acceptable service ratios, the construction of new or expanded school facilities would be required with buildout of the General Plan. Per Senate Bill 50 (SB50), residential and commercial developers are required to make payment of school fees prior to the issuance of any permits in order to offset potential impacts of development on the provision of school services. The payment of such fees is generally considered to be adequate mitigation to reduce a project's potential impacts on area schools.

As previously stated, the Project would not result in construction of residential or commercial uses that would directly or indirectly result in an increase in the local population of school-aged children. As such, the Project is not required to pay school fees prior to the issuance of any permits in order to maintain acceptable service ratios or offset potential impacts of the proposed development on the provision of school services. No impact would occur.

In addition, the Project would not result in the provision of new or physically altered school facilities or the need for new or physically altered school facilities, the construction of which could otherwise cause significant environmental impacts.

iv) Parks

No Impact. As indicated in Section 4.15, Recreation, of the General Plan FEIR, existing public parks within proximity to the Project site include Avenida del Diablo Park to the southwest along Avenida del Diablo and 11th Avenue Park to the southeast, just east of Valley Parkway.

Per the Citywide Facilities Plan, the provision of park services within the City of Escondido are currently meeting established threshold levels of service. Because the Project does not include new residential or commercial uses that would otherwise generate an increase in the demand for public parks or recreational facilities, it would not significantly impact local or regional park services. No impact would occur.

In addition, the Project would not result in the provision of new or physically altered park facilities or the need for new or physically altered park facilities, the construction of which could otherwise cause significant environmental impacts.

v) Other Public Facilities

No Impact. The Project would not result in a significant impact on other public facilities. In addition, the Project would not result in the provision of new or physically altered facilities or the

need for new or physically altered facilities, the construction of which could otherwise cause significant environmental impacts.

XV. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Recreation Discussion:

a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. Refer to Response XIV.a) iv), above. No impact would occur.

b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. Refer to Response XIV.a) iv), above. No impact would occur.

XVI. Transportation and Traffic

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an adopted plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an adopted congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the appropriate congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, pedestrian facilities, or other alternate transportation or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Transportation and Traffic Discussion:

a) Would the Project conflict with an adopted plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No Impact. A Traffic Assessment Memorandum was prepared by MBI (October 2015); refer to Appendix G of this Initial Study.

The new wastewater collections yard is intended to support maintenance activities associated with the City’s HARRF and wastewater treatment operations, currently the responsibility of the City’s Department of Utilities, Wastewater Collection and Treatment Division. As stated previously, maintenance activities for the City’s wastewater facilities have historically been operated out of the City’s Public Works Maintenance Yard located at 475 North Spruce Street, approximately 1.7 miles to the northwest of the Project site. Access to the Project site would occur from either Citracado Parkway or from the HARRF to the north. An existing paved access drive currently extends through the site from Citracado Parkway and provides connection to the HARRF.

The Project would not generate any new employees. Until recently, an estimated 50 employees operated from the HARRF site; however, an additional 40-45 City employees were recently relocated from the City’s existing maintenance facility on North Spruce Street to the new Administration Building at the HARRF site, bringing the total number of employees onsite to approximately 95. The 40-45 employees that were transferred would be responsible for operations and maintenance activities at the proposed wastewater collections yard. As such, the Project would not generate additional vehicle trips above that which currently are generated by those employees occupying the HARRF to the north. Furthermore, given the locations of the new buildings and parking lot associated with the Project, some of these employees would likely be assigned to use the new parking lot. This group of employees would have a slightly different ingress and egress pattern, influenced by the location of the access driveway on Citracado Parkway which would serve the proposed parking lot.

Existing trip generation estimated for the current HARRF conservatively assumes one trip per employee (95) in the peak direction during the morning and evening peak hour and an additional five trips in the corresponding off-peak direction.

- A.M. Peak Hour Trips: 95 Inbound 5 Outbound
- P.M. Peak Hour Trips: 5 Inbound 95 Outbound

The estimated distribution of traffic for the existing HARRF is shown in Appendix G of this Initial Study, including inbound and outbound HARRF traffic during the morning and evening peak hours.

The estimated number of diverted trips for the Project is based on the conservative assumption that one-third of the HARRF trips (32 trips) would divert to the new parking lot as follows:

- A.M. Peak Hour Trips: 32 Inbound 2 Outbound
- P.M. Peak Hour Trips: 2 Inbound 32 Outbound

This would result in a redistribution of the existing HARRF traffic to and from the Project parking lot. As determined in *Appendix G* of this Initial Study, the number of trips involved in the redistribution would be relatively small, and the surrounding roads and intersections affected by the change in traffic circulation patterns would also be confined to a relatively small area. While some traffic movements at these facilities would experience a limited increase in traffic, others would experience a reduction in traffic. As such, the projected changes in traffic patterns resulting with the proposed Project would not result in significant impacts on traffic operations on surrounding roadways, and the Project would not adversely affect the existing circulation system or cause a degradation in travel conditions in the surrounding area.

Similarly, the Project would not adversely affect alternative modes of transit in the area. Although temporary travel delays (slower moving vehicles) may occur on Citracado Parkway or Avenida del Diablo during the construction phase while construction materials and/or workers are transported to/from the site, no new offsite roadway improvements are proposed that would have the potential to adversely affect area bikeways or sidewalks, or existing area public transit systems (i.e. bus, trolley, or train).

Therefore, the Project would not conflict with an adopted plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, including alternative modes of transportation. No impact would occur.

b) Would the Project conflict with an adopted congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the appropriate congestion management agency for designated roads or highways?

No Impact. Refer to Section XVI.a), above. No impact would occur.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. Refer to Sections VIII.e) and VII.f), above. No impact would occur.

d) Would the Project substantially increase hazards due to a design feature (e.g., sharp curves of dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. Access to the proposed wastewater collections yard would be provided from Citracado Parkway or from the HARRF to the north. As such, no new offsite roadways or offsite roadway improvements would occur with the Project. An approximately 400-foot long onsite segment of the existing drive would be repaved as part of the Project. Therefore, the Project would not substantially increase hazards due to a design feature (e.g., sharp curves of dangerous intersections) or incompatible uses. No impact would occur.

e) Would the Project result in inadequate emergency access?

No Impact. Access to the proposed wastewater collections yard would be provided from Citracado Parkway or from the HARRF to the north. The proposed Project would not alter

ingress/egress to/from the property. As such, adequate emergency access would be provided to the developed site. No impact would occur.

f) Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, pedestrian facilities, or other alternate transportation or otherwise decrease the performance or safety of such facilities?

No Impact. The Project would take primary access from Citracado Parkway which currently does not support bike lanes, although sidewalks are present on both sides of the street. It should be noted that the City of Escondido Bicycle Master Plan (adopted October 2012; refer to Figure 6.1, Existing and Proposed Bicycle Facilities of the Bicycle Master Plan) does identify future planned Class III Bike Lanes along Citracado Parkway and Class II Bike Routes along Hale Avenue and Avenida del Diablo within the vicinity of the Project site.

The Project does not propose any offsite roadway improvements or connections to public transit facilities. Employees who would work at the proposed wastewater collections yard facility have already relocated to the Administration Building at the HARRF and are not anticipated to generate substantial new demands on area roadways, public transit, or alternative transportation systems. Therefore, the Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, pedestrian facilities, or other alternate transportation, or otherwise decrease the performance or safety of such facilities. No impact would occur.

XVII. Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Utilities and Service Systems Discussion:**a) Would the Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

No Impact. An existing sewer line from the HARRF would be extended southward to the Project site within the existing access road alignment in order to provide sewer service for the proposed facilities; refer to *Exhibit 4A, Preliminary Grading Plan*. The City has indicated that sufficient capacity for sewer treatment services is available to serve the proposed facilities. Further, demands for wastewater treatment would not substantially increase with the Project, due to the limited number of employees occupying the facility at any one time and based upon the nature of maintenance activities anticipated to occur at the Collections Yard. As such, the Project would not result in wastewater treatment elements that would exceed Regional Water Quality Control Board requirements. No impact would occur.

b) Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. The Project would involve construction of a wastewater collections yard to support the existing HARRF operations, and would not provide additional public water and sewer treatment services. Rather, the Project would be an expansion of the existing HARRF, and all potentially significant environmental effects associated with the Project have been adequately addressed in this Initial Study/MND. With implementation of mitigation and avoidance measures identified herein, such impacts would be less than significant.

c) Would the Project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. Under current conditions, a concrete cross-gutter directs runoff west to east across the existing onsite access road. Runoff then drains to the north, parallel to the road before crossing over the road via another cross-gutter. No existing storm drain piping exists on the site.

Existing stormwater facilities in the area would be adequate to handle runoff from the developed site. With incorporation of the proposed bioretention basins, the Project would not increase runoff flows from the site over existing conditions, and the offsite drainage facilities are adequate to convey such flows. No impact would occur.

d) Would the Project have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. Figure III-12, Water Service Boundaries, of the City General Plan Mobility and Infrastructure Element indicates that the Project site is within the boundaries of the City's Utilities Department Water Service Area. A new water line would be extended to the site from HARRF to provide water to the Project. The proposed land use would not result in a substantial increase in local demands for water service, due to the temporary nature of construction and limited operational activities associated with the Project. Additionally, the Project would result in relocation of the existing wastewater collections yard from the current North Spruce Street location, and would therefore not represent a new water user within the City. Adequate water supplies are available to serve the Project from existing entitlements and resources pursuant to the City of Escondido 2012 Water Master Plan. No impact would occur.

e) Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

No Impact. Figure III-14, Sewer Service Boundary, of the City General Plan Mobility and Infrastructure Element indicates that the Project site lies within the City of Escondido's Sewer Service Area boundary. A new sewer line would be extended to the site from HARRF to provide wastewater conveyance for the Project. Because the Project would relocate the existing wastewater collections yard from its current location on North Spruce Street, it would not represent a new land use within the City that would substantially increase demands for wastewater treatment services. Sufficient sewer facilities exist to serve the Project site. No impact would occur.

f) Would the Project be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?

No Impact. Escondido Disposal, Inc. is responsible for providing collection and disposal services for solid waste, as well as recyclables. Collection of solid waste by Escondido Disposal is transferred to the Escondido Disposal Transfer Station where it is taken to either the Sycamore Landfill, located in the City of Santee, or the Otay Mesa Landfill in the City of Chula Vista. As of August 2012, the Otay Mesa Landfill had a remaining capacity of 24,514,904 c.y. out of a maximum permitted capacity of 61,154,000 c.y. Closure of this landfill is anticipated to occur in February 2028. As of February 2011, the Sycamore Landfill had a remaining capacity of 42,246,551 cubic yards (c.y.) out of a maximum permitted capacity of 71,233,171 c.y. Closure of this landfill is anticipated to occur in October 2031.¹²

The proposed Project would result in an increase in the amount of solid waste generated at the site. As such, the Project would allow for a net increase in solid waste being disposed of at the Sycamore Sanitary Landfill and/or Otay Landfill with future development of the site. The Project would generate solid waste during the construction phase; however, the amount of solid waste generated would only account for a fractional percentage of the annual permitted capacity of either of these landfills. Additionally, Project operations would not generate substantial amounts of solid waste or substantially increase the demand for solid waste disposal services because typical daily operations would involve a similar amount to that currently generated at the existing facility on North Spruce Street which would be relocated to the new facility.

In addition, all such waste would be disposed of in compliance with applicable local, State, and/or federal regulations pertaining to solid waste disposal. All Project phases would conform to applicable regulations aimed at the reduction of solid waste in order to reduce the overall amount of waste generated; the reuse and/or recycling of materials to the extent feasible; the use of products made of post-consumer materials, where possible; and, the disposal of solid waste at an appropriate facility in compliance with all federal, State, and local statutes and regulations.

Therefore, the proposed Project would not result in a significant indirect impact on landfill capacity because the Project would be served by a landfill with sufficient permitted capacity to accommodate its solid waste disposal needs. No impact would occur.

12 CalRecycle – Sycamore Landfill (37-AA-0023), <http://www.calrecycle.ca.gov/SWFacilities/Directory/37-AA-0023/Detail/>, Accessed October 10, 2015; CalRecycle - Otay Landfill (37-AA-0010), <http://www.calrecycle.ca.gov/SWFacilities/Directory/37-AA-0010/Detail/>, Accessed October 10, 2015.

g) Would the Project comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. Refer to Response XVII.f), above. No impact would occur.

XVIII. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Mandatory Findings of Significance Discussion:

a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation. The Project would avoid impacts to the two adjacent drainage features with respect to Sections 404 and 401 of the federal Clean Water Act (i.e., UACOE and RWQCB, respectively) and Section 1602 of the California Fish and Game Code (i.e., CDFW), and would incorporate required wetland buffers (as measured from the jurisdictional limits) to reduce potential indirect impacts to sensitive biological resources; however, the Project would have the potential to degrade the quality of the environment or reduce the habitat of a fish or wildlife species. Implementation of Mitigation Measures BIO-1 through BIO-5 would reduce these potential impacts to less than significant.

The Project would not cause a fish or wildlife population to drop below self-sustaining levels; would not threaten to eliminate a plant or animal community; would not reduce the number or restrict the range of a rare or endangered plant or animal; and would not result in a significant impact, either directly, indirectly, or cumulatively, with regard to any species identified as a candidate, sensitive, or special status species relative to a local or regional plan, policies, or regulations, or by the CDFW or USFWS.

Although earth disturbance activities associated with Project construction could impact unknown tribal cultural resources identified as important examples of the major periods of California

history or prehistory, implementation of Mitigation Measures CUL-1 and CUL-14 would reduce such potential impacts to less than significant.

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant. No impacts were identified as potentially cumulatively significant. Any direct impacts resulting with the Project would be reduced to less than significant with incorporation of mitigation measures as proposed. Incremental increases relative to air quality, GHG, traffic, etc. were determined to be below the significance thresholds adopted by the City and would therefore not contribute to a cumulatively considerable environmental impact.

c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant. Due to the nature of the proposed use (maintenance yard), the Project may have the potential to adversely affect human beings through accidental release or spill of hazardous materials or substances (i.e. diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and/or other petroleum based products) during construction or operation. Through mandatory compliance with applicable local, State, and federal safety standards for the safe handling and use of hazardous materials, including implementation of a required SPCCP, these potential impacts would be less than significant. In addition, implementation of standard avoidance measures would ensure that potential construction-related noise impacts remain less than significant. Therefore, the Project is not expected to have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

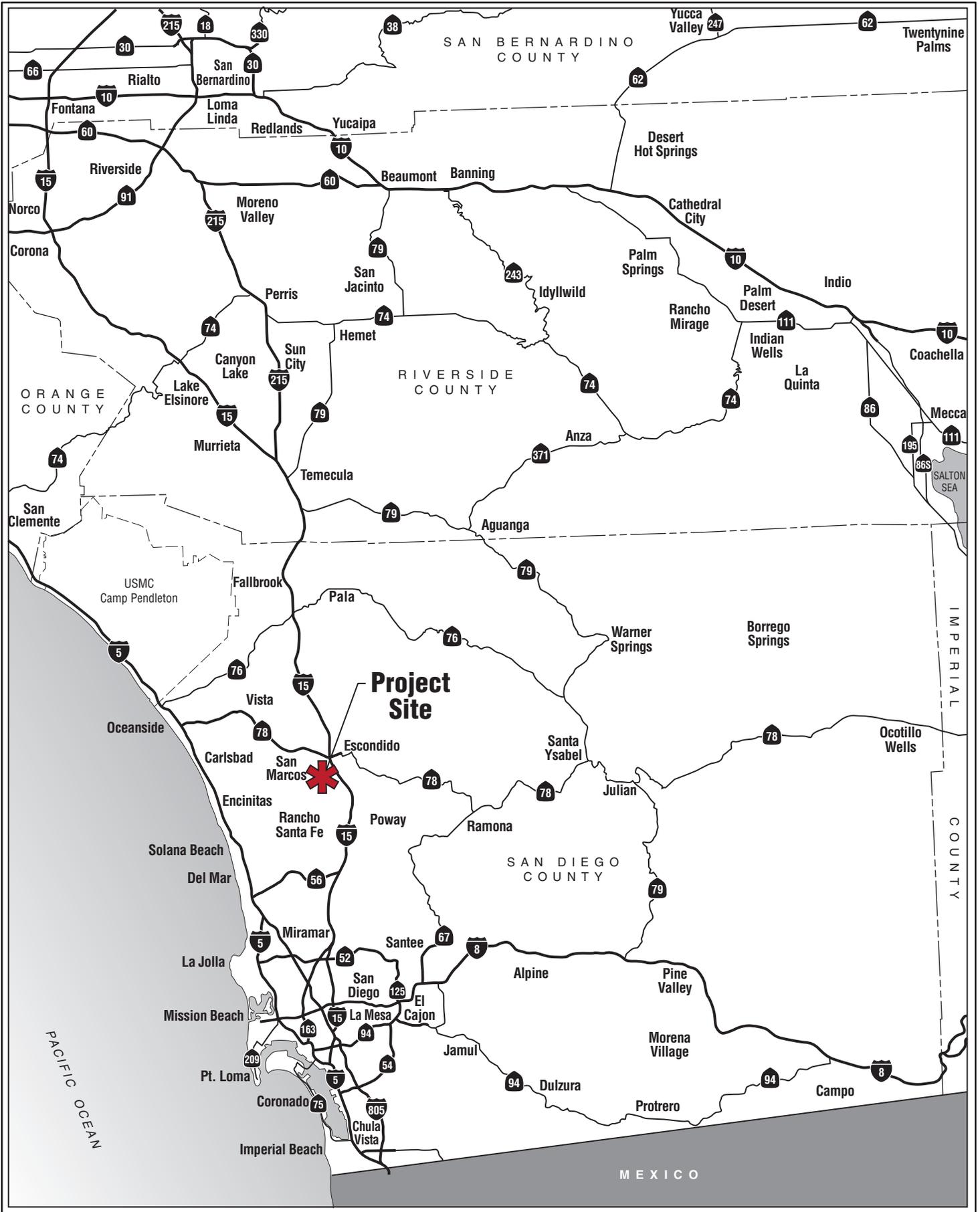
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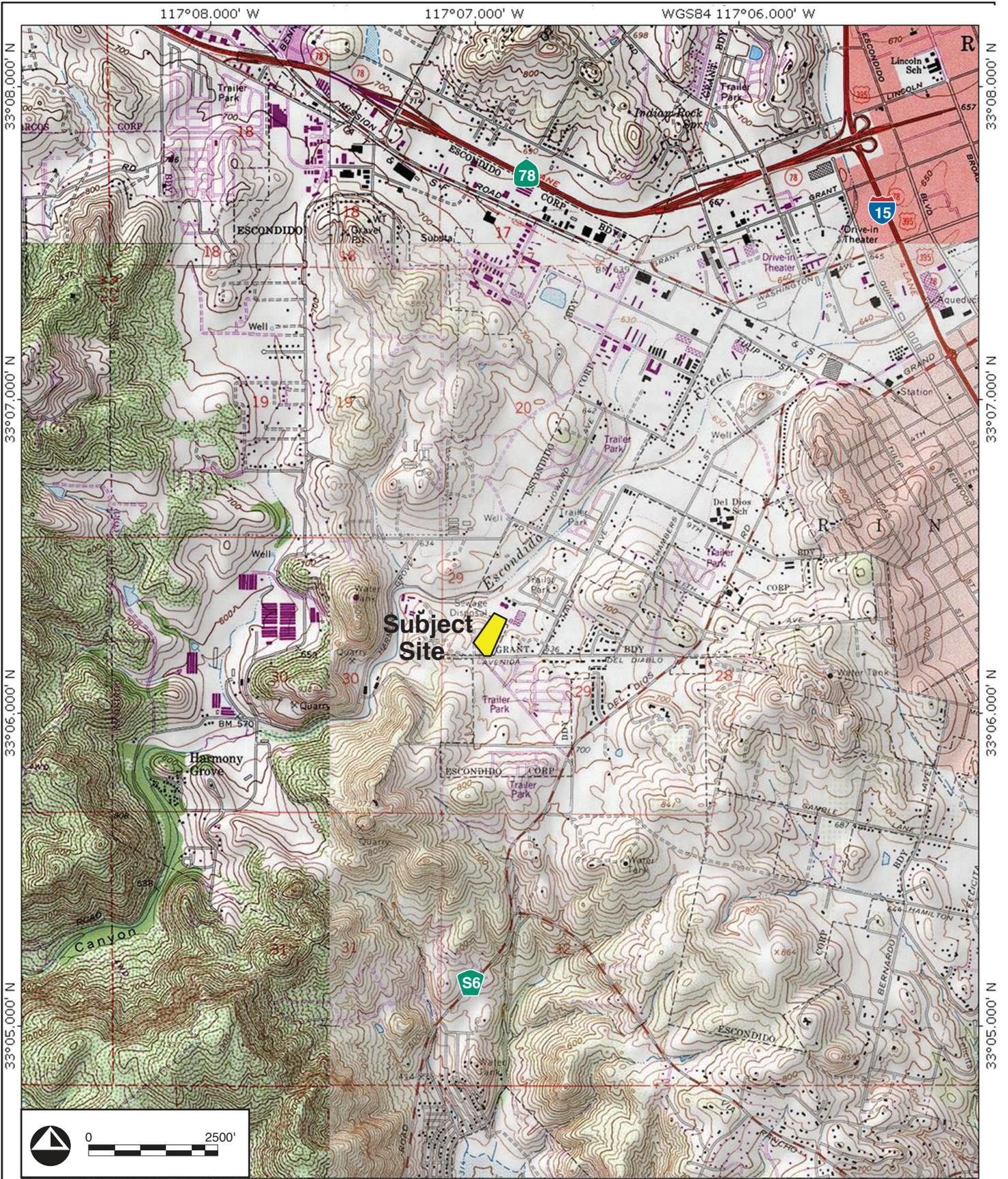
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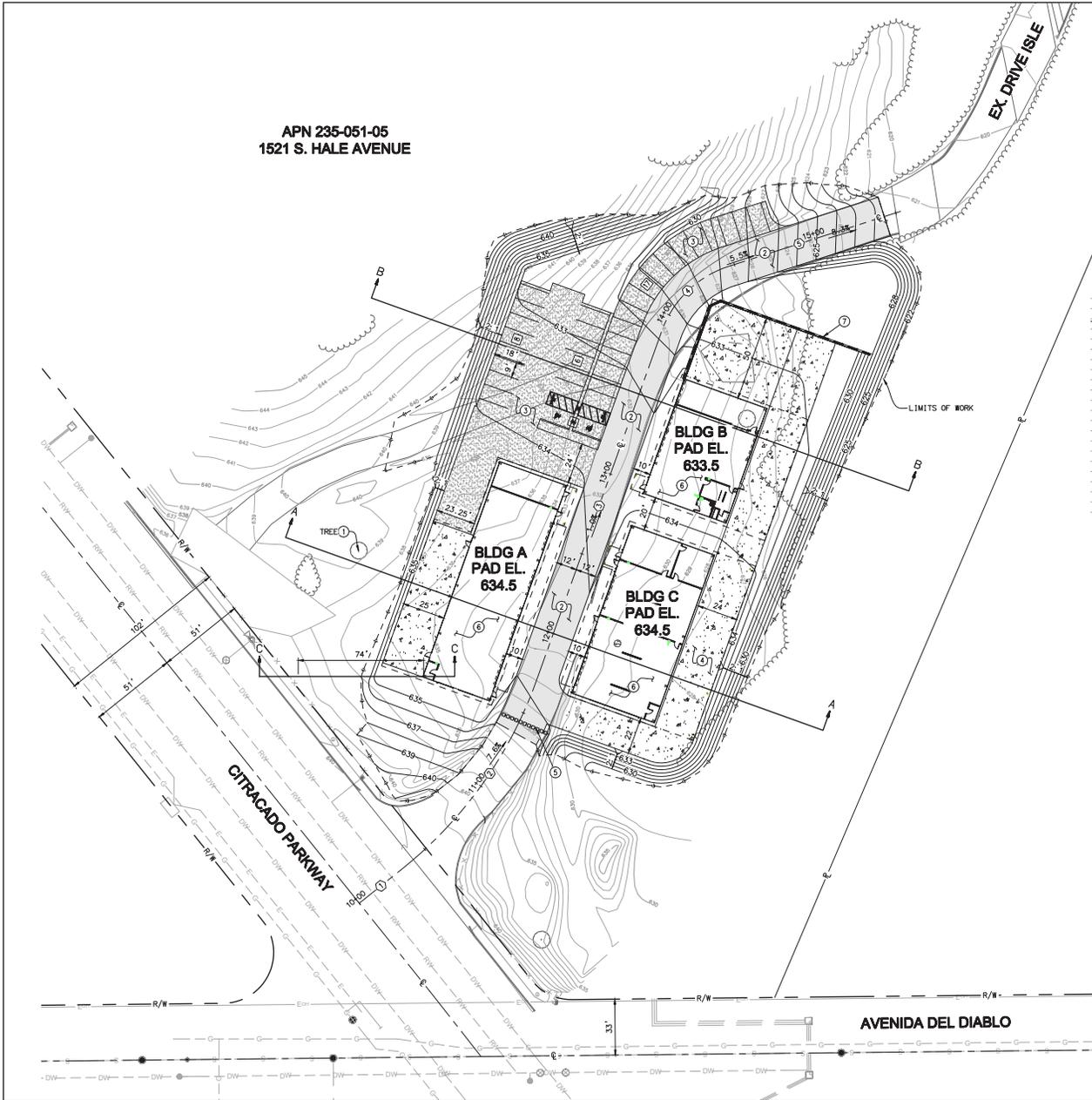


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APN 235-051-05
1521 S. HALE AVENUE

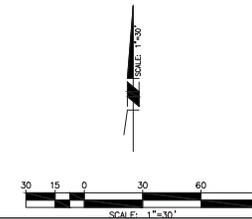
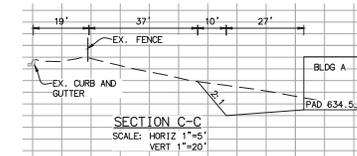
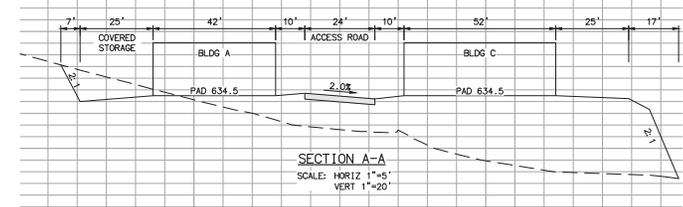
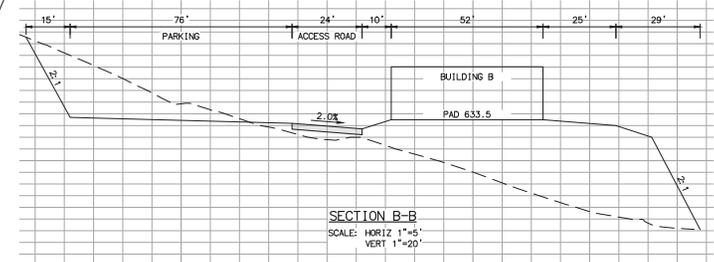


CONSTRUCTION NOTES

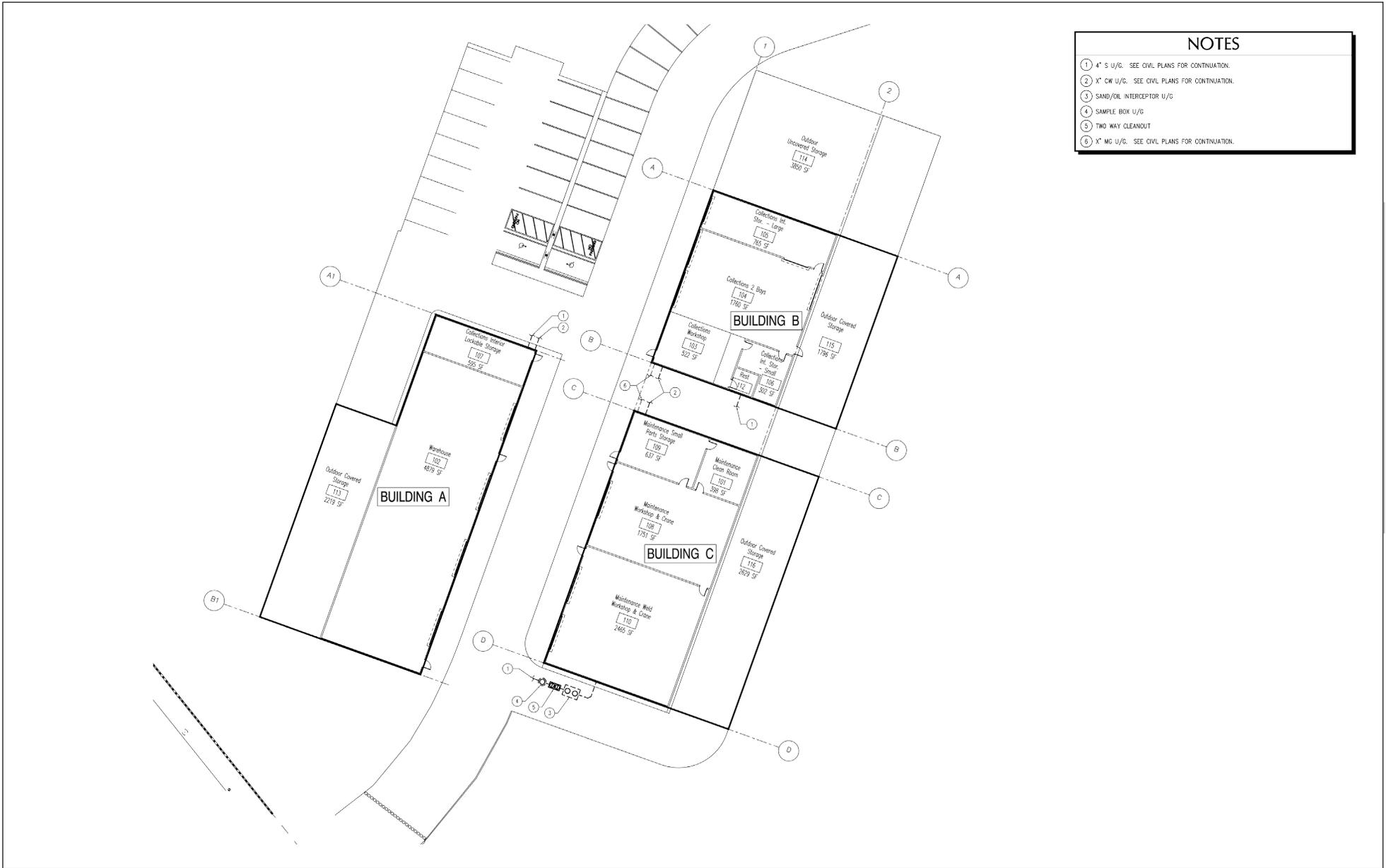
- ① PROTECT IN PLACE.
- ② CONSTRUCT 4" AC PAVEMENT OVER 8" AB MIN.
- ③ CONSTRUCT 9" GRAVEL PARKING LOT.
- ④ CONSTRUCT 4" CONCRETE.
- ⑤ INSTALL SECURITY GATE.
- ⑥ SEE ARCHITECTURAL PLANS FOR BUILDING LAYOUT AND DETAILS.
- ⑦ MASONRY RETAINING WALL TYPE 1 PER SORSO C-1

CENTERLINE DATA TABLE				
STATION	BEARING/Delta	RADIUS	LENGTH	TANGENT
1	N51°18'09"E	---	32.68'	---
2	S1°34'20"E	250.00'	137.76'	70.68'
3	N19°43'49"E	---	219.16'	---
4	S2°52'59"E	62.00'	66.86'	30.60'
5	N72°16'28"E	---	106.43'	---

PARKING	
ADA	2
STANDARD	31
TOTAL	33



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NOTES	
①	4" S U/G. SEE CIVIL PLANS FOR CONTINUATION.
②	8" CW U/G. SEE CIVIL PLANS FOR CONTINUATION.
③	SAND/OIL INTERCEPTOR U/G
④	SAMPLE BOX U/G
⑤	TWO WAY CLEANOUT
⑥	8" MC U/G. SEE CIVIL PLANS FOR CONTINUATION.

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Michael Baker

INTERNATIONAL

Source: JKA Architecture, March 2016.
143544Exhibits.indd

Wastewater Collections Yard Relocation Project

VISUAL SIMULATION: VIEW LOOKING NORTH FROM CITRACADO PARKWAY

Exhibit 4C

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PLANT MATERIAL



QUERCUS AGRIFOLIA
COAST LIVE OAK
15 GAL.



HETEROMELES ARBUTIFOLIA
TOYON
5 GAL. @ 5' O.C.



BACCHARIS PILLULARIS
DWARF COYOTE BRUSH
1 GAL. @ 4' O.C.



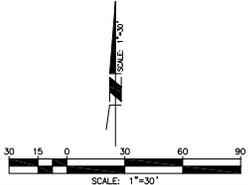
JUNCUS EFFUSUS
SOFT RUSH
1 GAL. @ 24" O.C.



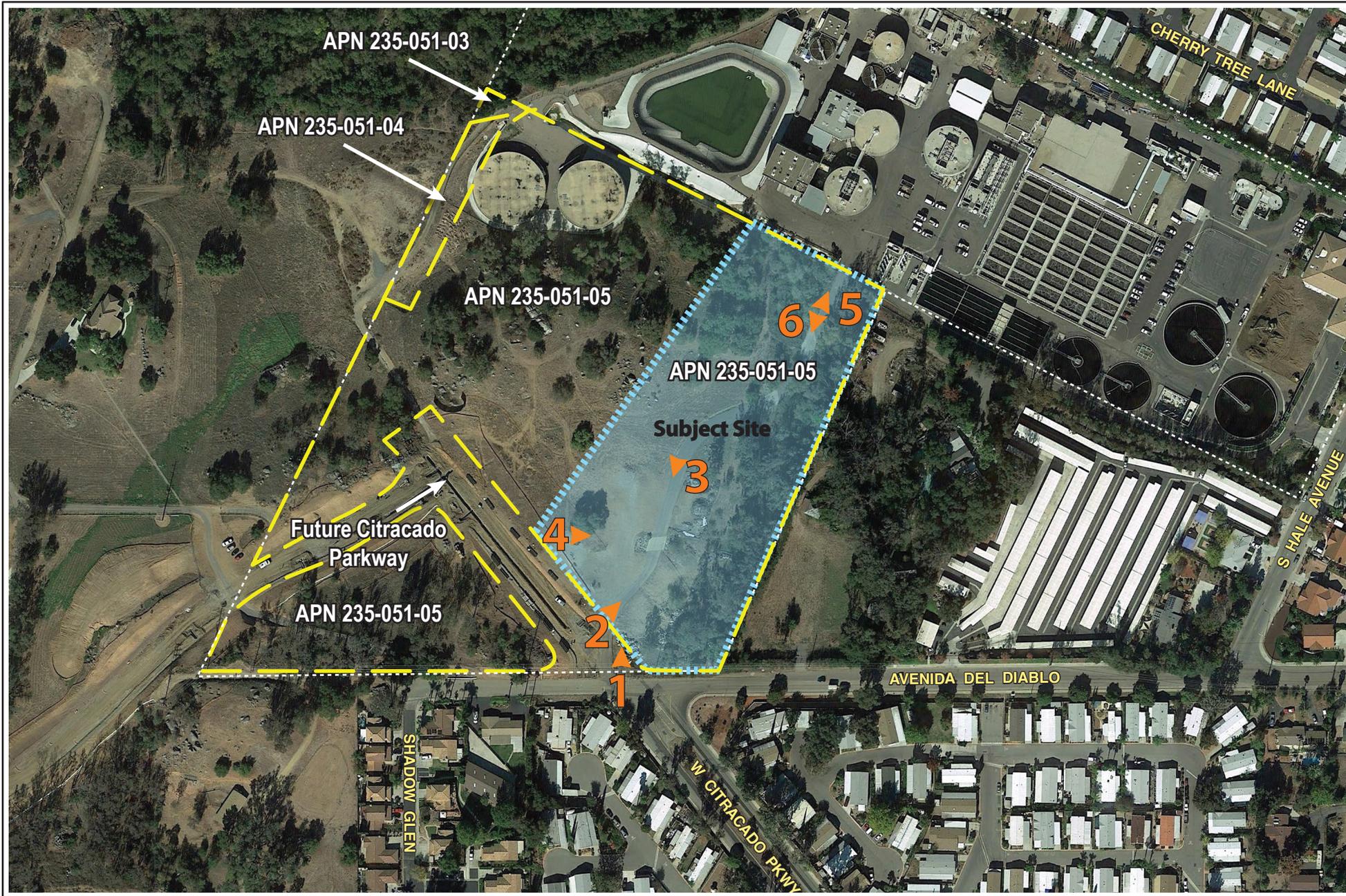
LONICERA JAPONICA
JAPANESE HONEYSUCKLE
1 GAL. @ 6' O.C.

GENERAL NOTES

1. ALL LANDSCAPE IMPROVEMENTS SHALL BE DESIGNED IN ACCORDANCE WITH CITY OF ESCONDIDO LANDSCAPE STANDARDS AND IN ACCORDANCE WITH AB 1881 - STATE WATER CONSERVATION REQUIREMENTS.
2. NATIVE AND DROUGHT TOLERANT PLANTS THAT MINIMIZE WATER USE AND MAINTENANCE WILL BE UTILIZED. ALL PLANT MATERIALS WILL BE APPROPRIATE FOR THE ESCONDIDO CLIMATE.
3. ALL LANDSCAPED AREAS SHALL BE IRRIGATED WITH STATE OF THE ART AUTOMATIC IRRIGATION SYSTEM. IRRIGATION WATER TO BE PROVIDED VIA EXISTING DOMESTIC WATER METER.
4. OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE LANDSCAPE AND RELATED IMPROVEMENTS DURING THE LIFE OF THE PERMIT. ALL DEAD, DYING, OR DISEASED PLANTS WILL BE REPLACED IN KIND. OPERATIONS AND MAINTENANCE OF THE PUBLIC PARK WILL BE THE RESPONSIBILITY OF THE CITY OF ESCONDIDO.



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Photo 1: View from Citracado Parkway looking northwest to Project site.



Photo 2: View from Citracado Parkway (Project access drive) looking north into Project site.

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Photo 3: View looking south from access drive to adjacent residential uses.



Photo 4: View looking northeast from onsite area proposed for future development.

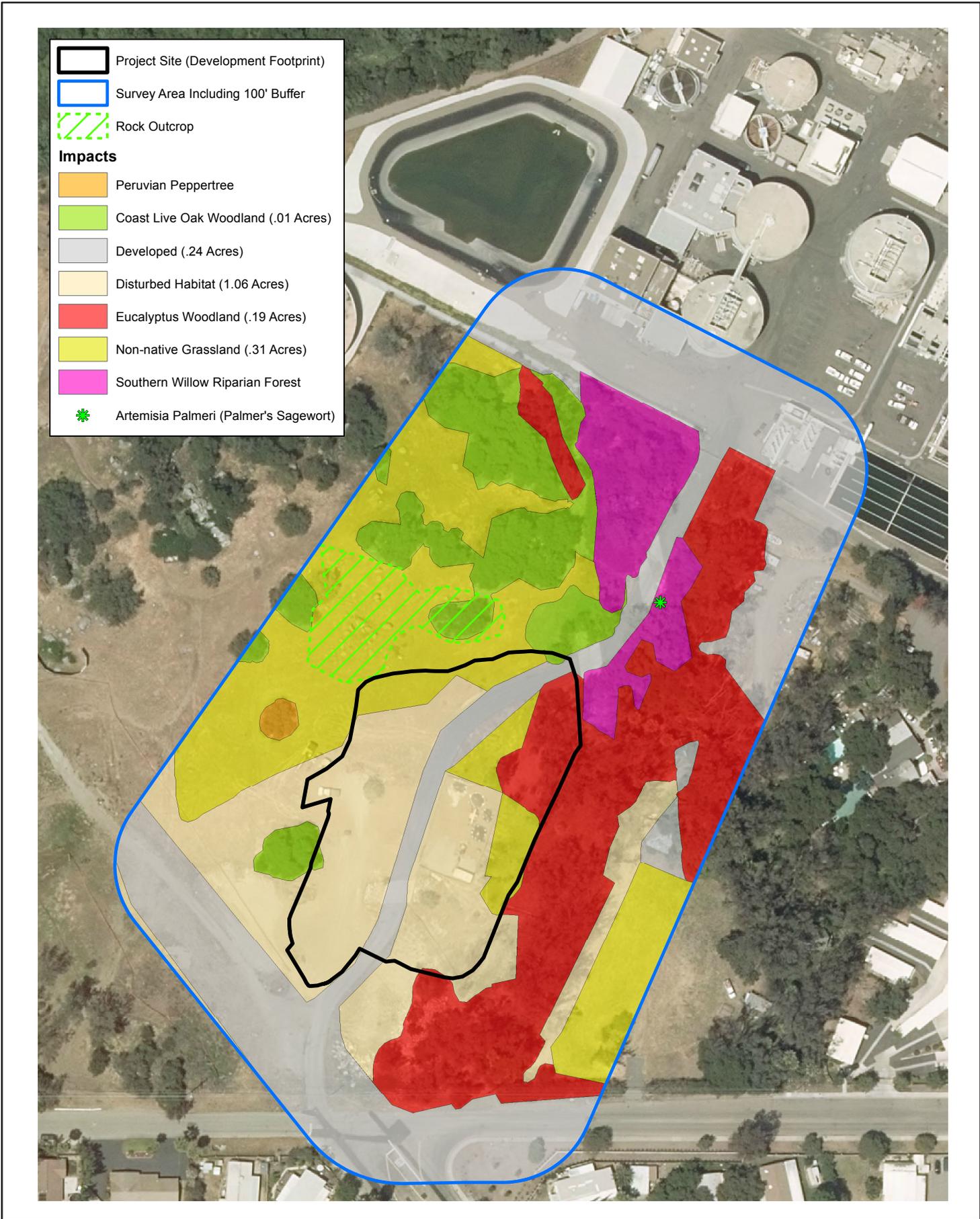


Photo 5: View looking south along existing access drive near entrance to adjacent HARRF.



Photo 6: View looking north along existing access drive to entrance of adjacent HARRF.

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APPENDIX A:

Air Quality and Greenhouse
Gas Emissions Data

**Parenthetical CALEEMOD Assumptions
For: HARRF Wastewater Collections Yard
Date: October 2015**

CONSTRUCTION

Grading (2016)

- 34,000 cubic yards and balanced cut and fill.
- 16 days.

Equipment:

Quantity	Type	Hours of Daily Operation
2	Concrete/Industrial Saws	8
1	Rubber Tired Dozer	1
4	Tractors/Loaders/Backhoes	6

Grading 2 (2016)

- 400 cubic yards of soil import.
- 6 days.

Equipment:

Quantity	Type	Hours of Daily Operation
1	Rubber Tired Dozer	1
4	Cement and Mortar Mixers	6

Construction - Paving (2016)

- 11 days

Equipment:

Quantity	Type	Hours of Daily Operation
1	Paver	7
1	Roller	7
1	Tractor/Loader/Backhoe	7

Building Construction (2016)

- 88 days

Equipment:

Quantity	Type	Hours of Daily Operation
1	Crane	4
2	Forklifts	6
2	Tractors/Loaders/Backhoes	8

HARRF
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.60	1000sqft	0.20	8,600.00	0
Unrefrigerated Warehouse-No Rail	5.47	1000sqft	0.13	5,474.00	0

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Construction info
- Construction Phase - Construction Info
- Off-road Equipment -
- Off-road Equipment -
- Off-road Equipment - Construction info
- Off-road Equipment - Construction info
- Off-road Equipment -
- Trips and VMT - Balanced cut and fill
- Grading - Balanced cut and fill, site acreage

Vehicle Trips - 80 total trips/day

Construction Off-road Equipment Mitigation - AQ construction mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstructionPhase	NumDays	100.00	88.00
tblConstructionPhase	NumDays	2.00	16.00
tblConstructionPhase	NumDays	2.00	6.00
tblConstructionPhase	NumDays	5.00	11.00
tblGrading	AcresOfGrading	0.00	1.82
tblGrading	AcresOfGrading	0.00	1.82
tblGrading	MaterialExported	0.00	3,400.00
tblGrading	MaterialImported	0.00	3,400.00
tblGrading	MaterialImported	0.00	400.00
tblLandUse	LandUseSquareFeet	5,470.00	5,474.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	0.08
tblVehicleTrips	ST_TR	1.32	5.6840e-003
tblVehicleTrips	ST_TR	2.59	5.6840e-003
tblVehicleTrips	SU_TR	0.68	5.6840e-003
tblVehicleTrips	SU_TR	2.59	5.6840e-003
tblVehicleTrips	WD_TR	6.97	5.6840e-003
tblVehicleTrips	WD_TR	2.59	5.6840e-003

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	1/22/2016	5	16	
2	Grading 2	Grading	1/23/2016	2/1/2016	5	6	
3	Paving	Paving	2/2/2016	2/16/2016	5	11	
4	Building Construction	Building Construction	2/17/2016	6/17/2016	5	88	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.82

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	2	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	4	6.00	97	0.37
Grading 2	Concrete/Industrial Saws	0	8.00	81	0.73
Grading 2	Rubber Tired Dozers	1	1.00	255	0.40
Grading 2	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	18.00	0.00	425.00	10.80	7.30	0.08	LD_Mix	HDT_Mix	HHDT
Grading 2	1	3.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9331	0.0000	0.9331	0.4359	0.0000	0.4359			0.0000			0.0000
Off-Road	2.4697	20.7431	16.0989	0.0230		1.5271	1.5271		1.4605	1.4605		2,271.792 2	2,271.792 2	0.4424		2,281.083 3
Total	2.4697	20.7431	16.0989	0.0230	0.9331	1.5271	2.4602	0.4359	1.4605	1.8963		2,271.792 2	2,271.792 2	0.4424		2,281.083 3

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.2299	0.6272	3.5522	6.1000e-004	2.2900e-003	1.7300e-003	4.0200e-003	6.8000e-004	1.5800e-003	2.2500e-003			55.6731	55.6731	1.3900e-003		55.7023
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402			156.3358	156.3358	7.8300e-003		156.5002
Total	0.2928	0.7010	4.3574	2.4800e-003	0.1502	2.8400e-003	0.1530	0.0399	2.6000e-003	0.0425			212.0088	212.0088	9.2200e-003		212.2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3457	0.0000	0.3457	0.1615	0.0000	0.1615			0.0000			0.0000
Off-Road	2.4697	20.7431	16.0989	0.0230		1.5271	1.5271		1.4605	1.4605	0.0000	2,271.7922	2,271.7922	0.4424		2,281.0833
Total	2.4697	20.7431	16.0989	0.0230	0.3457	1.5271	1.8728	0.1615	1.4605	1.6220	0.0000	2,271.7922	2,271.7922	0.4424		2,281.0833

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.2299	0.6272	3.5522	6.1000e-004	2.2900e-003	1.7300e-003	4.0200e-003	6.8000e-004	1.5800e-003	2.2500e-003			55.6731	55.6731	1.3900e-003		55.7023
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402			156.3358	156.3358	7.8300e-003		156.5002
Total	0.2928	0.7010	4.3574	2.4800e-003	0.1502	2.8400e-003	0.1530	0.0399	2.6000e-003	0.0425			212.0088	212.0088	9.2200e-003		212.2025

3.3 Grading 2 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					1.0838	0.0000	1.0838	0.4499	0.0000	0.4499			0.0000			0.0000	
Off-Road	0.1548	1.7338	1.3106	1.1100e-003		0.0807	0.0807		0.0742	0.0742			115.4290	115.4290	0.0348		116.1602
Total	0.1548	1.7338	1.3106	1.1100e-003	1.0838	0.0807	1.1645	0.4499	0.0742	0.5242			115.4290	115.4290	0.0348		116.1602

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1633	2.3353	1.6670	6.2300e-003	0.1452	0.0319	0.1771	0.0398	0.0294	0.0691		628.0645	628.0645	4.4700e-003		628.1583
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0105	0.0123	0.1342	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		26.0560	26.0560	1.3100e-003		26.0834
Total	0.1738	2.3476	1.8013	6.5400e-003	0.1698	0.0321	0.2019	0.0463	0.0295	0.0758		654.1204	654.1204	5.7800e-003		654.2417

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4016	0.0000	0.4016	0.1667	0.0000	0.1667			0.0000			0.0000
Off-Road	0.1548	1.7338	1.3106	1.1100e-003		0.0807	0.0807		0.0742	0.0742	0.0000	115.4290	115.4290	0.0348		116.1602
Total	0.1548	1.7338	1.3106	1.1100e-003	0.4016	0.0807	0.4822	0.1667	0.0742	0.2409	0.0000	115.4290	115.4290	0.0348		116.1602

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1633	2.3353	1.6670	6.2300e-003	0.1452	0.0319	0.1771	0.0398	0.0294	0.0691		628.0645	628.0645	4.4700e-003		628.1583
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0105	0.0123	0.1342	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		26.0560	26.0560	1.3100e-003		26.0834
Total	0.1738	2.3476	1.8013	6.5400e-003	0.1698	0.0321	0.2019	0.0463	0.0295	0.0758		654.1204	654.1204	5.7800e-003		654.2417

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.5832	1,083.5832	0.2969		1,089.8175

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202
Total	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0209	0.1896	0.2225	4.8000e-004	0.0133	2.8700e-003	0.0161	3.7900e-003	2.6400e-003	6.4200e-003		47.7177	47.7177	3.7000e-004		47.7254
Worker	0.0210	0.0246	0.2684	6.2000e-004	0.0493	3.7000e-004	0.0497	0.0131	3.4000e-004	0.0134		52.1119	52.1119	2.6100e-003		52.1668
Total	0.0418	0.2142	0.4909	1.1000e-003	0.0626	3.2400e-003	0.0658	0.0169	2.9800e-003	0.0198		99.8296	99.8296	2.9800e-003		99.8922

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202
Total	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0209	0.1896	0.2225	4.8000e-004	0.0133	2.8700e-003	0.0161	3.7900e-003	2.6400e-003	6.4200e-003		47.7177	47.7177	3.7000e-004		47.7254
Worker	0.0210	0.0246	0.2684	6.2000e-004	0.0493	3.7000e-004	0.0497	0.0131	3.4000e-004	0.0134		52.1119	52.1119	2.6100e-003		52.1668
Total	0.0418	0.2142	0.4909	1.1000e-003	0.0626	3.2400e-003	0.0658	0.0169	2.9800e-003	0.0198		99.8296	99.8296	2.9800e-003		99.8922

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1000e-004	7.1000e-004	3.2900e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004		0.6377	0.6377	3.0000e-005		0.6382
Unmitigated	3.1000e-004	7.1000e-004	3.2900e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004		0.6377	0.6377	3.0000e-005		0.6382

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.05	0.05	0.05	143	143
Unrefrigerated Warehouse-No Rail	0.03	0.03	0.03	91	91
Total	0.08	0.08	0.08	233	233

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

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

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003		35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867
NaturalGas Unmitigated	3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003		35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No	26.2452	2.8000e-004	2.5700e-003	2.1600e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004			3.0877	3.0877	6.0000e-005	6.0000e-005	3.1065
General Light Industry	277.792	3.0000e-003	0.0272	0.0229	1.6000e-004		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003			32.6814	32.6814	6.3000e-004	6.0000e-004	32.8803
Total		3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003			35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No	0.0262452	2.8000e-004	2.5700e-003	2.1600e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004			3.0877	3.0877	6.0000e-005	6.0000e-005	3.1065
General Light Industry	0.277792	3.0000e-003	0.0272	0.0229	1.6000e-004		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003			32.6814	32.6814	6.3000e-004	6.0000e-004	32.8803
Total		3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003			35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003
Unmitigated	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003
Total	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			3.0800e-003	3.0800e-003	1.0000e-005	3.2600e-003
Total	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			3.0800e-003	3.0800e-003	1.0000e-005	3.2600e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

HARRF
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.60	1000sqft	0.20	8,600.00	0
Unrefrigerated Warehouse-No Rail	5.47	1000sqft	0.13	5,474.00	0

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Construction info
- Construction Phase - Construction Info
- Off-road Equipment -
- Off-road Equipment -
- Off-road Equipment - Construction info
- Off-road Equipment - Construction info
- Off-road Equipment -
- Trips and VMT - Balanced cut and fill
- Grading - Balanced cut and fill, site acreage
- Vehicle Trips - 80 total trips/day

Construction Off-road Equipment Mitigation - AQ construction mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstructionPhase	NumDays	100.00	88.00
tblConstructionPhase	NumDays	2.00	16.00
tblConstructionPhase	NumDays	2.00	6.00
tblConstructionPhase	NumDays	5.00	11.00
tblGrading	AcresOfGrading	0.00	1.82
tblGrading	AcresOfGrading	0.00	1.82
tblGrading	MaterialExported	0.00	3,400.00
tblGrading	MaterialImported	0.00	3,400.00
tblGrading	MaterialImported	0.00	400.00
tblLandUse	LandUseSquareFeet	5,470.00	5,474.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	0.08
tblVehicleTrips	ST_TR	1.32	5.6840e-003
tblVehicleTrips	ST_TR	2.59	5.6840e-003
tblVehicleTrips	SU_TR	0.68	5.6840e-003
tblVehicleTrips	SU_TR	2.59	5.6840e-003
tblVehicleTrips	WD_TR	6.97	5.6840e-003
tblVehicleTrips	WD_TR	2.59	5.6840e-003

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	1/22/2016	5	16	
2	Grading 2	Grading	1/23/2016	2/1/2016	5	6	
3	Paving	Paving	2/2/2016	2/16/2016	5	11	
4	Building Construction	Building Construction	2/17/2016	6/17/2016	5	88	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.82

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	2	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	4	6.00	97	0.37
Grading 2	Concrete/Industrial Saws	0	8.00	81	0.73
Grading 2	Rubber Tired Dozers	1	1.00	255	0.40
Grading 2	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	18.00	0.00	425.00	10.80	7.30	0.08	LD_Mix	HDT_Mix	HHDT
Grading 2	1	3.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9331	0.0000	0.9331	0.4359	0.0000	0.4359			0.0000			0.0000
Off-Road	2.4697	20.7431	16.0989	0.0230		1.5271	1.5271		1.4605	1.4605		2,271.792 2	2,271.792 2	0.4424		2,281.083 3
Total	2.4697	20.7431	16.0989	0.0230	0.9331	1.5271	2.4602	0.4359	1.4605	1.8963		2,271.792 2	2,271.792 2	0.4424		2,281.083 3

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2893	0.6265	5.1184	5.9000e-004	2.2900e-003	2.0100e-003	4.3000e-003	6.8000e-004	1.8400e-003	2.5100e-003		50.9779	50.9779	1.5800e-003		51.0110
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.3560	0.7093	5.9007	2.3500e-003	0.1502	3.1200e-003	0.1533	0.0399	2.8600e-003	0.0428		197.7987	197.7987	9.4100e-003		197.9964

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3457	0.0000	0.3457	0.1615	0.0000	0.1615			0.0000			0.0000
Off-Road	2.4697	20.7431	16.0989	0.0230		1.5271	1.5271		1.4605	1.4605	0.0000	2,271.7922	2,271.7922	0.4424		2,281.0833
Total	2.4697	20.7431	16.0989	0.0230	0.3457	1.5271	1.8728	0.1615	1.4605	1.6220	0.0000	2,271.7922	2,271.7922	0.4424		2,281.0833

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2893	0.6265	5.1184	5.9000e-004	2.2900e-003	2.0100e-003	4.3000e-003	6.8000e-004	1.8400e-003	2.5100e-003		50.9779	50.9779	1.5800e-003		51.0110
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.3560	0.7093	5.9007	2.3500e-003	0.1502	3.1200e-003	0.1533	0.0399	2.8600e-003	0.0428		197.7987	197.7987	9.4100e-003		197.9964

3.3 Grading 2 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.0838	0.0000	1.0838	0.4499	0.0000	0.4499			0.0000			0.0000
Off-Road	0.1548	1.7338	1.3106	1.1100e-003		0.0807	0.0807		0.0742	0.0742		115.4290	115.4290	0.0348		116.1602
Total	0.1548	1.7338	1.3106	1.1100e-003	1.0838	0.0807	1.1645	0.4499	0.0742	0.5242		115.4290	115.4290	0.0348		116.1602

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1818	2.4106	2.1536	6.2300e-003	0.1452	0.0320	0.1772	0.0398	0.0294	0.0692		626.5915	626.5915	4.5300e-003		626.6865
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0111	0.0138	0.1304	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		24.4701	24.4701	1.3100e-003		24.4976
Total	0.1929	2.4244	2.2840	6.5200e-003	0.1698	0.0322	0.2020	0.0463	0.0296	0.0759		651.0616	651.0616	5.8400e-003		651.1841

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4016	0.0000	0.4016	0.1667	0.0000	0.1667			0.0000			0.0000
Off-Road	0.1548	1.7338	1.3106	1.1100e-003		0.0807	0.0807		0.0742	0.0742	0.0000	115.4290	115.4290	0.0348		116.1602
Total	0.1548	1.7338	1.3106	1.1100e-003	0.4016	0.0807	0.4822	0.1667	0.0742	0.2409	0.0000	115.4290	115.4290	0.0348		116.1602

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1818	2.4106	2.1536	6.2300e-003	0.1452	0.0320	0.1772	0.0398	0.0294	0.0692		626.5915	626.5915	4.5300e-003		626.6865
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0111	0.0138	0.1304	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		24.4701	24.4701	1.3100e-003		24.4976
Total	0.1929	2.4244	2.2840	6.5200e-003	0.1698	0.0322	0.2020	0.0463	0.0296	0.0759		651.0616	651.0616	5.8400e-003		651.1841

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.5832	1,083.5832	0.2969		1,089.8175

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202
Total	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0241	0.1941	0.2994	4.7000e-004	0.0133	2.9000e-003	0.0162	3.7900e-003	2.6600e-003	6.4500e-003		47.3518	47.3518	3.8000e-004			47.3598
Worker	0.0222	0.0276	0.2608	5.9000e-004	0.0493	3.7000e-004	0.0497	0.0131	3.4000e-004	0.0134		48.9403	48.9403	2.6100e-003			48.9951
Total	0.0464	0.2218	0.5602	1.0600e-003	0.0626	3.2700e-003	0.0658	0.0169	3.0000e-003	0.0199		96.2921	96.2921	2.9900e-003			96.3549

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646	0.0000	1,178.5549	1,178.5549	0.3555			1,186.0202
Total	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646	0.0000	1,178.5549	1,178.5549	0.3555			1,186.0202

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0241	0.1941	0.2994	4.7000e-004	0.0133	2.9000e-003	0.0162	3.7900e-003	2.6600e-003	6.4500e-003		47.3518	47.3518	3.8000e-004		47.3598
Worker	0.0222	0.0276	0.2608	5.9000e-004	0.0493	3.7000e-004	0.0497	0.0131	3.4000e-004	0.0134		48.9403	48.9403	2.6100e-003		48.9951
Total	0.0464	0.2218	0.5602	1.0600e-003	0.0626	3.2700e-003	0.0658	0.0169	3.0000e-003	0.0199		96.2921	96.2921	2.9900e-003		96.3549

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.3000e-004	7.6000e-004	3.4300e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004		0.6067	0.6067	3.0000e-005		0.6073
Unmitigated	3.3000e-004	7.6000e-004	3.4300e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004		0.6067	0.6067	3.0000e-005		0.6073

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.05	0.05	0.05	143	143
Unrefrigerated Warehouse-No Rail	0.03	0.03	0.03	91	91
Total	0.08	0.08	0.08	233	233

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

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

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day											lb/day					
NaturalGas Mitigated	3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003		35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867
NaturalGas Unmitigated	3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003		35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No	26.2452	2.8000e-004	2.5700e-003	2.1600e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004			3.0877	3.0877	6.0000e-005	6.0000e-005	3.1065
General Light Industry	277.792	3.0000e-003	0.0272	0.0229	1.6000e-004		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003			32.6814	32.6814	6.3000e-004	6.0000e-004	32.8803
Total		3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003			35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Unrefrigerated Warehouse-No	0.0262452	2.8000e-004	2.5700e-003	2.1600e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004			3.0877	3.0877	6.0000e-005	6.0000e-005	3.1065
General Light Industry	0.277792	3.0000e-003	0.0272	0.0229	1.6000e-004		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003			32.6814	32.6814	6.3000e-004	6.0000e-004	32.8803
Total		3.2800e-003	0.0298	0.0250	1.8000e-004		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003			35.7691	35.7691	6.9000e-004	6.6000e-004	35.9867

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003
Unmitigated	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003
Total	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003
Total	0.3907	1.0000e-005	1.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0800e-003	3.0800e-003	1.0000e-005		3.2600e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

HARRF
San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.60	1000sqft	0.20	8,600.00	0
Unrefrigerated Warehouse-No Rail	5.47	1000sqft	0.13	5,474.00	0

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Construction info
- Construction Phase - Construction Info
- Off-road Equipment -
- Off-road Equipment -
- Off-road Equipment - Construction info
- Off-road Equipment - Construction info
- Off-road Equipment -
- Trips and VMT - Balanced cut and fill
- Grading - Balanced cut and fill, site acreage
- Vehicle Trips - 80 total trips/day

Construction Off-road Equipment Mitigation - AQ construction mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstructionPhase	NumDays	100.00	88.00
tblConstructionPhase	NumDays	2.00	16.00
tblConstructionPhase	NumDays	2.00	6.00
tblConstructionPhase	NumDays	5.00	11.00
tblGrading	AcresOfGrading	0.00	1.82
tblGrading	AcresOfGrading	0.00	1.82
tblGrading	MaterialExported	0.00	3,400.00
tblGrading	MaterialImported	0.00	3,400.00
tblGrading	MaterialImported	0.00	400.00
tblLandUse	LandUseSquareFeet	5,470.00	5,474.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	0.08
tblVehicleTrips	ST_TR	1.32	5.6840e-003
tblVehicleTrips	ST_TR	2.59	5.6840e-003
tblVehicleTrips	SU_TR	0.68	5.6840e-003
tblVehicleTrips	SU_TR	2.59	5.6840e-003
tblVehicleTrips	WD_TR	6.97	5.6840e-003
tblVehicleTrips	WD_TR	2.59	5.6840e-003

2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0713	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Energy	6.0000e-004	5.4400e-003	4.5700e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	38.6053	38.6053	1.4300e-003	3.8000e-004	38.7534
Mobile	6.0000e-005	1.4000e-004	6.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1009	0.1009	0.0000	0.0000	0.1010
Waste						0.0000	0.0000		0.0000	0.0000	3.2073	0.0000	3.2073	0.1895	0.0000	7.1877
Water						0.0000	0.0000		0.0000	0.0000	1.0322	13.8457	14.8779	0.1066	2.6200e-003	17.9279
Total	0.0720	5.5800e-003	5.3100e-003	3.0000e-005	9.0000e-005	4.1000e-004	5.0000e-004	2.0000e-005	4.1000e-004	4.4000e-004	4.2395	52.5521	56.7916	0.2976	3.0000e-003	63.9702

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0713	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Energy	6.0000e-004	5.4400e-003	4.5700e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	38.6053	38.6053	1.4300e-003	3.8000e-004	38.7534
Mobile	6.0000e-005	1.4000e-004	6.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1009	0.1009	0.0000	0.0000	0.1010
Waste						0.0000	0.0000		0.0000	0.0000	3.2073	0.0000	3.2073	0.1895	0.0000	7.1877
Water						0.0000	0.0000		0.0000	0.0000	1.0322	13.8457	14.8779	0.1066	2.6100e-003	17.9262
Total	0.0720	5.5800e-003	5.3100e-003	3.0000e-005	9.0000e-005	4.1000e-004	5.0000e-004	2.0000e-005	4.1000e-004	4.4000e-004	4.2395	52.5521	56.7916	0.2975	2.9900e-003	63.9685

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.33	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	1/22/2016	5	16	
2	Grading 2	Grading	1/23/2016	2/1/2016	5	6	
3	Paving	Paving	2/2/2016	2/16/2016	5	11	
4	Building Construction	Building Construction	2/17/2016	6/17/2016	5	88	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.82

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	2	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	4	6.00	97	0.37
Grading 2	Concrete/Industrial Saws	0	8.00	81	0.73
Grading 2	Rubber Tired Dozers	1	1.00	255	0.40
Grading 2	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	18.00	0.00	425.00	10.80	7.30	0.08	LD_Mix	HDT_Mix	HHDT
Grading 2	1	3.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.4600e-003	0.0000	7.4600e-003	3.4900e-003	0.0000	3.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1659	0.1288	1.8000e-004		0.0122	0.0122		0.0117	0.0117	0.0000	16.4875	16.4875	3.2100e-003	0.0000	16.5549
Total	0.0198	0.1659	0.1288	1.8000e-004	7.4600e-003	0.0122	0.0197	3.4900e-003	0.0117	0.0152	0.0000	16.4875	16.4875	3.2100e-003	0.0000	16.5549

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1300e-003	5.0700e-003	0.0368	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.3897	0.3897	1.0000e-005	0.0000	0.3900
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	6.5000e-004	6.2200e-003	1.0000e-005	1.1500e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0761	1.0761	6.0000e-005	0.0000	1.0773
Total	2.6200e-003	5.7200e-003	0.0431	1.0000e-005	1.1700e-003	2.0000e-005	1.1900e-003	3.2000e-004	2.0000e-005	3.4000e-004	0.0000	1.4659	1.4659	7.0000e-005	0.0000	1.4673

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7700e-003	0.0000	2.7700e-003	1.2900e-003	0.0000	1.2900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1659	0.1288	1.8000e-004		0.0122	0.0122		0.0117	0.0117	0.0000	16.4875	16.4875	3.2100e-003	0.0000	16.5549
Total	0.0198	0.1659	0.1288	1.8000e-004	2.7700e-003	0.0122	0.0150	1.2900e-003	0.0117	0.0130	0.0000	16.4875	16.4875	3.2100e-003	0.0000	16.5549

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1300e-003	5.0700e-003	0.0368	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.3897	0.3897	1.0000e-005	0.0000	0.3900
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	6.5000e-004	6.2200e-003	1.0000e-005	1.1500e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0761	1.0761	6.0000e-005	0.0000	1.0773
Total	2.6200e-003	5.7200e-003	0.0431	1.0000e-005	1.1700e-003	2.0000e-005	1.1900e-003	3.2000e-004	2.0000e-005	3.4000e-004	0.0000	1.4659	1.4659	7.0000e-005	0.0000	1.4673

3.3 Grading 2 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2500e-003	0.0000	3.2500e-003	1.3500e-003	0.0000	1.3500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6000e-004	5.2000e-003	3.9300e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.3142	0.3142	9.0000e-005	0.0000	0.3161
Total	4.6000e-004	5.2000e-003	3.9300e-003	0.0000	3.2500e-003	2.4000e-004	3.4900e-003	1.3500e-003	2.2000e-004	1.5700e-003	0.0000	0.3142	0.3142	9.0000e-005	0.0000	0.3161

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2000e-004	7.2600e-003	5.9800e-003	2.0000e-005	4.3000e-004	1.0000e-004	5.2000e-004	1.2000e-004	9.0000e-005	2.1000e-004	0.0000	1.7076	1.7076	1.0000e-005	0.0000	1.7079
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	3.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0673	0.0673	0.0000	0.0000	0.0673
Total	5.5000e-004	7.3000e-003	6.3700e-003	2.0000e-005	5.0000e-004	1.0000e-004	5.9000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.7749	1.7749	1.0000e-005	0.0000	1.7752

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2000e-003	0.0000	1.2000e-003	5.0000e-004	0.0000	5.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6000e-004	5.2000e-003	3.9300e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.3142	0.3142	9.0000e-005	0.0000	0.3161
Total	4.6000e-004	5.2000e-003	3.9300e-003	0.0000	1.2000e-003	2.4000e-004	1.4400e-003	5.0000e-004	2.2000e-004	7.2000e-004	0.0000	0.3142	0.3142	9.0000e-005	0.0000	0.3161

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2000e-004	7.2600e-003	5.9800e-003	2.0000e-005	4.3000e-004	1.0000e-004	5.2000e-004	1.2000e-004	9.0000e-005	2.1000e-004	0.0000	1.7076	1.7076	1.0000e-005	0.0000	1.7079
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	3.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0673	0.0673	0.0000	0.0000	0.0673
Total	5.5000e-004	7.3000e-003	6.3700e-003	2.0000e-005	5.0000e-004	1.0000e-004	5.9000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.7749	1.7749	1.0000e-005	0.0000	1.7752

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.1600e-003	0.0585	0.0401	6.0000e-005		3.6300e-003	3.6300e-003		3.3600e-003	3.3600e-003	0.0000	5.4066	5.4066	1.4800e-003	0.0000	5.4377
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.1600e-003	0.0585	0.0401	6.0000e-005		3.6300e-003	3.6300e-003		3.3600e-003	3.3600e-003	0.0000	5.4066	5.4066	1.4800e-003	0.0000	5.4377

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	4.5000e-004	4.2800e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7398	0.7398	4.0000e-005	0.0000	0.7407
Total	3.4000e-004	4.5000e-004	4.2800e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7398	0.7398	4.0000e-005	0.0000	0.7407

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.1600e-003	0.0585	0.0401	6.0000e-005		3.6300e-003	3.6300e-003		3.3600e-003	3.3600e-003	0.0000	5.4066	5.4066	1.4800e-003	0.0000	5.4377
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.1600e-003	0.0585	0.0401	6.0000e-005		3.6300e-003	3.6300e-003		3.3600e-003	3.3600e-003	0.0000	5.4066	5.4066	1.4800e-003	0.0000	5.4377

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	4.5000e-004	4.2800e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7398	0.7398	4.0000e-005	0.0000	0.7407
Total	3.4000e-004	4.5000e-004	4.2800e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7398	0.7398	4.0000e-005	0.0000	0.7407

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0608	0.6031	0.3613	5.0000e-004		0.0414	0.0414		0.0380	0.0380	0.0000	47.0434	47.0434	0.0142	0.0000	47.3413
Total	0.0608	0.6031	0.3613	5.0000e-004		0.0414	0.0414		0.0380	0.0380	0.0000	47.0434	47.0434	0.0142	0.0000	47.3413

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	8.6000e-003	0.0121	2.0000e-005	5.7000e-004	1.3000e-004	7.0000e-004	1.6000e-004	1.2000e-004	2.8000e-004	0.0000	1.8986	1.8986	1.0000e-005	0.0000	1.8989
Worker	9.1000e-004	1.2000e-003	0.0114	3.0000e-005	2.1200e-003	2.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.8000e-004	0.0000	1.9729	1.9729	1.0000e-004	0.0000	1.9751
Total	1.9100e-003	9.8000e-003	0.0235	5.0000e-005	2.6900e-003	1.5000e-004	2.8300e-003	7.2000e-004	1.3000e-004	8.6000e-004	0.0000	3.8715	3.8715	1.1000e-004	0.0000	3.8740

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0608	0.6031	0.3613	5.0000e-004		0.0414	0.0414		0.0380	0.0380	0.0000	47.0433	47.0433	0.0142	0.0000	47.3413
Total	0.0608	0.6031	0.3613	5.0000e-004		0.0414	0.0414		0.0380	0.0380	0.0000	47.0433	47.0433	0.0142	0.0000	47.3413

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	8.6000e-003	0.0121	2.0000e-005	5.7000e-004	1.3000e-004	7.0000e-004	1.6000e-004	1.2000e-004	2.8000e-004	0.0000	1.8986	1.8986	1.0000e-005	0.0000	1.8989
Worker	9.1000e-004	1.2000e-003	0.0114	3.0000e-005	2.1200e-003	2.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.8000e-004	0.0000	1.9729	1.9729	1.0000e-004	0.0000	1.9751
Total	1.9100e-003	9.8000e-003	0.0235	5.0000e-005	2.6900e-003	1.5000e-004	2.8300e-003	7.2000e-004	1.3000e-004	8.6000e-004	0.0000	3.8715	3.8715	1.1000e-004	0.0000	3.8740

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.0000e-005	1.4000e-004	6.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1009	0.1009	0.0000	0.0000	0.1010
Unmitigated	6.0000e-005	1.4000e-004	6.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1009	0.1009	0.0000	0.0000	0.1010

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.05	0.05	0.05	143	143
Unrefrigerated Warehouse-No Rail	0.03	0.03	0.03	91	91
Total	0.08	0.08	0.08	233	233

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

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

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	32.6834	32.6834	1.3200e-003	2.7000e-004	32.7954
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	32.6834	32.6834	1.3200e-003	2.7000e-004	32.7954
NaturalGas Mitigated	6.0000e-004	5.4400e-003	4.5700e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	5.9220	5.9220	1.1000e-004	1.1000e-004	5.9580
NaturalGas Unmitigated	6.0000e-004	5.4400e-003	4.5700e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	5.9220	5.9220	1.1000e-004	1.1000e-004	5.9580

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No	9579.5	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5112	0.5112	1.0000e-005	1.0000e-005	0.5143
General Light Industry	101394	5.5000e-004	4.9700e-003	4.1800e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4108	5.4108	1.0000e-004	1.0000e-004	5.4437
Total		6.0000e-004	5.4400e-003	4.5700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	5.9220	5.9220	1.1000e-004	1.1000e-004	5.9580

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No	9579.5	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5112	0.5112	1.0000e-005	1.0000e-005	0.5143
General Light Industry	101394	5.5000e-004	4.9700e-003	4.1800e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4108	5.4108	1.0000e-004	1.0000e-004	5.4437
Total		6.0000e-004	5.4400e-003	4.5700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	5.9220	5.9220	1.1000e-004	1.1000e-004	5.9580

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	77400	25.2950	1.0200e-003	2.1000e-004	25.3817
Unrefrigerated Warehouse-No	22607.6	7.3884	3.0000e-004	6.0000e-005	7.4137
Total		32.6834	1.3200e-003	2.7000e-004	32.7954

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	77400	25.2950	1.0200e-003	2.1000e-004	25.3817
Unrefrigerated Warehouse-No	22607.6	7.3884	3.0000e-004	6.0000e-005	7.4137
Total		32.6834	1.3200e-003	2.7000e-004	32.7954

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0713	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Unmitigated	0.0713	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0163					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0550					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Total	0.0713	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0163					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0550					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Total	0.0713	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.8779	0.1066	2.6100e-003	17.9262
Unmitigated	14.8779	0.1066	2.6200e-003	17.9279

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.98875 / 0	9.0938	0.0651	1.6000e-003	10.9580
Unrefrigerated Warehouse-No	1.26494 / 0	5.7841	0.0414	1.0200e-003	6.9698
Total		14.8779	0.1066	2.6200e-003	17.9279

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.98875 / 0	9.0938	0.0651	1.6000e-003	10.9570
Unrefrigerated Warehouse-No	1.26494 / 0	5.7841	0.0414	1.0200e-003	6.9692
Total		14.8779	0.1066	2.6200e-003	17.9262

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.2073	0.1895	0.0000	7.1877
Unmitigated	3.2073	0.1895	0.0000	7.1877

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	10.66	2.1639	0.1279	0.0000	4.8494
Unrefrigerated Warehouse-No	5.14	1.0434	0.0617	0.0000	2.3383
Total		3.2073	0.1895	0.0000	7.1877

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	10.66	2.1639	0.1279	0.0000	4.8494
Unrefrigerated Warehouse-No	5.14	1.0434	0.0617	0.0000	2.3383
Total		3.2073	0.1895	0.0000	7.1877

9.0 Operational Offroad

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

10.0 Vegetation

APPENDIX B:
Biological Resources
Technical Report

BIOLOGICAL RESOURCES TECHNICAL REPORT

*HARRF Storage Facility
Escondido, California*

~~October 2015~~
~~Revised February 2016~~
Revised April 2016

Prepared by:

Michael Baker International
9755 Clairemont Mesa Boulevard
San Diego, California 92124

*Michael Gonzales, RBF Biologist
(858) 614-5087*

*Thomas J. McGill, Ph.D.
Vice President, Natural Resources
(909) 974-4907*

Michael Baker
INTERNATIONAL

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EXECUTIVE SUMMARY

This report evaluates impacts to biological resources due to proposed development of a materials storage facility to the south of the Hale Avenue Resource Recovery Facility (HARRF) located within the City of Escondido (“City”), San Diego County, California. The proposed project site is currently undeveloped, and is directly northeast of the recently-constructed Citracado Parkway extension. Biological resources on this parcel, as well as impacts and mitigation measures associated with that project, were evaluated in the *Citracado Parkway Extension Final EIR* (AECOM 2011) which was certified by the Escondido City Council in February 2012.

Michael Baker International (MBI) biologist Mike Gonzales conducted a general biological field survey on November 4, 2014. The 11.23-acre survey area includes the 1.82-acre project site. In addition to a paved road that provides access to the HARRF from Citracado Parkway, the vegetation communities onsite consist of disturbed habitat, eucalyptus woodland and non-native grassland, with coast live oak woodland and southern willow riparian forest occurring adjacent to the site within the larger City parcel. The southern willow riparian forest is associated with a drainage feature adjacent to the north and east of the site.

The proposed project would result in permanent loss of the following habitats: disturbed habitat (1.06 acres), eucalyptus woodland (0.19 acre), and non-native grassland (0.31 acre). Permanent loss of the latter two vegetation communities could indirectly affect avian/raptor foraging/nesting habitat.

Eucalyptus woodland is considered important raptor nesting and foraging habitat; however, the project’s direct loss (0.19 acre) of this habitat would not be significant given the large expanses of existing raptor habitat in the region. Although the removal of mature eucalyptus trees would not be considered a significant biological impact, it is recommended that one oak for each eucalyptus removed should be planted within the proposed landscaping areas of the new storage yard facility for consistency with the City’s Tree Preservation requirements. Eucalyptus replacement plantings are not recommended onsite due to their invasiveness (i.e., propensity for quickly spreading into adjacent native habitats) and safety concerns (i.e., propensity for producing weak limbs which easily break and fall during windy conditions or inclement weather).

Impacts to non-native grassland would be significant and require mitigation. Mitigation for project impacts to 0.31 acre of non-native grassland onsite shall ~~involve require the City to the planting of purchase credits (-0.15 acre) of native grassland species under the canopies of the two adjacent oaks to remain as part of the project’s landscaping plan~~ in an approved offsite mitigation bank to offset the loss of such habitat. Implementation of this mitigation would be consistent with the 0.5:1 compensation ratio for this habitat type according to the Multiple Habitat Conservation Plan (MHCP), and would reduce project impacts to non-native grassland to a level below significance. ~~Successful establishment and longevity of such plantings would be guaranteed through subsequent City landscape maintenance obligations (i.e. normal replacement of dead, damaged,~~

~~and/or diseased plants). Alternatively, the City may opt to purchase credits at an approved offsite mitigation bank to ensure that project impacts to non-native grassland are reduced to less than significant.~~

The project would avoid direct impacts to adjacent sensitive coast live oak trees and associated woodland habitat. Trimming of a few limbs of up to two oaks may be necessary to accommodate proposed structures, but such work would be done under the supervision of a certified arborist to avoid long-term damage to the trees. Prior to vegetation clearing, permanent protective fencing and “Keep Out” signage shall be installed at a distance of 50 feet from the canopy edge of these trees to avoid indirect impacts to the root zones (e.g., soil compaction) which could eventually result in tree mortality. Although the project is not expected to result in the permanent loss of coast live oak trees, it is recommended that two oaks be planted within the proposed landscaping areas of the new storage yard facility in the event that trimming of limbs or compaction near the root zone of the two existing trees would eventually cause damage or illness to the trees.

A Jurisdictional Delineation was completed by MBI to determine the regulatory authority of two adjacent drainage features with respect to Sections 404 and 401 of the federal Clean Water Act (i.e., U.S. Army Corps of Engineers and California Regional Water Quality Control Board, respectively); and Section 1602 of the California Fish and Game Code (i.e., California Department of Fish and Wildlife). The proposed project would avoid these jurisdictional features and would incorporate required wetland buffers (as measured from the jurisdictional limits) to reduce potential indirect impacts to sensitive biological resources within the southern willow riparian forest.

One previously recorded special-status species was observed within the southern willow riparian forest, Palmer’s sagewort (*Artemisia palmeri*); however, the proposed project would avoid impacts to these plants.

Breeding birds and raptors are protected by both the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (Sections 3500 et seq. and 3800 et seq.). Breeding passerine species may utilize nearby trees for nest construction and foraging, while raptor species may nest in larger, taller trees within the project vicinity. Furthermore, breeding birds and raptors may forage within the onsite habitats. Avian species may be affected by short-term construction-related noise levels which can result in the disruption of foraging, nesting, and reproductive activities. As such, grading/construction activities during the nesting season for breeding birds (typically January through September annually) protected by the MBTA and California Fish and Game Code could result in a significant temporary, indirect impact to these species. As mitigation for this potentially significant impact, if any grading/construction activities are scheduled to occur during the nesting season for breeding birds, then the following measures shall be implemented:

1. Within 7 days prior to commencement of grading/construction activities, a qualified biologist shall perform a preconstruction survey within 500 feet from the proposed work limits.
2. If active avian nest(s) are discovered within or 500 feet from the work limits, a buffer shall be delineated around the active nest(s) measuring 300 feet for passerines and 500 feet for raptors. A qualified biologist shall monitor the nest(s) weekly after commencement of grading/construction to ensure that nesting behavior is not adversely affected by such activities.

3. If the qualified biologist determines that nesting behavior is adversely affected by grading/construction activities, then a noise mitigation program shall be implemented in consultation with California Department of Fish and Wildlife (CDFW), to allow such activities to proceed. Once the young have fledged and left the nest(s), then grading/construction activities may proceed within 300 feet (500 feet for raptor species) of the fledged nest(s).
4. Raptor nests are protected under Section 3503.5 of the California Fish and Game Code (California Law 2011) which makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes; or to take, possess, or destroy the nests or eggs of any such birds. Consultation with CDFW shall be required prior to the removal of any raptor nest(s) observed during the preconstruction clearance surveys.

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SITE LOCATION, SETTING AND PROJECT DESCRIPTION

Site Location

The 1.82-acre project site is portion of a larger 15.38-acre City of Escondido parcel (County Assessor Parcel Number 235-051-05), located approximately 2 miles east of Interstate 15 (I-15) (Exhibit 1), sandwiched between the HARRF to the north and the recently-constructed Citracado Parkway extension to the southwest. The site is depicted on the Escondido, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map within Section 29 of Township 12 South, Range 2 West (Exhibit 2).

The HARRF is an activated sludge, secondary treatment facility capable of treating wastewater flows of up to 18 million gallons per day (MGD). The facility operates 24 hours a day, with an average daily flow of 15.6 MGD. Such flows are generated by the City of Escondido and the community of Rancho Bernardo (within the City of San Diego), with flows of approximately 11.8 MGD and 3.8 MGD, respectively.¹

Environmental Setting

Onsite Conditions

The project site is situated along the southeast side of a low hill (please refer to representative site photos in Appendix 1). Existing onsite topography is gently inclined towards the north and west. Onsite elevations range from approximately 645 feet above mean sea level (amsl) in the west portion to approximately 622 feet amsl in the east portion.

As shown on Exhibit 3 and Appendix 2, onsite soil types include Vista coarse sandy loam (9-15% slopes) in the south portion and Visalia sandy loam (2-5% slopes) in the north portion.

Onsite vegetation communities consist of disturbed habitat, eucalyptus woodland and non-native grassland, with coast live oak woodland and southern willow riparian forest occurring adjacent to the site within the survey area (Exhibit 4).

A paved road that provides access to the HARRF extends roughly south/north through the center of the site which is primarily undeveloped with the exception of an area east of the road where visqueen-covered soil stockpiles and materials related to HARRF operations (i.e., wooden pallets, concrete and PVC pipe sections) are randomly placed.

Surrounding Physical Conditions and Land Uses

Citracado Parkway runs generally northwest/southwest adjacent to the southwest boundary of the site; a vacant field occurs immediately to the west, with a large rock outcropping on the

¹ City of Escondido – HARRF. <http://www.escondido.org/harrf.aspx>. Accessed September 23, 2015.

hillside to the northwest; and two unnamed drainage channels and associated riparian vegetation are adjacent to the north and east.

Surrounding land uses include the existing HARFF to the north (1521 South Hale Avenue); large-acre single-family residences and a commercial storage facility to the east; and Avenida del Diablo and mobile home parks to the southeast/south. Further to the north (beyond the HARFF) is another mobile home park, and further to the northeast are more single-family residences.

Project Description

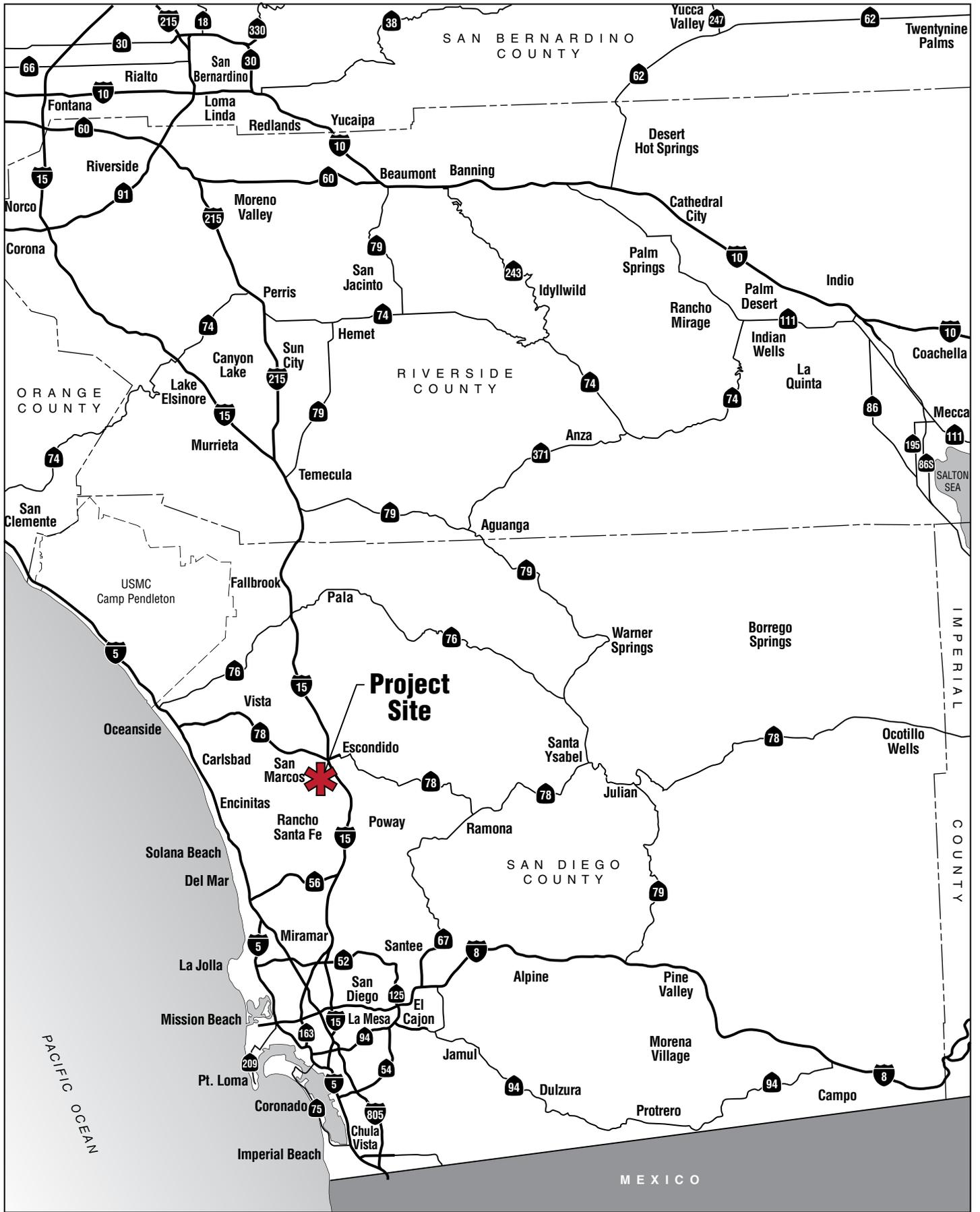
The project proposes construction of a new Wastewater Collections Yard to support maintenance activities associated with the City's HARFF and wastewater treatment operations, currently the responsibility of the City's Department of Utilities, Wastewater Collection and Treatment Division. Maintenance activities for the City's wastewater facilities have historically been operated out of the City's Public Works Maintenance Yard located at 475 North Spruce Street, approximately 1.7 miles to the north of the site.

The proposed project would occupy approximately 1.82 acres (development footprint) of the larger 15.38-acre City parcel (Exhibit 5). The project would result in construction of three individual pre-fabricated steel buildings on the site, as described below):

- Building A would be 3,735 square feet (s.f.) in size and would be used for collections. The building would include an outdoor storage area, indoor equipment storage, and one work bay. The work bay would be utilized for regular maintenance of vehicles and equipment associated with operations at HARFF.
- Building B would be 5,470 s.f. in size and would be used as a warehouse. The building would contain restrooms (men's and women's) as well as areas for indoor storage of small-scale equipment, tools, and materials used for routine maintenance.
- Building C would be 5,670 s.f. in size and would be used as a maintenance workshop. The building would contain two workshops: one for pump, motor, and valve rebuilding, and one for welding and fabrication activities required for routine maintenance of equipment associated with operations at the HARFF. Additional areas for storage of materials and equipment would also be provided within the interior.

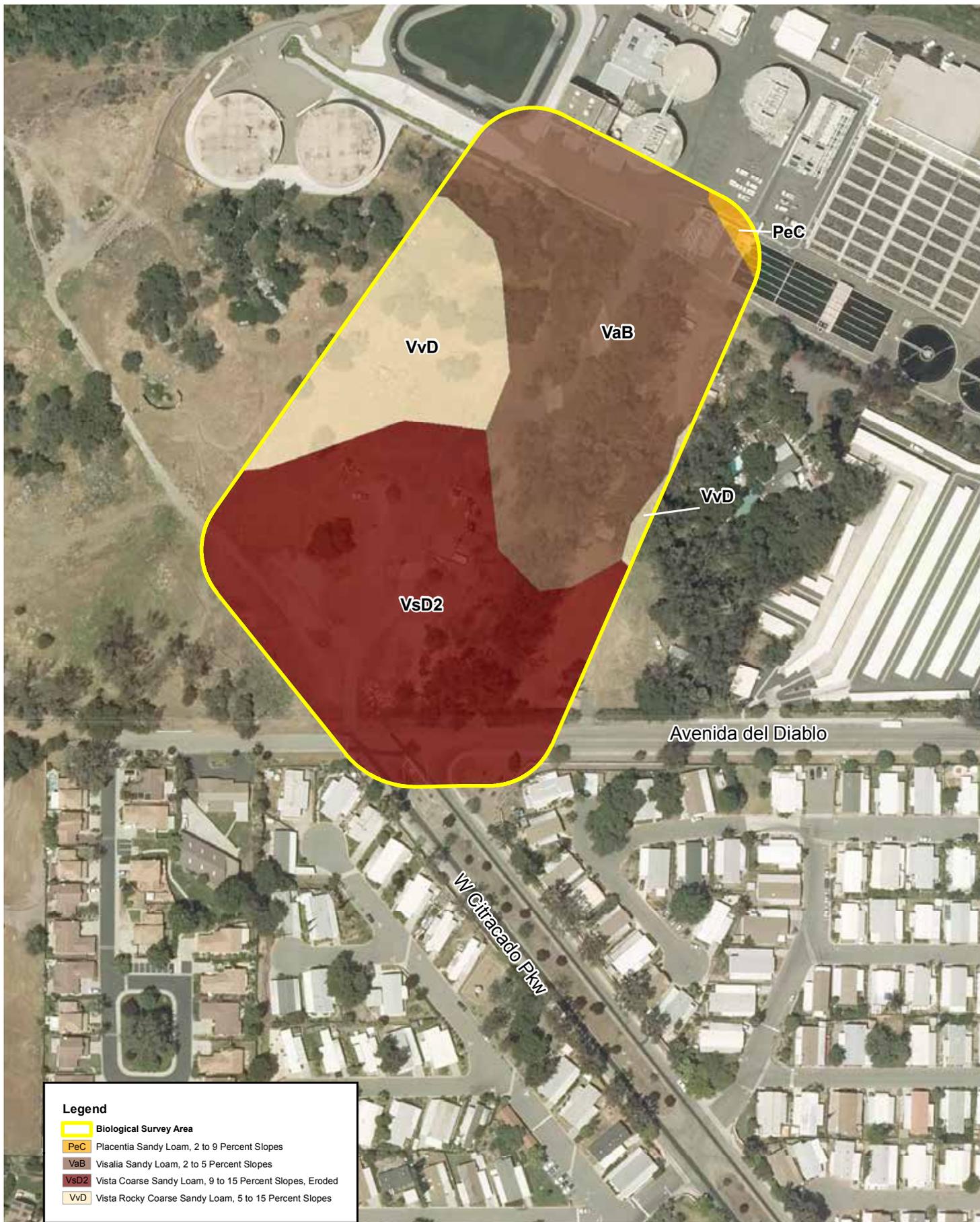
A total of 33 surface parking spaces (31 standard/2 American Disability Act compliant) are proposed for use by employees and visitors. The onsite parking areas would be surfaced with gravel. Access to the project would occur from either Citracado Parkway or from the HARFF via an existing paved access drive (Exhibit 5).

Project grading would require an estimated 3,400 cubic yards (c.y.) and 3,800 c.y. of fill. Approximately 400 c.y. of soil would therefore be transported offsite and properly disposed of at an approved facility in accordance with local and State regulations, as applicable. No demolition would be required, as no physical structures are present onsite.



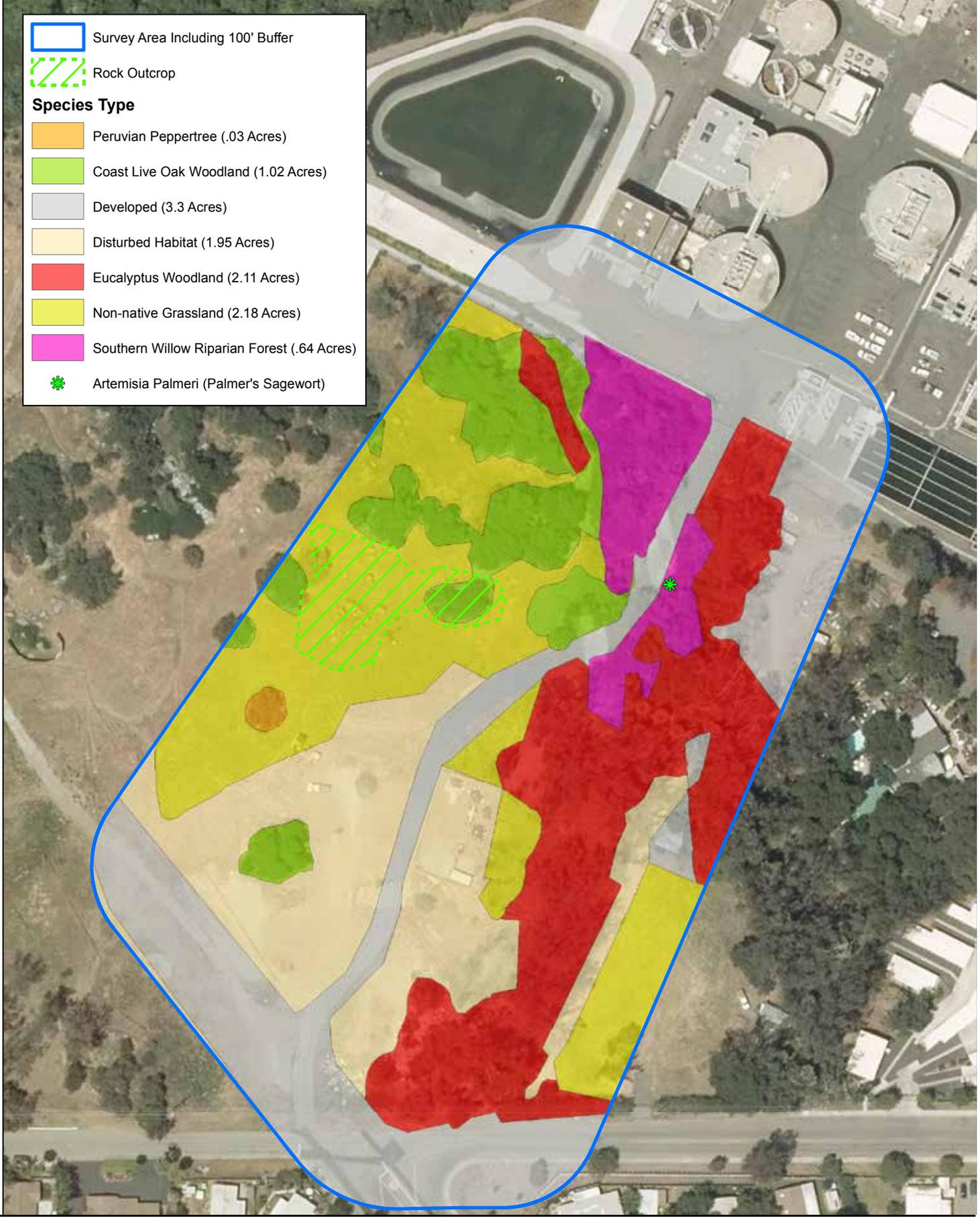
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 Survey Area Including 100' Buffer
 Rock Outcrop
Species Type
 Peruvian Peppertree (.03 Acres)
 Coast Live Oak Woodland (1.02 Acres)
 Developed (3.3 Acres)
 Disturbed Habitat (1.95 Acres)
 Eucalyptus Woodland (2.11 Acres)
 Non-native Grassland (2.18 Acres)
 Southern Willow Riparian Forest (.64 Acres)
 Artemisia Palmeri (Palmer's Sagewort)



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CONSTRUCTION NOTES

- ① CONSTRUCT PAVEMENT SECTION.
- ② CONSTRUCT GRAVEL PARKING LOT.
- ③ CONSTRUCT 4" CONCRETE.
- ④ INSTALL SECURITY GATE.



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A 4-inch sewer force main and a 1-inch water line would be extended to the site from the HARRF to serve the three proposed buildings. Lighting would be installed on the exterior of the structures for worker safety and site security. No new lighting is proposed along the onsite access drive. A new security gate would be installed across the access drive entrance off of Citracado Parkway; an existing security gate is located at the north end of the access drive where it provides connection to the HARRF. Two onsite bioretention areas are also proposed for storm water treatment.

Project construction would not be phased; it is anticipated to be completed in approximately six months from initial site grading to end of building construction. Painting of the structures would occur subsequent to installation and would be minimal.

Activities at the project site would be limited to routine maintenance of equipment and vehicles associated with the HARRF and the City's wastewater treatment facilities; the treatment of wastewater would not occur onsite, and none of the proposed improvements would increase demand for wastewater treatment or the City's capacity to provide wastewater treatment services for the community.

The Project would require the processing of a Conditional Use Permit (CUP) in conjunction with a General Plan Amendment (GPA). The Project site is located within Specific Planning Area 8 (SPA 8), and therefore would be subject to the uses and design criteria of the Specific Plan; however, a Specific Plan Amendment is not required. The Project would amend existing General Plan land use designation to add the Public Facility Overlay (no change in existing underlying land use designation of SPA 8) and Zone Change (rezone) to add the Public Facilities Overlay (no change in existing underlying zone of Open Space/Park, OS-P). The facility is an allowed land use under the proposed zoning with City approval of a Conditional Use Permit.

METHODS AND SURVEY LIMITATIONS

Prior to the general biological field survey, MBI performed a thorough review of relevant maps, databases, and literature pertaining to biological resources known to occur onsite and in the vicinity. Aerial imagery (Google Earth 2014), topographic maps (USGS 1997), and soils maps (USDA NRCS 2014) were reviewed to obtain updated information on the natural environmental setting. The CDFW California Natural Diversity Database (CNDDDB) RAREFIND program (CDFW 2014) and California Native Plant Society (CNPS) On-Line Electronic Inventory (CNPS 2014) were accessed to identify the potential for special-status species onsite and in the vicinity. A query of other sensitive species databases was also conducted, including the Consortium of California Herbaria (Jepson Online Interchange 2014) and San Diego Natural History Museum (SDNHM) Plant Atlas (SDNHM 2014) applications, as well as a review of regional lists produced by the USFWS (2014a) and CDFW (2011). The post-survey investigation included verification of whether or not the site falls within or near areas designated as final or proposed USFWS Critical Habitat for federally threatened or endangered

species (USFWS 2014b), as well as within or near any Preserve Areas, Focused Planning Areas (FPAs) or Constrained Lands designated under the Escondido Draft Subarea Plan (City of Escondido 2001) of the North County Multiple Habitat Conservation Program (MHCP). The site is identified as “Native Habitat” in the Draft Subarea Plan which does not designate any portion of the site as Preserve Area, FPA, or Constrained Lands. The Biological Technical Report for the *Citracado Parkway Extension Final EIR* was also reviewed.

The 11.23-acre survey area was surveyed on November 4, 2014 by MBI biologist Mike Gonzales (please refer to Appendix 3 for resume) between 7:30 a.m. and 11:30 a.m. Data was collected in the field using binoculars, digital camera, and a Kestrel hand-held air temperature and wind speed recording device. Weather conditions included clear skies; temperatures ranging between 54-82 degrees Fahrenheit; and calm winds with occasional gusts ranging from 10 to 16 miles per hour (mph).

Existing conditions were mapped in the field using aerial imagery. All plant and animal species observed were recorded. The vegetation communities were classified according to Holland’s Preliminary Descriptions of the Terrestrial Natural Communities of California (1986) and modifications by Oberbauer *et al.* (2008). The names of plant species follow the nomenclature suggested by CNPS and Lightner (2011). The names of wildlife follow the nomenclature suggested by CDFW (2008) and Peterson (2010).

RESULTS

Botanical Resources-Flora

Developed land (Holland/County Code 12000) occupies 3.3 acres within the survey area, consisting of a paved access road. Below is a description of the following vegetation communities mapped within the survey area ((Exhibit 4) and characteristic plant species (also refer to Appendix 4): disturbed habitat, eucalyptus woodland, non-native grassland, coast live oak woodland, and southern willow riparian forest.

Disturbed Habitat (Holland/County Code 11300) (1.95 acres): These areas are used to stockpile large pipe and other unused materials related to the HARRF operations and were disturbed by recent construction of the Citracado Parkway Extension.

Eucalyptus Woodland (Holland/County Code 79100) (2.11 acres): This vegetation community primarily consists of eucalyptus (*Eucalyptus* spp.) trees. Much of the understory is composed of sparse grasses and exotic forbs. Eucalyptus species produce a large amount of leaf and bark litter, the chemical and physical characteristics of which limit the ability of other species to grow in the understory, decreasing floristic diversity. Overstory composition is typically limited to one species of the genus, or mixed stands composed of several eucalyptus species; few native overstory species are present within eucalyptus forests. This community occurs in the northwest corner of the survey area and dominates the east portion of the property, choking out some of the native southern arroyo willow riparian forest within the

drainage feature in this area. Understory species include western ragweed (*Ambrosia psilostachya*) and nonnative grasses including ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and short-pod mustard (*Hirschfeldia incana*).

Non-native Grassland (Holland/County Code 42200) (2.21 acres): This vegetation community typically consists of a dense to sparse cover of annual grasses with numerous species of wildflowers, especially in years of favorable rainfall. In San Diego County the presence of *Avena*, *Bromus*, *Erodium*, and *Brassica* are common indicators. In some areas, depending on past disturbance and annual rainfall, annual forbs may be the dominant species; however, it is presumed that grasses will soon dominate. Germination occurs with the onset of late fall rains; growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds. It often forms the matrix between patches of other habitat types.

Nonnative grassland is the most prevalent vegetation community occurring throughout the survey area. Representative species include ripgut brome, soft chess, bull thistle (*Cirsium vulgare*), and short-pod mustard. A large Peruvian pepper tree (*Schinus molle*) occurs in the southwest portion of this vegetation community, and to the north of the pepper tree is an outcropping of large granite boulders (Exhibit 4).

Coast Live Oak Woodland (Holland/County Code 71162) (1.02 acres): Primarily occurring in the northwest portion of the survey area, this woodland is dominated by coast live oak (*Quercus agrifolia*), an evergreen oak that can reach up to 75 feet in height. The understory shrub layer is poorly developed, but includes California buckwheat (*Eriogonum fasciculatum*), toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), gooseberry (*Ribes* spp.), blue elderberry (*Sambucus mexicana*), and poison oak (*Toxicodendron diversilobum*), as well as some nonnative grasses. Small portions of this vegetation community barely extend into the project site; in the northernmost tip and near the southwest corner of the survey area.

Southern Arroyo Willow Riparian Forest (Holland/County Code 61320) (0.64 acre): This vegetation community is typically characterized by a tall, densely vegetated riparian forest dominated by arroyo willow (*Salix lasiolepis*) with other lesser prominent willow species such as Goodding's black willow (*Salix gooddingii*), sandbar willow (*Salix hindsiana*), and Pacific willow (*Salix lucida* ssp. *lasiandra*), as well as western cottonwood (*Populus fremontii*). This community is generally greater than 12 feet high and occupies drainages and floodplains supporting perennially wet streams. Typical understory species such as mugwort (*Artemisia douglasiana*), mule fat (*Baccharis salicifolia*), Cucamonga manroot (*Marah macrocarpus*), and stinging nettle (*Urtica dioica* ssp. *holosericea*) may also be present.

This offsite community is dominated almost exclusively by arroyo willow with western cottonwood, coast live oak, and Mexican fan palm (*Washingtonia robusta*) as additional overstory species. Understory species include western ragweed, mugwort, Palmer's sagewort, coyote brush (*Baccharis pilularis*), mule fat, marsh evening primrose (*Oenothera elata* ssp. *hirsutissima*), tamarisk (*Tamarix* ssp.), and stinging nettle.

Zoological Resources-Fauna

Twenty-one avian species and one mammal were observed during the biological field reconnaissance on November 4, 2014 (Appendix 4). Reptiles and other small mammals are expected to occur, but were not observed due to their nocturnal or secretive habits.

Special-Status Species

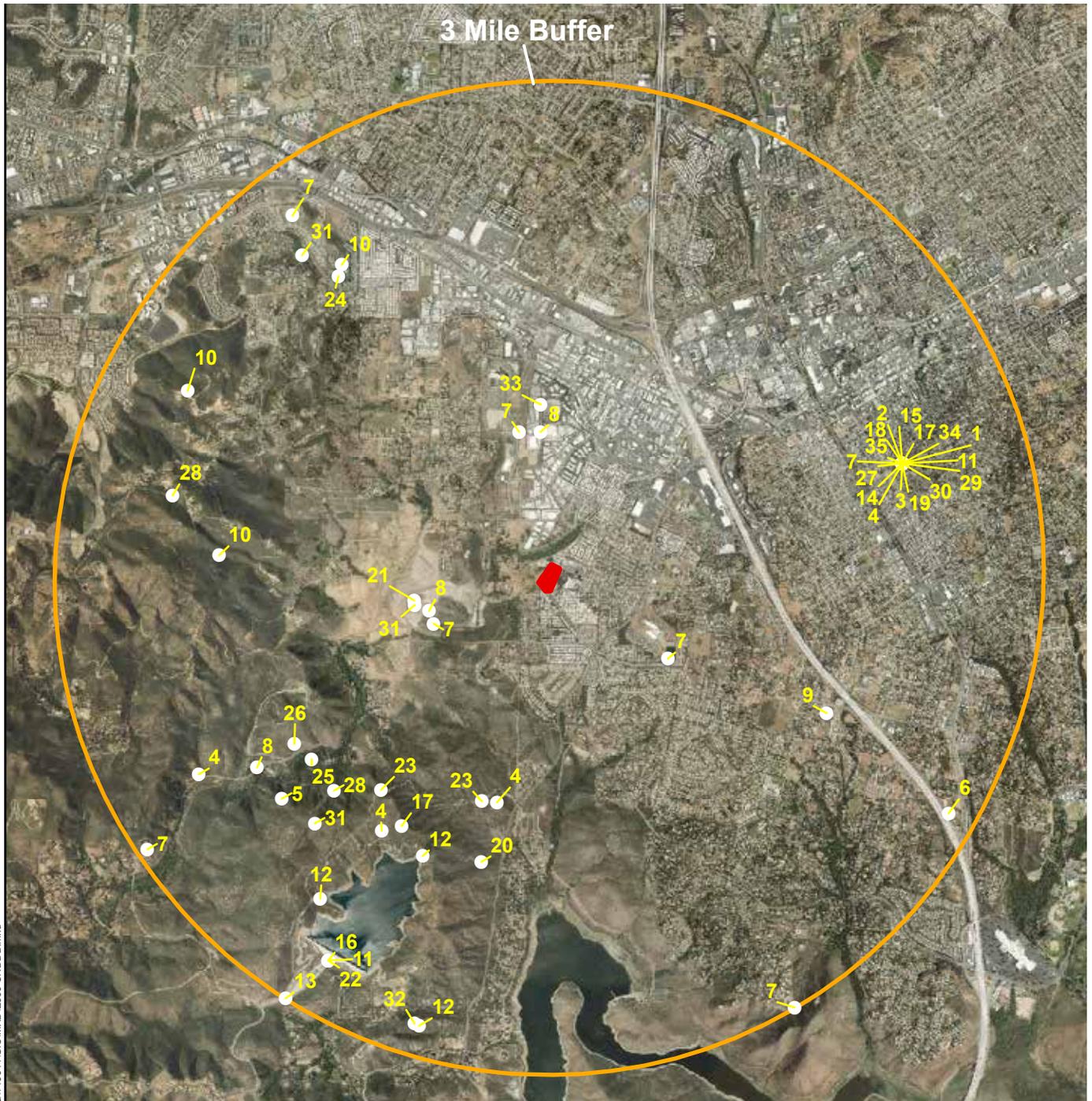
One special-status species, four individuals of Palmer's sagewort, was observed within the offsite southern arroyo willow riparian forest habitat adjacent to the east side of the paved access road. This species is a CNPS List 4.2. These same plants were recorded in the Biological Technical Report for the *Citracado Parkway Extension Final EIR*. In addition to Palmer's sagewort, Appendix 5 lists other potentially-occurring special-status species based on the CNDDDB database search (Exhibit 6), and provides rationale for each species' occurrence probability onsite.

Off-site Jurisdictional Waters/Wetlands and Regulations

Jurisdictional waters and wetlands generally include those resources regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the federal Clean Water Act (CWA); the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA and State Porter-Cologne Water Quality Control Act; and the CDFW pursuant to Sections 1600 *et. seq.* of the State Fish and Game Code. State and federal jurisdictional areas within the survey area are described in MBI's Jurisdictional Delineation Report for the project (Appendix 6).

The subject property is within the San Luis Rey River – Escondido Watershed. The San Luis Rey River Watershed is bordered by the Santa Margarita River Watershed to the north and by the Carlsbad and San Dieguito River Watersheds to the south. The San Luis Rey River originates in the Palomar and Hot Springs Mountains, both over 6,000 feet AMSL, as well as several other mountain ranges along the western border of the Anza Borrego Desert Park. The river extends over 55 miles across northern San Diego County forming a watershed with an area of approximately 360,000 acres or 562 square miles. The river ultimately discharges to the Pacific Ocean in the City of Oceanside.

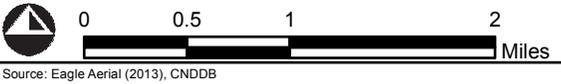
Two (2) offsite drainage features were observed within the survey area adjacent to the project site (Exhibit 7). Drainage A is an offsite concrete trapezoidal drainage channel adjacent to the northern property boundary. Approximately 273 feet in length, it originates from an underground concrete box culvert and generally runs in a southeast to northwest direction, conveying runoff from the surrounding developed areas into Escondido Creek and eventually the Pacific Ocean. The widths of the USACE Ordinary High Water Mark (OHWM) and CDFW jurisdictional streambed measure approximately 8 feet and 20 feet respectively. Evidence of the OHWM included flowing surface water, but no plant species were observed in association with Drainage A. Due to its hydrological connection to downstream waters (i.e., Escondido Creek, Pacific Ocean), Drainage A is considered a "Waters of the U.S." under both USACE and RWQCB jurisdictions (0.05 acre). In addition, due to the presence of a defined bed and bank (i.e., concrete trapezoidal drainage channel), Drainage A is considered a "jurisdictional streambed" under CDFW jurisdiction (0.13 acre).



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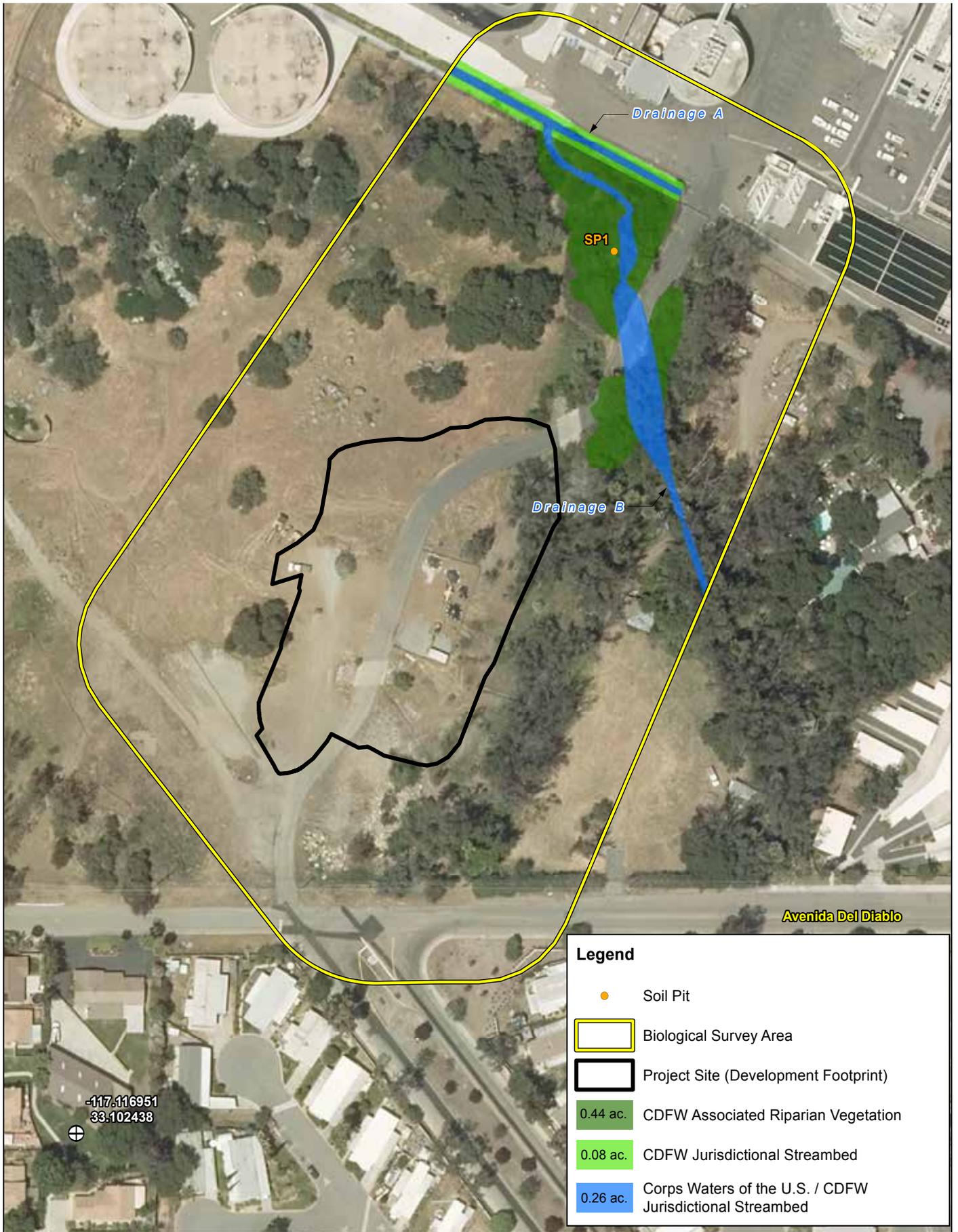
ID Num, Common Name

- | | | | |
|-----------------------------------|---|--|------------------------------|
| 1, American badger | 9, Coronado Island skink | 18, pallid bat | 27, southern tarplant |
| 2, big free-tailed bat | 10, Del Mar manzanita | 19, pocketed free-tailed bat | 28, summer holly |
| 3, burrowing owl | 11, Dulzura pocket mouse | 20, Robinson's pepper-grass | 29, Swainson's hawk |
| 4, coast horned lizard | 12, Encinitas baccharis | 21, San Diego black-tailed jackrabbit | 30, Townsend's big-eared bat |
| 5, coast patch-nosed snake | 13, felt-leaved monardella | 22, San Diego desert woodrat | 31, wart-stemmed ceanothus |
| 6, coastal cactus wren | 14, hoary bat | 23, San Diego sagewort | 32, western mastiff bat |
| 7, coastal California gnatcatcher | 15, least Bell's vireo | 24, San Diego thorn-mint | 33, western spadefoot |
| 8, coastal whiptail | 16, northwestern San Diego pocket mouse | 25, sea dahlia | 34, western yellow bat |
| | 17, orangethroat whiptail | 26, southern California rufous-crowned sparrow | 35, white-faced ibis |



Source: Eagle Aerial (2013), CNDDDB

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Legend

- Soil Pit
- Biological Survey Area
- Project Site (Development Footprint)
- 0.44 ac. CDFW Associated Riparian Vegetation
- 0.08 ac. CDFW Jurisdictional Streambed
- 0.26 ac. Corps Waters of the U.S. / CDFW Jurisdictional Streambed

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Drainage B is an ephemeral earthen stream extending from the northeast portion of the property in a southeast to northwest direction, conveying runoff into Escondido Creek and eventually the Pacific Ocean. As it crosses the access road, flows within Drainage B are conveyed through a 4-foot wide corrugated metal pipe via a low-water Arizona crossing. Substrate is generally composed of fine sediment with the exception of rock rip-rap and concrete near the access road. The following indicators of surface hydrology were observed within Drainage B: scour and drift/debris. Approximately 534 feet in length, the widths of the USACE OHWM and CDFW jurisdictional streambed measure approximately 4 and 38 feet respectively. Drainage B contains both vegetated and unvegetated streambed sections. Due to its hydrological connection to downstream waters (i.e., Escondido Creek, Pacific Ocean), Drainage B is considered a "Waters of the U.S." under both USACE and RWQCB jurisdictions (0.21 acre). In addition, due to the presence of a defined bed and bank, Drainage A is considered a "jurisdictional streambed" under CDFW jurisdiction (0.34 acre) including another 0.44 acre of associated CDFW jurisdictional riparian vegetation.

Due to the presence of hydrophytic vegetation such as arroyo willow (FACW), Fremont cottonwood (FAC), and mule fat (FAC), as well as wetland hydrology (i.e., drift deposits, drainage patterns), one soil pit was dug adjacent to the west bank of Drainage B (Exhibit 7) to assess for the presence of hydric soils to a depth of approximately 15 inches (i.e., subsurface restrictive layer). Soil within this pit consisted of sandy clay loam and sandy loam with no visible redox features. Therefore, since the tested soils did not exhibit hydric soil characteristics, there are no State or federal jurisdictional wetlands associated with Drainage B.

Applicable regulations that pertain to the offsite jurisdictional areas are described below.

Section 404 of the CWA: Requires that a permit be obtained from the USACE prior to the discharge of dredged or fill materials into any "waters of the U.S.," including wetlands. Such permits often require mitigation to offset losses of these habitat types. Waters of the U.S. are broadly defined in the USACE's regulations (33 CFR 328) to include navigable waterways and their tributaries. Waters of the U.S. encompass both wetland and non-wetland aquatic habitats, such as streams, creeks, rivers, lakes, ponds, bays, and oceans. Wetlands are defined as: "Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." To fit this definition, an area suspected of being a wetland must have hydrophytic vegetation, hydric soils, and hydrology. Wetlands that are not specifically exempt from Section 404 regulations (such as drainage channels excavated on dry land) are considered to be "jurisdictional wetlands." The USACE is required to consult with the federal and State Environmental Protection Agencies, USFWS, RWQCB, and CDFW in carrying out its discretionary authority under Section 404.

Section 401 of the CWA: States can certify or deny federal permits or licenses that might result in a discharge to State waters, including wetlands (33 USC 1341). Section 404 permit applicants must obtain a "water quality certification" from the state water quality agency indicating that the proposed activity complies with all applicable state water quality standards, limitations, and restrictions. In California, the RWQCBs issue water quality certifications within

their jurisdictions. The RWQCB reviews the project for consistency with Waste Discharge Requirements under the State land disposal regulations (Subchapter 15). In reviewing the project, the RWQCB will also consider impacts to waters of the U.S. and the filling of wetlands in accordance with the State wetland policy. Usually, mitigation is required (if not already a condition of the 404 permit) in the form of replacement or restoration of adversely impacted "waters of the U.S."

Sections 1601 to 1603 of the California Fish and Game Code. Streambeds and other drainages are subject to regulation by the CDFW. The CDFW considers most drainages to be "streambeds" unless it can be demonstrated otherwise. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel with banks and supports fish or other aquatic life. This includes watercourses having a surface or sub-surface flow that supports, or has supported, riparian vegetation. CDFW jurisdiction typically extends to the edge of the riparian canopy, and therefore, usually encompasses a larger area than USACE jurisdiction.

Protected Species Regulations

Federal Endangered Species Act (FESA): Administered by the USFWS, FESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species, or the habitats upon which they rely, are considered a "take" under the FESA. Section 9(a) of the FESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

Sections 4(d), 7, and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. A special rule under Section 4(d) of the FESA authorizes incidental take of certain protected species within subregions that are actively preparing a Natural Communities Conservation Program (NCCP), or are covered by approved NCCPs, which are administered by the states. The term "incidental take" refers to the "taking" of a listed species that is incidental to (and not the purpose of) an otherwise lawful activity.

Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. Federal actions by private, state, or local entities typically consist of activities that involve federal approvals/permits or federal funding. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species' impacts and issuance of a CWA permit by the USACE for work in jurisdictional areas or other federal actions.

Section 10(a) allows issuance of permits for "incidental" take of endangered or threatened species with preparation of a Habitat Conservation Plan (HCP). A HCP that demonstrates how the taking would be minimized and how steps would be taken to ensure the species' survival must be submitted for issuance of Section 10(a) permits.

California Endangered Species Act (CESA): Deserving plant or animal species will be given protection by the State because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA establishes a State policy to conserve, protect, restore, and enhance endangered species and their habitats. Under State law, plant and animal species may be formally designated as rare, threatened, or endangered through official listing by the California Fish and Game Commission. Listed species are given greater attention during the land use planning process by local governments, public agencies, and landowners than are species that have not been listed.

On private property, endangered plants may also be protected by the Native Plant Protection Act (NPPA) of 1977. Threatened plants are protected by CESA, and rare plants are protected by the NPPA. However, CESA authorizes that "Private entities may "take" plant species listed as endangered or threatened under the FESA and CESA through a federal incidental take permit issued pursuant to Section 10 of the FESA, if the CDFW certifies that the incidental take statement or incidental take permit is consistent with CESA." In addition, CEQA requires disclosure of any potential impacts on listed species, and alternatives or mitigation that would reduce those impacts.

Sections 3503, 3503.5, and 3800 of the California Fish and Game Code. These sections of the State Fish and Game Code prohibit the take or possession of birds, their nests, or eggs. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate Federal law protecting migratory birds. Incidental take permits are required from the CDFW for projects that may result in the incidental take of species listed by the State of California as endangered, threatened, or candidate species. The permits require that impacts to protected species be minimized to the extent possible and mitigated.

Other Unique Biological Resources and Potential Wildlife Corridors

No other unique biological features or resources were observed within the survey area. Based on a review of the on-line USFWS Critical Habitat Mapper, the nearest critical habitats to the site are located: (1) approximately 2.75 miles to the west for coastal California gnatcatcher, between Deadwood Drive and Crestwind Drive; (2) approximately 3.25 miles to the east for coastal California gnatcatcher, between South Centre City Parkway and South Juniper Street; and (3) approximately 3.50 miles to the southeast for coastal California gnatcatcher, south of Quiet Hills Drive.

Because the on- and off-site habitats are considered good avian and raptor nesting and foraging habitats, providing a good prey base and suitable hunting habitat for resident, wintering, and transient bird populations, portions of the property could be used as a significant "local" or "regional" wildlife corridor and/or linkage to Escondido Creek located approximately 500 feet west of the site.

BIOLOGICAL IMPACTS AND MITIGATION RECOMMENDATIONS

As shown on Exhibit 8, the proposed project would result in permanent loss of the following habitats: disturbed habitat (1.06 acres), eucalyptus woodland (0.19 acre), and non-native grassland (0.31 acre). Permanent loss of the latter two vegetation communities could indirectly affect avian/raptor foraging/nesting habitats. Therefore, impacts to non-native grassland would be significant and require mitigation (see below), but impacts to eucalyptus woodland would not be significant given the large expanses of existing raptor habitat in the region. Although the removal of mature eucalyptus trees would not be considered a significant biological impact, it is recommended that one oak for each eucalyptus removed should be planted within the proposed landscaping areas of the new storage yard facility for consistency with the City's Tree Preservation requirements. Eucalyptus replacement plantings are not recommended onsite due to their invasiveness (i.e., propensity for quickly spreading into adjacent native habitats) and safety concerns (i.e., propensity for producing weak limbs which easily break and fall during windy conditions or inclement weather).

The project would not impact southern arroyo willow riparian forest. The impact to coast live oak woodland (0.01 acre) would not be permanent; rather, it represents trimming of a few limbs if necessary to accommodate proposed structures. If any trimming of coast live oak trees is necessary, such work would be done under the supervision of a certified arborist to avoid long-term damage to the trees. In addition, prior to vegetation clearing, permanent protective fencing and "Keep Out" signage shall be installed at a distance of 50 feet from the canopy edge of these trees to avoid indirect impacts to the root zones (e.g., soil compaction) which could eventually result in tree mortality.

Because project impacts to disturbed habitat, eucalyptus woodland, and coast live oak woodland would not be significant, no mitigation measures are required. Mitigation for project impacts to 0.31 acre of onsite non-native grassland shall ~~involve the planting of~~ require the City to purchase credits (-0.15 acre) in an approved offsite mitigation bank to offset the loss ~~of native grassland species under the canopies of the two adjacent oaks to remain, as part of the project's landscaping plan~~ such habitat. Implementation of this mitigation would be consistent with the 0.5:1 compensation ratio for this habitat type according to the MHCP, and would reduce project impacts to non-native grassland to a level below significance. ~~Successful establishment and longevity of such plantings would be guaranteed through subsequent City landscape maintenance obligations (i.e. normal replacement of dead, damaged, and/or diseased plants). Alternatively, the City may opt to purchase credits at an approved offsite mitigation bank to ensure that project impacts to non-native grassland are reduced to less than significant.~~

Although the project is not expected to result in the permanent loss of coast live oak trees, it is recommended that two oaks be planted within the proposed landscaping areas of the new

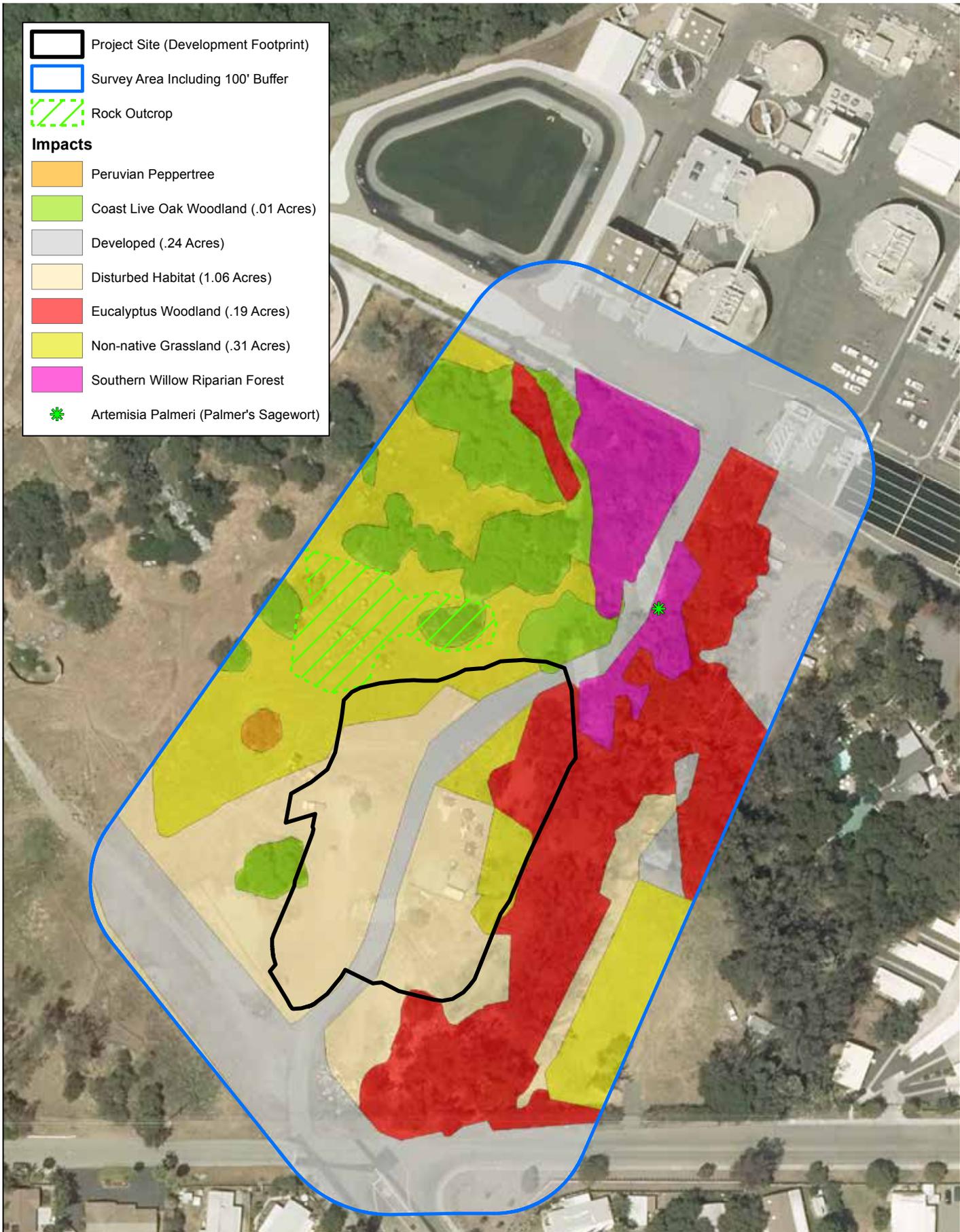
storage yard facility in the event that trimming of limbs or compaction near the root zone of the two existing trees would eventually cause damage or illness to the trees.

The project would not result in placement of fill and/or alteration within the offsite riparian/wetland/jurisdictional areas and thus would not be subject to USACE, Regional Board, and CDFW jurisdiction. In addition, project grading would maintain a 100-foot buffer as measured from the jurisdictional limits associated with Drainage B (Exhibit 8). Therefore, regulatory agency permits and authorizations are not required for the project. Furthermore, the proposed project would avoid impacts to the one special-status plant species observed within the southern willow riparian forest, Palmer's sagewort.

Birds and raptors which may forage and/or nest within the onsite vegetation and adjacent offsite trees are protected by both the MBTA and the California Fish and Game Code (Sections 3500 et seq. and 3800 et seq.). Avian species may be affected by short-term construction-related noise levels which can result in the disruption of foraging, nesting, and reproductive activities. As such, grading/ construction activities during the nesting season for breeding birds (typically January through September annually) protected by the MBTA and California Fish and Game Code could result in a significant temporary, indirect impact to these species. As mitigation for this potentially significant impact, if any grading/construction activities are scheduled to occur during the nesting season for breeding birds, then the following measures shall be implemented:

1. Within 7 days prior to commencement of grading/construction activities, a qualified biologist shall perform a preconstruction survey within 500 feet from the proposed work limits.
2. If active avian nest(s) are discovered within or 500 feet from the work limits, a buffer shall be delineated around the active nest(s) measuring 300 feet for passerines and 500 feet for raptors. A qualified biologist shall monitor the nest(s) weekly after commencement of grading/construction to ensure that nesting behavior is not adversely affected by such activities.
3. If the qualified biologist determines that nesting behavior is adversely affected by grading/construction activities, then a noise mitigation program shall be implemented in consultation with CDFW, to allow such activities to proceed. Once the young have fledged and left the nest(s), then grading/construction activities may proceed within 300 feet (500 feet for raptor species) of the fledged nest(s).
4. Raptor nests are protected under California Fish and Game Code Section 3503.5 (California Law 2011) which makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes; or to take, possess, or destroy the nests or eggs of any such birds. Consultation with CDFW shall be required prior to the removal of any raptor nest(s) observed during the preconstruction clearance surveys.

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Project Site (Development Footprint)
 Survey Area Including 100' Buffer
 Rock Outcrop
Impacts
 Peruvian Peppertree
 Coast Live Oak Woodland (.01 Acres)
 Developed (.24 Acres)
 Disturbed Habitat (1.06 Acres)
 Eucalyptus Woodland (.19 Acres)
 Non-native Grassland (.31 Acres)
 Southern Willow Riparian Forest
✱ Artemisia Palmeri (Palmer's Sagewort)

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APPENDIX 1
Representative Site
Photos

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Photographs 1-4

Views of disturbed habitat in south portion of survey area surrounding a separate "island" of coast live oak woodland consisting of 2-3 oak trees (Photos 1 and 3).



Photographs 5-10:

Views of non-native grassland habitat in the central and southeast portions of survey area. Note the large Peruvian pepper tree in Photo 5 and large rock outcroppings in Photos 7-8.



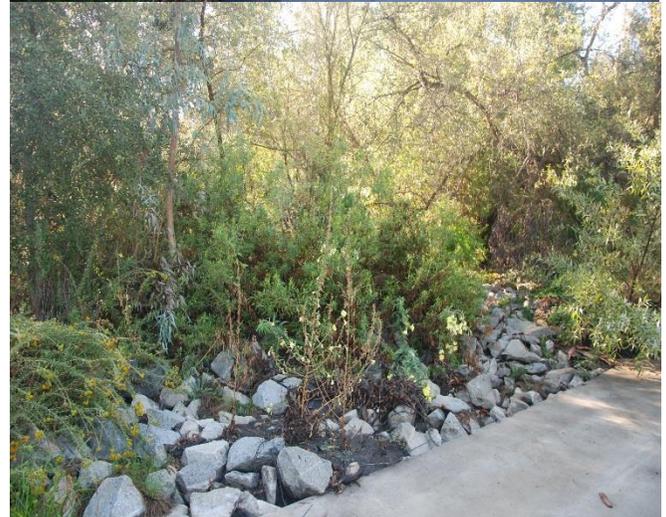
Photographs 11-14:

Views of eucalyptus woodland in the northwest corner and east portion of the survey area.



Photographs 15-18:

Views of southern arroyo willow riparian forest in the north and northwest portions of the survey area.



Photographs 19-26:

Views of coast live oak woodland. Note separate "island" of coast live oak woodland consisting of 2-3 oak trees in the southwest portion of the survey area (Photo 19) and large rock outcroppings in the northwest portion of the survey area (Photos 20 and 22).



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APPENDIX 2
Soils Report

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United States
Department of
Agriculture

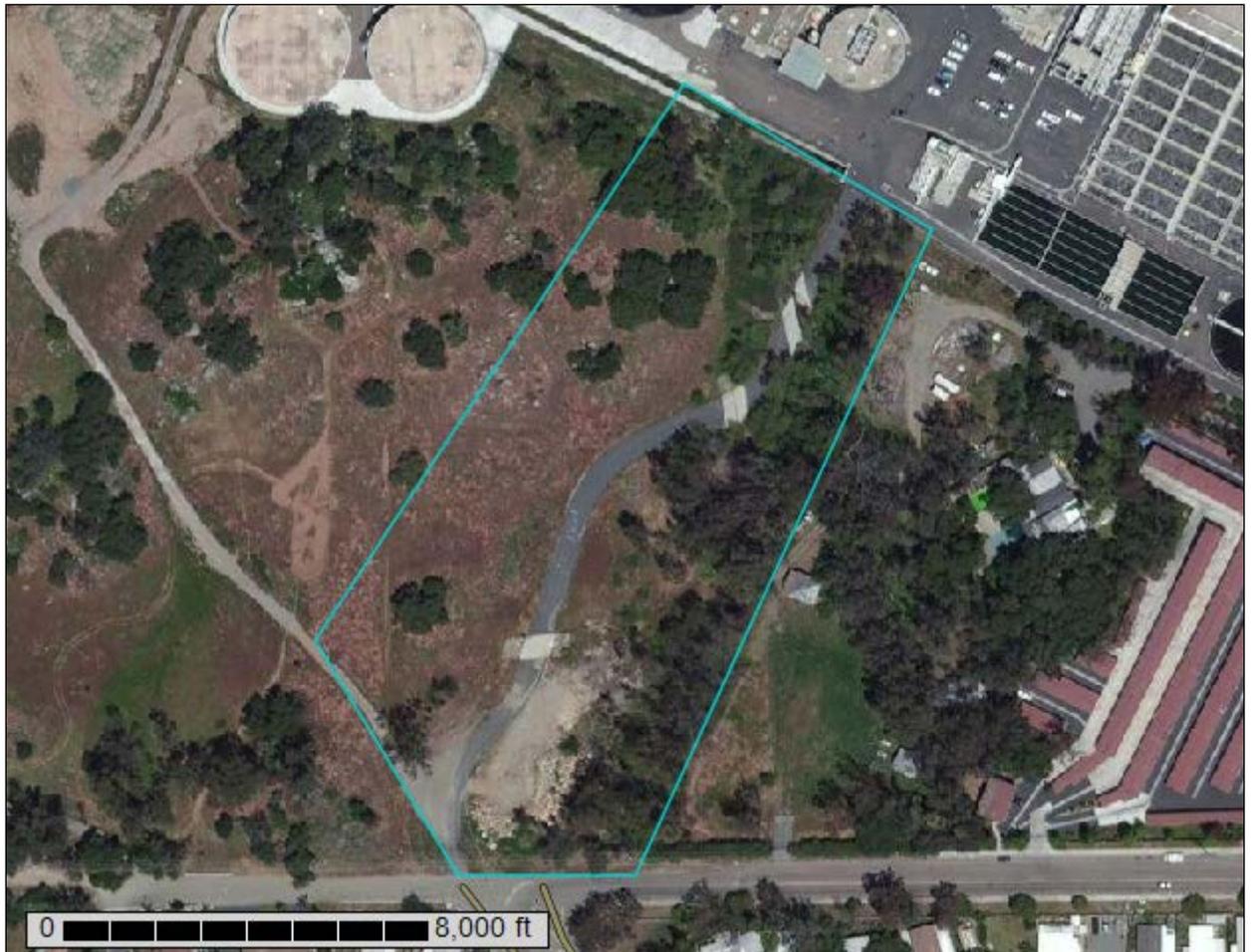
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for San Diego County Area, California

Escondido HARRF Storage Facility Project Area



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:1,530 if printed on A portrait (8.5" x 11") sheet.



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.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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 8, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Jun 19, 2010

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
VaB	Visalia sandy loam, 2 to 5 percent slopes	2.5	38.0%
VsD2	Vista coarse sandy loam, 9 to 15 percent slopes, eroded	3.1	48.4%
VvD	Vista rocky coarse sandy loam, 5 to 15 percent slopes	0.9	13.6%
Totals for Area of Interest		6.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

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on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Diego County Area, California

VaB—Visalia sandy loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: hbh3
Elevation: 0 to 1,500 feet
Mean annual precipitation: 9 to 30 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 200 to 350 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Visalia and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Visalia

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser, flat
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 40 inches: sandy loam, fine sandy loam
H2 - 12 to 40 inches: very fine sandy loam
H3 - 40 to 60 inches:

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A

Minor Components

Greenfield

Percent of map unit: 5 percent

Grangeville

Percent of map unit: 5 percent

Tujunga

Percent of map unit: 2 percent

Placentia

Percent of map unit: 2 percent

Unnamed

Percent of map unit: 1 percent

Landform: Flood plains

VsD2—Vista coarse sandy loam, 9 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: hbhb

Elevation: 400 to 3,900 feet

Mean annual precipitation: 10 to 18 inches

Mean annual air temperature: 59 to 64 degrees F

Frost-free period: 210 to 300 days

Farmland classification: Not prime farmland

Map Unit Composition

Vista and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vista

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Residuum weathered from granodiorite and quartz-diorite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam

H2 - 15 to 30 inches: coarse sandy loam, sandy loam

H2 - 15 to 30 inches: weathered bedrock

H3 - 30 to 34 inches:

Properties and qualities

Slope: 9 to 15 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Loamy (1975) (R019XD029CA)

Minor Components

Fallbrook

Percent of map unit: 4 percent

Cieneba

Percent of map unit: 4 percent

Bonsall

Percent of map unit: 4 percent

Greenfield

Percent of map unit: 3 percent

VvD—Vista rocky coarse sandy loam, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hbhg
Elevation: 400 to 4,000 feet
Mean annual precipitation: 8 to 18 inches
Mean annual air temperature: 45 to 64 degrees F
Frost-free period: 110 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Vista and similar soils: 70 percent
Rock outcrop: 25 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vista

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from granodiorite and quartz-diorite

Typical profile

H1 - 0 to 13 inches: coarse sandy loam
H2 - 13 to 27 inches: coarse sandy loam, sandy loam
H2 - 13 to 27 inches: weathered bedrock
H3 - 27 to 31 inches:

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Properties and qualities

Slope: 5 to 15 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: Loamy (1975) (R019XD029CA)

Description of Rock Outcrop

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Typical profile

H1 - 0 to 4 inches: unweathered bedrock

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Minor Components

Fallbrook

Percent of map unit: 3 percent

Cieneba

Percent of map unit: 2 percent

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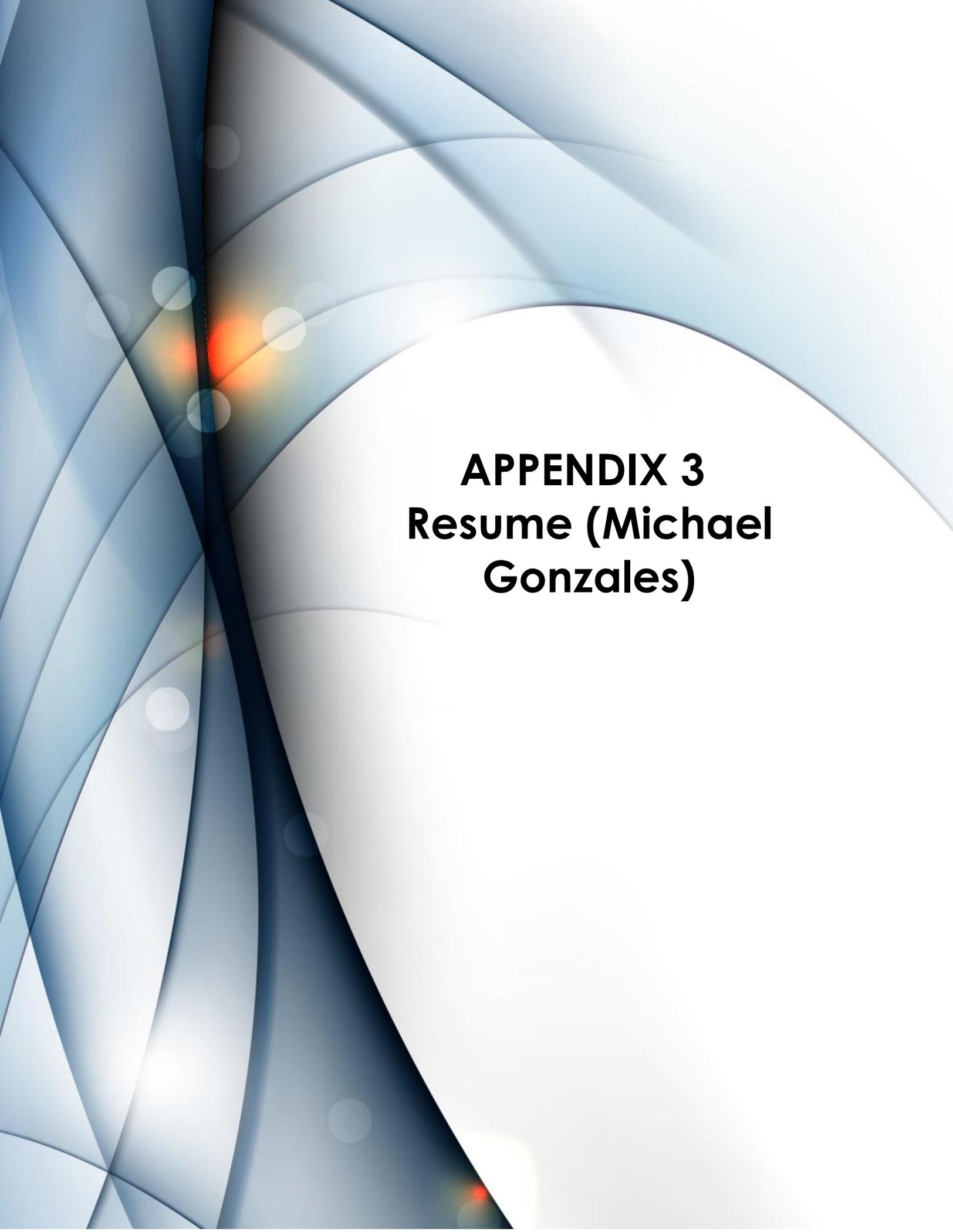
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APPENDIX 3
Resume (Michael
Gonzales)

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Michael J. Gonzales

Project Manager

General Qualifications

Natural Resources Studies has been a focus of Mr. Gonzales' entire career in environmental compliance and project management in Southern California, including his six years as the Environmental Review Coordinator for the City of San Diego Water Department Capital Improvements Program (CIP). In addition to his familiarity with the Endangered Species Act (ESA), Clean Water Act (CWA), California Fish and Game Code, and local and regulatory agency permit requirements, Mr. Gonzales has extensive knowledge of the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and stormwater compliance regulations. He has completed and reviewed numerous permit applications and associated studies in compliance with ESA Section 7, CWA Sections 404 and 401, and Section 1600 of the California Fish and Game Code. Such studies have included jurisdictional delineations, environmental assessments, alternatives analyses, and consistency evaluations for regional multiple species preserve documents under the Natural Communities Conservation Program (NCCP).

Mr. Gonzales has conducted general habitat and vegetation surveys, and rare plant surveys. His project experience has included: revegetation and habitat restoration plans; resource management plans; public works projects; long range development plans and master plans; general plans and specific plans; residential, commercial and mixed-use developments; and parks and recreational facilities. These projects have required a variety of discretionary approvals including conditional use permits, general plan amendments, coastal development permits, tentative subdivision maps, and annexations.

Experience

NCV_SDGE-Rancho Guejito. *San Diego Gas & Electric.* Biologist. Responsible for research and preparation of technical memos describing the process for establishment of a wetland mitigation bank and a conservation bank on the 21,315-acre Rancho Guejito property; and procedures for oak tree removal/replacement and oak woodland habitat restoration to mitigate impacts from the 2007 Witch Creek Fire. (2015 - Actual, 2015 - PS, 2015 - Estimate)

NCV_Mission Control SDG&E. *San Diego Gas & Electric.* Biologist. Responsible for a biological constraints survey and vegetation mapping of the undeveloped lands surrounding the existing SDG&E Mission Control (Operations) Facilities in Mission Valley, San Diego. (2015 - Actual, 2015 - PS, 2015 - Estimate)

Years with Michael Baker: 5

Years with Other Firms: 23

Degrees

B.A., 1986, Biology, University of California at San Diego

RBF-SDSU Imperial Valley Owl Survey. *Confidential Client.* Biologist. Responsible for pre-construction and construction surveys and monitoring for the Burrowing Owl (BUOW) and other birds protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. Key services included: weekly preconstruction monitoring of a nesting pair of BUOWs and documented fledging of young and closure of the burrow to facilitate start of construction; preparation of a Proposed Avoidance and Minimization Measures Report approved by CDFW to avoid impacts to BUOWs located on adjacent property north of the project site that may be indirectly affected by construction noise; and monthly bio-monitoring during project construction to ensure no impacts to BUOWs. (2014 - Actual, 2014 - PS, 2014 - Estimate)

Chula Vista Bayfront - Basis of Design Report, Chula Vista, California. *Unified Port of San Diego.* Biologist. Responsible for research and analysis of potential environmental constraints associated with proposed relocation of an RV Park and extension of E Street within the Sweetwater District of the Chula Vista Bayfront Master Plan. Project involves consistency review of various design elements to avoid and/or mitigate potential impacts to biological and wetland resources within Sweetwater Marsh and F & G Street Marsh. Also identifying the necessary CEQA and regulatory agency permit processes and schedules for the project, including coastal development permits for City of Chula Vista and Port District jurisdictions. (2014 - Actual, 2014 - PS, 2014 - Estimate)

Barrett Flume Cover. *City of San Diego.* Biologist. Responsible for desktop review, comparative analysis and coordination of regional GIS mapping of potential environmental constraints associated with various proposed pipeline alignments to replace an aging flume system that conveys potable water from Barrett Lake into Dulzura Creek and eventually into Otay Lakes in southern San Diego County. (2014 - Actual, 2014 - PS, 2014 - Estimate)

Ramona Solar. *Blue Oak Energy.* Biologist. Responsible for pre-construction protocol surveys and reporting for the western burrowing owl and pre-construction surveys for other nesting birds protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. (2014 - Actual, 2014 - PS, 2014 - Estimate)

Valley Center Solar. *Blue Oak Energy.* Biologist. Responsible for pre-construction protocol surveys and reporting for the western burrowing owl and pre-construction surveys for other nesting birds protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. (2014 - Actual, 2014 - PS, 2014 - Estimate)

Sol Orchard Solar Projects. *Sol Orchard San Diego.* Biologist. Responsible for pre-construction protocol surveys and reporting for the western burrowing owl and pre-construction surveys for other nesting birds protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code at two solar project sites, one in Valley Center and another in Ramona. Also responsible for general biological surveys, rare plant surveys and technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed construction of a solar panel facility in the community of Boulevard. The rare Jacumba milkvetch (*Astragalus douglasii* var. *perstrictus*) was detected and the onsite plant occurrences and populations recorded. (2014 - Actual, 2014 - PS, 2014 - Estimate)

Creekside Villas-Mitigation. *LG Creekside, LP.* Biologist. Responsible for implementation of the project's adopted Mitigation Monitoring and Reporting Program prior to grading permit issuance, pre-construction, and during project grading and construction activities. (2013 - Actual, 2013 - PS, 2013 - Estimate)

Culvert Repair PreDesign Study. *City of Vista.* Biologist. Responsible for general biological survey and report. (2013 - Actual, 2013 - PS, 2013 - Estimate)

SDG&E Mission Facs Master Plan. *Richard Yen & Associates.* Biologist. Responsible for general biological survey and vegetation mapping. Michael Baker provided a long-range Facilities Master Plan for the Mission Control Center site in Mission Valley in San Diego. The Master Plan involved an extensive documentation and analysis of existing and planned development: physical and environmental constraints; and General Plan, Community Plan, Zoning, Development Code and other State and local regulatory, permit and approval history. The Master Plan then coordinated the existing conditions and constraints analysis with all other disciplines (architecture, structural, landscape, civil, planning, company department needs analysis and programming) to prepare a variety of short and long-range development scenarios, opportunities and strategic recommendations for implementation. The Facilities Master Plan was presented to SDG&E Executives to inform capital and facilities management and operational decisions.(2013 - Actual, 2013 - PS, 2013 - Estimate)

Sol Orchard Blvd. "B" PV Solar. *Sol Orchard San Diego 5LLC.* Biologist. Responsible for general biological surveys, rare plant surveys and technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed construction of a solar panel facility in the community of Boulevard. The rare Jacumba milkvetch (*Astragalus douglasii* var. *perstrictus*) was detected and the on-site plant occurrences and populations recorded. (2013 - Actual, 2013 - PS, 2013 - Estimate)

Grading Violation Defense. *Elizabeth Rabbitt.* Biologist. Responsible for biological surveys and a technical report, prepared in accordance with City of San Diego Biology Guidelines, to assess impacts to ESL within private property in the Del Mar Mesa area of the City of San Diego. The study is in support of a Site Development Permit which is required by a Stipulated Administrative Enforcement Order in response to a Notice of Violation issued by the City's Neighborhood Code Compliance Division. Historic aerials were reviewed depicting site conditions that existed in 1995 (at the time the property was purchased) to estimate the amount of ESL impacts and required mitigation measures. (2013 - Actual, 2013 - PS, 2013 - Estimate)

Biological, Cultural, and Paleontological Monitoring for the Replacement of an 18-Inch Waterline, Marina Del Rey, California. *County of Los Angeles.* Biologist. Responsible for pre-construction surveys, construction monitoring, and noise mitigation measures for birds protected by the federal Migratory Bird Treaty Act (MBTA) that nest in trees adjacent to the installation of a new waterline within Admiralty Way. These biological services were performed for the Los Angeles County Department of Public Works (LADPW) according to the conditions of an approved CEQA document and the State Revolving Fund Agreement between the California Department of Public Health and LADPW. Also prepared a Nesting Bird Monitoring and Management Plan to guide monitoring efforts and mitigation measures to protect nesting birds that may be affected by project construction activities, consistent with the Los Angeles County Department of Beach and Harbor's Marina del Rey Conservation and Management Plan. Michael Baker provided biological, cultural, and paleontological monitoring for the replacement of an 18-inch water line along Admiralty Way in the City of Marina del Rey, California. Monitoring efforts included creating an iPad mapping and data collection application to enable instantaneous and accurate in-field assessment of ongoing nesting bird activities and ensure that construction activities did not disrupt nesting birds. Construction noise was also monitored to ensure it did not disrupt nesting behavior. The project site has the potential for sensitive archaeological and paleontological resources. Excavations were monitored daily by a certified archaeologist, certified paleontologist, and a Native American monitor appointed by the local Indian tribes to ensure that any sensitive resources found would be properly recorded and removed.(2013 - Actual, 2013 - PS, 2013 - Estimate)

Cleveland National Forest General Plan Amendment Supplemental Environmental Impact Report, San Diego County, California. *County of San Diego.* Project Manager. Responsible for the preparation of a draft Program EIR

(PEIR) for the County's proposed FCI GPA. On August 3, 2011, the County Board of Supervisors adopted the County General Plan Update (GPU) and certified the corresponding GPU PEIR. The land use map changes that occurred under the GPU excluded approximately 71,600 acres of private lands within the Cleveland National Forest in the unincorporated County that were formerly designated as FCI lands. The voter-approved initiative in 1993 that required a minimum lot size of 40 acres for the FCI lands expired on December 31, 2010. With its expiration, the former FCI lands reverted to the land use designations in effect before the FCI was enacted. As a result, the General Plan land use designations and the Guiding Principles and Policies were not consistent with those applied to the former FCI lands. The GPA will re-designate the former FCI lands to be consistent with the adopted General Plan and involves proposed changes in land use designations for approximately 400 acres of private lands adjacent to former FCI lands. The community and sub-regional planning areas affected by the proposed project's land use changes include: Alpine, Central Mountain, Desert, Jamul, Julian, Mountain Empire, North Mountain, Pendleton/De Luz, and Ramona. The draft Supplemental PEIR evaluates the impacts of the change in land use that would apply with buildout of the parcels in each of the affected community and sub-regional planning areas, including incorporation by reference of the applicable federal, state, and local regulations; existing county regulatory processes; adopted GPU goals and policies; and specific mitigation measures/implementation programs identified in the GPU Program EIR. Therefore, the draft Supplemental PEIR tiers from the current San Diego County General Plan and the GPU Program EIR. Michael Baker provided environmental services for a proposed general plan amendment to redesignate 71,600 acres of private lands within the Cleveland National Forest. Michael Baker's services included an environmental analysis, development of a geographic information system (GIS) mapping tool, and preparation of a supplemental environmental impact report. (2013 - Actual, 2013 - PS, 2013 - Estimate)

James Eleopoulos San Pedro Port Project. *James Eleopoulos - Crown Jewels Property.* Biologist. Responsible for general biological survey and vegetation mapping. (2013 - Actual, 2013 - PS, 2013 - Estimate)

Sol Focus, Sol Orchard SD5, Various Project Sites, California. *Sol Orchard San Diego 5 LLC.* Biologist. Responsible for general biological and rare plant surveys for a total of 15 sites within unincorporated areas of San Diego County for potential siting of solar photovoltaic (PV) facilities. Prepared biological resources letter reports evaluating potential impacts and mitigation measures for each site, pursuant to the County's Biological Guidelines. Michael Baker provided planning and engineering services for three 2-MW concentrated photovoltaic solar farm sites. All sites required administrative permits in the County of San Diego. Site improvements include fire access roads, transformer-inverter pads, perimeter security fencing, and fire-fuel management provisions. Environmental issues included biological and archeological mitigation and avoidance. (2012 - Actual, 2012 - PS, 2012 - Estimate)

Sol Orchard SD5- Loveland (Connen), Various Project Sites, California. *Sol Orchard San Diego 5 LLC.* Biologist. Prepared biological resources letter reports evaluating potential impacts and mitigation measures for each site, pursuant to the County's Biological Guidelines. (2012 - Actual, 2012 - PS, - Estimate)

Rabbitt - Grading Violation Defense, California. *Elizabeth Rabbitt.* Biologist. Responsible for biological surveys and a technical report, prepared in accordance with City of San Diego Biology Guidelines, to assess impacts to Environmentally Sensitive Lands (ESL) within private property in the Del Mar Mesa area of the City of San Diego. The study is in support of a Site Development Permit which is required by a Stipulated Administrative Enforcement Order in response to a Notice of Violation issued by the City's Neighborhood Code Compliance Division. Historic aeriels were reviewed depicting site conditions that existed in 1995 (at the time the property was purchased) to estimate the amount of ESL impacts and required mitigation measures. (2012 - Actual, 2012 - PS, - Estimate)

Blessed Teresa of Calcutta Parish Biological and Regulatory Services, Murrieta, California. *Blessed Teresa of Calcutta Church.* Biologist. Responsible for preparation of a report summarizing general biological surveys, focused burrowing owl and rare plant surveys, and consistency findings for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) with respect to proposed development of a 16-acre church campus at the northwest corner of Winchester Road (State Route 79) and Whisper Heights Parkway in an unincorporated area of Riverside County. Mr. Gonzales also prepared a Determination of Biologically Equivalent or Superior Preservation analysis for impacts to riparian resources protected by the MSHCP. Both documents will support the Habitat Evaluation and Acquisition Negotiation Strategy and Joint Project/Acquisition Review Process involving the Western Riverside County Regional Conservation Authority, U.S. Fish and Wildlife Services (USFWS), and California Department of Fish and Wildlife (CDFW). Michael Baker prepared a delineation of jurisdictional waters and biological analysis for a proposed church development within the French Valley area of Winchester, in an unincorporated portion of Riverside County, California. The proposed project would consist of the construction of an institutional use on approximately 15.73-acres on currently vacant land. Specifically, the project proposes construction of a church, multiuse hall, administration building, classrooms, landscaping, an open plaza, and associated parking spaces. (2011 - Actual, 2011 - PS, - Estimate)

Alpine Blvd. Environmental Studies, California. *County of San Diego.* Biologist. Responsible for biological surveys and a technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed expansion of the existing County of San Diego community library in Alpine. The project would involve transplantation of, and/or replacement planting (at specified mitigation ratios) for impacted oaks and willows in proposed landscaped areas within the developed site. (2011 - Actual, 2011 - PS, - Estimate)

Weber Property Residential Development Environmental Impact Report, Danville, California. *Town of Danville.* Biologist. Responsible for preparation of the biological resources section of this Final EIR evaluating the proposed development of 22 single-family homes on the 15-acre Weber property in the Town of Danville and Contra Costa County. The analysis involves a summary of over 25 biological studies and environmental documents spanning six years (2004-2010), including comprehensive coverage and full disclosure of the issues stemming from a 2008 California Superior Court decision and a California Court of Appeal mandate on a lawsuit filed by Citizens for Civic Accountability for this locally controversial project. Michael Baker prepared an Environmental Impact Report (EIR) for the proposed Weber Property Residential Development. The project proposed the construction of 22 single-family homes and a roadway connection to provide a new means of access to an adjacent middle school and alleviate traffic congestion at a nearby intersection. The EIR addressed potential project impacts on federally protected wetlands, riparian habitat, removal of trees not protected by the town's Tree Preservation Ordinance, and aesthetics. In addition, the scope addressed recent amendments to the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines, and the topics of global climate change, risk and health hazards, and forest resources. (2011 - Actual, 2011 - PS, - Estimate)

Live Oak Springs Solar Farm Development Support, California. *Ledcor San Diego Construction Group.* Biologist. Responsible for biological surveys of three parcels comprising approximately 60- acres in Live Oak Springs, an unincorporated area of east San Diego County, and preparation of a biological resources constraints report for potential siting of solar PV facilities on these sites. Biological resources mapping included fuel modification zones, resource protection ordinance wetland buffers, and oak tree root protection zones to protect sensitive habitats and oak trees. Michael Baker provided due diligence planning, environmental, engineering, and surveying services to support the development of a two megawatt photovoltaic solar farm located in east San Diego County. The project is situated within the Campo Creek tributary, and therefore required a

hydrology assessment and a biological assessment to identify sensitive habitat and native species in order to delineate developable areas. (2011 - Actual, 2011 - PS, - Estimate)

Sol Orchard CPV DOE Part I (15 Sites), San Diego & Imperial Counties, California. *Sol Orchard San Diego 5 LLC.* Biologist. Responsible for general biological and rare plant surveys for a total of 15 sites within unincorporated areas of San Diego County for potential siting of solar photovoltaic (PV) facilities. Prepared biological resources letter reports evaluating potential impacts and mitigation measures for each site, pursuant to the County's Biological Guidelines. (2011 - Actual, 2011 - PS, - Estimate)

Del Sol Boulevard Extension / Vista Del Mar Elementary School, San Diego, California. *San Ysidro School District.* Project Manager. Responsible for a multi-disciplinary team to implement CEQA mitigation measures and regulatory agency permit conditions associated with the construction of a new school and roadway extension in Otay Mesa. Key services included: pre-construction sensitive nesting bird surveys; land surveying, staking, temporary fencing, and storm water control protection at the limits of the on-site Open Space Preserve (for upland habitat) and at a vernal pool restoration site within the City of San Diego West Otay Mesa Vernal Pool Preserve (Parcel B); pre-construction sensitive habitat salvaging/seed collection; preparation of a Habitat Management Plan and Property Analysis Record (endowment funding) for perpetual management of the vernal pool restoration site; preparation of a Habitat Management Plan and Conservation Easement for the on-site Open Space Preserve; monitoring of biological, cultural, and paleontological resources and noise monitoring for nesting birds during project construction; preparation of vernal pool restoration plans/specifications; and installation of the vernal pool restoration site and implementation of the five-year maintenance and monitoring program, including regulatory agency sign-off. Michael Baker provided site investigation and preliminary hydrology and hydraulic calculations; utility, grading, and erosion control plans; and a stormwater management plan and hydrology study. Michael Baker also prepared public improvement plans for the construction of surface improvements to extend Del Sol Boulevard, prepared cost estimates, coordinated with DSA, and provided bid- and construction-phase support. (2010 - Actual, 2010 - PS, - Estimate)

La Media Road Environmental Services, San Diego, California. *Rick Engineering Company.* Project Manager. Michael Baker was responsible for scoping and fee negotiations with the City of San Diego to prepare a Supplemental EIR and prepare and process regulatory agency wetland permits for the proposed widening and drainage improvements along a one-mile segment of La Media Road between S.R. 905 and Siempre Viva Road in Otay Mesa. (- Actual, - PS, 2015 - Estimate)

Biological Resources Rpt. *Lewis Operating Corporation.* Environmental Planner. Responsible for preparing draft responses to Public Review comments on the Harmony Specific Plan EIR related to biological issues. (- Actual, - PS, 2016 - Estimate)

Brine & Reclaimed Wtr Pipeline. *City of Escondido.* Environmental Manager. Preparing a CEQA Addendum to an adopted MND evaluating minor project design changes associated with proposed installation of brine, reclaimed water, and blended (reverse osmosis) water pipelines. (- Actual, - PS, 2015 - Estimate)

Calexico Gran Plaza CEQA Mitigation and Regulatory Services, Calexico, California. *The Charles Company.* Project Manager. Michael Baker was responsible for a multi-disciplinary team to implement CEQA mitigation measures and regulatory agency permit conditions associated with the construction of a proposed commercial development adjacent to the U.S./Mexico International Border in Calexico. Key services included: pre-

construction nesting bird surveys identifying active nests of the sensitive western burrowing owl (BUOW); jurisdictional delineation in the area of an existing bridge crossing of 2nd Street over the New River adjacent to the east of the project to determine impacts and mitigation for proposed bridge widening; monitoring of biological, cultural, and paleontological resources during project construction; preparation of a Passive Relocation and Monitoring Plan for project impacts to the Burrowing Owl (BUOW) and coordination with the California Department of Fish and Wildlife (CDFW) to obtain plan approval; installation of artificial burrows as mitigation for project impacts to BUOW; passive relocation of the affected owls prior to site grading; and long-term monitoring of BUOW use of artificial burrows at the mitigation sites.

(- Actual, -PS, 2015 - Estimate)

Cardinal Dr Storm Drain Repair. *City of San Diego Economic Development.* Biologist. Responsible for biological survey and technical report, prepared in accordance with City of San Diego Biology Guidelines, documenting no impacts to Environmentally Sensitive Lands (ESL), and jurisdictional wetlands associated with proposed replacement of a failed storm drain pipe section and slope repairs (erosion gully) within an unnamed canyon adjacent to the City's MHPA and surrounded by urban development. Also overseeing the preparation of a Jurisdictional Delineation and Report, as well as regulatory agency permit applications for the project. (- Actual, -PS, 2016 - Estimate)

Coronado "I" Avenue Storm. *City of Coronado.* Biologist. Overseeing the preparation of a biological survey/technical report and CEQA Initial Study/MND, prepared in accordance with City of Coronado and San Diego Port District guidelines, documenting impacts to eelgrass habitat associated with proposed upgrades to a storm drain outlet into San Diego Bay. Also overseeing preparation of an eelgrass mitigation program and regulatory agency permit applications for the project, including coastal development permits for City of Coronado and Port District jurisdictions. (- Actual, -PS, 2015 - Estimate)

Covert Canyon Training Center. *The American Shooting Center.* Biologist. Responsible for a biological survey and technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed widening of High Glen Road to provide access to the Covert Canyon project, a future residential development. (- Actual, -PS, 2015 - Estimate)

San Mateo Road Culvert Crossing, Camp Pendleton, California. *EPC Corporation.* Project Manager. Managed biologists. Michael Baker biologists conducted preconstruction nesting bird surveys for storm drain improvements at the San Mateo Road culvert crossing within MCB Pendleton, and provided biological monitoring during construction activities to ensure no impacts to sensitive biological resources. (- Actual, -PS, 2015 - Estimate)

Kaiser Permanente Central San Diego Hospital, San Diego, California. *Co Architects.* Biologist. Responsible for preconstruction nesting bird survey and letter report, prepared in accordance with City of San Diego Biology Guidelines, documenting no potential impacts to nesting birds protected by the Migratory Bird Treaty Act (MBTA) due to proposed construction of a new hospital complex and parking structure within the highly urbanized Clairemont Mesa area, and managing subconsultant paleontological monitoring during project grading and excavations into native formational materials. The new Kaiser Central San Diego hospital project includes a 480,000-square-foot hospital, 180,000-square-foot hospital support building, 36,000-square-foot central utility plant, loading dock, and surface and structured parking for 1,800 cars. The site is being master planned to allow for Phase II expansion of the hospital to 720,000 square feet and 450 beds, as and structured parking to 2,275 car

spaces. The development of the site also includes roads, utilities and landscaping for the entire acreage, as well as healing gardens and outdoor event space for the patients and community. (- Actual, - PS, 2015 - Estimate)

Kaiser Foundation Hospital 060413. *Kaiser Foundation Hospitals.* Biologist. Responsible for biological surveys and a technical report, prepared in accordance with City of El Cajon guidelines, to assess potential impacts to biological resources associated with proposed development of a medical center complex and parking structure on mostly disturbed lands adjacent to an existing medical center within a highly urbanized area. (- Actual, - PS, 2014 - Estimate)

La Jolla Encore Residence, La Jolla, California. *Metcalf Development & Consulting.* Project Manager. Michael Baker is responsible for biological survey groundtruthing, peer review of technical reports, and preparation of an Initial Study/MND, in accordance with City of San Diego CEQA and Biology Guidelines, for a private property along La Jolla Farms Road. An intensive GIS mapping effort was performed to identify the extent of non-native plants invading Environmentally Sensitive Lands (ESL) in the adjacent Box Canyon, a portion of which is within the City's Multi-Habitat Preserve Area (MHPA), and which must be removed as required by the City. Michael Baker coordinated extensively with the manager of the UCSD Natural Reserves System and the project attorney to develop biological mitigation measures to protect the Scripps Coastal Reserve and State Marine Conservation Area, which includes the intertidal and subtidal areas along Black's Beach, downstream of the property. Michael Baker is also managing implementation of the project's adopted Mitigation Monitoring and Reporting Program (MMRP) involving preconstruction nesting bird surveys and fencing to protect the adjacent ESL; removal of invasive plants and corresponding habitat restoration; and long-term monitoring of habitat restoration areas. (- Actual, - PS, 2016 - Estimate)

Lake Hodges Slope Armoring. *City of San Diego Economic Development.* Biologist. Responsible for managing Michael Baker regulatory services related to jurisdictional delineation/reporting and regulatory agency permit applications; archaeological subconsultant services related to a cultural resources record search and survey; and biological subconsultant services related to rare plant surveys, protocol surveys for special status species, and preparation of a biological technical report in accordance with City of San Diego Biological Guidelines for proposed armoring of Lake Hodges Dam footings and abutment slope to prevent potential erosion impacts associated with flood overtopping events. (- Actual, - PS, 2015 - Estimate)

Lemon Grove Main Street Promenade, Lemon Grove, California. *KTU+A.* Biologist. Responsible for a biological survey and technical report to assess potential impacts to biological resources associated with proposed extension of the Main Street Promenade to provide a north-south travel-way and park for pedestrians and bicyclists, while maintaining utility maintenance and emergency access spanning the length of the City connecting the residential neighborhoods in the central and southern areas of the City with the commercial/civic core via the Massachusetts and Lemon Grove Trolley Stations. (- Actual, - PS, 2016 - Estimate)

Monterey Downs and Horse Park and Central Coast Veterans Cemetery Specific Plan EIR, Seaside, California. *City of Seaside.* Environmental Planner. Responsible for preparing draft responses to Public Review comments on the Monterey Downs and Horse Park and Central Coast Veterans Cemetery Specific Plan EIR related to biological issues. Michael Baker served as the Project Facilitator for the Monterey County Housing and Redevelopment Office by providing strategic, technical, planning, and environmental support services for coordination and processing of applications and approvals associated with the proposed Monterey Downs and Horse Park and Central California Veteran's Cemetery project. Following completion of the Phase I Due Diligence and ENA negotiations, Michael Baker prepared an Environmental Impact Report (EIR). Michael Baker developed a

draft project description, a Notice of Preparation (NOP), and an Administrative Draft EIR (ADEIR) for review. The EIR analyzed aesthetics and visual resources; air quality; construction-related and long-term emissions; biological resources, including forestry resources; cultural resources; geology and soils; greenhouse gases; hazards and hazardous materials; hydrology and water quality; land use and planning; construction-related and operational noise; population and housing; public service and recreation; utilities and service systems; and transportation and circulation. Following client and public review of the ADEIR, Michael Baker produced a Final EIR that included responses to comments received from agencies and members of the public. (- Actual, - PS, 2016 - Estimate)

P-637 SOF Infantry Squad Defense Range Including Access Road with Bridge, MCB Camp Pendleton, California. NAVFAC Southwest. Biologist. Responsible for biological monitoring during geotechnical investigations. Michael Baker prepared plans, specifications, and estimates for a 600-meter exterior rifle range with fixed, pop-up, and moving targets and an access road with bridge, targeting systems, supporting facilities and buildings, utilities, paving and site improvements, environmental mitigation, anti-terrorism/force protection, and incidental related work. Structural elements of the project included a 5,081-square-foot vehicular bridge, 194-square-foot ammunition breakdown building, 3,294-square-foot enclosed bleacher, 7,965-square-foot general instruction building, 797-square-foot operations storage facility, 258-square-foot range control tower, shade structures, range control tower, 800-square-foot classroom structure, and miscellaneous other facilities. Michael Baker was the designer of record and completed a hydrology/hydraulic analysis; scour analysis; and civil, structural, utility, stormwater and landscaping design. (- Actual, - PS, 2015 - Estimate)

Phase I, Option A, N Coast highway 101 Streetscape Design for Phase I. City of Encinitas. Engineering Manager. Responsible for managing the preparation of an EIR for proposed pedestrian/bicycle/lane, parking, streetscape, and drainage improvements along a 2.5-mile segment of North Highway 101 in the City of Encinitas. (- Actual, - PS, 2016 - Estimate)

Prime Contract between Watts Constructors and USMC is N62473-10-D-5418, TO 0004. Watts Constructors, LLC. Biologist. Responsible for managing in-house and subconsultant biologists performing preconstruction protocol surveys for the endangered arroyo toad (*Bufo californicus*) associated with construction of a groundwater test well located near the San Luis Rey River within MCB Camp Pendleton, and bio-monitoring during construction activities to ensure no impacts to sensitive biological resources. (- Actual, - PS, 2015 - Estimate)

R-DelOroGateway112014. Del Oro Gateway LLC. Environmental Manager. Responsible for managing the preparation of a Mitigated Negative Declaration (MND) for a proposed commercial building on a vacant lot within the Rancho del Oro Business Park in the City of Oceanside. Key issue involves project design consistency with the regulatory agency buffer requirements per the Draft Oceanside Subarea Plan of the North County Multiple Habitat Conservation Program (MHCP) to protect adjacent sensitive biological resources including wetlands, riparian habitat, and the endangered least Bell's vireo (*Vireo belli pusillus*). (- Actual, - PS, 2016 - Estimate)

R-JCTLookout121014. JCT Lookout, LLC. Biologist. Responsible for long-term monitoring of habitat restoration areas following removal of invasive plants and corresponding habitat restoration within a portion of private property on La Jolla Farms Road adjacent to sensitive natural habitats associated with Box Canyon, a portion of which is in the City of San Diego Multi-Habitat Preserve Area (MHPA). (- Actual, - PS, 2015 - Estimate)

Rancho Mission Slope Repair, San Diego, California. City of San Diego. Biologist. Responsible for biological surveys and a technical report, prepared in accordance with City of San Diego Biology Guidelines, to assess impacts to Environmentally Sensitive Lands (ESL) associated with the repair of a landslide on a natural slope between

residential streets in the San Carlos area. The landslide is within the City's Multi-Habitat Planning Area (MHPA) Preserve of the Multiple Species Conservation Program (MSCP). Also responsible for coordinating preconstruction nesting bird surveys and fencing to protect the adjacent ESL; coordinating paleontological and cultural resources monitoring during grading; attendance at weekly progress meetings; preparation of a habitat restoration plan; and long-term monitoring of the habitat restoration. Michael Baker provided engineering design, environmental coordination and stormwater quality services for the emergency repair of a slope failure in the Navajo Community of the City of San Diego. The area of exposed landslide is approximately 360 feet by 120 feet. The project involved the removal, export and disposal of slope movement debris in its entirety; re-grading and re-contouring of the hillside to blend into the surrounding topography for positive drainage; reconnection of the former trail across the slope; and re-vegetation of the hillside. This project was awarded the **2015 APWA Project of the Year Award**. (- Actual, -PS, 2015 - Estimate)

Rancho Paseana. *Watermark Estate Management Services, LLC.* Biologist. Responsible for a biological constraints survey, map and letter report for proposed residential development of approximately 228 acres whereby sensitive resources were identified for avoidance including wetlands and sensitive habitat for the endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*). (- Actual, -PS, 2015 - Estimate)

RBF-MSA 537042. *County of San Diego.* Biologist:

- **Pine Valley Sheriff's Substation Biological Study, Pine Valley, California.** Responsible for biological and rare plant surveys and technical reports, prepared in accordance with County of San Diego Biological Guidelines, for proposed construction of a new San Diego County Sheriff's Substation in Pine Valley. The project would incorporate a development buffer from an adjacent creek and off-site mitigation for impacts to sensitive Jeffrey pine forest and big sagebrush scrub habitats. 2012
- **Boulevard Fire Station Rare Plant Survey, Boulevard, California.** Responsible for a rare plant survey and technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed construction of a new fire station in the community of Boulevard, south of the I-8/SR-94 junction. Two rare plants were detected that would be avoided by the project design.
- **Alpine Community Library Biological Study, Alpine, California.** Responsible for biological surveys and a technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed expansion of the existing County of San Diego community library in Alpine. The project would involve transplantation of, and/or replacement planting (at specified mitigation ratios) for impacted oaks and willows in proposed landscaped areas within the developed site. (- Actual, -PS, 2015 - Estimate)

SDGE MTO Cons. Monitoring. *San Diego Gas & Electric.* Project Manager. Responsible for implementation of the project's adopted MMRP which involves administration of the Worker's Environmental Awareness Program (WEAP) training; coordination of preconstruction nesting bird surveys and fencing to protect the adjacent ESL; coordination of paleontological monitoring; attendance at weekly progress meetings; and preparation of weekly status reports. (- Actual, -PS, 2015 - Estimate)

Mira Sorrento Substation PEA, Sorrento Valley, California. *San Diego Gas & Electric.* Environmental Manager. Responsible for implementation of the project's adopted Mitigation Monitoring and Reporting Program (MMRP) involving administration of the Worker's Environmental Awareness Program (WEAP) training; coordination of preconstruction nesting bird surveys and fencing to protect the adjacent ESL; coordination of paleontological monitoring; attendance at weekly progress meetings; and preparation of weekly status reports. Michael Baker prepared a landscape concept plan and brush management plan for approval by the City of San Diego, SDG&E, and

the California Public Utilities Commission. The intent of the design was to blend the project landscaping with the surrounding, natural vegetation and screen the retaining and perimeter walls associated with the substation. Low-water use and native plant material were proposed throughout the site. Michael Baker prepared final planting and irrigation construction drawings.

Solana Carmel Creek. *MKS Residential LLC.* Biologist. Responsible for managing in-house and subconsultant biologists performing preconstruction protocol surveys for the threatened coastal California gnatcatcher (*Poliophtila californica californica*); preconstruction nesting bird surveys; and cultural, paleontological, biological resources monitoring during grading/construction to ensure no impacts to sensitive resources. (- Actual, -PS, 2015 - Estimate)

Sweetwater Town Center. *SAM-Sweetwater, LLC.* Biologist. Responsible for general biological surveys and technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed development of 122 detached residential condominium units. Also overseeing the preparation of a Jurisdictional Delineation and Report as well as regulatory agency permit applications for the project. (- Actual, -PS, 2015 - Estimate)

Twin Oak's Cemetery. *G. Levitt - Sea Breeze Properties, LLC.* Biologist. Responsible for a biological constraints survey and map of approximately 38 acres for proposed development of a cemetery whereby sensitive resources were identified for avoidance including wetlands and a rare plant population of Palmer's sagewort (*Ambrosia pumila*). (- Actual, -PS, 2015 - Estimate)

Van Dyke Storm Drain Repair. *City of San Diego.* Biologist. Responsible for biological survey and technical report, prepared in accordance with City of San Diego Biology Guidelines, documenting no impacts to ESL associated with proposed upgrades to a stormdrain outlet within an unnamed canyon outside the City's MHPA and surrounded by urban development. Also overseeing the preparation of a Jurisdictional Delineation and Report as well as regulatory agency permit applications for the project. (- Actual, -PS, 2016 - Estimate)

Vista Del Mar Elementary School Construction Vernal Pool Restoration Project, Otay Mesa, California. *San Ysidro School District.* Project Manager. Responsible for a multi-disciplinary team to implement CEQA mitigation measures and regulatory agency permit conditions associated with the construction of a new school and roadway extension in Otay Mesa. Key services include: pre-construction sensitive nesting bird surveys; land surveying, staking, temporary fencing, and storm water control protection at the limits of the on-site Open Space Preserve (for upland habitat) and at a vernal pool restoration site within the City of San Diego West Otay Mesa Vernal Pool Preserve (Parcel B); pre-construction sensitive habitat salvaging/seed collection; preparation of a Habitat Management Plan and Property Analysis Record (endowment funding) for perpetual management of the vernal pool restoration site; preparation of a Habitat Management Plan and Conservation Easement for the on-site Open Space Preserve; monitoring of biological, cultural, and paleontological resources and noise monitoring for nesting birds during project construction; preparation of vernal pool restoration plans/specifications; and installation of the vernal pool restoration site and implementation of the 5-year maintenance and monitoring program, including regulatory agency sign-off. Michael Baker is leading a multidiscipline team in the implementation of mitigation measures and conditions identified in a certified Environmental Impact Report and state and federal regulatory agency permits and authorizations for construction of a new elementary school and roadway extension in the Otay Mesa area of the City of San Diego.
(- Actual, -PS, 2016 - Estimate)

W. Mission Bay Dr Pipe Repair. *TC Construction.* Biologist. Responsible for a revegetation plan, prepared in accordance with City of San Diego Landscape Standards, to protect the adjacent Multi-Habitat Planning Area (MHPA) Preserve from potential erosion/siltation effects associated with runoff from project construction-related soil disturbance areas. Also responsible for conducting a preconstruction nesting bird survey documenting no potential impacts to nesting birds protected by the federal Migratory Bird Treaty Act (MBTA) due to proposed construction activities. (- Actual, -PS, 2015 - Estimate)

Wastewater Collect. Yard Reloc. *City of Escondido.* Biologist. Responsible for a biological survey and technical report associated with proposed construction of a materials storage yard to support the wastewater treatment operations at the adjacent Hale Avenue Resource Recovery Facility; and overseeing the preparation of a Jurisdictional Delineation and Report as well as regulatory agency permit applications for this project. Also preparing a CEQA Addendum to an adopted MND evaluating minor project design changes associated with proposed installation of brine, reclaimed water, and blended (reverse osmosis) water pipelines. (- Actual, -PS, 2015 - Estimate)

Water Group Job 949 and Water and Sewer Group Job 946 Design-Build Projects, El Cajon, California. *City of San Diego.* Biologist. Responsible for a preconstruction nesting bird survey and a technical report, prepared in accordance with City of San Diego Biology Guidelines, to assess potential impacts to sensitive coastal cactus wren (*Campylorhynchus brunneicapillus* ssp. *couesi*) nesting habitat (coast cholla plants) associated with the proposed replacement of an existing 12-inch water main with an 8-inch main between Cielo Drive and Aviation Drive. The survey included quantification/ mapping of coast cholla plants within the proposed pipeline trenching alignment and a directed search for coastal cactus wrens and identification of their nest locations within cholla plants in the survey area. Michael Baker provided engineering design services to the City of San Diego for the first Design-Build project under a Department of Public Works Multiple Award Construction Contract Task Order. The project was executed at three separate sites and involved design and construction services for the replacement of deteriorating 8-inch, 12-inch and 16-inch cast iron water mains, and 8-inch and 15-inch sewer mains with new PVC pipe, as well as improvements to associated fire services, fire hydrants, laterals, valves, pressure reducing stations, sewer laterals, sewer replumb laterals and agreements, and manholes. (- Actual, -PS, 2015 - Estimate)

RBF Project Experience

Sol Orchard Boulevard Solar Project - Biological Studies, Boulevard, California. Biologist. Responsible for general biological surveys, rare plant surveys and technical report, prepared in accordance with County of San Diego Biological Guidelines, for proposed construction of a solar panel facility in the community of Boulevard. The rare Jacumba milkvetch (*Astragalus douglasii* var. *perstrictus*) was detected and the on-site plant occurrences and populations recorded. 2011-2013

Jeffries Ranch Road Extension to State Route 76 - Biological Constraints Study, Oceanside, California. Biologist. Responsible for a general biological survey, map and letter report for proposed extension of Jeffries Ranch Road to form a new intersection with SR-76 within the northeastern portion of the City of Oceanside, approximately half mile east of the SR-76/Melrose Drive intersection. 2012

Park Once Parking Structure - Natural Environment Study (Minimal Impacts), Redlands, California. Biologist. Responsible for a general biological survey and NESMI report, prepared in accordance with Caltrans standards, for proposed construction of an above-ground parking structure the City of Redlands. 2012

GCL/Rosendin and Sol Orchard Solar Projects - Biological Studies, San Diego County, California. Biologist. Responsible for general biological and rare plant surveys for a total of 15 sites within unincorporated areas of San Diego County for potential siting of solar photovoltaic (PV) facilities. Prepared biological resources letter reports evaluating potential impacts and mitigation measures for each site, pursuant to the County's Biological Guidelines. 2011

Non-Michael Baker Project Experience

Resource Management Plan and Regulatory Agency Permits, San Marcos Campus, California. *Palomar Community College District.* Project Manager. Responsible for the preparation of a draft RMP for the establishment of a Coastal Sage Scrub Open Space Preserve within San Marcos Campus property to address long-term mitigation requirements for impacts to this sensitive upland habitat from development associated with implementation of the Facilities Master Plan. Also managed the preparation of the following regulatory agency applications and supplemental reports for the Master Plan: Section 404 Permit and Wetlands Delineation Report for USACE; Section 1601 Streambed Alteration Agreement for CDFW; and Section 401 Water Quality Certification for RWQCB. 2009

San Diego Water Department CIP Habitat Restoration Projects, San Diego, California. *City of San Diego.* Senior Planner. Responsible for supervision of staff and as-needed environmental consultants in the preparation and implementation of numerous habitat restoration projects, including the Chaparral Canyon riparian and upland mitigation (downstream of Lake Murray dam); the South San Diego Pipeline riparian and upland mitigation; and the Bonita Pipeline upland mitigation. 2005

Pipeline 5 Extension Phase I Wetlands Restoration Plan, San Marcos, California. *San Diego County Water Authority.* Project Manager. Responsible for the preparation of a wetlands and vernal pool restoration plan to mitigate impacts to sensitive biological habitats from pipeline construction at San Marcos Creek. Also managed the preparation of a Section 1601 Streambed Alteration Agreement application and supplemental reports for CDFW. 1995

Borrow Pit Revegetation Plan, Rancho San Diego, California. *Home Capital Corporation.* Project Manager. Responsible for the preparation of a revegetation plan to restore a one-acre borrow pit into riparian woodland habitat within the Rancho San Diego Specific Plan area and Sweetwater River floodplain. Also managed the preparation of a Section 404 Permit application and supplemental reports for the U.S. Army Corps of Engineers (USACE) and a Section 1603 Streambed Alteration Agreement application and supplemental reports for CDFW. 1993

Equestrian Center Supplemental EIR, Rancho San Diego, California. *Home Capital Corporation.* Project Manager. Responsible for the preparation of a Draft EIR for the San Diego County Department of Planning and Land Use involving a 10-acre equestrian facility and natural park within the Rancho San Diego Specific Plan area. Key environmental issues included biological resources, visual quality, water quality/hydrology, and electromagnetic transmissions. 1995

Mast Park Improvements EIR, Santee, California. *City of Santee.* Project Manager. Responsible for the preparation of a Final EIR, certified by the Santee City Council, for a 36-acre passive recreational park and riparian

woodland revegetation project along the San Diego River. Key environmental issues included the creation of high quality habitat suitable for use by least Bell's vireo. 1991

Water and Wastewater Projects

2009 Water Resources Master Plan Update Program EIR, South San Diego County, California. *Otay Water District.* Project Manager. Responsible for the preparation of a Final Program EIR (PEIR) for the 2009 WRMP Update, certified by the OWD Board of Directors, that identifies the potable and recycled water CIP facilities (e.g., pump stations, storage reservoirs, transmission mains) and additional water supply projects (e.g., groundwater wells, desalination facilities, reclamation plants) to meet projected demands within the OWD planning area and adjacent areas of influence through 2030. Key environmental issues included biological resources, energy, and global climate change. 2010

SD-24 Flow Control Facility Mitigated Negative Declaration, San Diego, California. *City of San Diego.* Project Manager. Responsible for the preparation of a Draft MND for the City of San Diego Public Utilities Department for construction of a flow control facility, 51-inch pipeline, and two turnout structures to increase water delivery to the Miramar Water Treatment Plant. Key environmental issues included removal of trees in a historic eucalyptus grove, temporary impacts to a hiking trail, and construction-related sedimentation and water quality impacts within an adjacent regulating pond. 2010

Carryover Storage and San Vicente Dam Raise Project EIR/EIS, Lakeside, California. *San Diego County Water Authority.* Project Manager. Responsible for the preparation of this Final EIR/EIS which was certified by the San Diego County Water Authority (CEQA Lead Agency) in 2008. The USACE (NEPA Lead Agency) issued a Record of Decision for the Final EIR/EIS in 2009. The Water Authority's Emergency Storage Project (ESP) included the expansion of San Vicente Reservoir by raising the dam 54 feet to provide 52,100 acre-feet (AF) of emergency storage capacity. The Water Authority combined the approved ESP dam raise with an additional 63-foot dam raise for the CSP, increasing the reservoir capacity by an additional 100,000 AF. The CSP raised the overall dam height by 117 feet and increased the reservoir capacity by 152,100 AF in total. The purpose of the CSP was to substantially increase the regional water storage reliability. Key alternatives to the Proposed Action included: construction of a new dam and 100,000 AF reservoir at Moosa Canyon in Valley Center; and a reduced dam raise at San Vicente Reservoir (increasing the reservoir capacity by an additional 50,000 AF) combined with the construction of smaller dam and 50,000 AF reservoir at Moosa Canyon. Key environmental issues included biological resources, temporary loss of recreational use, and construction-related air quality, noise and traffic impacts. Also managed the preparation of a Section 404 Permit application and supplemental reports for the USACE. 2009

Flood Control and Water Conservation District Environmental Compliance Reviews, Riverside, California. *Riverside County.* Project Manager. Responsible for the preparation of environmental compliance reviews in connection with engineering plan checks of drainage improvement plans submitted to the Riverside County Flood Control and Water Conservation District. Primary tasks involved the collection and review of environmental documents and permits to make sure projects complied with applicable CEQA/NEPA requirements, regulatory agency permit conditions, provisions of the Western Riverside County MSHCP, and long-term mitigation monitoring plans for water quality/detention basins and associated wetland mitigation sites. Also confirmed that long-term maintenance requirements for water quality/detention basins and wetland mitigation sites were assigned to appropriate entities, such as homeowners associations and landscape maintenance districts. 2010

San Diego Water Department CIP, San Diego, California. *City of San Diego.* Senior Planner. Responsible for supervision of staff and as-needed environmental consultants in the preparation of numerous CEQA/NEPA documents, technical studies, and permits for CIP projects, including the expansion and upgrades for the Miramar, Alvarado, and Otay water treatment plants; rehabilitation/replacement of existing and construction of new transmission pipelines, pump stations, standpipes, and enclosed reservoirs; new water reclamation system pipelines, pump stations, and reservoirs in the northern portions of the City; and a groundwater asset development program. 2005

Water Distribution Plan PEIR, San Diego County, California. *San Diego County Water Authority.* Project Manager. Responsible for the land use and air quality sections of the Final PEIR for pipeline improvements generally following the route of the existing San Diego Aqueduct from Lake Skinner in Riverside County to the International Border. 1990

Rancho San Diego Pump Station Emergency Storage Expansion MND, Rancho San Diego, California. *San Diego County.* Project Manager. Responsible for the preparation of a Final MND, adopted by the San Diego County Board of Supervisors, for the expansion of an emergency overflow storage pond at a County sewer pump station in the Rancho San Diego Specific Plan area. Key environmental issues included biological resources, noise, surface/groundwater quality, odors, and a wetlands restoration and buffer plan for the protection of endangered least Bell's vireo habitat. 1991

Wastewater Reclamation Plant Expansion Projects, Ramona, California. *Ramona Municipal Water District.* Project Manager. Responsible for the preparation of a Final EIR for the Santa Maria Wastewater Reclamation Plant Expansion and a Final MND for the San Vicente Wastewater Reclamation Plant Expansion, both certified by the RMWD Board of Directors. Key environmental issues included biological and cultural resources, odors and vectors, groundwater and flooding, and visual quality/aesthetics. 1989

Escondido Hills R3B Reservoir Expansion EIR, Escondido, California. *Rincon del Diablo Municipal Water District.* Project Manager. Responsible for the preparation of a Final EIR, certified by the Rincon del Diablo Municipal Water District Board of Directors, for construction of a three-million gallon capacity water tank. The key environmental issue included visual quality. 1988

Transportation Projects

State Route 56 EIR, San Diego, California. *City of San Diego.* Project Manager. Responsible for the preparation of a Final EIR, certified by the San Diego City Council, for the five-mile freeway segment connecting S.R. 56 West at Interstate 5 (I-5) and S.R. 56 East at Interstate 15 (I-15). Several alternative alignments and cross-section configurations were evaluated at an equal level of detail. Key environmental issues included biological resources, cultural resources, land use/community character, landform alteration/visual quality, traffic, noise, and conversion of prime agricultural lands. Also managed the preparation of the following regulatory agency applications and supplemental reports: Section 404 Permit (Section 106 Compliance, Alternatives Analysis, Wetlands Delineation Report, Environmental Assessment (EA), Mitigation Plans for federally threatened/endangered species, Public Noticing Package) for USACE; Section 1601 Streambed Alteration Agreement for CDFW; and Section 401 Water Quality Certification for the Regional Water Quality Control Board (RWQCB). 1999

Stevens/Nardo Intersection Improvements EIR, Solana Beach, California. *City of Solana Beach.* Project Manager. Responsible for the preparation of a Final EIR, certified by the Solana Beach City Council, for widening

and lane improvements of a major collector-commercial roadway. Key environmental issues included traffic safety, noise, visual quality/aesthetics, and housing relocation. 1993

Olivenhain Road Improvements EIR, Encinitas, California. *City of Encinitas.* Project Manager. Responsible for the preparation of a Final EIR, certified by the Encinitas City Council, for the widening of a segment of Olivenhain Road bordering the cities of Encinitas and Carlsbad. Flood control and public facilities improvements were also evaluated as part of the project. Key environmental issues included biological resources, traffic/circulation, noise, hydrology/water quality, public utilities, and a wetlands restoration plan along Encinitas Creek. 1992

Bancroft Drive Improvements EIR, Spring Valley, California. *San Diego County.* Project Manager. Responsible for the preparation of a Final EIR, certified by the San Diego County Board of Supervisors, for the widening of a segment of Bancroft Drive between Highway 94 and Troy Street. Flood control and public facilities improvements were also incorporated. Key environmental issues included flooding, historical and visual resources, traffic/circulation, noise, and public utilities. 1990

Federal Projects

San Diego Bay Deepening Project EIS/EIR, San Diego, California. Project Manager. Responsible for the preparation of a Draft EIS/EIR for the USACE (NEPA Lead Agency) and San Diego Unified Port District (CEQA Lead Agency) involving dredging of the main navigation channel in San Diego Bay to provide appropriate depth for safe passage and home porting of U.S. Navy Aircraft Carriers. Key environmental issues included marine biological resources, water quality impacts from accumulation of toxic materials in benthic layers, public safety concerns associated with dredging of buried ordnance, air quality emissions from dredging equipment, and conflicts with major underwater utilities. Participated in project scoping and mitigation discussions between the USACE, Port District, Environmental Health Coalition, and other environmental organizations. 1999

Cellular Communications Facility EA, Camp Pendleton, California. *MCB Camp Pendleton.* Project Manager. Responsible for the preparation of a Final EA for the relocation of a cellular communications facility within MCB Camp Pendleton, from Las Pulgas Road near I-5 to the U.S. Border Patrol Station near the Orange County line. Key environmental issues included visual quality, interference with airborne communications and military training, and human exposure to electromagnetic and radio frequency waves. Also coordinated with the California Coastal Commission to obtain a Coastal Consistency Determination of No Significant Effect. 1994

Educational/Institutional Projects

Facilities Master Plan PEIR, San Marcos Campus, California. *Palomar Community College District.* Project Manager. Responsible for the preparation of a Final PEIR for this Master Plan, certified by the PCCD Governing Board, that addresses a projected increase in student enrollment through 2022 at the San Marcos campus, and corresponding construction and remodeling of new and existing buildings and physical education facilities, as well as circulation, parking, and infrastructure improvements. Key environmental issues included air quality/global climate change, cultural resources, biological resources, geology/soils, water quality, and traffic. Assisted the PCCD in developing the following design guidelines that were incorporated into the PEIR to reduce environmental impacts associated with campus build-out: Energy Efficiency and Sustainability, Transportation Demand Management, and Water Conservation. Also provided oversight for the preparation of the following key technical studies in support of the PEIR: Water Availability Analysis, Drainage Master Plan, and Stormwater Management Plan. *The Palomar*

College San Marcos Campus Facilities Master Plan PEIR was awarded the "Outstanding Environmental Analysis Document" from the San Diego Chapter of AEP in 2010. 2009

Industrial Technology Center and Howard Brubeck Theater Projects MND, San Marcos Campus, California. *Palomar Community College District.* Project Manager. Responsible for the preparation of a Final MND, certified by the PCCD Governing Board, addressing two projects: (1) renovated facilities for the cabinetry/furniture and water/wastewater technology programs within the existing Trades/Industry building, and two new adjacent buildings for the ITC containing automotive, diesel, auto body, and welding programs; and (2) two renovated facilities within the existing HBT building and a new adjacent building for use by the Performing Arts Department and community groups. Key environmental issues included noise impacts to nearby residences and storm water runoff pollution. 2009

2007 Long Range Development Plan (LRDP) Update PEIR, Irvine, California. *University of California, Irvine (UCI).* Project Manager. Responsible for the preparation of a Final PEIR, certified by the UC Regents, for this LRDP Update which addresses a projected increase in student enrollment and corresponding facilities expansion through 2025 - 2026. The PEIR also included a project-level analysis of a faculty and staff affordable housing project in the University Hills community in the south portion of the campus. Key environmental issues included aesthetics, air quality, biological resources, hazardous materials, and traffic. 2008

Planning Projects

Vista General Plan Community Identity and Scenic Roadways Element EIR, Vista, California. *City of Vista.* Project Manager. Responsible for the preparation of a Final EIR, certified by the Vista City Council, for this new General Plan Element establishing community-based, thematic design standards for non-motorized uses and beautification improvements along designated scenic routes in the City. Key environmental issues included land use compatibility/community character, visual quality/aesthetics, and consistency with other general plan elements and applicable regional planning documents. 1998

General Plan Update PEIR, Imperial, California. *Imperial County.* Project Manager. Responsible for the preparation of a Final PEIR, certified by the Imperial County Board of Supervisors, for the County's General Plan Update. This project involved a programmatic evaluation of the full range of environmental impacts associated with the updated General Plan build-out. Prepared the biological resources, hydrology/flooding, and geology/soils sections of the Final PEIR. 1993

Chula Vista Bayfront General Plan Amendment EIR, Chula Vista, California. *City of Chula Vista.* Project Manager. Responsible for the preparation of a Final EIR for the City of Chula Vista Redevelopment Department, and certified by the Chula Vista City Council, involving the amendment of several outdated General Plan land use designations for the Bayfront properties in order to align them with visitor-serving commercial uses approved for the area in the City's adopted Bayfront Master Plan. Key environmental issues included visual quality (primarily views of proposed high-rise buildings), biological resources in the adjacent Chula Vista Nature Preserve, land use/community character, traffic, and noise. 1998

"GateWay of the Americas" Specific Plan EIR, Calexico, California. *Imperial County.* Project Manager. Responsible for the preparation of a final EIR, certified by the Imperial County Board of Supervisors, for a new 1,700-acre industrial and commercial Specific Plan area at the Calexico Port of Entry. This project also involved construction of a new segment of State Route 7. Key environmental issues included: agricultural conversion,

impacts to burrowing owl, public safety risks associated with open irrigation canals and the onsite Imperial Fault, and traffic/circulation. 1997

Residential Projects

Robinson Ranch EIR, Yucaipa, California. *City of Yucaipa.* Project Manager. Responsible for the preparation of a Draft EIR for multi- and single-family residences, general commercial uses, a business park, and 49-acres of natural open space within 522 acres located within the recently adopted Freeway Corridor Specific Plan (FCSP) along Interstate 10 in the City of Yucaipa. The project included: affordable housing in each of three proposed Planning Areas, and requires a general plan amendment and rezone. Key environmental issues included agricultural conversion, biological resources, cultural resources, FCSP consistency, hydrology/flooding, landform alteration, traffic/circulation, and water availability. 2010

Remington Hills Tentative Map EIR, Otay Mesa, California. *City of San Diego.* Project Manager. Responsible for the preparation of a Final EIR, certified by the San Diego City Council, for a 253-unit residential subdivision near the I-805 and S.R. 905 interchange. Key environmental issues included cultural resources, traffic/circulation, and landform alteration. 1995

Live Oak Ranch Tentative Map EIR, Valley Center, California. *San Diego County.* Project Manager. Responsible for the preparation of a Final EIR, certified by the San Diego County Board of Supervisors, for a 150-lot estate residential subdivision on 310 acres within the Valley Center Community Plan area in the unincorporated County. Prepared the agricultural conversion, community character/land use compatibility, and traffic/circulation sections of the Final EIR. 1994

Hidden Meadows Tentative Map EIR, Escondido, California. *San Diego County.* Project Manager. Responsible for the preparation of a Final Supplemental (SEIR), certified by the San Diego County Board of Supervisors, for a 20-lot estate residential subdivision and ridgeline development located north of the City of Escondido in the unincorporated County. Key environmental issues included biological resources and visual quality. 1992

Hillsdale Ranch Tentative Map EIR, San Diego, California. *San Diego County.* Project Manager. Responsible for the preparation of a draft EIR for a residential development located north of Valhalla High School in the Valle de Oro Community Plan area in the unincorporated County. Key environmental issues included: an onsite relocation, renovation and preservation plan for the historic Julia Liffreing House, dedication of a satellite elementary school onsite, visual quality, and community character. 1997

Commercial Projects

Pacific Coast Plaza EIR, Oceanside, California. *City of Oceanside.* Project Manager. Responsible for the preparation of a Final EIR, certified by the Oceanside City Council, for a 40-acre regional shopping center anchored by a Wal-Mart Store and located at the I-5 and S.R. 78 interchange north of Buena Vista Lagoon. The project also involved improvements to an S.R. 78 interchange and partial funding of the City's Multiple Habitat Conservation Plan. Key environmental issues included: visual quality/aesthetics, land use/community character, traffic/circulation, noise, and impacts to water quality and biological resources. 1996

Rancho San Diego Town Center SEIR, Rancho San Diego, California. *San Diego County.* Project Manager. Responsible for the preparation of a Final SEIR, certified by the San Diego County Board of Supervisors, for a 60-

acre regional shopping and entertainment center anchored by a Wal-Mart Store and located within the Valle de Oro Community Plan area in the unincorporated County. The project also involved improvements to S.R. 94. Key environmental issues included: biological resources in the adjacent Sweetwater River, an archaeological preservation plan for the Village of Jamacha, a comprehensive water quality protection program for the downstream Sweetwater Reservoir, traffic/circulation, and visual quality. 1996

Mixed-Use Projects

Rancho San Diego Specific Plan SEIRs, Rancho San Diego, California. *San Diego County.* Project Manager. Responsible for several Final SEIRs, certified by the San Diego County Board of Supervisors, for a number of developments within the 3,000-acre Rancho San Diego Specific Plan area centered around the Sweetwater River within the unincorporated County. These projects consisted of several residential subdivisions and recreational, commercial, and industrial uses. Key environmental issues included sensitive biological resources within the San Diego National Wildlife Refuge, including the endangered least Bell's vireo and the threatened coastal California gnatcatcher. 1994

East County Square Specific Plan EIRs, Lakeside, California. *San Diego County.* Project Manager. Responsible for the preparation of a Final PEIR and a Final SEIR, certified by the San Diego County Board of Supervisors, for development of a 377-acre commercial (anchored by a Wal-Mart Store) and residential specific plan area located south of I-8 within the community of Lakeside in the unincorporated County. The project included establishment of the County's first privately initiated habitat mitigation bank which encompassed the only avian corridor crossing for the California gnatcatcher across I-8. The project also involved improvements to the I-8 interchange which required a federal "Reasonable and Feasible" acoustical analysis due to potential noise impacts to adjacent residences. 1995

Zone 20 Specific Plan EIR, Carlsbad, California. *City of Carlsbad.* Project Manager. Responsible for the preparation of a Final EIR, certified by the Carlsbad City Council, for development of a 647-acre residential community located east of I-5 and south of Palomar Airport Road in the City of Carlsbad. The project also involved construction of a school, park, major roads, and regional open space and trail system. Key environmental issues included agricultural conversion, pesticide residues, and traffic/circulation. 1993

Previous Work History

PBS&J/Atkins, Project Manager, 2005 - 2010, CEQA/NEPA compliance.

City of San Diego Water Department, Senior Planner, 1999-2005, CEQA/NEPA compliance.

KEA Environmental, Project Manager, 1996-1999, CEQA/NEPA compliance.

Lettieri-McIntyre and Associates, Inc., Project Manager, 1992-1996, CEQA/NEPA compliance.

Brian Mooney & Associates, Inc., Project Manager, 1989-1992, CEQA/NEPA compliance.

Nasland Engineering, Environmental Planner, 1987-1989, CEQA/NEPA compliance.

Continuing Education/Training

Riparian Management Workshop, Pala Indian Reservation, 2014.

Habitat Site Restoration and Mitigation Implementation, Northwest Environmental Training Center Webinar, 2014.

Intro to Plant Identification, California Native Plant Society, Pala Indian Reservation, 2014.

California Tiger Salamander Training, California Department of Fish & Wildlife Conservation Lecture Series Webinar, 2014.

Arroyo Toad Workshop, The Wildlife Society, Mission Trails Regional Park Training Center, 2014.

California Gnatcatcher Training, Flite-Tours, Inc., Various locations in San Diego, 2013-2014.

Chaparral Vegetation, UC Riverside Extension, Various locations in Riverside County, 2013.

Fall, Winter, Spring Bird Identification, UC Riverside Extension, Various locations in Southern California, 2012-2013.

Beginning/Advanced Bird Identification, San Diego Audubon Society, Various locations in San Diego, 2011-2012.

Rapid Assessment Vegetation Mapping, California Native Plant Society, Redlands, California, 2011.

Specialized Experience

Certified EIR Preparer, County of San Diego

References

Dena Whittington, Assistant Superintendent of Business Services, San Ysidro School District, 619-428-3004 ext. 3004 dwhittington@sysd.k12.ca.us

Richard Quasarano, Environmental Specialist - Land Planning, San Diego Gas & Electric, 858-654-8211 rquasarano@semprautilities.com

Paul Metcalf, President, Metcalf Development & Consulting, Inc., 619-733-6056 pmdevcon@sbcglobal.net

Computer Skills

Adobe Acrobat Professional

Deltek Vision

Microsoft Excel

Microsoft Outlook

Microsoft Power Point

Microsoft Project

Microsoft Word

Oracle Application - Project Manager

Primavera Project Scheduling

Michael Baker

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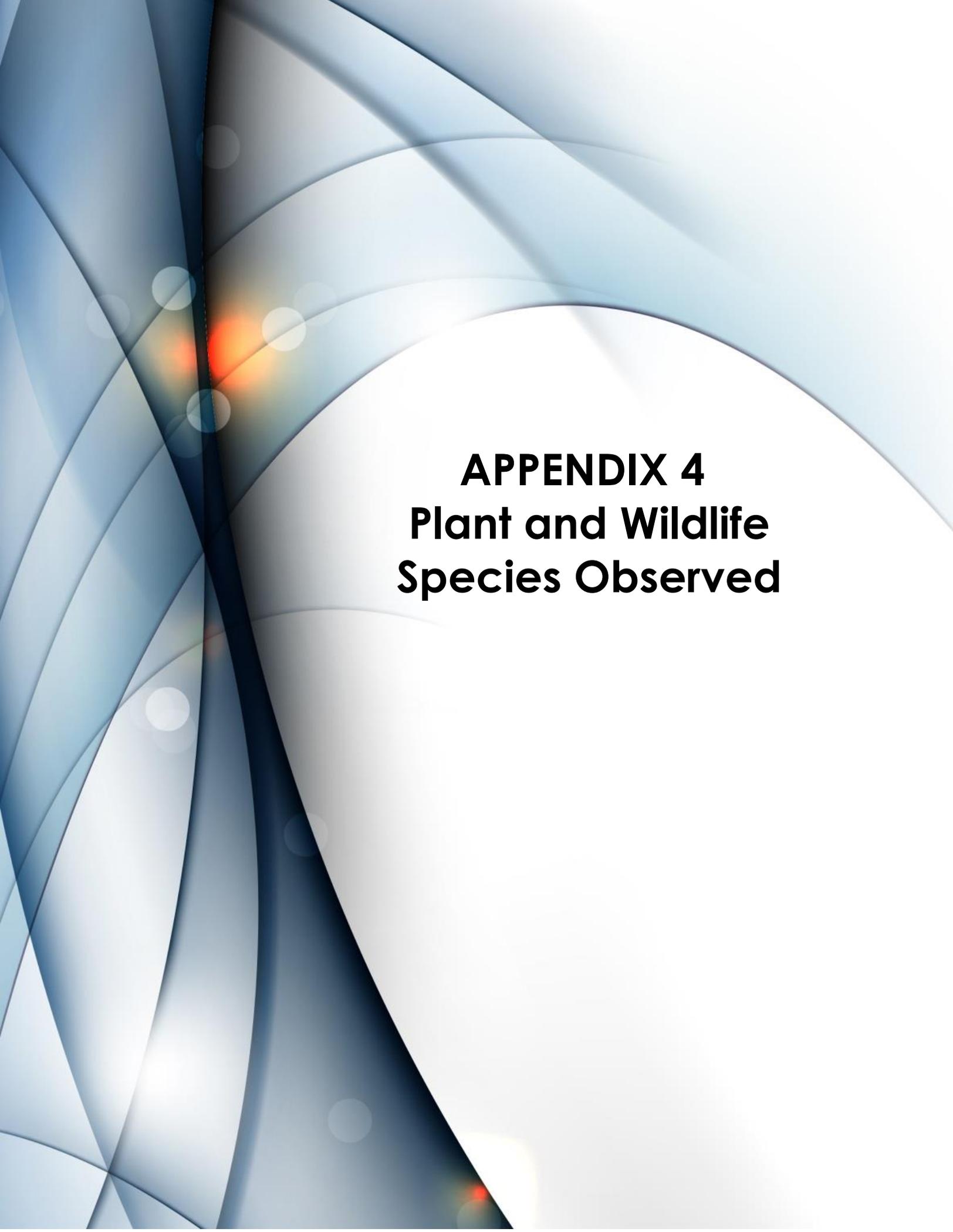
Association of Environmental Professionals (AEP), San Diego, Member

California Native Plant Society (CNPS), San Diego, Programs Chair

California Society for Ecological Restoration, Member

National Audubon Society, San Diego, Member

The Wildlife Society (TWS), Southern California, Member, MEM-195252



APPENDIX 4
Plant and Wildlife
Species Observed

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Plant Species Observed

Scientific Name	Common Name	Habitat Observed Within ¹
Acanthaceae <i>Sambucus nigra</i> ssp. <i>caerulea</i> (<i>S. mexicana</i>)	Acanthus Family blue elderberry	CLOW, SAWRF
Aizoaceae * <i>Carpobrotus</i> spp.	Fig-Marigold Family iceplant	DIS, EUC, SAWRF
Anacardiaceae <i>Malosma laurina</i> * <i>Schinus molle</i> <i>Toxicodendron diversilobum</i>	Sumac Family laurel sumac Peruvian pepper poison oak	CLOW DIS CLOW
Araliaceae * <i>Hedera</i> spp.	Ivy Family ivy	DIS, EUC, SAWRF
Areaceae * <i>Washingtonia robusta</i>	Palm Family Mexican fan palm	EUC, SAWRF
Asteraceae <i>Ambrosia psilostachya</i> <i>Artemisia californica</i> <i>Artemisia douglasiana</i> <i>Artemisia palmeri</i> <i>Baccharis salicifolia</i> ssp. <i>salicifolia</i> <i>Baccharis sarothroides</i> <i>Baccharis pilularis</i> * <i>Cirsium vulgare</i> <i>Heterotheca grandiflora</i> <i>Isocoma mensiezii</i> * <i>Picris echioides</i>	Sunflower Family western ragweed California sagebrush mugwort Palmer's sagewort mule fat broom baccharis coyote brush bull thistle telegraph weed coast goldenbush bristly ox-tongue	EUC, SAWRF CLOW SAWRF SAWRF EUC, SAWRF DIS, NNG DIS, NNG NNG NNG EUC, SAWRF EUC, SAWRF
Brassicaceae * <i>Brassica nigra</i> * <i>Hirschfeldia incana</i> * <i>Raphanus sativus</i>	Mustard Family black mustard short-pod mustard wild radish	DIS, EUC, NNG DIS, EUC, NNG DIS, EUC, NNG, SAWRF
Cactaceae <i>Opuntia littoralis</i>	Cactus Family coast prickly pear	CLOW, NNG
Chenopodiaceae * <i>Salsola australis</i>	Goosefoot Family Russian thistle	DIS, EUC, NNG
Cupressaceae <i>Juncus</i> spp.	Cyprus Family rush	EUC, SAWRF

Scientific Name	Common Name	Habitat Observed Within ¹
Ericaceae <i>Rhododendron occidentale</i>	Heath Family western azalea	EUC
Fabaceae <i>Acemispom glaber</i> var. <i>glaber</i>	Pea Family deer weed	CLOW, NNG, SAWRF
Fagaceae <i>Quercus agrifolia</i> <i>Quercus berberidifolia</i>	Oak Family coast live oak scrub oak	CLOW, DIS, SAWRF CLOW
Grossulariaceae <i>Ribes</i> spp.	Gooseberry Family gooseberry	CLOW
Lamiaceae <i>Lamium amplexicaule</i>	Mint Family henbit	DIS, NNG
Myrtaceae * <i>Eucalyptus</i> spp.	Myrtle Family gum tree	EUC, SAWRF
Oleaceae * <i>Olea europaea</i>	Olive Family olive	DIS
Onagraceae <i>Oenothera elata</i> ssp. <i>hirsutissima</i>	Evening-Primrose Family marsh evening primrose	SAWRF
Poaceae * <i>Arundo donax</i> * <i>Avena</i> spp. * <i>Bromus</i> spp. * <i>Cortaderia jubata</i> * <i>Festuca myuros</i> * <i>Festuca perennis</i> * <i>Polypogon monspeliensis</i>	Grass Family giant reed wild oats bromes pampas grass rat-tail fescue rye grass rabbitfoot grass	EUC, SAWRF DIS, NNG DIS, NNG DIS, NNG DIS, NNG DIS, NNG DIS, NNG
Polygonaceae <i>Eriogonum fasciculatum</i> * <i>Rumex conglomeratus</i>	Buckwheat Family California buckwheat curly dock	CLOW EUC, SAWRF
Primulaceae * <i>Anagallis arvensis</i>	Primrose Family scarlet pimpernel	DIS, EUC, NNG
Rosaceae <i>Heteromeles arbutifolia</i>	Rose Family toyon	CLOW
Salicaceae <i>Populus fremontii</i> <i>Salix gooddingii</i> <i>Salix lasiolepis</i>	Willow Family western cottonwood black willow arroyo willow	SAWRF SAWRF SAWRF

Scientific Name	Common Name	Habitat Observed Within ¹
Solanaceae <i>*Nicotiana glauca</i>	Nightshade Family tree tobacco	DIS, EUC, SAWRF
Tamaricaceae <i>*Tamarix parviflora</i>	Salt Cedar Family tamarisk	EUC, SAWRF
Tropaeolaceae <i>Urtica dioica ssp. holosericea</i>	Nasturtium Family stinging nettle	EUC, SAWRF
Vitaceae <i>Vitis girdiana</i>	Grape Family wild grape	SAWRF

¹ Habitat codes are as follows:

CLOW	=	Coast Live Oak Woodland
DIS	=	Disturbed Habitat
EUC	=	Eucalyptus Woodland
NNG	=	Nonnative Grassland
SAWRF	=	Southern Arroyo Willow Riparian Forest

*Non-native or ornamental species

Animal Species Observed

Scientific Name	Common Name	Habitat Observed Within ¹
BIRDS		
Accipiters <i>Buteo jamaicaicensis</i>	Hawks red-tailed hawk	overhead
Columbidae <i>Zenaida macroura</i>	Pigeons and Doves mourning dove	DIS
Corvidae <i>Corvus brachyrhynchos</i> <i>Corvus corax</i>	Jays and Crows American crow common raven	NNG DIS
Emberizidae <i>Melospiza melodia</i> <i>Pipilo crissalis</i> <i>Pipilo maculatus</i>	Sparrows, Old World Buntings and Relatives song sparrow California towhee spotted towhee	SAWRF EUC SAWRF
Empidonax <i>Empidonax traillii</i>	Flycatchers willow flycatcher	SAWRF

Scientific Name	Common Name	Habitat Observed Within ¹
Fringillidae	Finches	
<i>Carpodacus mexicanus</i>	house finch	EUC
<i>Carduelis psaltria</i>	lesser goldfinch	SAWRF
Icteridae	Blackbirds and Orioles	
<i>Molothrus ater</i>	brown-headed cowbird	DIS, EUC
Mimidae	Mockingbirds	
<i>Mimus polyglottos</i>	northern mockingbird	EUC
Parulidae	Warblers	
<i>Dendroica coronata</i>	yellow-rumped warbler	EUC
<i>Dendroica petechia</i>	yellow warbler	NNG, SAWRF
Passeridae	Old World Sparrows	
<i>Passer domesticus</i>	house sparrow	DIS, SAWRF
Podicipedidae	Grebes	
<i>Aechmophorus occidentalis</i>	western grebe	overhead
Sturnidae	Starlings	
<i>Sturnus vulgaris</i>	European starling	DIS, NNG
Trochilidae	Hummingbirds	
<i>Calypte anna</i>	Anna's hummingbird	EUC
Tyrannidae	Flycatchers and Kingbirds	
<i>Sayornis nigricans</i>	black phoebe	NNG
<i>Sayornis saya</i>	Say's phoebe	NNG
<i>Tyrannus vociferans</i>	Cassin's kingbird	NNG
MAMMALS		
Leporidae	Hares and Rabbits	
<i>Sylvilagus audubonii</i>	desert cottontail	NNG

¹ Habitat codes are as follows:

CLOW	=	Coast Live Oak Woodland
DIS	=	Disturbed Habitat
EUC	=	Eucalyptus Woodland
NNG	=	Nonnative Grassland
SAWRF	=	Southern Arroyo Willow Riparian Forest



APPENDIX 5
Potentially Occurring
Species

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Scientific Name Common Name	Status			Habitat Description	Considered in Impact Analysis	Rationale
	Federal	State	CNPS			
<i>Acanthomintha ilicifolia</i> San Diego thorn-mint	~	~	1B.1	Vernal pools or clay soil openings in chaparral, coastal scrub, valley and foothill grassland; 10-935 m	No	No potential to occur as the site does not support vernal pools; closest known location is 2.0 miles southwest of the site (Exhibit 6)
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	~	~	N/A	Coastal sage scrub, sparse mixed chaparral	No	No potential to occur as the site does not support these habitats; closest known location is 2.25 miles northwest of the site (Exhibit 6)
<i>Antrozous pallidus</i> pallid bat	~	SSC		Arid or semi-arid habitats; prefer rocky, outcrop areas where they commonly roost in rock crevices, caves, and mine tunnels but they also roost in the attics of houses, under the eaves of barns, behind signs, in hollow trees, and in abandoned adobe buildings	No	Moderate potential to occur as the site does support some of these habitats, trees and rock outcrops; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> Del Mar manzanita	FE	~	1B.1	Chaparral (maritime, sandy); 0-365 m	No	No potential to occur as the site does not support this habitat; closest known location is 2.0 miles west of the site (Exhibit 6)
<i>Artemisia palmeri</i> Palmer's (San Diego) sagewort	~	~	4.2	Coastal sage scrub, chaparral, oak woodland, riparian woodland, 15-915 m	Yes	Observed in SAWRF within survey area
<i>Aspidoscelis hyperythra</i> orangethroat whiptail	~	SSC	N/A	Washes, sandy areas in coastal sage scrub, chaparral, valley foothill hardwood habitats	No	Low potential to occur as the site does not support these habitats but does support these soil conditions; closest known location is 1.75 miles southwest of the site (Exhibit 6)
<i>Aspidoscelis tigris stejnegeri</i> coastal whiptail	~	~	N/A	Firm, sandy, rocky soils in deserts, woodlands, riparian habitats with sparse vegetation and open areas	No	High potential to occur as the site does support these habitats and soil conditions; closest known location is 1.0 mile north of the site (Exhibit 6)

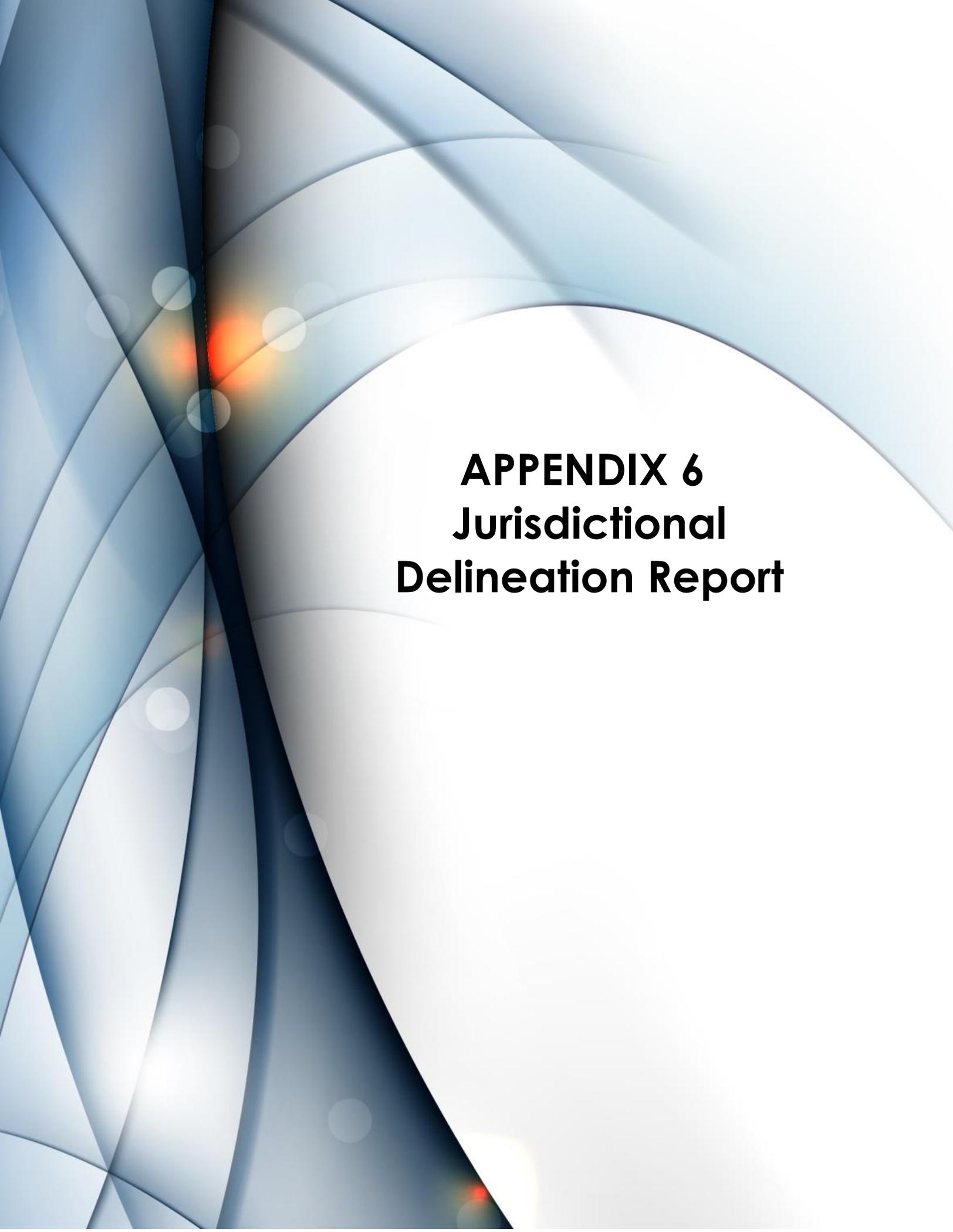
Scientific Name Common Name	Status			Habitat Description	Considered in Impact Analysis	Rationale
	Federal	State	CNPS			
<i>Athene cunicularia</i> western burrowing owl	~	SSC	N/A	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation	No	Moderate potential to occur as the site does support some of these habitats and conditions; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Baccharis vanessae</i> Encinitas baccharis	FT	CE	1B.1	Chaparral and cismontane woodland (maritime, sandy); 60-720 m	No	No potential to occur as the site does not support this habitat; closest known location is 2.0 miles southwest of the site (Exhibit 6)
<i>Buteo swainsoni</i> Swainson's hawk	~	CT	N/A	Perches atop fence posts and overhead sprinkler systems; forages in open habitats, pastures and agricultural fields; breeds in prairies and dry grasslands; nests in scattered stands of trees near agricultural fields and grasslands	No	High potential to occur as the site does support these habitats and conditions; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Campylorhynchus brunneicapillus sandiegensis</i> coastal cactus wren	~	SSC	N/A	Tall <i>Opuntia</i> cactus in coastal sage scrub for nesting and roosting	No	Low potential to occur as the site does not support this habitat but does support cactus; closest known location is 3.0 miles southeast of the site (Exhibit 6)
<i>Ceanothus verrucosus</i> wart-stemmed ceanothus	~	~	2B.2	Chaparral; 1-380 m	No	No potential to occur as the site does not support this habitat; closest known location is 1.0 mile west of the site (Exhibit 6)
<i>Centromadia parryi</i> ssp. <i>australis</i> southern tarplant	~	~	1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools; 0-480 m	No	No potential to occur as the site does not support these habitats and vernal pools; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Chaetodipus californicus femoralis</i> Dulzura pocket mouse	~	SSC	N/A	Grass/chaparral edges in chaparral, coastal sage scrub, grasslands	No	Moderate potential to occur as the site does support some of these habitats; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Chaetodipus fallax fallax</i> northwestern San Diego pocket mouse	~	SSC	N/A	Sandy, herbaceous areas with rocks or coarse gravel in chaparral, coastal sage scrub, grasslands	No	Moderate potential to occur as the site does support some of these habitats and rock outcrops; closest known location is 2.6 miles southwest of the site (Exhibit 6)

Scientific Name Common Name	Status			Habitat Description	Considered in Impact Analysis	Rationale
	Federal	State	CNPS			
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> summer holly	~	~	1B.2	Chaparral and cismontane woodland; 30-790 m		No potential to occur as the site does not support these habitats; closest known location is 2.0 miles southwest of the site (Exhibit 6)
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	FE	CE	N/A	Variety of habitats, but prefers pine forests and arid desert scrub habitats; roosts in rocky areas where caves or abandoned mine tunnels are available, and may also occasionally inhabit old buildings	No	No potential to occur as the site does not support these habitats and conditions; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Eumops perotis californicus</i> western mastiff bat	~	SSC	N/A	Semi-arid to arid habitats including coastal and desert scrublands, annual and perennial grasslands, conifer and deciduous woodlands, and palm oases; extensive open areas with potential roost sites having vertical faces below which there is an unobstructed drop of several meters allowing sufficient momentum to take flight, such as crevices in rock outcroppings and cliff faces, tunnels and tall buildings, and will scramble up a post or tree in order to achieve a minimum height of 5 m for launching into flight	No	No potential to occur as the site does not support these habitats and conditions; closest known location is 3.0 miles south of the site (Exhibit 6)
<i>Lasiurus cinereus</i> hoary bat	~	SSC	N/A	Prefers woodland, mainly coniferous forests, but hunts over open areas or lakes; roosts solitarily in dense vegetation and in trees at the edges of clearings, rather than in colonies in caves, but will also use tree cavities, rock crevices and even squirrel burrows	No	Moderate potential to occur as the site does support some of these habitats, trees and rock outcrops; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Lasiurus xanthinus</i> western yellow bat	~	SSC	N/A	Prefers water features (e.g. stock tanks, ponds, streams, and rivers) in open grassy areas and scrub, as well as canyon and riparian situations; roost in trees, hanging from the underside of a leaf and in the skirt of dead fronds in both native and non-native palm trees	No	Moderate potential to occur as the site does support some of these habitats, trees and palms; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	~	~	4.3	Chaparral and coastal sage scrub; 1-885 m	No	No potential to occur as the site does not support these habitats; closest known location is 2.0 miles south of the site (Exhibit 6)

Scientific Name Common Name	Status			Habitat Description	Considered in Impact Analysis	Rationale
	Federal	State	CNPS			
<i>Leptosyne maritima</i> sea dahlia	~	~	2B.2	Coastal bluff scrub and coastal sage scrub; 5-150 meters	No	No potential to occur as the site does not support these habitats; closest known location is 2.0 miles southwest of the site (Exhibit 6)
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	~	SSC	N/A	Open shrub	No	High potential to occur as the site does support these habitats and conditions; closest known location is 0.75 mile west of the site (Exhibit 6)
<i>Monardella hypoleuca</i> ssp. <i>lanata</i> felt-leaved monardella	~	~	1B.2	Chaparral and cismontane woodland; 300-1575 m	No	No potential to occur as the site does not support these habitats; closest known location is 3.0 miles southwest of the site (Exhibit 6)
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	~	SSC	N/A	Rock outcrops, rocky cliffs/slopes, dense canopies in coastal sage scrub	No	Low to Moderate potential to occur as the site does not support this habitat but does support rock outcrops; closest known location is 2.6 miles southwest of the site (Exhibit 6)
<i>Nyctinomops femorosacca</i> pocketed free-tailed bat	~	SSC	N/A	Prefers desert shrub and pine-oak forests; roosts primarily in crevices of rugged cliffs, high rocky outcrops and slopes but may also roost in buildings, caves, and under roof tiles	No	No potential to occur as the site does not support these conditions; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Nyctinomops macrotis</i> big free-tailed bat	~	SSC	N/A	Preferred roosting sites are crevices and cracks in high canyon walls, but these bats also occur in buildings	No	No potential to occur as the site does not support these conditions; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Phrynosoma blainvillii</i> coast horned lizard	~	SSC	N/A	Wide variety of habitats, open areas for sunning, scattered low bushes for cover, patches of loose soil for burial, abundant supply of ants and other insects	No	High potential to occur as the site does support these habitats and conditions; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Plegadis chihi</i> white-faced ibis	~	SSC	N/A	Breeds colonially in marshes, usually nesting in bushes or low trees	No	No potential to occur as the site does not support this habitat; closest known location is 2.25 miles east of the site (Exhibit 6)

Scientific Name Common Name	Status			Habitat Description	Considered in Impact Analysis	Rationale
	Federal	State	CNPS			
<i>Plestiodon skiltonianus interparietalis</i> Coronado Island skink	~	SSC	N/A	Dry hillsides, rocky areas near streams in grassland, chaparral, pinion-juniper woodland, juniper-sage woodland, pine-oak woodland, pine forests	No	High potential to occur as the site does support some of these habitats and conditions; closest known location is 2.0 miles southeast of the site (Exhibit 6)
<i>Polioptila californica californica</i> coastal California gnatcatcher	FT	SSC	N/A	Obligate permanent resident of coastal sage scrub below 762 m	No	No potential to occur as the site does not support this habitat; closest known location is 0.75 mile west of the site (Exhibit 6)
<i>Salvadora hexalepis virgultea</i> coast patch-nosed snake	~	SSC	N/A	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains	No	Moderate potential to occur as the site does support some of these habitats and conditions; closest known location is 2.0 miles southwest of the site (Exhibit 6)
<i>Spea hammondi</i> western spadefoot	~	SSC	N/A	Prefers open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, and alkali flats; rain pools which do not contain bullfrogs, fish, or crayfish are necessary for breeding	No	No potential to occur as the site does not support these habitats and soil conditions; closest known location is 1.0 mile north of the site (Exhibit 6)
<i>Taxidea taxus</i> American badger	~	~	N/A	Open shrub, forest, herbaceous habitats; preys on burrowing rodents	No	High potential to occur as the site does support these habitats and conditions; closest known location is 2.25 miles east of the site (Exhibit 6)
<i>Vireo bellii pusillus</i> least Bell's vireo	FE	SE, SSC	N/A	Summer resident in dense riparian thickets near watercourses	No	Low potential to occur within SAWRF due to surrounding disturbance by eucalyptus woodland, small habitat size, and fragmentation from high quality habitat in Escondido Creek to the west; closest known location is 2.25 miles east of the site (Exhibit 6)

Federal Status	State Status	CNPS Rare Plant Rank
FE = Listed as endangered under the federal Endangered Species Act (FESA)	CE = Listed as endangered under the California Endangered Species Act (CESA)	1A = Plants presumed extirpated in California and either rare or extinct elsewhere. 1B = Plant species that are rare, threatened, or endangered in California and elsewhere.
FT = Listed as threatened under the FESA	CE = Listed as threatened under the CESA	2A = Plants presumed extirpated in California, but more common elsewhere. 2B = Plant species that are rare, threatened, or endangered in California, but more common elsewhere.
	CR = Species identified as rare by CDFG	3 = Plant species about which more information is needed (Review List), and which lack the necessary information for assignment to one of the other ranks or for rejection.
	SSC = Species of Special Concern	4 = Plant species of limited distribution (Watch List) or infrequent throughout a broader area in California, and which are uncommon enough that their status should be monitored regularly. Threat Ranks 0.1 -Seriously threatened in California (high degree/immediacy of threat) 0.2 -Fairly threatened in California (moderate degree/immediacy of threat) 0.3 -Not very threatened in California (low degree/immediacy of threats or no current threats known)



APPENDIX 6
Jurisdictional
Delineation Report

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WASTEWATER COLLECTIONS YARD RELOCATION PROJECT

Escondido, California

DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Prepared For:

**City of Escondido
Utilities Division**

1521 South Hale Avenue
Escondido, California 92029
Contact: Paul Keck, P.E., QSD/QSP
(760) 839-6299

Prepared By:

RBF Consulting, a Michael Baker International Company

14725 Alton Parkway
Irvine, California 92618
Contact: Lauren Mack
(949) 330-4297

January 2015

JN 143544

WASTEWATER COLLECTIONS YARD RELOCATION PROJECT

ESCONDIDO, CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional "waters of the U.S." (including wetlands) and "waters of the State" determination for the above-referenced project.



Lauren Mack
Regulatory Specialist
Natural Resources/Regulatory Permitting



Richard Beck, PWS, CEP, CPESC
Vice President
Natural Resources/Regulatory Permitting

January 2015

Executive Summary

Introduction: At the request of the City of Escondido, Utilities Division, RBF Consulting, a Michael Baker International Company (RBF) has prepared this Delineation of Jurisdictional Waters for the Wastewater Collections Yard Relocation Project (project), located in the City of Escondido, County of San Diego, State of California.

Methods: This delineation documents the regulatory authority of the U.S. Army Corps of Engineers (Corps), San Diego Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife South Coast Region (CDFW) pursuant to Section 401 and 404 of the Federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act, and Section 1600 of the California Fish and Game Code¹ respectively. The field work for this delineation was conducted on November 18, 2014.

Results: State and federal jurisdictional areas were identified within the project site. Two (2) unnamed drainage features were observed within the boundaries of the project site. Placement of fill and/or alteration within these jurisdictional areas is subject to Corps, Regional Board, and CDFW jurisdiction and approval. Table ES-1 identifies the total jurisdiction on site of each regulatory agency.

TABLE ES-1: Jurisdictional Summary

Jurisdictional Feature	Corps (non-wetland)	Regional Board	CDFW	
	Acreage (Linear Feet)	Acreage (Linear Feet)	Streambed Acreage (Linear Feet)	Associated Riparian
Drainage A	0.05 (273)	0.05 (273)	0.13 (273)	-
Drainage B	0.21 (534)	0.21 (534)	0.21 (534)	0.44
Total	0.26 (807)	0.26 (807)	0.34 (807)	0.44

Conclusion: Based on a detailed review of current site conditions and the proposed project, the project applicant must obtain the following regulatory approvals prior to construction activities within the identified jurisdictional areas: a Corps CWA Section 404 permit; Regional Board CWA Section 401 Water Quality Certification; and CDFW Section 1602 Streambed Alteration Agreement (SAA)². Refer to Sections 1-6 for a complete discussion.

¹ The project area was surveyed pursuant to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (Corps 2008); the Practices for Documenting Jurisdiction under Section 404 of the CWA Regional Guidance Letter (Corps 2007); Minimum Standards for Acceptance of Preliminary Wetland Delineations (Corps 2001); and the Field Guide to Lake and Streambed Alteration Agreements Section 1600-1607 (CDFW 1994).

² Other approvals (in-lieu of an SAA) may be acquired from the CDFW based on a formally-submitted notification package.

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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CWA	Clean Water Act
DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
FAC	Facultative Vegetation
FACU	Facultative Upland Vegetation
FACW	Facultative Wetland Vegetation
GPS	Ground Positioning System
IP	Individual Permit
LF	Linear Feet
MSL	Mean Sea Level
NWP	Nationwide Permit
OBL	Obligate Wetland Vegetation
OHWM	Ordinary High Water Mark
RBF	RBF Consulting, A Michael Baker International Company
RPW	Relatively Permanent Waters
SAA	Streambed Alteration Agreement
SBBM	San Bernardino Base and Meridian
SWANCC	Solid Waste Agency of Northern Cook County
TNW	Traditional Navigable Water
UPL	Obligate Upland Vegetation
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WoUS	Waters of the United States

Section 1 Introduction and Purpose

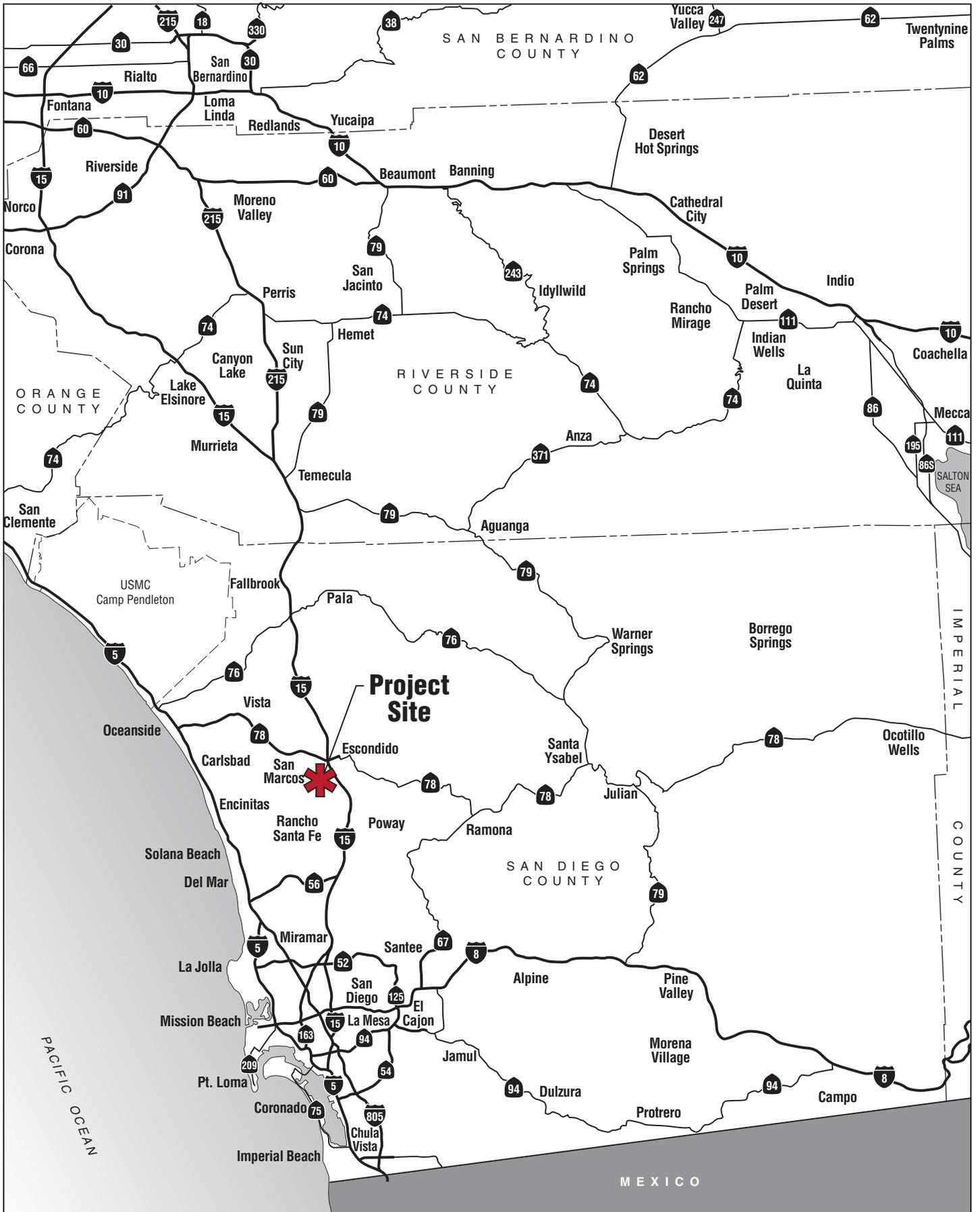
This delineation has been prepared for the City of Escondido, Utilities Division in order to document the jurisdictional authority of the U.S. Army Corps of Engineers' (Corps), San Diego Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife South Coast Region (CDFW) pursuant to Section 401 and 404 of the Federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act, and Section 1600 of the Fish and Game Code. The field work for this delineation was conducted on November 18, 2014.

The Wastewater Collections Yard Relocation Project, hereinafter referred to as the project site, is generally located south of California State Route 78 (SR-78) west of Interstate 15 (I-15), and north of Lake Hodges in the southwest portion of the City of Escondido, County of San Diego, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the *Escondido, California* United States Geological Survey (USGS) 7.5-minute quadrangle within Section 29, Township 12 South, Range 2 West (Exhibit 2, *Site Vicinity*). More specifically, the project site is located at the intersection of Avenida Del Diablo and Citracado Parkway, south of Pacific Oaks Place, west of Hale Avenue, and east of Harmony Grove Road (Exhibit 3, *Project Site*).

This delineation has been designed to explain the methodology undertaken by RBF Consulting, a Michael Baker International Company (RBF), to document the jurisdictional authority of the regulatory agencies, and support the findings made by RBF within the boundaries of the project site. This report presents our best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional boundaries.

1.1 PROJECT SITE BACKGROUND

The approximately 11.23-acre project site consists primarily of vacant land with the exception of developed areas in association with the adjacent water treatment facility within the northern portion, improved roads (Avenida Del Diablo and Citracado Parkway) in the southern portion, an improved access road and a small residential structure located on the eastern portion of the project site. Elevations within the project site range from 610 feet above mean sea level (msl) in the northern corner of the site to 670 feet above msl along the northwestern boundary. Topography of the project site is relatively flat within the eastern and southern portions sloping up gradient toward a small hill along the northwestern boundary. Surrounding areas consist of vacant, undeveloped land, commercial, municipal and single-family residential uses.

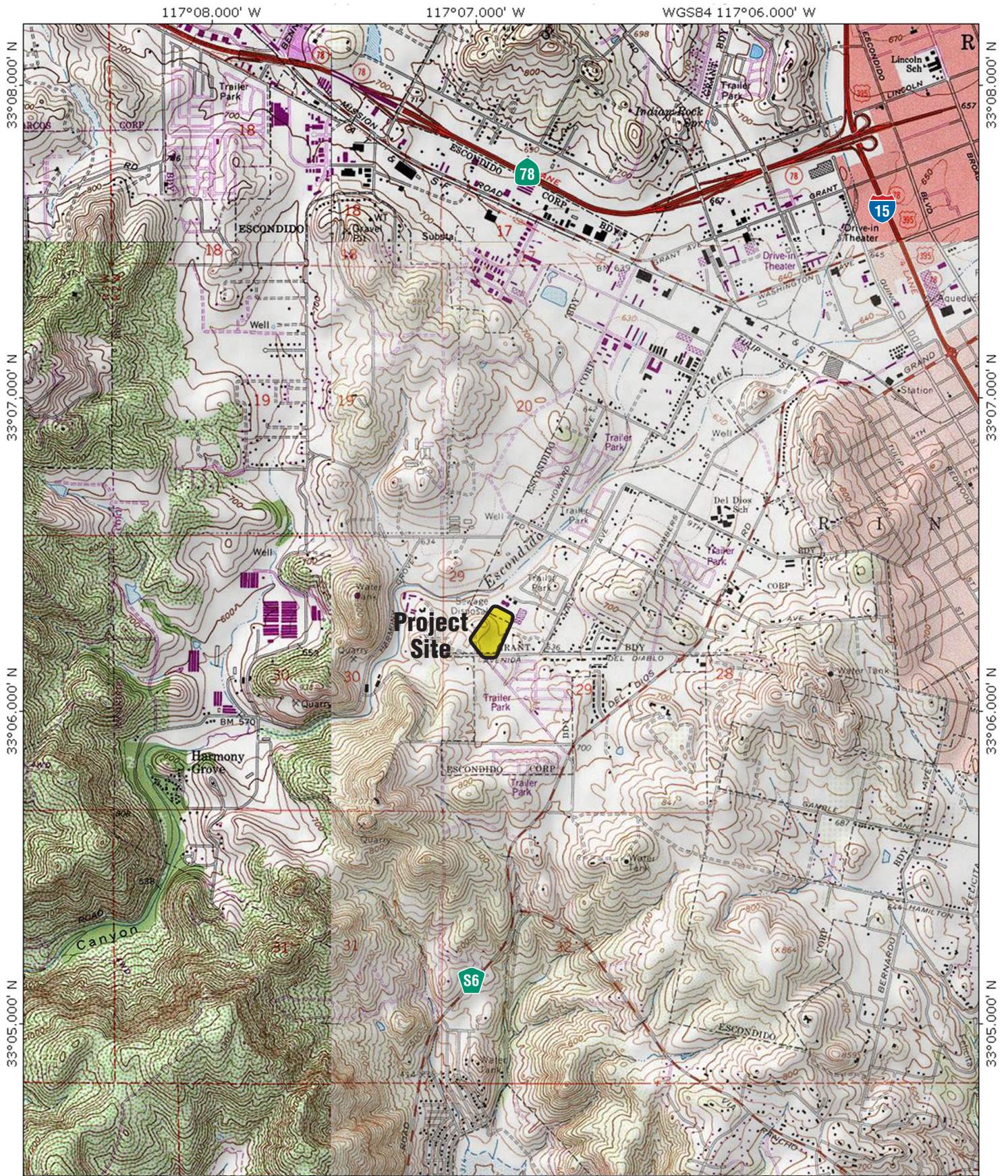


WASTEWATER COLLECTIONS YARD RELOCATION PROJECT
 JURISDICTIONAL DELINEATION

Regional Vicinity

Exhibit 1



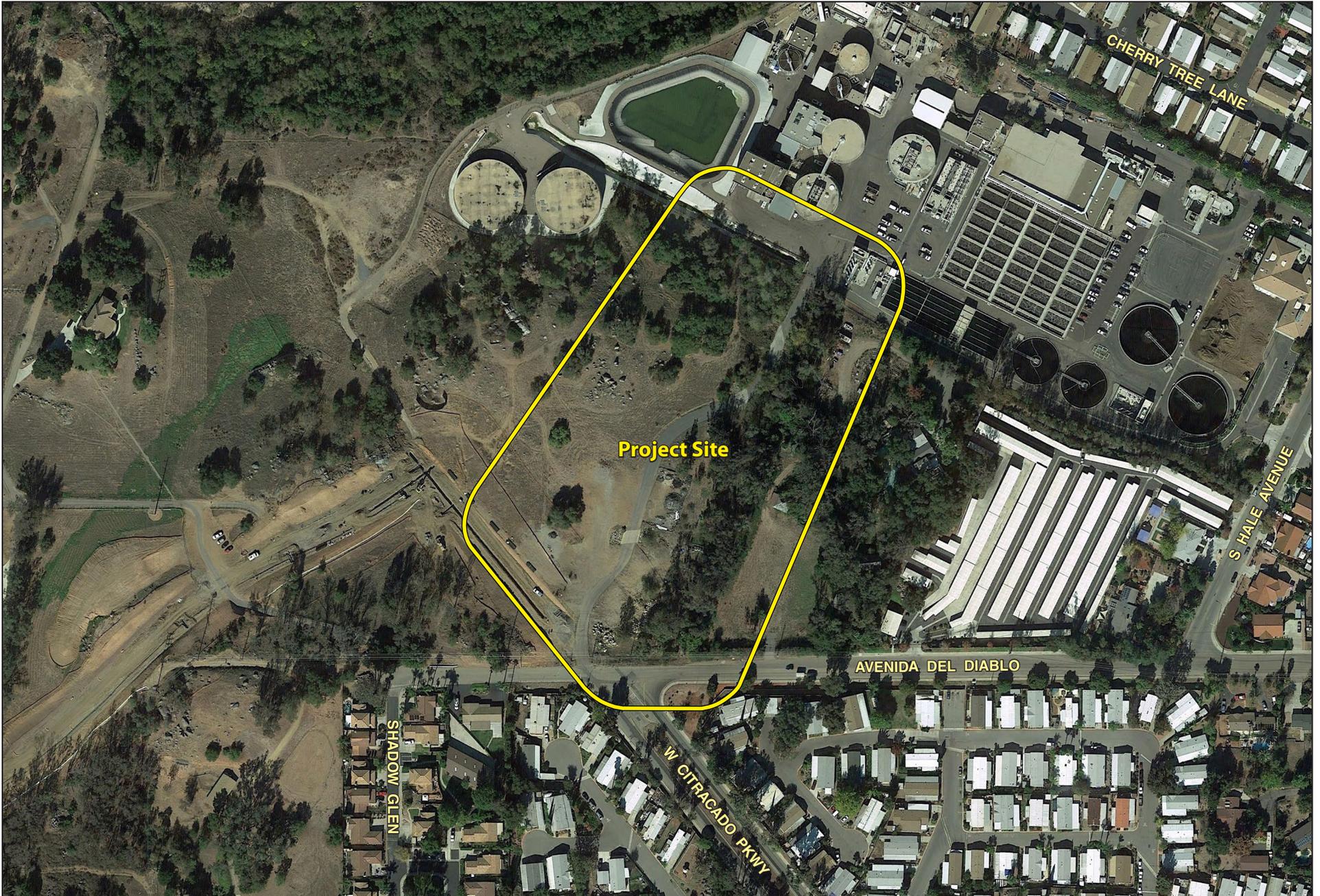


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 Project Site

WASTEWATER COLLECTIONS YARD RELOCATION PROJECT
 JURISDICTIONAL DELINEATION





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JURISDICTIONAL DELINEATION

Project Site

Exhibit 3



1.2 PROJECT DESCRIPTION

The proposed project is anticipated to be construction activities associated with the relocation of the wastewater collections yard for the Hale Avenue Resource Recovery Facility, wastewater treatment facility. No specific project description was available at the time of this delineation.

Section 2 Regulations and Methodology

2.1 SUMMARY OF REGULATIONS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. CDFW regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. For a detailed summary of regulations, refer to Appendix A.

2.1.1 FEDERAL JURISDICTIONAL WATERS

Generally, the Corps and Environmental Protection Agency (EPA) will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

The Corps and EPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. It should be noted a significant nexus includes consideration of hydrologic and ecologic factors.

The Corps and EPA generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

2.1.2 STATE JURISDICTIONAL AREAS

2.1.2.1 California Regional Water Quality Control Boards

The California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters.

2.1.2.2 California Department of Fish and Wildlife Jurisdiction

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state. The Fish and Wildlife's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

2.2 METHODOLOGY

RBF conducted a site reconnaissance to determine jurisdictional "waters of the United States" and "waters of the State" (including potential wetlands and vernal pools), located within the boundaries of the project site. The literature review and site visit are utilized to define:

- the Corps' ordinary high water mark (OHWM) and any three (3) parameter wetlands on-site. The actual presence or absence of wetlands on-site was verified through the determination of the presence of hydrologic conditions, hydrophytic vegetation, and hydric soils pursuant to the September 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*.
- the CDFW's jurisdiction being identified via the top of bank of the on-site streambed or to the outer drip line of riparian vegetation (if present) pursuant to the 1994 CDFW *Field Guide to Lake and Streambed Alteration Agreements*; and,
- in cases where isolated and/or Rapanos conditions are present, the delineation would identify areas under the jurisdiction of the Regional Board pursuant to the California Porter-Cologne Water Quality Act.

Analysis presented in this document is supported by field surveys and verification of current conditions conducted on November 18, 2014. While in the field, jurisdictional areas were recorded onto a base map at a scale of 1" = 100' using the topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin 62 Global Positioning System (GPS) Map62 in order to record and identify specific widths for the ordinary high water marks (OHWM), soil pit locations, picture point locations, and pertinent jurisdictional features. This data was then transferred via USB port as a .shp file and added to the project's jurisdictional map. The jurisdictional map was prepared in ESRI ArcInfo Version 10. For a detailed summary of methodology, refer to Appendix B.

Section 3 Literature Review

Review of relevant literature and materials often aids in preliminary identification areas that may fall under an agency's jurisdiction. A summary of RBF's literature review is provided below (refer to Section 7.0 for a complete list of references used during the course of this delineation). In addition, refer to Appendix C for further documentation.

3.1 WATERSHED REVIEW

The project site is located within the San Luis Rey – Escondido Watershed (HUC 18070303). The San Luis Rey River Watershed is located in northern San Diego County. It is bordered to the north by the Santa Margarita River Watershed and the Carlsbad and San Dieguito River Watersheds to the south. The San Luis Rey River originates in the Palomar and Hot Springs Mountains, both over 6,000 feet above mean sea level, as well as several other mountain ranges along the western border of the Anza Borrego Desert Park. The river extends over 55 miles across northern San Diego County forming a watershed with an area of approximately 360,000 acres or 562 square miles. The river ultimately discharges to the Pacific Ocean in the City of Oceanside.

Population centers include the City of Oceanside and the unincorporated communities of Fallbrook, Bonsall, and Valley Center. Although the watershed is the third largest of the watersheds in the San Diego region, its population is one of the smallest. Land uses within the watershed include residential, commercial/industrial, recreational, transportation, open space/parks, agriculture, and vacant, undeveloped land. Over 54% of the land in the watershed is vacant or undeveloped. Other predominant land uses in the watershed include residential (15%) and agriculture (14%). Principal agricultural uses include cattle grazing, nurseries, citrus groves, and avocado groves.

3.2 LOCAL CLIMATE

The San Luis Rey – Escondido Watershed, like the entire region, is characterized by a year-round Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Climatological data obtained from nearby weather stations indicates the annual precipitation averages 14.93 inches per year. Almost all of the precipitation in the form of rain occurs in the months between October and April, with very little rainfall occurring between the months of May and September. The wettest month was February, with a monthly average total precipitation of 3.46 inches. The climatological cycle of the region results in higher surface water flows in the spring and early summer and lower flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years. Similarly, during the dry season, infrequent summer storms can cause torrential floods in local streams.

3.3 USGS TOPOGRAPHIC QUADRANGLE

The project site is located within Section 29, Township 12 South, Range 2 West, San Bernardino Meridian of the USGS *Escondido, California* quadrangle. On-site topography ranges from approximately 620 to 660 feet above msl. According to the topographic map the majority of the project site consists of vacant land and is located in the vicinity of sewage disposal land uses. Avenida Del Diablo and Citracado Parkway intersect along the southern boundary of the project site. Historically, one unimproved dirt road entered the project site along the western boundary in a south to north direction. A portion of a structure is located in the northeastern portion of the project site. Multiple structures are located to the north and northeast of the project site. Escondido Creek is located to the north and west. Additional surrounding uses include vacant land, residential uses and orchards as indicated by the topographic map.

3.4 AERIAL PHOTOGRAPH

Prior to the field visit, RBF reviewed a current aerial photograph dated November 13, 2013 from Google Earth Imaging for the project site. Aerial photographs can be useful during the delineation process, as the photographs often indicate drainages and vegetation (i.e., riparian vegetation) present within the boundaries of the project site (if any).

According to the aerial photograph the project site appears to consist primarily of vacant, undeveloped land and water treatment facilities. Riparian vegetation species appear to be located along the western portions of the project site transitioning into upland species within the central and eastern portions. Bare ground is visible within the central and western portions of the project site. A water treatment facility, including associated roads and structures, are located within the northeastern portion of the subject site. One (1) residential structure appears to be located along the eastern boundary of the subject site. A storage area for the water treatment facility consisting of miscellaneous equipment, piping, rock rip-rap, and soil piles is located with the central portion of the subject site. Avenida Del Diablo and Citracado Parkway intersect within the southern portion of the project site. One (1) improved access road traverses the site in a southwest/northeast direction providing access to the water treatment facility from Avenida Del Diablo. One (1) unimproved road enters the eastern boundary of the project site providing access to the on-site residential structure. A trapezoidal concrete drainage is located in the northeast portion of the project site which conveys flows off-site to the northwest. Surrounding land uses include municipal uses to the north and northeast (water treatment facility), single-family residential to the south, commercial uses to the east, and vacant, undeveloped land to the west. No structures and/or additional improvements are located within the boundaries of the project site.

3.5 SOIL SURVEY

On-site and adjoining soils were researched prior to the field visits using the U.S. Department of Agriculture, Soil Conservation Service, Soil Survey for the San Diego County Area, California and the Natural Resources Conservation Service, Custom Soil Resource Report for the San Diego County Area, California (refer to Exhibit 4, *Soils Map*). The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color). The following soil series have been reported on-site:

Placentia sandy loam, 2 to 9 percent slopes (PeC)

These soils are moderately well drained soils formed in granitic alluvium. These soils are found on old alluvial fans with an elevation range from 200 to 1,800 feet. Mean annual precipitation ranges from 14 to 18 inches. The mean annual air temperature ranges from 60 to 62 degrees F with a frost-free period of 260 to 320 days. In a representative profile 0 to 13 inches is sandy loam, and 13 to 53 inches is sandy clay and sandy clay loam. From 0 to 4 inches, the soils are sandy loam, dark brown (10YR 4/3) when moist; weak, medium, granular structure. From 4 to 13 inches soils are sandy loam, dark grayish brown (10YR 4/2) when moist; massive structure. From 13 to 21 inches soils are light sandy clay, dark brown (10YR 3/2) when moist; strong, coarse, prismatic structure. The available water capacity is 3.0 to 4.0 inches. Runoff is slow to medium and the erosion hazard is slight to moderate. Soils in this complex are used for tomatoes, flowers, dry farmed crops, and range.

12/2/2014, JN, M:\Mdata\143544\GIS\SWD\Soils Map, Exhibit 4.mxd



Legend

- Project Site
- PeC Placentia Sandy Loam, 2 to 9 Percent Slopes
- VaB Visalia Sandy Loam, 2 to 5 Percent Slopes
- VsD2 Vista Coarse Sandy Loam, 9 to 15 Percent Slopes, Eroded
- VvD Vista Rocky Coarse Sandy Loam, 5 to 15 Percent Slopes



Visalia sandy loam, 2 to 5 percent slopes (VaB)

These soils are moderately well drained, very deep sandy loams derived from granitic alluvium. These soils are found on alluvial fans and flood plains, with an elevation range from 400 to 2,000 feet. Mean annual precipitation is 14 to 18 inches. The mean annual air temperature ranges from 60 to 62 degrees F with a frost-free period of 260 to 320 days. In a representative profile 0 to 12 inches is sandy loam, and 12 to 60 inches is sandy loam and loam. From 0 to 12 inches, the soils are sandy loam, very dark brown (10YR 2/2) when moist; weak, fine, granular structure. From 12 to 40 inches soils are sandy loam, dark brown (10YR 3/3) when moist; massive structure. From 40 to 60 inches soils are loam, dark brown (10YR 3/3) when moist; massive structure. The available water capacity is 8.0 to 9.5 inches. Runoff is very slow and the erosion hazard is slight. Soils in this complex are used for truck crops, avocados, citrus, flowers, pasture, and nursery stock.

Vista coarse sandy loam, 9 to 15 percent slopes, eroded (VsD2)

These soils are well drained, moderately deep and deep coarse sandy loams derived from granodiorite or quartz diorite. These soils are found on uplands with an elevation range from 300 to 2,500 feet. Mean annual precipitation is 14 to 18 inches. The mean annual air temperature ranges from 60 to 62 degrees F with a frost-free period of 260 to 320 days. In a representative profile 0 to 19 inches is sandy loam, and 19 to 35 inches is coarse sandy loam. From 0 to 3 inches, the soils are coarse sandy loam, dark brown (10YR 3/3) when moist; moderate, fine and medium, crumb structure. From 3 to 9 inches soils are coarse sandy loam, dark brown (10YR 3/3) when moist; weak, fine and medium, granular structure. From 9 to 19 inches soils are coarse sandy loam, dark brown (10YR 3/3) when moist; weak, fine and medium, granular structure. From 19 to 28 inches soils are sandy loam, dark brown (10YR 3/3) when moist; massive structure. The available water capacity is 3.5 to 5.5 inches. Runoff is medium and the erosion hazard is moderate. Soils in this complex are used for citrus orchards, avocados, truck crops, and range.

Vista rocky coarse sandy loam, 5 to 15 percent slopes (VvD)

These soils are well drained, moderately deep and deep coarse sandy loams derived from granodiorite or quartz diorite. These soils are found on uplands with an elevation range from 300 to 2,500 feet. Mean annual precipitation is 14 to 18 inches. The mean annual air temperature ranges from 60 to 62 degrees F with a frost-free period of 260 to 320 days. In a representative profile 0 to 19 inches is sandy loam, and 19 to 35 inches is coarse sandy loam. From 0 to 3 inches, the soils are coarse sandy loam, dark brown (10YR 3/3) when moist; moderate, fine and medium, crumb structure. From 3 to 9 inches soils are coarse sandy loam, dark brown (10YR 3/3) when moist; weak, fine and medium, granular structure. From 9 to 19 inches soils are coarse sandy loam, dark brown (10YR 3/3) when moist; weak, fine and medium, granular structure. From 19 to 28 inches soils are sandy loam, dark brown (10YR 3/3) when moist; massive structure. The available water capacity is 2.0 to 4.5 inches.

Runoff is slow to medium and the erosion hazard is slight to moderate. Soils in this complex are used for avocados, citrus, and range.

3.6 HYDRIC SOILS LIST OF CALIFORNIA

RBF reviewed the Hydric Soils List of California, provided by the Natural Resources Conservation Service, in an effort to verify whether or not on-site soils are considered to be hydric. It should be noted that lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for on-site investigations. According to the soils list, the on-site soils Placentia sandy loam, 2 to 9 percent slopes, and Visalia sandy loam, 2 to 5 percent slopes are listed as hydric.

3.7 NATIONAL WETLANDS INVENTORY

RBF reviewed the U.S. Fish and Wildlife Service's National Wetland Inventory maps. Wetland features were noted within the study area and consisted of *freshwater pond wetland* and *riverine wetland*. The freshwater pond wetlands are reported to be of the palustrine system, unconsolidated bottom class, artificially flooded, and excavated (PUBKx). The riverine wetlands are reported to be of the riverine system, intermittent subsystem, streambed class, seasonally flooded, and excavated (R4SBCx) (refer to Appendix C, *Documentation*).

3.8 FLOOD ZONE

RBF searched the Federal Emergency Management Agency website for flood data for the project site. Based on the Flood Insurance Rate Map No. 06073C1076G the project site is located within Zone X, and is not within the 100-year flood zone (refer to Appendix C).

Section 4 Site Conditions

RBF regulatory specialist Lauren Mack and regulatory analyst Tim Tidwell visited the project site from approximately 11:30 a.m. to 1:30 p.m. on November 18, 2014 to verify existing conditions and document potential jurisdictional areas. Temperatures during the site visit were in the mid 70's (degrees Fahrenheit) with clear skies and calm wind conditions. RBF was unable to access the northeastern portion of the project site due to gated private property limitations. No other limitations were encountered during the site visit. Refer to Exhibits 5a and 5b, *Site Photographs* for representative photographs taken throughout the project site.

4.1 NON-WETLAND FEATURES

4.1.1 Drainage A

Drainage A is an unnamed, unvegetated drainage feature located on the northern portion of the project site. Drainage A enters the site within an underground concrete box culvert opening into a concrete trapezoidal channel. Drainage A generally runs in a southeast to northwest direction along the northeastern boundary of the project site, conveying flows off-site toward Escondido Creek. Surface water was present within the channel of Drainage A and flows are assumed to originate as runoff from the surrounding developed areas. Drainage A, within the boundaries of the project site, measures approximately 273 feet in length. The Corps OHWM and CDFW jurisdictional streambed measured approximately 8 feet and 20 feet in width respectively. Evidence of an OHWM included flowing surface water. No plant species were observed in association with Drainage A.

4.1.2 Drainage B

Drainage B is an unnamed, ephemeral drainage feature located within the northeastern portion of the project site. Drainage B enters the project site along the eastern boundary as an earthen feature and traverses the site in a southeast to northwest direction. In the eastern portion of the project site, flows within Drainage B are conveyed through a 4-foot wide corrugated metal pipe, over an on-site improved access road via a constructed low-water Arizona crossing, and eventually discharged into Drainage A within the northern portion of the project site. Substrate within Drainage B is generally composed of fine sediment with the exception of rock rip-rap and concrete near the access road. No surface water was present within Drainage B; however, the following indicators of surface hydrology were observed: scour and drift/debris. Drainage B measures approximately 534 feet in length within project boundaries. The Corps OHWM and CDFW jurisdictional streambed measured approximately 4 to 38 feet in width. Drainage B is comprised of portions of vegetated and unvegetated streambed sections. Plant species occurring within and adjacent



View of surface water within Drainage A looking east in the northern portion of the project site.



View looking northwest of the confluence of Drainage A and Drainage B in the northern portion of the project site.



View looking southeast of 4-foot metal pipe within Drainage B along the eastern boundary of the project site.



View looking southeast of Drainage B and associated riparian vegetation in the eastern portion of the project site.

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Site Photographs



View looking southeast of Drainage B, associated riparian vegetation and a low water crossing in the northeastern portion of the project site.



View of drift within Drainage B in the northeastern portion of the project site.



View looking northwest of drift within Drainage B in the northern portion of the project site.



View looking north of Drainage B and associated riparian vegetation in the northern portion of the project site.

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Site Photographs

to Drainage B include arroyo willow (*Salix lasiolepis*), Fremont cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), coyotebrush (*Baccharis pilularis*), mugwort (*Artemisia douglasiana*), mulefat (*Baccharis salicifolia*), ragweed (*Ambrosia psilostachya*), goldenrod (*Euthamia occidentalis*), California buckwheat (*Eriogonum fasciculatum*), Mexican fan palm (*Washingtonia robusta*), eucalyptus (*Eucalyptus globulus*), tamarisk (*Tamarix* ssp.), golden rain tree (*Koelreuteria bipinnata*), Brazilian peppertree (*Schinus terebinthifolius*), and umbrella plant (*Cyperus involucratus*).

4.2 WETLAND FEATURES

No wetland features were noted onsite during the site visit. Due to the presence of hydrophytic vegetation and wetland hydrology (drift deposits, drainage patterns), one soil pit (SP-1) was dug to assess for the presence of hydric soils. SP-1 was dug adjacent to the western bank of Drainage B due to the presence of arroyo willow (FACW), Fremont cottonwood (FAC), and mulefat (FAC). SP-1 was dug to a depth of approximately 15 inches before encountering a subsurface restrictive layer. Soil within surface layer (0-3 inches) of SP-1 consisted of sandy clay loam and displayed a matrix color of 10YR 2.5/2 with no visible redox features. Soil within the subsurface layer (3-15 inches) consisted of sandy loam and displayed a matrix color of 10YR 3/2 with no visible redox features. Soils within SP-1 did not exhibit hydric soil characteristics. Therefore, no state or federal wetland features were identified in association with Drainage B or within the project site boundaries. Please refer to Appendix D, *Wetland Data Form*.

Section 5 Findings

This delineation has been prepared for the City of Escondido, Utilities Division in order to document the jurisdictional authority of the Corps, Regional Board, and CDFW within the boundaries of the project site. This report presents RBF’s best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies.

5.1 U.S. ARMY CORPS OF ENGINEERS DETERMINATION

5.1.1 Waters of the United States Determination

Evidence of an OHWM was noted within the project site, which totaled 0.26-acre. The on-site drainage features convey flows into Escondido Creek and thus exhibit a hydrological connection to downstream waters (Pacific Ocean). Therefore, all onsite drainage features are considered “Waters of the United States,” which falls within Corps’ jurisdiction. At the time of this delineation, specific project design plans were not available. Refer to Table 1 for a summary of the jurisdictional areas on-site, and Exhibit 6, *Jurisdictional Map*, for an illustration of on-site jurisdictional areas.

TABLE 1 – Jurisdictional Areas

Jurisdictional Feature	Corps (non-wetland)	Regional Board	CDFW	
	Acreage (Linear Feet)	Acreage (Linear Feet)	Streambed Acreage (Linear Feet)	Associated Riparian
Drainage A	0.05 (273)	0.05 (273)	0.13 (273)	-
Drainage B	0.21 (534)	0.21 (534)	0.21 (534)	0.44
Total	0.26 (807)	0.26 (807)	0.34 (807)	0.44

5.1.2 Wetland Determination

A Corps jurisdictional wetland must exhibit three (3) parameters including the presence of hydrologic conditions, hydrophytic vegetation, and hydric soils. At no point during the November 18, 2014 site visit were three (3) parameter wetlands identified within the survey area.

5.2 REGIONAL WATER QUALITY CONTROL BOARD DETERMINATION

No isolated or Rapanos conditions were observed within the boundaries of the project site; therefore, the Regional Board follows that of Corps jurisdiction.



Legend

- Soil Pit
- Photo Location
- Project Site
- 0.44 ac. CDFW Associated Riparian
- 0.08 ac. CDFW Jurisdictional Streambed
- 0.26 ac. Corps Waters of the U.S. / CDFW Jurisdictional Streambed

WASTEWATER COLLECTIONS YARD RELOCATION PROJECT
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS
Jurisdictional Map

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5.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DETERMINATION

The on-site drainage features exhibited a bed and bank and qualify as CDFW jurisdictional streambed. Based on the results of the field investigation, approximately 0.34-acre of CDFW jurisdictional streambed occurs within the project site. In addition, approximately 0.44-acre of associated CDFW jurisdictional riparian vegetation is located within the project site.

Section 6 Regulatory Approval Process

The following is a summary of the various permits, agreements, and certifications required before construction activities take place within the jurisdictional areas.

6.1 U.S. ARMY CORPS OF ENGINEERS

The Corps regulates discharges of dredged or fill materials into WoUS and wetlands pursuant to Section 404 of the CWA. At the time of this delineation, approximately 0.26-acres of Corps jurisdictional areas are located within the boundaries of the project site. CWA Section 404 authorization will be required from the Corps Regulatory Branch-Los Angeles District Office for any impacts occurring within Corps delineated jurisdictional areas.

6.2 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board regulates discharges to surface waters under the Federal CWA and the California Porter-Cologne Water Quality Control Act. At the time of this delineation, approximately 0.26-acres of Regional Board jurisdictional areas are located within the boundaries of the project site. It will be necessary for the project applicant to obtain CWA Section 401 Water Quality Certification from the San Diego Regional Board for any impacts occurring within Regional Board jurisdictional areas.

6.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW regulates alterations to streambed under the California Fish and Game Code. At the time of this delineation, approximately 0.34-acres of CDFW jurisdictional streambed and an additional 0.44-acres of CDFW associated riparian vegetation are located within the boundaries of the project site. It will be necessary for the project applicant to acquire a Section 1602 Streambed Alteration Agreement from the CDFW for any impacts occurring within CDFW jurisdictional areas.

6.4 GLOBAL RECOMMENDATIONS

It is highly recommended that the delineation be forwarded to each of the regulatory agencies for their concurrence. The concurrence/receipt would be valid up to five years and would solidify findings noted within this report.

Section 7 References

The following resources were utilized during preparation of this Delineation of State and Federal Jurisdictional Waters:

California Department of Fish and Game, *Field Guide to Lake and Streambed Alteration Agreements Section 1600-1607 California Fish and Game Code*, January 1994

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U.S. Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey*.
(<http://websoilsurvey.nrcs.usda.gov/app/>)

U.S. Department of Homeland Security, Federal Emergency Management Agency, National Flood Insurance Program, *Flood Insurance Rate No. 06073C1076G*, revised May 16, 2012, accessed December 2, 2014

U.S. Geological Survey, 7.5 Minute Series Topographic Quadrangle, *Escondido, California*, 1968, Photorevised 1975

Appendix A Regulations

U.S. Army Corps of Engineers

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of “waters of the U.S.”, including wetlands, pursuant to Section 404 of the CWA. The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States (WoUS) under Section 404 of the CWA. The Corps and EPA define “fill material” to include any “material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States.” Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and “materials used to create any structure or infrastructure in the waters of the United States.” The term WoUS is defined as follows:³

- (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 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 recreational or other purposes; or (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign 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 WoUS under the definition;
- (5) tributaries of waters identified in paragraphs (1)-(4) mentioned above;
- (6) the territorial seas; and,
- (7) wetlands adjacent to the waters identified in paragraphs (1)-(6) mentioned above.

Wetlands, a subset of jurisdictional waters, are jointly defined by the Corps and EPA as *“those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of*

³ CWA regulations 33 CFR §328.3(a).

*vegetation typically adapted for life in saturated soil conditions.*⁴ Wetlands generally include swamps, marshes, bogs, and similar areas.

The Corps' regulatory program continues to evolve due to court rulings associated with litigation. Sections 2.1.1 and 2.1.2, below, briefly discuss court cases that have impacted the Corps' jurisdiction over the past decade. The Corps does not regulate isolated waters and wetlands with no interstate or foreign commerce connection.⁵

The Corps will assert jurisdiction over traditional navigable waters (TNWs) and all wetlands adjacent to TNWs, as well as non-navigable tributaries of TNWs that are relatively permanent waters (RPW) (i.e., the tributaries typically flow year-round or have a continuous flow at least seasonally) and wetlands with a continuous surface connection that directly abut such tributaries; however, the agencies will evaluate jurisdiction over the following features based on a fact-specific analysis to determine whether they have a significant nexus with a TNW.⁶

- Non-navigable tributaries that are not relatively permanent (do not flow typically year-round or have a continuous flow at least seasonally);
- Wetlands adjacent to such tributaries; and,
- Wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary.

A case-by-case "significant nexus" analysis is conducted to determine whether the waters noted above and their adjacent wetlands are jurisdictional. A "significant nexus" may be found where waters, including adjacent wetlands, affect the chemical, physical, or biological integrity of downstream TNWs. The significant nexus analysis also includes consideration of hydrologic and ecologic factors relative to TNWs.

REGIONAL WATER QUALITY CONTROL BOARD

Applicants for a federal license or permit for activities which may discharge to waters of the United States must seek Water Quality Certification from the state or Indian tribe with jurisdiction.⁷ Such Certification is based on a finding that the discharge will meet water quality standards and other applicable requirements. In California, Regional Boards issue or deny Certification for discharges within their geographical jurisdiction. Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which are defined as numeric and narrative objectives in each Regional

⁴ CWA regulations 33 CFR §328.3(b).

⁵ *Solid Waste Agency of Northern Cook County v. United States Corps of Engineers* (SWANCC)

⁶ *Rapanos v. United States* 547 U.S. 715 (2006) (Rapanos)

⁷ Title 33, United States Code, Section 1341; Clean Water Act Section.

Board's Basin Plan. Where applicable, the State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board's jurisdiction extends to all waters of the State (includes SWANCC and Rapanos conditions) and to all WoUS, including wetlands.

Additionally, the California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC and Rapanos regulatory environment, with respect to the state's authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

California Fish and Game Code Sections 1600-1616 establish a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW 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, streams, and lakes in the state. The Fish and Wildlife's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and

watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

Any of the below criteria could be applicable in determining what constitutes a stream depending on the potential for the proposed activity to adversely affect fish and other stream-dependent wildlife resources.

- (1) The term “stream” can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams based on United States Geological Survey (USGS) maps, and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.
- (2) Biological components of a stream may include aquatic and riparian vegetation, along with all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system.
- (3) As a physical system, a stream not only includes water (at least on an intermittent or ephemeral basis), but also a bed or channel, a bank and/or levee, in-stream features such as logs or snags, and various flood plains depending on the return frequency of the flood event being considered (i.e., 10, 50, or 100 years, etc.).
- (4) The lateral extent of a stream can be measured in several ways depending on a particular situation and the type of fish or wildlife resource at risk. The following criteria are presented in order from the most inclusive to the least inclusive:
 - (a) The flood plain of a stream can be the broadest measurement of a stream’s lateral extent depending on the return frequency of the flood event used. For most flood control purposes, the 100-year flood plain exists for many streams. However, the 100-year flood plain may include significant amounts of upland or urban habitat and therefore may not be appropriate in many cases.
 - (b) The outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats and is therefore a reasonable and identifiable boundary for the lateral extent of a stream. In most cases, the use of this criterion should result in protecting the fish and wildlife resources at risk.
 - (c) Most streams have a natural bank which confines flows to the bed or channel except during flooding. In some instances, particularly on smaller streams or dry washes with little or no riparian habitat, the bank should be used to mark the lateral extent of a stream.

- (d) A levee or other artificial stream bank would also be used to mark the lateral extent of a stream. However, in many instances, there can be extensive areas of valuable riparian habitat located behind a levee.

Appendix B Methodology

WATERS OF THE U.S. AND STATE WATERS

The limits of the Corps' jurisdiction in non-tidal waters extend to the OHWM, which is defined 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 soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*”⁸ An OHWM can be determined by the observation of a natural line impressed on the bank; shelving; changes in the character of the 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; and/or change in plant community. The Regional Board shares the Corps' jurisdictional methodology, unless SWANCC or Rapanos conditions are present. In the latter case, the Regional Board considers such drainages to be jurisdictional waters of the State. The CDFW's jurisdiction extends to the top of bank of the stream/channel or to the limit (outer dripline) of the adjacent riparian vegetation.

WETLANDS

For this project location, Corps jurisdictional wetlands are delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps, 2008). This document is one of a series of Regional Supplements to the 1987 Corps Wetland Delineation Manual (Corps Manual). According to the Corps Manual, identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. In order to be considered a wetland, an area must exhibit at least minimal characteristics within these three (3) parameters. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. In the field, vegetation, soils, and evidence of hydrology have been examined using the methodology listed below and documented on Corps' wetland data sheets, when applicable. It should be noted that both the Regional Board and the CDFW jurisdictional wetlands encompass those of the Corps.

Vegetation

Nearly 5,000 plant types in the United States may occur in wetlands. These plants, often referred to as hydrophytic vegetation, are listed in regional publications by the U.S. Fish and Wildlife Service (USFWS). In general, hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during growing season. Hydrophytic vegetation decisions are based on the assemblage

⁸ CWA regulations 33 CFR §328.3(e).

of plant species growing on a site, rather than the presence or absence of particular indicator species. Vegetation strata are sampled separately when evaluating indicators of hydrophytic vegetation. A stratum for sampling purposes is defined as having 5 percent or more total plant cover. The following vegetation strata are recommended for use across the Arid West:

- ◆ *Tree Stratum*: Consists of woody plants 3 inches or more in diameter at breast height (DBH), regardless of height;
- ◆ *Sapling/shrub stratum*: Consists of woody plants less than 3 inches DBH, regardless of height;
- ◆ *Herb stratum*: Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size; and,
- ◆ *Woody vines*: Consists of all woody vines, regardless of size.

The following indicator is applied per the test method below.⁹ Hydrophytic vegetation is present if any of the indicators are satisfied.

Indicator 1 – Dominance Test

Cover of vegetation is estimated and is ranked according to their dominance. Species that contribute to a cumulative total of 50% of the total dominant coverage, plus any species that comprise at least 20% (also known as the “50/20 rule”) of the total dominant coverage, are recorded on a wetland data sheet. Wetland indicator status in California (Region 0) is assigned to each species using the *National Wetland Plant List, version 2.4.0* (Corps, 2012). If greater than 50% of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation is considered to be met. Plant indicator status categories are described below:

- ◆ *Obligate Wetland (OBL)*: Plants that almost always occur in wetlands;
- ◆ *Facultative Wetland (FACW)*: Plants that usually occur in wetlands, but may occur in non-wetlands;
- ◆ *Facultative (FAC)*: Plants that occur in wetlands and non-wetlands;

⁹ Although the Dominance Test is utilized in the majority of wetland delineations, other indicator tests may be employed. If one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present, then the Prevalence Test (Indicator 2) may be performed. If the plant community satisfies the Prevalence Test, then the vegetation is hydric. If the Prevalence Test fails, then the Morphological Adaptation Test may be performed, where the delineator analyzes the vegetation for potential morphological features.

- ◆ *Facultative Upland (FACU)*: Plants that usually occur in non-wetlands, but may occur in wetlands; and,
- ◆ *Obligate Upland (UPL)*: Plants that almost never occur in wetlands.

Hydrology

Wetland hydrology indicators are presented in four (4) groups, which include:

Group A – Observation of Surface Water or Saturated Soils

Group A is based on the direct observation of surface water or groundwater during the site visit.

Group B – Evidence of Recent Inundation

Group B consists of evidence that the site is subject to flooding or ponding, although it may not be inundated currently. These indicators include water marks, drift deposits, sediment deposits, and similar features.

Group C – Evidence of Recent Soil Saturation

Group C consists of indirect evidence that the soil was saturated recently. Some of these indicators, such as oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur in the soil profile, indicate that the soil has been saturated for an extended period.

Group D – Evidence from Other Site Conditions or Data

Group D consists of vegetation and soil features that indicate contemporary rather than historical wet conditions, and include shallow aquitard and the FAC-neutral test.

If wetland vegetation criteria is met, the presence of wetland hydrology is evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil test pits. The lateral extent of the hydrology indicators are used as a guide for locating soil pits for evaluation of hydric soils and jurisdictional areas. In portions of the stream where the flow is divided by multiple channels with intermediate sand bars, the entire area between the channels is considered within the OHWM and the wetland hydrology indicator is considered met for the entire area.

Soils

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 16-20

inches.¹⁰ The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. It should also be noted that the limits of wetland hydrology indicators are used as a guide for locating soil pits. If any hydric soil features are located, progressive pits are dug moving laterally away from the active channel until hydric features are no longer present within the top 20 inches of the soil profile.

Once in the field, soil characteristics are verified by digging soil pits along each transect to an excavation depth of 20 inches; in areas of high sediment deposition, soil pit depth may be increased. Soil pit locations are usually placed within the drainage invert or within adjoining vegetation. At each soil pit, the soil texture and color are recorded by comparison with standard plates within a *Munsell Soil Chart* (2009). Munsell Soil Charts aid in designating color labels to soils, based by degrees of three simple variables – hue, value, and chroma. Any indicators of hydric soils, such as organic accumulation, iron reduction, translocation, and accumulation, and sulfate reduction, are also recorded.

Hydric soil indicators are present in three groups, which include:

All Soils

“All soils” refers to soils with any United States Department of Agriculture (USDA) soil texture. Hydric soil indicators within this group include histosol, histic epipedon, black histic, hydrogen sulfide, stratified layers, 1 cm muck, depleted below dark surface, and thick dark surface.

Sandy Soils

“Sandy soils” refers to soil materials with a USDA soil texture of loamy fine sand and coarser. Hydric soil indicators within this group include sandy mucky mineral, sandy gleyed matrix, sandy redox, and stripped matrix.

Loamy and Clayey Soils

“Loamy and clayey soils” refers to soil materials with a USDA soil texture of loamy very fine sand and finer. Hydric soil indicators within this group include loamy mucky mineral, loamy gleyed matrix, depleted matrix, redox dark surface, depleted dark surface, redox depressions, and vernal pools.

¹⁰ According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (Corps 2008), growing season dates are determined through on-site observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature.

SWANCC WATERS

The term “isolated waters” is generally applied to waters/wetlands that are not connected by surface water to a river, lake, ocean, or other body of water. In the presence of isolated conditions, the Regional Board and CDFW take jurisdiction through the application of the OHWM/streambed and/or the 3-parameter wetland methodology utilized by the Corps.

RAPANOS WATERS

The Corps will assert jurisdiction over non-navigable, not relatively permanent tributaries and their adjacent wetlands where such tributaries and wetlands have a significant nexus to a TNW. The flow characteristics and functions of the tributary itself, in combination with the functions performed by any wetlands adjacent to the tributary, determine if these waters/wetlands significantly affect the chemical, physical, and biological integrity of the TNWs. Factors considered in the significant nexus evaluation include:

- (1) The consideration of hydrologic factors including, but not limited to, the following:
 - volume, duration, and frequency of flow, including consideration of certain physical characteristics of the tributary
 - proximity to the TNW
 - size of the watershed average annual rainfall
 - average annual winter snow pack
- (2) The consideration of ecologic factors including, but not limited to, the following:
 - the ability for tributaries to carry pollutants and flood waters to TNWs
 - the ability of a tributary to provide aquatic habitat that supports a TNW
 - the ability of wetlands to trap and filter pollutants or store flood waters
 - maintenance of water quality

Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in, and draining only, uplands and that do not carry a relatively permanent flow of water, are generally not considered jurisdictional waters.

In the presence of Rapanos drainage conditions, the Regional Board and CDFW take jurisdiction via the OHWM and/or the 3-parameter wetland methodology utilized by the Corps.

Appendix C Documentation



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for San Diego County Area, California

Wastewater Collections Yard Relocation Project



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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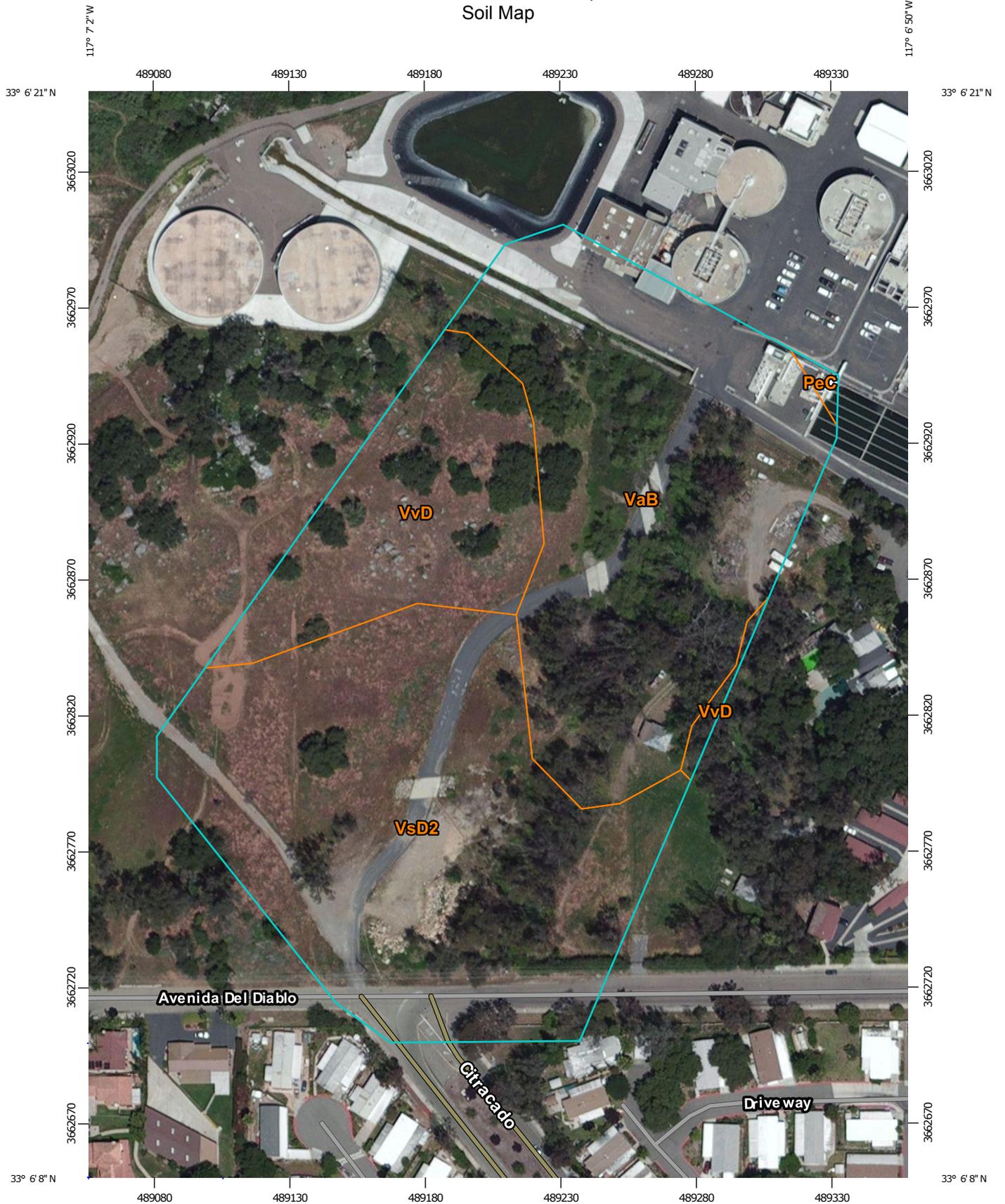
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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:1,950 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Custom Soil Resource Report

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.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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 8, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Jun 19, 2010

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
PeC	Placentia sandy loam, 2 to 9 percent slopes, warm MAAT, MLRA 19	0.0	0.4%
VaB	Visalia sandy loam, 2 to 5 percent slopes	4.4	38.6%
VsD2	Vista coarse sandy loam, 9 to 15 percent slopes, eroded	5.0	43.8%
VvD	Vista rocky coarse sandy loam, 5 to 15 percent slopes	2.0	17.3%
Totals for Area of Interest		11.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Diego County Area, California

PeC—Placentia sandy loam, 2 to 9 percent slopes, warm MAAT, MLRA 19

Map Unit Setting

National map unit symbol: 2tyyn

Elevation: 150 to 2,950 feet

Mean annual precipitation: 13 to 18 inches

Mean annual air temperature: 62 to 64 degrees F

Frost-free period: 270 to 360 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Placentia and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placentia

Setting

Landform: Terraces, alluvial fans

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear, convex

Parent material: Alluvium derived from granitoid

Typical profile

A1 - 0 to 4 inches: sandy loam

A2 - 4 to 13 inches: sandy loam

Bt1 - 13 to 21 inches: sandy clay

Bt2 - 21 to 34 inches: sandy clay

BC - 34 to 53 inches: sandy clay loam

C - 53 to 63 inches: sandy clay loam

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 25.0

Available water storage in profile: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: Claypan (1975) (R019XD061CA)

Minor Components

Bonsall

Percent of map unit: 5 percent

Fallbrook

Percent of map unit: 5 percent

Ramona

Percent of map unit: 4 percent

Typic natrixeralfs, occasionally ponded

Percent of map unit: 1 percent

Landform: Depressions

VaB—Visalia sandy loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: hbh3

Elevation: 0 to 1,500 feet

Mean annual precipitation: 9 to 30 inches

Mean annual air temperature: 57 to 61 degrees F

Frost-free period: 200 to 350 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Visalia and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Visalia

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Riser, flat

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 12 inches: sandy loam

H2 - 12 to 40 inches: sandy loam, fine sandy loam

H2 - 12 to 40 inches: very fine sandy loam

H3 - 40 to 60 inches:

Properties and qualities

Slope: 2 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: A

Minor Components

Greenfield

Percent of map unit: 5 percent

Grangeville

Percent of map unit: 5 percent

Tujunga

Percent of map unit: 2 percent

Placentia

Percent of map unit: 2 percent

Unnamed

Percent of map unit: 1 percent

Landform: Flood plains

VsD2—Vista coarse sandy loam, 9 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: hbhb

Elevation: 400 to 3,900 feet

Mean annual precipitation: 10 to 18 inches

Mean annual air temperature: 59 to 64 degrees F

Frost-free period: 210 to 300 days

Farmland classification: Not prime farmland

Map Unit Composition

Vista and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vista

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Custom Soil Resource Report

Parent material: Residuum weathered from granodiorite and quartz-diorite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 30 inches: coarse sandy loam, sandy loam
H2 - 15 to 30 inches: weathered bedrock
H3 - 30 to 34 inches:

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Loamy (1975) (R019XD029CA)

Minor Components

Fallbrook

Percent of map unit: 4 percent

Cieneba

Percent of map unit: 4 percent

Bonsall

Percent of map unit: 4 percent

Greenfield

Percent of map unit: 3 percent

VvD—Vista rocky coarse sandy loam, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hbhg
Elevation: 400 to 4,000 feet
Mean annual precipitation: 8 to 18 inches
Mean annual air temperature: 45 to 64 degrees F
Frost-free period: 110 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Vista and similar soils: 70 percent
Rock outcrop: 25 percent

Custom Soil Resource Report

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vista

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Residuum weathered from granodiorite and quartz-diorite

Typical profile

H1 - 0 to 13 inches: coarse sandy loam

H2 - 13 to 27 inches: coarse sandy loam, sandy loam

H2 - 13 to 27 inches: weathered bedrock

H3 - 27 to 31 inches:

Properties and qualities

Slope: 5 to 15 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: Loamy (1975) (R019XD029CA)

Description of Rock Outcrop

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Typical profile

H1 - 0 to 4 inches: unweathered bedrock

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Minor Components

Fallbrook

Percent of map unit: 3 percent

Cieneba

Percent of map unit: 2 percent

Custom Soil Resource Report

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U.S. Fish and Wildlife Service National Wetlands Inventory

Escondido Wastewater Project

Nov 17, 2014



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

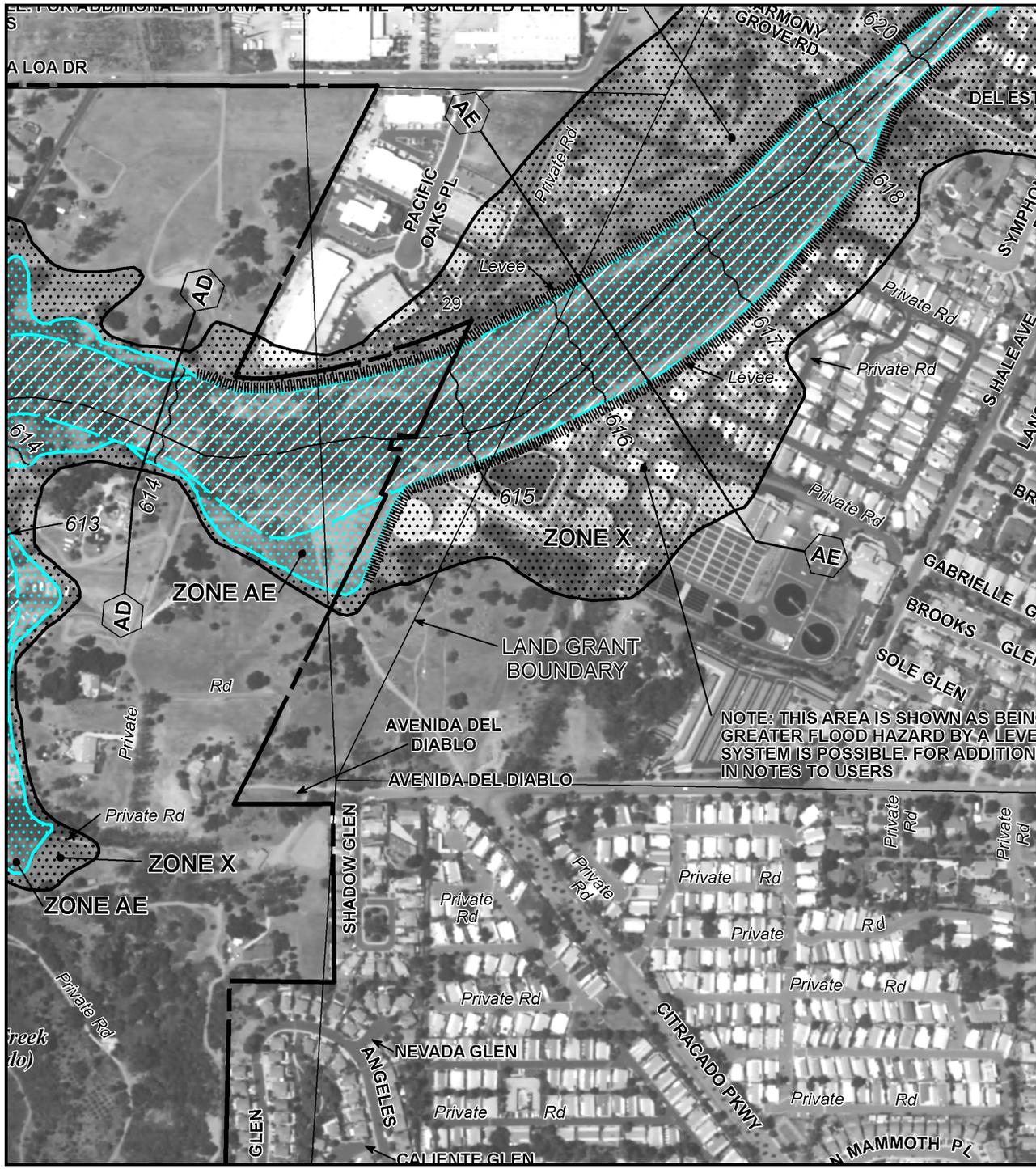
- Herbaceous
- Forested/Shrub

Riparian Status

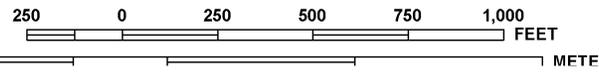
- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:



MAP SCALE 1" = 500'



NFIP

PANEL 1076G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
SAN DIEGO COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 1076 OF 2375
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ESCONDIDO, CITY OF	060290	1076	G
SAN DIEGO COUNTY	060284	1076	G

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
06073C1076G
MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix D Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wastewater Collections Yard Relocation Project City/County: Escondido/San Diego Sampling Date: 11/18/14
 Applicant/Owner: City of Escondido State: CA Sampling Point: SP-1
 Investigator(s): Lauren Mack, Tim Tidwell Section, Township, Range: Section 29, Township 12 south, Range 2 west
 Landform (hillslope, terrace, etc.): Stream Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR): C - Mediterranean Lat: 33.1045°N Long: 117.1153°W Datum: NAD 83
 Soil Map Unit Name: VaB - Visalia sandy loam, 2 to 5 percent slopes NWI classification: None

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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Significant drought conditions present.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Arroyo Willow (Salix lasiolepis)</u>	<u>35</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Cottonwood (Populus fremontii)</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
3. _____				
4. _____				
	<u>50</u>	<u>= Total Cover</u>		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>3</u> x 3 = <u>9</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>53</u> (A) <u>109</u> (B) Prevalence Index = B/A = <u>2.06</u>
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Mulefat (Bacharis salicifolia)</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>3</u>	<u>= Total Cover</u>		
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
	<u>0</u>	<u>= Total Cover</u>		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
	<u>0</u>	<u>= Total Cover</u>		
% Bare Ground in Herb Stratum <u>80</u> % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

Remarks:
 Ground moss on surface layer.
 Populus fremontii is listed as Populus deltoides ssp. fremontii (FAC) in the 2014 NWPL Viewer v3.2 found at: (http://rsgisias.crrel.usace.army.mil/nwpl_static/viewer.html)

SOIL

Sampling Point: SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3"	10YR 2.5/2	100					SCL	Organic matter, roots present
3-15"	10YR 3/2	100					SL	Roots present

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

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

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

Restrictive Layer (if present):

Type: Large roots
 Depth (inches): 15"

Hydric Soil Present? Yes No

Remarks:

Significant amount of organic material (i.e., roots). No visible redoximorphic features or hydric soil indicators observed.

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:

APPENDIX C:

Cultural Resources Report

CULTURAL RESOURCES INVENTORY
FOR THE
HALE AVENUE RESOURCE RECOVERY
FACILITY STORAGE PROJECT,
CITY OF ESCONDIDO,
COUNTY OF SAN DIEGO, CALIFORNIA

Prepared for

City of Escondido
201 North Broadway
Escondido, CA 92025

Spindrifft Project No. 2015-008

Prepared by Arleen Garcia-Herbst, RPA

October 2015



SPINDRIFT ARCHAEOLOGICAL
CONSULTING, LLC

8895 Towne Centre Drive #105-248
San Diego, CA 92122
Phone: 858-333-7202 Fax: 855-364-3170

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Appendices

Appendix A	Records Search Confirmation
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Appendix C	Confidential DPR Forms
Figure 7	Confidential – Records Search Results Map
Figure 8	Confidential – Impact Analysis Map

List of Acronyms and Abbreviations

AMSL	Above Mean Sea Level
APE	Area of Potential Effects
BFSA	Brian F. Smith and Associates
CEQA	California Environmental Quality Act
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
City	City of Escondido
CRHR	California Register of Historical Resources
CUP	Conditional Use Permit
CWSRF	Clean Water State Revolving Fund
CY	Cubic Yard
DPR	California Department of Parks and Recreation
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
GPA	General Plan Amendment
HAARF	Hale Avenue Resource Recovery Facility
MGD	Million Gallons Per Day
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NEPA	National Environmental Protection Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PI	Principal Investigator
RPA	Register of Professional Archaeologists
SDG&E	San Diego Gas & Electric
SPA	Specific Planning Area
SCIC	South Coastal Information Center
USGS	United States Geological Survey

National Archaeological Database

Author: Arleen Garcia-Herbst

Consulting Firm: Spindrift Archaeological Consulting

Report Date: August 2015

Report Title: Cultural Resources Inventory for the Hale Avenue Resource Recovery
Facility Storage Project, City of Escondido – County of San Diego, California

Prepared by: Spindrift Archaeological Consulting, 8895 Towne Centre Drive #105-248, San
Diego, CA 92122

Submitted to: City of Escondido

Project No. 2015-008

Acreage approximately 1.8 acres

Keywords: Hale Avenue Resource Recovery Facility (HARRF) Storage, Records Search
Summary, P-37-008280/CA-SDI-8280

EXECUTIVE SUMMARY

In 2015, the City of Escondido (City) retained Spindrift Archaeological Consulting, LLC (Spindrift) to conduct a cultural resources inventory of the proposed Hale Avenue Resource Recovery Facility (HARRF) Storage Project (hereafter known as Project) in the City of Escondido. The entire Project Area of Potential Effects (APE) is composed of approximately 1.8 acres. The Project APE is located in San Diego County, California.

The inventory included a records search and literature review. The records search results indicated 13 previous cultural resources studies were conducted within 0.25-mile radius of the Project APE, and seven (7) cultural resources have previously been recorded within 0.25-mile radius of the Project APE.

One (1) cultural resource has been previously recorded within the Project APE (P-37-008280/CA-SDI-8280).

A field survey was not conducted as part of this inventory; however, recommendations for pedestrian survey, eligibility evaluations and the management of unanticipated discoveries are provided in this report.

SECTION 1 INTRODUCTION

In 2015, Spindrift was retained by the City to conduct a cultural resources inventory survey of the proposed HARFF (Project APE), located in San Diego County (County), California. A desktop inventory of the approximately 1.8-acre Project APE was required to identify potentially significant cultural resources (archaeological sites, historic buildings, structures, and objects) that could be affected by the project.

1.1 PROJECT LOCATION

The HARFF Storage Project (Project APE) is located within the southwestern portion of the City of Escondido (City). The area affected by the proposed Project (development footprint) is comprised of a 1.8-acre portion of County Assessor Parcel Number (APN) 235-051-05 (totaling approximately 15.4 acres). The Project is located just north of the intersection of Avenida del Diablo and Citracado Parkway, south of Pacific Oaks Place (cul-de-sac), west of South Hale Avenue, and east of Harmony Grove Road. The site is also located within the larger Escondido Research Tech Center Specific Plan Area 8 (SPA 8 - Harmony Grove). As shown on the United States Geological Survey (USGS) 7.5-minute Escondido topographic quadrangle (1975, Rincon del Diablo Land Grant), the Project APE is located within San Diego County (Figure 1).

1.2 PROJECT DESCRIPTION

The existing HARFF is located adjacent to the north/northeast of the Project site at 1521 South Hale Avenue. The HARFF is an activated sludge, secondary treatment facility capable of treating wastewater flows of up to 18 million gallons per day (MGD). The facility operates 24 hours a day, with an average daily flow of 15.6 MGD. Such flows are generated by the City of Escondido and the community of Rancho Bernardo (within the City of San Diego), with flows of approximately 11.8 MGD and 3.8 MGD, respectively.

The Project proposes construction of a new Wastewater Collections Yard to support maintenance activities associated with the City's HARFF and wastewater treatment operations, currently the responsibility of the City's Department of Utilities, Wastewater Collection and Treatment Division. Maintenance activities for the City's wastewater facilities have historically been operated out of the City's Public Works Maintenance Yard located at 475 North Spruce Street, approximately 1.7 miles to the northwest of the Project site.

The proposed Project would affect approximately 1.8 acres (development footprint) of a larger 15.4-acre parcel. The Project would result in construction of three individual prefabricated steel buildings on the site, as described below:

- Building A would be 3,735 square feet (s.f.) in size and would be used for collections. The building would include an outdoor storage area, indoor equipment storage, and one work bay. The work bay would be utilized for regular maintenance of vehicles and equipment associated with operations at HARFF.

- Building B would be 5,470 s.f. in size and would be used as a warehouse. The building would contain restrooms (men's and women's) as well as areas for indoor storage of small-scale equipment, tools, and materials used for routine maintenance.
- Building C would be 5,670 s.f. in size and would be used as a maintenance workshop. The building would contain two workshops: one for pump, motor, and valve rebuilding, and one for welding and fabrication activities required for routine maintenance of equipment associated with operations at the HARFF. Additional areas for storage of materials and equipment would also be provided within the interior.

Surface parking would be provided adjacent to the proposed buildings and/or access drive. A total of 33 parking spaces (31 standard/2 American Disability Act compliant) are proposed for use by employees and visitors. The onsite parking areas would be surfaced with gravel.

Access to the Project site would occur from either Citracado Parkway or from the HARFF to the north. An existing paved access drive currently extends through the site from Citracado Parkway and provides connection to the HARFF. An approximately 400-foot long segment of the existing onsite drive would be repaved as part of the Project to ensure that it can adequately accommodate facility traffic and emergency vehicles following Project implementation; refer to Exhibit 4A.

To allow for the proposed improvements, Project grading would require an estimated 3,400 cubic yards (CY) of cut and 3,800 CY of fill. Approximately 400 CY of soil would therefore be transported offsite and properly disposed of at an approved facility in accordance with local and State regulations, as applicable.

A 4-inch sewer force main and a 1-inch waterline would be extended to the site from the existing HARFF to serve the three proposed buildings. Lighting would be installed on the exterior of the structures for purposes of worker safety and site security. No new lighting is proposed along the onsite access drive. A security gate would be installed along the access drive near the entrance off of Citracado Parkway; an existing security gate is currently located at the northern end of the access drive where it provides connection to the HARFF. Two onsite bioretention areas are also proposed for purposes of storm water treatment.

The Project would not generate any new employees. Until recently, an estimated 50 employees operated from the HARFF site; however, an additional 40-45 City employees were recently relocated from the City's existing maintenance facility on North Spruce Street to the new Administration Building at the HARFF site, bringing the total number of employees onsite to approximately 95. The 40-45 employees would be responsible for operations and maintenance activities at the proposed Wastewater Collections Yard.

Activities at the Project site would be limited to routine maintenance of equipment and vehicles associated with the HARFF and the City's wastewater treatment facilities; the treatment of wastewater would not occur onsite, and none of the improvements proposed would increase demand for wastewater treatment or the City's capacity to provide wastewater treatment services for the community.

1.2.1 Phasing

The Project would not be phased. No demolition would be required, as no physical structures are present onsite. Project construction is anticipated to be completed in approximately six months from initial site grading to the end of building construction. Painting of the structures would occur subsequent to installation and would be minimal.

1.2.2 General Plan Amendment and Rezone

The Project would require the processing of a Conditional Use Permit (CUP) in conjunction with a General Plan Amendment (GPA). The Project site is located within Specific Planning Area 8 (SPA 8 – Harmony Grove). The Project would change the existing General Plan land use designation from Specific Plan to Public Lands/Open Space with a Public Facilities Overlay. A Zone Change (rezone) would also be required to change the zoning from Open Space - Park (OS-P) to Open Space with a Public Facilities Overlay (PF-O).

1.3 AREA OF POTENTIAL EFFECTS (APE)

The Project APE consists of the horizontal and vertical limits of the project, and includes the area within which significant impacts or adverse effects to Historical Resources (CEQA) or Historic Properties (Section 106) could occur as a result of the project. The Project APE, subject to environmental review under CEQA, consists of all areas where activities associated with the project are proposed. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other elements described in the official project description. The horizontal APE is illustrated in Figure 1 and also represents the records search summary coverage area. It measures approximately 1.8 acres in size.

The Project APE also includes the maximum depth below the surface to which excavations for project foundations and facilities will extend. Thus, it includes all subsurface areas where archaeological deposits could be affected and varies across the project, depending on the type of infrastructure. Ground disturbance of up to 13 feet below the surface is assumed.

1.4 REGULATORY CONTEXT

To meet the regulatory requirements of this project, this cultural resources investigation was conducted pursuant to the provisions for the treatment of cultural resources in California Environmental Quality Act (CEQA) (Pub. Res. Code § 21000 et seq.). The goal of CEQA is to develop and maintain a high-quality environment that serves to identify the significant environmental effects of the actions of a proposed project and to either avoid or mitigate those significant effects where feasible. CEQA pertains to all proposed projects that require state or local government agency approval, including the enactment of zoning ordinances, the issuance of conditional use permits, and the approval of project development maps.

CEQA (Title 14, CCR, Article 5, Section 15064.5) applies to cultural resources of the historic and prehistoric periods. Any project with an effect that may cause a substantial adverse change in the significance of a cultural resource, either directly or indirectly, is a project that may have a significant effect on the environment. As a result, such a project would require avoidance or mitigation of impacts

to those affected resources. Significant cultural resources must meet at least one of four criteria that define eligibility for listing in the California Register of Historical Resources (CRHR) (Pub. Res. Code § 5024.1, Title 14 CCR, Section 4852). Resources listed on or eligible for inclusion in the CRHR are considered Historical Resources under CEQA.

1.5 REPORT ORGANIZATION

The following report documents the study and its findings and was prepared in conformance with the California Office of Historic Preservation's *Archaeological Resource Management Reports: Recommended Contents and Format*. Appendix A includes a confirmation of the records search with the California Historical Resources Information System (CHRIS). Appendix B contains documentation of Native American outreach efforts. Appendix C includes copies of the confidential Department of Parks and Recreation (DPR) 523 series forms.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code §6250 *et seq.*) and California's open meeting laws (The Brown Act, Government Code §54950 *et seq.*) protect the confidentiality of Native American cultural place information. Likewise, the Information Centers of the CHRIS maintained by the Office of Historic Preservation prohibit public dissemination of records search information. This report was prepared as a confidential document, which is not intended for public distribution in either paper or electronic format.

SECTION 2 SETTING

The Project is located in the County of San Diego within the City of Escondido (Figures 1 and 2).

2.1 Existing Conditions

This section establishes the context for the evaluation of cultural resources through an overview of the environmental setting, the prehistory, and the ethnographic identity of the Project APE, as well as the regulatory setting.

2.1.1 Natural Setting

2.1.1.1 *Onsite Conditions*

The Project site is located along the southeastern side of a low hill. Existing onsite topography is gently to moderately steep to gently inclined to the south and east. Onsite elevations range from approximately 645 feet above mean sea level (amsl) in the northern portion of the development area to approximately 622 feet amsl in the northeastern portion of the site.

Portions of the site are disturbed/developed. A limited area in the central portion of the site is presently used for (surface) storage of materials, i.e. soil stockpiles. As stated above, an existing paved access road traverses the easterly portion of the affected parcel and provides access to the HARRF site to the north.

Onsite vegetation communities consist of disturbed habitat and eucalyptus woodland. Additionally, the site supports non-native grassland, coast live oak woodland, and southern willow riparian forest, which are considered to be sensitive habitats. A small onsite drainage is present in the north/northeastern portion of the site. A Jurisdictional Delineation was completed to determine the regulatory authority of the onsite drainage features with respect to Sections 404 and 401 of the federal Clean Water Act (*i.e.* U.S. Army Corps of Engineers and California Regional Water Quality Control Board, respectively) and Section 1602 of the California Fish and Game Code (*i.e.* California Department of Fish and Wildlife). The Project has been designed to avoid all jurisdictional resources, and buffers have been incorporated in order to provide additional protection. Several rock outcroppings are located within proximity of the western Project boundary.

The HARRF is a wastewater treatment facility that is owned and operated by the City of Escondido. The HARRF originally was constructed in 1959 and has undergone five phases of capacity expansion (1965, 1973, 1981, 1998, and 2000). Currently is rated to provide, on average, 18.0 MGD of secondary wastewater treatment and 9.0 MGD of tertiary wastewater treatment. The HARRF fronts onto and takes access from two driveways along Hale Avenue. A portion of the facility also fronts onto and takes access from the intersection of Avenida Del Diablo (Local Collector) and Citracado Avenue (Major Road).

2.1.1.2 *Surrounding Land Uses*

The site is located within the larger Escondido Research Tech Center Specific Plan Area. The existing HARRF is located immediately to the north/northeast of the Project site. To the west are large-acre single-family residential uses, with mobile home parks to the south/southeast. Adjacent to the east of the site is a commercial storage facility. Further to the north (beyond the existing HARRF) is a mobile home park, and further to the northeast are single-family residential uses. Citracado Parkway runs generally southeast/northwest adjacent to the southwest boundary of the Project site; refer to Exhibit 3, Surrounding Land Uses.

2.1.2 Geology and Soils

Three (3) soil units, or types, have been mapped within the Project APE: Visalia sandy loam (VaB), Vista coarse sandy loam (VsD2), and Vista rocky coarse sandy loam (VvD) (U.S. Department of Agriculture, Natural Resources Conservation Service 2015). Visalia sandy loam (VaB) consists of mixed alluvium that formed in material weathered from decomposed granitic rocks. Visalia sandy loam soils are on alluvial fans and toeslopes in the northeast portion of the Project APE and have slopes of 2 to 5 percent.

The Vista coarse sandy loam (VsD2) consists of moderately deep, well drained soils that formed in material weathered from decomposed granitic rocks. Vista soils are on hills and mountainous uplands in the southern portion of the Project APE and have slopes of 2 to 85 percent.

The Vista rocky coarse sandy loam (VvD) consists of moderately deep, well drained soils that formed in material weathered from decomposed granitic rocks. Vista soils are on hills and mountainous uplands in the western portion of the Project APE and have slopes of 2 to 85 percent.

One geologic unit has been mapped within the Project APE: Green Valley tonalite [Kg(gv), Cretaceous) that consists of medium-grained, gray tonalite with minor granodiorite, gabbro and other basic igneous rocks (Jennings 1977; Kennedy and Tan 2008). A previous map (Rogers 1965) shows the Project APE underlain by Mesozoic granitic rocks (gr).

2.1.3 Vegetation and Wildlife

Escondido Creek is located along the northern boundary of the HARRF and single-family residential and mobile home park development to the south and east. Development to the west is characterized as single-family rural/estate on large parcels. Vegetation within the proposed development area primarily consists of disturbed habitat, non-native grassland and eucalyptus woodland. Other-habitat types and features located on the 1.8-acre parcel include patches of coast live oak woodland; southern willow riparian associated with a drainage feature; and rock outcrops.

2.1.4 Cultural Setting

The following sections have been excerpted from the County of San Diego Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources (GDS, 2007) and serves to provide a comparative framework for the prehistory of the region and context for this inventory report. Archaeological evidence reveals that San Diego County has a long cultural history beginning approximately 10,000 years ago. The following cultural background discusses the characteristics of each

cultural period of prehistory and history. The information that follows is reproduced with the permission of the author, *Dennis Gallegos*¹. The references cited in this section can be found in GDS (2007).

PRE-CONTACT BACKGROUND

The body of current research of Native American (Pre-Contact) occupation in San Diego County recognizes the existence of at least two major cultural traditions, discussed here as Early Period/Archaic and Late Period, based upon general economic trends and material culture. Within San Diego County, the Early Period/Archaic includes the period from 10,000 to 1,300 years ago, while the Late Period is from 1,300 years ago to historic (Spanish) contact. The Post-contact/Historic Period covers the time from Spanish contact to present. Terminology used for the past 10,000 year history of San Diego County includes a mixture of ideas of ordering archaeological sites using terms for peoples, collections of artifacts, and temporal time frames. The first ordering was by Malcolm Rogers who used the terms: Shell-Midden people, Scraper-Maker culture (scraper-makers), and Yuman (Rogers 1929). He later revised his chronology to use the terms San Dieguito (Scraper-Maker), La Jolla culture (Shell-Midden people) and Yuman (Rogers 1945). Claude Warren characterized the San Dieguito Tradition as: "... a wide range of scraper types made on side-struck flakes and finished by well controlled percussion flaking, leaf-shaped knives or large points of several varieties, leafshaped, lanceolate and slightly shouldered points in small number. Chipped stone crescents, often eccentric in form, hammerstones and flaked tools are few in number. Milling stones and manos are noticeably absent" (Warren 1968). Warren's revision to Rogers' La Jolla culture, was called the Encinitas Tradition wherein he identifies: "...the majority of flaked stone tools being percussion flaked and made from local macrocrystalline rock. A large percentage of the tool assemblage is composed of chopping, scraping and cutting tools and hammerstones. Projectile points are rare and rather large, suggesting the use of darts, rather than bow and arrow. Ground stone items include large numbers of manos and milling stones usually shaped through use, and occasional items such as doughnut stones, discs and cogstones...Bone tools are rare but include awls, antler flakers, beads...Shell items are also limited, but include beads, pendants...Basketry is represented...Loosely flexed burials are found throughout the area..." (Warren et al. 1968). Warren has more recently updated his chronology and for the San Dieguito Tradition (Initial Occupation) has since included milling tools and a wider range of tools and food sources, and now discusses the potential of Transitional and intermediate stages of occupation to cover the past 10,000 years of Native American occupation in San Diego County (Warren 1998). Early Man in San Diego County was discussed by George Carter in the 1950s; however, little to no evidence of Pleistocene human occupation supports this hypothesis (Carter 1957).

Early Period/Archaic

The Early Period/Archaic includes the San Dieguito, La Jolla and Pauma complexes, which are poorly defined, as are the interrelationships between contemporaneous inland, desert, and coastal assemblages (Gallegos 1987). Initially believed to represent big game hunters, the San Dieguito people are better typified as a hunting and gathering society. These people had a relatively diverse and non-specialized economy wherein relatively mobile bands accessed and used a wide range of plant, animal, and lithic resources. Movement of early groups from the California desert may have been spurred by the gradual desiccation of the vast pluvial lake system that dominated inland basins and valleys during the early to

middle Holocene. This hypothesis is supported by the similarity between Great Basin assemblages and those of Early Holocene Archaic sites in San Diego County. Several researchers recognized the regional similarity of artifacts and grouped these contemporaneous complexes under the nomenclature of either the Western Pluvial Lakes Tradition or the Western Lithic Co-tradition (Bedwell 1970; Davis et al. 1969; Moratto 1984; Rogers 1939; Warren 1967).

Early migrations into San Diego County may have come from the north. Recent work on the northern Channel Islands near Santa Barbara demonstrates island occupation dating back to the terminal Pleistocene, roughly 11,600 years ago (Erlandson et al. 1996; Johnson et al. 2000). At this early date, a fully maritime-adapted population exploited shellfish and used seaworthy boats to ply channel waters. Fish were captured using bone gorges by 10,000 years ago (Rick et al. 2001). Such early dates are lacking for the adjacent Santa Barbara mainland; presumably because the rise in sea level brought about by post-Pleistocene deglaciation would have inundated sites along the late Pleistocene/early Holocene coastlines. At this time in San Diego County, the shoreline stood two to six kilometers (km) farther seaward than today's coast (Masters and Gallegos 1997). Therefore, any evidence for early coastal adaptation coeval with that of the northern Channel Islands may have been destroyed within this two to six km paleo-shoreline area by sea encroachment thousands of years ago.

The origin of coastal populations in San Diego County and subsequent interaction between these populations and Great Basin/desert groups is a subject of some debate (Gallegos 1987). Whether they migrated into San Diego County from the coast or inland, the first occupants immediately exploited coastal and inland resources of plants, animals, shellfish, and fish (Gallegos 1991; Moriarty 1967; Kaldenberg 1982; Kyle et al. 1998).

The development of a generalized economic system indicates that the initial occupation, referred to here as San Dieguito can be placed within the general Archaic pattern. Archaic cultures occur within North America at slightly different times and in different areas, but are generally correlated with local economic specialization growing out of the earlier Paleo-Indian Tradition (Willig et al. 1988). Archaic cultures are often represented by more diverse artifact assemblages and more complex regional variation than PaleoIndian traditions. This is generally thought to have resulted from the gradual shift away from a herd-based hunting focus to a more diverse and area specific economy.

The earliest known sites are found near coastal lagoons and river valleys of San Diego County. These sites are the Harris Site (CA-SDI-149), Agua Hedionda sites (CA-SDI- 210/UCLJ-M-15 and CA-SDI-10695), Rancho Park North (CA-SDI-4392/SDM-W-49), and Remington Hills (CA-SDI-11069), dating from 9,500 to 8,000 years ago. The northern San Diego County coastal lagoons supported large populations, circa 6,000 years ago, as shown by the numerous radiocarbon-dated sites adjacent to these lagoons. After 3,000 to roughly 1,500 years ago, there are fewer archaeological sites in northern San Diego County. This reduction in number of archaeological sites can be attributed to the slowing of the rise in sea level and concomitant siltation of coastal lagoons causing the depletion of shellfish and other lagoon resources (Gallegos 1985; Miller 1966; Warren and Pavesic 1963). Archaeological sites dated to circa 2,000 years ago are found in the Camp Pendleton area (Byrd and Reddy 2002), wherein shellfish (*Donax gouldii*) were collected from open-shore sandy beach habitat; and bay species were still abundant in San Diego Bay, and present but not as dominant in other lagoons. Batiquitos Lagoon and perhaps other

lagoons reopened circa 1,500 years ago, therein producing shellfish, but not in the quantity, size or variety of shellfish as documented for the early to middle Holocene (Miller 1966, Gallegos 1985).

The La Jolla and Pauma complexes, which are referred to as following the San Dieguito Complex, may simply represent seasonal or geographic variations of the somewhat older and more general San Dieguito Complex. Inland Early/Archaic Period occupation sites have been reported in coastal settings, transverse valleys, sheltered canyons, benches, and knolls (True 1958; Warren et al. 1961). In north San Diego County, noncoastal sites were termed “Pauma Complex” by True (1958, 1980), and were defined as containing a predominance of grinding implements (manos and metates), a general lack of shellfish remains, a greater tool variety, and express an emphasis on both gathering and hunting (True 1958, 1980; Warren et al. 1961; Waugh 1986).

Early Period/Archaic sites from 10,000 to 1,300 years ago within San Diego County include a range of sites that include coastal and inland valley habitation sites, inland hunting and milling camps, and quarry sites, usually in association with fine-grain metavolcanic material. Material culture assemblages during this long period are remarkably similar in many respects. These deposits may well represent a process of relative terrestrial economic stability and presumably slow cultural change. Though various culture traits developed or disappeared during the long span of 10,000 to 1,300 years ago, there is a clear pattern of cultural continuity during this period.

Late Period

During the Late Period (circa 1,300 to historic contact), a material culture pattern similar to that of historic Native Americans first becomes apparent in the archaeological record. The economic pattern during this period appears to be one of more intensive and efficient exploitation of local resources. The prosperity of these highly refined economic patterns is well evidenced by the numerous Kumeyaay/Diegueño and Luiseño habitation sites scattered throughout San Diego County. This increase in Late Period site density probably reflects both better preservation of the more recent archaeological record and a gradual population increase within the region. Artifacts and cultural patterns reflecting this Late Period pattern include small projectile points, pottery, the establishment of permanent or semi-permanent seasonal village sites, a proliferation of acorn milling sites in the uplands, the presence of obsidian from the Imperial Valley source Obsidian Butte, and interment by cremation.

Luiseño occupation in northern San Diego County during the late Holocene has been viewed as an occupation that migrated from the desert to the coast (Rogers 1966), an incursion called “the Shoshonean Wedge” (Kroeber 1925). Late Period culture patterns were shared with groups along the northern and eastern periphery of San Diego County, incorporating many elements of their neighbors’ culture into their own cultures. This transference and melding of cultural traits between neighboring groups makes positive association of archaeological deposits with particular ethnographically known cultures difficult. This is particularly true of the groups within San Diego County. Although significant differences exist between Luiseño and Kumeyaay/Diegueño cultures (including linguistic stock), the long interaction of these groups during the Late Period resulted in the exchange of many social patterns. Archaeologists must rely heavily on ethnographic accounts of group boundaries as recorded during the historic period, although it is not known how long these boundaries had been in place or the validity of these boundaries as presently reported.

Kroeber (1925) placed the Kumeyaay and Luiseño boundary between Agua Hedionda and Batiquitos Lagoon. According to Luomala (1978) the territory of the Ipai extended along the coast from the San Luis Rey River in the north to San Diego Bay in the south with San Felipe Creek marking the eastern boundary. The territory of the Tipai, the southern group, extended south from San Diego Bay to include parts of Mexico and the southern mountains. Florence Shipek (1993) identified the northern and southern Kumeyaay/Diegueño tribal boundary as:

In 1769, the Kumeyaay national territory started at the coast about 100 miles south of the Mexican border (below Santo Tomas), thence north to the coast at the drainage divide south of the San Luis Rey River including its tributaries. Using the U.S. Geological Survey topographic maps, the boundary with the Luiseño then follows that divide inland. The boundary continues on the divide separating Valley Center from Escondido and then up along Bear Ridge to the 2240 contour line and then north across the divide between Valley Center and Woods Valley up to the 1880-foot peak, then curving around east along the divide above Woods Valley (Shipek 1993).

HISTORICAL BACKGROUND

The history of San Diego County is commonly presented in terms of Spanish, Mexican, and American political domination. A discussion of historic land use and occupation under periods of political rule by people of European and Mexican origin is justified on the basis of characteristics associated with each period, when economic, political, and social activities were influenced by the prevailing laws and customs. Certain themes are common to all periods, such as the development of transportation, settlement, and agriculture. Robinson (1969) provides a comprehensive account of public and privately owned land in California, with a discussion of laws, activities, and events related to the development of the state.

Spanish Period (1769-1821)

The Spanish Period represents exploration, the establishment of the San Diego Presidio and missions at San Diego (1769) and San Luis Rey (1798), and asistencias (chapels) to the San Diego Mission at Santa Ysabel (1818) and to the San Luis Rey Mission at Pala (1816). Horses, cattle, agricultural foods and weed seeds, and a new architectural style and method of building construction were also introduced. Spanish influence continued after 1821 when California became a part of Mexico. For a period of time under Mexican rule, the missions continued to operate as in the past, and laws governing the distribution of land were also retained.

Mexican Period (1821-1848)

The Mexican Period includes the initial retention of Spanish laws and practices until shortly before secularization of the missions in 1834, a decade after the end of Spanish rule. Although several grants of land were made prior to 1834, vast tracts of land were dispersed through land grants offered after secularization. Cattle ranching prevailed over agricultural activities, and the development of the hide and tallow trade increased during the early part of this period. The Pueblo of San Diego was established and transportation routes were expanded. The Mexican Period ended in 1848 as a result of the Mexican-American War.

American Period (1848 to Present)

The American Period began when Mexico ceded California to the United States under the Treaty of Guadalupe Hidalgo. Terms of the treaty brought about the creation of the Lands Commission, in response to the Homestead Act of 1851 that was adopted as a means of validating and settling land ownership claims throughout the state. Few Mexican ranchos remained intact because of legal costs and the difficulty of producing sufficient evidence to prove title claims. Much of the land that once constituted rancho holdings became available for settlement by immigrants to California. The influx of people to California and the San Diego region resulted from several factors including the discovery of gold in the state, the conclusion of the Civil War, the availability of free land through passage of the Homestead Act, and later, the importance of San Diego County as an agricultural area supported by roads, irrigation systems, and connecting railways. The growth and decline of towns occurred in response to an increased population and the economic boom and bust cycle in the late 1800s.

NATIVE AMERICAN PERSPECTIVE

In addition to the point of view discussed above, the County acknowledges that other perspectives exist to explain the presence of Native Americans in the region. The Native American perspective is that they have been here from the beginning as described by their creation stories. Similarly, they do not necessarily agree with the distinction that is made between different archaeological cultures or periods, such as “La Jolla” and “San Dieguito”. They instead believe that there is a continuum of ancestry, from the first people to the present Native American populations of San Diego. To acknowledge this perspective, consultation with affected Native American communities can be beneficial to understand fully the impact to cultural resources. The consultation is typically administered pursuant to Senate Bill 18 and Assembly Bill 52.

2.1.5 Project APE History

The location of Escondido was first identified and discovered by Juan Bautista de Anza, a Spanish explorer, in 1776 (City of Escondido 2015). Later, the area became part of the Rancho Rincon del Diablo (the devil's corner) land grant bestowed to Juan Bautista Alvarado in 1843 by Mexican Governor Manuel Micheltoarena. In 1886, the Escondido Land and Town Company acquired the land grant, laid out the town site, and divided the valley into small farms suitable for grapes or citrus. On October 8, 1888, the city was incorporated and its voters elected a council, clerk, treasurer, and marshal.

As was mentioned above, the Project APE is within the Rincon del Diablo Land Grant, one of 30 ranchos distributed in San Diego County (see Figures 5 and 6):

“...it was granted in 1843 to Juan Bautista Alvarado, who had been regidor of tiny Los Angeles pueblo and of San Diego. This grant, consisting of 12,633 acres, now Escondido Valley, was called Rincon del Diablo, meaning "Corner of the Devil". The origin of the name is not definitely known. A suggested explanation is that during the Mission period, this section was not under the jurisdiction of either San Luis Rey or San Diego Missions. Anything not held by the church belonged to the devil, so this Spanish grant became Rincon del Diablo.

Senor Alvarado built a rather pretentious six-room adobe on a little knoll in Dead Horse Canyon, about a half mile south of "the Tepee" as a home for his wife, himself and their six children. Alvarado died on the ranch after only three years' residence, and sometime in the 1850 the heirs sold it to judge Oliver S. Witherby of San Diego, who also was a member of the Boundary Commission, and San Diego's first representative to the state legislature. It is reported that he was a jolly bachelor, who loved good food and dancing. Friends from San Diego would ride out on horseback to the Rancho, dance all night, and return to the city the next day.

Judge Witherby sold the property in 1868 to the Wolfskill brothers, John, Josiah and Matthew, of Los Angeles, for \$8000, and the Valley was known as Wolfskill Plains for a while.

The land boom of the 1880s penetrated to Rincon del Diablo, and the first settlement was made near the present site of Jesmond Dene on the McDougall ranch, where a postoffice called Apex was opened with Mr. McDougall as postmaster. He was succeeded by Thomas W. Adams on June 28, 1883, and the name was changed to Escondido April 24, 1884.

According to a deed dated October 1883, a group of investors from Los Angeles and San Diego bought the grant from the Wolfskills for \$128,000, but a year later sold it to a so-called Escondido Company. This is the first time the name Escondido appears on a document. The Spanish name Escondido means "hidden" and was probably chosen because the valley is surrounded by foothills. On March 1, 1886, the Escondido Company deeded the grant to the newly formed Escondido Land & Town Company, which proceeded to subdivide the valley into small farms and lay out the town site." [Whetstone 1963]

2.2 Regulatory Setting

The public stewardship and management of historical resources are provided for in the local, state and federal policies and regulations that form the basis for the County of San Diego's development review process. This project has been completed in accordance with all applicable regulations, provided in the County of San Diego Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources (GDS, 2007), and per the cultural resources provisions of CEQA of 1970 (Public Resources Code §§ 21000–21177) and Section 106 of the NHPA (16 USC Section 470 et seq.). Per these applicable regulations impacts to cultural resources associated with this project must be taken into consideration. These regulations are described in detail below.

2.2.1 Public Resources Code and CEQA

CEQA states that:

The Legislature further finds and declares that it is the policy of the state to. . . Preserve for future generations. . . Examples of the major periods of California history (Section 21001).

CEQA requires that before approving discretionary projects the Lead Agency must identify and examine the significant adverse environmental effects which may result from that project. A project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (Sections 15064.5(b) and 21084).

As it pertains to cultural resources, CEQA defines the term “historical resource” as the following:

- (1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (Pub. Res. Code §5024.1, Title 14 CCR. Section 4850 et seq.).
- (2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- (3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record.

Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the CRHR (Pub. Res. Code §5024.1, Title 14, Section 4852) including the following:

- (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.

The fact that a resource is not listed in, or determined eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resource Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

According to CEQA (§15064.5b), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

- (1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
- (2) The significance of an historical resource is materially impaired when a project:
 - (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or
 - (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
 - (C) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

- (1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
- (2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
- (3) If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
- (4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the

Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) & (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides: (d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American heritage Commission as provided in Public Resources Code §5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American heritage Commission. Action implementing such an agreement is exempt from:

- (1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
- (2) The requirement of CEQA and the Coastal Act.

2.2.2 County of San Diego CEQA Significance

As stated above, if a resource is not listed in, or determined eligible for listing in the CRHR, and not included in a local register or not deemed significant in a historical resource survey, it may nonetheless be historically significant. If a proposed project has the potential to effect a historical resource, the significance of that resource must be determined. The significance of a historical resource is based on the potential for the resource to address important research questions as documented in a site specific technical report prepared as part of the environmental review process. Research priorities for the prehistoric, ethnohistoric and historic periods of San Diego County history are discussed in these Guidelines and should be used in the determination of historical significance. As a baseline, the County of San Diego has established the following criteria to be used in the determination of significance under CEQA.

A number of criteria are used in identifying significant historic/archaeological resources and are based upon the criteria for inclusion in the San Diego County Local Register. Significance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of San Diego County in history, architecture, archaeology, engineering, and culture.

The San Diego County Local Register was modeled after the California Register. As such, a cultural resource is determined significant if the resource is listed in, or determined to be eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, or the San Diego County Local Register of Historical Resources. Any resource that is significant at the National or State level is by definition significant at the local level.

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources; or is not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or is not identified in an historical resources survey (meeting

the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that a resource may be historical as defined in Public Resources Code section 5020.1(j) or 5024.1.

The following criteria must be considered when evaluating a resource's importance. The first four criteria were derived from the significance criteria found in the California Environmental Quality Act and the San Diego County Local Register of Historical Resources (Ordinance No.9493; San Diego County Administrative Code §396.7).

1. Resources associated with events that have made a significant contribution to the broad patterns of California or San Diego County's history and cultural heritage. Examples include resources associated with the Battle of San Pasqual (Mexican-American War, 1846) or gold mining in the Julian area (1870s), or a Kumeyaay settlement in the Cuyamaca Valley. Each of these resources would be considered significant because it is associated with an event that has made a significant contribution to the broad patterns of San Diego County's history and cultural heritage.
2. Resources associated with the lives of persons important to our past, including the history of San Diego County or its communities. Resources that are associated with the life of George W. Marston (Benefactor/Merchant/Civic Leader), Kate Sessions (Horticulturalist), John D. Spreckels (Investor/Developer), Ellen Browning Scripps (Philanthropist), Ah Quin (Chinese Merchant/Labor Contractor), Manuel O. Medina (Pioneer of the Tuna Industry), Jose Manuel Polton (Hatam [Kumeyaay Captain of the Florida Canyon Village]), or Jose Pedro Panto (Kumeyaay Captain of the San Pasqual Pueblo) illustrates this criteria because this list identifies examples of individuals that are important to the history of San Diego County or its communities.
3. Resources that embody the distinctive characteristics of a type, period, region (San Diego County), or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Resources representing the work of William Templeton Johnson (Architect – Balboa Park, Serra Museum), Irving Gill (Architect – Bishop's School), Lilian Rice (Rancho Santa Fe), or Hazel Waterman (Designer – Estudillo Adobe Restoration) would be considered significant because they represent the work of an important creative individual; or if a resource is identified as a Queen Anne, Mission Revival, Craftsman, Spanish Colonial, or Western Ranch Style structure, it would be significant because it embodies the distinctive characteristics of a type or period.
4. Resources that have yielded or may be likely to yield, information important in prehistory or history. Most archaeological resources contain information; however the amount of information varies from resource to resource. For example, a small lithic scatter will contain information, but it will be on a much more limited basis than that of a village or camp site. The information may be captured during initial recordation and testing of the site or may require a full data recovery program or additional treatment/mitigation. Any site that yields information or has the potential to yield information is considered a significant site. Most resources will be considered significant because they contain some information that contributes to our knowledge of history or prehistory. The criteria used to evaluate a single resource is the same criteria used to evaluate cumulative impacts to multiple resources outside the boundary of a project.

5. Although districts typically will fall into one of the above four categories, because they are not specifically identified, the following criterion is included which was obtained from the National Register:

Districts are significant resources if they are composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition, but collectively compose an entity of exceptional historical or artistic significance, or outstandingly commemorate or illustrate a way of life or culture. A traditional cultural landscape is an example a prehistoric district because individual sites must be considered within the broader context of their association with one another.

6. Human remains are considered “highly sensitive” by the County. As such, human remains require special consideration and treatment. Regulations require that if human remains are discovered, the County Coroner shall be contacted. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains. This criterion was included pursuant to the California Environmental Quality Act (§15064.5) and California State Code (PRC5097.98 and HSC7050.5). As such, a resource shall be considered significant if it contains any human remains interred outside of a formal cemetery. Mitigation measures will be developed on a case by case basis by the County archaeologist and the archaeological consultant. In addition, it is of the utmost importance to tribes that human remains be avoided whenever feasible.
7. Integrity is the authenticity of a resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. The evaluation of integrity is somewhat of a subjective judgment, but it must always be grounded in an understanding of a property’s physical features and how they relate to its historical associations or attributes and context. Resources must retain enough of their historical character or appearance to be recognizable as historical resources and to convey the reasons for their significance. An evaluation of integrity is an essential part of determining significance for historical resources such as building, structures, and districts.

Integrity is evaluated through the assessment of a cultural resource’s attributes, and may include location, design, setting, materials, workmanship, feeling, and association. It must be judged with reference to the particular criteria under which a resource is proposed for eligibility (structural, architectural, artistic, historic location, archaeological site, historic district). Alterations over time to a resource or historic changes in its use may themselves have historical, cultural, or architectural significance.

Attributes - Attributes are those distinctive features that characterize a resource. They should be evaluated and compared to other properties of its type, period, or method of construction.

Location - Location is the place where the property was constructed or the place where the historical event occurred. The actual location of an historical property, complemented

by its setting, is particularly important in recapturing the sense of historical events and persons.

Design - Design is the combination of elements that create the historical form, plan, space, structure, and style of a property. This includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials. Design can also apply to districts and to the historical way in which the buildings, sites, or structures are related. Examples include spatial relationships between major features; visual rhythms in a streetscape or landscape plantings; the layout and materials of walkways and roads; and the relationship of other features, such as statues, water fountains, and archaeological sites.

Setting - Setting is the physical environment of an historical property. It refers to the historical character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its historical relationship to surrounding features and open space. The physical features that constitute the historical setting of an historical property can be either natural or manmade and include such elements as topographical features, vegetation, simple manmade paths or fences and the relationships between buildings and other features or open spaces.

Materials - Materials are the physical elements that were present during the development period and are still present or, if materials have been replaced, the replacement(s) must have been based on the original. The property must be an actual historical resource, not a re-creation. For example, a Victorian style wood-frame dwelling that has been covered with reconstructed stucco has lost its integrity of materials. Conversely, an adobe wall that has been reconstructed with similar adobe mud, as opposed to adobe-simulate concrete, would retain its integrity of materials.

Workmanship - Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history. It is the evidence of the artisans' labor and skill in constructing or altering a building, structure, object, or site. It may be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. Examples of workmanship in historic buildings include tooling, carving, painting, graining, turning, and joinery. Examples of workmanship in precontact contexts include pottery, stone tools, basketry, rock art, bedrock milling, and stone structures.

To assess integrity one must:

- Define essential physical features that must be present to a high degree for a property to represent its significance;
- Determine whether the essential physical features are apparent enough to convey the property's significance; and
- Compare the property with similar properties in the locally significant theme.

A property that is significant for its historical association should retain the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person(s). If the property is a site where there are no material cultural remains, such as a battlefield, the setting must be intact. If the historical building associated with the event, pattern, or person no longer exists, the property has lost its historical integrity.

A property important for illustrating a particular architectural style or construction technique must retain the physical features that constitute that style or technique. A property that has lost some historical materials or details can be considered if it retains the majority of the features that illustrate its style in terms of the massing, spatial relationships, proportion, pattern of windows and doors, texture of materials, and ornamentation. A property should not be considered if it retains some basic features conveying massing, but has lost the majority of the features that once characterized its style. Normally changes to a structure that are reversible will not affect integrity because they will be less than significant.

Properties being considered for the first five criteria above must not only retain the essential physical features, but the features must be visible enough to convey their significance and historical identity. This means that even if a property is physically intact, its integrity is questionable if its significant features are concealed under modern construction. Archaeological properties are the exception to this – by nature they may not require visible features to convey their significance.

Unless a resource is determined to be “not significant” based on the above criteria, it will be considered a significant resource. If it is agreed to forego significance testing on cultural sites, the sites will be treated as significant resources and must be preserved through project design. In addition, a treatment plan must be prepared that will include preservation of cultural resources.

SECTION 3 METHODS

Chapter 3 discusses the methods utilized during the cultural resources inventory survey of the Project APE.

3.1 PERSONNEL QUALIFICATIONS

All phases of the cultural resources investigation were conducted by Registered Professional Archaeologist Arleen Garcia-Herbst, C.Phil., RPA, who meets the Secretary of the Interior's Professional Qualifications Standards for a prehistoric and historical archaeologist. Fieldwork and reporting was completed by Ms. Garcia-Herbst. Mr. Martin Rosen, M.A., RPA, provided technical report review and quality assurance. Resumes are available upon request.

Ms. Garcia-Herbst is a Secretary of the Interior-qualified Archaeologist and has been professionally involved with cultural resources management in California and Hawaii since 2006. She has extensive experience with the cultural and paleontological resources requirements of the City and County of San Diego, CEQA, Hawai'i Revised Statutes and Administrative Rules, the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act (NHPA). She is a City of San Diego, County of San Diego, and County of Riverside Qualified Archaeologist. While Ms. Garcia-Herbst's professional focus is in California and Hawaii, she also has project experience in Arizona, Nevada, Germany, Peru, and Argentina. She received her B.A. from the University of Arizona (1996), and completed her M.A. at the University of California, Santa Barbara (UCSB, 2000), is advanced to candidacy (C.Phil., 2006) and working on completing her Ph.D. thesis at the University of California, Santa Barbara.

Mr. Rosen has over 40 years of experience as a cultural resource professional where he has worked extensively in southern California, and also in the Great Basin, the Southwest, and in Guatemala. He joined Spindrifft in 2014, after starting his own small firm called Rosen Cultural Resources Consulting or RC2, working several years at ICF, and a 30-year career at Caltrans District 11 (San Diego and Imperial Counties), the last 10 spent as the senior cultural resources specialist. He was the District's Heritage Resources Coordinator from 1988 until his departure. At Caltrans, he ran numerous capital projects of every size, from small curve corrections, to major highway construction projects covering dozens of miles. He also had the sole responsibility of working with Local Jurisdictions who had received money from the Federal Highway Administration. He received his B.A. in 1974 and his M.A. in 1977, both from the University of California, Los Angeles. Mr. Rosen is a City of San Diego, County of San Diego, and County of Riverside Qualified Archaeologist, as well as a Registered Professional Archaeologist.

3.2 RECORDS SEARCH METHODS

A records search for the Project APE was completed by the South Coastal Information Center (SCIC) of the CHRIS at San Diego State University on 29 September 2015 (SCIC RSID #1116) (Appendix A; see records search request map in Figure 3). The purpose of the records search was to determine the extent of previous surveys within a 0.25-mile (400-meter) radius of the proposed project location, and whether previously documented prehistoric or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area.

In addition to the official records and maps for archaeological sites and surveys in San Diego County, the following historic references were also reviewed: Historic Property Data File for San Diego County (Office of Historic Preservation 2013a); The National Register Information System website (National Park Service 2013); Office of Historic Preservation, California Historical Landmarks website (Office of Historic Preservation 2013b); California Historical Landmarks (Office of Historic Preservation 1996 and updates); and California Points of Historical Interest (Office of Historic Preservation 1992 and updates).

A Final Environmental Impact Report (EIR) (City File No. ER 2006-10) was certified for the Citracado Parkway Extension Project that analyzed impacts to portions of the subject parcel from the roadway project. The EIR evaluated potential cultural resources on the Project site (Brian F. Smith and Associates, 2012) and mitigation measures were developed to reduce potential impacts from the widening project to less than a significant level. The Cultural Resources Section of the Final EIR was reviewed as part of this report.

3.3 NATIVE AMERICAN CONSULTATION METHODS

The City of Escondido contacted all persons or organizations on the City's AB 52 and SB 18 consultation lists on 9 July 2015 to request information on unrecorded cultural resources that may exist within the current Project APE, or to inquire about any concerns regarding sacred sites or traditional cultural properties in the vicinity that might be affected by the proposed action. A complete record is provided in Appendix B.

3.4 FIELD METHODS

A pedestrian field survey of the Project APE was not conducted as part of this inventory.

SECTION 4 RESULTS AND MANAGEMENT RECOMMENDATIONS

Information about cultural resources in and around the Project APE comes from the records search and literature review.

4.1 RECORDS SEARCH

The records search results indicated that 13 previous cultural resources studies (Table 1 in Appendix A) were conducted within 0.25-mile radius of the Project APE, and seven (7) cultural resources have previously been recorded within 0.25-mile radius of the Project APE (Table 2 in Appendix A).

One (1) cultural resource has been previously recorded within the Project APE (Site P-37-008280/CA-SDI-8280). The previous studies were conducted between 1982 and 2013.

Site P-37-008280/CA-SDI-8280 was originally recorded by Knutson in 1976 and updated by Gallegos and Associates (1991), ERCE (1992), and Andrew York of EDAW (1996). According to Knutson, site components consisted of prehistoric period (Late Prehistoric) rock art, bedrock milling, flakes, scrapers, manos, metates, planes, arrowheads, and a “trail shrine” in an area that covered 17.24 acres. Gallegos and Associates noted historic-period (ca. 1914-1945) water cisterns and a prehistoric rock alignment. ERCE (1992) updated the site to include a historic-period component. York’s update described the site as “an extensive distribution of prehistoric and historic materials” in an area measuring approximately 200 x 300 meters. York recorded 94 bedrock milling features, three (3) midden deposits, and a light lithic scatter of flakes, a mano, and fire affected rocks, but was not able to relocate the previously recorded pictograph. Historic components consisted of two concrete structures, concrete rubble, fence posts, lumber, nails, and possible animal cages. The site was heavily disturbed by graffiti, vandalism, trash dumping, foot and vehicle traffic, agriculture, and construction activities. Vegetation consisted of introduced grasses, live oaks, and poison oak. In October 2010, HDR, Inc. conducted a resurvey of the area as part of a cultural resource assessment for San Diego Gas & Electric’s (SDG&E) TCM Access Road Grading Project. This survey only consisted of portions of SDG&E access roads that overlap prerecorded cultural resources; therefore, this update only pertains to the portion of P-37-008280/CA-SDI-8280, which is within the access road. Areas of the site outside the access road were not revisited. P-37-008280/CA-SDI-8280 was not relocated within the existing access roads. Topsoil was present throughout the dirt access roads; however, some of the access roads had been paved with asphalt. Ground vegetation was sparse along dirt roads and visibility was excellent.

Brian F. Smith and Associates (BFSA) personnel and Native American monitors conducted an archaeological survey of the Citracado Parkway Extension Project during the weeks of January 25, 2010, and May 9, 2010. One of the archaeological sites with associated bedrock milling features, pictographs, and surface artifact scatters observed was the previously recorded P-37-008280/CA-SDI-8280. Native American representatives of both the Kumeyaay and Luiseño were present during all fieldwork conducted for the Citracado Parkway project. The cultural resources within the APE were tested for significance evaluations following standard professional archaeological field protocol and the guidelines of the City. The testing program was conducted between January 26 and February 18, 2010. The procedures used also correspond to guidelines for cultural resources studies published by the County of San Diego. The archaeological testing and significance evaluation program for Site P-37-008280/CA-SDI-8280 was conducted by BFSA in 2010. The analysis of the archaeological information recovered during the testing

programs at P-37-008280/CA-SDI-8280 indicates that the site has significant subsurface deposits, large quantities of bedrock milling, and associated pictograph loci; and, therefore, has the potential to further answer questions related to the understanding of prehistory and history for the region, state, and/or nation (CEQA Section 15064.5 (c)). Therefore, it was recommended as eligible for the CRHR.

A review of California Inventory of Historic Resources (March 1976), indicated that there are no inventoried historic properties within the Project APE or within the vicinity of the Project APE.

Resources listed as California Historical Landmarks (CHL; Office of Historic Preservation 1996) and on the Office of Historic Preservation website (Office of Historic Preservation 2015) were reviewed. There are no inventoried CHLs within the Project APE or within the vicinity of the Project APE.

The Caltrans Historic Bridge Local Inventory (Caltrans 2013a) listed no historic bridges within 0.25 mile of the Project APE. Additionally, the Caltrans State Historic Bridge Inventory (Caltrans 2013b) listed no bridges within 0.25 mile of the Project APE.

A Final Environmental Impact Report (EIR) (City File No. ER 2006-10) was certified for the Citracado Parkway Extension Project that analyzed impacts to one cultural resource (P-37-008280/CA-SDI-8280) within a portion of the roadway project. Mitigation measures and protection of the cultural resources were identified in the EIR. A section of the Citracado Parkway project along the HARRF project frontage was recently completed and archaeological eligibility evaluation testing was completed, finding the portion of site P-37-008280/CA-SDI-8280 within the Citracado project APE as eligible for the CRHR; however, the portion of site P-37-008280/CA-SDI-8280 within the proposed HARRF project APE has not been evaluated for eligibility to the CRHR.

4.2 NATIVE AMERICAN CONSULTATION RESULTS

During the initial phase of the Citracado Parkway Extension Project, the California Native American Heritage Commission (NAHC) was contacted to identify possible sacred lands within the project area (Bowden-Renna and Apple 2008). No known sacred lands were identified within the project area. The NAHC provided a list of contact information for local Native American representatives that may have an interest or concerns regarding the proposed project. In addition, the NAHC strongly recommended that EDAW contact Cami Mojado or Mark Mojado of the San Luis Rey Band of Luiseño Indians regarding the proposed project. All persons listed by the NAHC, including the Mojado family, were contacted.

Consultation with local Native American groups for the Citracado Project was ongoing and included letters, telephone calls, meetings, and site visits. On February 15, 2008, a field visit to the Citracado Project area was scheduled with interested Native Americans and City of Escondido personnel. Due to inclement weather, the field visit was postponed and a meeting was held at the City of Escondido offices to address concerns regarding the proposed project as well as proposed investigations at site CA-SDI-12,209 (see below).

Attendees at the February meeting included Catalina Campos from the San Pasqual Band of Mission Indians; Cami Mojado and Mindy Mojado from the San Luis Rey Band of Luiseño Indians; City of Escondido representatives Diana Delgadillo and Robert Zaino; and, EDAW representatives Jason Reynolds, Rebecca Apple, and Cheryl Bowden-Renna.

On March 4, 2008, a rescheduled site tour was conducted. Participants included Clint Linton from the Santa Ysabel Band of Mission Indians; Cami Mojado and Mindy Mojado from the San Luis Rey Band of Luiseño Indians; City of Escondido representative Diana Delgadillo; and Jason Reynolds, Rebecca Apple, and Cheryl Bowden-Renna from EDAW.

Site P-37-008280/CA-SDI-8280 is located south of the Escondido Creek. The site is primarily a late prehistoric habitation site that contains bedrock milling features, pictographs, multiple artifacts and habitation debris, and artifact-rich midden soil. The archaeological testing of the site associated with the environmental review of the Citracado Parkway Extension Project was conducted in 2010 by BFSa. At the request of local Native American representatives, the City of Escondido agreed that a representative from both the Kumeyaay and Luiseño would be present during the testing program, as the site was located within territorial boundaries of both the Kumeyaay and Luiseño.

Native American monitors from Red Tail Monitoring and Research, Inc. (Kumeyaay) and the San Luis Rey Band of Luiseño Indians were present during the resurvey, testing, and evaluation effort conducted for the Citracado Project by BFSa. The results were published in *Cultural Resources Survey and Evaluation Program for the Citracado Parkway Extension Project* (Brian F. Smith and Associates 2012) prepared by BFSa and provided in Appendix E of the Citracado EIR.

The prehistoric site is interpreted as Late Prehistoric period occupation site and has associated pictograph features. The analysis of the archaeological information recovered during the testing program indicates that the site has significant subsurface deposits, large quantities of bedrock milling, and associated pictograph loci; and, therefore, have the potential to further answer questions related to the understanding of prehistory and history for the region, state, and/or nation (CEQA Section 15064.5(c)). Based on data from various studies of P-37-008280/CA-SDI-8280, particularly the 2006 BFSa study for the Harmony Grove Village Project (Gilbert et al. 2006), the site as a whole, is considered to be significant under CEQA criteria. Given the presence of clearly definable rock art and the overall data potential for the site, Site P-37-008280/CA-SDI-8280 is significant under CEQA Section 15064.5(a, c). No human remains were identified by BFSa during subsurface excavations conducted in the Citracado Parkway Project APE.

Subsequent to the Citracado Parkway Project, on 20 July 2015, the San Luis Rey Band of Mission Indians requested to consult with the City of Escondido regarding the HARRF Project pursuant to AB 52, and City Planning Division personnel met with Tribal Representatives. The Pauma Band of Luiseño Indians expressed concern regarding how the sites identified by the Citracado project will be protected, if an alternative site development plan was being discussed, and asked to be contacted to schedule a site visit to the property. The Rincon Band requested to be included in any archaeological field surveys done on the site. A complete record is provided in Appendix B.

4.3 FIELD SURVEY RESULTS

A pedestrian field survey of the Project APE was not conducted as part of this inventory.

4.4 MANAGEMENT CONSIDERATIONS

4.4.1 Conclusions

One (1) cultural resource was identified within the Project APE (P-37-008280/CA-SDI-8280). The potential for subsurface historic- and prehistoric-period cultural resources is generally considered high within the western half of the Project APE within the boundaries of Site P-37-008280/CA-SDI-8280 (Figure 6).

The portion of Site P-37-008280/CA-SDI-8280 within the Citracado Project APE, and directly adjacent to the HARFF Project APE, is eligible for the CRHR under Criteria 4 (Brian F. Smith and Associates 2012). The period of significance is Late Prehistoric. It is unknown if the State Historic Preservation Officer has concurred with this recommendation, as no documentation was provided by the records search. However, the portion of site P-37-008280/CA-SDI-8280 within the Project APE has not been evaluated for the CRHR.

Preservation in place by project redesign and avoidance of impacts and adverse effects to this eligible resource is recommended, if feasible. If avoidance of impacts is not feasible, then before construction, a pedestrian inventory survey to determine the horizontal extent of the site within the Project APE, and subsequent subsurface testing program to determine the presence or absence of *in situ* buried archaeological deposits within the portion of Site P-37-008280/CA-SDI-8280 (vertical extent) within the Project APE and its integrity is recommended. The results and an evaluation of eligibility should be reported in a separate document.

4.4.2 Monitoring

Due to the high sensitivity of the Project APE for prehistoric and historic-period resources, Spindrift recommends that all ground-disturbing activity be monitored by an archaeological monitor, who has the authority to halt construction activity, in accordance with the unanticipated discovery procedures discussed below.

In the event of any unanticipated discoveries during construction, a less than significant impact to buried resources, if present, would occur with implementation of Mitigation Measures C-1 and C-2.

Mitigation Measures

- C-1** All ground disturbing activities should be monitored by a qualified professional archaeologist and a Native American consultant, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission. Both monitors shall have the authority to halt construction activities in the event that cultural deposits, or those that are potentially cultural, are encountered. The monitors shall examine the deposits and, if the find is confirmed to be cultural in origin, which includes human remains and

archaeological materials, then the protocols for unanticipated discovery shall be followed.

- C-2** If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 50-foot radius of the discovery. The on-site archaeological monitor or Principal Investigator, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be afforded a reasonable amount of time to evaluate the significance of the find. Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR. If a *potentially*-eligible resource is encountered, then the archaeologist, lead agency, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations to evaluate eligibility and, if eligible, total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the lead agency as verification that the provisions in CEQA/NEPA for managing unanticipated discoveries have been met.

In the event that evidence of human remains is discovered, construction activities within 50 feet of the discovery will be halted or diverted, and the requirements above will be implemented. Depending on the occurrence, a larger radius may be necessary and will be required at the discretion of the on-site archaeologist. In addition, the provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. When human remains are discovered, state law requires that the discovery be reported to the County Coroner (Section 7050.5 of the Health and Safety Code) and that reasonable protection measures be taken during construction to protect the discovery from disturbance (AB 2641). If the Coroner determines the remains are Native American, the Coroner notifies the Native American Heritage Commission, which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code). The MLD may not be the same person as the tribal monitor. The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).

Implementation of the above mitigation measures will reduce impacts to buried cultural resources to a less than significant level.

The Lead Agency, the City of Escondido, is responsible for ensuring compliance with these mitigation measures because damage to significant cultural resources is in violation of CEQA and Section 106. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, *Mitigation Monitoring or Reporting*, “the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.”

SECTION 5 REFERENCES

Caltrans

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FIGURES

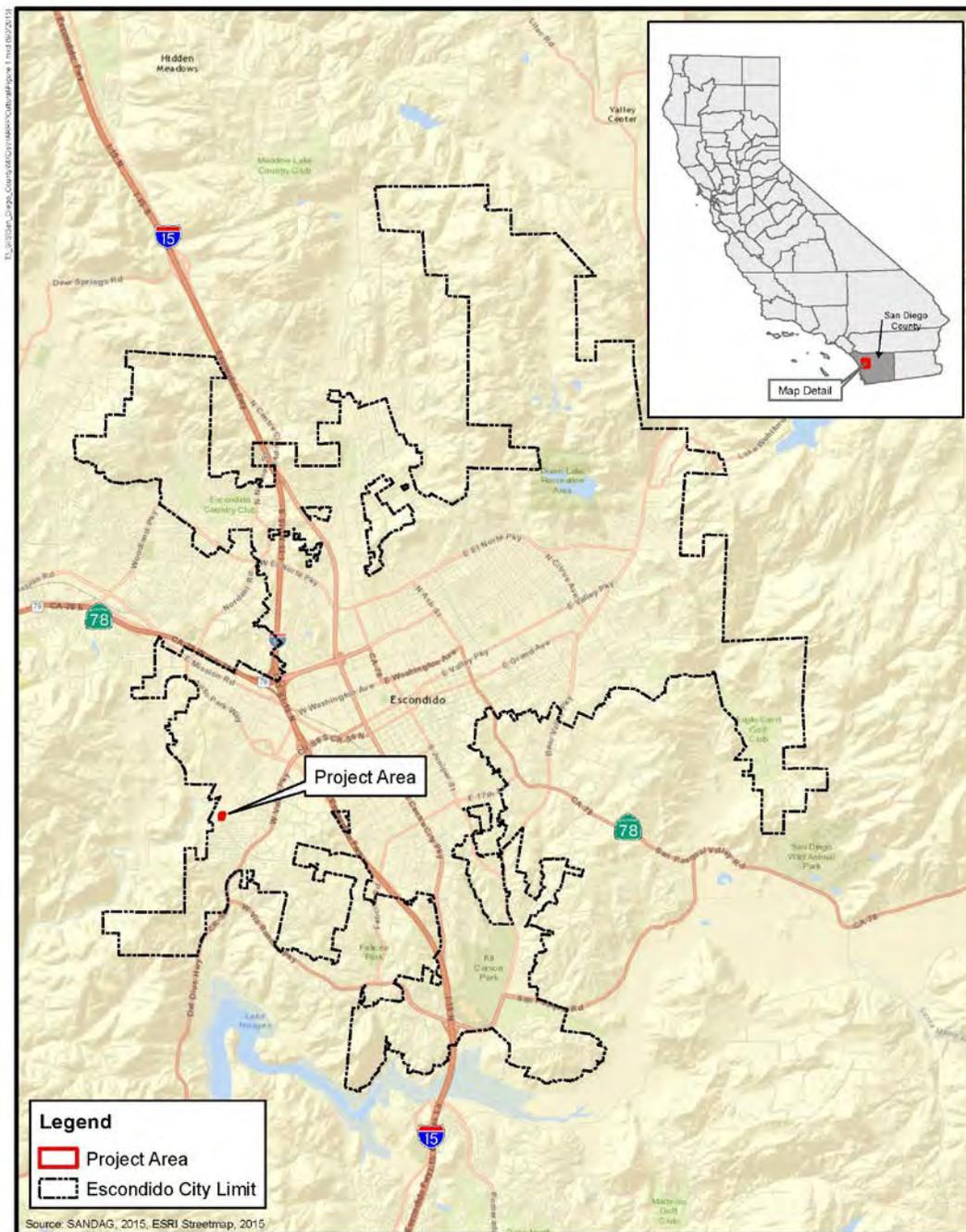


Figure 1
Project Location and Vicinity

Michael Baker
INTERNATIONAL

Figure 1. Project Location Map

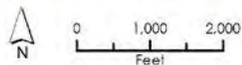
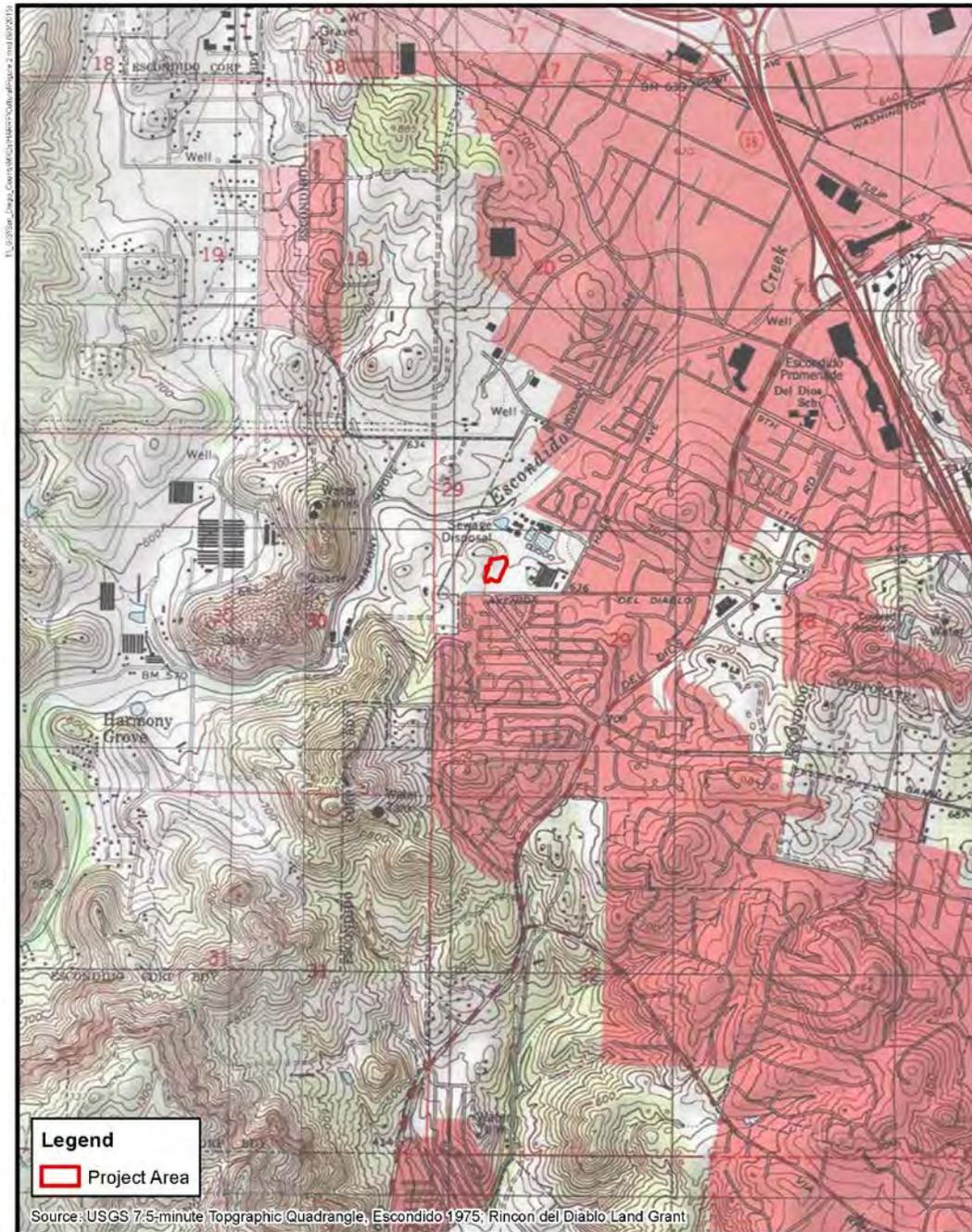


Figure 2
Project Area
Michael Baker
INTERNATIONAL

Figure 2. Project Area Map

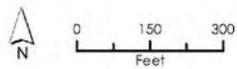
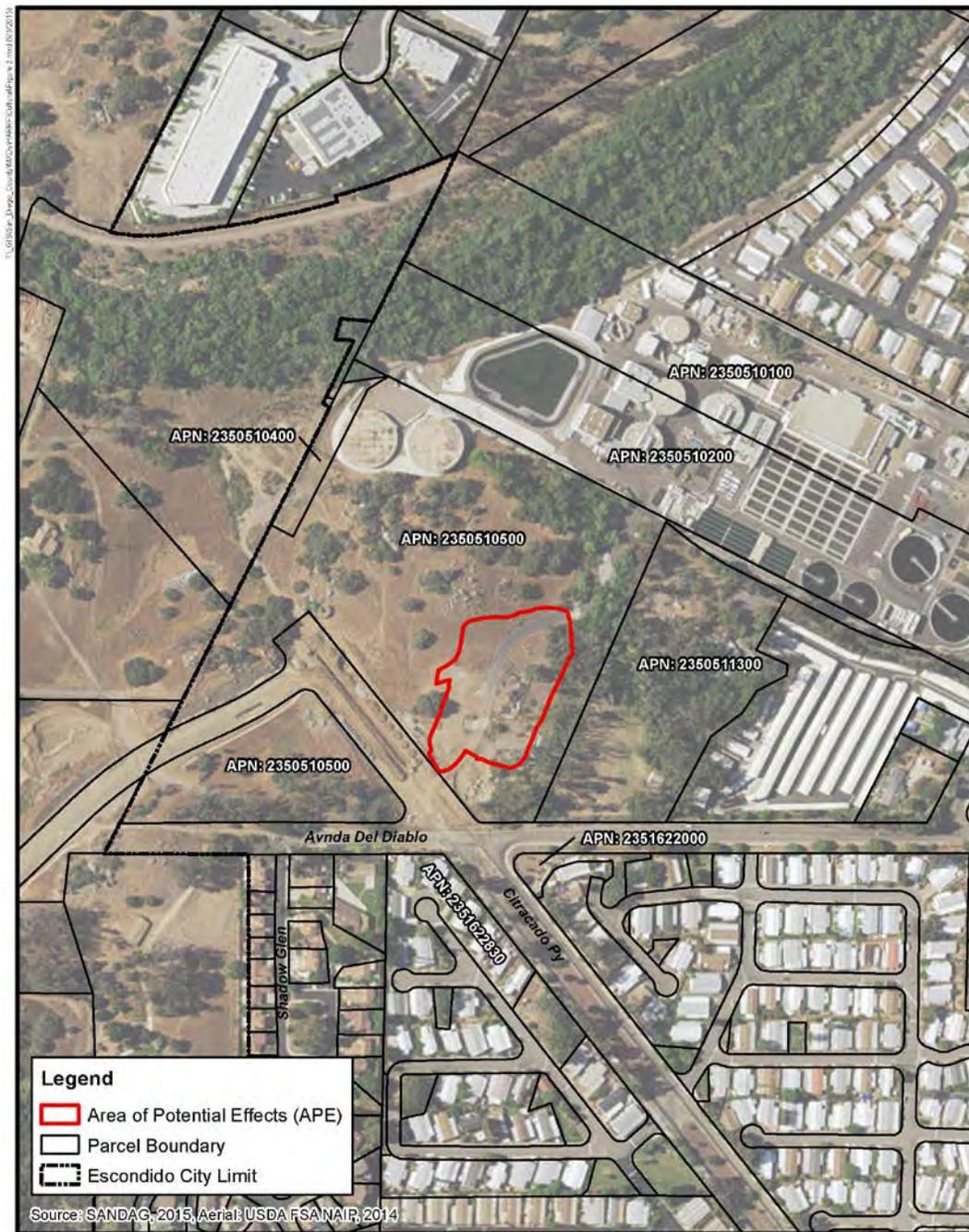


Figure 3
Area of Potential Effects

Michael Baker
INTERNATIONAL

Figure 3. Project APE Map

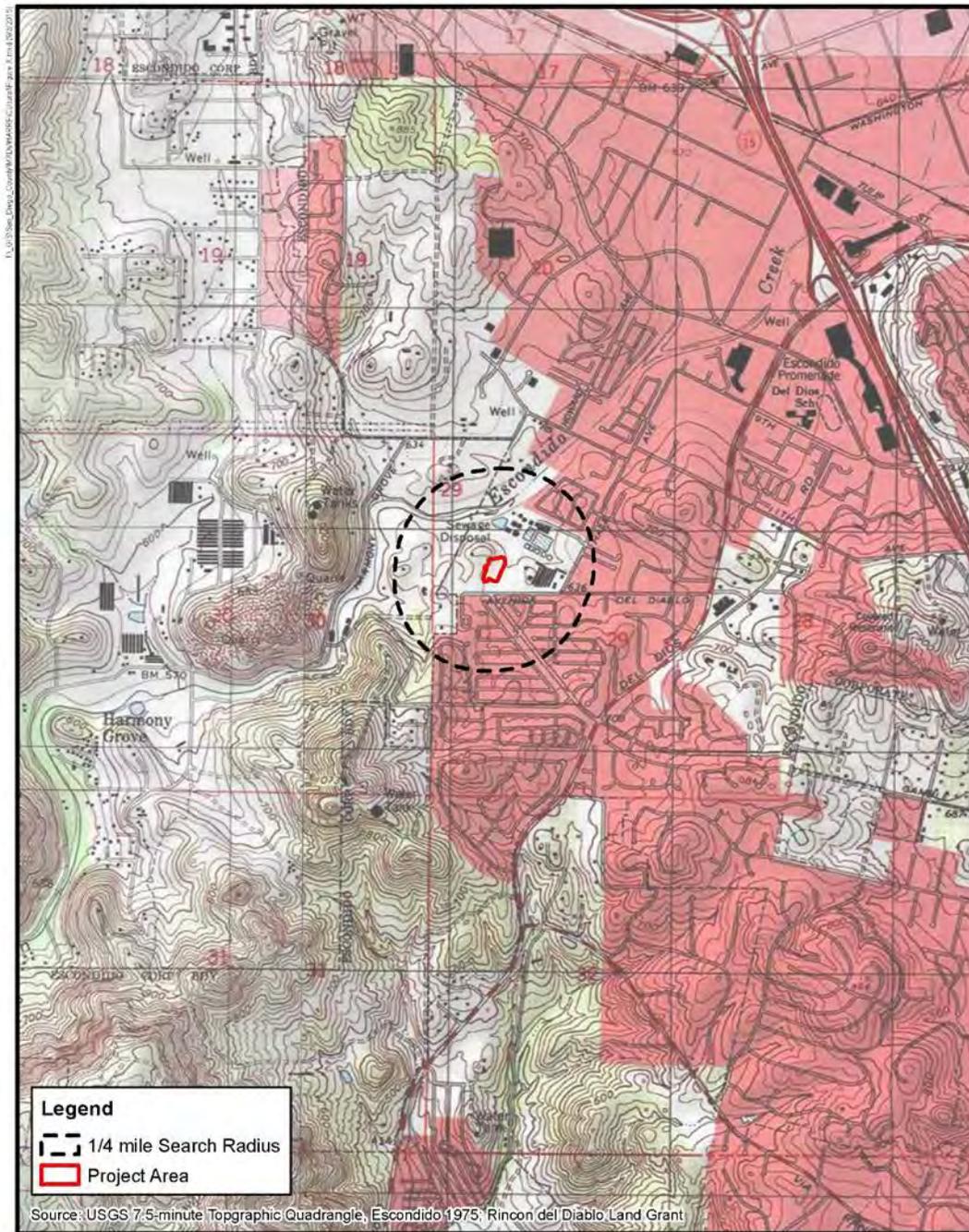
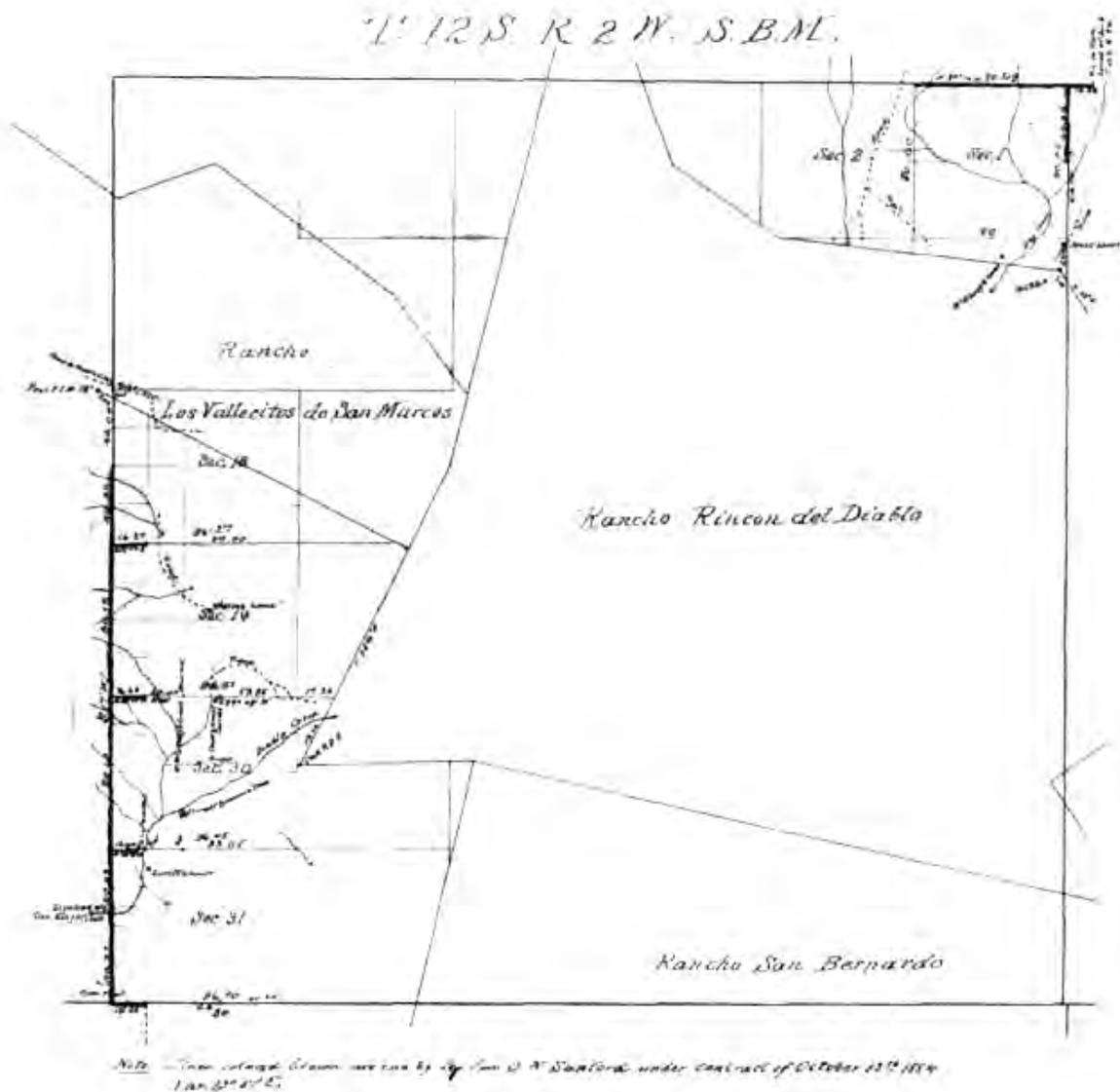


Figure 4
Search Area
Michael Baker
INTERNATIONAL

Figure 4. Records Search Boundary Map



The Huntington Library

Figure 5. A survey map of Rancho Rincon del Diablo made in 1884. Source: Stanford, Leland G. 1978 Devil's Corner and Oliver S. Withersby. *The Journal of San Diego History, San Diego Historical Society Quarterly* 24 (2). Electronic Document, <http://www.sandiegohistory.org/journal/78spring/corner.htm>, Viewed 8 October 2015.

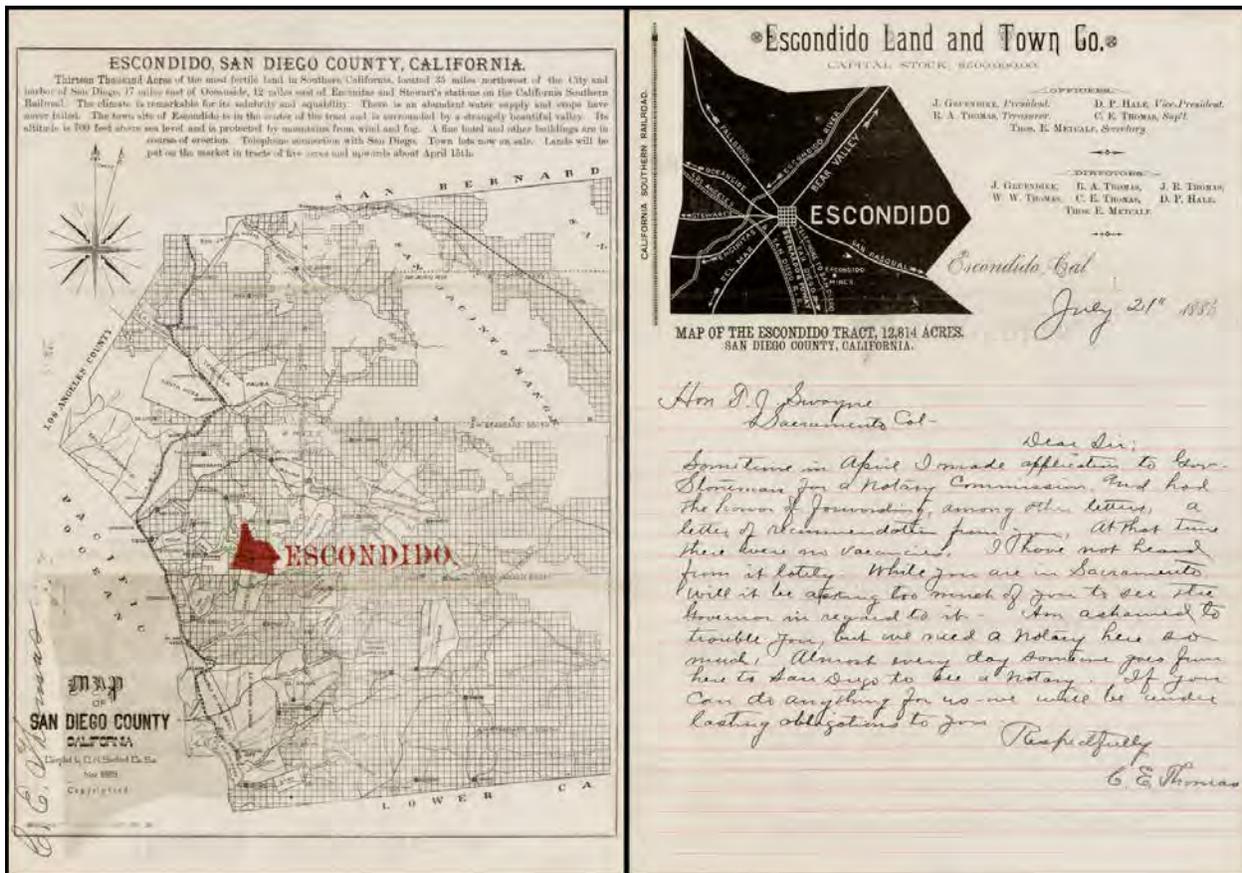


Figure 6. Map of San Diego County California Compiled by O.N. Sanford Co. Sur. Nov. 1885. / Escondido Land and Town Co. (with Autographed Letter). Source: Barry Lawrence Ruderman Antique Maps Inc. Electronic Document, https://www.raremaps.com/gallery/detail/32489/Map_of_San_Diego_County_California_Compiled_by_ON_Sanford_Co_Sur_Nov/Escondido%20Land%20and%20Town%20Comp any.html, Viewed 8 October 2015.

Unrecorded letter sheet, promoting the land owned by the Escondido Land and Town Company. The letter sheet is written by C.E. Thomas to a T.J. Swaine in Sacramento, regarding an application for Notary Commission. Thomas states "we need a notary here so much. Almost every day someone goes from here to San Diego to see a notary..."

The letter sheet also includes an unusual map of the area around Escondido, showing the various roads to the neighboring communities and noting "Telephone to San Diego," which would likely be Telegraph Canyon.

The lettersheet includes a large map of San Diego County on the verso, with promotional information for the town of Escondido. The red section on the map locates Rancho Rincon Del Diablo, a 12,653 acre Mexican Land Grant Rancho given to Juan Bautista Alvarado in 1843.

APPENDIX A



South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
nick@scic.org

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM RECORDS SEARCH

Company: Spindrift Archaeological Consulting

Company Representative: Arleen Garcia-Herbst

Date Processed: 10/11/2015

Project Identification: Hale Avenue Resource Recovery Facility Storage Project
#2015-08

Search Radius: 1/4 mile

Historical Resources: YES
Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: YES
Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: YES
A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: YES
The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Summary of SHRC Approved CHRIS IC Records Search Elements

RSID:	1116
RUSH:	yes
Hours:	1
Spatial Features:	23
Address-Mapped Shapes:	yes
Digital Database Records:	1
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	78

Table 1. Previous Investigations Within a 1/2-mile Radius of the Project APE

Report Number	Author	Year	Report Title	Type of Study
SD-01407	CHACE, PAUL G.	1982	AN ARCHAEOLOGICAL RECONNAISSANCE AND TESTING PROGRAM FOR THE STORM DRAIN ALIGNMENT-HALE AVENUE SEWAGE TREATMENT PLANT, ESCONDIDO, CALIFORNIA.	ARCHAEOLOGICAL, EVALUATION, FIELD STUDY
SD-01828	CHACE, PAUL G.	1982	AN ARCHAEOLOGICAL SURVEY OF THE SMITH PROPERTY, ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, FIELD STUDY
SD-02219	DENNIS GALLEGOS	1992	HISTORICAL/ARCHAEOLOGICAL SURVEY REPORT FOR THE PROPOSED GRAND AVE, SECOND AVE, AND VALLEY BLVD SPECIFIC PLAN, ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, EXCAVATION, FIELD STUDY
SD-02341	SMITH, BRIAN F.	1992	ARCHAEOLOGICAL INVESTIGATIONS FOR THE HALE AVENUE WASTEWATER TREATMENT PLANT EXPANSION PROJECT	ARCHAEOLOGICAL, EVALUATION
SD-02346	SMITH, BRIAN F.	1991	ARCHAEOLOGICAL INVESTIGATIONS FOR THE HALE AVENUE WASTEWATER TREATMENT PLANT EXPANSION PROJECT	ARCHAEOLOGICAL, EVALUATION
SD-02389	SMITH, BRIAN F.	1991	ARCHAEOLOGICAL INVESTIGATIONS FOR THE HALE AVENUE WASTEWATER TREATMENT PLANT EXPANSION PROJECT - CITY OF ESCONDIDO, CA	ARCHAEOLOGICAL, EXCAVATION, FIELD STUDY, MANAGEMENT/PLANNING
SD-03630	YORK, ANDREW L.	1996	ARCHAEOLOGICAL SURVEY FOR PROPOSED EXPANSION TO THE HALE AVENUE RESOURCE RECOVERY FACILITY, ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION

Table 1. Previous Investigations Within a ½-mile Radius of the Project APE

Report Number	Author	Year	Report Title	Type of Study
SD-04719	CITY OF ESCONDIDO	1990	ARCHAEOLOGICAL INVESTIGATIONS FOR THE HALE AVENUE WASTEWATER TREATMENT PLANT EXPANSION PROJECT - CONFIDENTIAL APPENDICES	ARCHAEOLOGICAL, EVALUATION
SD-08588	CITY OF ESCONDIDO	1980	DRAFT ENVIRONMENTAL IMPACT REPORT FOR EXPANSION OF WASTEWATER TREATMENT FACILITY	OTHER RESEARCH
SD-08596	KELLER ENVIRONMENTAL ASSOCIATES, INC	1992	APPENDICES-RECLAIMED WATER DISTRIBUTION SYSTEM PROJECT: DRAFT ENVIRONMENTAL IMPACT REPORT	OTHER RESEARCH
SD-13626	MORGAN, NICHOLE B.	2011	TCM ACCESS ROAD GRADING PROJECT, CULTURAL RESOURCES INVENTORY REPORT	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-14200	BOWDEN-RENNNA, CHERYL	2012	LETTER REPORT: ETS 22159- CULTURAL RESOURCES SURVEY FOR NEW POLE P24876, ESCONDIDO AREA OF NORTHERN SAN DIEGO COUNTY, CALIFORNIA- IO 7011102	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-14730	DAVISON, KRISTINA AND MARY ROBBINS-WADE	2013	LAKE MORENA'S OAK SHORES MUTUAL WATER COMPANY WATER SYSTEM IMPROVEMENTS PROJECT PHASE 2- ARCHAEOLOGICAL MONITORING	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH

Table 2. Previously Recorded Sites

Site identifier	Prehistoric or Historic	Report Reference	Within Project Site
P-37-007871	PREHISTORIC BEDROCK MILLING STATION	SD-01407, SD-04719	NO
P-37-008280	PREHISTORIC VILLAGE, ROCK ART AND TRAIL SHRINE HISTORIC STRUCTURES AND REFUSE	SD-01407, SD-02342, SD-02346, SD-02389, SD-02459, SD-03630, SD-04719, SD-13626	YES
P-37-012209	PREHISTORIC BEDROCK MILLING STATION	SD-02459, SD-13626	NO
P-37-012460	PREHISTORIC BEDROCK MILLING STATION	SD-02459	NO
P-37-012461	PREHISTORIC BEDROCK MILLING STATION	SD-02459, SD-13626	NO
P-37-012601	PREHISTORIC BEDROCK MILLING STATION	SD-02341	NO
P-37-033269	PREHISTORIC ARTIFACT CONCENTRATION	N/A	NO

APPENDIX B

SAN LUIS REY BAND OF MISSION INDIANS

1889 Sunset Drive • Vista, California 92081

760-724-8505 • FAX 760-724-2172

www.slrmissionindians.org

July 20, 2015

Jay Paul
Associate Planner
City of Escondido
201 North Broadway
Escondido, CA 92025

VIA U.S. POST & E-MAIL
jpaul@escondido.org

RE: Formal Request for Tribal Consultation Pursuant to the California Environmental Quality Act (CEQA), Public Resources Code section 21080.3.1, subds. (b), (d) and (e) for HARRF Wastewater Collections Yard Project, City of Escondido, California (PHG15-0018 and ENV 15-008)

Dear Mr. Paul:

This letter constitutes a formal request for tribal consultation under the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21080.3.1 subdivisions (b), (d) and (e)) for the mitigation of potential project impacts to tribal cultural resource for the above referenced project. The San Luis Rey Band of Mission Indians requested formal notice and information for all projects within your agency's geographical jurisdiction and received notification on July 8, 2015 regarding the above referenced project.

The San Luis Rey Band of Mission Indians requests consultation on the following topics checked below, which shall be included in consultation if requested (Public Resources Code section 21080.3.2, subd. (a)):

- Alternatives to the project
- Recommended mitigation measures
- Significant effects of the project

The San Luis Rey Band of Mission Indians also requests consultation on the following discretionary topics checked below (Public Resources Code section 21080.3.2 (subd. (a)):

- Type of environmental review necessary
- Significance of tribal cultural resources, including any regulations, policies or standards used by your agency to determine significance of tribal cultural resources

X Significance of the project's impacts on tribal cultural resources

X Project alternatives and/or appropriate measures for preservation or mitigation that we may recommend, including, but not limited to:

- (1) Avoidance and preservation of the resources in place, pursuant to Public Resources Code section 21084.3, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria;
- (2) Treating the resources with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resources, including but not limited to the following:
 - a. Protecting the cultural character and integrity of the resource;
 - b. Protection the traditional use of the resource; and
 - c. Protecting the confidentiality of the resource.
- (3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- (4) Protecting the resource.

Additionally, the San Luis Rey Band of Mission Indians requests to receive any cultural resources assessments or other assessments that have been completed on all or part of the project's potential "area of project effect" (APE), including, but not limited to:

1. The results of any UPDATED (*post-Citracado Parkway Extension FEIR*) record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
 - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
 - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
 - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.
2. The results of any archaeological inventory survey that was conducted (*post-Citracado Parkway Extension FEIR*), including:
 - Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission (*post-Citracado Parkway Extension FEIR*). The request form can be found at http://www.nahc.ca.gov/slf_request.html. USGS 7.5-minute quadrangle name, township, range, and section required for the search.
4. Any ethnographic studies conducted for any area including all or part of the potential APE (*post-Citracado Parkway Extension FEIR*); and
5. Any geotechnical reports regarding all or part of the potential APE (*post-Citracado Parkway Extension FEIR*).

We would like to remind your agency that CEQA Guidelines section 15126.4, subdivision (b)(3) states that preservation in place is the preferred manner of mitigating impacts to archaeological sites. Section 15126.4, subd. (b)(3) of the CEQA Guidelines has been interpreted by the California Court of Appeal to mean that “feasible preservation in place must be adopted to mitigate impacts to historical resources of an archaeological nature unless the lead agency determines that another form of mitigation is available and provides superior mitigation of impacts.” *Madera Oversight Coalition v. County of Madera* (2011) 199 Cal.App.4th 48, disapproved on other grounds, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.

The San Luis Rey Band of Mission Indians expects to begin consultation within 30 days of your receipt of this letter. Please contact the San Luis Rey Band of Mission Indians lead contact person identified in our previous request for notification.

Name: Cami Mojado
Title: Cultural Resources Manager
Address: 1889 Sunset Drive, Vista, CA 92081
Office Phone Number: 760-724-8505
Direct Cell Phone Number: 760-917-1736
Office Fax Number 760-724-2172
Email Address: cjmojado@slrmissionindians.org

Sincerely,



Merri Lopez-Keifer
Chief Legal Counsel
San Luis Rey Band of Mission Indians

APPENDIX C
CONFIDENTIAL

AVAILABLE UNDER SEPARATE COVER

APPENDIX D:

Geotechnical Investigation

GEOTECHNICAL INVESTIGATION
PROPOSED WASTEWATER COLLECTIONS
YARD RELOCATION - H.A.R.R.F.
1521 SOUTH HALE AVENUE
ESCONDIDO, CALIFORNIA

JOB NO. 14-20-02

JULY 9, 2015

WEST COAST
GEOTECHNICAL CONSULTANTS, INC.

**WEST COAST
GEOTECHNICAL CONSULTANTS, INC.**

1305 SIMPSON WAY, STE. F.
ESCONDIDO, CA 92029

PHONE: (760) 746-3592

July 9, 2015

Mr. Tim Thiele, P.E., Leed AP, QSD
RBF Consulting
5050 Avenida Encinas, Suite 260
Carlsbad, CA 92008

Project: Job No. 14-20-02
Proposed Wastewater Collections
Yard Relocation
H.A.R.R.F.
1521 So. Hale Avenue
Escondido, California

Subject: Report of Geotechnical Investigation

Dear Mr. Thiele:

In accordance with your request, we have completed a geotechnical investigation for the proposed project. We are presenting to you, herewith, our findings and recommendations for the construction of the proposed improvements.

If you have any questions after reviewing the findings and recommendations contained in the attached report, please do not hesitate to contact this office. This opportunity to be of professional service is sincerely appreciated.

Respectfully submitted,
WEST COAST GEOTECHNICAL CONSULTANTS, INC.



Vincent W. Gaby, CEG 1755, Expires 7/31/17
Engineering Geologist



Susana Kemmerrer, RGE 2287, Expires 6/30/17
Geotechnical Engineer



Distribution: (3) Addressee
VWG:SK/dfg

GEOTECHNICAL INVESTIGATION

PROPOSED WASTEWATER COLLECTIONS
YARD RELOCATION - H.A.R.R.F.
1521 SOUTH HALE AVENUE
ESCONDIDO, CALIFORNIA

Prepared For:

Mr. Tim Thiele, P.E., Leed AP, QSD
RBF Consulting
5050 Avenida Encinas, Suite 260
Carlsbad, CA 92008

JOB NO. 14-20-02

JULY 9, 2015

WEST COAST
GEOTECHNICAL CONSULTANTS, INC.

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ATTACHMENTS

Plate No. 1	Site Plan
Plate No. 2	Unified Soil Classification Chart
Plate No. 3 through 9	Exploratory Excavation Logs
Plate Nos. 10 and 11	Laboratory Test Results
Plate No. 12	Fill Slope Key Diagram
APPENDIX I	Specifications for Construction of Controlled Fills
APPENDIX II	References

GEOTECHNICAL INVESTIGATION

PROPOSED WASTEWATER COLLECTIONS YARD RELOCATION - H.A.R.R.F. ESCONDIDO, CALIFORNIA

1.0 Introduction and Summary

This report presents the results of our geotechnical investigation that was performed for the relocation of the Wastewater Collections Yard. The new Collections Yard will be located south of the existing Hale Avenue Resource Recovery Facility (HARRF), and approximately 150 feet northwest of the intersection of Citracado Parkway with Avenida Del Diablo.

The purpose of this investigation was to evaluate the existing surface and subsurface conditions from a geotechnical perspective, and to provide recommendations for grading, site preparation, foundation design and retaining wall construction.

A summary of our findings and recommendations is as follows:

- Dense to very dense bedrock was exposed at the exploratory locations at depths of approximately 1½ to 4 feet.
- The bedrock is mantled with overburden soils consisting of artificial fill and naturally occurring materials (colluvium). The complete removal and recompaction of the overburden soils is recommended beneath all proposed improvements and structural fill.
- Expansive soil materials were observed in two of the exploratory excavations located on the west side of the site. Expansion indices ranged from 54 to 87.

- Large boulders of very hard and resistant rock are present on the site. Difficult excavation should be expected especially when trenching or when using light-duty earthmoving equipment. Heavy-duty earthmoving equipment may be required to excavate the well cemented materials.
- Groundwater was not encountered in the exploratory excavations. However, the property is situated near a tributary drainage to the Escondido Creek. Transitory subsurface water may be experienced during the lifetime of the new facility.
- The proposed buildings may be supported on shallow footings that are completely embedded into the appropriately recompacted soils. Structures that are independent of the buildings and retaining walls may be supported on foundations that are completely embedded into competent bedrock.

2.0 Project Description

The proposed project will be the construction of three buildings, outdoor storage (both covered and uncovered) and parking areas. The buildings will be prefabricated structures one story in height. They will be supported on conventional foundations with slab-on-grade floors.

Based on the preliminary grading plan provided by our Client, the proposed earthwork will result in maximum cuts and fills on the order of 8 feet. Cut slopes may be up to 11 feet in height while fill slopes may reach a maximum height of 9 feet. A retaining wall is planned to support the fill area north of proposed Building C. We should be allowed the opportunity to review and amend our recommendations, if necessary, after construction documents have been completed.

The site configuration and the approximate locations of our subsurface explorations are shown on the enclosed Site Plan, Plate No. 1. The Site Plan is based on the previously referenced preliminary grading plan.

3.0 Project Scope

This investigation consisted of a surface reconnaissance in the vicinity of the planned improvements, coupled with a subsurface exploration program that utilized backhoe trenches. A description of the subsurface exploration is presented in Section 7.0, Field Explorations, of this report. Representative samples of soil material, obtained during the subsurface exploration, were returned to the laboratory for observation and testing

Specifically, the intent of this investigation was to:

- a. Map the prevailing geologic units exposed at the surface near the proposed facilities;
- b. Explore the subsurface conditions to the depths that could be influenced by the proposed improvements;
- c. Evaluate, by laboratory tests, the pertinent static physical properties of the soils that may be encountered during construction;
- d. Describe the site geology, including the geologic materials observed;
- e. Estimate potential geologic hazards and their effect upon the proposed development;

- f. Provide recommendations for site preparation and earthwork;
- g. Present recommendations for foundation design, including bearing capacity and lateral pressures of the on-site soils; and
- h. Furnish soil parameters for retaining wall and shoring design.

This report has been prepared for RBF Consulting and the City of Escondido, to be used in the development of the proposed project. This report has not been prepared for use by other parties, and may not contain sufficient information for purposes of other parties or other uses. The information in this report represents professional opinions that have been developed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, express or implied, is made as to the professional advice included in this report.

4.0 Findings

4.1 Site Description: The project site is located on the northeast side of Citracado Parkway, approximately 150 feet northwest of Avenida Del Diablo, in the city of Escondido, California. The site vicinity can be found near the center of grid E-5, page 1129, of the Thomas Brothers Guide for San Diego County.

The project site is situated on the southeastern flank of a low hill. The terrain is moderately steep to gently inclined to the south and east. Elevations across the property range from approximately 645 feet above mean sea level (msl) at the northern corner of the project, to 622 feet msl northeast of proposed Building “B”.

At the time of our field investigation the property was undeveloped. An asphalt paved access road extended through the site from Avenida Del Diablo to the back gate for the HARRF. A significant portion of the property along the east side of the access road was being used for soil and construction debris stockpiles associated with the improvements of the Influent Pump Station at the HARRF.

Vegetation on the site consisted of isolated oak trees and wild grasses west of the access road, and densely growing shrubs and trees along the eastern limits.

4.2 Geologic Setting: The project is located within the western foothills of the Penninsular Ranges Geomorphic Province. The bedrock underlying this portion of the province consist of intrusive plutonic (granitic) rocks and metamorphic rocks. The granitic rocks include gabbro, tonalite, diorite and granite. These are considered part of the cretaceous age Southern California batholith. The metamorphic rocks, which occupy smaller areas, are generally volcanic and volcanoclastic materials that were metamorphosed during emplacement of the batholith. The structural fabric of the Penninsular Ranges Geomorphic Province (faulting, ridge lines, jointing) trends northwest. On the western side of the province, rivers and streams have carved-out valleys and basins that drain to lagoons along the Pacific Coast. These rivers and streams have also deposited sediments into the alluvial valleys and basins.

4.3 Geologic Materials: The subject site is underlain by granitic bedrock that has been mapped by Tan and Kennedy (1999) as part of the Cretaceous age southern California batholith.

Depending on the location explored, the bedrock is covered with colluvium and artificial fill of variable thickness. Each stratigraphic unit is described below in order from oldest to youngest.

4.4 Green Valley Tonalite: The Green Valley Tonalite is the predominant geologic unit on the mapped project site (Tan and Kennedy, 1999). It is described in the literature as “medium-grained, gray tonalite with minor granodiorite, gabbro and other basic igneous rocks”. Outcrops of the tonalite occur on the northern edge of the property. These appear as angular to semi-spheroidal boulders of gray, fine to coarse grained, crystalline rock.

Within the exploratory excavations the Green Valley Tonalite was exposed at depths of 1½ to 4 feet below the existing ground surface. At these locations it was represented by fine to coarse grained decomposed granitic rock. Depending on the degree of oxidation experienced by the bedrock, its color varied from dark gray to yellowish-gray to orangish-gray. These materials were dense to very dense, and in a damp to moist condition.

Near the contact with the overlying surface soils the bedrock materials have become more extensively decomposed into a sub-unit identified in the exploratory excavation logs as Residuum. This material appears more like soil than rock, but retains some of the characteristics (foliation and crystal fabric) of the parent bedrock. At the locations explored the residuum can be described as dark reddish-brown to orangish-gray, silty, fine to coarse grained sand, dark yellowish-gray, slightly silty, fine to coarse grained sand, and dark yellowish-gray, very clayey, fine to coarse grained sand. It ranges from medium dense to dense with moisture content varying from damp to very moist.

4.5 Colluvium: At six of the seven locations explored the bedrock is mantled by colluvium ranging from 1½ to 3 feet in vertical thickness. For the purposes of this study the term “Colluvium” is used to describe topsoil and gravity deposited slopewash, as well as insitu developed soil. It typically consists of dark reddish-brown, silty, fine grained sand. Thicker colluvium deposits that have accumulated in the southern half of the site grade with depth into clay-rich deposits. The colluvium is damp to very moist and poorly consolidated. Laboratory testing performed on samples of the clayey colluvium resulted in an Expansion Index of 54 to 87 and a medium to high expansion potential. The expansive soils appeared to have a vertical thickness that varied from 1 to 2 feet.

The colluvium is not considered suitable for the support of structural improvements or new fill in its present condition. Thicker and/or poorer quality colluvial materials may be exposed at locations that were not explored.

4.6 Artificial Fill: Artificial fill was present in four of the seven exploratory excavations. In trenches T-2, T-3 and T-4 the fill thickness ranged from approximately 1 to 1½ feet. At these locations, the soil materials consisted of loose to medium dense, silty to gravelly sands. In exploratory trench T-6 the artificial fill was approximately 3½ feet thick and was composed of brown, silty, fine grained sand with angular boulders of granitic rock. This material was also loose, and the trench walls were prone to collapse. The fill soils are not considered suitable for the support of structural improvements or new fill in its current condition. Thicker or poorer quality fill may be encountered during site development at locations that were not explored.

4.7 Rippability: The exploratory trenches were excavated using a Cat 430F, rubber-tired backhoe. These trenches ranged from 10 feet in Trench T-1 to 5½ feet in T-4. The majority of the trenches were excavated with moderate difficulty to depths between 6½ and 8 feet. Refusal, the inability to excavate, was experienced in trench T-4 at a depth of 5½ feet.

It is our professional opinion that well maintained, heavy-duty, earthmoving equipment, such as a D-8 bulldozer with a single shank ripper, could excavate the existing materials to the proposed grades. Nevertheless, it is possible that resistant knobs of bedrock and boulders will be encountered during construction. These may require pneumatic chipping or other special excavation techniques.

Trenching for pipelines and footings may be challenging at many areas on the site. During our investigation cobble and boulder-sized fragments of granitic rock were observed in the exploratory trenches. Also deep utility trenches could encounter very dense bedrock. It is possible that pneumatic chipping or other special excavation techniques may be required to advance pipeline trenches. The contractor should expect boulders and cobble to be protruding from the sidewalls and bottoms of trenches. This may result in raveling trench walls and enlarged and irregular excavations. Additional handling of materials and screening of backfill soils may be required.

4.8 Groundwater: Free groundwater was not observed in any of the exploratory excavations. These excavations ranged from 5½ to 10 feet below existing grade. Nevertheless, the project site is located near a tributary drainage of the Escondido Creek. Therefore, transitory subsurface water may be present during years with average to above average precipitation. Shallow subsurface seepage will often occur along the contact separating materials of different density and permeability (soil over bedrock), especially following significant rainfall events or periods of prolonged irrigation. Subsurface water elevations are expected to be influenced by runoff derived from sources located up-slope and up-stream from the project location. Moreover, it has been our experience that periodic events of seepage will occur in areas of significant “cut” or any “below-grade” structures. Therefore, consideration should be given to appropriate surface and subsurface drainage systems.

4.9 Soil Corrosivity: Corrosion of buried metal is an electrochemical process in which the amount of metal loss due to corrosion is directly proportional to the flow of electric current from the metal into the soil. Corrosion currents are inversely proportional to soil resistivity. Lower electrical resistivity is indicative of higher corrosive soils.

A general correlation between electrical resistivity and corrosivity toward ferrous metals is presented in the following table.

Soil Resistivity (ohm-centimeters)	Corrosivity Category
over 10,000	mildly corrosive
2,000 to 10,000	moderately corrosive
1,000 to 2,000	corrosive
below 1,000	severely corrosive

One soil sample was analyzed for corrosivity. The results are presented on Plate No. 11 of this report and are provided below.

Resistivity and pH

Sample Location	pH	Resistivity Initial (ohm-cm)	Resistivity Saturated (ohm-cm)
T-2 @ 2'	6.1	6,800	2,400

The soil materials tested are considered moderately corrosive to ferrous metals.

The retrieved soil samples were also analyzed for concentrations of sulfate and chloride ions. The results are presented on Plate No. 11 and in the table below. The presence of chloride ions in soil can be detrimental to metals. Chloride ions can result in the corrosion of steel reinforcement of concrete and other steel structures by breaking down the normally present layer of oxides on the steel surface (Caltrans, 2003). The presence of chloride ions can also lead to a decrease in soil resistivity. Chloride concentrations greater than 0.03 percent (300 parts per million (p.p.m.)) can be detrimental to buried metals. Based on the laboratory test results soluble chloride concentrations are considered negligible.

Sulfates typically have less of a direct effect on metals. However, high concentrations of sulfate ions greater than 0.1 percent (1000 p.p.m.) can cause softening and cracking of concrete. This can then lead to direct attack on steel reinforcement. Based on the laboratory test results, the amount of water-soluble sulfate is considered negligible. The soil materials tested are not considered deleterious to concrete.

Soluble Chloride and Sulfate Content

Sample Location	Soluble Chloride (%)	Soluble Sulfate (%)
T-2 @ 2'	0.002	0.006

West Coast Geotechnical Consultants, Inc. does not practice in the field of corrosion engineering. We recommend that a corrosion engineer be consulted for final corrosion protection measures.

5.0 Geologic Hazards

5.1 Faults and Seismic Hazards: The numerous fault zones in southern California include active, potentially active, and inactive faults. Active faults are those which display evidence of movement within Holocene time (from the present to approximately 11 thousand years). Faults that have ruptured geologic units of Pleistocene age (11 thousand to 2 million years) but not Holocene age materials are considered potentially active. Inactive faults are those which exhibit movement that is older than 2 million years. According to available published information, there are no known active or potentially active faults which intercept the project site. The site is not located within an Alquist-Priolo Special Studies Zone. Therefore, the potential for ground rupture at this site is considered low.

There are, however, several active faults located in close proximity to the site; and movement associated with them could cause significant ground motion at the site. Nearby faults include the Elsinore fault zone, which occurs approximately 18 miles to the northeast, the Rose Canyon fault zone, which lies approximately 16 miles offshore to the west, and the Coronado Bank fault zone, located approximately 24 miles to the southwest (offshore).

5.2 Elsinore Fault Zone: The Elsinore fault zone is a predominantly northwest-striking group of faults which extend from the Mexican border northward along the west flank of Palomar Mountain, to the city of Corona in Riverside County. The Elsinore fault zone is considered active. Within the regional area of the project site, the Elsinore fault zone is characterized by right lateral strike-slip faulting (Kennedy 1977). Neotectonic studies by Vaughn and Rockwell (1986) within the Agua Tibia Mountains identified thrust faulting north of Pauma Valley near Frey Creek. These studies estimated slip rates of 3 to 6 millimeters per year for that portion of the Elsinore fault zone. Based on their estimates, the recurrence interval for a magnitude 6 event could range from 50 to 90 years; and for a magnitude 7 event, the recurrence interval could be between 250 and 450 years. Relative to other regional fault zones (e.g., San Jacinto, San Andreas) the frequency of seismic events associated with the Elsinore fault zone has historically been low. The frequency of seismic events apparently increases southward along the fault zone.

5.3 Rose Canyon Fault Zone: The Rose Canyon Fault Zone is a generally northwest trending series of strike-slip faults that extend from offshore of Oceanside, in north San Diego county to the San Diego Bay. The fault zone transitions onshore in the area between La Jolla Shores and the La Jolla Cove, and then bends southward around the east side of Mount Soledad. From Mount Soledad it trends south through downtown San Diego, where it widens into the Downtown Graben Zone and then branches out into San Diego Bay.

Evidence suggesting movement along the Rose Canyon fault zone during the Holocene has been presented by Moore and Kennedy (1975). The State of California has zoned portions of the Rose Canyon fault zone as active under the Alquist-Priolo Senate Bill. This has come about as a result of faulted paleosols in Rose Canyon that are considered to be unquestionably of Holocene age (T. Rockwell, 1989).

5.4 Coronado Bank Fault Zone: The Coronado Bank fault zone is a complex series of left and right stepping en-echelon faults. Marine geophysical studies performed by Kennedy and Welday (1980) and others have provided evidence that Holocene sediments have been offset by several faults associated with the Coronado Bank fault zone. Therefore, this fault system should also be considered active.

5.5 Seismic Shaking: The table below presents the maximum credible and maximum probable earthquake magnitudes and estimated peak ground accelerations anticipated at the site. These accelerations are based on the assumption that the postulated earthquakes occur on specific faults at the closest point on that particular fault to the site.

The maximum credible earthquake is defined as the maximum earthquake that appears to be reasonable capable of occurring under the conditions of the presently known geologic framework. The probability of the maximum credible earthquake occurring during the lifetime of this project is considered low. The maximum probable earthquake is considered an event having a return period of 100 years. The severity of ground motion is not anticipated to be any greater at this location than in other areas of San Diego County.

Seismicity of Major Faults

Fault	Distance (Miles)	Maximum Credible Magnitude (Richter)	Maximum Probable Magnitude (Richter)	Estimated Bedrock Acceleration (1) (g)
Coronado Banks	24	7.6 _{L(2)}	6.7	0.14
Elsinore	18	7.5 _{L(3)}	6.6	0.21
Rose Canyon	16	7.0 _{L(2)}	5.9	0.15
San Andreas	60	8.3 _{L(3)}	8.0	0.09
San Jacinto	32	7.8 _{L(3)}	7.0	0.12

L = Local Magnitude (1) Seed and Idriss, 1982

(2) Slemmons, 1979

(3) Greensfelder, C.D.M.G. Map Sheet 23, 1994

The preceding table suggests that the Elsinore fault zone would have the predominant influence on the site

Peak accelerations for events having a higher return period than those presented may be required for design. The earthquake motions and design parameters used in the design of the project should be determined in accordance with the governing codes (CBC) and local regulations.

Based on the USGS 2009 PSHA, there is a 10% probability that within a 50-year time span the site would experience the effects of an earthquake with a magnitude greater than 7.0 occurring within 50 kilometers (31 miles). The California Geologic Survey PSHA indicated that there is a 10% probability that a peak ground acceleration of 0.25g would be exceeded in a 50-year period.

5.6 Liquefaction: The potential for seismically induced liquefaction is greatest where shallow groundwater and poorly consolidated, well-sorted, fine grained sands and silts are present. Liquefaction potential decreases with increasing density, grain size, clay content and gravel content. Conversely, liquefaction potential increases as the ground acceleration and duration of seismic shaking increase.

Groundwater was not observed within our exploratory excavations and the site is underlain by dense granitic bedrock at relatively shallow depths. Furthermore, if the earthwork is performed in accordance with the recommendations presented in this report, then poorly consolidated overburden soils will be removed and/or appropriately compacted.

Based on the conditions observed and the anticipated earthwork, it is our professional opinion that the potential for generalized liquefaction and/or seismic settlement in the event of a strong to moderate earthquake along one of the fault zones listed above would be low.

5.7 Landslides and Slope Stability: No evidence indicating the presence of deep-seated landslides was observed on or in the immediate vicinity of the site. There were no remolded clay seams or continuous shear planes exposed in the exploratory excavations. We did not observe any head scarps, tension cracks or excessive hummocky topography that would suggest rotational slumps. Therefore, it is our professional opinion that the potential for deep-seated slope failure is low. Based on the preliminary grading plan provided, constructed slopes will be on the order of 10 feet or less in vertical height. Both the onsite soils that may be used for fill embankments, as well as the naturally occurring material that is expected to be exposed in cut slopes, are granular with high frictional shear strength. Therefore, there is a low probability of slope failure in manufactured slopes if they are constructed in accordance with the recommendations presented further in this report.

6.0 Recommendations and Conclusions

6.1 Site Preparation

6.1.1 Earthwork: All earthwork performed on-site must be accomplished in accordance with the attached Specifications for Construction of Controlled Fills (Appendix I). All special site preparation recommendations presented in the sections below will supersede those in the Specifications for Construction of Controlled Fills. All embankments, structural fill, and utility trench backfill shall be compacted to no less than 90% of its maximum dry density. The moisture content of the granular fill soils should be within 2% of optimum moisture content at the time of compaction. The moisture content of the clayey soil materials should be maintained between 2% and 4% over optimum moisture content. The maximum dry density of each soil type shall be determined in accordance with ASTM D1557.

Prior to commencement of the grading and/or excavation, a pre-grading meeting shall be held at the site. The Owner, Surveyor, Grading Contractor, and Soil Engineer should attend. Our firm should be given at least 3 days notice of the meeting time and date.

6.1.2 Existing Soil: The existing overburden soils (fill and colluvium) encountered in the subsurface exploration are not considered suitable for support of structural improvements or additional fill in their present condition. To provide more uniform support for the proposed improvements, we recommend that any existing fill, colluvium or otherwise unsuitable material be completely removed to firm, unyielding, undisturbed bedrock at the location of planned improvements. Based on the results of the exploratory excavations the removal depths could vary from 3 to 5½ feet, below the current existing grade.

The horizontal limits of removal and recompaction should include the entire areas of proposed structures, pavement, hardscape, or any new fill slope supporting these improvements. All soil removal and recompaction should extend at least 5 feet beyond the footprint of any structure, where space allows, and 2 feet beyond the perimeter of any pavement.

Thicker and/or less competent materials that require deeper excavation and/or the additional processing may be encountered at locations that were not explored.

6.1.3 Materials Used For Fill: The on-site soils, minus any debris, expansive soil, organic matter or over-sized rock (greater than 6-inches) may be used as compacted fill. Due to the abundance of over-sized rock in the existing overburden soils, additional processing such as screening and/or rock crushing will be necessary before their use as compacted fill. This fill should be compacted to no less than 90% of its maximum dry density (ASTM D1557), and placed in accordance with the earthwork recommendations provided in this report.

6.1.4 Expansive Soil: Detrimentially expansive soils (Expansion Index of 21 or greater) were encountered in the subsurface explorations. These generally occurred as sandy clay and very clayey sand deposited in the southern portion of the property. The vertical thickness of the expansive soils appeared to vary from 1 to 2 feet. The results of laboratory testing indicated that these materials had a medium to high expansion potential, with expansion indices of 54 and 87 (Plate No. 11). Potentially expansive materials should not be placed within 4 feet of finish subgrade where conventional foundations or slabs-on-grade are proposed. Expansive soils should not be used as wall backfill or within 2 feet of finish subgrade beneath concrete pavements or hardscapes.

6.1.5 Imported Fill: Imported fill, if required at this site, shall be approved by the Geotechnical Consultant prior to importing. The Geotechnical Consultant should be provided ample notification so that sampling and testing of potential import soils may be performed prior to delivery to the site. Approximately 3 to 5 working days may be necessary to sample and evaluate potential import soils. Imported fill material shall have an Expansion Index of 20 or less with not more than 25 percent passing the No. 200 U.S. standard sieve and at least 40 percent passing the No. 4 U.S. standard sieve. Imported soil shall not contain any rocks or clods greater than 6 inches in longest dimension.

6.1.6 Fill Slopes: It is our professional opinion that fill slopes constructed at an inclination of 2:1 (horizontal to vertical) or flatter should be stable to the maximum proposed height of 10 feet.

Fill slopes shall be keyed into dense natural ground. The key shall extend through all incompetent soil and be established at least 2 feet into dense competent material. The key shall be a minimum of 2 feet deep at the toe of slope and fall with 5% grade toward the interior of the proposed fill areas. The bottom of the key shall have a width of at least 15 feet.

All keys must be observed by the Geotechnical Consultant. A fill slope key diagram is provided on Plate No. 12 of this report.

The soil material placed within the outer 15 feet of any fill slope, as measured inward horizontally from the face of the slope, should consist of on-site or imported granular soil material with an expansion index of 30 or less. Clayey or expansive soils should not be used to construct fill slopes.

We recommend that slopes be compacted by backrolling with a loaded sheepsfoot roller at vertical intervals not to exceed 4 feet and should be track walked at the completion of each slope. The face of the slopes should be compacted to no less than 90% relative compaction (ASTM D1557). This can best be accomplished by over building the slope at least 4 feet and trimming to design finish slope grade.

6.1.7 Cut Slopes: According to the referenced grading plan cut slopes up to 10 feet in height are proposed. Based on the observations made in the exploratory trenches, decomposed granitic bedrock is expected to be exposed at the location of the proposed cut slope. A relatively thin layer of colluvium may be present in the upper 1 to 2 feet of the proposed slope face. It is our professional opinion that slopes excavated into firm, unfractured bedrock would be stable at an inclination of 1½:1 (horizontal to vertical) or flatter to the proposed height. Any portion of the slope face that consists of colluvium, residuum or fractured bedrock should be laid back at an inclination of 2:1 (horizontal to vertical).

All cut slopes should be observed by the Engineering Geologist. Additional remedial actions may be required if detrimental slope conditions are exposed during the earthwork. This may include construction of retaining walls, the installation of soil nails and rock anchors, or reconstructing the slope as a buttress fill slope.

6.1.8 Surface Drainage: Surface drainage shall be directed away from structures and paved areas. The ponding of water or saturation of soils should not be allowed adjacent to any of the foundations. We recommend that planters be provided with drains and low flow irrigation systems. Gutters, roof drains and other drainage devices shall discharge water away from the structure into surface drains and storm sewers.

Surface water must not be allowed to drain in an uncontrolled manner over the top of any slope or excavation.

The exterior grades should be sloped to drain away from the structures to minimize ponding of water adjacent to the foundations. Minimum site gradients of at least 2% in the landscaped areas and of 1% in the hardscaped areas are recommended in the vicinity of buildings. These gradients should extend at least 10 feet from the edge of the structures.

To reduce the potential for erosion, the slopes shall be planted as soon as possible after grading. Slope erosion, including sloughing, rilling, and slumping of surface soils may be anticipated if the slopes are left unplanted for a long period of time, especially during rainy seasons. Swales or earth berms are recommended at the top of all permanent slopes to prevent surface water runoff from overtopping the slopes. Animal burrows should be controlled or eliminated since they can serve to collect normal sheet flow on slopes, resulting in rapid and destructive erosion. Erosion control and drainage devices must be installed in compliance with the requirements of the controlling agencies.

6.2 Foundation Recommendations

6.2.1 Foundation Support: Poorly consolidated overburden soils ranging from 1½ to 4 feet in thickness were encountered at the exploratory excavations. Earthwork recommendations presented in Section 6.1 of this report include complete removal and recompaction of poorly consolidated materials. The foundations for the proposed buildings may be supported in fill material that is placed and compacted as recommended in this report. Foundations supported on fill should be underlain by at least 2 feet of soil having an expansion index of 20 or less.

6.2.2 Seismic Design Parameters: The following seismic parameters may be used for foundation design. These design parameters are based on the information provided in Chapter 16 of the 2013 California Building Code.

Table	1613.5.2 Site Class = C
Figure	1613.5 (3) Spectral Response Acceleration $S_s = 1.00\%$ g
Figure	1613.5 (4) Spectral Response Acceleration $S_1 = 0.39\%$ g
Table	1613.5.3 (1) Site Coefficient $F_a = 1.0$
Table	1613.5.3 (2) Site Coefficient $F_v = 1.4$

6.2.3 Soil Classification: For design purposes, the soil materials exposed during construction will likely have Unified Soil Classification of GM, GW, SM and SW.

6.2.4 Bearing Capacity: A bearing value of 2,000 pounds per square foot may be used for the design of footings that are at least 12 inches wide and have a minimum footing depth of 1½ feet below the lowest adjacent final grade. Footings may be supported on the on-site fill soils that are processed and compacted in accordance with the recommendations presented in this report. A minimum of 2 feet of compacted fill is recommended beneath the footings or 4 feet below the bottom of slabs, whichever is greater. The soil load bearing values of imported soil should be determined after its selection, but prior to its delivery on-site.

The recommended bearing values are net values. Therefore, the weight of the concrete footings may be assumed to be 50 pounds per cubic foot. A one-third increase in the bearing values may be used for short-term wind or seismic loads.

6.2.5 Lateral Resistance: Resistance to lateral loads may be provided by friction at the base of the footings and floor slabs and by the passive resistance of the supporting soils. Ultimate values of frictional and passive resistance are presented below. The frictional resistance and the passive resistance of the materials may be combined without reduction in determining the total lateral resistance.

Lateral Resistance Values

Soil Type	Coefficient of Friction	Passive Pressure (psf/ft of depth)
Compacted Fill	0.4	400

6.2.6 Transition Areas: The proposed structures should not be allowed to straddle a cut-fill transition line. The tendency of cut and fill soils to compress differently can frequently result in differential settlement, cracking to portions of the structure and in severe cases structural damage. To reduce the potential for damage due to differential settlement in transition areas, we recommend that cut areas beneath foundations and slabs-on-grade be over-excavated to a depth of at least 2 feet below the bottom of the deepest footing. The over-excavated area should be filled with soil material having an expansion index of 20 or less. The fill soil should be compacted to at least 90% of the maximum dry density (ASTM D 1557).

6.2.7 Footing Observations: Prior to the placement of reinforcing steel and concrete, all foundation excavations should be observed by the Soil Engineer, Engineering Geologist or their representative. Footing excavations shall be cleaned of any loosened soil and debris before placing steel or concrete. Shallow footing excavations should be observed and probed for soft areas. Any soft or disturbed soils shall be over-excavated prior to placement of steel and concrete. Over-excavation of soils should not be performed in locations that were undercut for transition areas. This would compromise the thickness of the soil supporting the footings. In undercut transition areas loose soils should be recompacted.

6.2.8 Concrete Slabs-On-Grade: Concrete slabs-on-grade that will be subject to moderately heavy loads such as vehicles, forklifts and stationary machinery should have a thickness of at least 6 inches. Minimum reinforcement should consist of No. 5 rebar at 18 inches on center each way. The rebar should be kept at least 3 inches above the underlying soil materials. The rebar should be supported on 3-inch-tall concrete dobies. Slabs-on-grade should be underlain by at least 6 inches of Class 2 aggregate base compacted to no less than 95 percent (ASTM D 1557). These recommendations may be enhanced or increased at the discretion of the Structural Engineer. If the grading is performed as recommended in this report, new concrete slabs-on-grade may be supported entirely on compacted fill. No cut/fill transitions should be allowed to occur beneath the structures.

6.2.9 Impermeable Membrane: We recommend that the 6-inch-thick aggregate base layer be overlain by a 10-mil-thick impermeable plastic membrane (Stego Wrap or approved equal) to provide additional protection against water vapor transmission through the slabs. The vapor barrier should be installed in accordance with the manufacturer's instructions. We recommend that the edges, laps and penetrations for pipes or other devices be sealed with Stego tape.

To provide protection to the vapor barrier during construction a 2-inch layer of sand may be placed over the membrane. The impermeable membrane may be eliminated beneath slabs where seepage would not be a nuisance, a hazard or otherwise detrimental to the structures or facility operations.

6.2.10 Foundation Settlement: Settlement for foundations placed on compacted fill as recommended in this report is anticipated to be negligible.

6.3 Retaining Walls

6.3.1 Lateral Pressures: According to available information, retaining walls up to 10 feet in height may be used during the construction of the proposed improvements. These recommendations should be reviewed and updated if walls greater than 10 feet in height are to be installed. For the design of cantilevered retaining walls where the backfill is well drained, the equivalent fluid pressures for both active and at-rest conditions are presented below.

Backfill Inclination	Active Pressure (p.c.f.)	At-Rest Pressure (p.c.f.)
Level	35	52
2:1 Slope	52	78

Wherever walls are subject to surcharge loads, they should be designed for an additional uniform lateral pressure equal to one-third the anticipated surcharge pressure, in case of unrestrained walls, and one-half the anticipated surcharge, in case of restraining walls.

6.3.2 Seismic Lateral Pressures: Retaining walls greater than 5 feet in height should be designed for the increased lateral earth pressure due to earthquake loads. The additional pressure due to seismic loading may be computed using the following formula:

$$P_E = 0.5 [(0.75) k_h] \tilde{a}_{wet} H^2$$

Where P_E = Increased horizontal force due to seismic loading
 $k_h = 0.15g$
 $\tilde{a}_{wet} = 140$ pcf
 H = Height of the wall

The dynamic lateral earth pressure may be assumed to have a uniform pressure distribution with the resultant force taken to act through a point, which is $0.6H$ above the base of the retaining structure. A factor of safety of 1.2 may be used for stability of the wall when including seismic forces.

6.3.3 Drainage and Waterproofing: If the backfill is placed and compacted as recommended herein and good surface drainage is provided, the infiltration of water into the wall backfill may be reduced. Adequate drainage of adjacent planters should likewise be provided to reduce water infiltration into wall backfills.

To limit the entrapment of water in the backfill behind the proposed walls, backdrains or other drainage measures should be installed. Drainage should consist of vertical gravel drains approximately 18 inches wide connected to a 4-inch-diameter perforated pipe. The pipe shall be SDR 35 (ASTM D3034) or approved equal.

The perforated pipe should be placed with the perforations down and should be surrounded by at least 1½ feet of filter gravel or uniformly graded crushed rock. The gravel or rock should be wrapped in a non-woven filter fabric, such as Mirafi 140N, or an approved equivalent. Care should be taken to select a filter fabric compatible with the backfill materials as clogging of the filter material may occur.

The drainpipe should be located near the base of the wall and should discharge into a storm drain or onto a surface draining away from the structure. As an alternative to the vertical gravel drains, a drainage geocomposite such as Miradrain, or an approved equivalent, may be used with a 4-inch diameter, perforated pipe collector drain.

6.3.4 Backfill: The exterior grades should be sloped to drain away from the structures to minimize ponding of water adjacent to the foundations and retaining walls. Compaction of the backfill as recommended herein will be necessary to reduce settlement of the backfill and associated settlement of the overlying walks, paving, and utilities. Soil material used for wall backfill should have an expansion index of 20 or less. All backfill should be compacted to at least 90% of the maximum dry density (ASTM D1577). Some settlement of the backfill should be anticipated; and any utilities supported therein should be designed to accept differential settlement, particularly at points of entry into structures.

6.4 Pavement Recommendations:

6.4.1 Parking Area and Access Road: The required paving thickness and base thickness will depend on the subgrade soils and on the Traffic Index (T.I.) applicable to the intended usage. Sampling and testing the on-site soils to determine the R-value was not within the scope of our services for this project. However, it has been our experience that the granular on-site materials are similar to soils in the site vicinity which yield on R-value of at least 30. Therefore, an assumed R-value of 30 was used in this preliminary design. It is anticipated that the parking area would be used primarily for passenger vehicles and pick-up trucks. Therefore, a T.I. of 5.0 was used in the design of the parking areas. The reconstructed access road is expected to support heavier truck traffic. A T.I. of 7.0 was used in the design of the reconstructed access road. The asphalt paving section was established based on Caltrans design methods.

Structural Flexible Pavement Section

Location	R-Value	T.I.	Paving Section*
Parking Areas (Automobiles Only)	30**	5.0	3-inches AC over 6-inches AB
Access Road	30**	7.0	4-inches AC over 8-inches AB

* AC = Asphaltic Concrete; AB = Aggregate Base

**Assumed R-value based on typical soil materials in the site vicinity.

The pavement sections should be verified by observation during construction and, if necessary, confirmed by sampling and performing R-Value tests on the soil material at subgrade elevation on completion of the earthwork.

These recommendations are subject to the review and approval of the governing agencies.

6.4.2 Base Material: The aggregate base course should meet the specifications for untreated base as defined in Section 200-2 of the latest edition of the Standard Specifications for Public Works Construction (“Green Book”). If approved by the governing agency, the base course could meet the specifications for Class 2 Aggregate Base as defined in Section 26, of the State of California, Standard Specifications (latest edition). The base course should be compacted to at least 95% of its maximum dry density as determined by ASTM D1557. Careful inspection is recommended to verify that the specified thicknesses, or greater, are achieved and that proper construction procedures are used.

6.4.3 Subgrade Preparation: Subgrade areas that will receive aggregate base or any areas that will support vehicular pavement should be prepared as recommended in this report. Pavement subgrade preparation should consist of scarifying to a minimum depth of 12 inches and re-compacting the subgrade soil to no less than 95% of its maximum dry density (ASTM D1557). The Geotechnical Consultant should test the subgrade to document that the compaction has been achieved.

7.0 Field Explorations

Subsurface conditions were explored by observing the excavation of seven exploratory trenches on May 28, 2015. The exploratory excavations were extended to depths ranging from 5½ to 10 feet. Free groundwater was not encountered in the trenches. Caving was experienced in the sidewalls of Trench T-6. The location of the exploratory excavations are depicted on the Site Plan, Plate No. 1, in the back of this report.

The surface reconnaissance and subsurface exploration were conducted by our geology and soil engineering personnel. The soils are described in accordance with the Unified Soil Classification System as illustrated on the attached simplified chart (Plate No. 2). In addition, a verbal textural description, the wet color, the apparent moisture and the density or consistency are presented. The density of granular material is given as either very loose, loose, medium dense, dense or very dense. The consistency of silts or clays is given as either very soft, soft, medium stiff, stiff, very stiff or hard. The sampling and logging of the exploratory excavations was performed using standard geotechnical methods. The logs are presented on Plate No. 3 through 9. Samples of typical and representative soils were obtained and returned to our laboratory for observation and testing.

8.0 Laboratory Testing

Laboratory tests were performed in accordance with the American Society for Testing and Materials (ASTM) test methods or suggested procedures. Test results are shown on Plate Nos. 10 and 11.

9.0 Plan Review

West Coast Geotechnical Consultants, Inc. should review the final grading and improvement plans for this project.

10.0 Limitations

The recommendations and opinions expressed in this report reflect our best estimate of the project requirements based on an evaluation of the subsurface soil conditions encountered at the subsurface exploration locations and the assumption that the soil conditions do not deviate appreciably from those encountered. It should be recognized that the performance of the foundations, pavements and constructed slopes may be influenced by undisclosed or unforeseen variations in the soil conditions that may occur in the intermediate and unexplored areas. Any unusual conditions not covered in this report that are encountered during site development should be brought to the attention of the geotechnical consultant so that modifications can be made, if necessary.

It is recommended that West Coast Geotechnical Consultants, Inc. be retained to provide continuous geotechnical engineering services during the earthwork operations. This is to observe compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction. West Coast Geotechnical Consultants, Inc. and/or our consultants, will not be held responsible for earthwork of any kind performed without our observation and testing.

This office should be advised of any changes in the project scope so that it may be determined if the recommendations contained herein are appropriate. This should be verified in writing or modified by a written addendum.

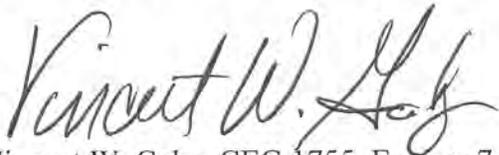
The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the State-of-the-Art and/or Government Codes may occur. Due to such changes, the findings of the report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a period of one year without a review by this office verifying the suitability of the conclusions and recommendations.

We will be responsible for our data, interpretations, and recommendations, but shall not be responsible for the 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.

It is the responsibility of the Client or the Client's representative to ensure that the information and recommendations contained herein are brought to the attention of the engineer and architect for the project and incorporated into the project's plans and specifications. It is further the responsibility of the Client to take the necessary measures to ensure that the contractor and sub-contractors carry out such recommendations during construction.

Respectfully submitted,

WEST COAST GEOTECHNICAL CONSULTANTS, INC.



Vincent W. Gaby, CEG 1755, Expires 7-31-17
Engineering Geologist



Susana Kemmerrer, RGE 2287, Expires 6-30-17
Geotechnical Engineer



VWG:SK/dfg

ATTACHMENTS

SITE PLAN

Plate No. 1

GEOTECHNICAL LEGEND

- Approximate Location of Exploratory Trenches
- Approximate Geologic Contact (queried where uncertain)
- Qaf/Kg** Artificial Fill Less Than 6 Feet Thick Over Granitic Rock
- Qc/Kg** Colluvium Less Than 6 Feet Thick Over Granitic Rock
- Kg** Granitic Rock

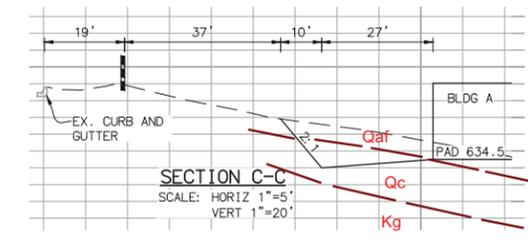
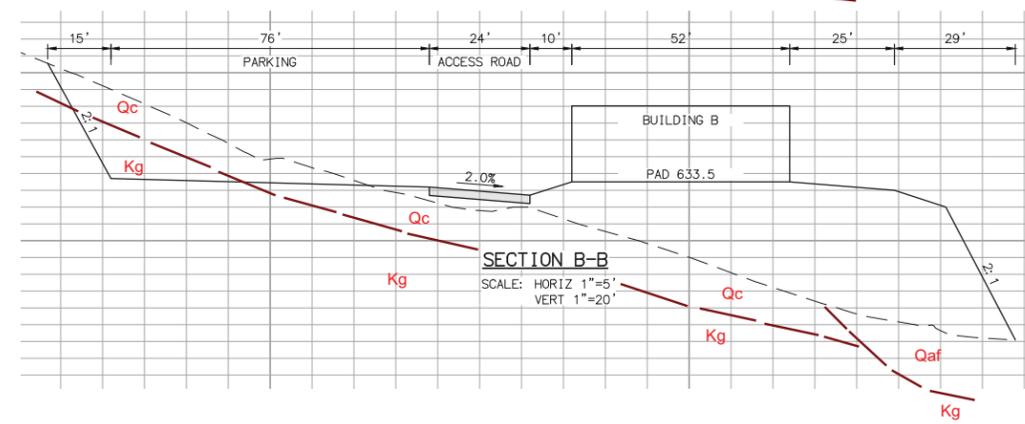
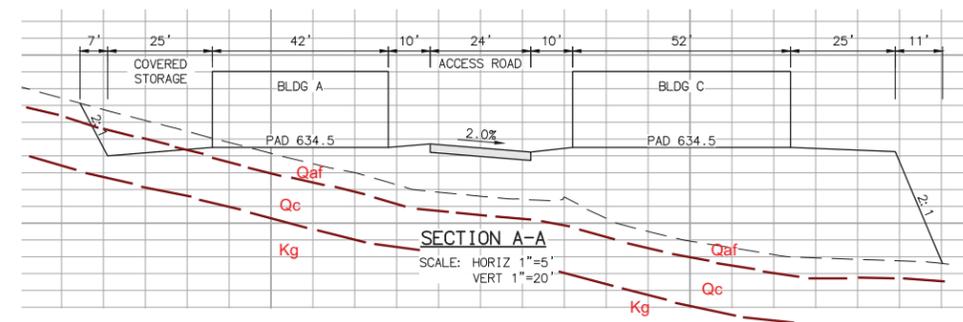
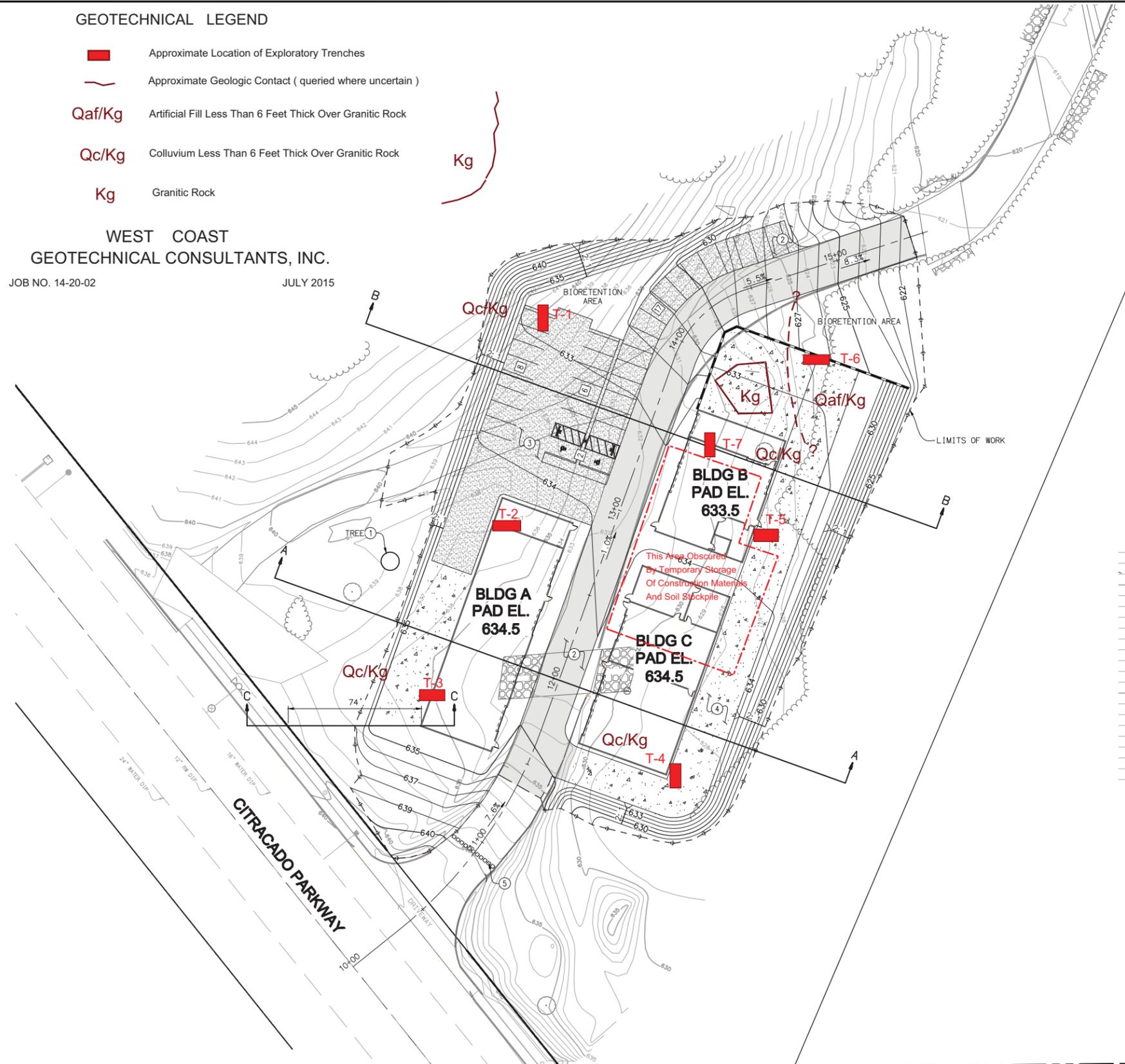
CONSTRUCTION NOTES

- ① PROTECT IN PLACE.
- ② CONSTRUCT PAVEMENT SECTION.
- ③ CONSTRUCT GRAVEL PARKING LOT.
- ④ CONSTRUCT 4" CONCRETE.
- ⑤ INSTALL SECURITY GATE.

WEST COAST
GEOTECHNICAL CONSULTANTS, INC.

JOB NO. 14-20-02

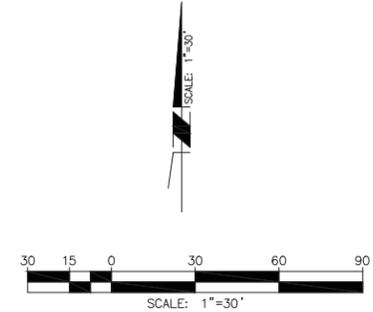
JULY 2015



ENGINEER OF WORK:



5050 AVENIDA ENCINAS, SUITE 200
CARLSBAD, CALIFORNIA 92008-4388
760.478.9193 • FAX 760.478.9198 • www.RBF.com



CITY PROJECT NO.
ENG. XX-XXXX

CONSTRUCTION RECORD		REFERENCES	Date	By	REVISIONS	App'd	Date	BENCH MARK	SCALE	Office	Designed By	Drawn By	Checked By	Submitted	Approved
Contractor									Horizontal	Filed	Plans Prepared Under Supervision Of				
Inspector									Vertical	Traffic					
Date Completed															

Date 11/19/14 R.C.E. No. 60283 TIMOTHY THIELE	By _____ Assistant City Engineer	By _____ Director of Engineering Services	UTILITIES DEPARTMENT WASTEWATER COLLECTIONS YARD RELOCATION PRELIMINARY GRADING PLAN	Drawing No. PXX-XXXX Sheet of _____
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**SUBSURFACE EXPLORATION
LEGEND**

UNIFIED SOIL CLASSIFICATION CHART

Soil Description	Group Symbol	Typical Names
I. COARSE GRAINED: More than half of material is <u>larger</u> 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.
GRAVEL W/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.
SANDS W/FINES	SM	Silty sands, poorly graded sand and silt mixtures.
	SC	Clayey sands, poorly graded sand and clay mixtures.
II. FINE GRAINED: More than half of material is <u>smaller</u> than No. 200 sieve size.		
Silts & Clays: Liquid limit <u>less</u> 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	Inorganic silty and organic silty clays of low plasticity.
Silts & Clays:		
	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
	CH	Inorganic clays of high plasticity, fat.
	OH	Organic clays of medium to high plasticity.
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

Plate No. 2

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-1	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)	
			ELEVATION ±641							SAMPLING METHOD CAT 430F BACKHOE
1		SM	COLLUVIUM - Dark Orangish-Brown, Silty, Fine to Medium Grained Sand	Damp to Moist	Loose				1	
2									2	
3	B	SM	RESIDUUM - Dark Reddish-Brown, Silty, Fine to Coarse Grained Sand, Moderately Well Cemented	Damp	Medium Dense to Dense				3	
4									4	
5				Grades to						5
6										6
7		SW	GREEN VALLEY TONALITE - Yellowish-Gray, Fine to Coarse Grained Decomposed Granitic Rock	Damp to Moist	Dense to Very Dense				7	
8									8	
9									9	
10			BOTTOM OF TRENCH @ 10 FEET						10	
11									11	
12									12	
13			SAMPLING LEGEND B = BULK SAMPLE C = CHUNK SAMPLE FDT = FIELD DENSITY TEST						13	
14									14	
15									15	
16									16	
JOB NUMBER 14-20-02			WASTE WATER COLLECTIONS YARD		DATE LOGGED 5-28-15		LOGGED BY VWG			

SUBSURFACE EXPLORATORY LOG

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-2	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			ELEVATION ±637						
1		SM	FILL - Gray, Silty Sand	Dry	Loose				1
1		SM	FILL - Reddish-Brown, Silty, Fine Grained Sand with Gray Clods	Moist	Medium Dense				1
2		SM	COLLUVIUM - Dark Reddish-Brown, Silty, Fine Grained Sand	Moist	Loose				2
3		SM							3
4	FDT	SM	RESIDUUM - Dark Reddish-Brown, Silty, Fine to Coarse Grained Sand	Moist	Medium Dense to Dense	118.5	10.8		4
5			Grades to						5
6		SW	GREEN VALLEY TONALITE - Orangish-Gray, Fine to Coarse Grained Decomposed Granitic Rock	Damp to Moist	Dense to Very Dense				6
7			BOTTOM OF TRENCH @ 6½ FEET						7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
JOB NUMBER 14-20-02			WASTE WATER COLLECTIONS YARD		DATE LOGGED 5-28-15		LOGGED BY VWG		

SUBSURFACE EXPLORATORY LOG

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-3	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)	
			ELEVATION ±635							SAMPLING METHOD CAT 430F BACKHOE
1		SM	FILL - Gray, Silty Sand	Dry	Loose				1	
2	FDT	SM	COLLUVIUM - Dark Reddish-Brown, Silty, Fine Grained Sand Grades to Dark Reddish-Brown, Clayey, Silty, Fine to Medium Grained Sand	Damp to Moist	Loose	112.3	10.9		2	
3		SC								3
4	B								4	
5	FDT	SM	RESIDUUM - Dark Orangish-Gray, Silty, Fine to Coarse Grained Sand Grades to	Moist	Dense	129.7	8.6		5	
6		SW	GREEN VALLEY TONALITE - Dark Orangish-Gray, Fine to Coarse Grained Decomposed Granitic Rock	Moist	Very Dense				6	
7			BOTTOM OF TRENCH @ 6½ FEET						7	
8									8	
9									9	
10									10	
11									11	
12									12	
13									13	
14									14	
15									15	
16									16	
JOB NUMBER 14-20-02			WASTE WATER COLLECTIONS YARD			DATE LOGGED 5-28-15		LOGGED BY VWG		

SUBSURFACE EXPLORATORY LOG

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-4		APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			ELEVATION ±628	SAMPLING METHOD CAT 430F BACKHOE						
			DESCRIPTION							
1		GM	FILL -	Gray, Gravelly Sand	Damp	Loose				1
2	B	SM	COLLUVIUM -	Reddish-Brown, Silty, Fine Grained Sand	Moist	Loose				2
3	FDT	CL		Brown, Very Sandy Clay	Very Moist	Stiff	123.3	12.4		3
4		SC	RESIDUUM -	Dark Yellowish-Gray, Very Clayey, Fine to Coarse Grained Sand	Very Moist	Dense				4
5		SW	GREEN VALLEY TONALITE -	Dark Gray, Fine to Coarse Grained Decomposed Granitic Rock	Moist	Very Dense				5
6			REFUSAL @ 5½ FEET							6
7										7
8										8
9										9
10										10
11										11
12										12
13										13
14										14
15										15
16										16
JOB NUMBER 14-20-02			WASTE WATER COLLECTIONS YARD			DATE LOGGED 5-28-15		LOGGED BY VWG		

SUBSURFACE EXPLORATORY LOG

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-5	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			ELEVATION ±627						
1		SM	COLLUVIUM - Reddish-Brown, Silty, Fine Grained Sand	Damp to Moist	Loose				1
2	FDT	SM	RESIDUUM - Dark Reddish-Brown, Silty, Fine to Medium Grained Sand, Moderately Well Cemented	Moist to Very Moist	Medium Dense	107.4	15.2		2
3									3
4			Grades to						4
5									5
6		SW	GREEN VALLEY TONALITE - Dark Yellowish-Gray, Fine to Coarse Grained Decomposed Granitic Rock	Damp to Moist	Dense to Very Dense				6
7									7
8			BOTTOM OF TRENCH @ 7 FEET						8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
JOB NUMBER 14-20-02			WASTE WATER COLLECTIONS YARD			DATE LOGGED 5-28-15		LOGGED BY VWG	

SUBSURFACE EXPLORATORY LOG

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-6	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			ELEVATION ±625						
			DESCRIPTION						
1		SM/GM	FILL - Brown, Silty, Fine Grained Sand with Angular Boulders of Granitic Rock	Moist	Loose				1
2									2
3									3
4		SW/SM	RESIDUUM - Dark Yellowish-Gray, Slightly Silty, Fine to Coarse Grained Sand	Moist	Medium Dense				4
5									5
6			Grades to						6
7		SW	GREEN VALLEY TONALITE - Dark Gray, Fine to Coarse Grained Decomposed Granitic Rock	Moist	Dense to Very Dense				7
8									8
9			BOTTOM OF TRENCH @ 8 FEET						9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
JOB NUMBER 14-20-02			WASTE WATER COLLECTIONS YARD		DATE LOGGED 5-28-15		LOGGED BY VWG		

SUBSURFACE EXPLORATORY LOG

DEPTH (FEET)	SAMPLE TYPE	SOIL CLASSIFICATION	TRENCH NO. T-7	APPARENT MOISTURE	APPARENT CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	RELATIVE COMPACTION %	DEPTH (FEET)
			ELEVATION ±630						
1		SM	COLLUVIUM - Reddish-Brown, Silty, Fine Grained Sand	Dry to Damp	Loose				1
2									2
3			Corestone of Hard Resistant Granitic Rock						3
4		SM	RESIDUUM - Dark Reddish-Brown, Silty, Fine to Coarse Grained Sand, Moderately Well Cemented	Moist	Medium Dense				4
5			Grades to						5
6		SW	GREEN VALLEY TONALITE - Dark Yellowish-Gray, Fine to Coarse Grained Decomposed Granitic Rock	Damp to Moist	Dense to Very Dense				6
7									7
8			BOTTOM OF TRENCH @ 7½ FEET						8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
JOB NUMBER 14-20-02			WASTE WATER COLLECTIONS YARD		DATE LOGGED 5-28-15		LOGGED BY VWG		

SUBSURFACE EXPLORATORY LOG

LABORATORY TEST RESULTS

Maximum Density/Optimum Moisture

Sample Location	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (percent)
T-1 @ 2' to 5'	Grayish-Brown, Silty, Fine to Coarse Grained Sand	129.8	9.8

Direct Shear

Sample Location	Apparent Cohesion (psf)	Angle of Internal Friction (degrees)
*T-1 @2' to 5'	60	36

* Sample remolded to 90% relative compaction and 3% over optimum moisture content.

In-Situ Moisture and Density

Sample Location	Dry Density (pcf)	Moisture Content (%)
T-2 @ 3'	118.5	10.8
T-3 @ 2½'	112.3	10.9
T-3 @ 4½'	129.7	8.6
T-4 @ 3'	123.3	12.4
T-5 @ 3½'	107.4	15.2

Plate No. 10

LABORATORY TEST RESULTS - Cont.

Expansion Index Test

Sample	Initial Moisture (%)	Final Moisture (%)	Expansion Index	Expansion Potential
T-3 @ 2½' to 4'	9.4	19.2	54	Medium
T-4 @ 1½' to 2½'	9.4	25.5	87	Medium to High

* Medium expansion potential ranges from 51 to 90.

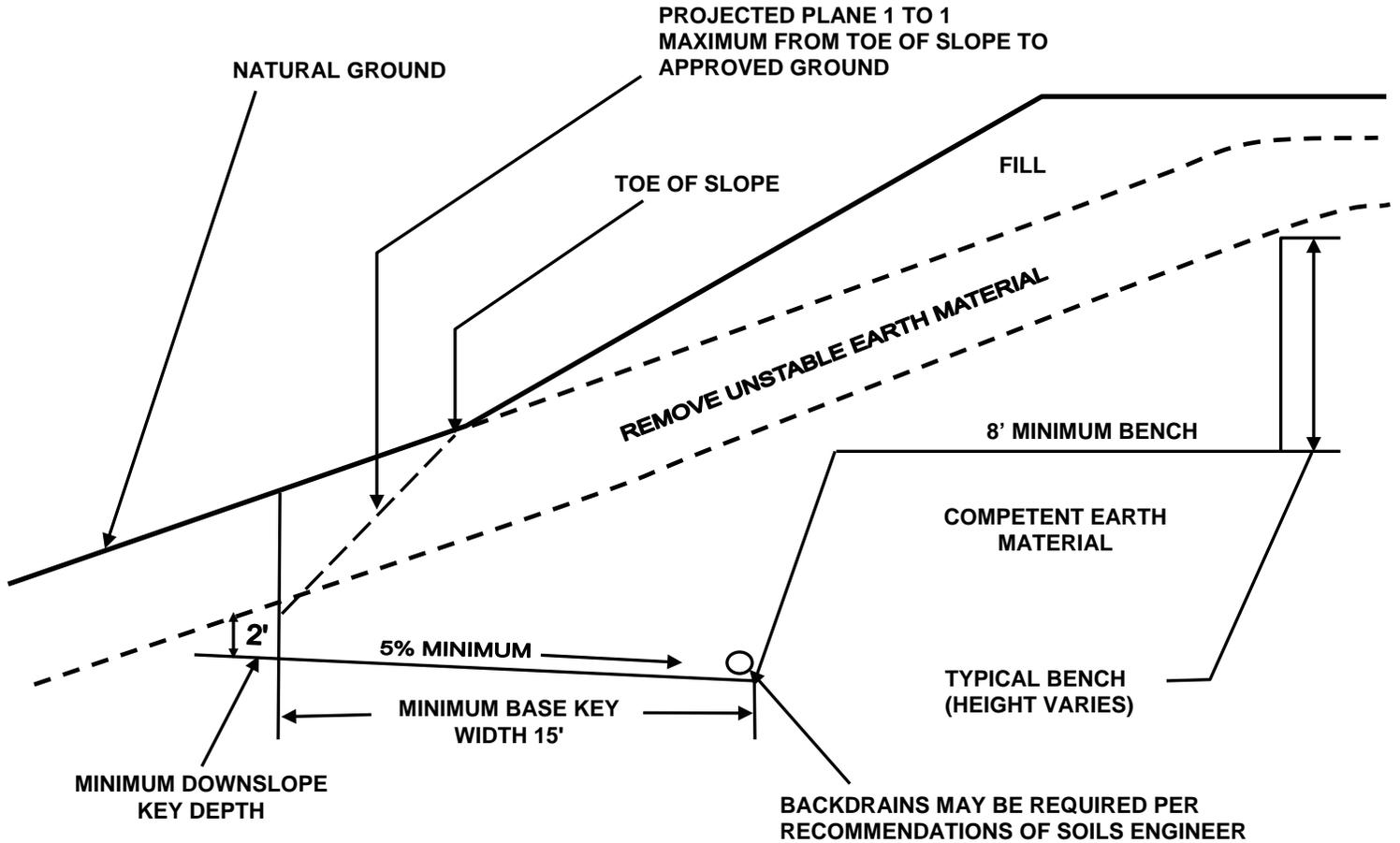
Resistivity and pH/Soluble Chloride and Sulfate Content

Sample Location	pH	Resistivity Saturated (ohm-cm)	Soluble Chloride (%)	Soluble Sulfate (%)
T-2 @ 2'	6.1	2,400	0.002	0.006

Plate No. 11

**WEST COAST
GEOTECHNICAL CONSULTANTS, INC.**

FILL SLOPE KEY



H.A.R.R.F.
Wastewater Collections Yard

WEST COAST
GEOTECHNICAL CONSULTANTS, INC.

APPENDIX I

SPECIFICATIONS FOR CONSTRUCTION OF CONTROLLED FILLS

I.) General Description: The construction of controlled fills shall consist of adequate geotechnical investigations, and clearing, removal of existing structures and foundations, preparation of land to be filled, excavation of earth rock from cut area, compaction and control of the fill, and all other work necessary to complete the grading of the filled area to conform with the lines, grades, and slopes as shown on the accepted plans.

II.) Clearing and Preparation of Areas to be Filled:

- (1) All fill control projects shall have an investigation or a visual examination, depending upon the nature of the job, performed by a qualified geotechnical consultant prior to grading.
- (2) All timber, trees, brush, vegetation, and other rubbish shall be removed, piled and burned, or otherwise deposited of to leave the prepared area with a finished appearance free from unsightly debris.
- (3) Any soft, swampy or otherwise unsuitable areas, shall be corrected by drainage or removal of compressible material, or both, to the depths indicated on the plans or as recommended by the geotechnical consultant.
- (4) The natural ground which is determined to be satisfactory for the support of the filled ground shall then be plowed or scarified to a depth of at least six inches (6") or deeper as recommended by the geotechnical consultant, and until the surface is free from ruts, hummocks, or other uneven features which would tend to prevent uniform compaction by the equipment to be used.
- (5) No fill shall be placed until the prepared native ground has been approved by the geotechnical consultant.
- (6) Where fills are made on the hillsides with slopes greater than 5 (horizontal) to 1 (vertical), horizontal benches shall be cut into firm undisturbed natural ground to provide lateral and vertical stability. The initial bench at the tow of the fill shall be at least 10 feet in width on firm undisturbed natural ground at the elevation of the toe stake. The geotechnical consultant shall determine the width and frequency of all succeeding benches, which will vary with the soil conditions, and the steepness of slope.
- (7) After the natural ground has been prepared, it shall be brought to the proper moisture content and compacted to not less than 90% of maximum density, ASTM D1557-09.

- (8) Expansive soils may require special compaction specifications as recommended in the report of geotechnical investigation.
- (9) The cut portions of building pads may require excavation and recompaction for density compatibility with the fill as recommended by the geotechnical consultant.

III. Materials: The fill soils shall consist of select materials graded so that at least 40 percent of the material passes the No. 4 sieve. The material may be obtained from the excavation, a borrow pit, or by mixing soils from one or more sources. The material used shall be free from vegetable matter, and other deleterious substances, and shall not contain rocks or lumps greater than 6 inches in diameter. If excessive vegetation, rocks, or soils with unacceptable physical characteristics are encountered, these materials shall be disposed of in waste areas designated on the plans or as directed by the soil engineer. If soils are encountered during the grading operation which were not reported in the report of geotechnical investigation, further testing will be required to ascertain their engineering properties. Any special treatment recommended in the preliminary or subsequent soil reports not covered herein shall become an addendum to these specifications.

No material of perishable, spongy, or otherwise unstable nature shall be used in the fills.

IV. Placing, Spreading and Compacting Fill Material:

- (1) The selected fill material shall be placed in layers which shall not exceed six inches (6") when compacted. Each layer shall be spread evenly and shall be thoroughly blade-mixed during the spreading to insure uniformity of material and moisture in each layer.
- (2) When the moisture content of the fill material is below that recommended by the geotechnical consultant, water shall be added until moisture content is near optimum as determined by the geotechnical consultant to assure thorough bonding during the compacting process.
- (3) When the moisture content of the fill material is above that recommended by the geotechnical consultant, the fill material shall be aerated by blading and scarifying, or other satisfactory methods until the moisture content is near optimum as determined by the geotechnical consultant.
- (4) After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than the specified maximum density in accordance with ASTM D1557-09. Compaction shall be by means of tamping or sheepsfoot rollers, multiple-wheel pneumatic-tired rollers, or other types of rollers. Rollers shall be of such design that they will be able to compact the fill to the specified density. Rolling of each layer shall be continuous over its entire area and the roller shall make sufficient passes to obtain the desired density. The entire area to be filled shall be compacted to the specified density

- (5) Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compacting operations shall be continued until the slopes are stable and until there is no appreciable amount of loose soil on the slopes. Compacting of the slopes shall be accomplished by backrolling the slopes in increments of 3 to 5 feet in elevation gain or by other methods producing satisfactory results.
 - (6) Field density tests shall be made by the soil engineer for approximately each foot in elevation gain after compaction, but not to exceed two feet in vertical height between tests. The location of the tests in plan shall be spaced to give the best possible coverage and shall be taken no farther than 100 feet apart. Tests shall be taken on corner and terrace lots for each two feet in elevation again. The soil engineer may take additional tests as considered necessary to check on the uniformity of compaction. Where sheepsfoot rollers are used, the layers of fill shall be spread until the field density tests indicate that the specified density has been obtained.
 - (7) The fill operation shall be continued in six inch (6") compacted layers, as specified above, until the fill has been brought to the finished slopes and grades as shown on the accepted plans.
- V. Observation:** Observation by the geotechnical consultant shall be made during the filling and compaction operations so that he/she can document that the fill was made in accordance with accepted specifications.

The specifications and soil testing of subgrade, subbase, and base materials for roads, or other public property shall be done in accordance with specifications of the governing agency.

- VI. Seasonal Limits:** No fill material shall be placed, spread, or rolled during unfavorable weather conditions. When the work is interrupted by heavy rain, grading shall not be resumed until field tests by the geotechnical consultant indicate that the moisture content and density of the fill are as previously specified. In the event that, in the opinion of the geotechnical consultant, soils unsatisfactory as foundation material are encountered, such soils shall not be incorporated into the grading.

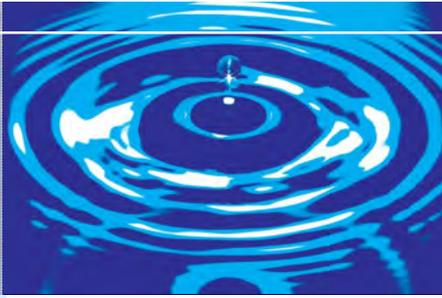
APPENDIX II

REFERENCES

- Caltrans, September 2003, Corrosion Guidelines Version 1.0.
- Greensfelder, R. W., 1974, *Maximum Credible Rock Accelerations from Earthquakes in California*: California Division of Mines and Geology, Map Sheet 23.
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APPENDIX E-1:

Drainage Study



CEQA Drainage Study

HARRF Wastewater Collections Yard
City of Escondido, California

City Project # _____

September 2015

Prepared for:

City of Escondido
Construction and Engineering
1521 South Hale Avenue
Escondido, CA 92029
Contact: Paul Keck

Prepared by:

Michael Baker

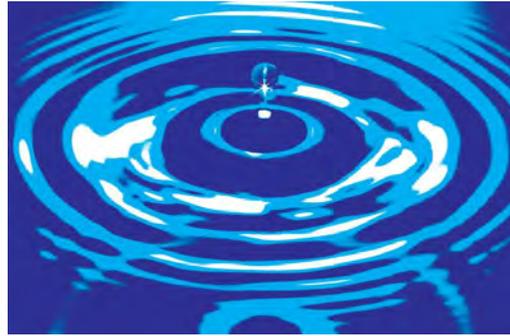
INTERNATIONAL
5050 Avenida Encinas, Suite 260
Carlsbad, CA 92008
760.476.9193 telephone
760.476.9198 fax

MBI Contact Person:

David Wiener, RCE 77285

MBI JN 143544





Declaration of Responsible Charge

I hereby declare that I am the engineer of work for this project, that I have exercised responsible charge over the design of the project as defined in Section 6703 of the business and professions code, and that the design is consistent with current standards.

I understand that the check of project drawings and specifications by the City of Escondido is confined to a review only and does not relieve me, as Engineer of Work, of my responsibilities for the project design.

David A. Wiener
RCE 77285

9/22/2015
Date



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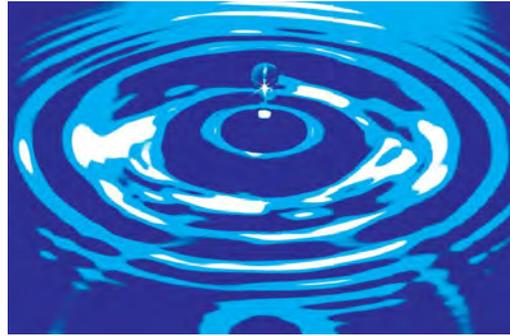
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Introduction

This drainage report presents an analysis of the effects the proposed HARRF Wastewater Yard Relocation have on the *quantity* and *pattern* of storm water runoff in the local watershed. The purpose of this report is to help fulfill requirements of the California Environmental Quality Act (CEQA). Storm water *quality* is addressed in the Water Quality Technical Report (WQTR) for the project, under separate cover from this document.

This report examines the existing and proposed hydrology of the site and nearby watershed and presents preliminary design of drainage facilities. This report is for planning purposes and does not present final design engineering recommendations for the project.

Section 1. Project Information

This section describes the location, activities, and hydrologic setting (watershed, topography, land use, soils and vegetation, drainage patterns, and impervious cover) of the project site.

1.1 Project Description

1.1.1 Project Location

The project site is located in the City of Escondido within the County of San Diego, California. The project is located just northeast of the intersection of Avenida Del Diablo and Citracado Parkway (reference Google Maps). **Exhibit A** is the Vicinity Map.

1.1.2 Project Activities Description

The project proposes the construction of approximately 24,650 square feet of warehouse, maintenance, collections, and storage areas on a previously undeveloped site. Approximately 12,300 square feet of concrete hardscape is proposed adjacent to the buildings. A 24'-wide asphalt road is proposed bisecting the site. Approximately 11,000 square foot gravel parking lot is proposed northwest of the new road. The site will drain to three bioretention areas, on either side of the new road. The limits of work and grading is approximately 79,135 square feet.

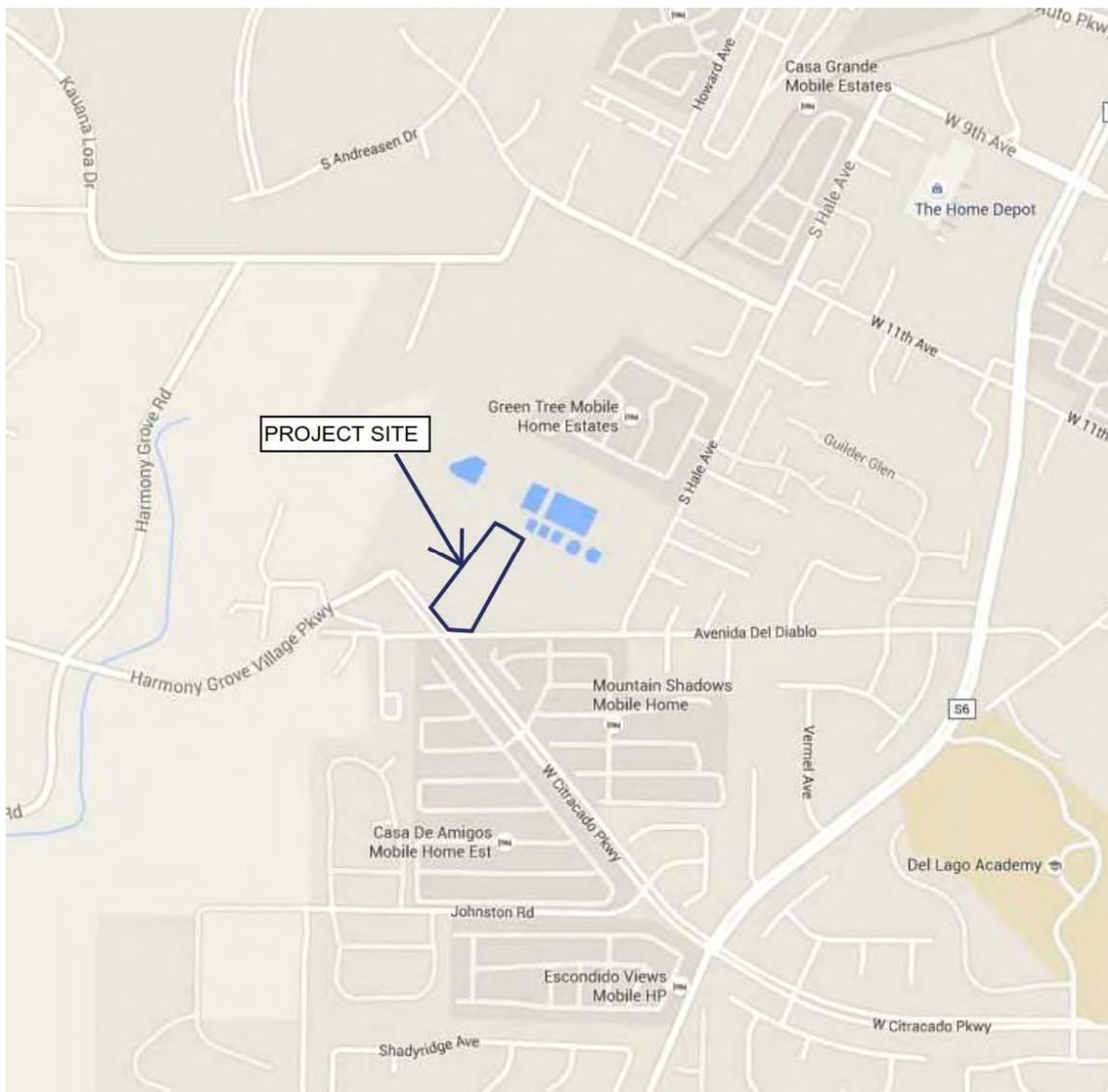


Exhibit A- Vicinity Map (Reference Google Maps)

1.2 Hydrologic Setting

This section summarizes the project's size and location in the context of the larger watershed perspective, topography, soil and vegetation conditions, percent impervious area, natural and infrastructure drainage features, and other relevant hydrologic and environmental factors specific to the project area's watershed.

The project site is located in the Escondido Hydrologic Sub-Area (HSA 904.62), which is part of the Carlsbad Hydrologic Unit (HU 904.00). **Exhibit B** is the Watershed Vicinity Map.

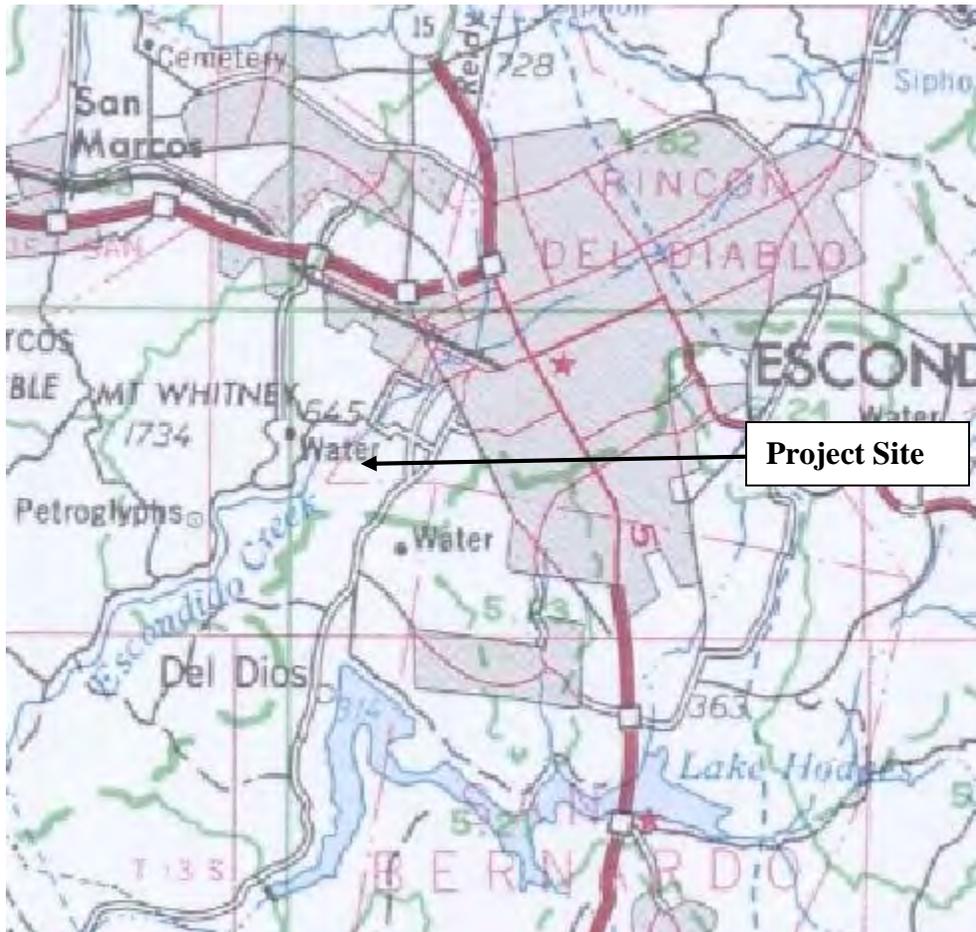


Exhibit B- Watershed Vicinity Map (Reference California Regional Water Quality Control Board, San Diego Region, HSA 904.62)

1.2.1 Topography

The site drains to the east with moderate to steep slopes. It is sparsely vegetated. An asphalt access road bisects the site, connecting Citracado Parkway to the treatment plant.

1.2.2 Current and Adjacent Land Use

The majority of the project site is currently undeveloped except for the existing asphalt access road. Portions of the site have been disturbed as a result of recent improvements to Citracado Parkway.

1.2.3 Soil and Vegetation Conditions

Per the Natural Resources Conservation Service (NRCS) online soil survey, the project site contains hydrologic type B soil. The NRCS custom soils report is included as **Exhibit C**.

1.2.4 Existing Drainage Patterns and Facilities

The site drains to the east with moderate to steep slopes. It is sparsely vegetated. An asphalt access road bisects the site, connecting Citracado Parkway to the treatment plant. There exists a concrete cross-gutter directing runoff west to east across the road. Runoff then drains the north parallel to the road before crossing over the road west to east via another cross-gutter. No existing storm drain piping exists on the site.

1.2.5 Floodplain Mapping

The Federal Emergency Management Agency (FEMA) has not mapped any Special Flood Hazard Areas (SFHAs) through the project site.

The FEMA FIRM Map was reviewed to identify the existing County Floodway and 100-Year Floodline (shown in **Exhibit D**).

1.2.6 Downstream Conditions

Analysis of downstream conditions has not been attempted, because the project site plan has been designed to detain storm water flows to match pre-development levels using proposed bioretention areas.

1.2.7 Impervious Cover

The site has little impervious cover under the existing condition. The existing impervious consists of approximately 0.40 acres contained in the asphalt access road bisecting the site from Citracado Parkway to the treatment plant. The project will add approximately 0.52 acres of impervious surface consisting of concrete loading areas and building roofs, and replaced asphalt road paving. Proposed parking areas will be gravel and considered permeable surface.

Section 2. Methodology and Design Criteria

This section summarizes the design criteria and methodology applied during drainage analysis of the project site. The design criteria and methodology follow the County of San Diego Hydrology Manual (June 2003).

2.1 Rational Method

Rational Method Peak Flow for the area of interest at the southwest corner of the development footprint was calculated using methodology in the County of San Diego Hydrology manual for the rational method. These calculations were performed for both the existing and proposed conditions, so as to quantify increase in peak rate of discharge. Runoff coefficients were based upon researched soils data and Table 3-1 of the County Hydrology Manual for the existing condition. Existing and proposed condition assumed a Type B soil. Time of concentration was calculated per Section 3.1.4. of the County Hydrology Manual and corresponding runoff intensities for the 100-year storm were based upon a 6-hour precipitation of 3.3 inches.

Using results from rational method calculations for peak flow in proposed conditions, 6 hour hydrographs were generated using the Hydraflow Hydrographs computer program, which utilizes the methods described in Section 6 of the San Diego County Hydrology Manual. By routing the post-development hydrograph through the proposed bioretention areas for the 100-year 6-hour event, we were able to quantify the mitigated 100-year peak flow. (see **Appendix B** for Proposed Hydrology Calculations). Rational Method Peak Flow for the project drainage areas shall match the existing peak flows in the post-development conditions.

Section 3. Hydrologic Effects of Project

This section characterizes the quantities and location of storm water runoff from the project site. Discussion of the water quality aspects of the project can be found in the Storm Water Management Plan (SWMP), which is under separate cover from this report.

3.1 Drainage Patterns

The existing drainage patterns on the site will be preserved without any changes. The runoff from the proposed impervious areas will collect in bioretention areas. This will attenuate the existing peak flows. See **Appendix A** for the Existing Hydrology Map and **Appendix B** for the Proposed Hydrology Map

3.2 Impervious Cover

The project will add approximately 0.52 acres of impervious area in the form of rooftops, loading areas, and access roads.

3.3 Peak Runoff

The project will not increase the peak 100-year storm discharge because bioretention areas have been included in the site plan to capture and attenuate the flow rates of most runoff from the proposed development.

Tables 3-1 and 3-2 summarize the hydrologic effects in terms of calculated peak runoff from the watershed under both the existing and proposed conditions, respectively. Nodes at points of drainage discharge from the project pre- and post-development (corresponding with Tables 3-1 and 3-2 below) are labeled on the hydrology maps in **Appendix A** and **Appendix B**, respectively. The detention volumes are listed on the hydrology maps in **Appendix A** and **Appendix B**.

Table 3-1 Existing Hydrology Summary Table

Node	Area (acres)	C	T _c (min)	Q ₁₀₀ (cfs)
100	4.29	0.31	10.8	7.0

Table 3-2 Proposed Hydrology Summary Table

Node	Area (acres)	C	T _c (min)	Q ₁₀₀ (cfs)	Q ₁₀₀ (cfs) with Detention
101	1.27	0.34	8.7	2.6	1.5
102	0.89	0.62	6.9	3.9	0.4
103	0.26	0.83	5.6	1.7	0.2
104	1.87	0.25	10.8	2.5	2.5
Total 100	4.29	0.39		10.8	4.6

3.4 Project Erosion and Siltation

Because concentrated flows will enter proposed bioretention areas, which will attenuate the flow before discharging to the watershed, neither erosion nor siltation are anticipated.

3.5 Project Impacts to Existing Drainage Facilities

Because the project design features will control runoff to match pre-development peaks, the project will not adversely impact existing drainage facilities downstream of the site.

Section 4. Summary and Conclusions

This section provides a summary discussion of the potential effects of the proposed project on local water resources in terms of quantity and location.

- ❖ The project will not increase peak 100-year discharges or other points downstream. It accomplishes this by means of on-site bioretention basins.
- ❖ There are no City Master Plan drainage facilities that would affect the project in the future.
- ❖ The project will not cause flooding on- or off-site to people or property substantially by altering the existing drainage patterns (they substantially remain the same), or by increasing the peak runoff.
- ❖ The project will not affect the capacity of existing drainage facilities on- or off-site. The project site currently contains no drainage improvements and any storm drainage proposed as part of this project will be designed to convey the peak 100-year flows without causing flooding of proposed structures.

Section 5. CEQA Summary

This section summarizes the results of the drainage analysis in the context of CEQA significance guidelines.

5.1 Drainage

5.1.1 Erosion and/or Sedimentation

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?

No. The project will not substantially alter existing drainage patterns of the site area in a manner that would result in substantial erosion or siltation. The project does not alter the course of a stream or river.

- The project proposes to preserve the alignment and profile of existing natural drainage paths throughout the project site.

- Three bioretention areas mitigate the potential increase in peak flow (see Table 3-1), such that no significant erosion and/or siltation are expected.
- Flows may be concentrated at certain locations, including storm drain outfalls. However, all existing and proposed storm drain outfalls will be outfitted with appropriate energy dissipation devices. These energy dissipation devices, along with other storm water Best Management Practices (BMPs), will help preclude significant erosion and/or siltation on-site and off-site.

5.1.2 Flooding

Does the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

No. The project will not substantially alter existing drainage patterns of the site area in a manner that would result in flooding on- of off-site. The project does not alter the course of a stream or river.

- The drainage study demonstrates that the project will not increase the peak 100-year storm discharge from the on-site contributing watershed. While the proposed development will add impervious area, the increase in peak flows will be mitigated to pre-development level by means of on-site bioretention areas.

5.1.3 Drainage System Capacity

Does the project create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems?

No. The project will not create or contribute to runoff water that would exceed the capacity of existing or planned storm water drainage systems.

- The project would not affect any known City master-planned drainage facilities.

5.2 Flood Hazards

5.2.1 Residential Flood Hazard

Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, including County Floodplain Maps?

No. The project does not propose to locate any housing within the 100-year flood hazard area.

- The project does not propose any development within the 100-year floodplain or other Special Flood Hazard Area (SFHA) designated by FEMA or the County of San Diego.

5.2.2 Flood Flow

Does the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No. The project does not propose to locate any structures or grading in the floodplain that would impede or redirect flood flows.

- The project does not propose any development within the 100-year floodplain or other Special Flood Hazard Area (SFHA) designated by FEMA or the County of San Diego.

5.2.3 Flood Hazard

Does the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No. The project does not place any people or structures at significant risk of loss, injury, or death due to flooding.

- The project does not propose any development within the 100-year floodplain or other Special Flood Hazard Area (SFHA) designated by FEMA or the County of San Diego.
- The project will ensure emergency access during significant flood events. The project is not located behind a levee or below a dam that would present a flood hazard upon its failure.

5.2.4 Other Hazards

Is the project at significant risk of inundation by seiche, tsunami, or mudflow?

No. The project is not located within an area at risk of inundation by seiche (lake slosh) tsunami, or mud flow.

5.3 Waiver and Release Agreements

The project does not alter downstream flow characteristics significantly, either due to increase in flow or flood condition, diversion of flow, or flow concentration. Therefore, it should not be necessary to obtain waiver and release agreements from any affected property owners.

Section 6. References

FEMA, 2012. FEMA. (May 6, 2012). Flood Insurance Study, San Diego County.

San Diego County, 2003. San Diego County Flood Control District. (June 2003). Hydrology Manual.

San Diego County, 2015. Project Clean Water. (January 2015). Model BMP Design Manual San Diego Region.

City of Escondido, 2011. City of Escondido SUSMP. (January 2011).

Exhibit “C”

NRCS Hydrologic Soil Group Map



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for San Diego County Area, California



Custom Soil Resource Report Soil Map



Map Scale: 1:1,420 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Map Unit Legend

San Diego County Area, California (CA638)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
VaB	Visalia sandy loam, 2 to 5 percent slopes	1.8	34.4%
VsD2	Vista coarse sandy loam, 9 to 15 percent slopes, eroded	1.9	36.6%
VvD	Vista rocky coarse sandy loam, 5 to 15 percent slopes	1.5	29.1%
Totals for Area of Interest		5.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

Custom Soil Resource Report

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Diego County Area, California

VaB—Visalia sandy loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: hbh3
Elevation: 0 to 1,500 feet
Mean annual precipitation: 9 to 30 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 200 to 350 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Visalia and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Visalia

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser, flat
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 40 inches: sandy loam, fine sandy loam
H2 - 12 to 40 inches: very fine sandy loam
H3 - 40 to 60 inches:

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A

Minor Components

Greenfield

Percent of map unit: 5 percent

Grangeville

Percent of map unit: 5 percent

Tujunga

Percent of map unit: 2 percent

Placentia

Percent of map unit: 2 percent

Unnamed

Percent of map unit: 1 percent

Landform: Flood plains

VsD2—Vista coarse sandy loam, 9 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: hbhb

Elevation: 400 to 3,900 feet

Mean annual precipitation: 10 to 18 inches

Mean annual air temperature: 59 to 64 degrees F

Frost-free period: 210 to 300 days

Farmland classification: Not prime farmland

Map Unit Composition

Vista and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vista

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Residuum weathered from granodiorite and quartz-diorite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam

H2 - 15 to 30 inches: coarse sandy loam, sandy loam

H2 - 15 to 30 inches: weathered bedrock

H3 - 30 to 34 inches:

Properties and qualities

Slope: 9 to 15 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: LOAMY (1975) (R019XD029CA)

Minor Components

Fallbrook

Percent of map unit: 4 percent

Cieneba

Percent of map unit: 4 percent

Bonsall

Percent of map unit: 4 percent

Greenfield

Percent of map unit: 3 percent

VvD—Vista rocky coarse sandy loam, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hbhg
Elevation: 400 to 4,000 feet
Mean annual precipitation: 8 to 18 inches
Mean annual air temperature: 45 to 64 degrees F
Frost-free period: 110 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Vista and similar soils: 70 percent
Rock outcrop: 25 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vista

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from granodiorite and quartz-diorite

Typical profile

H1 - 0 to 13 inches: coarse sandy loam
H2 - 13 to 27 inches: coarse sandy loam, sandy loam
H2 - 13 to 27 inches: weathered bedrock
H3 - 27 to 31 inches:

Custom Soil Resource Report

Properties and qualities

Slope: 5 to 15 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: LOAMY (1975) (R019XD029CA)

Description of Rock Outcrop

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Typical profile

H1 - 0 to 4 inches: unweathered bedrock

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Minor Components

Fallbrook

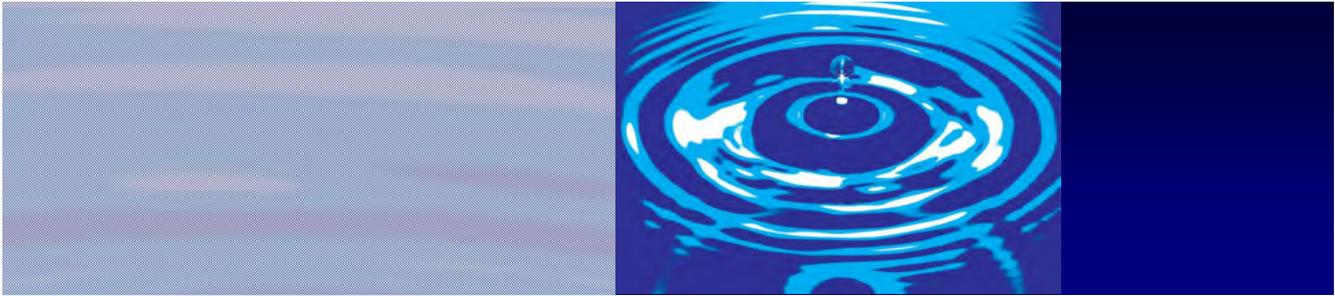
Percent of map unit: 3 percent

Cieneba

Percent of map unit: 2 percent

Exhibit “D”

FEMA Flood Map



APPENDIX A

Existing Conditions Hydrology



This Section Contains:

- Work Map
- Rational Method Calculations



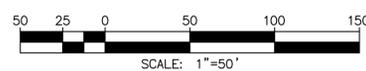
LEGEND

- IMPERVIOUS AREA
- GRAVEL
- DRAINAGE AREA NODE 100 100
- DRAINAGE AREA BOUNDARY
- LONGEST FLOW PATH

EXISTING DRAINAGE AREAS

NODE	AREA (AC)	IMPERVIOUS (AC)	% IMPERVIOUS	C	Tc (min) ¹	Q ₁₀₀ (cfs) ²
100	4.29	0.40	9%	0.31	10.8	7.0

1. REFER TO HYDROLOGY CALCULATIONS IN APPENDIX A FOR TIME OF CONCENTRATION.
2. RATIONAL METHOD CALCULATION PER SAN DIEGO COUNTY HYDROLOGY MANUAL.



**HARFF WASTEWATER COLLECTIONS
YARD RELOCATION**

EXISTING HYDROLOGY MAP

**Michael Baker
INTERNATIONAL**

5050 Avenida Encinas, Ste 260
Carlsbad, CA 92008
Phone: (760) 476-9193
WWW.MBAKERINTL.COM

HPD\TAK13544_Watermain Coll. Yrd Reloc\Report\Drawings\CADD\13544-DEE.dwg 09/25/15 - 2:10pm - gwenor

Runoff Coefficient - Existing Condition

San Diego County Hydrology Manual: Section 3.1.2

$$C = 0.9(\%impervious) + C_p(1 - \%impervious)$$

$C_p = 0.25$ Table 3-1: Soil Type B

Existing Drainage Area	Total Area (Square Feet)	Impervious Area (Square Feet)	% Impervious	C
100	187,022	17,273	9%	0.31

Time of Concentration - Existing Condition

San Diego County Hydrology Manual: Section 3.1.4

$$T_c = T_i + T_t$$

T_i : Overland Flow - Table 3-2

T_t : Natural Watershed - Figure 3-4

Proposed Drainage Area	Flowpath Initial Slope	L_M (Feet)	T_i (Min)	Natural Watershed			T_t (Min)	T_c (Min)
				Elev Up	Elev Dn	Length (Feet)		
100	10%	100	6.9	630	620	470	3.9	10.8

Rainfall Intensity - Existing Condition

San Diego County Hydrology Manual: Section 3.1.3

$$I = 7.44P_6D^{-0.645}$$

50-YEAR P_6 (in)= 2.8 Appendix B - Isopluvial Maps
 100-YEAR P_6 (in)= 3.3

Existing Drainage Area	D (min)	I_{50} (in/hr)	I_{100} (in/hr)
100	10.8	4.5	5.3

Basin Intensity Calculations

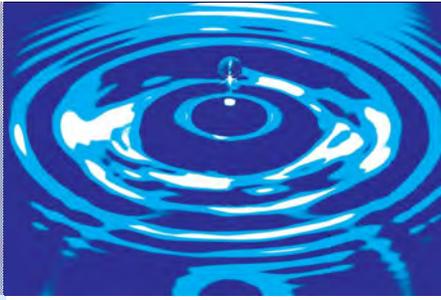
Selected Frequency, 100 year
 $P_6 = \underline{3.3}$ in. P_6 must be within
 $P_{24} = \underline{6}$ in. 45% to 65% of P_{24} .
 $P_6 / P_{24} = \underline{55\%}$ Adjust P_6 as needed.
 Adjusted $P_6 = \underline{3.30}$ in.

Rational Method - Existing Condition

San Diego County Hydrology Manual: Section 3.1

$$Q = CiA$$

Existing Drainage Area	A (acres)	C	Q_{50} (cfs)	Q_{100} (cfs)
100	4.29	0.31	6.0	7.0

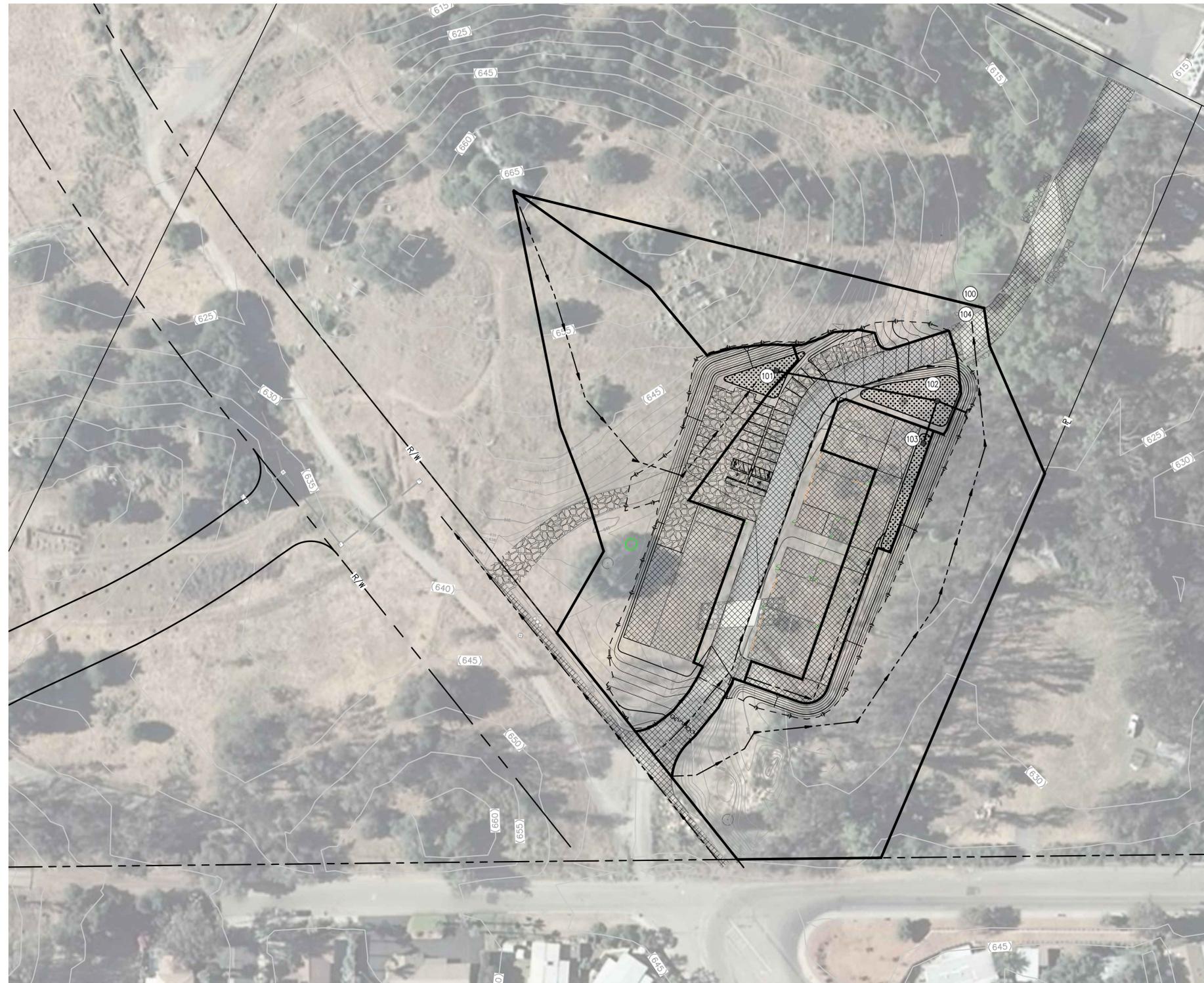


APPENDIX B

Proposed Conditions Hydrology

This Section Contains:

- Work Map
- Rational Method Calculations
- Rational Hydrograph Software Output

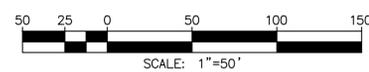


LEGEND

- IMPERVIOUS AREA
- GRAVEL
- BIORETENTION AREA
- DRAINAGE AREA NODE
- DRAINAGE AREA BOUNDARY
- LONGEST FLOW PATH

PROPOSED DRAINAGE AREAS							
NODE	AREA (AC)	IMPERVIOUS (AC)	% IMPERVIOUS	C	Tc (min) ¹	Q ₁₀₀ (cfs) ²	Q ₁₀₀ (cfs) ³ MITIGATED
101	1.27	0.18	14%	0.34	8.7	2.6	1.5
102	0.89	0.51	57%	0.62	6.9	3.9	0.4
103	0.26	0.23	88%	0.83	5.6	1.7	0.2
104	1.87	0.00	0%	0.25	10.8	2.5	2.5
100 - Total	4.29	0.92	21%	0.39		10.8	4.6

1. REFER TO HYDROLOGY CALCULATIONS IN APPENDIX A FOR TIME OF CONCENTRATION.
2. RATIONAL METHOD CALCULATION PER SAN DIEGO COUNTY HYDROLOGY MANUAL.
3. MITIGATED Q₁₀₀ RESULTING FROM FLOW THROUGH BIORETENTION BMP.



**HARFF WASTEWATER COLLECTIONS
YARD RELOCATION**

PROPOSED HYDROLOGY MAP

**Michael Baker
INTERNATIONAL**

5050 Avenida Encinas, Ste 260
Carlsbad, CA 92008
Phone: (760) 476-9193
WWW.MBAKERINTL.COM

Runoff Coefficient - Proposed Condition

San Diego County Hydrology Manual: Section 3.1.2

$$C = 0.9(\%impervious) + C_p(1 - \%impervious)$$

$C_p = 0.25$ Table 3-1: Soil Type B

Proposed Drainage Sub Area	Total Area (Square Feet)	Impervious Area (Square Feet)	% Impervious	C
101	55,270	7,890	14%	0.34
102	38,830	21,900	56%	0.62
103	11,440	10,070	88%	0.82
104	81,480	0	0%	0.25
100 Total	187,020	39,860	21%	0.39

Rainfall Intensity - Proposed Condition

San Diego County Hydrology Manual: Section 3.1.3

$$I = 7.44P_6D^{-0.645}$$

50-YEAR P₆ (in)= 2.8 Appendix B - Isopluvial Maps

100-YEAR P₆ (in)= 3.3

Proposed Drainage Area	D (min)	I ₅₀ (in/hr)	I ₁₀₀ (in/hr)
101	8.7	5.2	6.1
102	6.9	6.0	7.1
103	5.6	6.8	8.0
104	10.8	4.5	5.3

Rational Method - Proposed Condition

San Diego County Hydrology Manual: Section 3.1

$$Q = CiA$$

Proposed Drainage Area	A (acres)	C	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)	Mitigated Q ₁₀₀ (cfs)
101	1.27	0.34	2.2	2.7	1.5
102	0.89	0.62	3.3	3.9	0.4
103	0.26	0.82	1.5	1.7	0.2
104	1.87	0.25	2.1	2.5	2.5
100 - Total	4.29	0.39	9.1	10.8	4.6

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

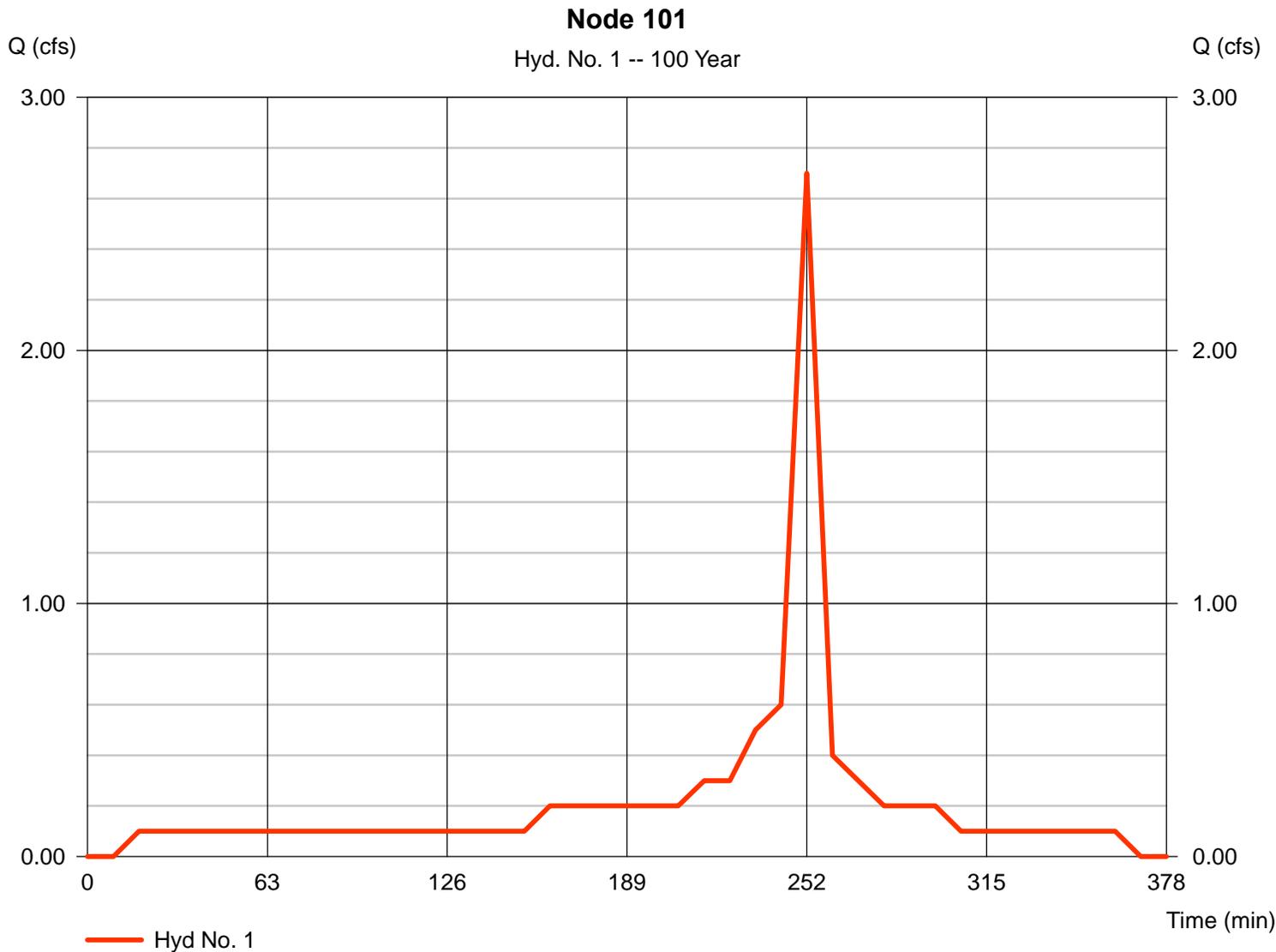
Monday, Sep 28, 2015

Hyd. No. 1

Node 101

Hydrograph type = Manual
Storm frequency = 100 yrs
Time interval = 9 min

Peak discharge = 2.700 cfs
Time to peak = 252 min
Hyd. volume = 4,968 cuft



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

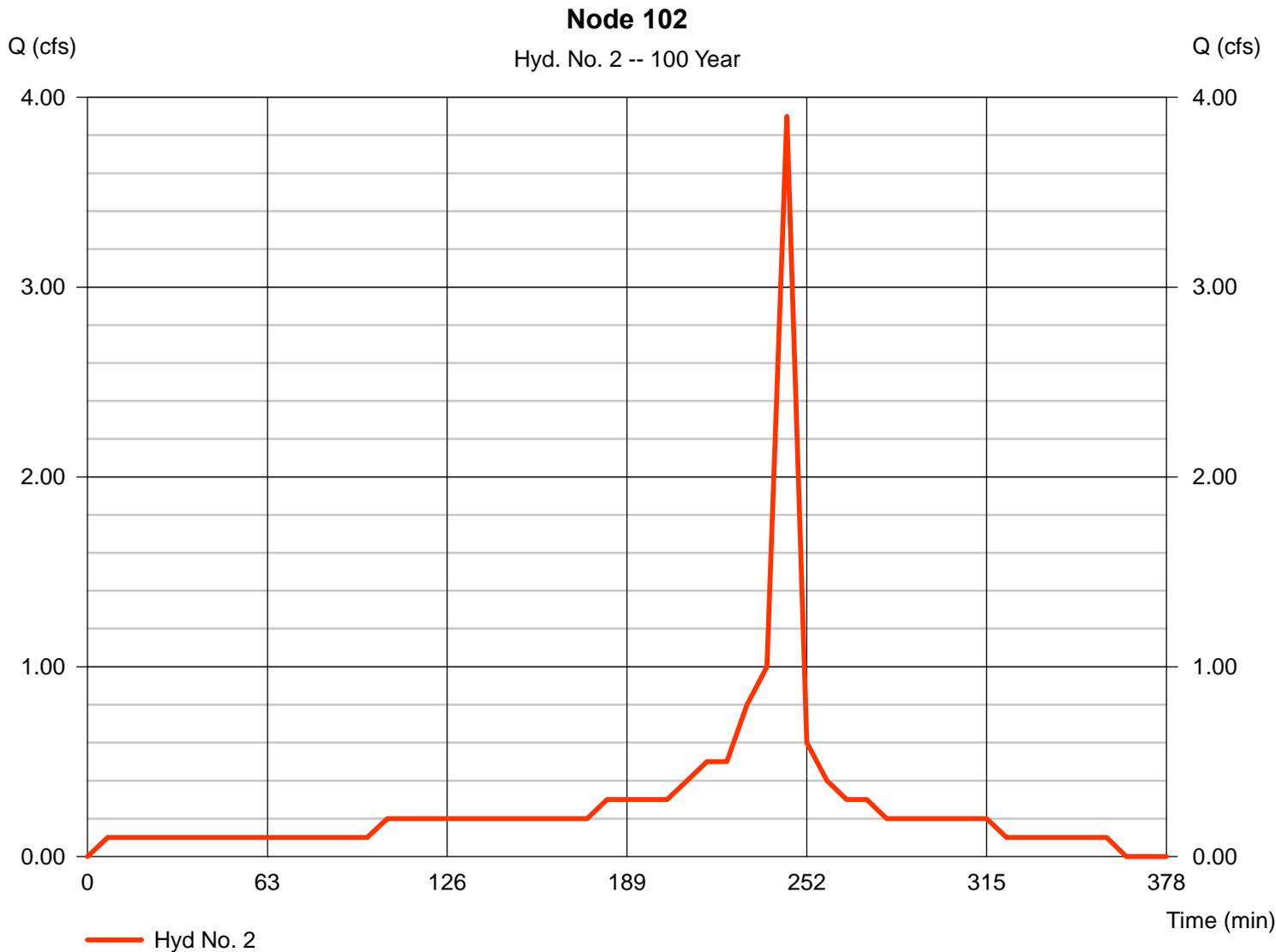
Monday, Sep 28, 2015

Hyd. No. 2

Node 102

Hydrograph type = Manual
Storm frequency = 100 yrs
Time interval = 7 min

Peak discharge = 3.900 cfs
Time to peak = 245 min
Hyd. volume = 6,426 cuft



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

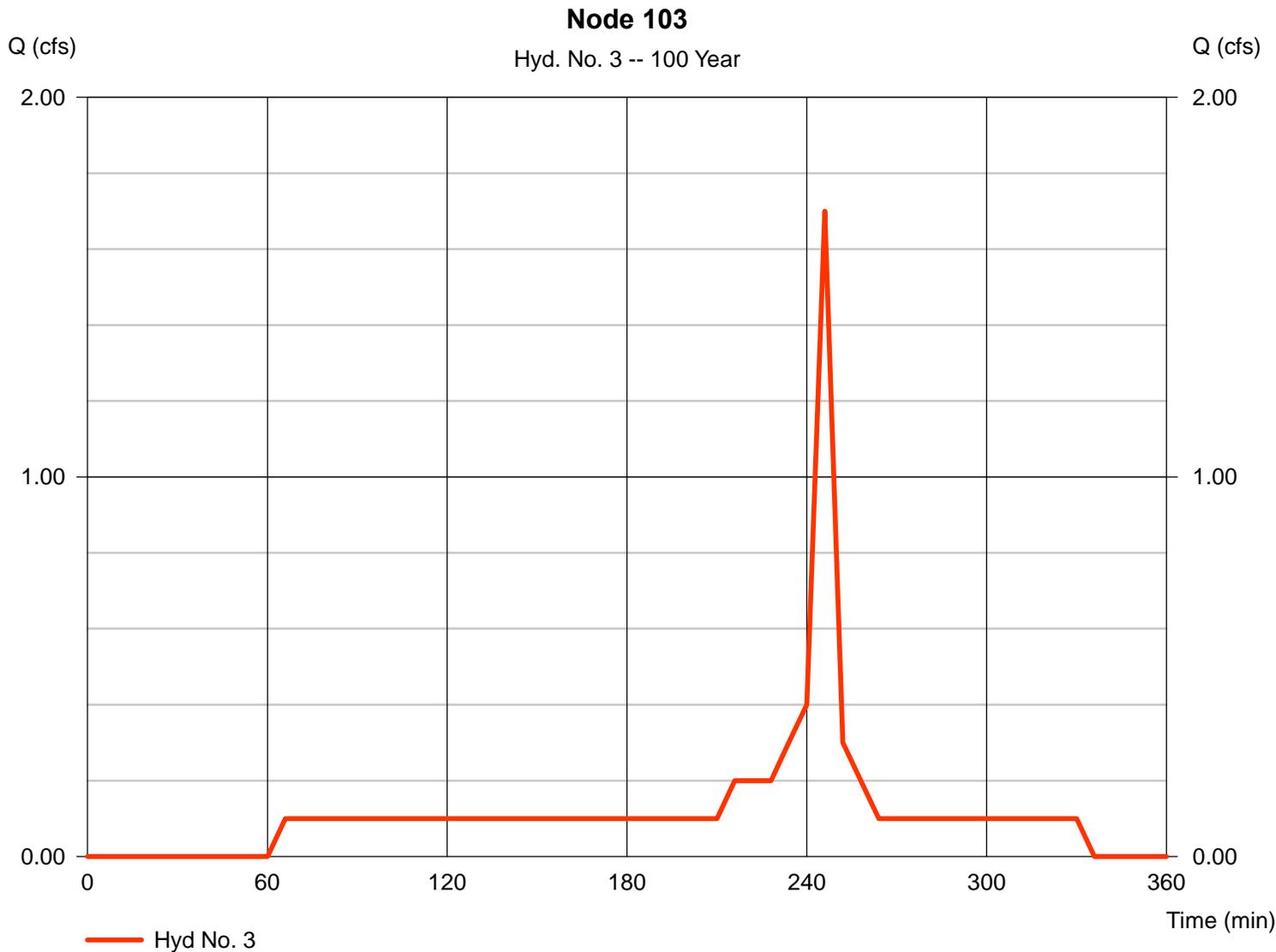
Monday, Sep 28, 2015

Hyd. No. 3

Node 103

Hydrograph type = Manual
Storm frequency = 100 yrs
Time interval = 6 min

Peak discharge = 1.700 cfs
Time to peak = 246 min
Hyd. volume = 2,592 cuft



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Monday, Sep 28, 2015

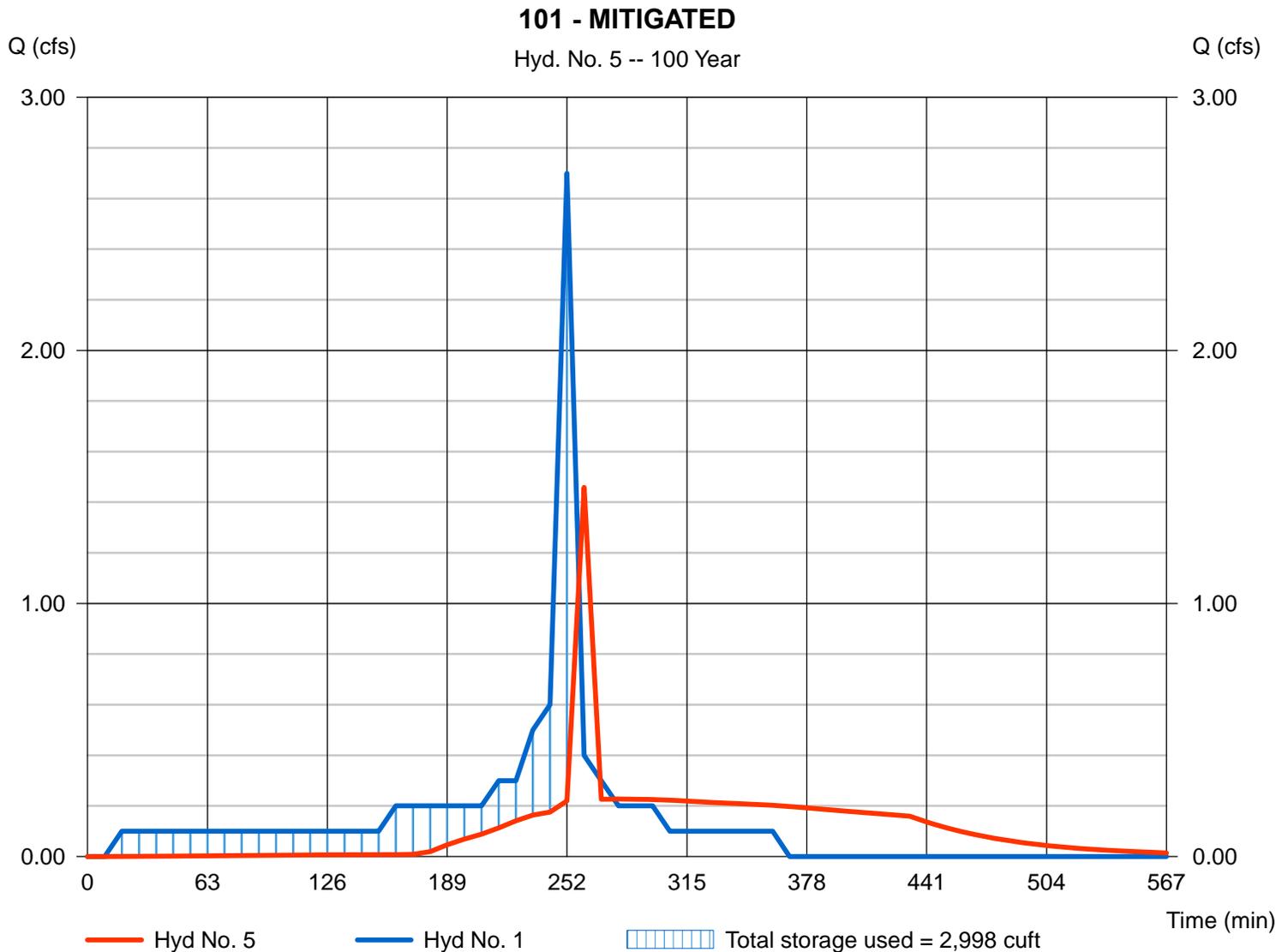
Hyd. No. 5

101 - MITIGATED

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Time interval = 9 min
Inflow hyd. No. = 1 - Node 101
Reservoir name = IMP 101

Peak discharge = 1.459 cfs
Time to peak = 261 min
Hyd. volume = 4,872 cuft
Max. Elevation = 14.16 ft
Max. Storage = 2,998 cuft

Storage Indication method used.



Pond No. 1 - IMP 101

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	10.00	n/a	0	0
1.00	11.00	n/a	530	530
2.00	12.00	n/a	520	1,050
3.00	13.00	n/a	505	1,555
4.00	14.00	n/a	1,245	2,800
4.17	14.17	n/a	205	3,005

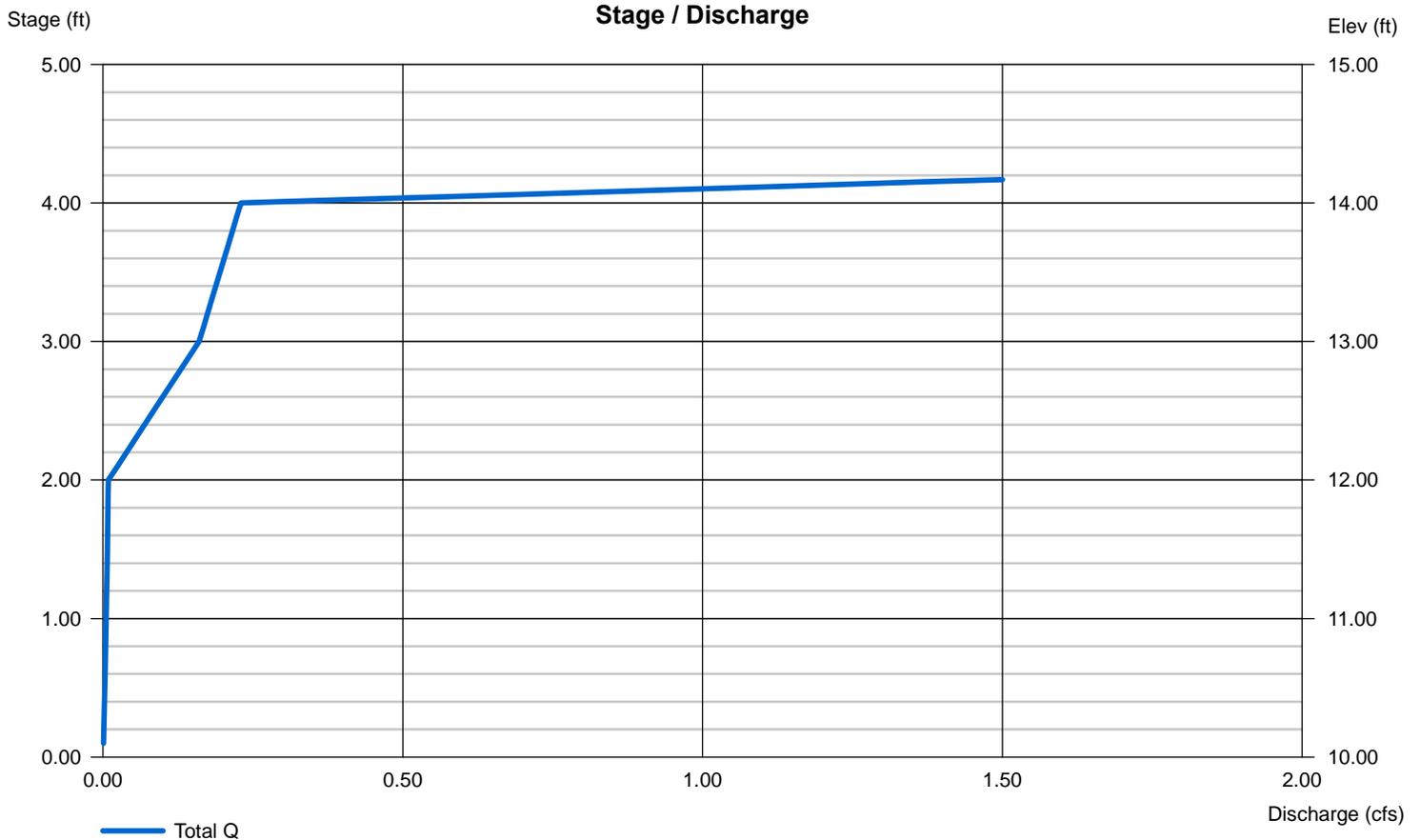
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Monday, Sep 28, 2015

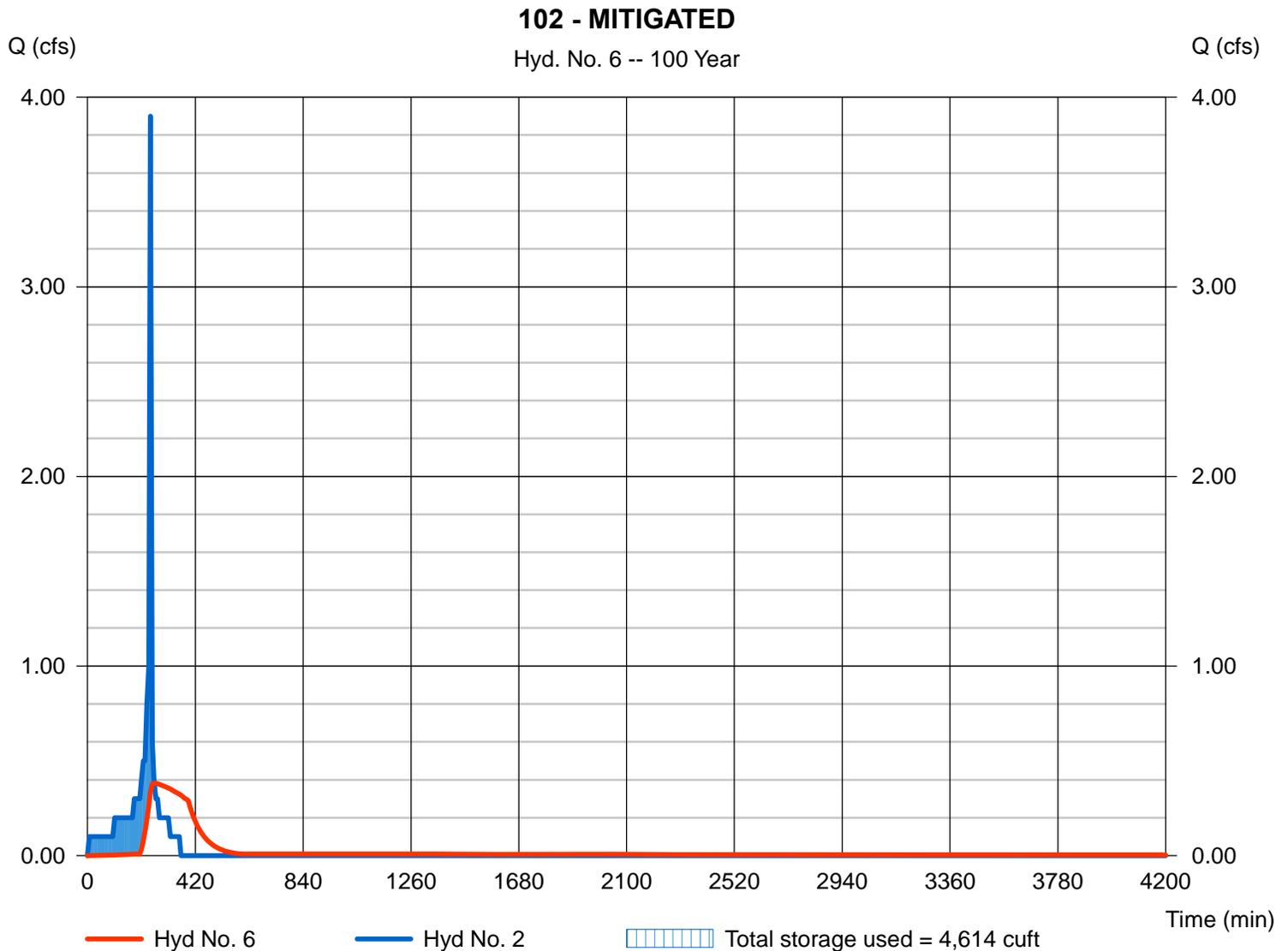
Hyd. No. 6

102 - MITIGATED

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Time interval = 7 min
Inflow hyd. No. = 2 - Node 102
Reservoir name = IMP 102

Peak discharge = 0.382 cfs
Time to peak = 259 min
Hyd. volume = 6,254 cuft
Max. Elevation = 13.71 ft
Max. Storage = 4,614 cuft

Storage Indication method used.



Pond No. 2 - IMP 102

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	10.00	n/a	0	0
1.00	11.00	n/a	1,000	1,000
2.00	12.00	n/a	960	1,960
3.00	13.00	n/a	990	2,950
4.00	14.00	n/a	2,350	5,300
4.17	14.17	n/a	400	5,700

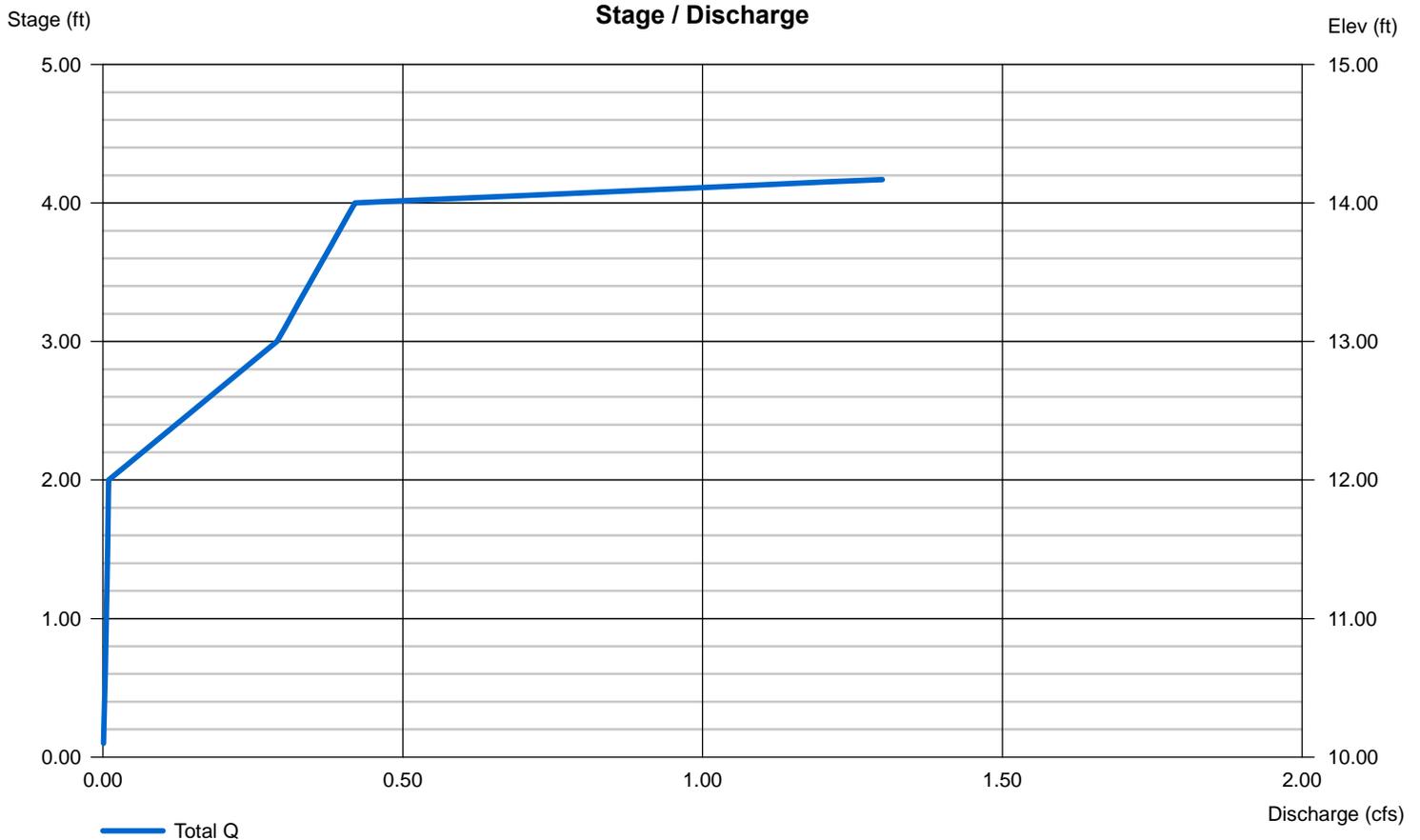
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Monday, Sep 28, 2015

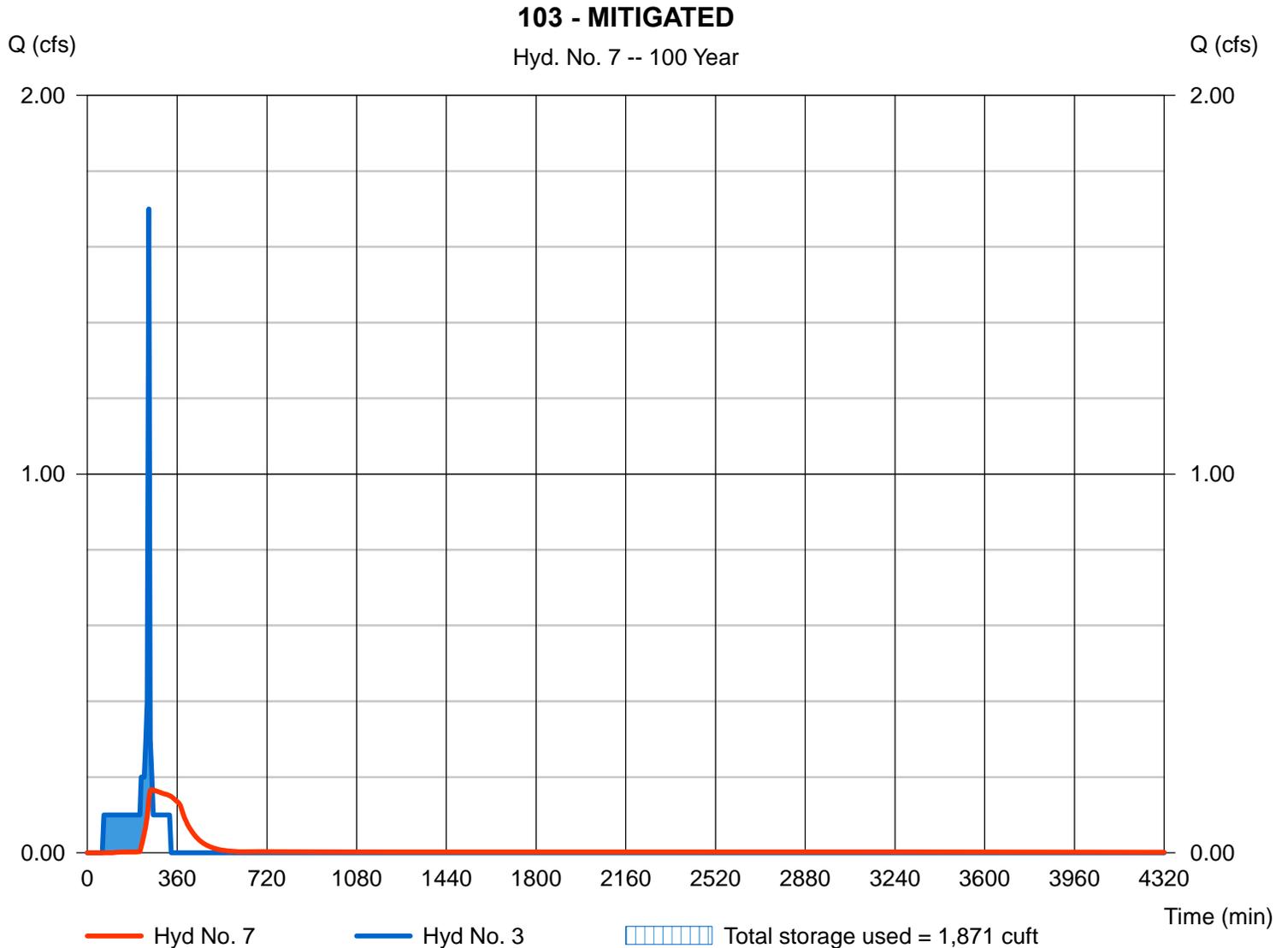
Hyd. No. 7

103 - MITIGATED

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Time interval = 6 min
Inflow hyd. No. = 3 - Node 103
Reservoir name = IMP 103

Peak discharge = 0.167 cfs
Time to peak = 258 min
Hyd. volume = 2,355 cuft
Max. Elevation = 13.53 ft
Max. Storage = 1,871 cuft

Storage Indication method used.



Pond No. 3 - IMP 103

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	10.00	n/a	0	0
1.00	11.00	n/a	450	450
2.00	12.00	n/a	420	870
3.00	13.00	n/a	445	1,315
4.00	14.00	n/a	1,060	2,375
4.17	14.17	n/a	175	2,550

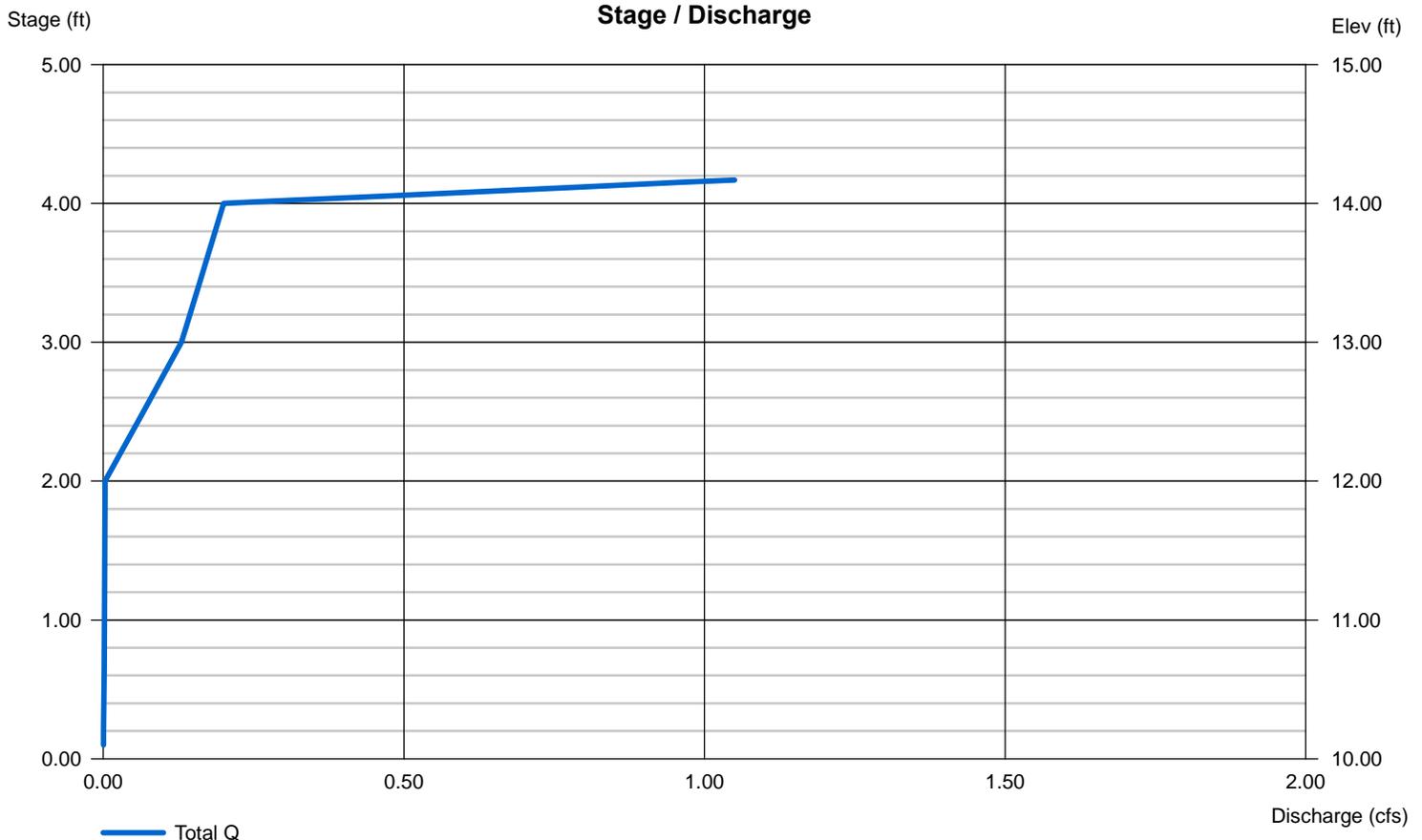
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



APPENDIX E-2:
Stormwater Management Plan

**Stormwater Management Plan
(SWMP)
For
HARRF Wastewater Collections Yard
Project Number _____
Preparation/Revision Date:
September 2015**

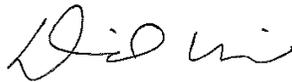
Prepared for:

City of Escondido
Construction and Engineering
1521 South Hale Avenue
Escondido, CA 92029
Contact: Paul Keck

Prepared by:

David Wiener, R.C.E. 77285
Michael Baker International
5050 Avenida Encinas, STE 260
Carlsbad, California 92008
(760) 603-6240

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan have been prepared under the direction of the following Registered Civil Engineer and meet the requirements of Regional Water Quality Control Board Order R9-2013-0001 and subsequent amendments.



David Wiener, RCE #77285



9/12/2015

Date

Project Name:	HARRF Collections Yard
Project Location:	Escondido, CA
City Project Number	
Applicant:	City of Escondido
Applicant's Address:	1521 South Hale Ave
Plan Prepared By (<i>Leave blank if same as applicant</i>):	David Wiener, Michael Baker International
Preparer's Address:	5050 Avenida Encinas, Suite 260 Carlsbad, CA 62008
Date:	September 2015

Since the SWMP is a living document, revisions may be necessary during various stages of approval by the City. Please provide the approval information requested below.

Project Stages	Does the SWMP need revisions?		If YES, Provide Revision Date
	YES	NO	
Initial Preparation			
Revised			
Revised per Hydromodification Mitigation Requirement			

Completion of the following checklists and attachments will fulfill the requirements of an SWMP for the project listed above.

STEP 1

PRIORITY DEVELOPMENT PROJECT DETERMINATION

TABLE 1: IS THE PROJECT IN ANY OF THESE CATEGORIES?

Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	A	Housing subdivisions of 10 or more dwelling units. Examples: single-family homes, multi-family homes, condominiums, and apartments.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	B	Commercial—greater than one acre (total disturbed area). Any development other than heavy industry or residential. Examples: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	C	Heavy industry—greater than one acre (total disturbed area). Examples: manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.).
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	D	Automotive repair shops. A facility categorized in any one of Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, or 7536-7539.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	E	Restaurants. Any facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for structural treatment BMP and numeric sizing criteria requirements and hydromodification requirements.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	F	Hillside development greater than 5,000 square feet. Any development that creates 5,000 square feet of impervious surface and is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	G	Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. “Directly adjacent” means situated within 200 feet of the ESA. “Discharging directly to” means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	H	Parking lots 5,000 square feet or more or with 15 or more (paved) parking spaces and potentially exposed to urban runoff.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	I	Street, roads, highways, and freeways. Any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	J	Retail Gasoline Outlets (RGOs) that are: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

To use the table, review each definition A through K. If any of the definitions match, the project is a Priority Development Project. Note some thresholds are defined by square footage of impervious area created; others by the total area of the development.

STEP 2

PROJECT STORMWATER QUALITY DETERMINATION

Total Project Site Area 1.84 (Acres)

Estimated amount of disturbed acreage: 1.84 (Acres)

(If >1 acre, you must also provide a WDID number from the SWRCB)

WDID: TBD

Complete A through C and the calculations below to determine the amount of impervious surface on your project before and after construction.

A. Total size of project site: 1.84 (Acres)

B. Total impervious area (including roof tops) before construction 0.40 (Acres)

C. Total impervious area (including roof tops) after construction 0.92 (Acres)

Calculate percent impervious before construction: $B/A = \underline{22}\%$

Calculate percent impervious after construction: $C/A = \underline{50}\%$

Please provide detailed descriptions regarding the following questions:

TABLE 2: PROJECT SPECIFIC STORMWATER ANALYSIS

1.	Please provide a brief description of the project.
<p>The project site is located in the City of Escondido within the County of San Diego, California. The project is located just northeast of the intersection of Avenida Del Diablo and Citracado Parkway. Refer to the Vicinity Map Attachment A. The project proposes the construction of approximately 24,650 square feet of warehouse, maintenance, collections, and storage areas on a previously undeveloped site. Approximately 12,300 square feet of concrete hardscape is proposed adjacent to the buildings. A 24'-wide asphalt road is proposed bisecting the site. Approximately 11,000 square foot gravel parking lot is proposed northwest of the new road. The site will drain to three bioretention areas, on either side of the new road. The limits of work and grading is approximately 79,135 square feet.</p>	
2.	Describe the pre-project and post-project topography of the project. (Show on Plan)
<p>The majority of the project site is currently undeveloped except for the existing asphalt access road. Portions of the site have been disturbed as a result of recent improvements to Citracado Parkway. An asphalt access road bisects the site, connecting Citracado Parkway to the treatment plant. The site drains to the east with moderate to steep slopes. It is sparsely vegetated. An asphalt access road bisects the site, connecting Citracado Parkway to the treatment plant. There exists a concrete cross-gutter directing runoff west to east across the road. Runoff then drains the north parallel to the road before crossing over the road west to east via another cross-gutter. No existing storm drain piping exists on the site.</p> <p>The project will add approximately 0.52 acres of impervious surface in the form of building roofs, concrete loading areas, and asphalt roadway. The impervious area will be directed to three bioretention areas, which will ultimately discharge north of the site. Proposed parking lot will be permeable gravel surface. Existing drainage patterns of the watershed will not be altered.</p>	
3.	Describe the soil classification, permeability, erodibility, and depth to groundwater for LID and Treatment BMP consideration. (Show on Plan) If infiltration BMPs are proposed, a Geotechnical Engineer must certify infiltration BMPs
<p>Per the NRCS Web Soil Survey, the project contains soil type B. Infiltration testing will be performed during later stages of design.</p>	
4.	Describe if contaminated or hazardous soils are within the project area. (Show on Plan)

There are no known contaminated soils, fills, or hazardous wastes at the project site.	
5.	Describe the existing site drainage and natural hydrologic features. (Show on Plan).
See Drainage Study for this project under separate cover.	
6.	Describe site features and conditions that constrain, or provide opportunities for stormwater control, such as LID features.
The proposed impervious area will be directed to three bioretention areas to meet water quality, flood control, and hydromodification requirements. The proposed parking lot will be a permeable gravel surface.	
7.	Is this project within the environmentally sensitive areas as defined on the maps in Appendix A of the <i>County of San Diego Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects</i> ?
Yes	
No	
✓	
8.	Is this an emergency project? If yes, please provide a description below.
Yes	
No	
✓	

CHANNELS & DRAINAGES

Complete the following checklist to determine if the project includes work in channels.

TABLE 3: CHANNEL & DRAINAGE ANALYSIS

No.	CRITERIA	YES	NO	N/A	COMMENTS
1.	Will the project include work in channels?		✓		If YES go to 2 If NO go to 13.
2.	Will the project increase velocity or volume of downstream flow?				If YES go to 6.
3.	Will the project discharge to unlined channels?				If YES go to 6.
4.	Will the project increase potential sediment load of downstream flow?				If YES go to 6.
5.	Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?				If YES go to 8.
6.	Review channel lining materials and design for stream bank erosion.				Continue to 7.
7.	Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.				Continue to 8.
8.	Include, where appropriate, energy dissipation devices at culverts.				Continue to 9.
9.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.				Continue to 10.
10.	Include, if appropriate, detention facilities to reduce peak discharges.				Continue to 11.
11.	“Hardening” natural downstream areas to prevent erosion is not an acceptable technique for protecting channel slopes, unless pre-development conditions are determined to be so erosive that hardening would be required even in the absence of the proposed development.				Continue to 12.
12.	Provide other design principles that are comparable and equally effective.				Continue to 13.
13.	End	✓			

TEMPORARY CONSTRUCTION BMPS

Please check the construction BMPs that may be implemented during construction of the project. The applicant will be responsible for the placement and maintenance of the BMPs incorporated into the final project design.

- Silt Fence
- Fiber Rolls
- Street Sweeping and Vacuuming
- Storm Drain Inlet Protection
- Stockpile Management
- Solid Waste Management
- Stabilized Construction Entrance/Exit
- Dewatering Operations
- Vehicle and Equipment Maintenance
- Any minor slopes created incidental to construction and not subject to a major or minor grading permit shall be protected by covering with plastic or tarp prior to a rain event, and shall have vegetative cover reestablished within 180 days of completion of the slope and prior to final building approval.
- Desilting Basin
- Gravel Bag Berm
- Sandbag Barrier
- Material Delivery and Storage
- Spill Prevention and Control
- Concrete Waste Management
- Water Conservation Practices
- Paving and Grinding Operations

EXCEPTIONAL THREAT TO WATER QUALITY DETERMINATION

Complete the checklist below to determine if a proposed project will pose an “exceptional threat to water quality,” and therefore require Advanced Treatment Best Management Practices during the construction phase.

TABLE 4: EXCEPTIONAL THREAT TO WATER QUALITY DETERMINATION

No.	CRITERIA	YES	NO	INFORMATION
1.	Is all or part of the proposed project site within 200 feet of waters named on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments as impaired for sedimentation and/or turbidity? Current 303d list may be obtained from the following site: http://www.swrcb.ca.gov/tmdl/docs/303dlists_2006/approved/r9_06_303d_reqtmlds.pdf		✓	If YES, continue to 2. If NO, go to 5.
2.	Will the project disturb more than 5 acres, including all phases of the development?			If YES, continue to 3. If NO, go to 5.
3.	Will the project disturb slopes that are steeper than 4:1 (horizontal: vertical) with at least 10 feet of relief, and that drain toward the 303(d) listed receiving water for sedimentation and/or turbidity?			If YES, continue to 4. If NO, go to 5.
4.	Will the project disturb soils with a predominance of USDA-NRCS Erosion factors k_f greater than or equal to 0.4?			If YES, continue to 6. If NO, go to 5.
5.	Project is not required to use Advanced Treatment BMPs.	✓		Document for Project Files by referencing this checklist.
6.	Project poses an “exceptional threat to water quality” and is required to use Advanced Treatment BMPs.			Advanced Treatment BMPs must be consistent with WPO section 67.811(b)(20)(D) performance criteria

Exemption potentially available for projects that require advanced treatment: Project proponent may perform a Revised Universal Soil Loss Equation, Version 2 (RUSLE 2), Modified Universal Soil Loss Equation (MUSLE), or similar analysis that demonstrates that advanced treatment is not required

STEP 3

HYDROMODIFICATION DETERMINATION

The following questions provide a guide to collecting information relevant to hydromodification management plan (HMP) issues.

Please reference the full descriptions of the HMP exemptions located in Figure 1-2 of the San Diego Region Model BMP Design Manual (January 2015).

TABLE 5: HYDROMODIFICATION DETERMINATION

	QUESTIONS	YES	NO	Information
1.	Is the project a Priority Development Project (PDP)?	✓		If NO, continue to 2. If YES, go to 7.
2.	Does the project discharge directly to the Pacific Ocean?		✓	If NO, continue to 3. If YES, go to 7.
3.	Does the project discharge to enclosed embankment, not within protected area?		✓	If NO, continue to 4. If YES, go to 7.
4.	Does the project discharge directly to water storage reservoir or lake, below spillway or normal operating level?		✓	If NO, continue to 5. If YES, go to 7.
5.	Does the project discharge directly to an area identified in WMAA?		✓	If NO, continue to 6. If YES, go to 7.
6.	Project is required to manage hydromodification impacts.		✓	
7.	Project is not required to manage hydromodification impacts.			Hydromodification Exempt. Keep on file

STEP 4

POLLUTANTS OF CONCERN DETERMINATION

WATERSHED

Please check the watershed(s) for the project.

<input type="checkbox"/> San Juan 901	<input type="checkbox"/> Santa Margarita 902	<input type="checkbox"/> San Luis Rey 903	<input checked="" type="checkbox"/> Carlsbad 904
<input type="checkbox"/> San Dieguito 905	<input type="checkbox"/> Penasquitos 906	<input type="checkbox"/> San Diego 907	<input type="checkbox"/> Sweetwater 909
<input type="checkbox"/> Otay 910	<input type="checkbox"/> Tijuana 911	<input type="checkbox"/> Whitewater 719	<input type="checkbox"/> Clark 720
<input type="checkbox"/> West Salton 721	<input type="checkbox"/> Anza Borrego 722	<input type="checkbox"/> Imperial 723*	

http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

HYDROLOGIC SUB-AREA NAME AND NUMBER(S)

Number	Name
904.62	Escondido

http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

RECEIVING WATERS that each project discharge point proposes to discharge to.

RECEIVING WATERS (river, creek, stream, etc.)	Hydrologic Unit Basin Number	Impairment(s) listed [303(d) listed waters or waters with established TMDLs] List the impairments identified in Table 7.	Distance to Project
Escondido Creek	904.62	DDT, Enterococcus, Fecal Coliform, Selenium, Sulfates, Nitrogen, Toxicity,	200 ft
San Elijo Lagoon	904.61	Eutrophic, Indicator Bacteria, Sedimentation/siltation,	12 miles

http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r9_06_303d_reqtmls.pdf

GROUND WATERS

Ground Waters	Hydrologic Unit Basin Number	MUN	AGR	IND	PROC	GWR	FRESH
Escondido	904.62	●	●	●			

http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

+ Excepted from Municipal

● Existing Beneficial Use

○ Potential Beneficial Use

PROJECT ANTICIPATED AND POTENTIAL POLLUTANTS

Using Table 6, identify pollutants that are anticipated to be generated from the proposed priority project categories. Pollutants associated with any hazardous material sites that have been remediated or are not threatened by the proposed project are not considered a pollutant of concern.

TABLE 6: ANTICIPATED AND POTENTIAL POLLUTANTS GENERATED BY LAND USE TYPE

<i>PDP Categories</i>	<i>General Pollutant Categories</i>								
	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	P ⁽¹⁾	P ⁽²⁾	P	X
Commercial Development 1 acre or greater	P ⁽¹⁾	P ⁽¹⁾		P ⁽²⁾	X	P ⁽⁵⁾	X	P ⁽³⁾	P ⁽⁵⁾
Heavy industry /industrial development	X		X	X	X	X	X		
Automotive Repair Shops			X	X ⁽⁴⁾⁽⁵⁾	X		X		
Restaurants					X	X	X	X	
Hillside Development >5,000 ft ²	X	X			X	X	X		X
Parking Lots	P ⁽¹⁾	P ⁽¹⁾	X		X	P ⁽¹⁾	X		P ⁽¹⁾
Retail Gasoline Outlets			X	X	X	X	X		
Streets, Highways & Freeways	X	P ⁽¹⁾	X	X ⁽⁴⁾	X	P ⁽⁵⁾	X		
<p>X = anticipated P = potential (1) A potential pollutant if landscaping exists on-site. (2) A potential pollutant if the project includes uncovered parking areas. (3) A potential pollutant if land use involves food or animal waste products. (4) Including petroleum hydrocarbons. (5) Including solvents.</p>									

PROJECT POLLUTANTS OF CONCERN SUMMARY TABLE

Please summarize the identified project pollutant of concern by checking the appropriate boxes in the table below and list any surface water impairments identified. Pollutants anticipated to be generated by the project, which are also causing impairment of receiving waters, shall be considered the primary pollutants of concern. For projects where no

primary pollutants of concern exist, those pollutants identified as anticipated shall be considered secondary pollutants of concern.

TABLE 7: PROJECT POLLUTANTS OF CONCERN

Pollutant Category	Anticipated (X)	Potential (P)	Surface Water Impairments
Sediments	X		Sedimentation Siltation
Nutrients		X	Eutrophic
Heavy Metals	X		
Organic Compounds	X		DDT, Selenium, Sulfates, Nitrogen,
Trash & Debris	X		
Oxygen Demanding Substances		X	
Oil & Grease	X		
Bacteria & Viruses			Enterococcus, Fecal Coliform, Indicator Bacteria,
Pesticides			

STEP 5

LID AND SITE DESIGN STRATEGIES

Each numbered item below is a Low Impact Development (LID) requirement of the WPO. Please check the box(s) under each number that best describes the LID BMP(s) and Site Design Strategies selected for this project. LID BMPs selected on this table will be typically represented as a self-retaining area, self-treating area, pervious pavement and greenroof, which, should be delineated in the BMP Map in Attachment C.

TABLE 8: LID AND SITE DESIGN

1. Conserve natural Areas, Soils, and Vegetation	
<input checked="" type="checkbox"/>	Preserve well draining soils (Type A or B)
<input checked="" type="checkbox"/>	Preserve Significant Trees
<input type="checkbox"/>	Preserve critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions
<input type="checkbox"/>	Other. Description:
2. Minimize Disturbance to Natural Drainages	
<input checked="" type="checkbox"/>	Set-back development envelope from drainages
<input checked="" type="checkbox"/>	Restrict heavy construction equipment access to planned green/open space areas
<input type="checkbox"/>	Other. Description:
3. Minimize and Disconnect Impervious Surfaces (see 5)	
<input type="checkbox"/>	Clustered Lot Design
<input checked="" type="checkbox"/>	Items checked in 5?
<input type="checkbox"/>	Other. Description:
4. Minimize Soil Compaction	
<input checked="" type="checkbox"/>	Restrict heavy construction equipment access to planned green/open space areas
<input checked="" type="checkbox"/>	Re-till soils compacted by construction vehicles/equipment
<input checked="" type="checkbox"/>	Collect & re-use upper soil layers of development site containing organic Materials
<input type="checkbox"/>	Other. Description:
5. Drain Runoff from Impervious Surfaces to Pervious Areas	
<u>LID Street & Road Design</u>	
<input checked="" type="checkbox"/>	Curb-cuts to landscaping
<input type="checkbox"/>	Rural Swales
<input type="checkbox"/>	Concave Median
<input type="checkbox"/>	Cul-de-sac Landscaping Design
<input type="checkbox"/>	Other. Description:

<u>LID Parking Lot Design</u>	
<input checked="" type="checkbox"/>	Permeable Pavements
<input checked="" type="checkbox"/>	Curb-cuts to landscaping
<input type="checkbox"/>	Other. Description:
<u>LID Driveway, Sidewalk, Bike-path Design</u>	
<input checked="" type="checkbox"/>	Permeable Pavements (easterly access road)
<input checked="" type="checkbox"/>	Pitch pavements toward landscaping
<input type="checkbox"/>	Other. Description:
<u>LID Building Design</u>	
<input type="checkbox"/>	Cisterns & Rain Barrels
<input checked="" type="checkbox"/>	Downspout to swale or landscaping
<input type="checkbox"/>	Vegetated Roofs
<input type="checkbox"/>	Other. Description:
<u>LID Landscaping Design</u>	
<input checked="" type="checkbox"/>	Soil Amendments
<input checked="" type="checkbox"/>	Reuse of Native Soils
<input checked="" type="checkbox"/>	Smart Irrigation Systems
<input type="checkbox"/>	Street Trees
<input type="checkbox"/>	Other. Description:
6.	Minimize erosion from slopes
<input checked="" type="checkbox"/>	Disturb existing slopes only when necessary
<input type="checkbox"/>	Minimize cut and fill areas to reduce slope lengths
<input checked="" type="checkbox"/>	Incorporate retaining walls to reduce steepness of slopes or to shorten slopes
<input type="checkbox"/>	Provide benches or terraces on high cut and fill slopes to reduce concentration of flows
<input type="checkbox"/>	Rounding and shaping slopes to reduce concentrated flow
<input checked="" type="checkbox"/>	Collect concentrated flows in stabilized drains and channels
<input type="checkbox"/>	Other. Description:

STEP 6

SOURCE CONTROL

Please complete the checklist on the following pages to determine Source Control BMPs. Below is instruction on how to use the checklist. (Also see instructions on Appendix A of the *Escondido SUSMP*)

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies and list in Table 9
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your BMP Map in Attachment C.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs and list in Table 9.

TABLE 9: PROJECT SOURCE CONTROL BMPs

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
<input checked="" type="checkbox"/> A. On-site storm drain inlets	<input checked="" type="checkbox"/> Locations of inlets.	<input checked="" type="checkbox"/> Mark all inlets with the words “No Dumping! Flows to Bay” or similar.	<input checked="" type="checkbox"/> Maintain and periodically repaint or replace inlet markings. <input checked="" type="checkbox"/> Provide stormwater pollution prevention information to new site owners, lessees, or operators. <input checked="" type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-44, “Drainage System Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com <input type="checkbox"/> Include the following in lease agreements: “Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains.”
<input type="checkbox"/> B. Interior floor drains and elevator shaft sump pumps		<input type="checkbox"/> State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	<input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.
<input type="checkbox"/> C. Interior parking garages		<input type="checkbox"/> State that parking garage floor drains will be plumbed to the sanitary sewer.	<input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
<input type="checkbox"/> D1. Need for future indoor & structural pest control		<input type="checkbox"/> Note building design features that discourage entry of pests.	<input type="checkbox"/> Provide Integrated Pest Management information to owners, lessees, and operators.

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
<p>✓ D2. Landscape/ Outdoor Pesticide Use</p> <p><u>Note: Should be consistent with project landscape plan (if applicable).</u></p>	<ul style="list-style-type: none"> ✓ Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. ✓ Show self-retaining landscape areas, if any. ✓ Show stormwater treatment facilities. 	<p>State that final landscape plans will accomplish all of the following:</p> <ul style="list-style-type: none"> ✓ Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. ✓ Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. ✓ Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. ☐ Consider using pest-resistant plants, especially adjacent to hardscape. ✓ To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions. 	<ul style="list-style-type: none"> ✓ Maintain landscaping using minimum or no pesticides. ✓ See applicable operational BMPs in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com ✓ Provide IPM information to new owners, lessees and operators.

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
<input type="checkbox"/> E. Pools, spas, ponds, decorative fountains, and other water features.	<input type="checkbox"/> Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet.	<input type="checkbox"/> If the local municipality requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.	<input type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-72, “Fountain and Pool Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
<input type="checkbox"/> F. Food service	<input type="checkbox"/> For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment. <input type="checkbox"/> On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.	<input type="checkbox"/> Describe the location and features of the designated cleaning area. <input type="checkbox"/> Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.	<input type="checkbox"/>

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
<input type="checkbox"/> G. Refuse areas	<input type="checkbox"/> Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. <input type="checkbox"/> If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area. <input type="checkbox"/> Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.	<input type="checkbox"/> State how site refuse will be handled and provide supporting detail to what is shown on plans. <input type="checkbox"/> State that signs will be posted on or near dumpsters with the words “Do not dump hazardous materials here” or similar.	<input type="checkbox"/> State how the following will be implemented: Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post “no hazardous materials” signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, “Waste Handling and Disposal” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
<input checked="" type="checkbox"/> H. Industrial processes.	<input checked="" type="checkbox"/> Show process area.	<input checked="" type="checkbox"/> If industrial processes are to be located on site, state: “All process activities to be performed indoors. No processes to drain to exterior or to storm drain system.”	<input checked="" type="checkbox"/> See Fact Sheet SC-10, “Non-Stormwater Discharges” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
<p>✓ I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)</p>	<p>✓ Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.</p> <p>✓ Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.</p> <p>✓ Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.</p>	<p>✓ Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.</p> <p>Where appropriate, reference documentation of compliance with the requirements of local Hazardous Materials Programs for:</p> <ul style="list-style-type: none"> ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release (CalARP) ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank 	<p>✓ See the Fact Sheets SC-31, “Outdoor Liquid Container Storage” and SC-33, “Outdoor Storage of Raw Materials ” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>

<p><input type="checkbox"/> J. Vehicle and Equipment Cleaning</p>	<p><input type="checkbox"/> Show on drawings as appropriate:</p> <p>(1) Commercial/industrial facilities having vehicle /equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.</p> <p>(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).</p> <p>(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.</p> <p>(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.</p>	<p><input type="checkbox"/> If a car wash area is not provided, describe measures taken to discourage on-site car washing and explain how these will be enforced.</p>	<p>Describe operational measures to implement the following (if applicable):</p> <p><input type="checkbox"/> Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.</p> <p><input type="checkbox"/> Car dealerships and similar may rinse cars with water only.</p> <p>✓ See Fact Sheet SC-21, “Vehicle and Equipment Cleaning,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>
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<p><input type="checkbox"/> K. Vehicle/Equipment Repair and Maintenance</p>	<p><input type="checkbox"/> Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.</p> <p><input type="checkbox"/> Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.</p> <p><input type="checkbox"/> Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.</p>	<p><input type="checkbox"/> State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.</p> <p><input type="checkbox"/> State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.</p> <p><input type="checkbox"/> State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.</p>	<p>In the SUSMP report, note that all of the following restrictions apply to use the site:</p> <p><input type="checkbox"/> No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.</p> <p><input type="checkbox"/> No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.</p> <p><input type="checkbox"/> No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.</p>
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<p><input type="checkbox"/> L. Fuel Dispensing Areas</p>	<p><input type="checkbox"/> Fueling areas¹ shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.</p> <p>Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area¹.] The canopy [or cover] shall not drain onto the fueling area.</p>		<p><input type="checkbox"/> The property owner shall dry sweep the fueling area routinely.</p> <p><input type="checkbox"/> See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>
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¹ The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

<p>✓ M. Loading Docks</p>	<p>✓ Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas should be drained to the sanitary sewer where feasible. Direct connections to storm drains from depressed loading docks are prohibited.</p> <p>✓ Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.</p> <p>✓ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.</p>		<p>✓ Move loaded and unloaded items indoors as soon as possible.</p> <p>✓ See Fact Sheet SC-30, “Outdoor Loading and Unloading,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>
<p>☐ N. Fire Sprinkler Test Water</p>		<p>☐ Provide a means to drain fire sprinkler test water to the sanitary sewer.</p>	<p>☐ See the note in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>

<p>O. Miscellaneous Drain or Wash Water</p> <ul style="list-style-type: none"> <input type="checkbox"/> Boiler drain lines <input type="checkbox"/> Condensate drain lines <input type="checkbox"/> Rooftop equipment <input type="checkbox"/> Drainage sumps <input type="checkbox"/> Roofing, gutters, and trim. 		<ul style="list-style-type: none"> <input type="checkbox"/> Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. <input type="checkbox"/> Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. <input type="checkbox"/> Rooftop mounted equipment with potential to produce pollutants shall be roofed and/or have secondary containment. <input type="checkbox"/> Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. <input type="checkbox"/> Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff. 	
<p>✓ P. Plazas, sidewalks, and parking lots.</p>			<p>✓ Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Debris from pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.</p>

STEP 7

LID AND TREATMENT CONTROL SELECTION

A treatment control BMP and/or LID facility must be selected to treat the project pollutants of concern identified in Table 7 “Project Pollutants of Concern”. A treatment control facility with a high or medium pollutant removal efficiency for the project’s most significant pollutant of concern shall be selected. It is recommended to use the design procedure in Chapter 4 of the SUSMP to meet NPDES permit LID requirements, treatment requirements, and flow control requirements. If your project does not utilize this approach, the project will need to demonstrate compliance with LID, treatment and hydromodification flow control requirements. Review “Selection of Stormwater Treatment Facilities” in the Escondido SUSMP to assist in determining the appropriate treatment facility for your project.

Will this project be utilizing the unified LID design procedure as described in Section 2 of the Local SUSMP?	
Yes	No
✓	
If this project is not utilizing the unified LID design procedure, please describe how the alternative treatment facilities will comply with applicable LID criteria, stormwater treatment criteria, and hydromodification management criteria.	

- Indicate the project pollutants of concern (POCs) from Table 7 in Column 2 below.

TABLE 10: GROUPING OF POTENTIAL POLLUTANTS of Concern (POCs) by fate during stormwater treatment

Pollutant	Check Project Specific POCs	Coarse Sediment and Trash	Pollutants that tend to associate with fine particles during treatment	Pollutants that tend to be dissolved following treatment
Sediment	X	X	X	
Nutrients	X		X	X
Heavy Metals	X		X	
Organic Compounds	X		X	
Trash & Debris	X	X		
Oxygen Demanding	X		X	
Bacteria	X		X	
Oil & Grease	X		X	
Pesticides	X		X	

- Indicate the treatment facility(s) chosen for this project in the following table.

TABLE 11: GROUPS OF POLLUTANTS and relative effectiveness of treatment facilities

Pollutants of Concern	Bioretention Facilities (LID)	Settling Basins (Dry Ponds)	Wet Ponds and Constructed Wetlands	Infiltration Devices (LID)	Media Filters	Higher-rate biofilters	Higher-rate media filters	Trash Racks & Hydro-dynamic Devices	Vegetated Swales
Coarse Sediment and Trash	High	High	High	High	High	High	High	High	High
Pollutants that tend to associate with fine particles during treatment	High	High	High	High	High	Medium	Medium	Low	Medium
Pollutants that tend to be dissolved following treatment	Medium	Low	Medium	High	Low	Low	Low	Low	Low

- Please check the box(s) that best describes the Treatment BMP(s) and/or LID BMP selected for this project. Please check if the treatment facility is designed for water quality or hydromodification flow control. Check both boxes if the facility is designed for both water quality and hydromodification flow control.

TABLE 12: PROJECT LID AND TC-BMPS – BMPs designed to treat stormwater (e.g., LID and hydromod) shall be considered TCBMPS.

TCBMP Type	Water Quality Treatment	Hydromodification Flow Control
Bioretention Facilities (LID)		
<input checked="" type="checkbox"/> Bioretention area	X	X
<input type="checkbox"/> Flow-through Planter		
<input type="checkbox"/> Cistern with Bioretention Facility		
Basins		
<input type="checkbox"/> Extended/dry detention basin with grass/vegetated lining		
<input type="checkbox"/> Extended/dry detention basin with impervious lining		
<input type="checkbox"/> Underground Vault		
<input type="checkbox"/> Cistern		
Infiltration Devices (LID)		
<input type="checkbox"/> Infiltration basin		

<input type="checkbox"/> Infiltration trench		
<input type="checkbox"/> Other _____		
Wet Ponds and Constructed Wetlands		
<input type="checkbox"/> Wet pond/basin (permanent pool)		
<input type="checkbox"/> Constructed wetland		
Vegetated Swales (LID)		
<input type="checkbox"/> Vegetated Swale		
Media Filters		
<input type="checkbox"/> Austin Sand Filter		
<input type="checkbox"/> Delaware Sand Filter		
<input type="checkbox"/> Multi-Chambered Treatment Train (MCTT)		
Higher-rate Biofilters		
<input type="checkbox"/> Tree-pit-style unit		
<input type="checkbox"/> Other _____		
Higher-rate Media Filters		
<input type="checkbox"/> Vault-based filtration unit with replaceable cartridges		
<input type="checkbox"/> Other _____		
Hydrodynamic Separator Systems		
<input type="checkbox"/> Swirl Concentrator		
<input type="checkbox"/> Other _____		
Trash Racks		
<input type="checkbox"/> Catch Basin Insert		
<input type="checkbox"/> Catch Basin Insert w/ Hydrocarbon boom		
<input type="checkbox"/> Other _____		
Self-Retaining Areas (LID)		
<input checked="" type="checkbox"/> Permeable Pavements	X	
<input type="checkbox"/> Self-Retaining		
<input type="checkbox"/> Vegetated Roofs		

For design guidelines and calculations refer to Section 2 “Concepts and Criteria” in the Escondido SUSMP. Please show all fact sheets for all treatment control BMPs proposed in Attachment D.

- Create a Construction Plan SWMP Checklist for your project.

Instructions on how to fill out table

1. Number and list each measure or BMP you have specified in your SWMP in Columns 1 and Maintenance Category in Column 3 of the table. Leave Column 2 blank.
2. When you submit construction plans, duplicate the table (by photocopy or electronically). Now fill in Column 2, identifying the plan sheets where the BMPs are shown. List all plan sheets on which the BMP appears. This table must be shown on the front sheet of the grading and improvement plans.

Stormwater Treatment Control and LID BMP's ¹			
Description / Type	Sheet	Maintenance Category	Revisions
Bioretention areas			
⁽¹⁾ BMPs designed to treat stormwater (e.g., LID and hydromod) shall be considered TCBMPs.			

Please describe why the chosen treatment BMP(s) was selected for this project. For projects utilizing a low performing BMP, please provide a feasibility analysis that demonstrates utilization of a treatment facility with a high or medium removal efficiency ranking is infeasible.

The selection, design and location of treatment BMPs for the proposed project relied heavily on the project-wide drainage plan. BMP alternatives were evaluated for their relative effectiveness for treating potential pollutants from the project site; technical feasibility; relative costs and benefits; and applicable legal, institutional, and other constraints. Table 12 provides a list of LID and Treatment-Control BMP alternatives and identifies the BMPs selected for the project site.

Bioretention Areas

The project proposes bioretention which will provide water quality, flood control, and hydromodification benefits. The three proposed bioretention areas were sized based on the County of San Diego BMP Sizing Spreadsheet and the Model BMP Design Manual for the San Diego Region (January 2015). See calculations in Attachment D. They each have expected to include a sub-grade side wall impermeable liner to prevent lateral migration of runoff, a subgrade section of 30-inches of gravel with orifice-controlled perforated sub-drains, 24-inches minimum of engineering media, and 12-inches of 100% voids (ponding area), and an overflow grate inlet.

ATTACHMENTS

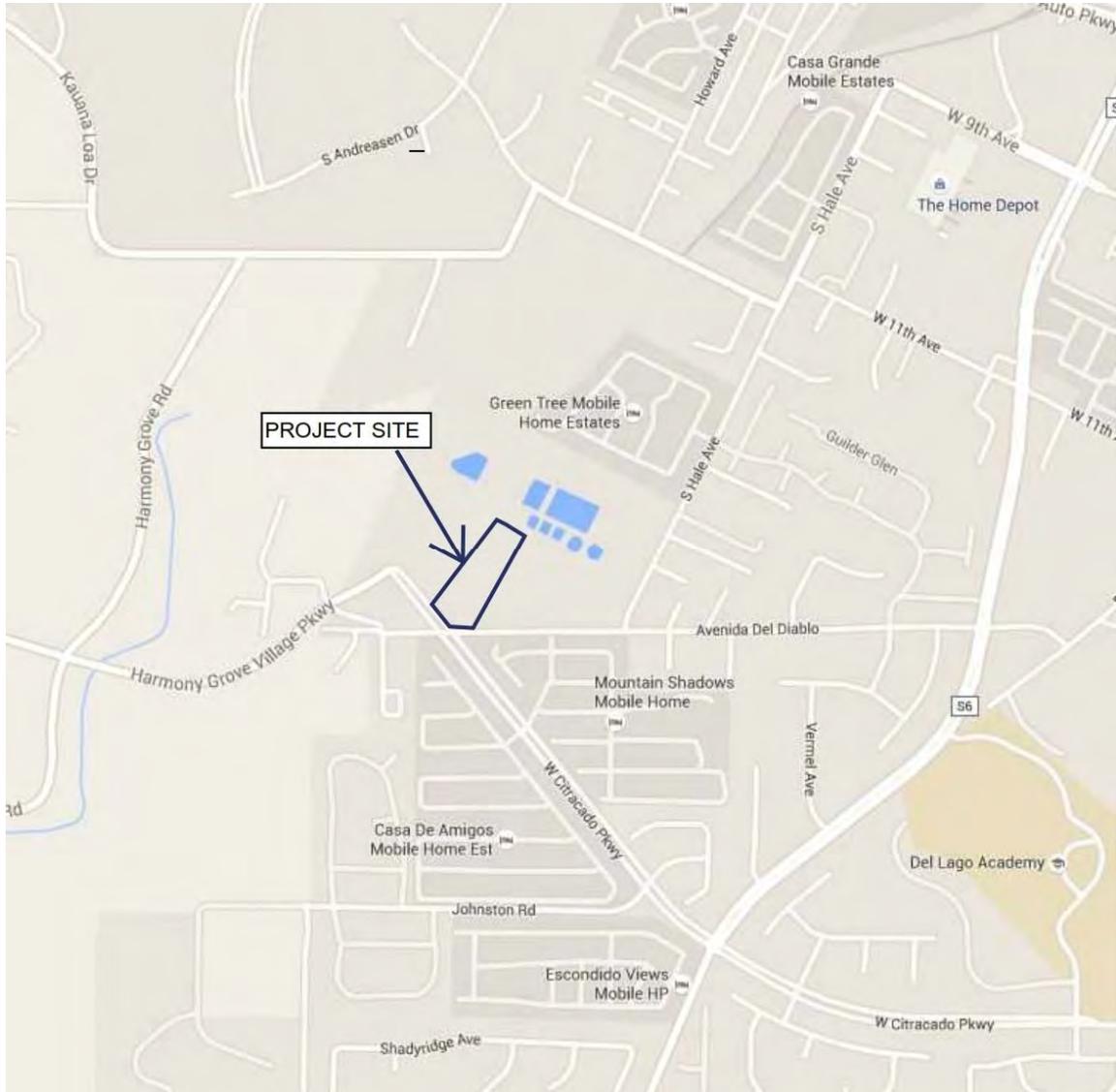
Please include the following attachments.

ATTACHMENT	
A	Project Location Map
B	Project Watershed Map
C	DMA Exhibit
D	BMP Fact Sheets and Calculations

ATTACHMENT A

Project Location Map

Source: Google Maps



ATTACHMENT B

Project Watershed Map

ATTACHMENT C

DMA Exhibit



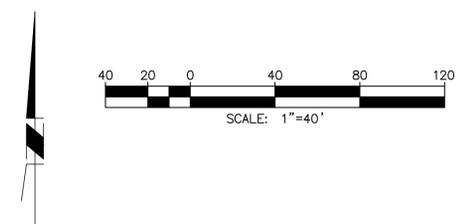
LEGEND

- IMPERVIOUS AREA 
- GRAVEL 
- BIORETENTION AREA 
- INTEGRATED MANAGEMENT PRACTICE (IMP) 
- DRAINAGE MANAGEMENT AREA (DMA) NODE 
- DRAINAGE AREA BOUNDARY 

- SOURCE CONTROL BMPS:**
1. ON-SITE STORM DRAIN SIGNAGE
 2. SELECT DROUGHT TOLERANT PLANTS THAT WILL ALSO SURVIVE SATURATED SOILS WHEN LOCATED IN BIORETENTION AREAS.

- TREATMENT CONTROL BMPS:**
1. BIORETENTION BASINS

- LID AND SITE DESIGN STRATEGIES:**
1. PRESERVE SIGNIFICANT TREES AND CRITICAL AREAS.
 2. RE-TILL SOILS COMPACTED BY CONSTRUCTION VEHICLES/EQUIPMENT.
 3. CURB-CUTS TO BIORETENTION AREAS.
 4. PITCH PAVEMENTS TOWARD LANDSCAPING.
 5. LANDSCAPING DESIGN INCLUDES SOIL AMENDMENTS AND SMART IRRIGATION SYSTEMS.
 6. DISTURB EXISTING SLOPES ONLY WHEN NECESSARY.
 7. ROUNDING AND SHAPING SLOPES TO REDUCE CONCENTRATED FLOW.
 8. PERMEABLE GRAVEL PARKING LOT.



**HARRF WASTEWATER COLLECTIONS
YARD RELOCATION**

**DMA EXHIBIT
POST-DEVELOPMENT**

**Michael Baker
INTERNATIONAL**

5050 Avenida Encinas, Ste 260
Carlsbad, CA 92008
Phone: (760) 476-9193
WWW.MBAKERINTL.COM

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ATTACHMENT D

BMP Fact Sheets and Calculations

Per

**Model BMP Design Manual for the San Diego
Region, January 2015**

BMP Sizing Spreadsheet V1.04

Project Name:	HARRF	Hydrologic Unit:	904.62
Project Applicant:	Baker	Rain Gauge:	Oceanside
Jurisdiction:	City of Escondido	Total Project Area:	1.82 Acres
Parcel (APN):		Low Flow Threshold:	0.1Q2
BMP Name	IMP 101	BMP Type:	Bioretention

DMA Name	Rain Gauge	Existing Condition			Q2 Sizing Factor (cfs/ac)	DMA Area (ac)	Orifice Flow - %Q ₂ (cfs)	Orifice Area (in ²)
		Soil Type	Cover	Slope				
101	Oceanside	B	Scrub	Moderate	0.134	0.315	0.004	0.10
101	Oceanside	B	Scrub	Moderate	0.134	0.181	0.002	0.06
101	Oceanside	B	Scrub	Moderate	0.134	0.097	0.001	0.03
101	Oceanside	B	Scrub	Moderate	0.134	0.250	0.003	0.08
101	Oceanside	B	Scrub	Moderate	0.134	0.426	0.006	0.14

0.017	0.42	0.73
Tot. Allowable Orifice Flow (cfs)	Tot. Allowable Orifice Area (in ²)	Max Orifice Diameter (in)

0.012	0.28	0.60
Actual Orifice Flow (cfs)	Actual Orifice Area (in ²)	Selected Orifice Diameter (in)

Drawdown (Hrs)	30.0
----------------	------

BMP Sizing Spreadsheet V1.04			
Project Name:	HARRF	Hydrologic Unit:	904.62
Project Applicant:	Baker	Rain Gauge:	Oceanside
Jurisdiction:	City of Escondido	Total Project Area:	1.82 Acres
Parcel (APN):		Low Flow Threshold:	0.1Q2
BMP Name	IMP 102	BMP Type:	Bioretention

DMA Name	Rain Gauge	Existing Condition			Q2 Sizing Factor (cfs/ac)	DMA Area (ac)	Orifice Flow - %Q ₂ (cfs)	Orifice Area (in ²)
		Soil Type	Cover	Slope				
102	Oceanside	B	Scrub	Moderate	0.134	0.162	0.002	0.05
102	Oceanside	B	Scrub	Moderate	0.134	0.376	0.005	0.12
102	Oceanside	B	Scrub	Moderate	0.134	0.129	0.002	0.04
102	Oceanside	B	Scrub	Moderate	0.134	0.010	0.000	0.00
102	Oceanside	B	Scrub	Moderate	0.134	0.127	0.002	0.04
102	Oceanside	B	Scrub	Moderate	0.134	0.028	0.000	0.01
102	Oceanside	B	Scrub	Moderate	0.134	0.060	0.001	0.02

0.012	0.29	0.61
Tot. Allowable Orifice Flow (cfs)	Tot. Allowable Orifice Area (in ²)	Max Orifice Diameter (in)

0.012	0.28	0.60
Actual Orifice Flow (cfs)	Actual Orifice Area (in ²)	Selected Orifice Diameter (in)

Drawdown (Hrs)	56.4
----------------	------

BMP Sizing Spreadsheet V1.04			
Project Name:	HARRF	Hydrologic Unit:	904.62
Project Applicant:	Baker	Rain Gauge:	Oceanside
Jurisdiction:	City of Escondido	Total Project Area:	1.82 Acres
Parcel (APN):		Low Flow Threshold:	0.1Q2
BMP Name:	IMP 103	BMP Type:	Bioretention
BMP Native Soil Type:	B	BMP Infiltration Rate (in/hr):	0.52

Areas Draining to BMP						HMP Sizing Factors			Minimum BMP Size		
DMA Name	Area (sf)	Soil Type	Slope	Post Project Surface Type	Runoff Factor (Table 4-2)	Surface Area	Surface Volume	Subsurface Volume	Surface Area (sf)	Surface Volume (cf)	Subsurface Volume (cf)
103	10070	B	Flat	Impervious	1.0	0.103	0.0854	N/A	1037	860	N/A
103	1370	B	Flat	Landscape	0.1	0.103	0.0854	N/A	14	12	N/A
Total BMP Area	11440								Minimum BMP Size	1051.321	872
									Proposed BMP Size*	1055	1187
									Soil Matrix Depth	24.00	in
									Minimum Ponding Depth	8.41	in
									Maximum Ponding Depth	13.77	in
									Selected Ponding Depth	12.00	in

Describe the BMP's in sufficient detail in your SWMP to demonstrate the area, volume, and other criteria can be met within the constraints of the site.

BMP's must be adapted and applied to the conditions specific to the development project such as unstable slopes or the lack of available head. Designated Staff have final review and approval authority over the project design.

This Sizing Calculator has been developed in compliance with the Countywide Model SUSMP. For questions or concerns please contact the jurisdiction in which your project is located.

E.9 INF-2 Bioretention



Photo Credit: San Diego Low Impact Development Design Manual

MS4 Permit Category

Retention

BMP Manual Category

Infiltration

Applicable Performance Standard

Pollutant Control
Flow Control

Hydromodification Management Potential

Volume Reduction
Treatment
Peak Flow Attenuation

Description

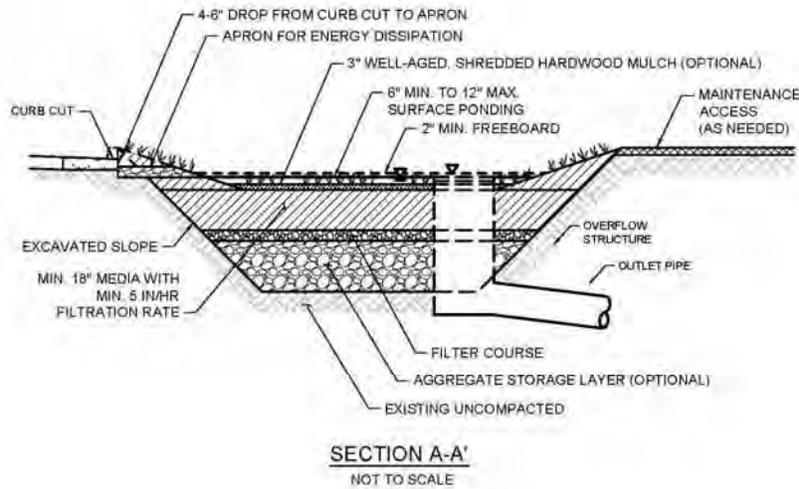
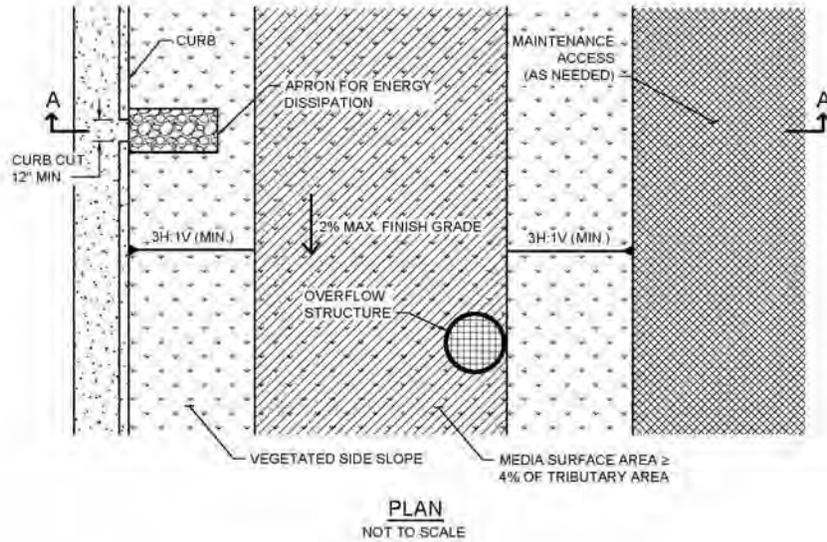
Bioretention (Bioretention without underdrain) facilities are vegetated surface water systems that filter water through vegetation and soil, or engineered media prior to infiltrating into native soils. These facilities are designed to infiltrate the full DCV. Bioretention facilities are commonly incorporated into the site within parking lot landscaping, along roadsides, and in open spaces. They can be constructed inground or partially aboveground, such as planter boxes with open bottoms (no impermeable liner at the bottom) to allow infiltration. Treatment is achieved through filtration, sedimentation, sorption, infiltration, biochemical processes and plant uptake.

Typical bioretention without underdrain components include:

- Inflow distribution mechanisms (e.g, perimeter flow spreader or filter strips)
- Energy dissipation mechanism for concentrated inflows (e.g., splash blocks or riprap)
- Shallow surface ponding for captured flows
- Side slope and basin bottom vegetation selected based on expected climate and ponding depth
- Non-floating mulch layer (Optional)
- Media layer (planting mix or engineered media) capable of supporting vegetation growth
- Filter course layer consisting of aggregate to prevent the migration of fines into

uncompacted native soils or the optional aggregate storage layer

- Optional aggregate storage layer for additional infiltration storage
- Uncompacted native soils at the bottom of the facility
- Overflow structure



Design Adaptations for Project Goals

Full infiltration BMP for storm water pollutant control. Bioretention can be used as a pollutant control BMP designed to infiltrate runoff from direct rainfall as well as runoff from adjacent tributary areas. Bioretention facilities must be designed with an infiltration storage volume (a function of the ponding, media and aggregate storage volumes) equal to the full design capture

volume (DCV) and able to meet drawdown time limitations.

Integrated storm water flow control and pollutant control configuration. Bioretention facilities can be designed to provide flow rate and duration control. This may be accomplished by providing greater infiltration storage with increased surface ponding and/or aggregate storage volume for storm water flow control.

Design Criteria and Considerations

Bioretention must meet the following design criteria:

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<input type="checkbox"/> Placement observes geotechnical recommendations regarding potential hazards (e.g., slope stability, landslides, liquefaction zones) and setbacks (e.g., slopes, foundations, utilities).	Must not negatively impact existing site geotechnical concerns.
<input type="checkbox"/> Selection and design of BMP is based on infiltration feasibility criteria and appropriate design infiltration rate presented in Appendix C and D.	Must operate as a full infiltration design and must be supported by drainage area and in-situ infiltration rate feasibility findings.
<input type="checkbox"/> Contributing tributary area is ≤ 5 acres (≤ 1 acre preferred)	Higher ratios increase the potential for clogging.
<input type="checkbox"/> Finish grade of the facility is $\leq 2\%$. In long bioretention facilities where the potential for internal erosion and channelization exists, the use of check dams is required.	Flatter surfaces reduce erosion and channelization within the facility. Internal check dams reduce velocity and dissipate energy.
Surface Ponding	
<input type="checkbox"/> Surface ponding is limited to a 24-hour drawdown time.	24-hour drawdown time is recommended for plant health
<input type="checkbox"/> Surface ponding depth is ≥ 6 and ≤ 12 inches.	Surface ponding capacity lowers subsurface storage requirements. Deep surface ponding raises safety concerns.
<input type="checkbox"/> A minimum of 2 inches of freeboard is provided.	Freeboard provides room for head over overflow structures and minimizes risk of uncontrolled surface discharge.
<input type="checkbox"/> Side slopes are stabilized with vegetation and are $\geq 3H: 1V$.	Gentler side slopes are safer, less prone to erosion, able to establish vegetation more quickly and easier to maintain.

Vegetation

- | | |
|--|--|
| <input type="checkbox"/> Plantings are suitable for the climate and expected ponding depth. A plant list to aid in selection can be found in Appendix E.15 | Plants suited to the climate and ponding depth are more likely to survive. |
| <input type="checkbox"/> An irrigation system with a connection to water supply is provided as needed. | Seasonal irrigation might be needed to keep plants healthy. |
-

Mulch (Optional)

- | | |
|---|--|
| <input type="checkbox"/> A minimum of 3 inches of well-aged, shredded hardwood mulch that has been stockpiled or stored for at least 12 months is provided. Mulch must be non-floating to avoid clogging of overflow structure. | Mulch will suppress weeds and maintain moisture for plant growth. Aging mulch kills pathogens and weed seeds and allows the beneficial microbes to multiply. |
|---|--|
-

Media Layer

- | | |
|---|--|
| <input type="checkbox"/> Media maintains a minimum filtration rate of 5 in/hr over lifetime of facility. A minimum initial filtration rate of 10 in/hr is recommended. | A high filtration rate through the soil mix minimizes clogging potential and allows flows to quickly enter the aggregate storage layer, thereby minimizing bypass. |
| <input type="checkbox"/> Media is a minimum 18 inches deep, meeting either of these two media specifications:
City of San Diego Low Impact Development Design Manual, July 2011 (page B-18)
or
County of San Diego Low Impact Development Handbook, June 2014: Appendix G -Bioretention Soil Specification | A deep media layer provides additional filtration and supports plants with deeper roots. |
| <input type="checkbox"/> Media surface area is 3% of tributary impervious area or greater. | Greater surface area to tributary area ratios decrease loading rates per square foot and therefore increase longevity. |
-

Filter Course Layer (Optional)

- | | |
|---|---|
| <input type="checkbox"/> A filter course is used to prevent migration of fines through layers of the facility. Filter fabric is not used. | Migration of media can cause clogging of the aggregate storage layer void spaces or subgrade. Filter fabric is more likely to clog. |
| <input type="checkbox"/> Filter course is washed and free of fines. | Washing aggregate will help eliminate fines that could clog the facility and |
-

		impede infiltration.
<input type="checkbox"/>	Filter course calculations assessing suitability for particle migration prevention have been completed.	Gradation relationship between layers can evaluate factors (e.g., bridging, permeability, and uniformity) to determine if particle sizing is appropriate or if an intermediate layer is needed.
<i>Aggregate Storage Layer (Optional)</i>		
<input type="checkbox"/>	Class 2 Permeable per Caltrans specification 68-1.025 is recommended for the storage layer. Washed, open-graded crushed rock may be used, however a 4-6 inch washed pea gravel filter course layer at the top of the crushed rock is required.	Washing aggregate will help eliminate fines that could clog the aggregate storage layer void spaces or subgrade.
<input type="checkbox"/>	Maximum aggregate storage layer depth is determined based on the infiltration storage volume that will infiltrate within a 36-hour drawdown time.	A maximum drawdown time to facilitate providing storm water storage for the next storm event.
<i>Inflow and Overflow Structures</i>		
<input type="checkbox"/>	Inflow and overflow structures are accessible for inspection and maintenance. Overflow structures must be connected to downstream storm drain system or appropriate discharge point.	Maintenance will prevent clogging and ensure proper operation of the flow control structures.
<input type="checkbox"/>	Inflow velocities are limited to 3 ft/s or less or use energy dissipation methods. e.g., riprap, level spreader) for concentrated inflows	High inflow velocities can cause erosion, scour and/or channeling.
<input type="checkbox"/>	Curb cut inlets are at least 12 inches wide, have a 4-6 inch reveal (drop) and an apron and energy dissipation as needed.	Inlets must not restrict flow and apron prevents blockage from vegetation as it grows in. Energy dissipation prevents erosion.
<input type="checkbox"/>	Overflow is safely conveyed to a downstream storm drain system or discharge point. Size overflow structure to pass 100-year peak flow for on-line basins and water quality peak flow for off-line basins.	Planning for overflow lessens the risk of property damage due to flooding.

Conceptual Design and Sizing Approach for Storm Water Pollutant Control Only

To design bioretention for storm water pollutant control only (no flow control required), the

following steps should be taken:

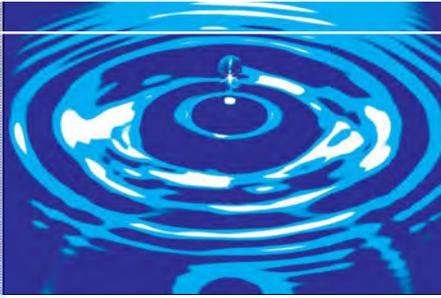
1. Verify that siting and design criteria have been met, including placement and basin area requirements, maximum side and finish grade slope, and the recommended media surface area tributary ratio.
2. Calculate the DCV per Appendix B based on expected site design runoff for tributary areas.
3. Use the sizing worksheet to determine if full infiltration of the DCV is achievable based on the available infiltration storage volume calculated from the bioretention without underdrain footprint area, effective depths for surface ponding, media and aggregate storage layers, and in-situ soil design infiltration rate for a maximum 36-hour drawdown time for the aggregate storage layer, with surface ponding no greater than a maximum 24-hour drawdown. The drawdown time can be estimated by dividing the average depth of the basin by the design infiltration rate of the underlying soil. Appendix D provides guidance on evaluating a site's infiltration rate. A generic sizing worksheet is provided in Appendix B.4.
4. Where the DCV cannot be fully infiltrated based on the site or bioretention constraints, an underdrain can be added to the design (use biofiltration with partial retention factsheet).

Conceptual Design and Sizing Approach when Storm Water Flow Control is Applicable

Control of flow rates and/or durations will typically require significant surface ponding and/or aggregate storage volumes, and therefore the following steps should be taken prior to determination of storm water pollutant control design. Pre-development and allowable post-project flow rates and durations should be determined as discussed in Chapter 6 of the Manual.

1. Verify that siting and design criteria have been met, including placement requirements, maximum side and finish grade slopes, and the recommended media surface area tributary area ratio. Design for flow control can be achieved using various design configurations, and will typically require a greater storage volume than designs which provide only storm water pollutant control.
2. Iteratively determine the facility footprint area, surface ponding and/or aggregate storage layer depth required to provide infiltration storage to reduce flow rates and durations to allowable limits while adhering to the maximum drawdown times for surface ponding and aggregate storage. Flow rates and durations can be controlled using flow splitters that route the appropriate inflow amounts to the bioretention facility and bypass excess flows to the downstream storm drain system or discharge point.
3. If bioretention without underdrain facility cannot fully provide the flow rate and duration control required by the MS4 permit, an upstream or downstream structure with appropriate storage volume such as an underground vault can be used to provide additional control.
4. After bioretention without underdrain has been designed to meet flow control requirements, calculations must be completed to verify if storm water pollutant control requirements to treat the DCV have been met.

APPENDIX E-3:
Hydromodification
Mitigation Plan



Hydromodification Mitigation Plan

HARRF Wastewater Collections Yard
City of Escondido, California

City Project # _____

September 2015

Prepared for:

City of Escondido
Construction and Engineering
1521 South Hale Avenue
Escondido, CA 92029
Contact: Paul Keck

Prepared by:

Michael Baker

INTERNATIONAL
5050 Avenida Encinas, Suite 260
Carlsbad, CA 92008
760.476.9193 telephone
760.476.9198 fax

MBI Contact Person:

David Wiener, RCE 77285
MBI JN 143544



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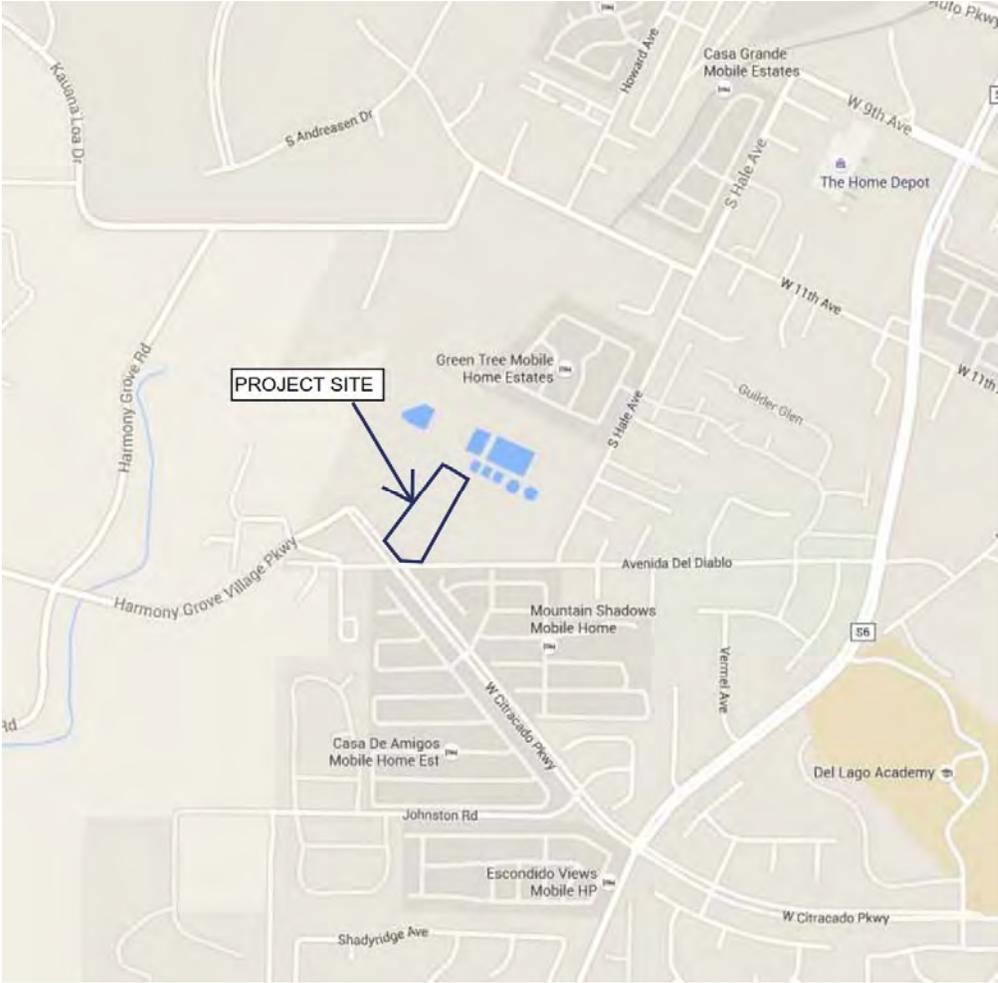
Table of Appendices

- Appendix A: IMP Design Calculations
- Appendix B: HMP Maps

Section 1. Project Description

The project proposes the construction of approximately 24,650 square feet of warehouse, maintenance, collections, and storage areas on a previously undeveloped site. Approximately 12,300 square feet of concrete hardscape is proposed adjacent to the buildings. A 24'-wide asphalt road is proposed bisecting the site. Approximately 11,000 square foot gravel parking lot is proposed northwest of the new road. The site will drain to three bioretention areas, on either side of the new road. The limits of work and grading is approximately 79,135 square feet.

The project site is located in the City of Escondido within the County of San Diego, California. The project is located just northeast of the intersection of Avenida Del Diablo and Citracado Parkway (reference Google Maps).



Section 2. Hydromodification Requirements

In May 2013, the California Regional Water Quality Control Board for the San Diego Region reissued (SDRWQCB) a municipal storm water, National Pollutant Discharge Elimination System permit (Municipal Separate Storm Sewer Systems [MS4] Permit) that covered its region. The San Diego Region is comprised of San Diego, Orange, and Riverside County Copermittees. The MS4 Permit reissuance to the San Diego County Copermittees went into effect in 2013 (Order No. R9-2013-0001).

The reissued MS4 Permit updates and expands storm water requirements for new developments and redevelopments. In February 2015, the MS4 Permit was amended by Order R9-2015-001. As required by the reissued MS4 Permit, the Copermittees have prepared this Model Best Management Practices (BMP) Design Manual (from here in referred to as the “**manual**”) to replace the current Countywide Model Standard Urban Stormwater Mitigation Plan (SUSMP), dated March 25, 2011, which was based on the requirements of the 2007 MS4 Permit. The Model BMP Design Manual is available for download at www.projectcleanwater.org. The City of Escondido is required to adopt jurisdiction specific local BMP Design Manual.

The following are significant updates to storm water requirements of the MS4 Permit compared to the 2007 MS4 Permit and 2011 Countywide Model SUSMP:

- The standard for storm water pollutant control (formerly treatment control) is retention of the 24-hour 85th percentile storm volume, defined as the event that has a precipitation total greater than or equal to 85 percent of all daily storm events larger than 0.01 inches over a given period of record in a specific area or location.
- For situations where onsite retention of the 85th percentile storm volume is technically not feasible, biofiltration must be provided to satisfy specific “biofiltration standards”. These standards consist of a set of siting, selection, sizing, design and operation and maintenance (O&M) criteria that must be met for a BMP to be considered a “biofiltration BMP”
- Exemptions from hydromodification management are reduced, and certain categories of exemptions that are not identified in the MS4 Permit must be identified in a Watershed Management Area Analysis (WMAA).
- The flow control performance standard for hydromodification management is based on controlling flow to pre-development condition (natural) rather than pre-project condition.

The flow chart in Figure 1 shows that hydromodification management is required for this project.

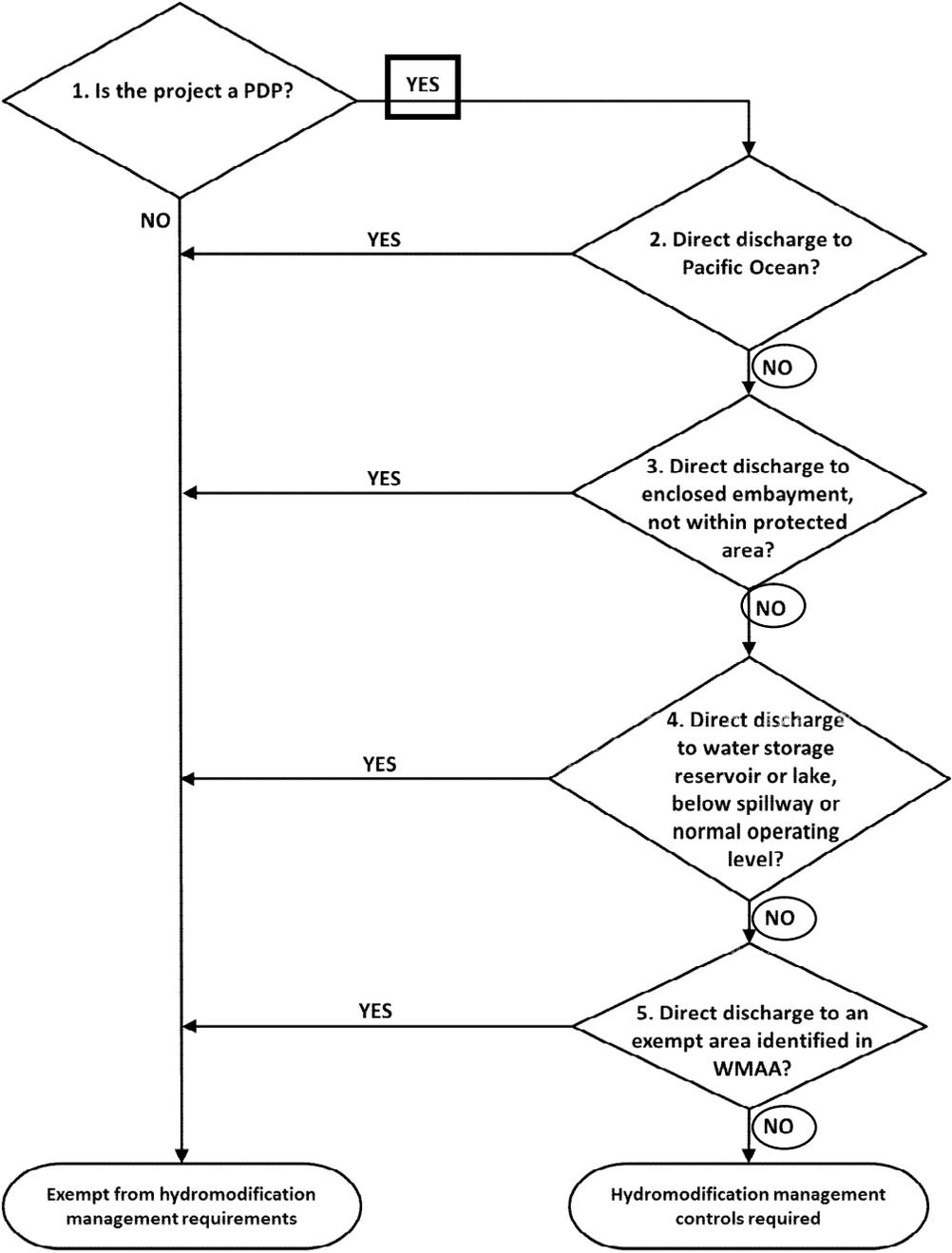


Figure 1 - Applicability of the Hydromodification Management Requirements

Section 3. Integrated Management Practices

This report addresses hydromodification mitigation for the proposed development at the HARRF Wastewater Yard. Please refer to the project specific Drainage Study and Storm Water Management Plan (SWMP), found under separate cover, for additional project site information pertaining to 100-year peak flows and water quality treatment.

3.1. Bioretention

Three bioretention basins have been strategically located to intercept runoff from proposed impervious surfaces, as shown on the HMP Map. The bioretention areas will discharge via storm drain piping to rip-rap energy dissipater, and off the site. Existing drainage patterns of the watershed will be maintained.

The three proposed bioretention basins will consist of a 30-inch deep class II permeable base section, 4" perforated PVC underdrain pipe set 12" above the bottom of the base layer, a 24-inch biofiltration soil layer, 12 inches of available surface ponding, and 2" of freeboard. The basins will be fitted with perforated sub-drains and impermeable side-wall liners will be extended into the sub-grade to prevent the potential for lateral migration of flow. Underdrain piping for each bioretention area will be fitted with an orifice-controlled end cap. The specifications of each bioretention IMP that was modeled are in Table 4-2. For overflow, a 24-inch square grate inlet will be set at 12" above the bioretention basin surface, connecting to 12" PVC outlet pipe. See Figure 1-1 below for typical bioretention cross-section.

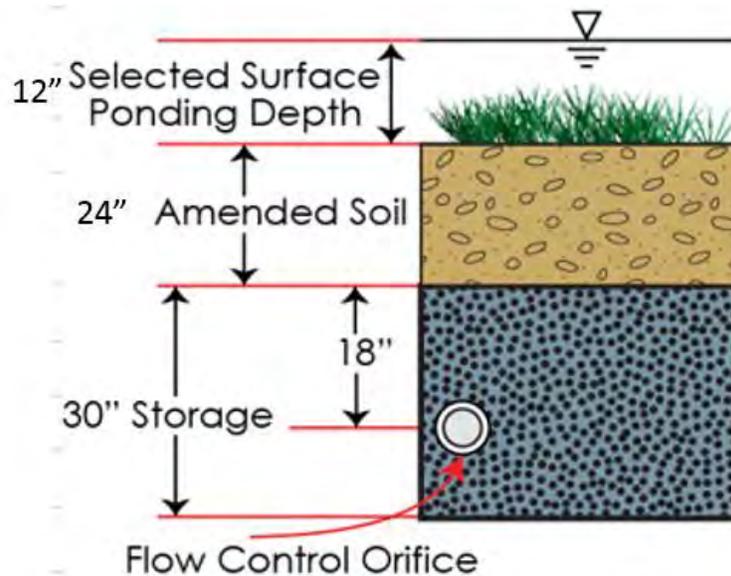


Figure 2 - Typical Bioretention Area

Bioretention Maintenance

Maintenance Program for Bioretention Area

Inspection Frequency/Indications:	<u>Regular Inspections</u> <input type="checkbox"/> Before wet season begins (September); <input type="checkbox"/> Every 60 days during wet season (September-April); <input type="checkbox"/> After wet season (April). <u>Performance Inspections</u> <input type="checkbox"/> After rainfall events greater than 0.5 inch
Maintenance Indications Connections	Maintenance Activities Connections
<input type="checkbox"/> Damage to inlet/outlet, side slopes, headwall, or other structures	<input type="checkbox"/> Repair inlet/outlet structures, side slopes, fences, or other structural elements as needed to maintain performance of the facility.
<input type="checkbox"/> Over-grown vegetation, emergent woody vegetation and/or weeds	<input type="checkbox"/> Trim vegetation to average height of 12 inches and remove trimmings. <input type="checkbox"/> Remove emergent trees and other vegetation that are not part of bioretention basin plan and weeds <input type="checkbox"/> Re-seed and re-plan barren areas prior to rainy season <input type="checkbox"/> Install erosion blanket on barren spots if re-vegetation is not successful
<input type="checkbox"/> Sediment accumulation over 3 inches	<input type="checkbox"/> Remove sediment accumulation at or near plant height
<input type="checkbox"/> Trash, debris, and vegetative litter	<input type="checkbox"/> Remove trash, debris, and vegetative litter
<input type="checkbox"/> Rodents or other vectors	<input type="checkbox"/> Abate and control rodents as necessary to maintain performance of the facility <input type="checkbox"/> Drain standing water
Waste Disposal	Sediment, other pollutants, and all other waste shall be properly disposed of in a licensed landfill or by another appropriate disposal method in accordance with local, state, and federal regulations.

Section 4. Hydromodification Study Methods

This section presents sizing factors for design of flow control structural BMPs based on the sizing factor method identified in Chapter 6.3.5.1 of the *Model BMP Design Manual for the San Diego Region* (January 2015). The sizing factors are re-printed from the "San Diego BMP Sizing Calculator Methodology," dated January 2012, prepared by Brown and Caldwell (herein "BMP Sizing Calculator Methodology"). The sizing factors are linked to the specific details and descriptions that were presented in the BMP Sizing Calculator Methodology, with limited options for modifications. The sizing factor method is intended for simple studies that do not include diversion, do not include significant offsite area draining through the project from upstream, and do not include offsite area downstream of the project area. Use of the sizing factors is limited to the specific structural BMPs described in this Appendix. Sizing factors are available for the following specific structural BMPs proposed for this project:

- **Bioretention:** sizing factors available for A and B soils represent a bioretention area with engineered soil media and gravel storage layer.

The following information is needed to use the sizing factors:

- ❖ Determine the appropriate rainfall basin for the project site from Figure G.7-1, Rainfall Basin Map of the *BMP Manual*: **Oceanside Basin**
- ❖ Hydrologic soil group at the project site (use available information pertaining to existing underlying soil type such as soil maps published by the Natural Resources Conservation Service): **Hydrologic Soil Group B.**
- ❖ Pre-development and post-project slope categories (low = 0% – 5%, moderate = 5% – 10%, steep = >10%). **See HMP Maps.**
- ❖ Area tributary to the structural BMP. **See HMP Map.**
- ❖ Area weighted runoff factor (C) for the area draining to the BMP from Table B1-1 of the *BMP Manual*. **See HMP Calculations**
- ❖ Fraction of Q2 to control (see Chapter 6.3.4 of the *BMP Manual*): **0.1Q2 to Q10**

Each bioretention IMP was sized using the BMP Sizing Calculator. The calculations are shown in Appendix A.

Section 5. Conclusions

The site is currently moderate to steep undeveloped land. To mitigate potential hydromodification impacts from development, three bioretention areas and level grading have been proposed. They collectively serve a number of important purposes:

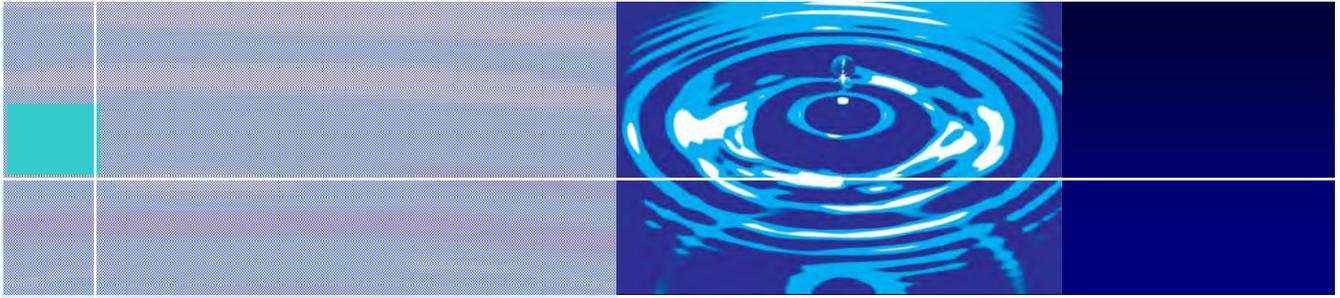
- The bioretention areas provide runoff storage and attenuation of peak flow discharge rates and flow duration to pre-project levels.
- The use of select import in IMPs will provide increased infiltration rate and flow retention, which will result in increased initial abstraction (the minimum precipitation required to cause runoff).
- The bioretention areas provide a means to disconnect impervious area runoff prior to discharge from the project site. In that regard, they serve as a Low Impact Development (LID) IMP.
- The soil filtration and biological uptake of the plant life within the bioretention areas will provide water quality treatment from the pollutants typically associated with residential rooftop runoff and roadways, respectively.

The HMP Maps in Appendix B provides a summary of the area proposed to meet hydromodification and water quality requirements.

The specific characteristics of each bioretention IMP, as calculated using the BMP Calculator, are shown in Appendix A and in Figure 1.

Section 6. References

- **City of Escondido SUSMP** (January 2011).
- **Model BMP Design Manual San Diego Region** (January 2015).



Appendix A: IMP Design Calculations

BMP Sizing Spreadsheet V1.04			
Project Name:	HARRF	Hydrologic Unit:	904.62
Project Applicant:	Baker	Rain Gauge:	Oceanside
Jurisdiction:	City of Escondido	Total Project Area:	1.82 Acres
Parcel (APN):		Low Flow Threshold:	0.1Q2
BMP Name	IMP 101	BMP Type:	Bioretention

DMA Name	Rain Gauge	Existing Condition			Q2 Sizing Factor (cfs/ac)	DMA Area (ac)	Orifice Flow - %Q ₂ (cfs)	Orifice Area (in ²)
		Soil Type	Cover	Slope				
101	Oceanside	B	Scrub	Moderate	0.134	0.315	0.004	0.10
101	Oceanside	B	Scrub	Moderate	0.134	0.181	0.002	0.06
101	Oceanside	B	Scrub	Moderate	0.134	0.097	0.001	0.03
101	Oceanside	B	Scrub	Moderate	0.134	0.250	0.003	0.08
101	Oceanside	B	Scrub	Moderate	0.134	0.426	0.006	0.14

0.017	0.42	0.73
Tot. Allowable Orifice Flow (cfs)	Tot. Allowable Orifice Area (in ²)	Max Orifice Diameter (in)

0.012	0.28	0.60
Actual Orifice Flow (cfs)	Actual Orifice Area (in ²)	Selected Orifice Diameter (in)

Drawdown (Hrs)	30.0
----------------	------

BMP Sizing Spreadsheet V1.04			
Project Name:	HARRF	Hydrologic Unit:	904.62
Project Applicant:	Baker	Rain Gauge:	Oceanside
Jurisdiction:	City of Escondido	Total Project Area:	1.82 Acres
Parcel (APN):		Low Flow Threshold:	0.1Q2
BMP Name	IMP 102	BMP Type:	Bioretention

DMA Name	Rain Gauge	Existing Condition			Q2 Sizing Factor (cfs/ac)	DMA Area (ac)	Orifice Flow - %Q ₂ (cfs)	Orifice Area (in ²)
		Soil Type	Cover	Slope				
102	Oceanside	B	Scrub	Moderate	0.134	0.162	0.002	0.05
102	Oceanside	B	Scrub	Moderate	0.134	0.376	0.005	0.12
102	Oceanside	B	Scrub	Moderate	0.134	0.129	0.002	0.04
102	Oceanside	B	Scrub	Moderate	0.134	0.010	0.000	0.00
102	Oceanside	B	Scrub	Moderate	0.134	0.127	0.002	0.04
102	Oceanside	B	Scrub	Moderate	0.134	0.028	0.000	0.01
102	Oceanside	B	Scrub	Moderate	0.134	0.060	0.001	0.02

0.012	0.29	0.61
Tot. Allowable Orifice Flow (cfs)	Tot. Allowable Orifice Area (in ²)	Max Orifice Diameter (in)

0.012	0.28	0.60
Actual Orifice Flow (cfs)	Actual Orifice Area (in ²)	Selected Orifice Diameter (in)

Drawdown (Hrs)	56.4
----------------	------

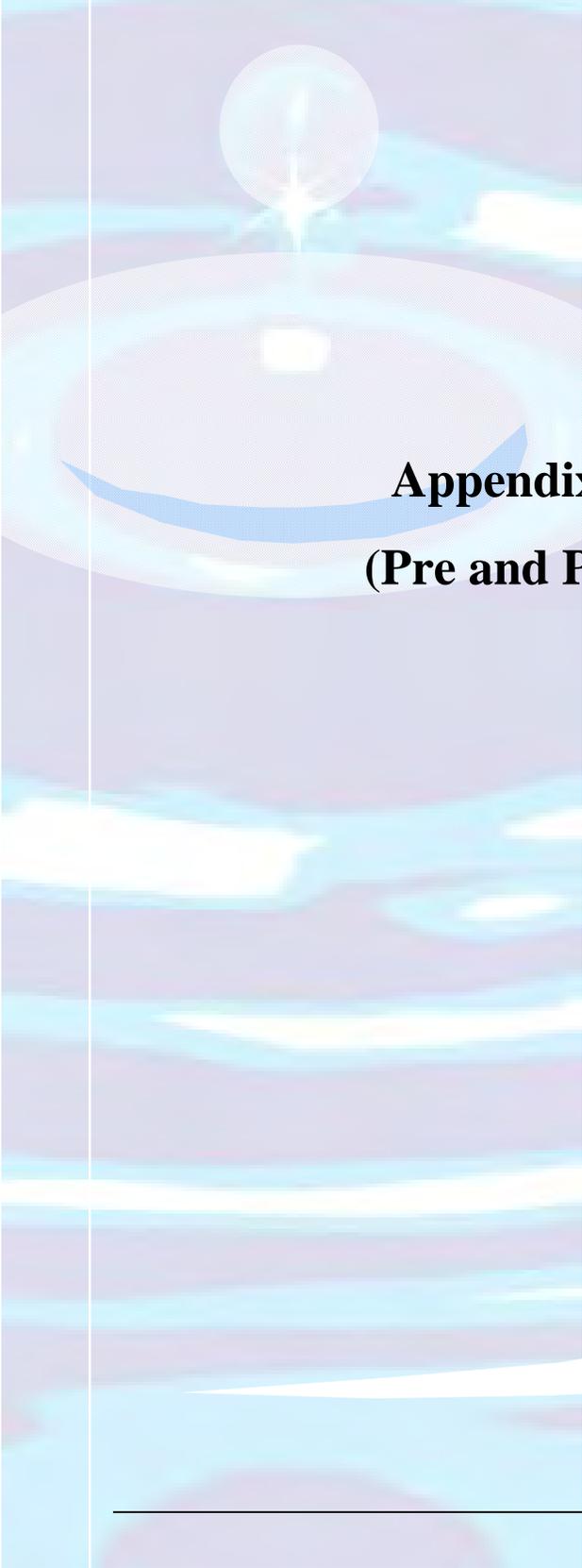
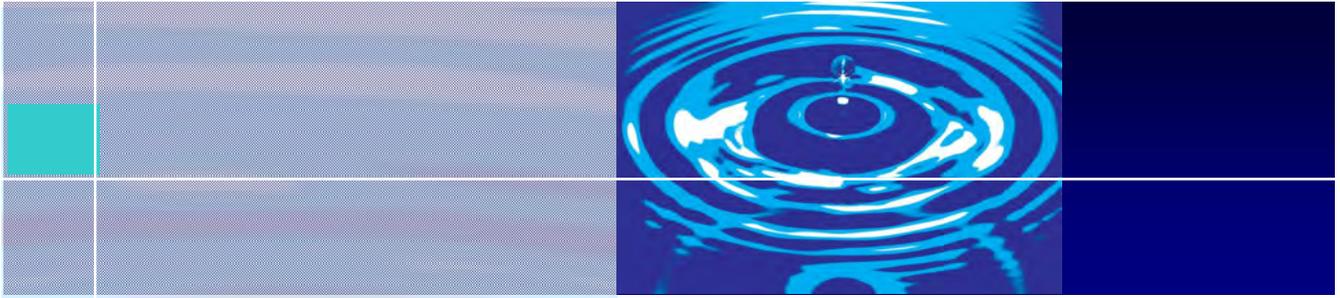
BMP Sizing Spreadsheet V1.04			
Project Name:	HARRF	Hydrologic Unit:	904.62
Project Applicant:	Baker	Rain Gauge:	Oceanside
Jurisdiction:	City of Escondido	Total Project Area:	1.82 Acres
Parcel (APN):		Low Flow Threshold:	0.1Q2
BMP Name:	IMP 103	BMP Type:	Bioretention
BMP Native Soil Type:	B	BMP Infiltration Rate (in/hr):	0.52

Areas Draining to BMP						HMP Sizing Factors			Minimum BMP Size		
DMA Name	Area (sf)	Soil Type	Slope	Post Project Surface Type	Runoff Factor (Table 4-2)	Surface Area	Surface Volume	Subsurface Volume	Surface Area (sf)	Surface Volume (cf)	Subsurface Volume (cf)
103	10070	B	Flat	Impervious	1.0	0.103	0.0854	N/A	1037	860	N/A
103	1370	B	Flat	Landscape	0.1	0.103	0.0854	N/A	14	12	N/A
Total BMP Area	11440								Minimum BMP Size	1051.321	872
									Proposed BMP Size*	1055	1187
									Soil Matrix Depth	24.00	in
									Minimum Ponding Depth	8.41	in
									Maximum Ponding Depth	13.77	in
									Selected Ponding Depth	12.00	in

Describe the BMP's in sufficient detail in your SWMP to demonstrate the area, volume, and other criteria can be met within the constraints of the site.

BMP's must be adapted and applied to the conditions specific to the development project such as unstable slopes or the lack of available head. Designated Staff have final review and approval authority over the project design.

This Sizing Calculator has been developed in compliance with the Countywide Model SUSMP. For questions or concerns please contact the jurisdiction in which your project is located.



**Appendix B: HMP Maps
(Pre and Post Development)**

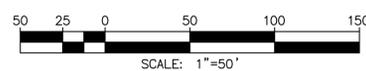


LEGEND

POINT OF COMPLIANCE (POC 1)

POC BOUNDARY

EXISTING GROUND TABLE					
TYPE	MIN SLOPE	MAX SLOPE	AREA (SF)	AREA (AC)	COLOR
FLAT	0.00%	5.00%	62,560	1.44	
MODERATE	5.00%	10.00%	55,960	1.28	
STEEP	10.00%	50.00%	68,500	1.57	
TOTAL			187,020	4.29	



**HARFF WASTEWATER COLLECTIONS
YARD RELOCATION**

**HMP MAP
PRE-DEVELOPMENT**

**Michael Baker
INTERNATIONAL**

5050 Avenida Encinas, Ste 260
Carlsbad, CA 92008
Phone: (760) 476-9193
WWW.MBAKERINTL.COM



LEGEND

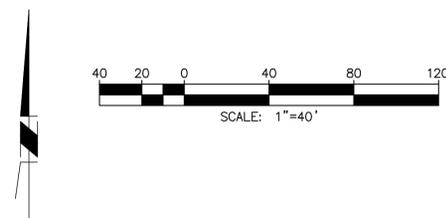
- IMPERVIOUS AREA
- GRAVEL
- BIORETENTION AREA
- INTEGRATED MANAGEMENT PRACTICE (IMP)
- DRAINAGE MANAGEMENT AREA (DMA) NODE
- POINT OF COMPLIANCE (POC 1)
- DRAINAGE AREA BOUNDARY

PROPOSED GROUND TABLE - DMA 101 - TO BIORETENTION IMP 101					
TYPE	MIN SLOPE	MAX SLOPE	AREA (SF)	AREA (AC)	COLOR
FLAT-LANDSCAPE	0.00%	5.00%	13,740	0.31	
FLAT-IMPERVIOUS	0.00%	5.00%	7,890	0.18	
FLAT-GRAVEL	0.00%	5.00%	4,230	0.10	
MODERATE-LANDSCAPE	5.00%	10.00%	10,870	0.25	
STEEP-LANDSCAPE	10.00%	50.00%	18,540	0.43	
			TOTAL	55,270	1.27

PROPOSED GROUND TABLE - DMA 102 - TO BIORETENTION IMP 102					
TYPE	MIN SLOPE	MAX SLOPE	AREA (SF)	AREA (AC)	COLOR
FLAT-LANDSCAPE	0.00%	5.00%	7,070	0.16	
FLAT-IMPERVIOUS	0.00%	5.00%	16,360	0.38	
FLAT-GRAVEL	0.00%	5.00%	5,600	0.13	
MODERATE-LANDSCAPE	5.00%	10.00%	450	0.01	
MODERATE-IMPERVIOUS	5.00%	10.00%	5,540	0.13	
MODERATE-GRAVEL	5.00%	10.00%	1,210	0.03	
STEEP-LANDSCAPE	10.00%	50.00%	2,600	0.06	
			TOTAL	38,830	0.89

PROPOSED GROUND TABLE - DMA 103 - TO BIORETENTION IMP 103					
TYPE	MIN SLOPE	MAX SLOPE	AREA (SF)	AREA (AC)	COLOR
FLAT-LANDSCAPE	0.00%	5.00%	1,370	0.03	
FLAT-IMPERVIOUS	0.00%	5.00%	10,070	0.23	
			TOTAL	11,440	0.26

PROPOSED GROUND TABLE - DMA 104 - BYPASS					
TYPE	MIN SLOPE	MAX SLOPE	AREA (SF)	AREA (AC)	COLOR
FLAT-LANDSCAPE	0.00%	5.00%	23,705	0.55	
MODERATE-LANDSCAPE	5.00%	10.00%	26,600	0.61	
STEEP-LANDSCAPE	10.00%	50.00%	31,175	0.71	
			TOTAL	81,480	1.87



**HARFF WASTEWATER COLLECTIONS
YARD RELOCATION**

**HMP MAP
POST-DEVELOPMENT**

**Michael Baker
INTERNATIONAL**

5050 Avenida Encinas, Ste 260
Carlsbad, CA 92008
Phone: (760) 476-9193
WWW.MBAKERINTL.COM

APPENDIX F:

Noise Data

Site Number: 1			
Recorded By: Ryan Chiene			
Job Number: 143544			
Date: 9/30/15			
Time: 10:05 a.m.			
Location: HARRF Project Site			
Source of Peak Noise: Operations/machinery at the existing HARRF site to the north, cars and trucks on Citracado Avenue.			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
59.8	42.4	85.1	110.4

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	11/18/2014	
	Microphone	Brüel & Kjær	4189	2543364	11/18/2014	
	Preamp	Brüel & Kjær	ZC 0032	4265	11/18/2014	
	Calibrator	Brüel & Kjær	4231	2545667	11/18/2014	
Weather Data						
Est.	Duration: 10 minutes			Sky: Sunny		
	Note: dBA Offset = 0.02			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	2.2		78.3		29.81	

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		09/30/2015 10:05:38
End Time:		09/30/2015 10:15:38
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.45

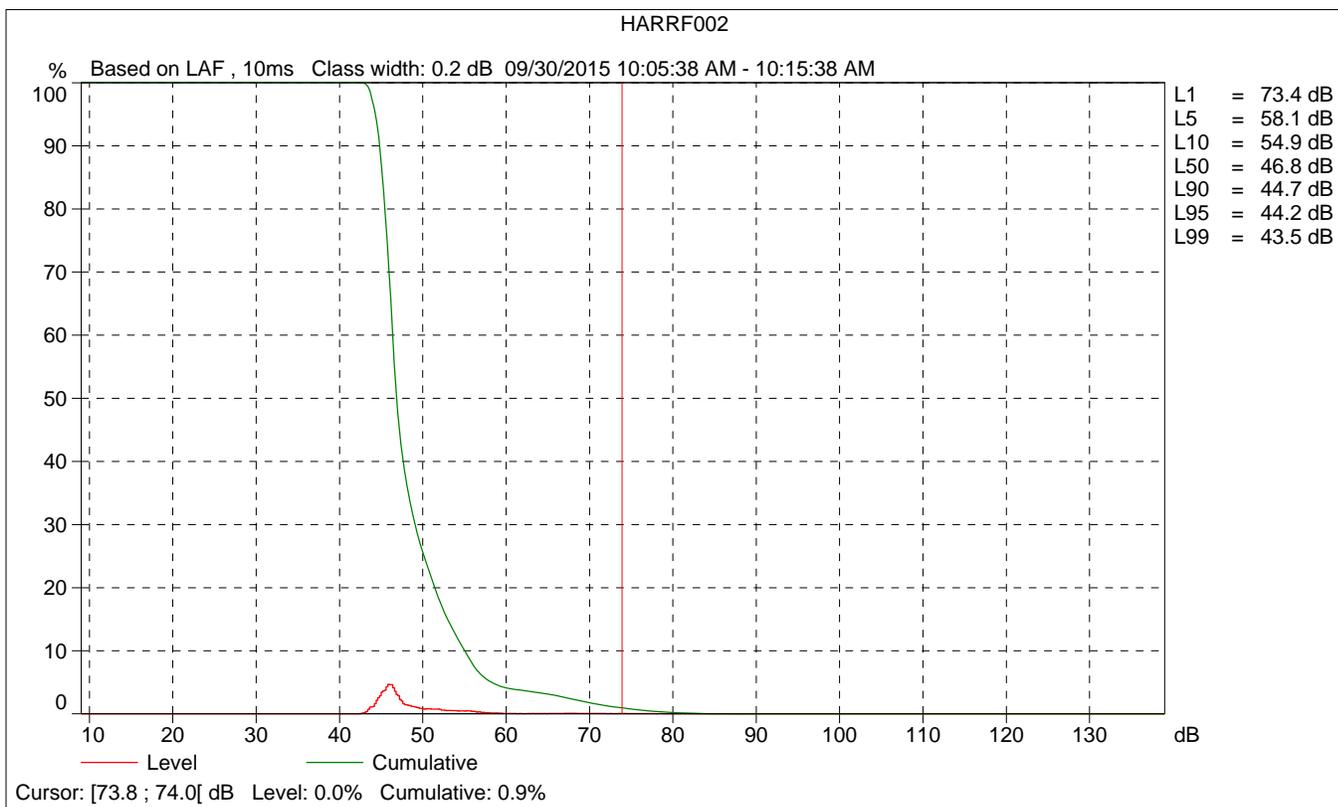
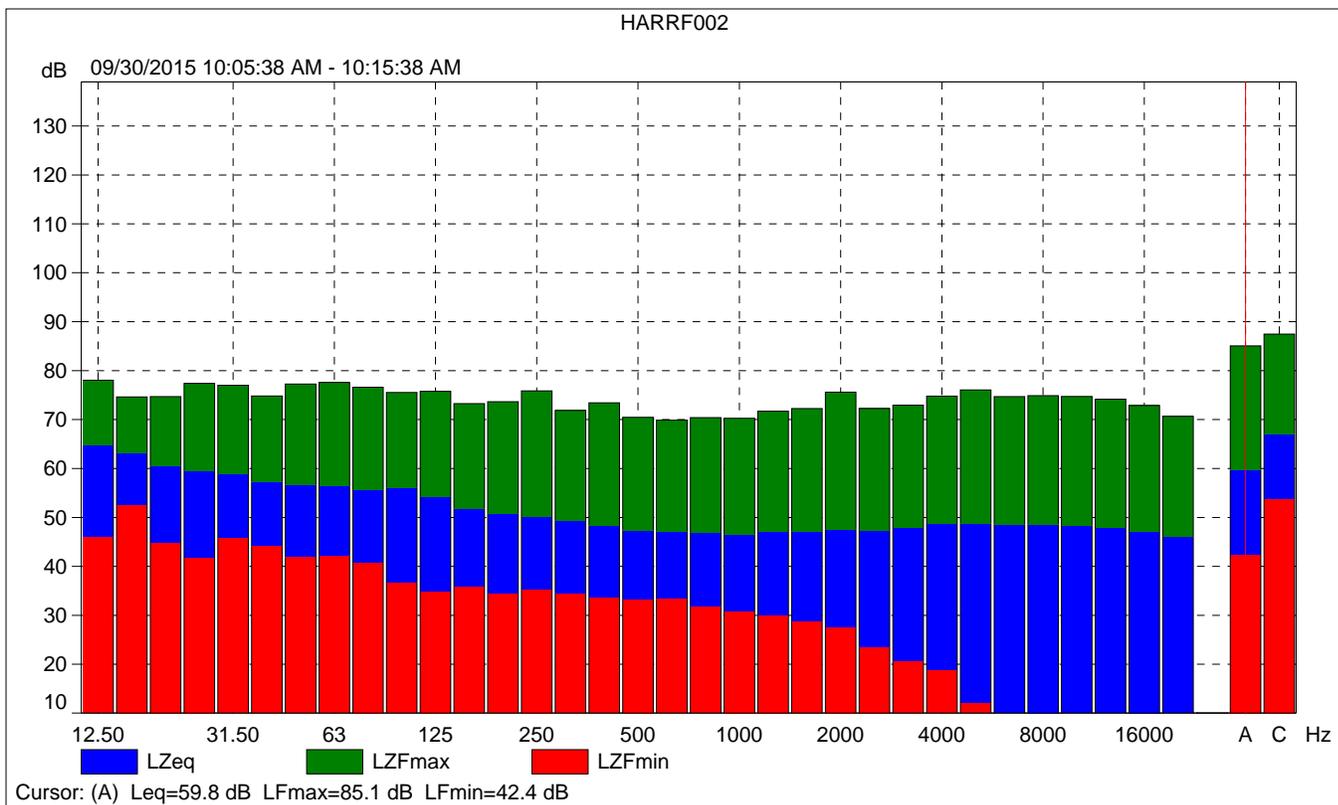
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Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

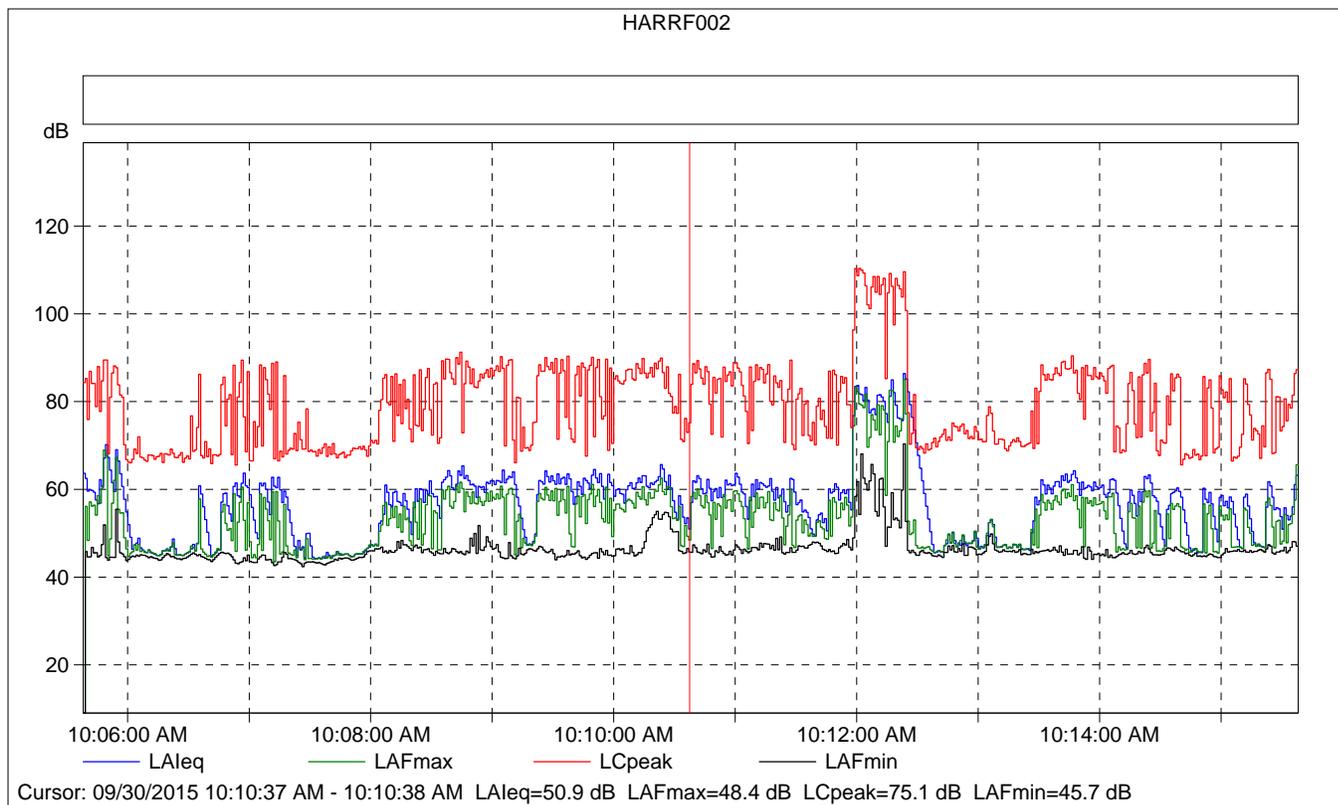
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Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

Calibration Time:		09/29/2015 16:43:17
Calibration Type:		External reference
Sensitivity:		66.6543319821358 mV/Pa

HARRF002

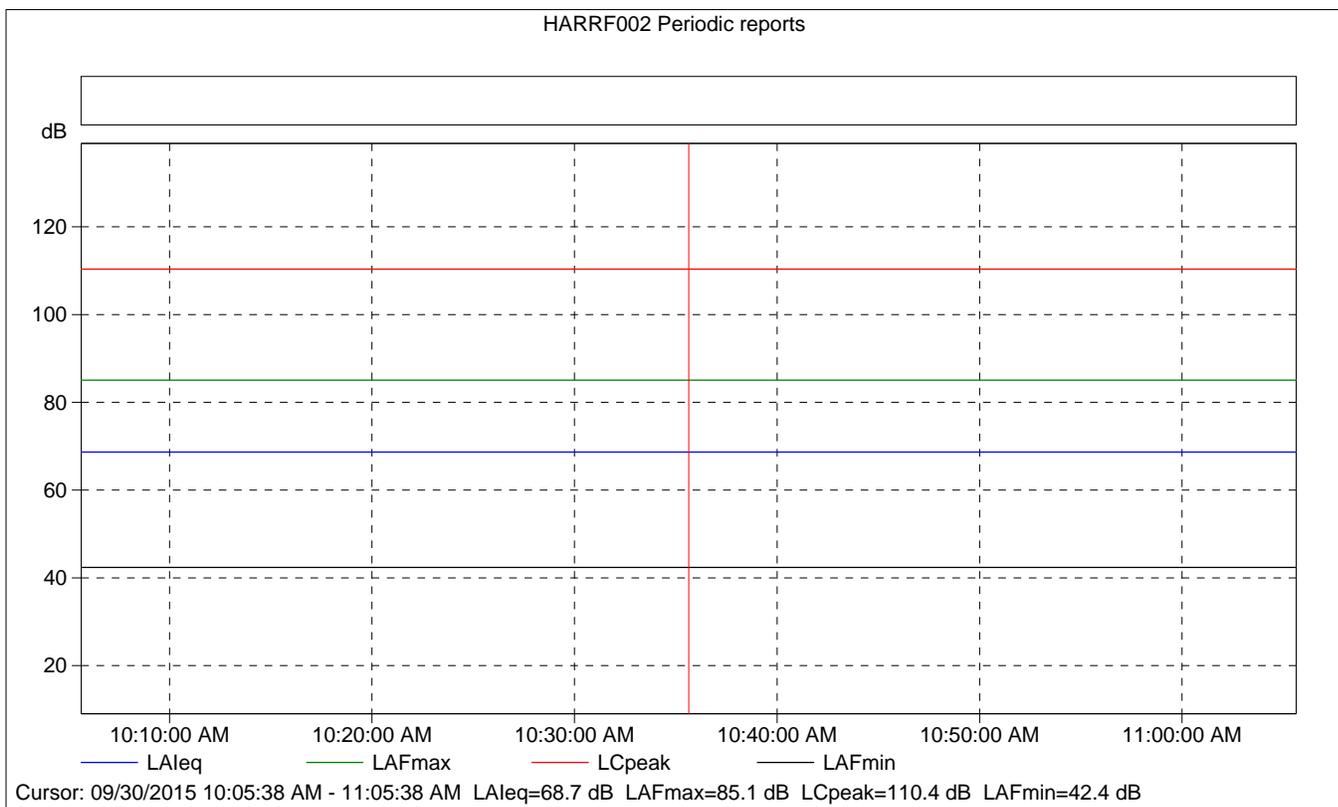
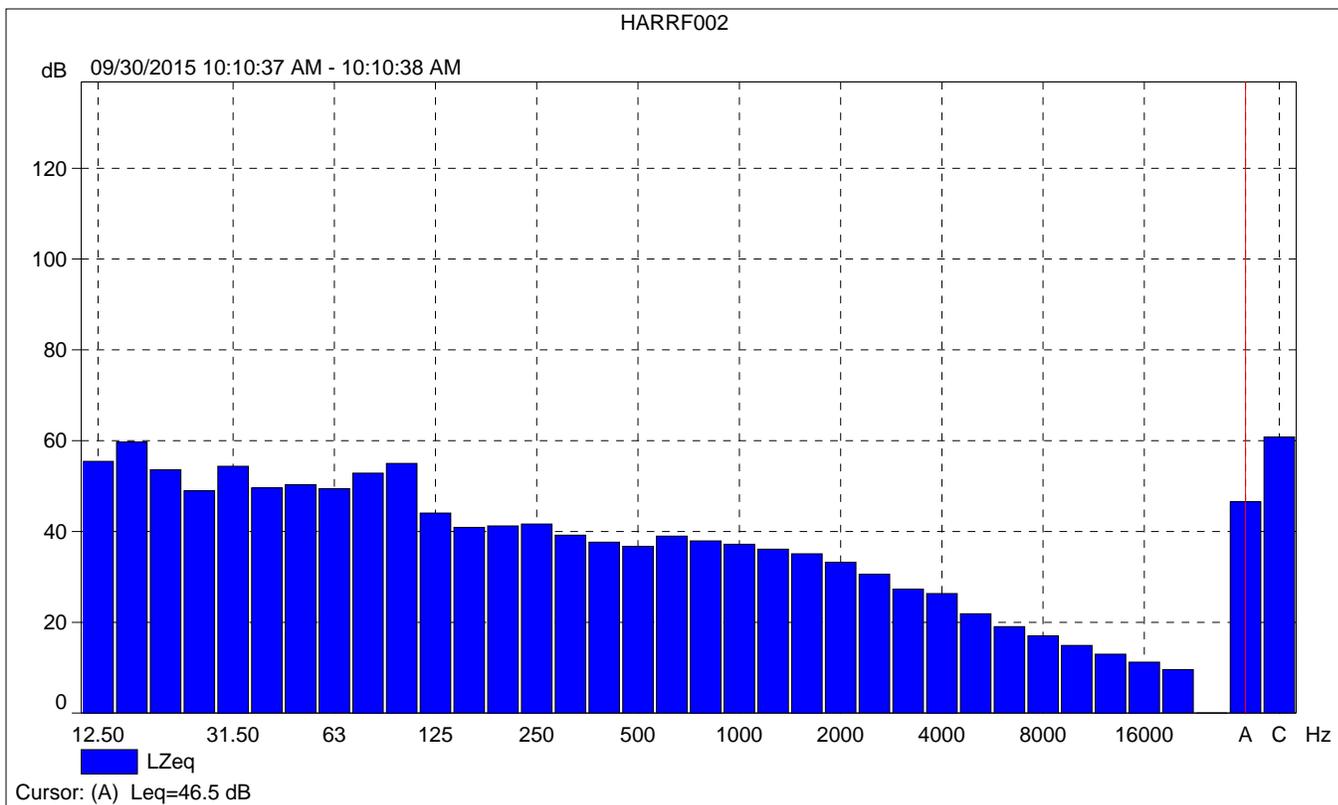
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	59.8	85.1	42.4
Time	10:05:38 AM	10:15:38 AM	0:10:00				
Date	09/30/2015	09/30/2015					





HARRF002

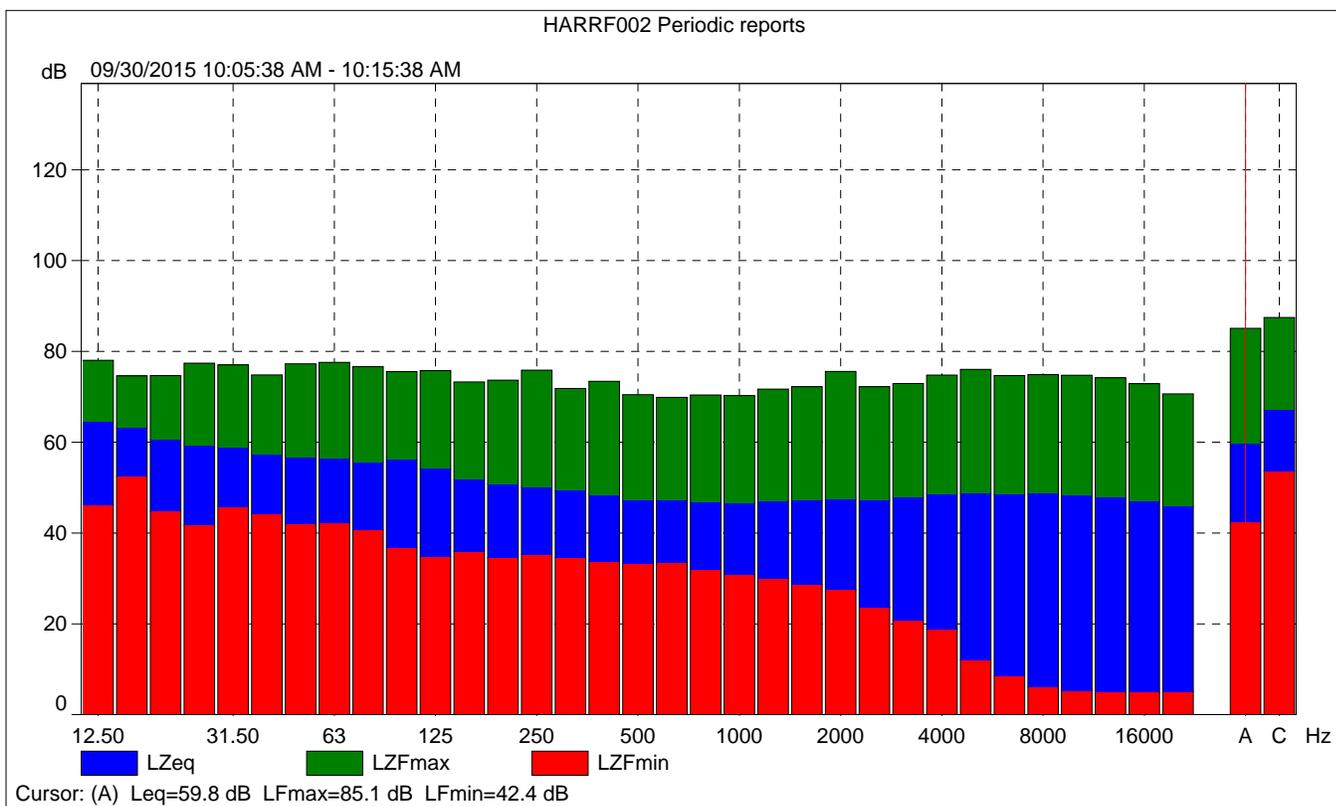
	Start time	Elapsed time	LAlaq [dB]	LAFmax [dB]	LAFmin [dB]
Value			50.9	48.4	45.7
Time	10:10:37 AM	0:00:01			
Date	09/30/2015				





HARRF002 Periodic reports

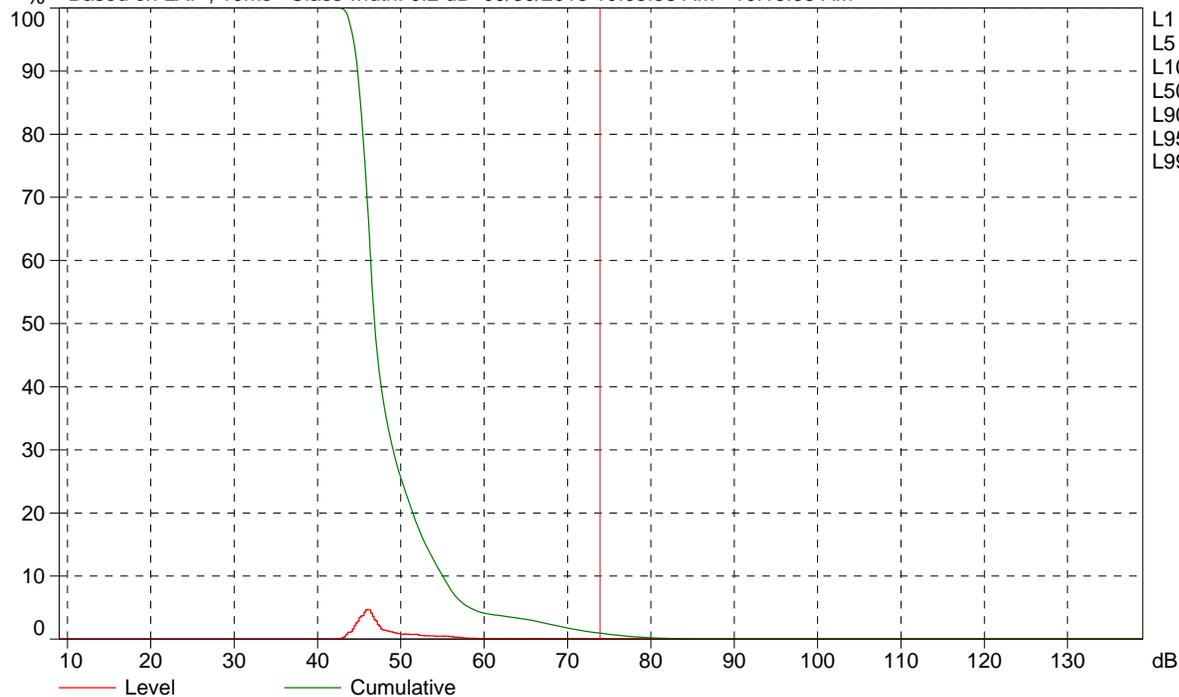
	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	68.7	85.1	42.4
Time	10:05:38 AM	0:10:00				
Date	09/30/2015					





HARRF002 Periodic reports

% Based on LAF, 10ms Class width: 0.2 dB 09/30/2015 10:05:38 AM - 10:15:38 AM



- L1 = 73.4 dB
- L5 = 58.1 dB
- L10 = 54.9 dB
- L50 = 46.8 dB
- L90 = 44.7 dB
- L95 = 44.2 dB
- L99 = 43.5 dB

Cursor: [73.8 ; 74.0] dB Level: 0.0% Cumulative: 0.9%

Site Number: 2			
Recorded By: Ryan Chiene			
Job Number: 143544			
Date: 9/30/15			
Time: 10:30 a.m.			
Location: Mountain Shadows residential neighborhood to the south of the project site.			
Source of Peak Noise: Construction at residential uses west of Mountain Shadows neighborhood, birds chirping, car parking, plane flying overhead, dogs barking.			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
49.6	36.7	71.7	95.5

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	11/18/2014	
	Microphone	Brüel & Kjær	4189	2543364	11/18/2014	
	Preamp	Brüel & Kjær	ZC 0032	4265	11/18/2014	
	Calibrator	Brüel & Kjær	4231	2545667	11/18/2014	
Weather Data						
Est.	Duration: 10 minutes			Sky: Sunny		
	Note: dBA Offset = 0.02			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	2.3		81.0		29.81	

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		09/30/2015 10:30:17
End Time:		09/30/2015 10:41:02
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.45

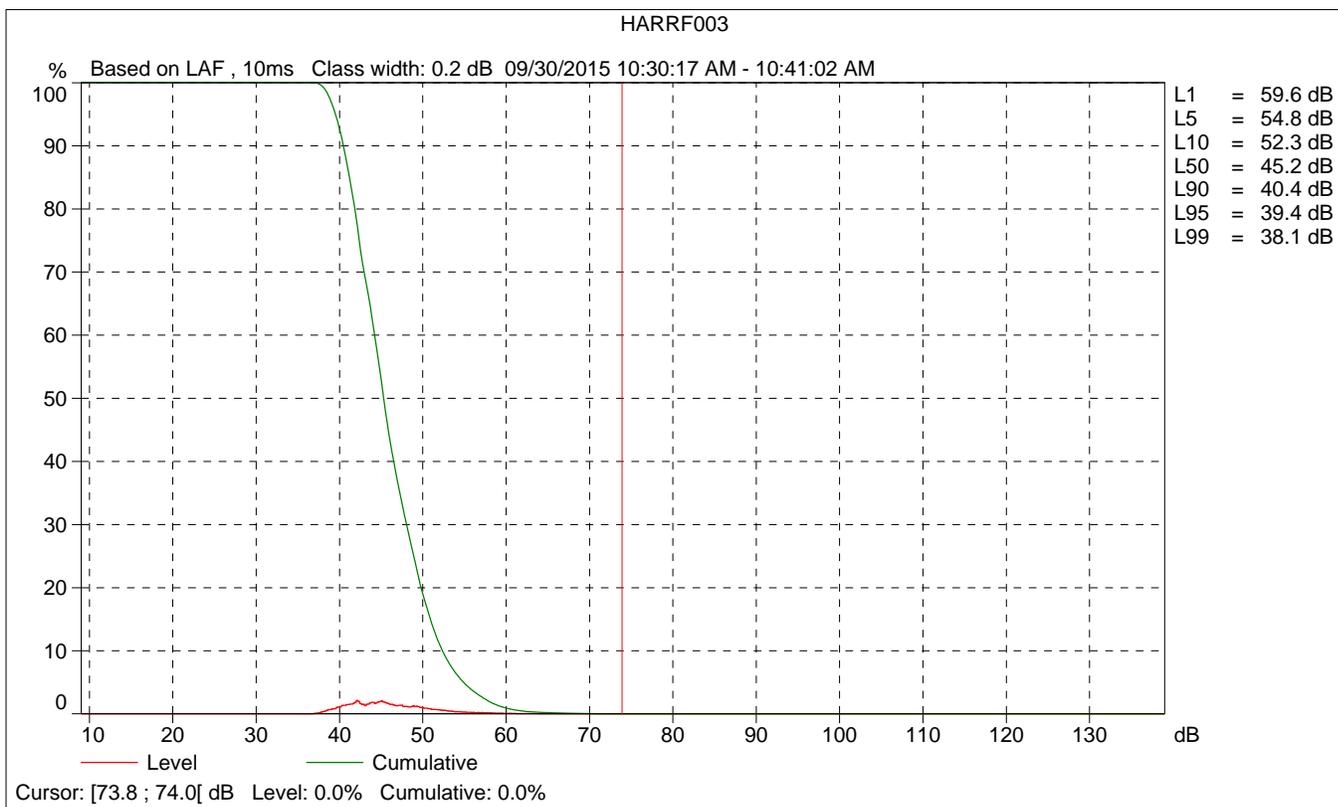
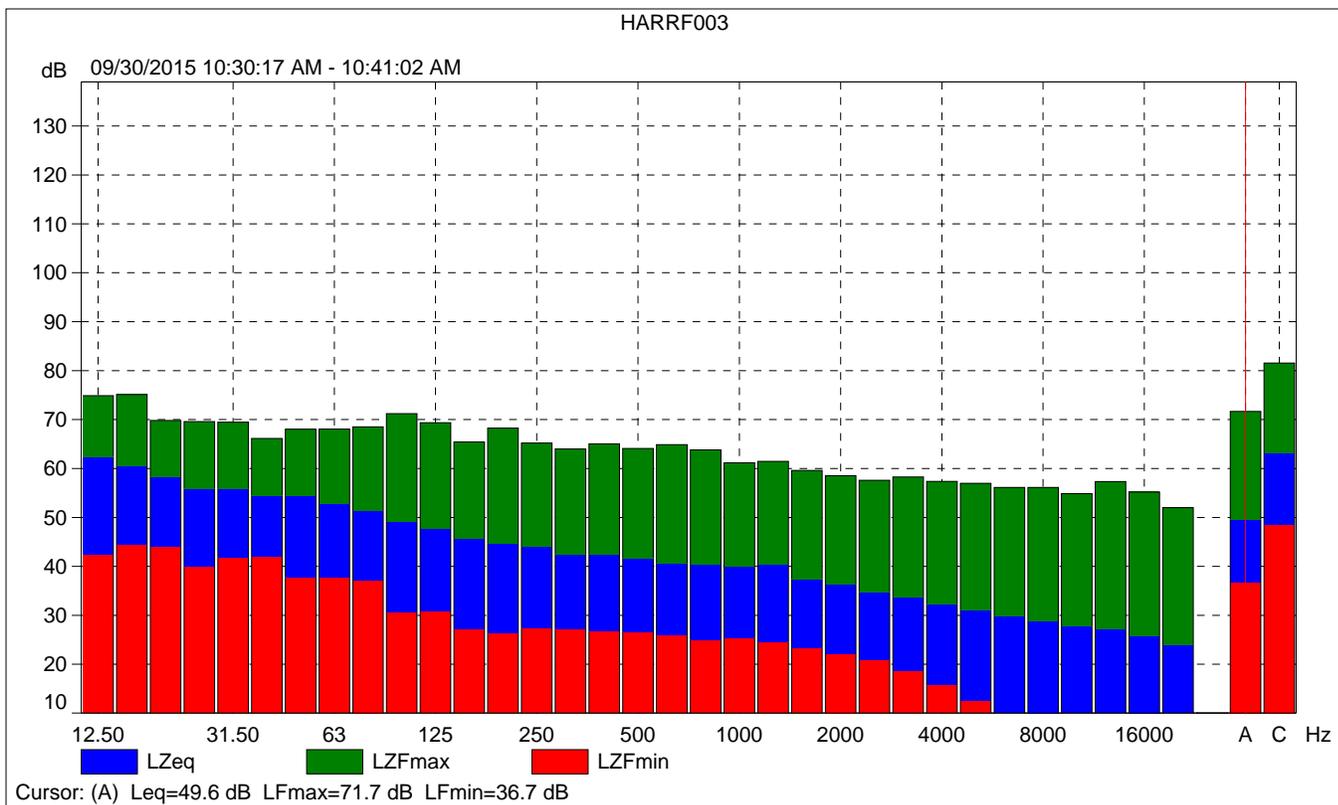
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Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

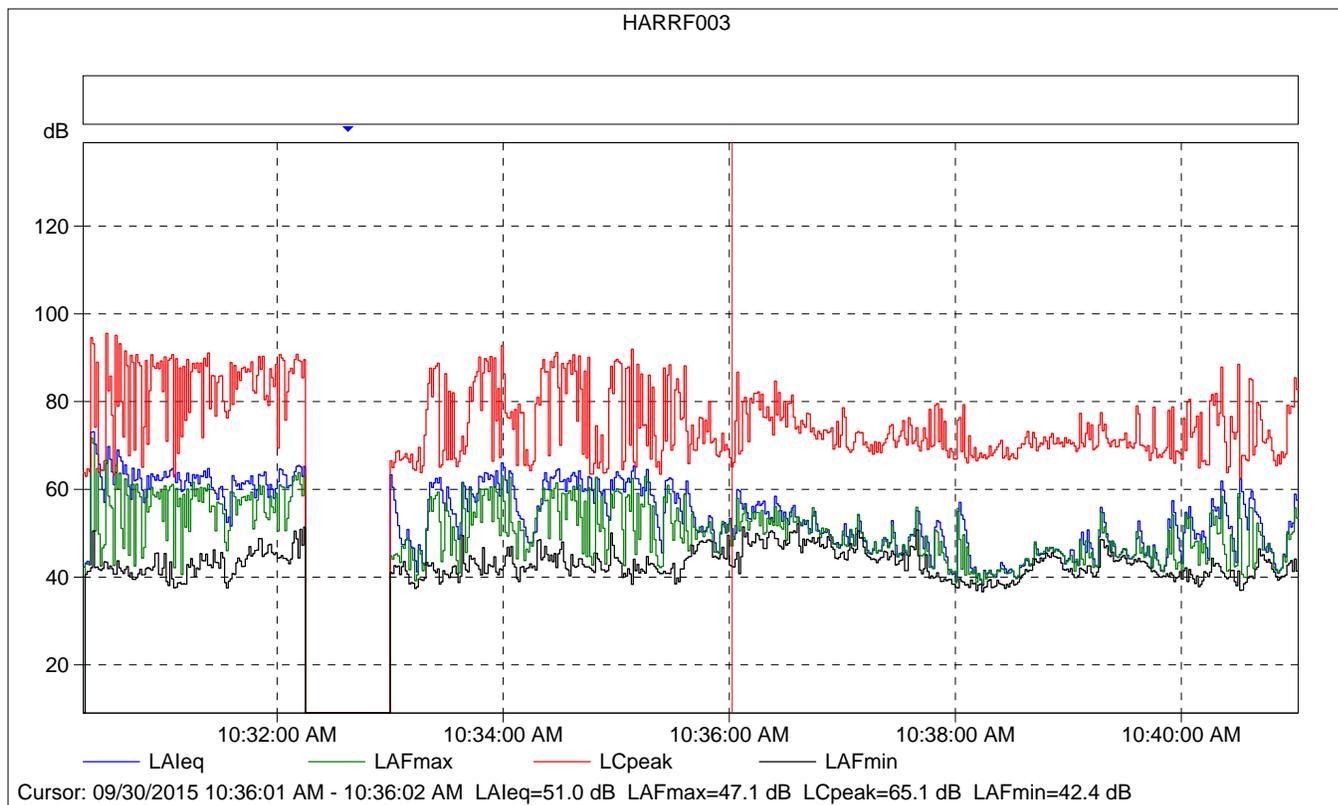
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Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

Calibration Time:		09/29/2015 16:43:17
Calibration Type:		External reference
Sensitivity:		66.6543319821358 mV/Pa

HARRF003

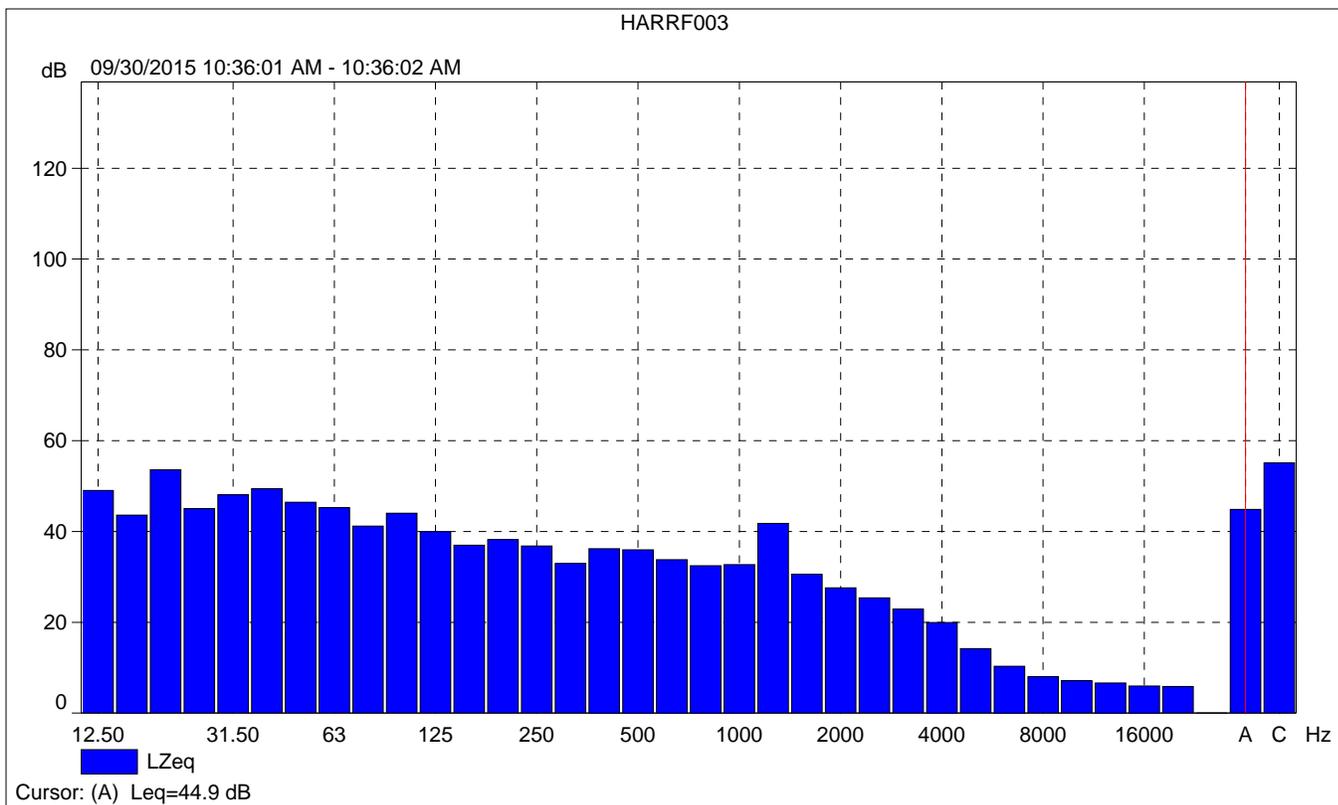
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	49.6	71.7	36.7
Time	10:30:17 AM	10:41:02 AM	0:10:00				
Date	09/30/2015	09/30/2015					





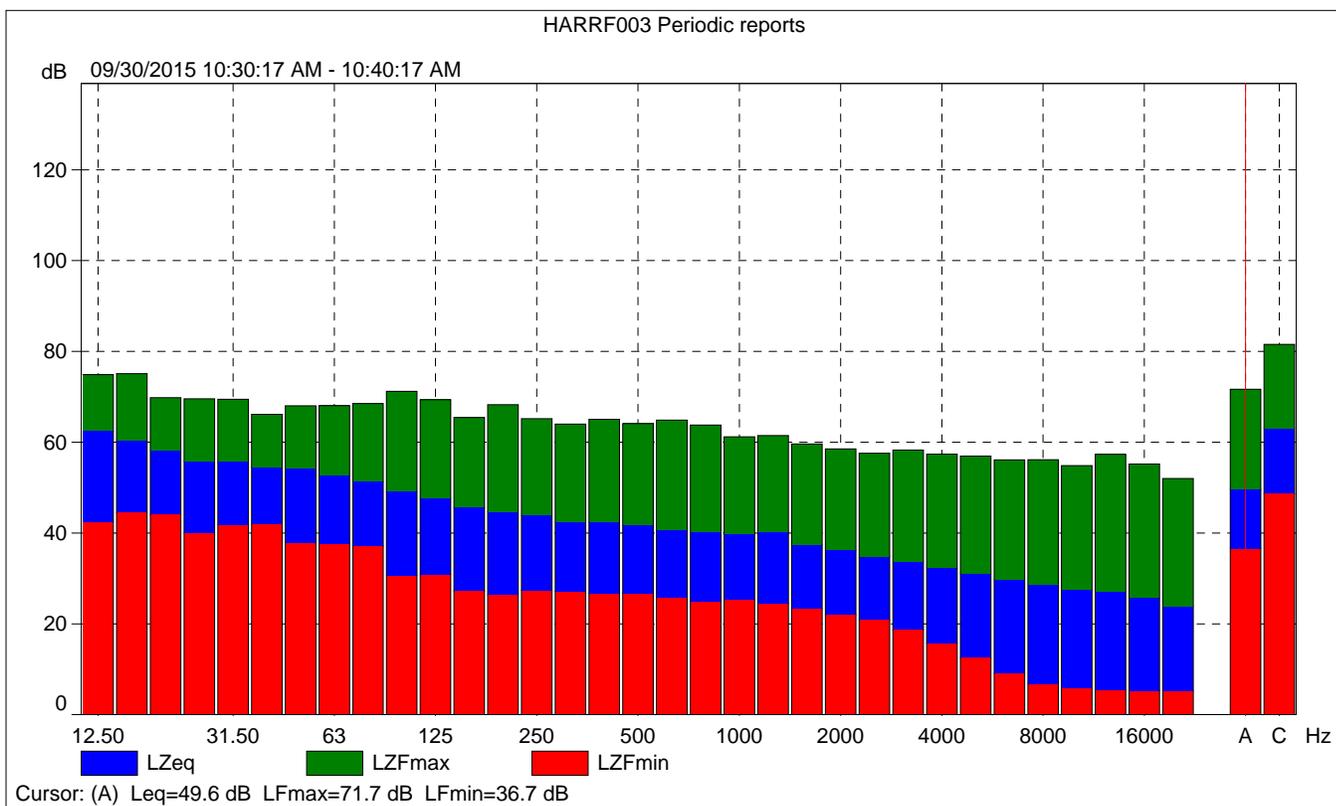
HARRF003

	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			51.0	47.1	42.4
Time	10:36:01 AM	0:00:01			
Date	09/30/2015				



HARRF003 Periodic reports

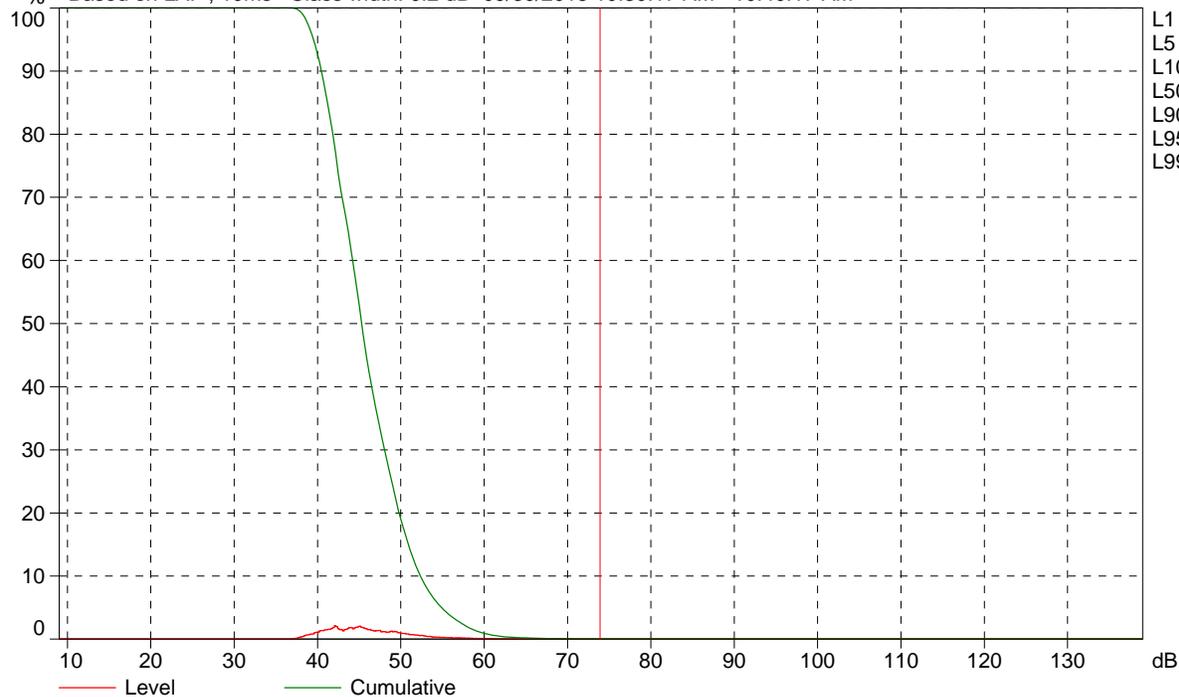
	Start time	Elapsed time	Overload [%]	LALeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	59.1	71.7	36.7
Time	10:30:17 AM	0:10:00				
Date	09/30/2015					





HARRF003 Periodic reports

% Based on LAF , 10ms Class width: 0.2 dB 09/30/2015 10:30:17 AM - 10:40:17 AM



- L1 = 59.6 dB
- L5 = 54.8 dB
- L10 = 52.3 dB
- L50 = 45.2 dB
- L90 = 40.4 dB
- L95 = 39.4 dB
- L99 = 38.1 dB

Cursor: [73.8 ; 74.0] dB Level: 0.0% Cumulative: 0.0%

Site Number: 3			
Recorded By: Ryan Chiene			
Job Number: 143544			
Date: 9/30/15			
Time: 10:48 a.m.			
Location: Residential uses near Shadow Glen/Avenida Del Diablo, to the west of the project site.			
Source of Peak Noise: Construction at residential uses to the southeast, operations (trucks) at the existing HARRF site, cars and trucks on Avenida Del Diablo.			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
47.4	33.5	73.5	95.6

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	11/18/2014	
	Microphone	Brüel & Kjær	4189	2543364	11/18/2014	
	Preamp	Brüel & Kjær	ZC 0032	4265	11/18/2014	
	Calibrator	Brüel & Kjær	4231	2545667	11/18/2014	
Weather Data						
Est.	Duration: 10 minutes			Sky: Sunny		
	Note: dBA Offset = 0.02			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	2.0		82.0		29.81	

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		09/30/2015 10:48:06
End Time:		09/30/2015 10:58:06
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.45

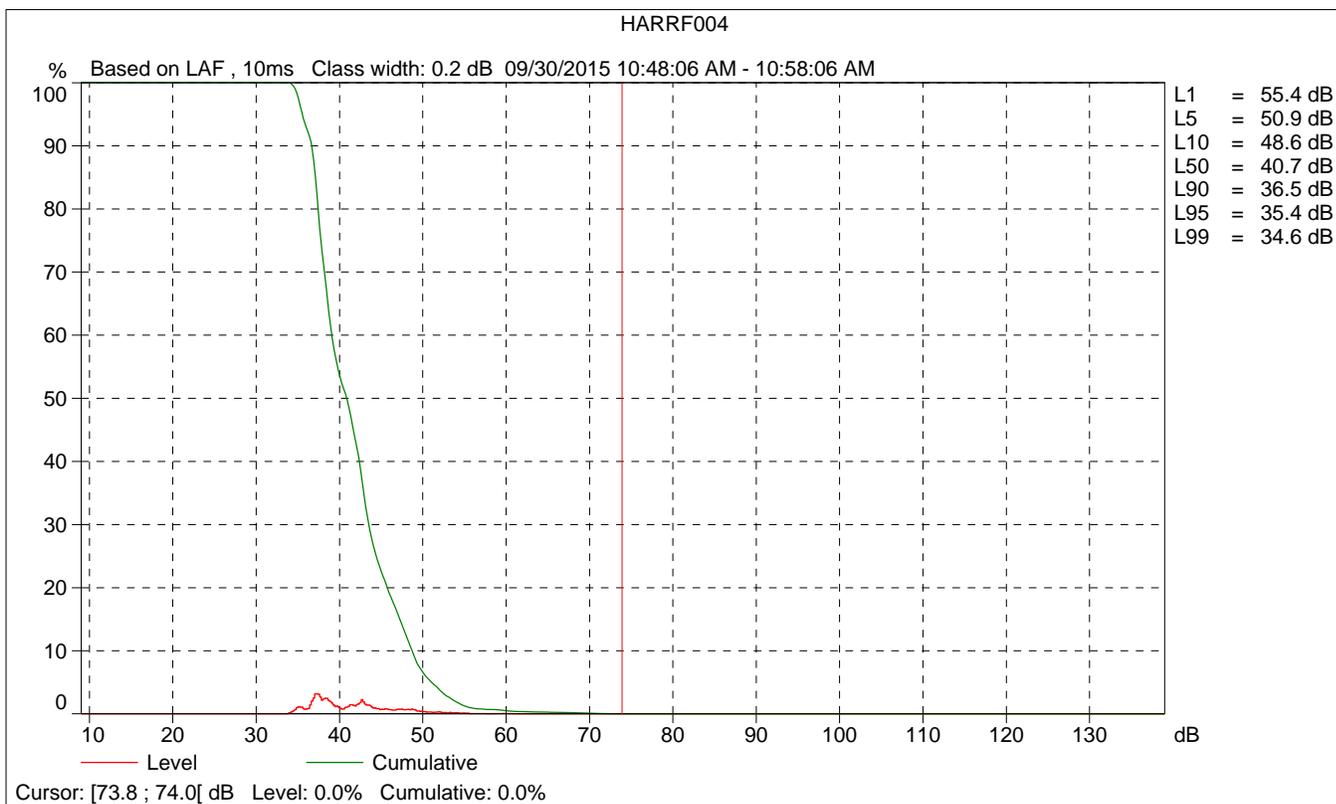
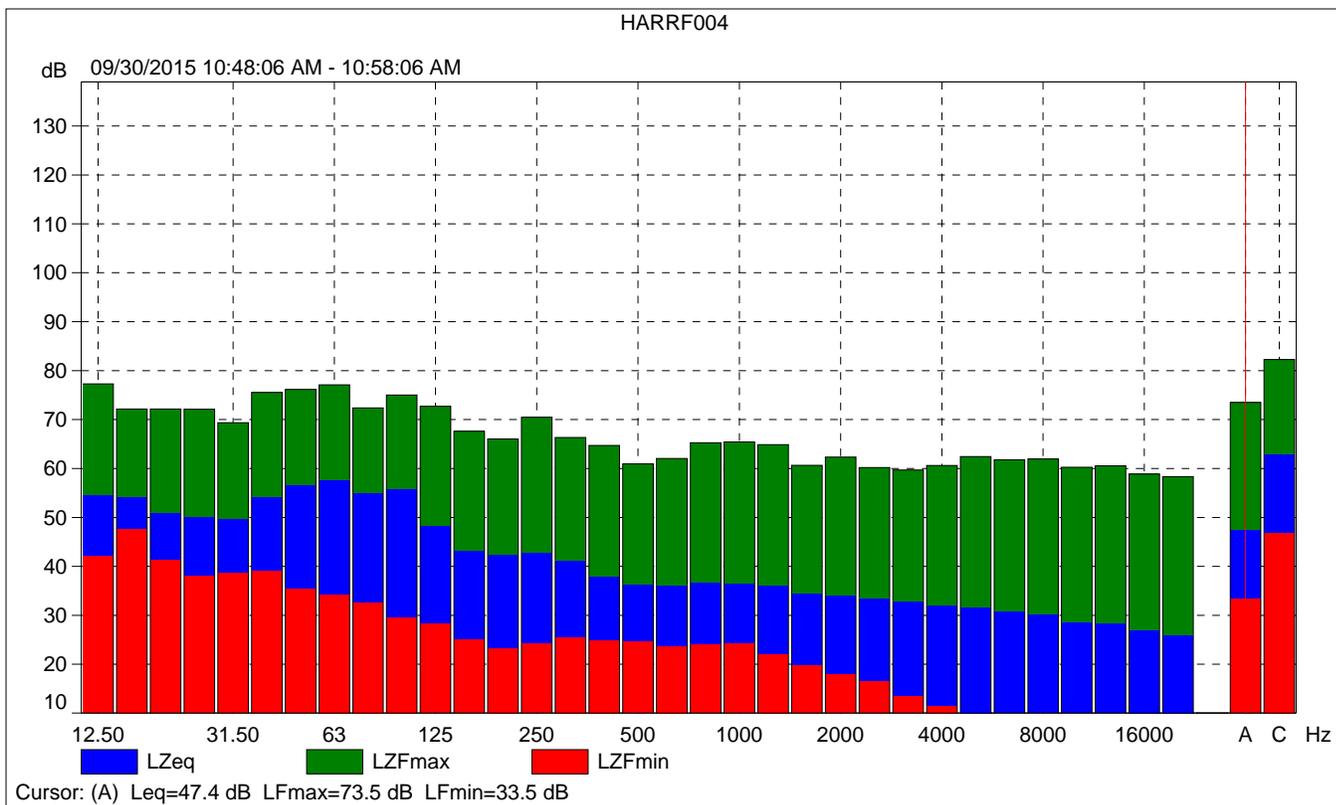
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

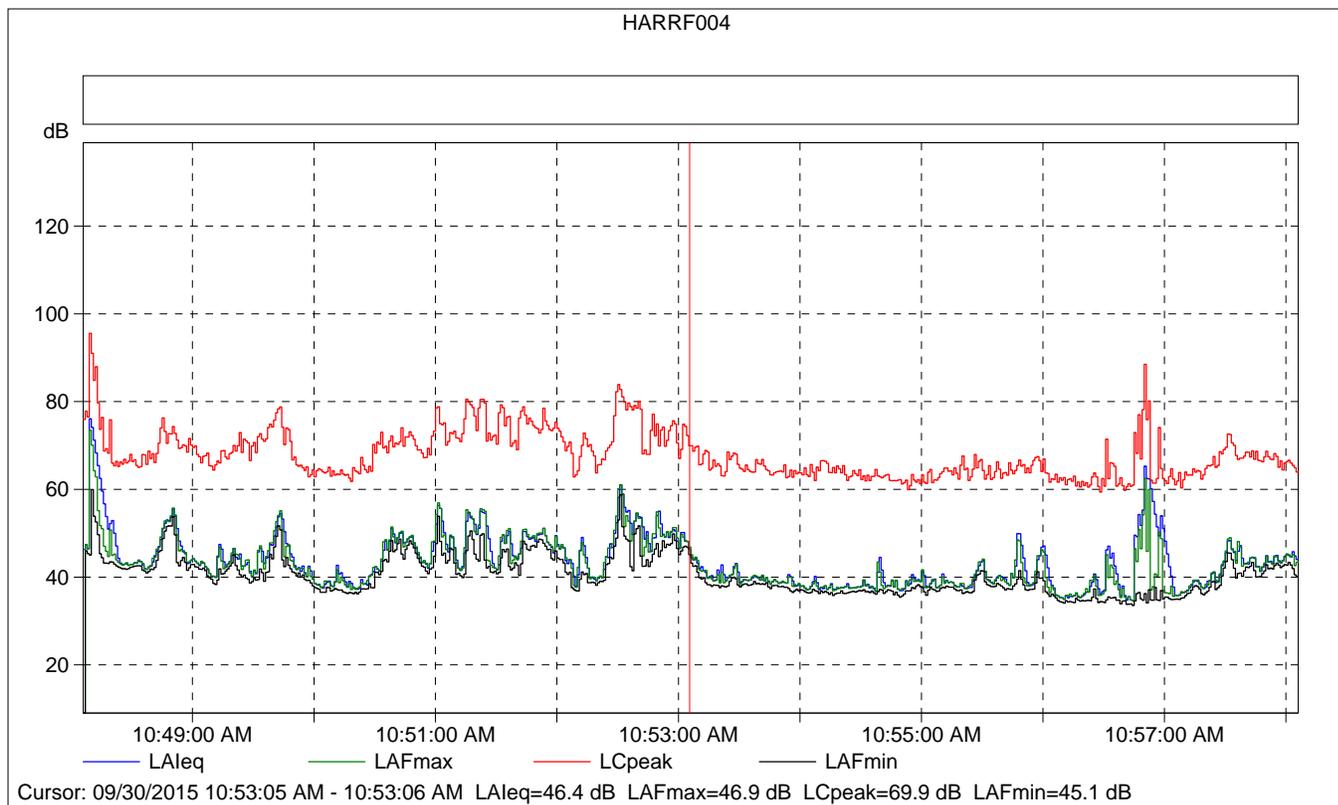
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

Calibration Time:		09/29/2015 16:43:17
Calibration Type:		External reference
Sensitivity:		66.6543319821358 mV/Pa

HARRF004

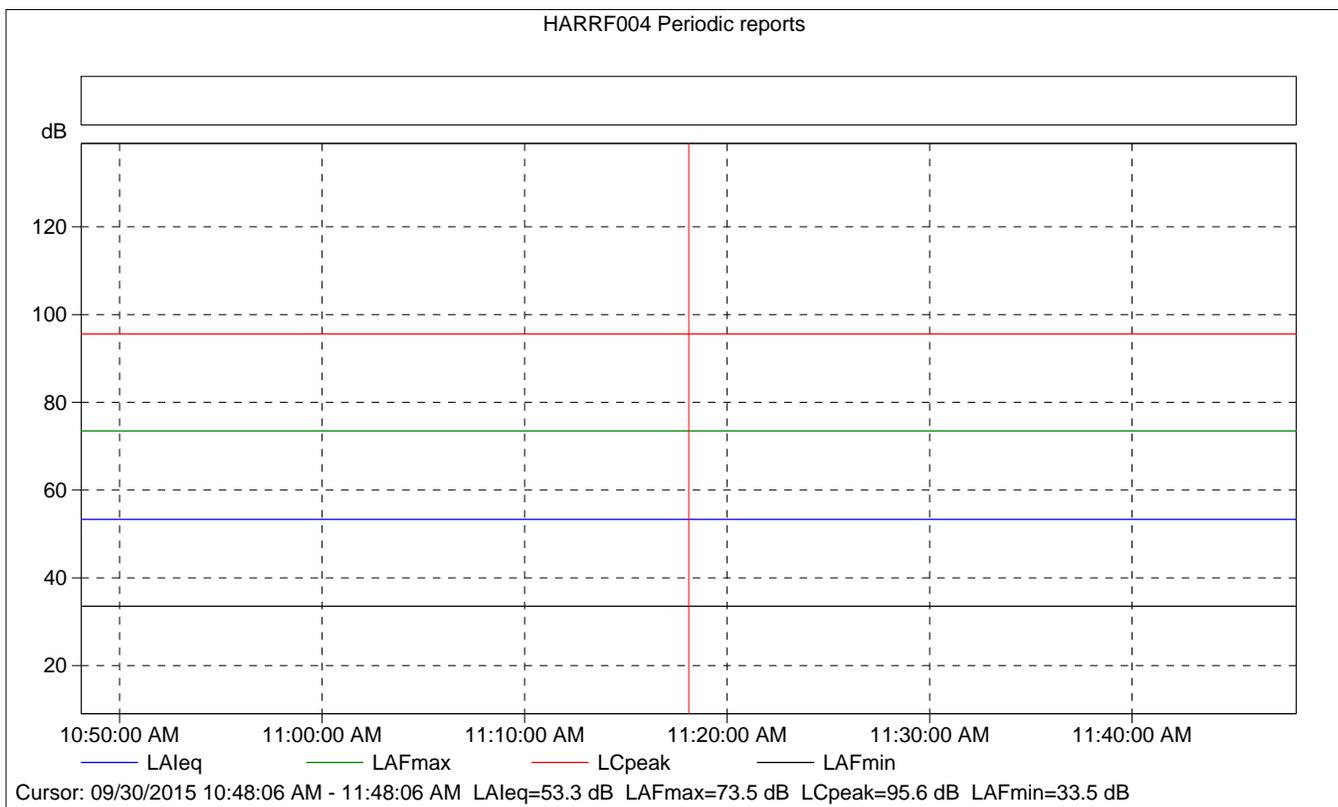
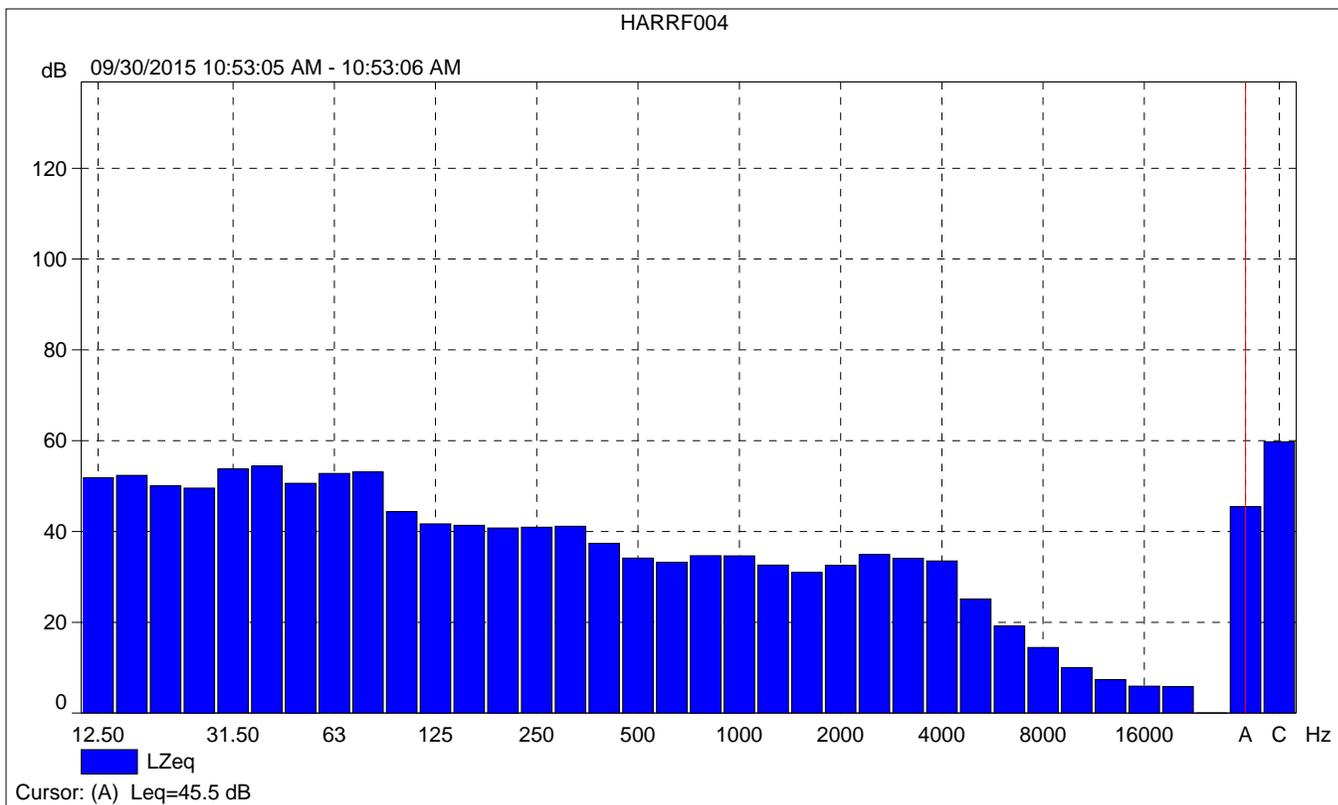
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	47.4	73.5	33.5
Time	10:48:06 AM	10:58:06 AM	0:10:00				
Date	09/30/2015	09/30/2015					





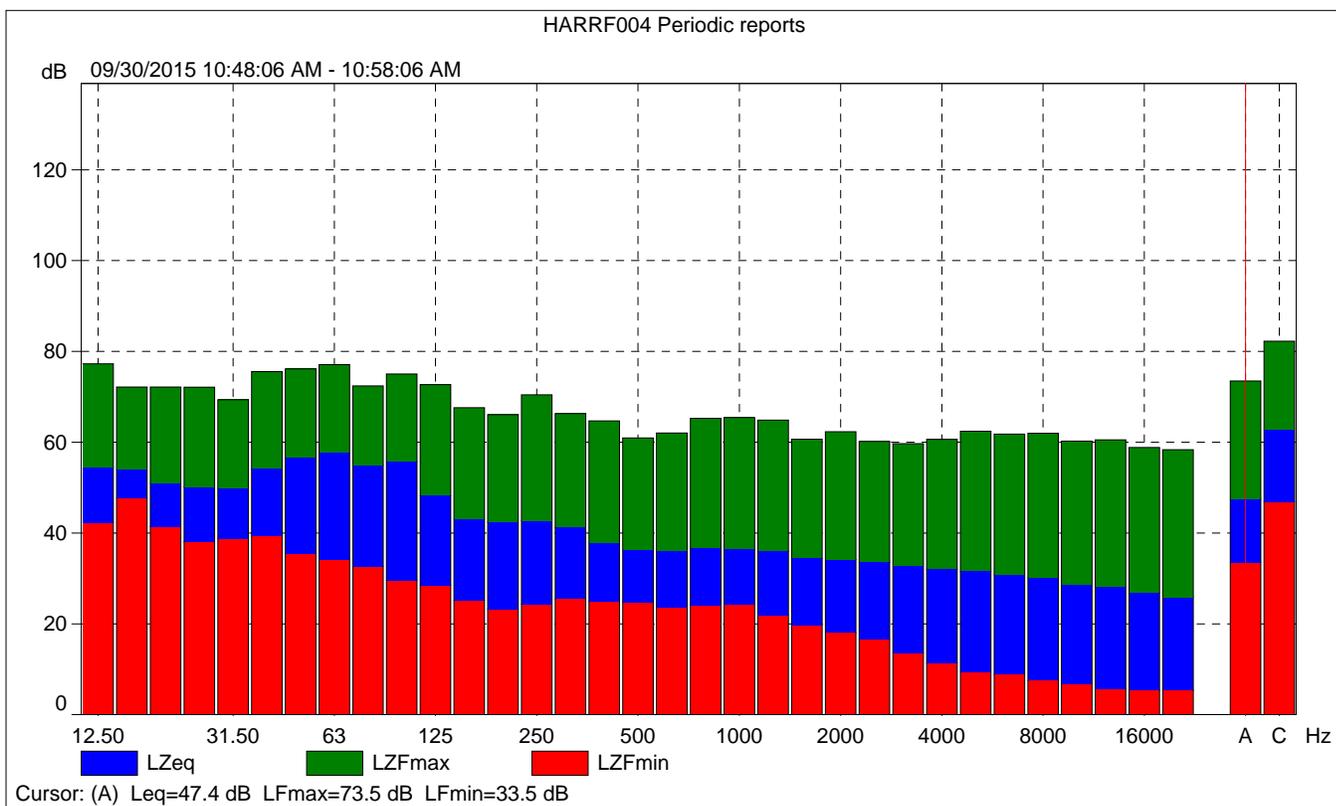
HARRF004

	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			46.4	46.9	45.1
Time	10:53:05 AM	0:00:01			
Date	09/30/2015				



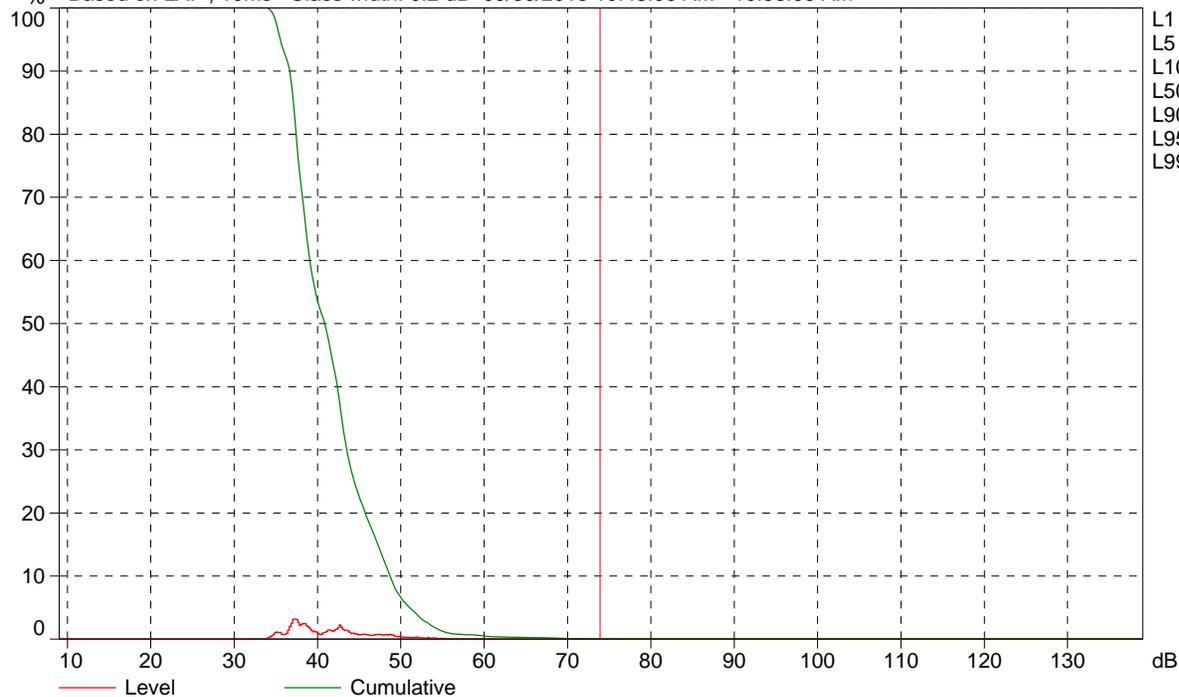
HARRF004 Periodic reports

	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	53.3	73.5	33.5
Time	10:48:06 AM	0:10:00				
Date	09/30/2015					



HARRF004 Periodic reports

% Based on LAF, 10ms Class width: 0.2 dB 09/30/2015 10:48:06 AM - 10:58:06 AM



- L1 = 55.4 dB
- L5 = 50.9 dB
- L10 = 48.6 dB
- L50 = 40.7 dB
- L90 = 36.5 dB
- L95 = 35.4 dB
- L99 = 34.6 dB

Cursor: [73.8 ; 74.0] dB Level: 0.0% Cumulative: 0.0%

APPENDIX G:

Traffic Assessment

October 23, 2015
Paul Keck, P.E., QSD/QSP
City of Escondido
Utilities Dept.
1521 South Hale Avenue
Escondido, CA 92029

RE: Escondido HARRF Storage Facility MND Traffic Assessment

Dear Mr. Keck:

The following presents a brief assessment and discussion of potential traffic impacts associated with the proposed relocation of the Escondido Wastewater Collections Yard.

Proposed Project

The Hale Avenue Resource Recovery Facility (HARRF) Wastewater Collections Yard Relocation Project (proposed "Project") site is located on the northwest side of Citracado Parkway between Harmony Grove and Avenida del Diablo (Refer to Exhibit 1). The site is located within the larger Escondido Research Tech Center Specific Plan Area 8 (SPA 8 - Harmony Grove). The existing HARRF is located adjacent to the north/northeast of the Project site at 1521 South Hale Avenue.

The Project proposes construction of a new Wastewater Collections Yard to support maintenance activities associated with the City's HARRF and wastewater treatment operations, currently the responsibility of the City's Department of Utilities, Wastewater Collection and Treatment Division. Maintenance activities for the City's wastewater facilities have historically been operated out of the City's Public Works Maintenance Yard located at 475 North Spruce Street, approximately 1.7 miles to the northwest of the Project site.

The Project, which consists of approximately 1.8 acres, would result in construction of three individual pre-fabricated steel buildings on the site, as illustrated in Exhibit 2 and described below:

- Building A would be 3,735 square feet (s.f.) in size and would be used for collections. The building would include an outdoor storage area, indoor equipment storage, and one work bay. The work bay would be utilized for regular maintenance of vehicles and equipment associated with operations at HARRF.
- Building B would be 5,470 s.f. in size and would be used as a warehouse. The building would contain restrooms (men's and women's) as well as areas for indoor storage of small-scale equipment, tools, and materials used for routine maintenance.
- Building C would be 5,670 s.f. in size and would be used as a maintenance workshop. The building would contain two workshops: one for pump, motor, and valve rebuilding, and one for welding and fabrication activities required for routine maintenance of

equipment associated with operations at the HARRF. Additional areas for storage of materials and equipment would also be provided within the interior.

A surface parking lot would be provided adjacent to the proposed buildings and access drive. A total of 33 parking spaces (31 standard/2 American Disability Act compliant) are proposed for use by employees and visitors. The onsite parking areas would be surfaced with gravel.

Access to the Project site would occur from either Citracado Parkway or from the HARRF to the north. An existing paved access drive currently extends through the site from Citracado Parkway and provides connection to the HARRF. An approximately 400-foot long segment of the existing onsite drive would be repaved as part of the Project to ensure that it can adequately accommodate Project-related traffic and emergency vehicles following Project implementation.

The Project would not generate any new employees. Until recently, an estimated 50 employees operated from the HARRF site; however, an additional 40-45 City employees were recently relocated from the City's existing maintenance facility on North Spruce Street to the new Administration Building at the HARRF site, bringing the total number of employees onsite to approximately 95. The 40-45 employees that were transferred will be responsible for operations and maintenance activities at the proposed Wastewater Collections Yard.

Traffic Impact Assessment

As noted earlier, the Project will not add more employees and therefore will not generate more vehicle trips than are currently being generated. Given the location of the new buildings and parking lot comprising the Project, a portion of the existing employees will likely be assigned to use the new parking lot. This group of employees will have a slightly different ingress and egress pattern influenced by the location of the access driveway on Citricado Parkway serving the Project's parking lot. The following sections discuss the changes in traffic patterns that will result from the project.

Existing HARRF Trip Generation - The trip generation that has been estimated for the current HARRF conservatively assumes one trip per employee (95) in the peak direction during the morning and evening peak hour and an additional 5 trips in the corresponding off-peak direction.

A.M. Peak Hour Tips:	95 Inbound	5 Outbound
P.M. Peak Hour Tips:	5 Inbound	95 Outbound

Existing HARRF Trip Distribution - The estimated distribution of the existing HARRF traffic is depicted in Exhibit 3. Inbound and outbound HARRF traffic during the morning peak hour is shown in Exhibits 4 and 5 respectively. Similarly, inbound and outbound HARRF traffic during the evening peak hour is shown in Exhibits 4 and 5 respectively. These conditions are considered as the baseline HARRF traffic conditions before the Project.

Project Trip Diversion - The number of trips diverted has been estimated for the Project based on a conservative assumption that one third of the HARRF trips (32 trips) would divert to the new Project parking lot. The estimated number of diverted trips are as follows.

A.M. Peak Hour Tips:	32 Inbound	2 Outbound
P.M. Peak Hour Tips:	2 Inbound	32 Outbound

Project Trip Distribution - The estimated re-distribution of the existing HARRF traffic to and from the Project parking lot is depicted in Exhibits 8 and 9 for the morning peak hour and in Exhibits 10 and 11 for the evening peak hour.

Note that in Exhibits 8 through 11, the traffic shown is the path of the redistributed project-related trips but not necessarily the net increase at any given location. The net increase in trips will be less in some locations. Also not shown are the reductions in traffic that would occur in the vicinity of the existing HARRF driveways on Hale Avenue that would result from the diversion of traffic away from these driveways.

Conclusions – As shown in the Project traffic re-distribution exhibits, the number of trips involved in the re-distribution are relatively small and the area affected by the change in traffic circulation patterns is also confined to a relatively small area. While some traffic movements will have a small traffic increase, others will have a reduction in traffic.

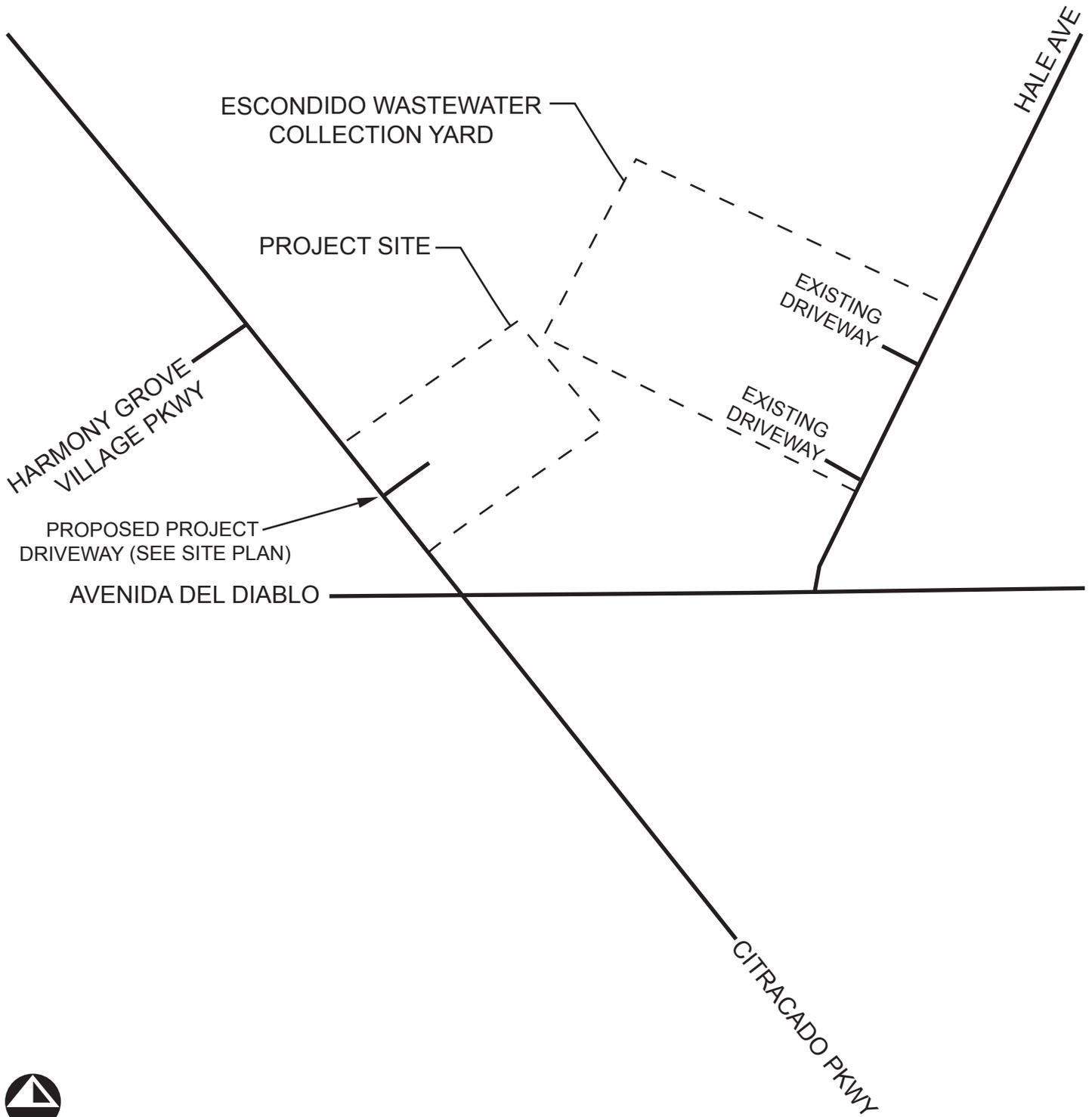
The projected changes in traffic patterns are not at a level that would be considered significant in terms of the potential to result in significant impacts on traffic operations.

If you have any questions concerning the traffic assessment or conclusions, please call me at (760) 603-6244.

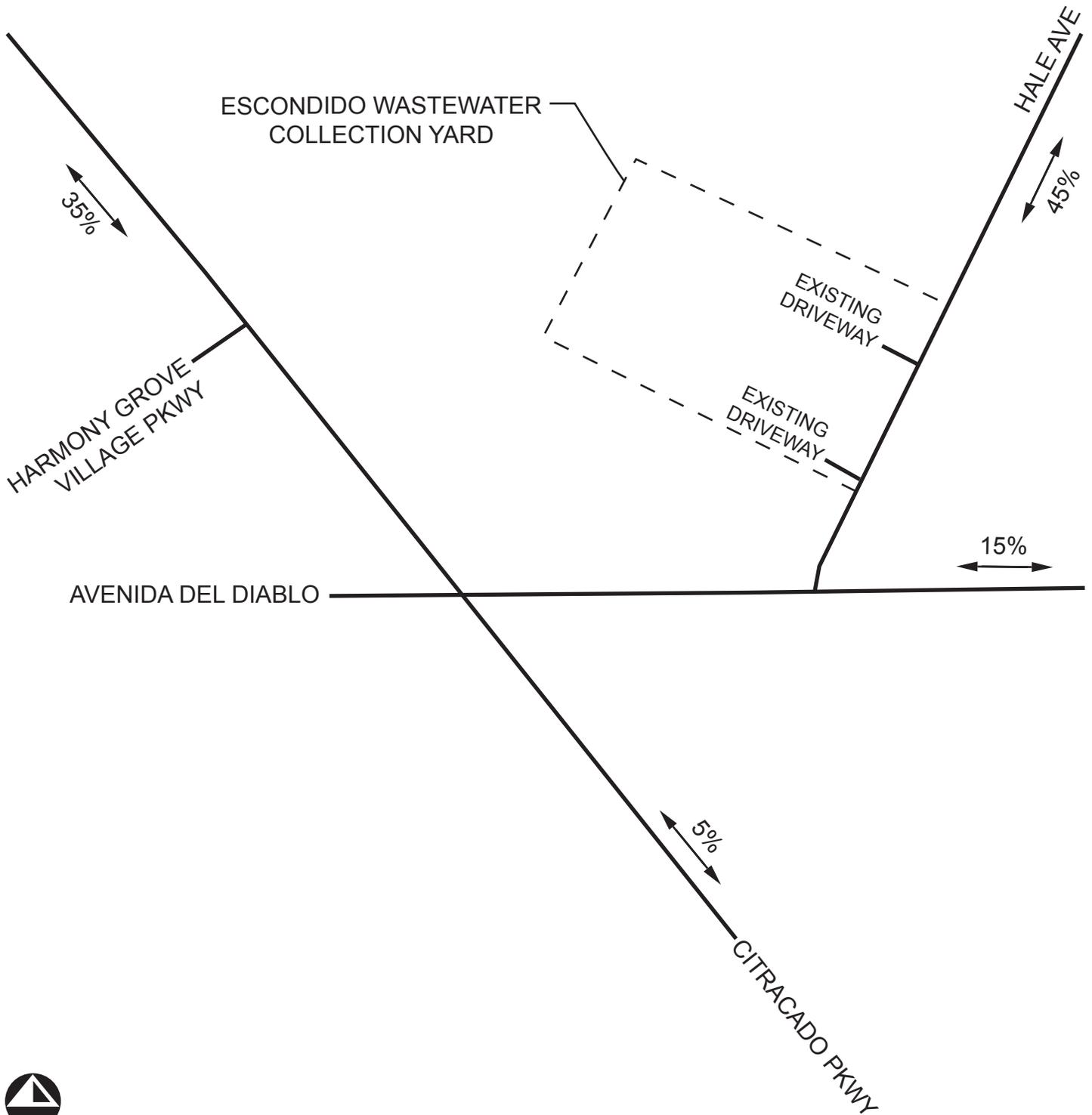
Sincerely,



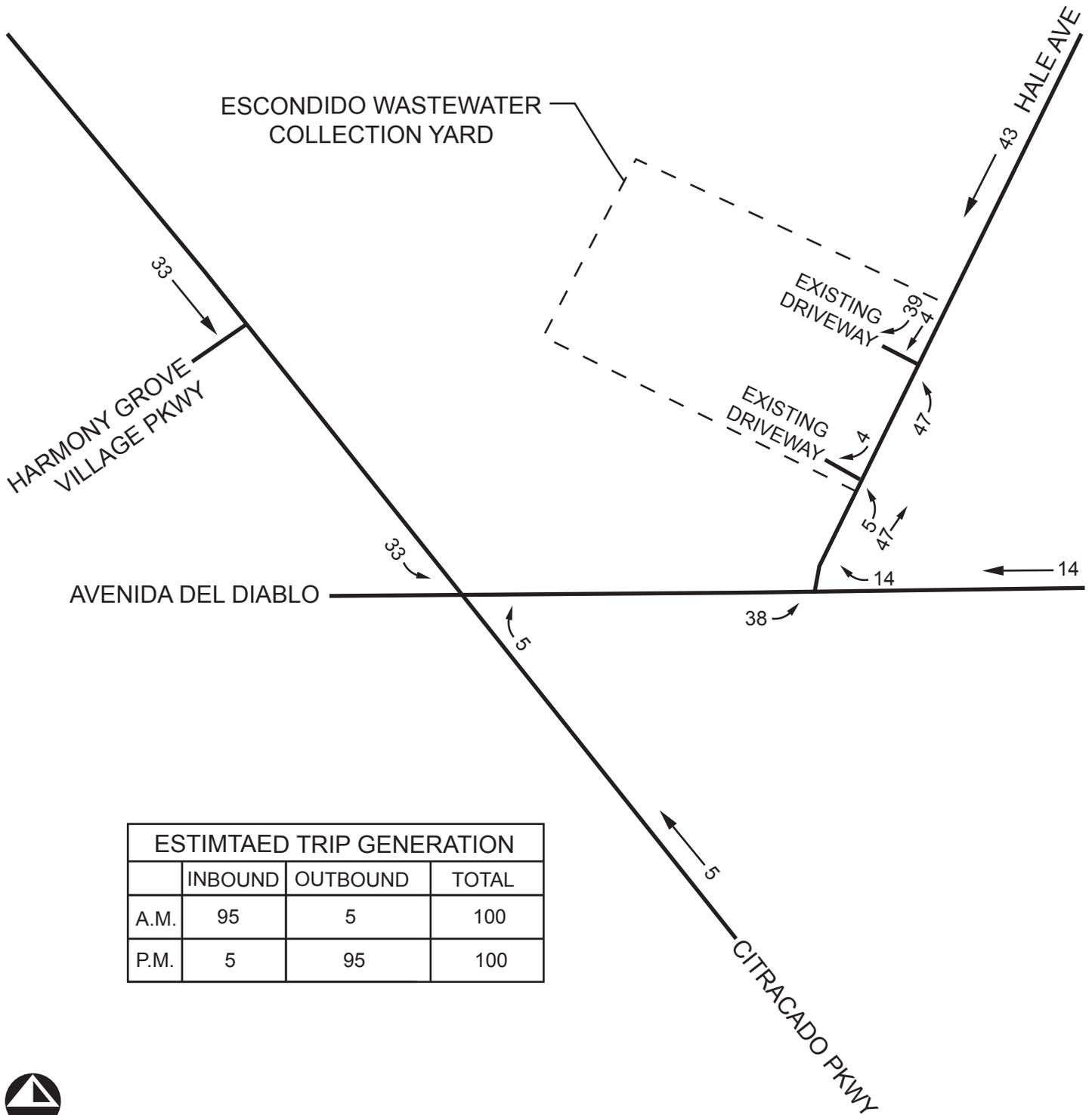
Robert A. Davis
Senior Transportation Planner
Transportation Services



Not to Scale



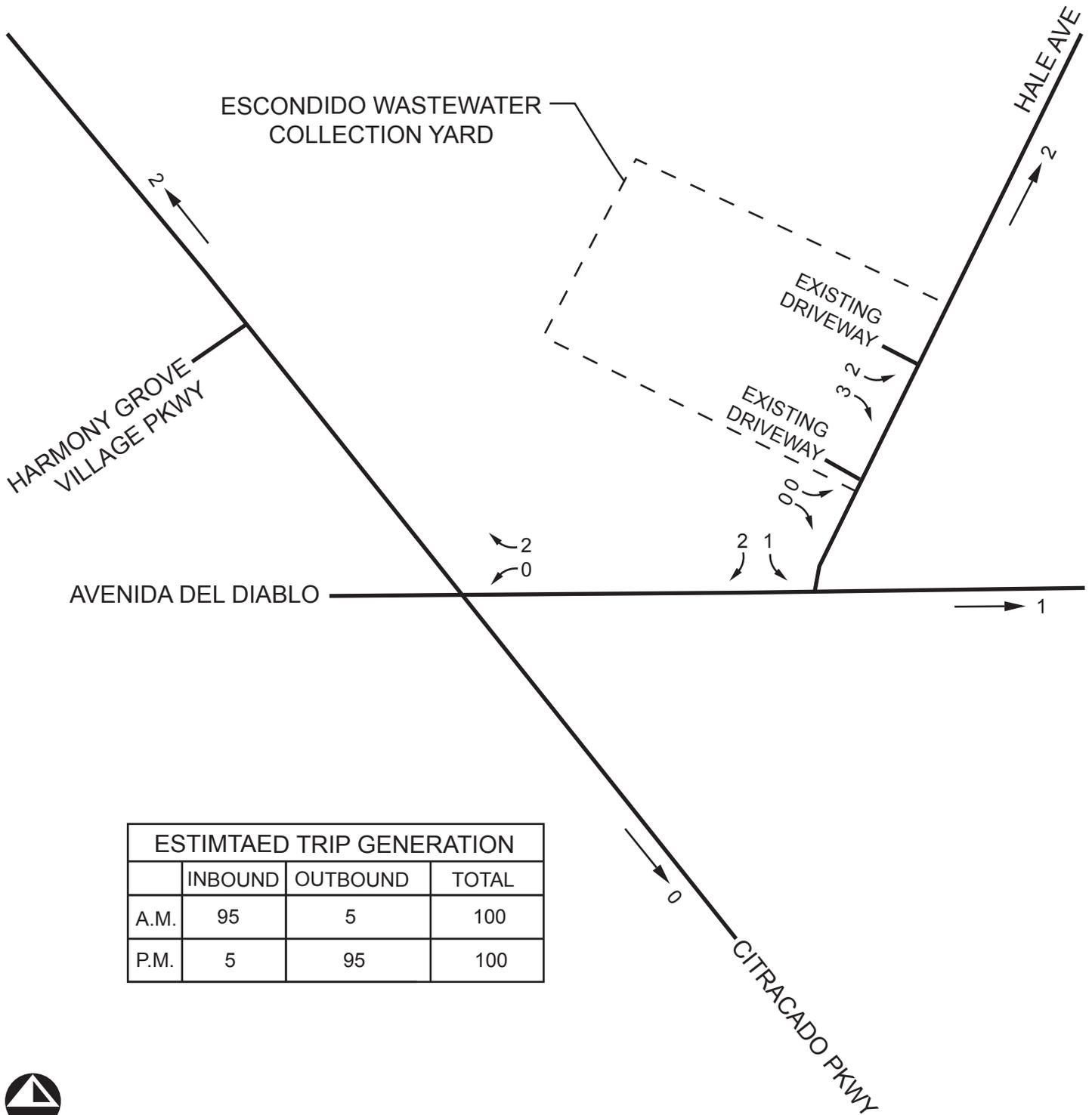
Not to Scale



ESTIMATED TRIP GENERATION			
	INBOUND	OUTBOUND	TOTAL
A.M.	95	5	100
P.M.	5	95	100



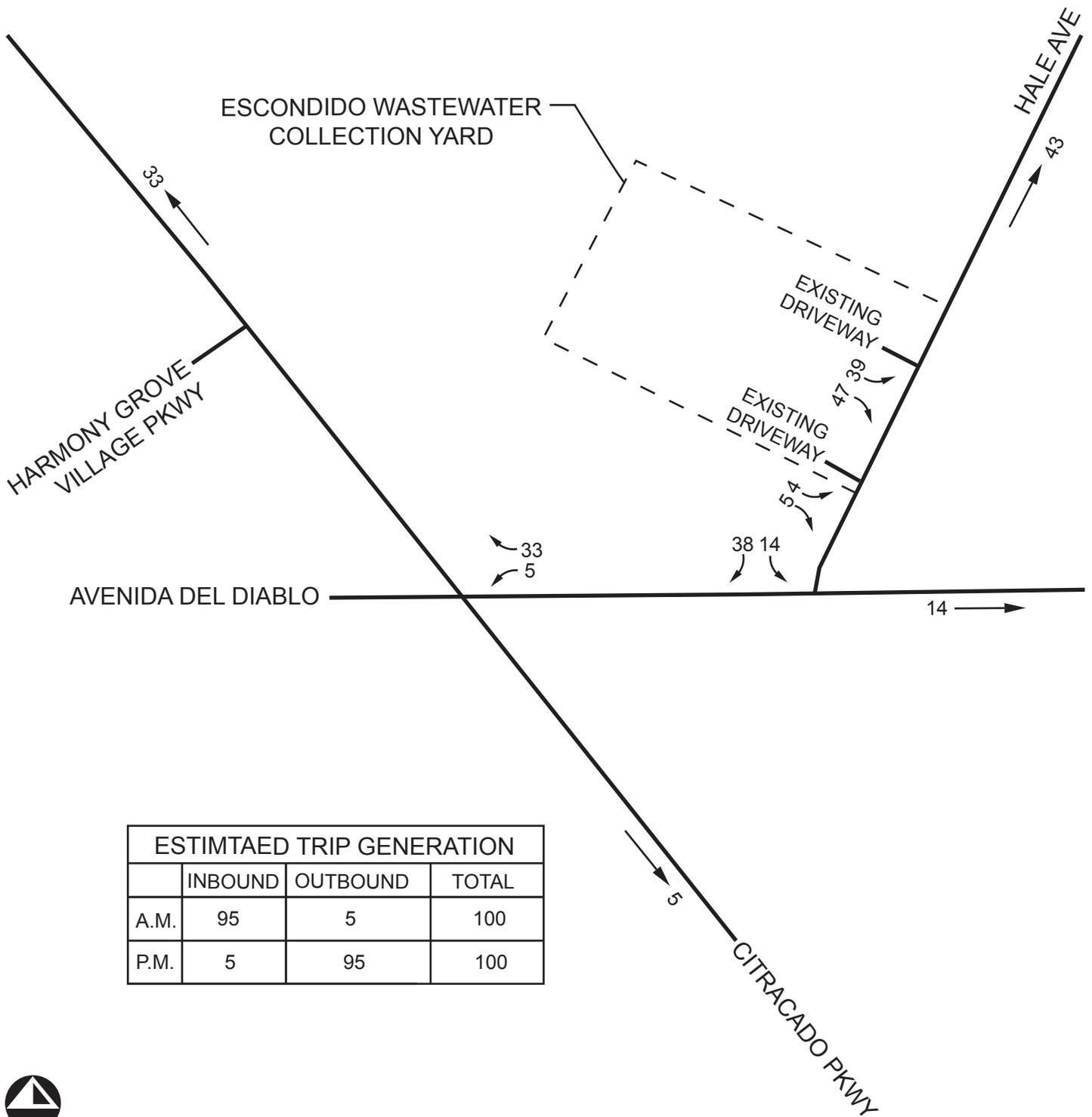
Not to Scale



ESTIMATED TRIP GENERATION			
	INBOUND	OUTBOUND	TOTAL
A.M.	95	5	100
P.M.	5	95	100



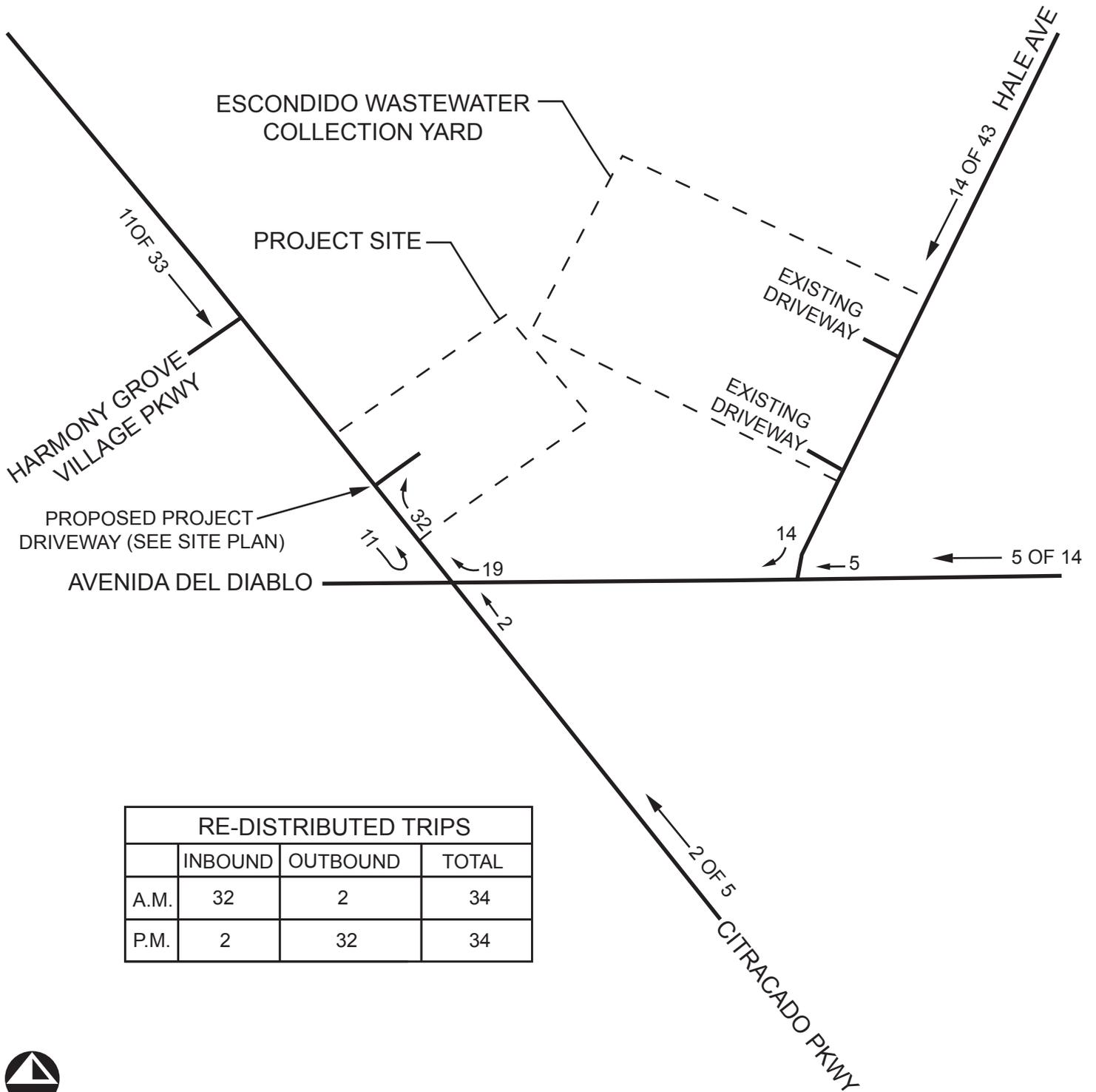
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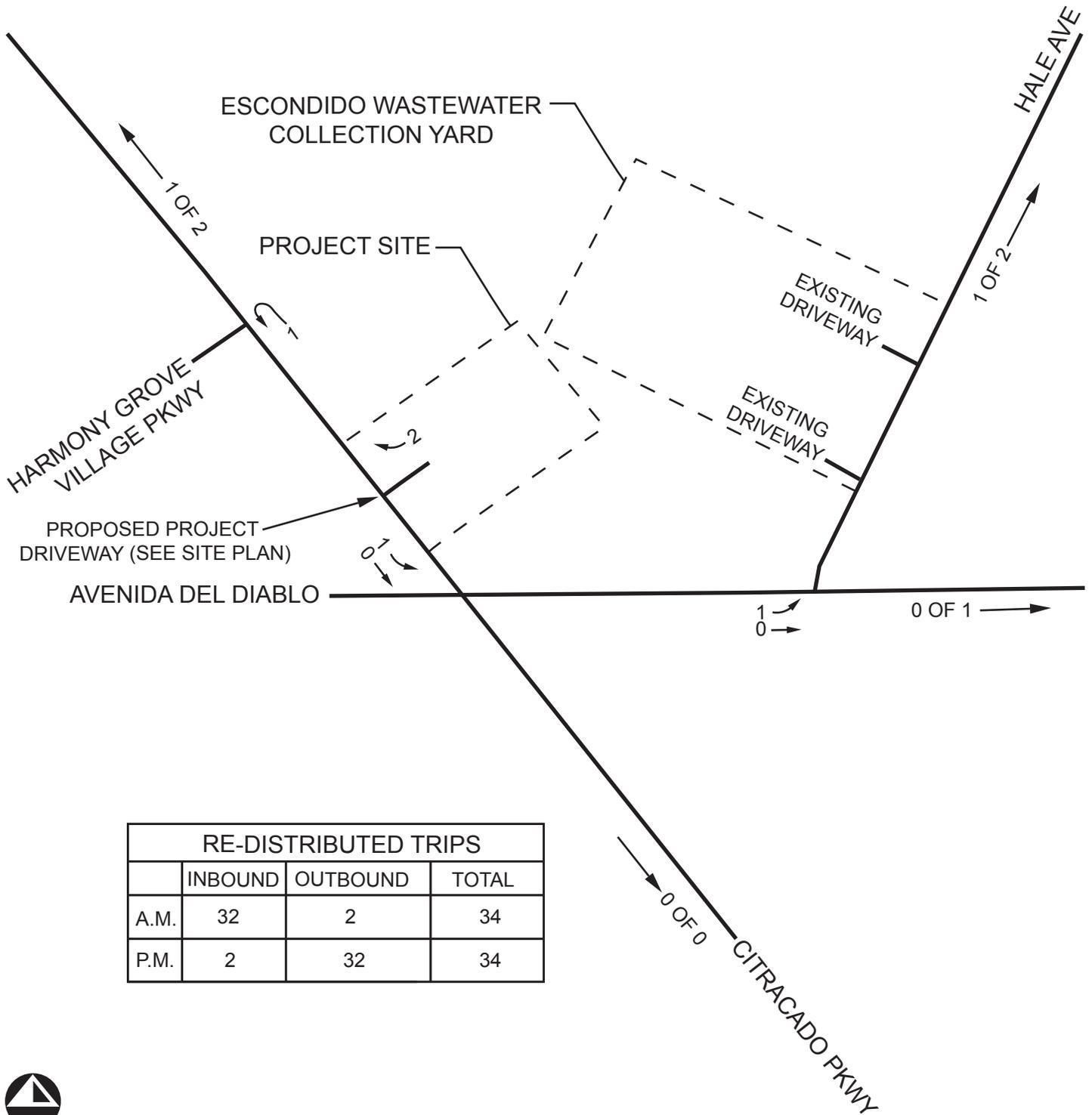
ESTIMATED TRIP GENERATION			
	INBOUND	OUTBOUND	TOTAL
A.M.	95	5	100
P.M.	5	95	100



Not to Scale



Not to Scale



RE-DISTRIBUTED TRIPS			
	INBOUND	OUTBOUND	TOTAL
A.M.	32	2	34
P.M.	2	32	34

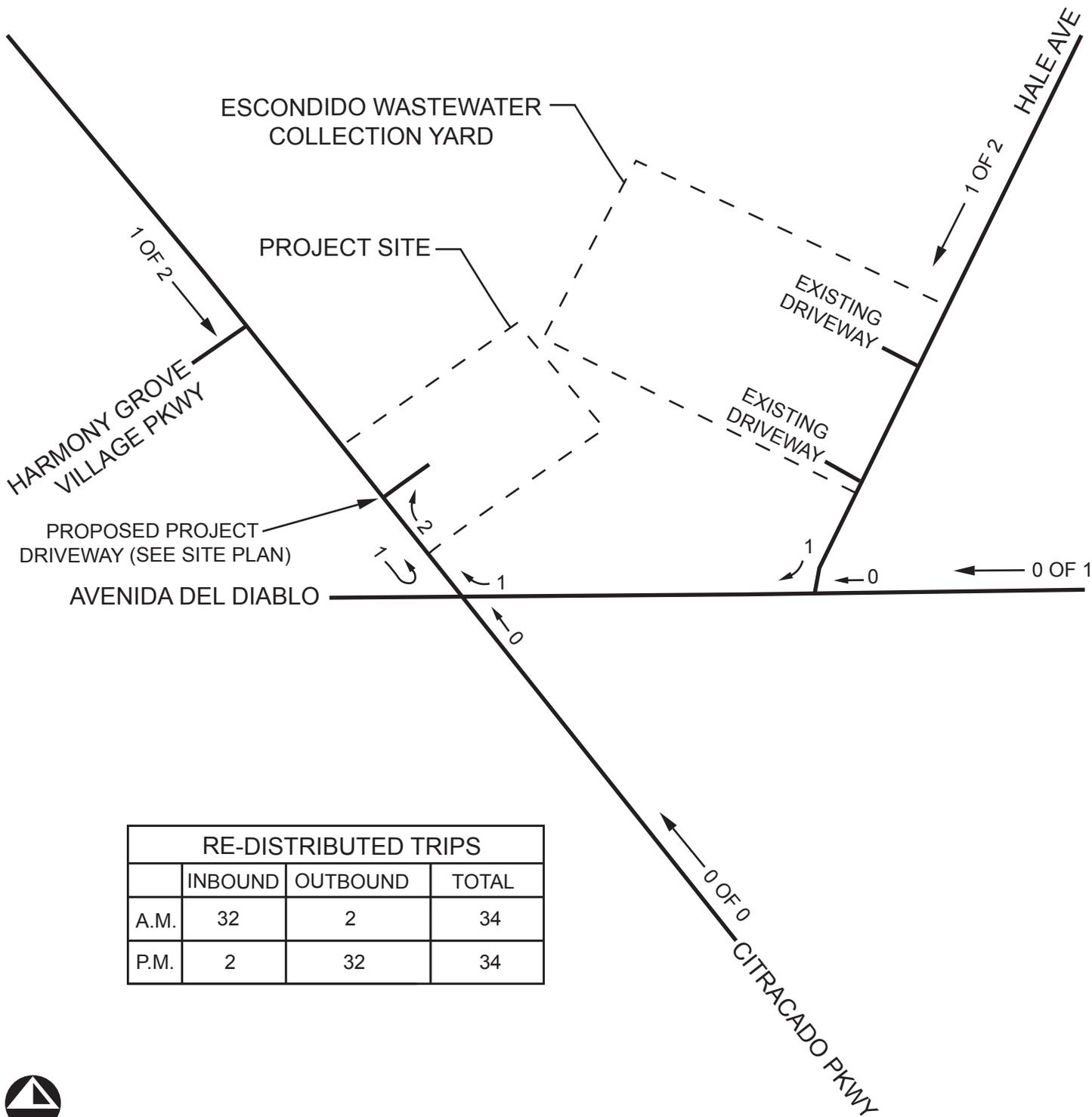


Not to Scale



Modified Project AM Outbound Trips HARRF Wastewater Collections Yard Relocation

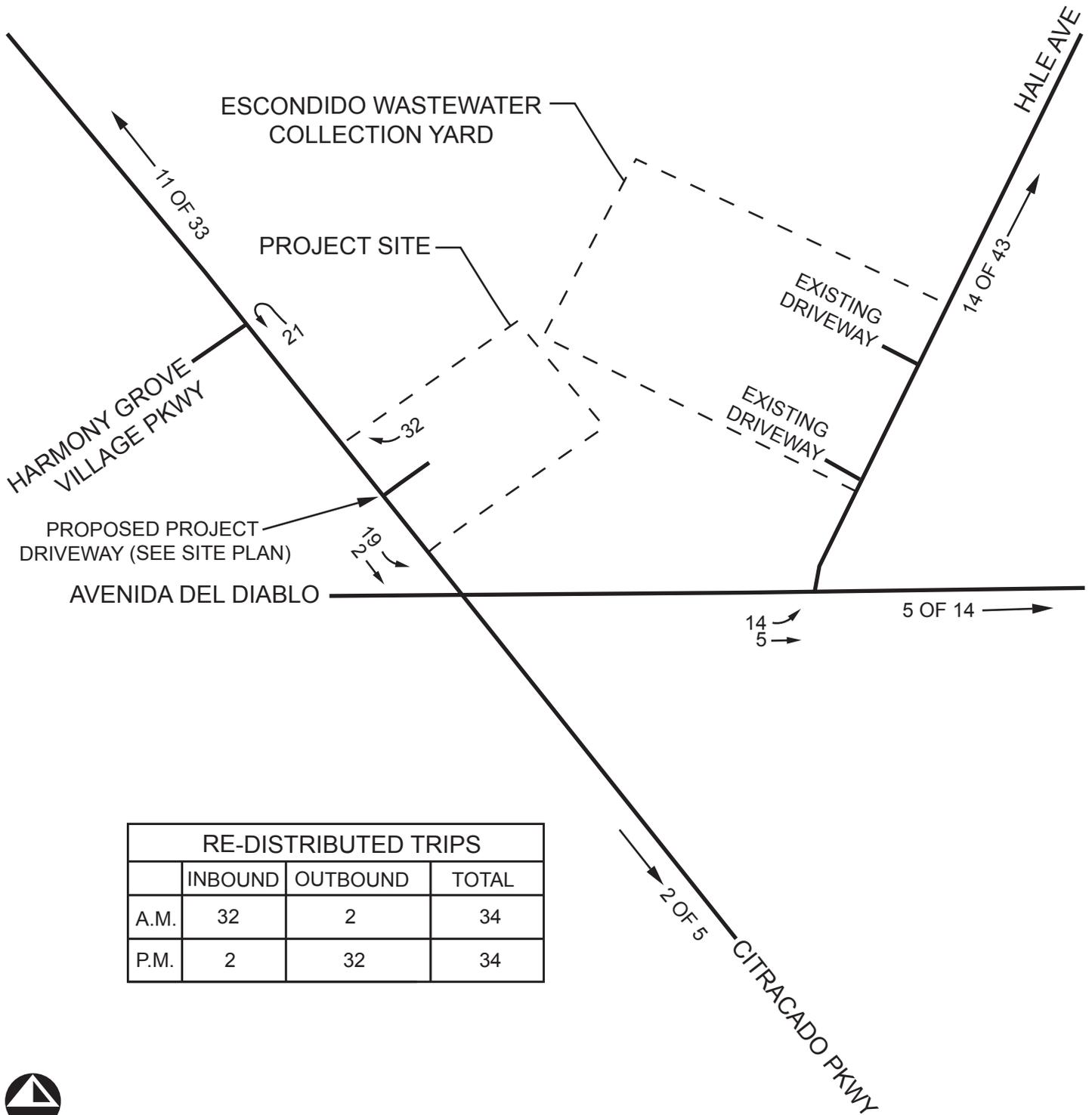
OCTOBER 2015



RE-DISTRIBUTED TRIPS			
	INBOUND	OUTBOUND	TOTAL
A.M.	32	2	34
P.M.	2	32	34



Not to Scale



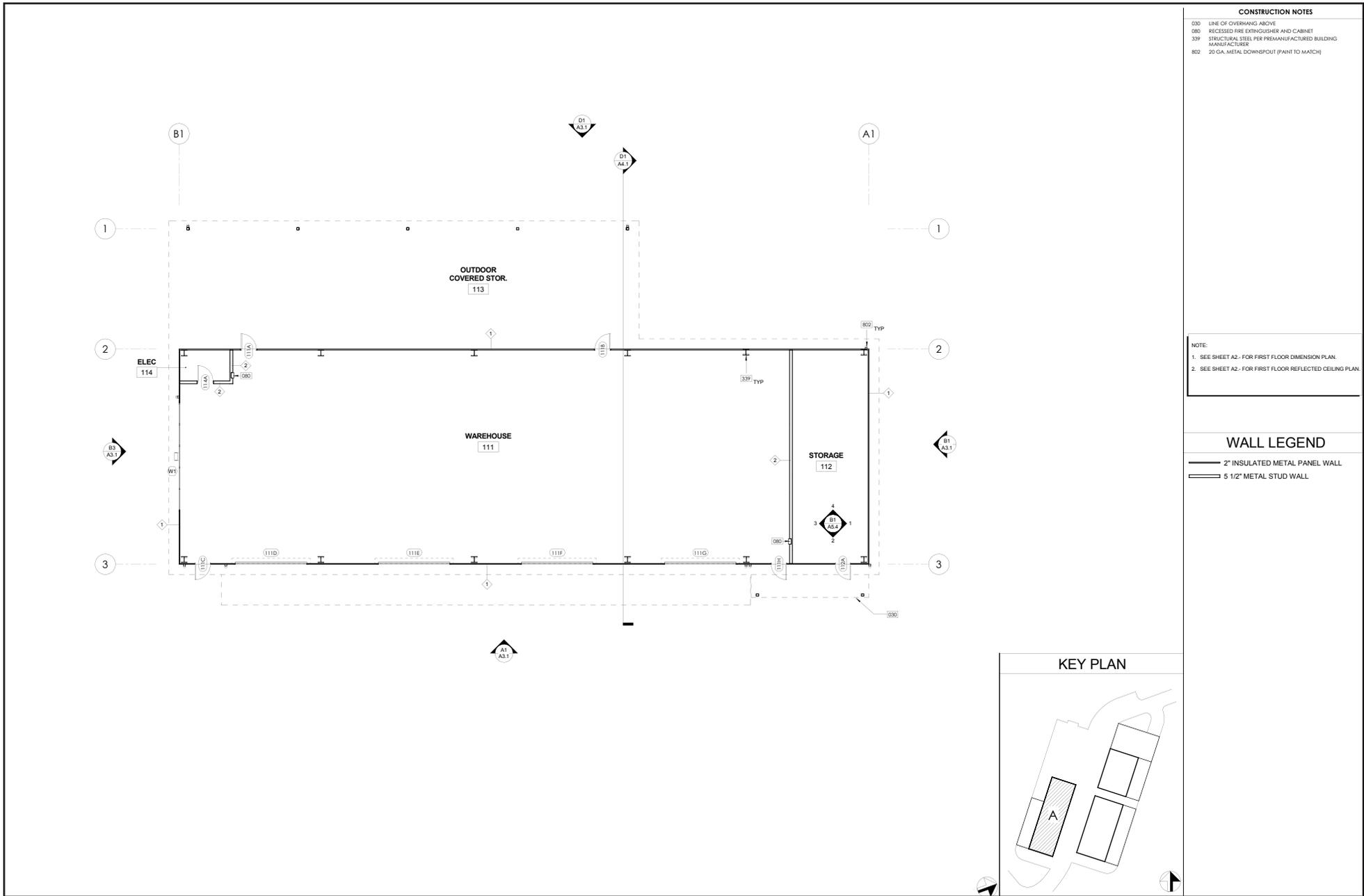
RE-DISTRIBUTED TRIPS			
	INBOUND	OUTBOUND	TOTAL
A.M.	32	2	34
P.M.	2	32	34

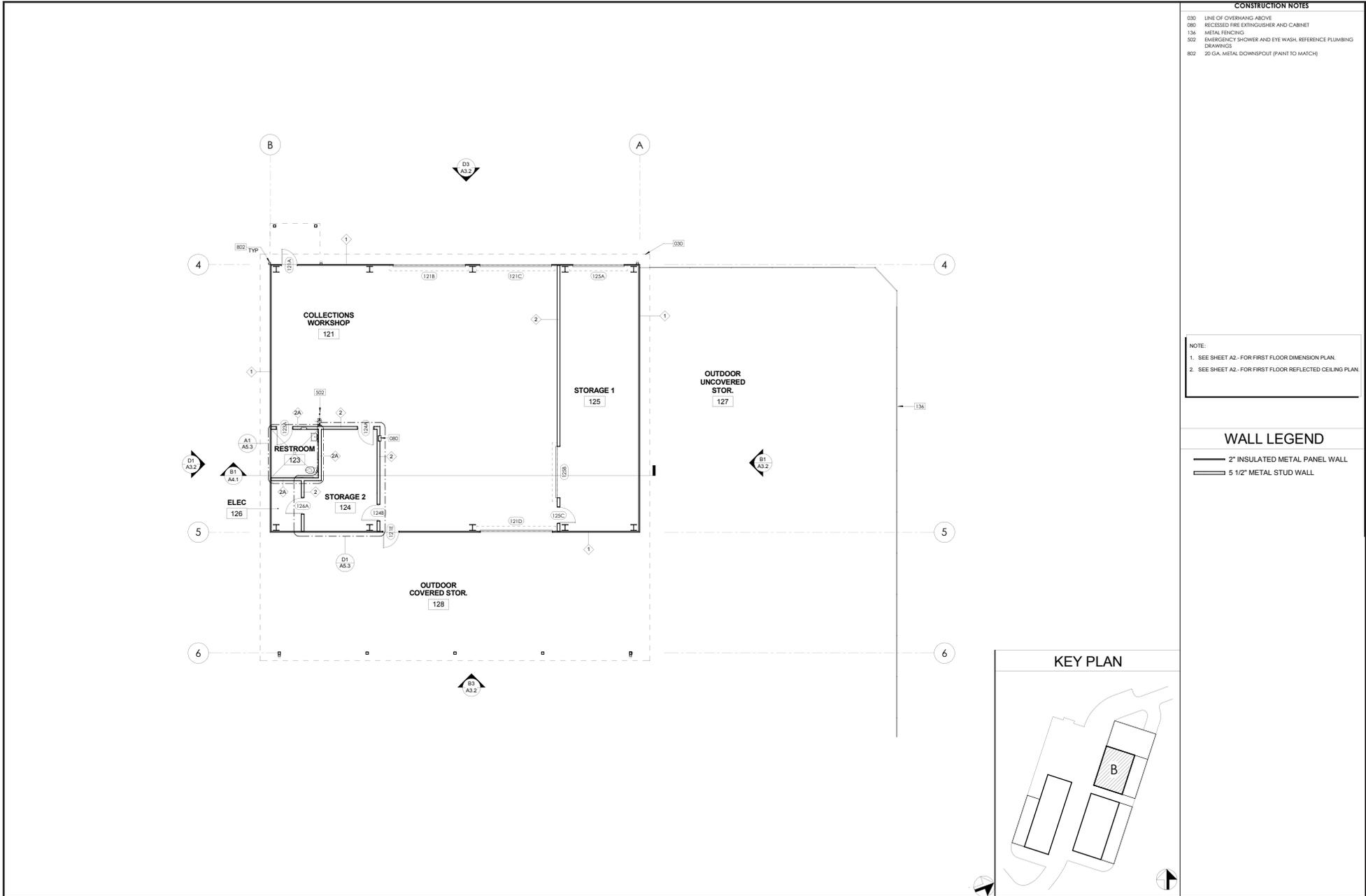


Not to Scale

APPENDIX H:

Project Design Plans





CONSTRUCTION NOTES

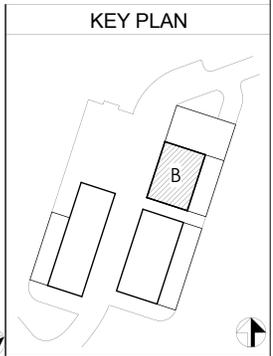
030	LINE OF OVERHANG ABOVE
080	RECESSED FIRE EXTINGUISHER AND CABINET
136	METAL FENCING
502	EMERGENCY SHOWER AND EYE WASH, REFERENCE PLUMBING DRAWINGS
802	20 GA. METAL DOWNSPOUT (PAINT TO MATCH)

NOTE:

- SEE SHEET A2 - FOR FIRST FLOOR DIMENSION PLAN.
- SEE SHEET A2 - FOR FIRST FLOOR REFLECTED CEILING PLAN.

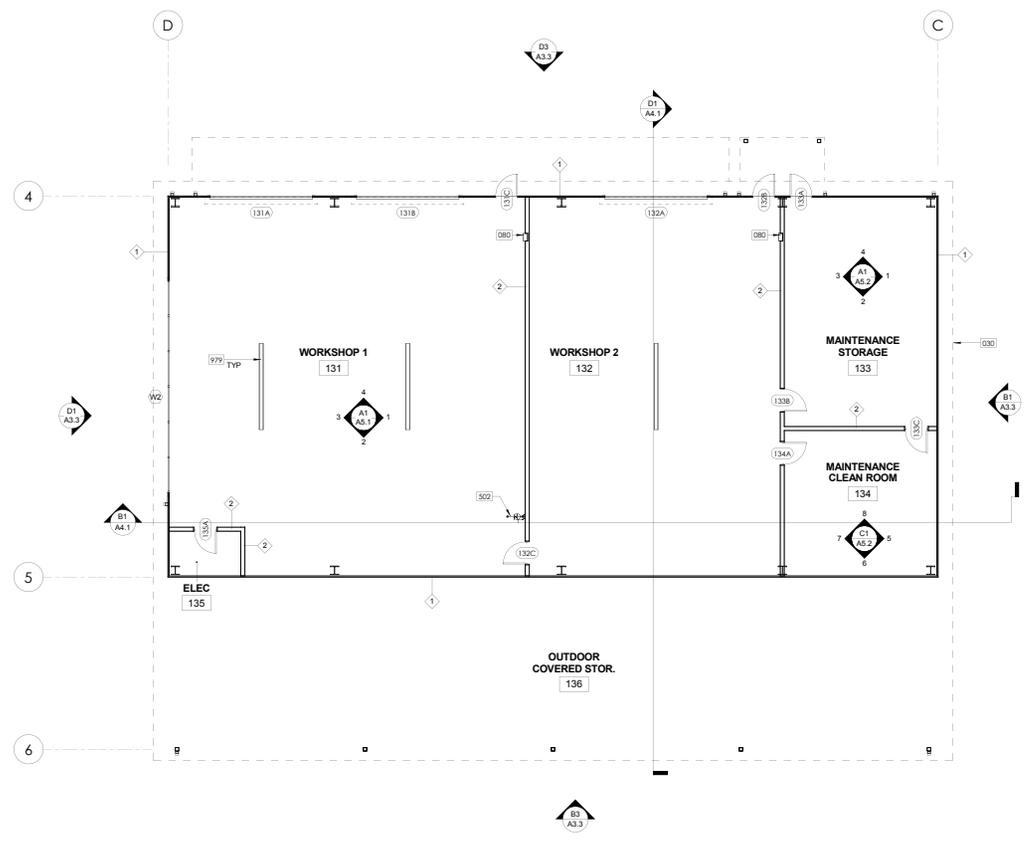
WALL LEGEND

	2" INSULATED METAL PANEL WALL
	5 1/2" METAL STUD WALL



CONSTRUCTION NOTES

- 030 LINE OF OVERHANG ABOVE
- 080 RECESSED FIRE EXTINGUISHER AND CABINET
- 502 EMERGENCY SHOWER AND EYE WASH, REFERENCE PLUMBING DRAWINGS
- 979 TRENCH DRAIN, REFERENCE PLUMBING DRAWINGS

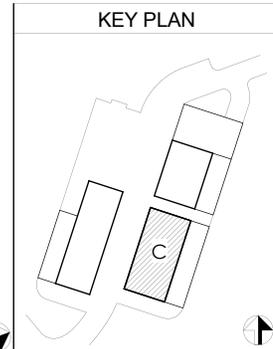


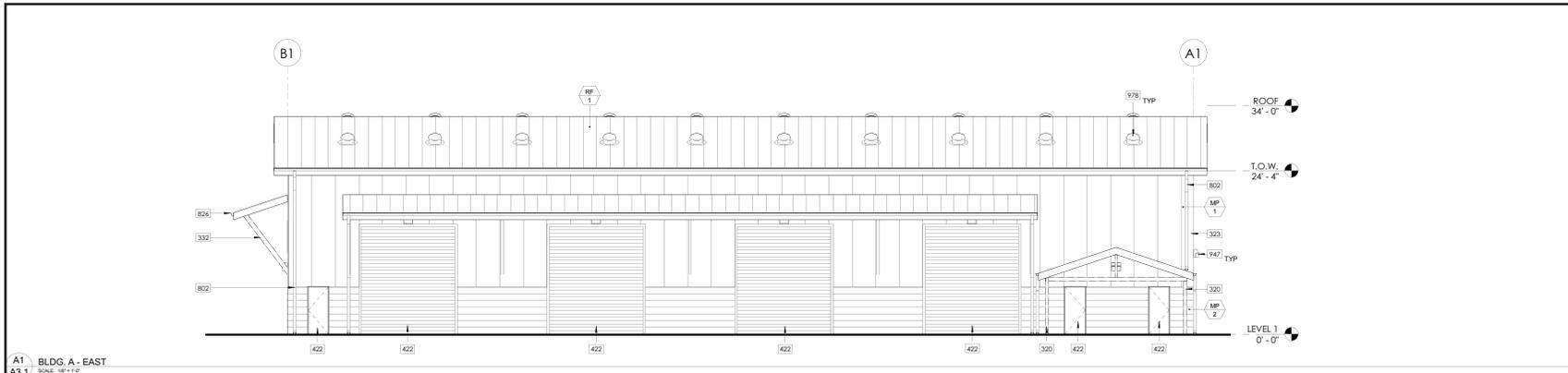
NOTE:

1. SEE SHEET A2 - FOR FIRST FLOOR DIMENSION PLAN
2. SEE SHEET A2 - FOR FIRST FLOOR REFLECTED CEILING PLAN

WALL LEGEND

- 2" INSULATED METAL PANEL WALL
- 5 1/2" METAL STUD WALL

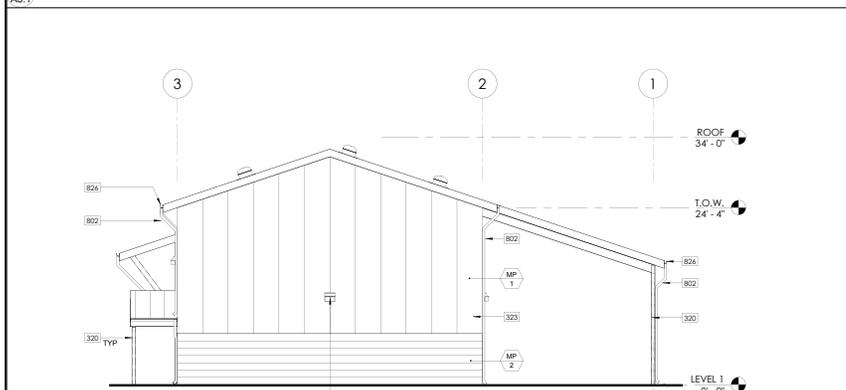




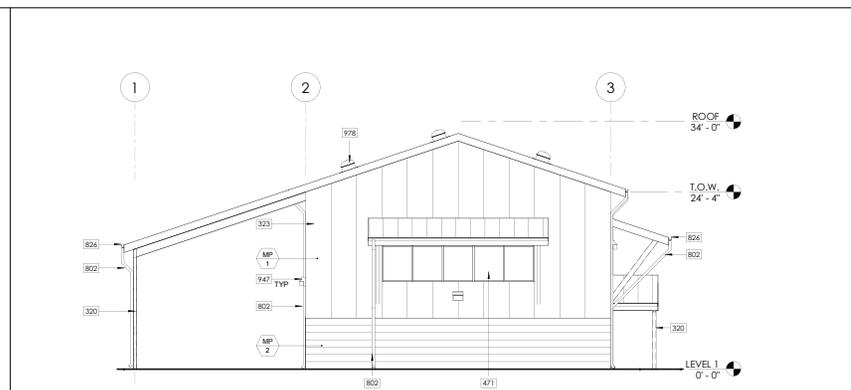
A1 BLDG. A - EAST
AS.1 30x6 - 10'-11"

CONSTRUCTION NOTES

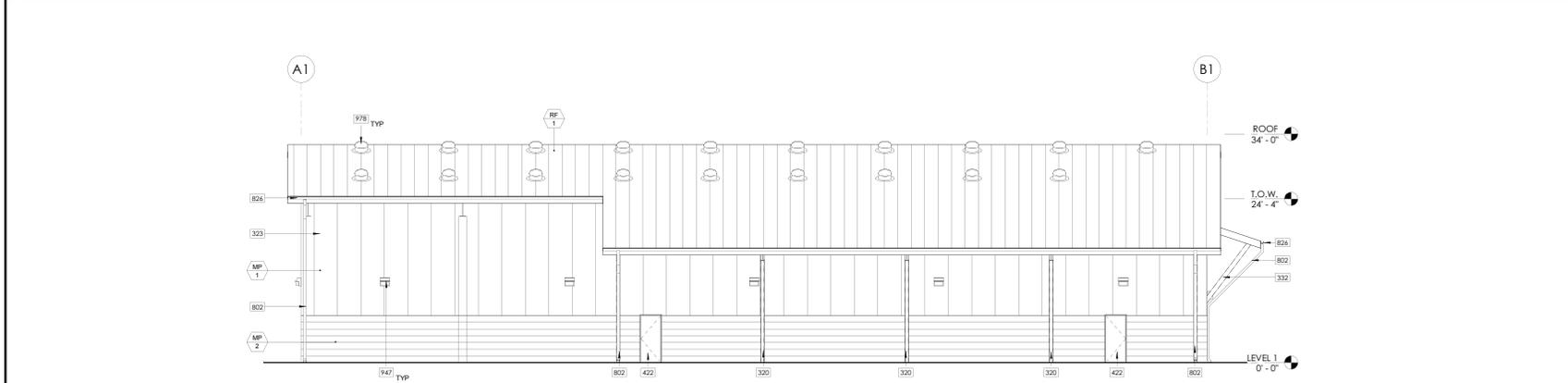
- 300 HOLLOW STRUCTURAL STEEL COLUMN, REFERENCE STRUCTURAL DRAWINGS
- 323 INSULATED METAL PANEL
- 332 ROOF STRUCTURE, REFERENCE STRUCTURAL DRAWINGS
- 422 DOOR AS SCHEDULED
- 471 WINDOW, REFERENCE WINDOW SCHEDULE
- 802 20 GA. METAL DOWNSPOUT (PAINT TO MATCH)
- 826 GUTTER
- 947 LIGHTING FIXTURE, REFERENCE ELECTRICAL DRAWINGS
- 978 TUBULAR SKYLIGHT



B1 BLDG. A - NORTH
AS.1 30x6 - 10'-11"



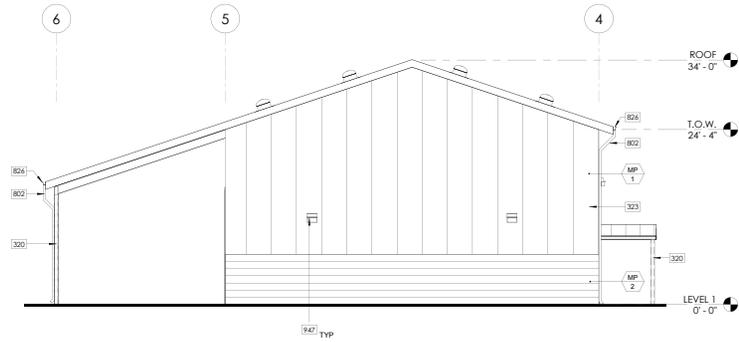
B3 BLDG. A - SOUTH
AS.1 30x6 - 10'-11"



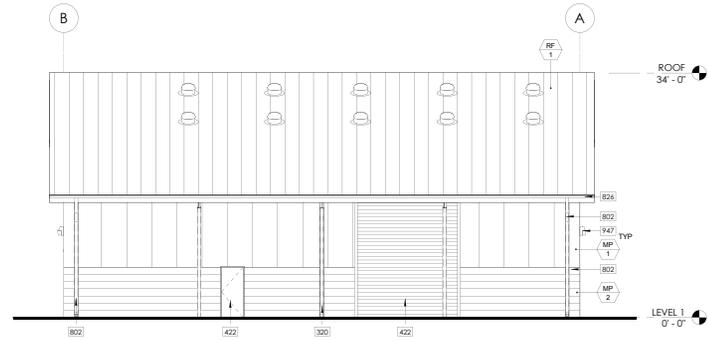
D1 BLDG. A - WEST
AS.1 30x6 - 10'-11"

CONSTRUCTION NOTES

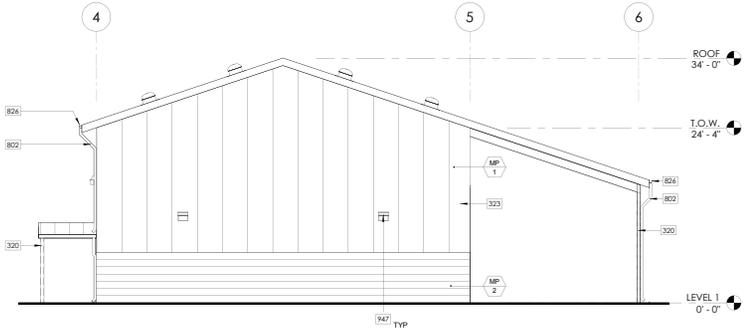
- 330 HOLLOW STRUCTURAL STEEL COLUMN, REFERENCE STRUCTURAL DRAWINGS
- 333 INSULATED METAL PANEL
- 422 DOOR AS SCHEDULED
- 802 20 GA. METAL DOWNSPOUT (PAINT TO MATCH)
- 824 CURTIN
- 947 LIGHTING FIXTURE, REFERENCE ELECTRICAL DRAWINGS



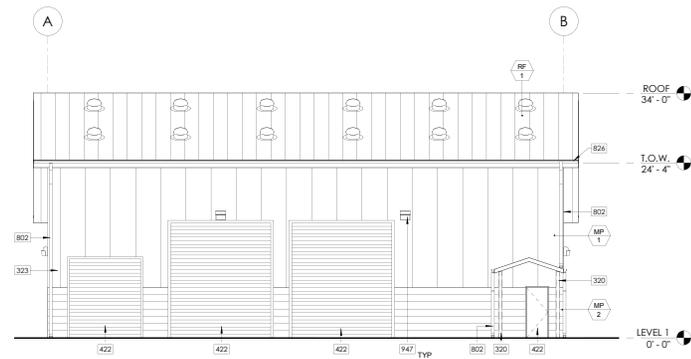
B1 BLDG. B - NORTH
A3.2 SCALE: 1/8" = 1'-0"



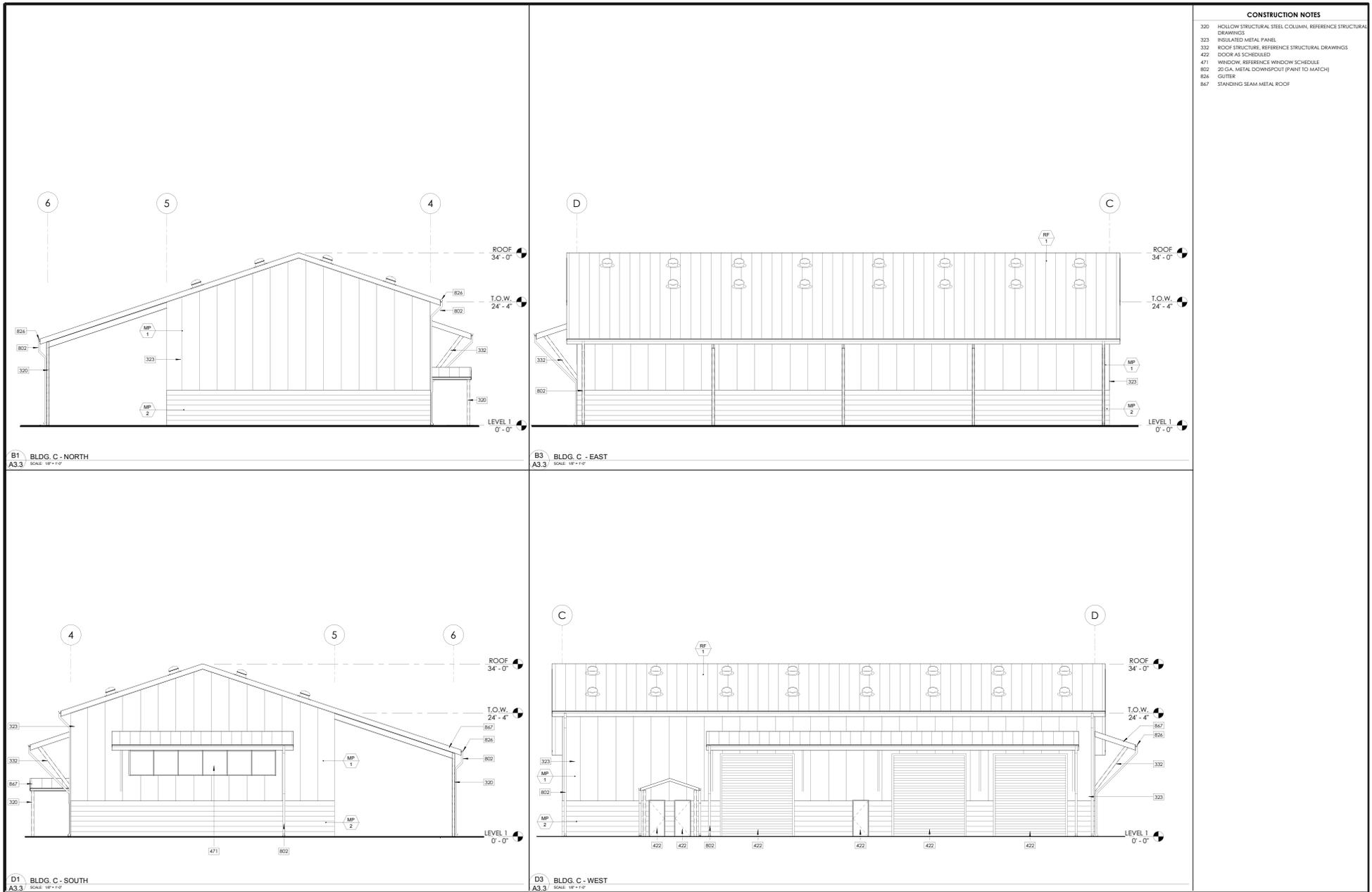
B3 BLDG. B - EAST
A3.2 SCALE: 1/8" = 1'-0"



D1 BLDG. B - SOUTH
A3.2 SCALE: 1/8" = 1'-0"



D3 BLDG. B - WEST
A3.2 SCALE: 1/8" = 1'-0"



APPENDIX I:
Responses Received During
30-day Public Review Period



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 19, 2016

Mr. Jay Paul
City of Escondido Planning Division
201 N. Broadway
Escondido, CA 92025
jpaul@escondido.org

Subject: Comments on the Mitigated Negative Declaration for the Wastewater Collection Yard-HARRF Project ENV15-0008 PHG15-0018 SCH#2016031059

Dear Mr. Paul:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced draft Mitigated Negative Declaration (DMND) for the Wastewater Collection Yard-Hale Avenue Resource Recovery Facility (HARRF) 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 (Fish and Game Code § 2050 *et seq.*) and Fish and Game Code section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) program. The City of Escondido (City) participated in the NCCP program and prepared a draft Subarea Plan (SAP) under the Multiple Habitat Conservation Program (MHCP) Subregional Plan that was circulated for public review in May 2001; however, it was never adopted by the City Council or submitted to the Department and the U.S. Fish and Wildlife Service for permitting.

The project site is located within the southwestern portion of the City, near the intersection of Avenida Del Diablo and Citracado Parkway. The project would develop approximately 1.8 acres of a larger, approximately 15.4-acre site as a new wastewater collections yard for the City's existing HARRF. The HARRF is an activated sludge, secondary wastewater treatment facility. The project would provide a new location for maintenance activities associated with the City's Wastewater Collections Division (routine maintenance of equipment and vehicles associated with the HARRF). The proposed new facilities would consist of three separate pre-fabricated metal buildings. Paved parking spaces would also be developed for use by employees working at the new facility. Access to the site would be from the existing driveway on Citracado Parkway along the southern area of the property, or from the existing driveways on Hale Avenue through the HARRF facility. A security gate would be installed along the access drive near the entrance off of Citracado Parkway. Two onsite bioretention areas are also proposed for stormwater treatment.

The Department offers the following comments and recommendations to assist the City in avoiding or minimizing potential project impacts on biological resources.

Mr. Jay Paul
City of Escondido Planning Division
April 19, 2016
Page 2 of 2

The Department recommends that mitigation measure BIO-1B remain as the exclusive mechanism in the final MND for mitigation of the non-native grassland impacted by the project. This measure more fully complies with subscript 4 of Table 5-2 of the draft SAP that requires all mitigation obligations associated with impacts to upland habitat be located inside the City's Focused Planning Area (FPA) or other approved FPA. Measure BIO-1A may not be biologically viable due to possible temporal loss of habitat value and the small and isolated nature of the parcel. In addition, the funding instrument, budget and management plan for conservation in perpetuity of any proposed on-site preserve should be identified in BIO-1A if it is retained in the final version of the MND.

We appreciate the opportunity to comment on the referenced DMND. Questions regarding this letter and further coordination on these issues should be directed to Eric Hollenbeck at (858) 467-2720 or Eric.Hollenbeck@wildlife.ca.gov.

Sincerely,



Gail K. Sevens
Environmental Program Manager
South Coast Region

cc: Janet Stuckrath (U.S. Fish and Wildlife Service)
Scott Morgan (State Clearinghouse)



County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
VECTOR CONTROL PROGRAM

5570 OVERLAND AVENUE, SUITE 102, SAN DIEGO, CA 92123
Phone: (858) 694-2888 Fax: (858) 571-4268
www.SDVector.com

AMY HARBERT
ASSISTANT DIRECTOR

April 20, 2016

City of Escondido, Planning Division
Attn.: Bill Martin, Asst. Director of Planning
201 North Broadway
Escondido, California 92025-2798

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION – WASTEWATER
COLLECTION YARD-HARRF (ENV15-0008; PHG15-0018)

Dear Mr. Martin:

Thank you for the opportunity to review the Notice of Intent to adopt a Mitigated Negative declaration for the above referenced project. The County of San Diego Vector Control Program (VCP) is responsible for the protection of public health through the surveillance and control of mosquitoes that are vectors for human disease including West Nile virus (WNV).

The VCP respectfully requests that during the design and construction of this project efforts are made to avoid impacts arising from potential mosquito breeding sources created by the project. Specifically, ensure construction-related depressions created by grading activities and vehicle tires, tree pits and landscaping do not result in depressions that will hold standing water. In addition, ensure bioretention areas and rip-rap do not create a potential mosquito breeding source. Any area that is capable of accumulating and holding at least ½ inch of water for more than 96 hours can support mosquito breeding and development.

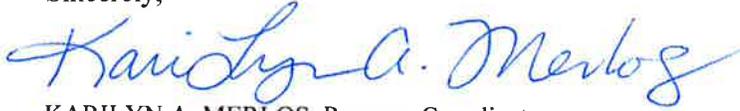
Please note, the VCP has the authority pursuant to state law and County Code to order the abatement of any mosquito breeding that does occur either during construction or after the project is completed that is determined to be a vector breeding public nuisance. VCP will exert that authority as necessary to protect public health if the project is not designed and constructed to prevent such breeding.

For your information, the County of San Diego Guidelines for Determining Significance for Vectors can be accessed at http://www.sandiegocounty.gov/content/dam/sdc/pds/docs/vector_guidelines.pdf and the California Department of Public Health Best Management Practices for Mosquito Control in California is available at <http://www.cdph.ca.gov/HealthInfo/discond/Documents/BMPforMosquitoControl07-12.pdf>

April 20, 2016
Mr. Martin
City of Escondido

The County VCP appreciates the opportunity to participate in the environmental review process for this project. If you have any questions regarding these comments, please contact me at 858-495-5799 or by e-mail at Karilyn.Merlos@sdcounty.ca.gov.

Sincerely,



KARILYN A. MERLOS, Program Coordinator
Vector Control Program

e-mail cc:

Keith Corry, Policy Advisor, Board of Supervisors, District 3
Chris Livoni, Policy Advisor, Board of Supervisors, District 5
Megan Jones, Group Program Manager, Land Use and Environment Group
Eric Lardy, Land Use/Environmental Planning Manager, Planning & Development Services
Joseph Farace, Group Program Manager, Advance Planning Division
Danny Serrano, Land Use/Environmental Planner, Planning & Development Services
Rebecca Lafreniere, Deputy Director, Department of Environmental Health