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ADDENDUM TO THE 2018 WATER, WASTEWATER, AND RECYCLED WATER MASTER PLAN PROGRAM ENVIRONMENTAL IMPACT REPORT

Montiel Lift Station and Force Main Replacement Project

Prepared for:
Vallecitos Water District
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San Marcos, California 92069
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September 2022

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TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

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1.0 INTRODUCTION AND PROJECT DESCRIPTION

This Addendum to the certified 2018 Program Environmental Impact Report (PEIR; State Clearinghouse [SCH] #2017111082) for the Vallecitos Water District (District, or VWD) 2018 Water, Wastewater, and Recycled Water Master Plan (2018 Master Plan) is intended to address infrastructure improvements previously identified for the Montiel Force Main and Lift Station Improvement Project [Capital Improvement Projects (CIP) #SP-09 and LS-1]. The 2018 Master Plan is intended to update the prior VWD 2008 Water, Wastewater, and Water Reclamation Master Plan (2008 Master Plan) to plan for those projects that would be needed if development occurs as forecast and account for a reduction in the projected service demand. As such, the 2018 Master Plan includes reduced or deferred CIP projects as compared to the 2008 Master Plan.

The California Environmental Quality Act (CEQA) Guidelines Sections 15162 through 15164 set forth the criteria for determining the appropriate additional environmental documentation, if any, to be completed when there is a previously certified EIR covering the project for which a subsequent discretionary action is required. This Environmental Review Update Checklist Form has been prepared in accordance with CEQA Guidelines Section 15164(e) to explain the rationale for determining whether any additional environmental documentation is needed for the subject discretionary action.

In accordance with CEQA Guidelines Section 15164, this document tiers from the certified 2018 Vallecitos Water District Water, Wastewater, and Recycled Water Master Plan PEIR which updated the previously prepared 2011 Vallecitos Water District Water, Wastewater, and Recycled Water Master Plan PEIR. The VWD serves as the lead agency, as defined by CEQA Guidelines Section 15367, for review and approval of the CEQA Addendum. CEQA Guidelines Section 15164(a) states that the lead agency or responsible agency shall prepare an Addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a Subsequent or Supplemental EIR have occurred. Pursuant to CEQA Guidelines Section 15164(e), the analysis provided herein demonstrates that an addendum is appropriate because none of the conditions set forth apply. No change in circumstances has occurred, and no new information has become available for the project since the time of certification of the 2018 Master Plan PEIR that triggers the need to prepare a subsequent EIR or MND. Pursuant to CEQA Guidelines Section 15164(d), this Addendum is intended to inform the District's consideration and action on the project.

1.1 PROJECT LOCATION

The project site lies within the service boundaries of the VWD. The majority of lands affected by the proposed improvements are located in the City of San Marcos in northern San Diego County; refer to *Figure 1*, *Regional and Project Vicinity*. The proposed pipeline alignment would affect portions of Montiel Road, Nordahl Road, Center Drive, M Lane, and surface parking areas, and would cross several jurisdictions which include the City of San Marcos, VWD, and the California Department of Transportation (Caltrans).

The existing Montiel lift station is located within a 40-foot by 40-foot sewer lift station easement located at 2175 Montiel Road in San Marcos, adjacent to the east of the existing Coles Fine Flooring retail store and SR 78. The existing 6-inch ductile iron force main discharges to a gravity sewer at existing manhole 1694 (MH 1694) in the Montiel Road/Nordahl Road intersection. The project would extend the force main to MH 1704, located west of Nordahl Road in the Nordahl Shopping Center which includes an existing Walmart, Kohl's, and Guitar Center, among other retail stores. Refer to *Figure 2*, *CIP Project Locations*, and Figures 4A and 4B, Site Photographs.

1.2 PROJECT BACKGROUND

The VWD provides potable water and wastewater services within northern San Diego County, including service to the City of San Marcos; parts of the Cities of Carlsbad, Escondido, and Vista; and unincorporated areas within the County of San Diego. The District also wholesales recycled water to the City of Carlsbad and the Olivenhain Municipal Water District.

The VWD service area supports four existing sewer lift stations (LS-1, Lake San Marcos, Questhaven, and Montiel), with the Montiel lift station having the smallest capacity of the four. The 2018 VWD Water, Wastewater, and Recycled Water Master Plan (2018 Master Plan) identifies the existing Montiel lift station as having a capacity of 100 gallons per minute (gpm) with an ultimate future peak wet weather flow of 275 gpm.

The Montiel lift station collects flow from two influent pipelines north of State Route 78 (SR 78) and delivers it via force main to the VWD gravity sewer system at the intersection of Montiel Road and Nordahl Road in San Marcos. The Montiel Gravity Outfall (MGO) project proposed to eliminate the need for pumping by diverting flow by gravity from the lift station across SR 78, through industrial parcels, to Mission Road in Escondido with connection to existing pipelines. The MGO project was suspended after completion of the preliminary design phase with the March 6, 2019 decision by the City of Escondido to not accept VWD flows into the City of Escondido wastewater collection system.

Without the proposed improvements, lift station, force main, and gravity and pipeline capacity deficiencies must be addressed to accommodate future planned growth in the area, which is anticipated to include the hotel development on Leora Lane adjacent to the Montiel lift station and a 9-lot subdivision. VWD capital improvement planning reports have identified that the Montiel lift station, force main, and a section of trunk sewer downstream of the force main are undersized for planned development within the tributary sewer shed.

The Montiel lift station is therefore proposed to be upgraded to comply with current standards. Additionally, the existing ductile iron pipe force main has reached the end of its useful life and replacement with new C900 PVC piping is proposed as a more economical solution than rehabilitation.

The intended force main (CIP #SP-09) and Montiel lift station (CIP #LS-1) improvements were identified in the 2018 Master Plan; however, such improvements have been slightly revised with the current project as proposed, based upon further analysis and available technologies. As currently designed, the alignment for the proposed force main sewer infrastructure improvements varies slightly from that originally analyzed in the 2018 Master Plan PEIR; refer to *Figure 2*, *CIP Project Locations*, and *Figure 3A*, *Proposed*

Improvements. Additionally, the design of the lift station has been revised to accommodate the required components and to improve access for ongoing maintenance.

However, the improvements as currently designed remain in substantial conformance with that originally identified in the 2018 Master Plan and as evaluated in the 2018 Master Plan PEIR. As demonstrated herein, potential environmental impacts and required mitigation measures for the project would remain consistent with those previously identified in the 2018 Master Plan PEIR. The proposed improvements would not result in any new significant environmental impacts or mitigation measures as compared to those evaluated in the previous 2018 Master Plan PEIR, nor would they result in a greater degree of significance of impacts. For these reasons, CEQA review of the proposed improvements do not warrant preparation of a subsequent or supplemental EIR or Mitigated Negative Declaration. The proposed action is considered to be covered by the scope of the 2018 Master Plan PEIR. Therefore, the proposed project that is the basis of this Addendum may be approved by the District as a subsequent activity covered within the scope of the 2018 Master Plan PEIR.

Additionally, other associated activities (e.g., manhole rehabilitation, pipe relining to support adequate wastewater flows and prevent leakage and/or failure, etc.) considered to be maintenance activities by the District are proposed to ensure that the sewer infrastructure system continues to function properly and that adequate service can be provided to District customers. These improvements were not specifically identified as capital improvement projects in the 2008 or 2018 VWD Master Plans, and therefore, were not evaluated in the associated EIRs. However, such improvements are considered herein in association with CIPs #SP-09 and #LS-1, as appropriate.

1.3 EXISTING CONDITIONS

Under current conditions, the Montiel lift station pumps wastewater collected from the Montiel sewer shed through a 6-inch force main to a gravity sewer heading west through the Nordahl Shopping Center at the intersection of Nordahl Road and Montiel Road in San Marcos.

Several system deficiencies have been identified with the current infrastructure:

- The Montiel lift station has exceeded its useful life expectancy and requires replacement. The VWD 2018 Master Plan identifies replacement of this lift station with a 200 gpm facility.
- The 6-inch force main serving the Montiel lift station is in danger of failing and is in severe need of replacement.

The existing 8-inch gravity sewer that transports wastewater from the 6-inch force main through the Nordahl Shopping Center is undersized and cannot serve additional development in the Montiel sewer shed without enlargement. The VWD 2018 Master Plan identifies upsizing of this 3,400-foot pipeline.

1.4 PROJECT DESCRIPTION

Lift Station Replacement

The project proposes construction of a sewer lift station. The lift station would be constructed within the boundaries of and existing 40-foot x 40-foot utility easement, located on the east side of the Cole's Fine

Flooring store and adjacent to SR 78, which currently supports the existing lift station and wet well. The existing pump station and wet well would be demolished in place prior to construction of the new lift station.

The following describes the components of the proposed lift station:

- Below grade 21' x 30' (inside dimensions) wet well lift station structure, and emergency storage capacity for 4 hours of ultimate peak wet weather flow (8,824 cubic feet). Chain-link fence (eight feet in height) would be installed along the perimeter of the lift station improvements.
- Below grade 11'-9" x 7' (inside dimensions) concrete valve vault.
- Three submersible sewage pumps (lead-lag-standby), each with variable frequency drives (VFDs) capable of meeting design flow rate with one out of service; 275 gpm each (400 gpm ultimate system) with total dynamic head (TDH) 96 feet and 20 HP ratings in wet well.
- TriOxyn injection system, Enviroprep mixing and suspension system and ventilation system in wet well.
- Outdoor emergency 60 kilowatt diesel generator with 24 hours integral fuel tank and automatic transfer switch for back-up power, and genset concrete pad.
- Above ground chemical storage area, electrical/supervisory control and data acquisition (SCADA), antenna mast, and control room with restroom
- Approximately 60 linear feet of retaining wall and approximately 35 linear feet of concrete swale.
- Approximately 46 linear feet of permanent 8-inch diameter high density polyethylene (HDPE) DR19 gravity sewer bypass line.

The land area on which the existing lift station is located is highly disturbed/developed. Access to the lift station occurs via an existing 20-foot wide paved utility easement. Portions of the existing asphalt and miscellaneous base of this access drive would be removed and replaced in-kind as part of project construction; refer to *Figure 4B*, *Site Photographs*.

Modification of the existing manhole adjacent to the existing lift station and installation of a proposed 6-inch sewer force main and gravity bypass piping would occur prior to demolition of the existing pump station and wet well and after the new piping is accepted. Additionally, the proposed above ground chemical storage area, electrical/SCADA and control room with restroom, and genset concrete pad would be constructed within a utility easement located adjacent to the existing paved access drive; refer to *Figure 3B*, *Proposed Lift Station Improvements*. The utility easement would be composed of an existing 20-foot wide easement and a proposed 10-foot wide easement (to be located between the existing 20-foot easement and the property line of the adjoining property to the east).

The lift station wet well will be approximately 35 foot deep. All pumps will be installed in the wet well. The emergency generator will be installed with sound attenuated enclosure to minimize exterior noise to below applicable noise level thresholds enforced by the City of San Marcos.

The project would be designed to comply with area classification requirements in accordance with National Electric Code and National Fire Protection Association (NFTA) 820; ACI 350, Code Requirements for Environmental Engineering Concrete Structures; 2016 California Build Code; and ASCE 7-10. The lift station would incorporate high-efficiency pumps and motors that meet or exceed the energy efficiency levels listed in the National Electric Manufacturers Associations MGI-1993 publication, as recommended by the California Energy Commission.

Sewer Force Main

The sewer force main design would include the following elements:

- New 6-inch diameter HDPE DR 19 force main from the lift station to Manhole 1712 (MH 1712), located on an existing access roadway. Total force main length would be approximately 4,135 linear feet. The proposed force main would stop short of the Caltrans right-of-way at Station 1+22.09 to avoid the need to obtain permit approval from Caltrans (per final design).
- Approximately 26 linear feet of new 8-inch diameter PVC SDR 35 sewer gravity pipe from Manhole 1712 (MH 1712) to Manhole 1719 (MH 1719) to connect to the existing gravity.
- Three of 2-inch diameter air valve assemblies and two of 4-inch diameter blow-off assemblies.

The project would result in replacement of approximately 426 linear feet existing 6-inch ductile iron force main in place, from the new lift station to existing Manhole 1699 (MH 1699) at Montiel Road.

From the lift station eastward, the project would rehabilitate or replace in place approximately 1,366 linear feet of the existing 10-inch DIP sewer pipe with cured in place pipe (CIPP) or 10-inch PVC SDR 35 sewer pipe within an existing 15 foot wide utility easement adjacent to Caltrans SR 78 right-of-way. Rehabilitation of seven existing manholes would also be required.

Site Access

Short-Term Construction Access and Staging

Access to the lift station site would be from an existing asphalt driveway within an existing 20-foot wide utility easement extending to Montiel Road. Portions of the existing asphalt and miscellaneous base of the access drive would be removed and replaced in-kind as part of project construction.

Access along the sewer pipeline alignment would vary, depending on where construction is underway. Access to the pipeline in the eastern portion of the alignment would be more restricted due to existing development and would occur via existing utility easements and within roadway rights-of-way. Access to the pipeline in the central and western portions of the alignment would be more easily accessed, particularly in the large parking lots of the existing retail center, and within utility easements/roadway rights-of-way.

Construction staging areas would be temporarily located within existing public utility easements or roadway rights-of-way. A laydown/staging area is proposed on the disturbed vacant lot adjacent to the east of the Cole's Fine Flooring store in the vicinity of the existing lift station. All equipment and materials

would be removed once construction is completed; refer also to *Figure 3A*, *Proposed Improvements*, and *Figure 3B*, *Proposed Lift Station Improvements*.

Long-Term Operations and Maintenance Access

Access to the infrastructure facilities for ongoing maintenance purposes would occur similar to that as for the construction phase. Access would continue to be provided via existing public utility easements and/or roadway rights-of-way. It is anticipated that routine inspection and maintenance would occur on an annual basis, and as needed when it is identified that any repairs are required.

Lighting

Project construction would occur during typical daytime hours (generally 7:00 a.m. to 6:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday) consistent with the applicable agency regulations pertaining to allowable hours of construction. The only nighttime work that may occur would be at the Nordahl Road/Montiel Road intersection which is highly congested under present conditions. If determined to be appropriate, the City may require that some work at this intersection be performed during nighttime hours in order to minimize potential disruption to area traffic circulation, particularly during peak hours. Any nighttime lighting would be temporary and would be shielded and directed downward to reduce potential adverse lighting effects on surrounding land uses.

Limited permanent lighting would be installed at the proposed control room for the lift station to allow for access/maintenance purposes in the event of an emergency. As required by the Master Plan, low illumination, advanced fluorescent interior lighting, and high-intensity discharge outdoor lighting would be incorporated. Lighting would only be used when personnel are on-site at night and lighting is required. Any exterior lighting would be manually controlled and/or motion-sensored to ensure that such lighting is reduced to a minimum. No other permanent nighttime lighting would be installed for access or maintenance purposes (i.e., along the pipeline alignment).

Construction

Site Earthwork and Excavation

Site preparation and construction would occur in accordance with accepted construction standards and requirements. All construction for the pipeline improvements would occur within existing utility easements, temporary construction easements, or roadway rights-of-way.

Excavation would be required in the vicinity of the existing Montiel lift station to allow for the proposed improvements. As a result of project grading requirements, approximately 100 c.y. of soil would be imported to the site and approximately 537 c.y. of soil would be excavated and exported. Additionally, project construction would involve an estimated 142 c.y. of rock handling. It is anticipated that excavation activities for the lift station improvements would extend to a maximum of approximately 40 feet below ground surface. Following completion of construction, any exposed ground surface areas disturbed by construction activities would be returned to their prior condition (i.e., pavement replacement).

The sewer force main improvements would involve trench excavation; preparing the bed for placement of the pipeline; installing the pipe in the trench; backfilling; and restoring the disturbance area. Trenching

along the pipeline alignment is estimated to be approximately 2 feet in width and would reach an estimated maximum depth of 8 feet below ground surface. Existing paving grind and overlay is proposed to varying widths along the alignment to meet City of San Marcos requirements, with replacement of any damaged traffic loops.

Schedule

Construction of the proposed improvements is anticipated to be completed over a period of approximately 12 months. Construction is not proposed to be phased. Construction would primarily occur during daylight hours, generally Monday through Friday, between 7:00 a.m. and 6:00 p.m. and 8:00 a.m. to 5:00 p.m. on Saturday, as required to meet the construction schedule, and consistent with restrictions set forth in the City of San Marcos Noise Ordinance (Municipal Code, Chapter 10.24, Noise).

If deemed appropriate, some nighttime work may potentially occur at the Nordahl Road/Montiel Road intersection to avoid disruption of traffic circulation patterns in the area affected by the proposed improvements; it is not anticipated that nighttime work would be required at other locations where project construction activities are proposed. Construction on Sunday or during nighttime hours would require a waiver from the City Manager. If needed, construction work performed outside of the normal work schedule would be coordinated with other affected agencies as appropriate and would conform to applicable public notification requirements to ensure that area landowners are aware of and can plan for any temporary disruption in service.

Operations and Maintenance

Typical ongoing operations and maintenance activities over the long-term would include, but may not be limited to, routine monitoring, documentation, and reporting of equipment conditions and maintenance needs; routine maintenance; and repair on an as-needed or emergency basis. It is anticipated that any ongoing monitoring and maintenance would require a minimal number of staff. Additional staff may be required for intermittent repair or replacement purposes, depending on the nature of the work to be performed.

The lift station would be remotely monitored over the long-term via a supervisory control and data acquisition (SCADA) system. The SCADA system would be integrated with the existing VWD SCADA system and radio antenna (to be removed and replaced on-site during the construction phase). It is anticipated that the SCADA equipment would be connected to the power grid for operational purposes, with a small battery pack installed for emergency back-up.

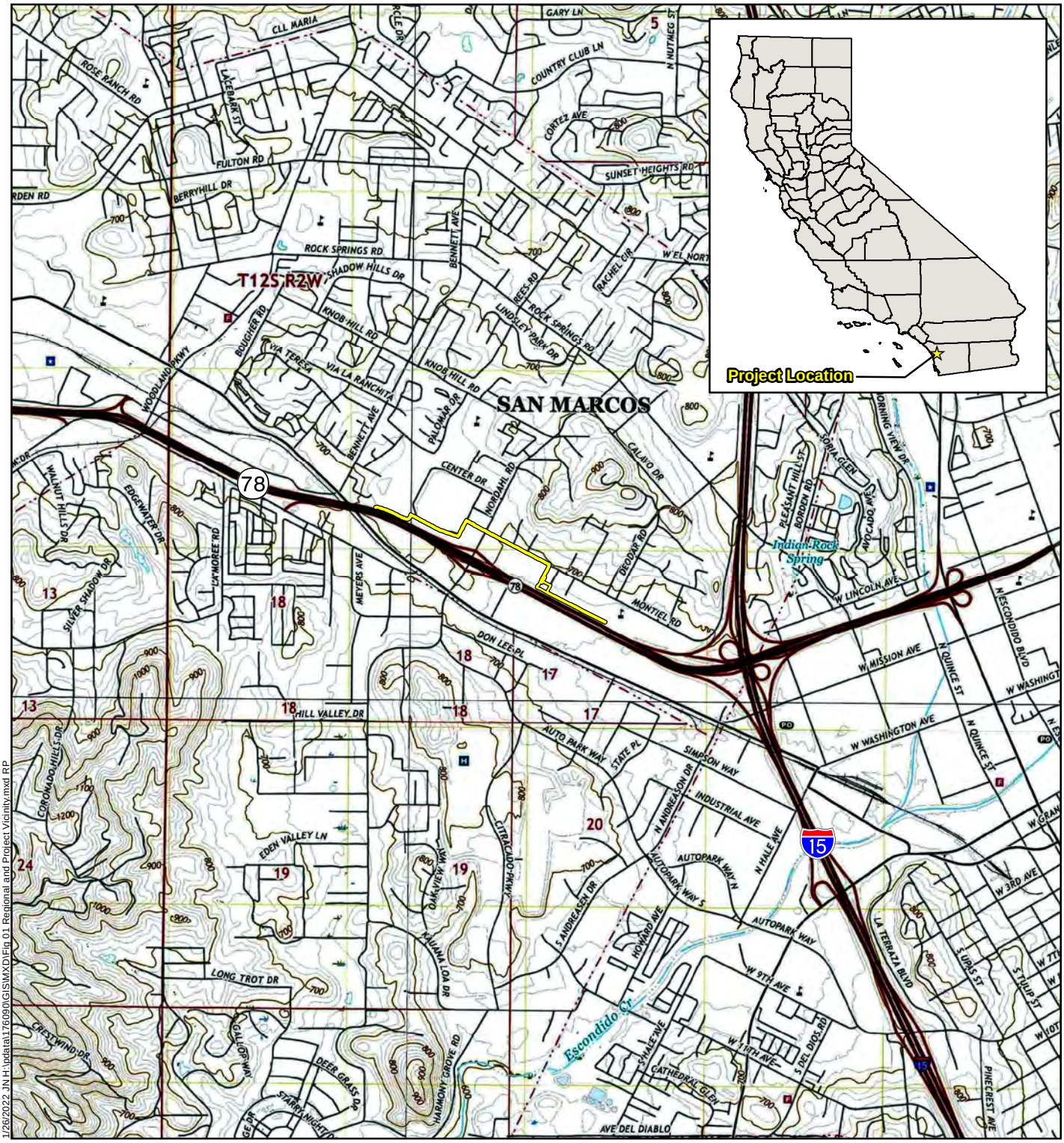
Anticipated Permits

An encroachment permit would be required from the City of San Marcos for any work performed within public roadway rights-of-way. Additionally, City approval of a grading permit would be required for earthwork per the final project design. Coordination with potentially affected utility companies (e.g., electrical, cable, etc.) prior to construction would also be required to ensure that conflicts do not occur.

A construction phase Storm Water Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan would be prepared in accordance with City of San Marcos regulatory requirements. This would be coordinated with the Cities of San Marcos to ensure compliance with the required right-of-way permits.

Groundwater was not encountered during subsurface explorations performed in 2017 and 2020 at the lift station site and at locations along the anticipated sewer force main alignment (SCST 2017 and 2020). Dewatering would not be applicable if the proposed improvements are not extended near/below the groundwater level; however, the presence of groundwater may vary with location and time. If groundwater is encountered, a Special Use Discharge Permit from the Encina Wastewater District would typically be required for discharge to the VWD sewer system.

Additionally, coordination with potentially affected utility companies (electrical, cable, etc.) would be required to avoid potential conflicts.



Legend

Project Site

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT

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0 0.25 0.5 Miles

Source: USGS 7.5-Minute topographic quadrangle maps: *Escondido, Rancho Santa Fe, San Marcos, Valley Center, California (2018)*

Regional and Project Vicinity

Figure 1

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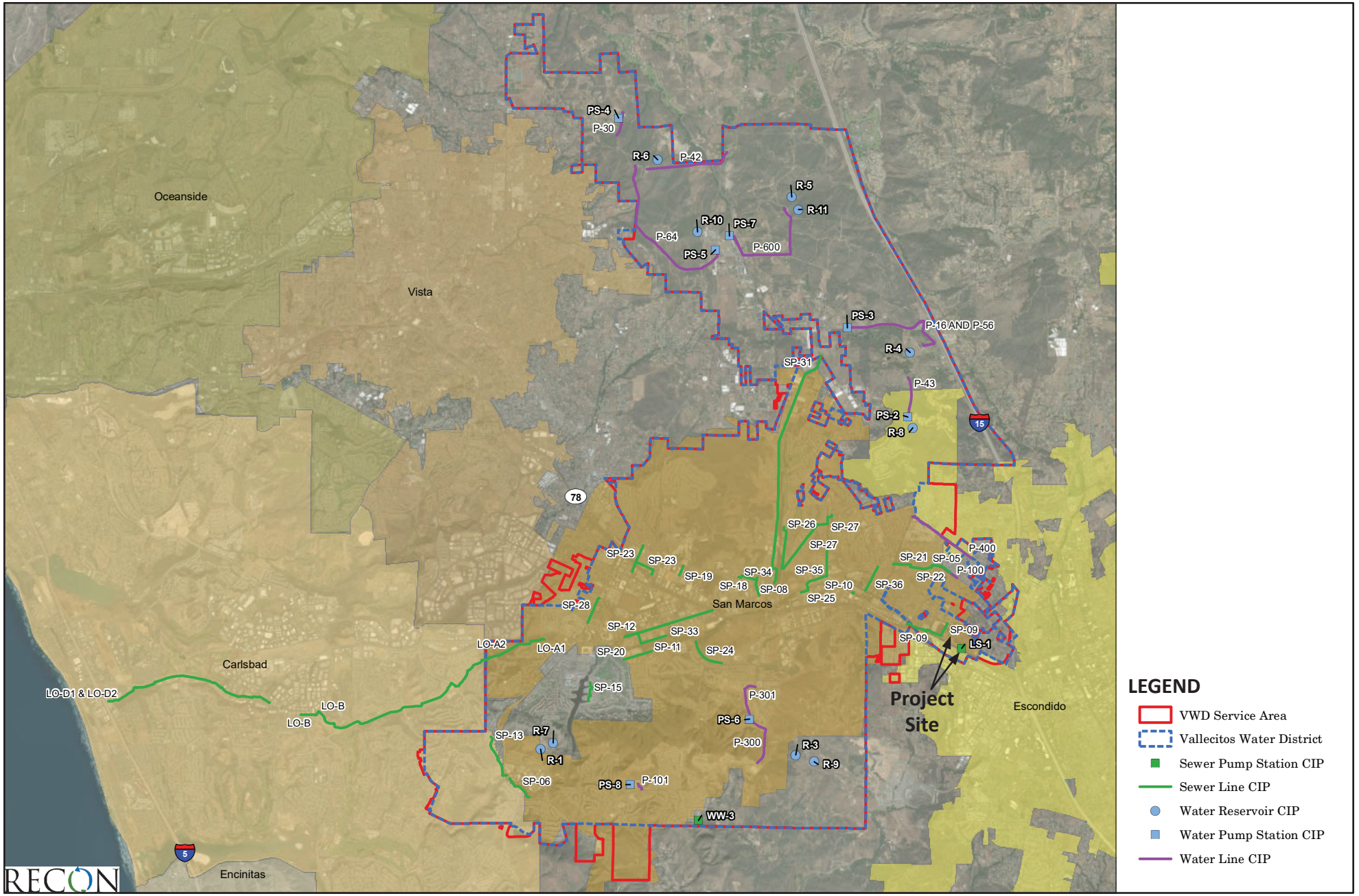

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT

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0 Miles 1.2

Source: Vallecitos Water District 2018 Water, Wastewater, and Recycled Water Master Plan Draft PEIR

CIP Project Locations

Figure 2

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MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT

Proposed Improvements

Figure 3A

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0 290 580 Feet

Source: ESRI, Michael Baker International

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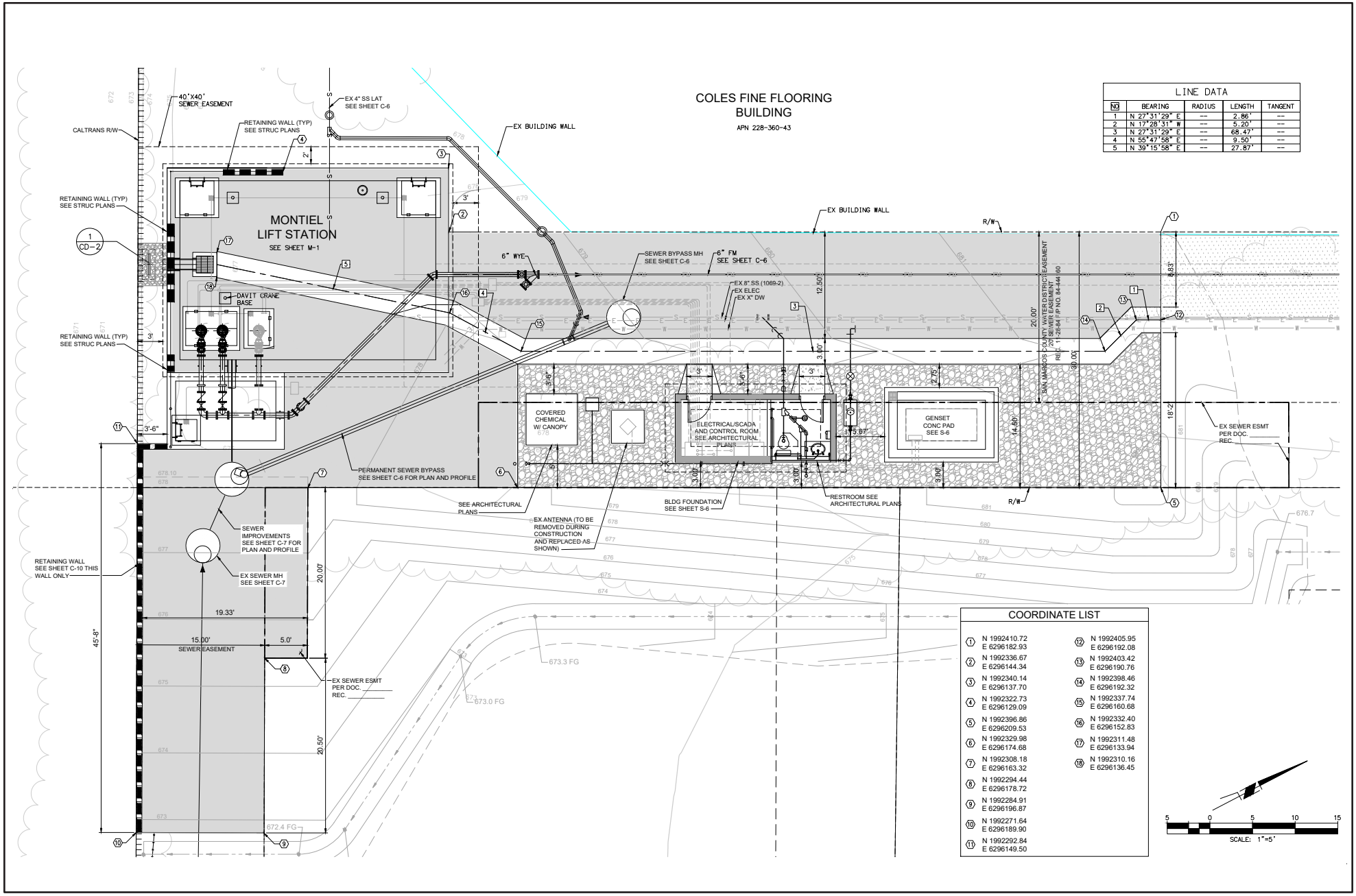

LINE DATA				
NO	BEARING	RADIUS	LENGTH	TANGENT
1	N 27°31'29" E	---	2.86'	---
2	N 17°28'31" W	---	5.20'	---
3	N 27°31'29" E	---	68.47'	---
4	N 55°47'58" E	---	9.50'	---
5	N 39°15'58" E	---	27.87'	---

COORDINATE LIST	
① N 1992410.72 E 6296182.93	⑫ N 1992405.95 E 6296192.08
② N 1992336.67 E 6296144.34	⑬ N 1992403.42 E 6296190.76
③ N 1992340.14 E 6296137.70	⑭ N 1992398.46 E 6296192.32
④ N 1992322.73 E 6296129.09	⑮ N 1992337.74 E 6296160.68
⑤ N 1992396.86 E 6296209.53	⑯ N 1992332.40 E 6296152.83
⑥ N 1992329.98 E 6296174.68	⑰ N 1992311.48 E 6296133.94
⑦ N 1992308.18 E 6296163.32	⑱ N 1992310.16 E 6296136.45
⑧ N 1992294.44 E 6296178.72	
⑨ N 1992284.91 E 6296196.87	
⑩ N 1992271.64 E 6296189.90	
⑪ N 1992292.84 E 6296149.50	

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT

Proposed Lift Station Improvements

Figure 3B

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Source: Michael Baker International, 7/25/22

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Photograph 1: Standing at the western end of the project, facing east at one of two manholes located along the western terminus.

Photograph 2: Standing at the western end of the project, facing east along an earthen access road.

Photograph 3: Standing near the corner of Center Drive and M Lane, facing southeast.

Photograph 4: Standing at the junction of Montiel Road and Via Flora Road, facing northwest.

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT

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Site Photographs

Figure 4A

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Photograph 5: Standing near the junction of Montiel Road and Alsing Drive, facing southeast.

Photograph 6: Facing southwest along the paved access road adjacent to Coles Fine Flooring and the existing Montiel Lift Station (visible in the center of the photo in the background).

Photograph 7: Facing southwest at the Montiel Lift Station.

Photograph 8: Standing near the eastern terminus of the project, facing northwest across a vacant lot.

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT

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Site Photographs

Figure 4B

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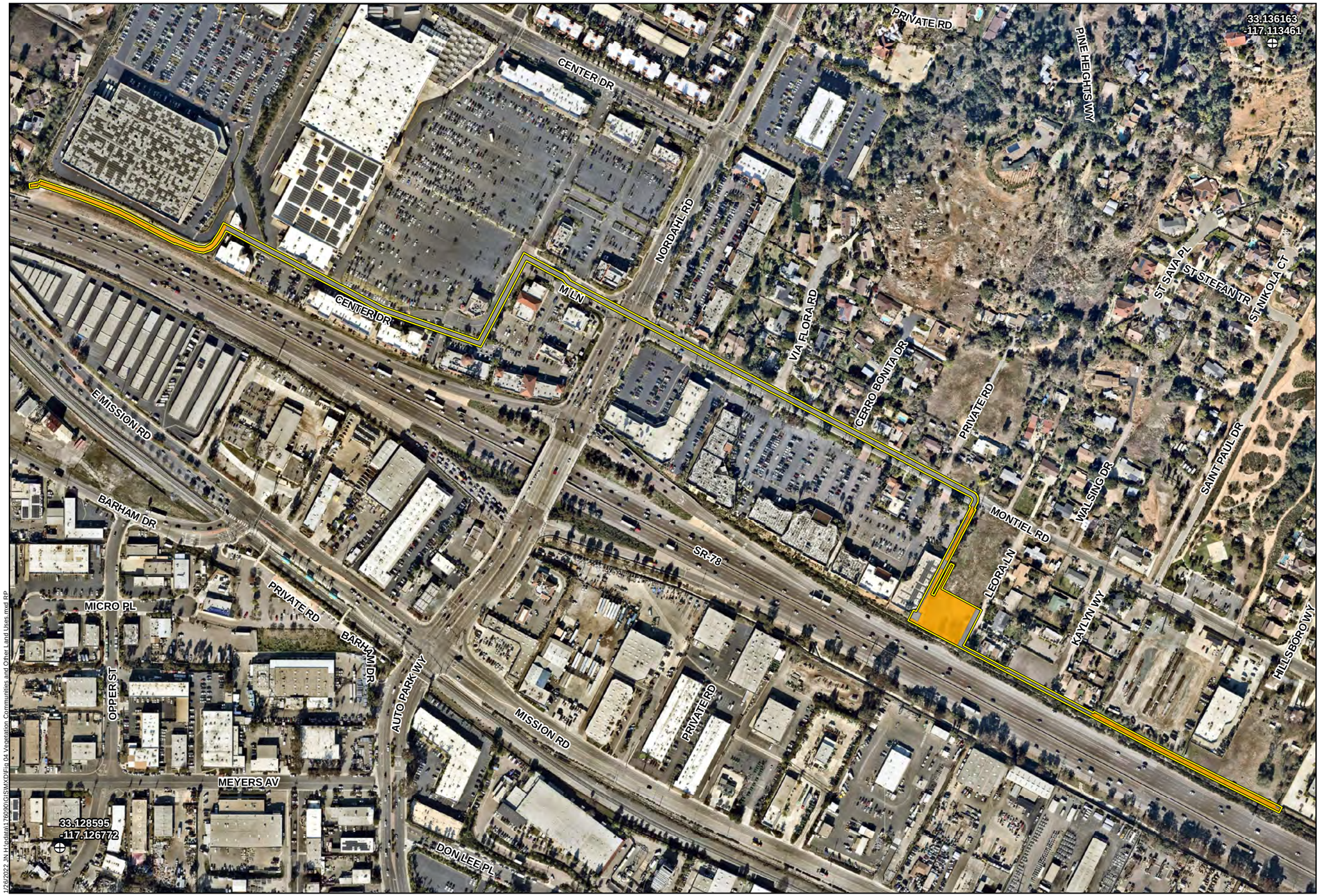

Legend

- Project Site
- Disturbed Habitat (1.34 acres)
- Urban/Developed (1.70 acres)
- Reference Point

0 160 320 Feet

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT

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Source: Nearmap (01/2022)

Vegetation Communities and Other Land Uses

Figure 5

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1.5 PURPOSE AND BASIS FOR DECISION TO PREPARE AN ADDENDUM

CEQA Guidelines Sections 15162 through 15164 set forth the criteria for determining the appropriate additional environmental documentation, if any, to be completed when there is a previously certified EIR for a project.

The previous 2018 Vallecitos Water, Wastewater, and Recycled Water Master Plan (Master Plan) and 2018 Vallecitos Water District Water, Wastewater, and Recycled Water Master Plan Program Environmental Impacts Report (PEIR) referenced above comply with CEQA Guidelines Section 15168(a), which requires that a programmatic environmental document be prepared for a series of actions that can be characterized as one large program, with each action related as logical parts in the chain of contemplated actions. Typically, such a program can involve individual activities/projects carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways (Section 15168[a][4]).

PEIRs generally analyze broad environmental effects of the program acknowledging that site-specific environmental reviews may be required for subsequent implementing activities/projects. When a subsequent project within the program is proposed for implementation, it must undergo additional CEQA review (Section 15168[c]) to confirm whether it would result in any new significant environmental effects or increase the severity of any previously identified environmental effects.

CEQA Guidelines Sections 15162-15164 provide the circumstances under which a subsequent project that has been evaluated in a previously certified PEIR may warrant a subsequent EIR or Mitigated Negative Declaration (MND), a supplement to an EIR or MND, or an Addendum to an EIR or MND, based on the significance or severity of new or increased environmental impacts that could result from project changes, new information, changing circumstances, or changes to mitigation measures or alternatives. If determined that a subsequent project would not have any new or greater significant environmental effects than what was concluded for that project in a PEIR, then a subsequent or supplemental EIR or MND is not required, and the Lead Agency shall prepare an addendum to approve the subsequent project (Section 15164[a] and [b]).

The analysis in this Addendum is based on engineering design plans prepared for CIP #SP-09 and LS-1 involving force main and lift station improvements; refer to *Figure 3A*, *Proposed Improvements*, and *Figure 3B*, *Proposed Lift Station Improvements*. Pursuant to CEQA Guidelines Section 15164(e), the analysis provided herein demonstrates that an addendum is appropriate because none of the conditions set forth apply. No change in circumstances has occurred, and no new information has become available for the project since the time of certification of the 2018 Master Plan PEIR that triggers the need to prepare a subsequent EIR or MND. Pursuant to CEQA Guidelines Section 15164(d), this Addendum is intended to inform the District's consideration and action on the project. As applicable, other responsible agencies having approval authority may also utilize this Addendum for their required approvals.

As applicable, mitigation measures identified in the 2018 Master Plan PEIR would be implemented to reduce potential environmental effects resulting with the proposed improvements to a level of less than significant. Refer to the evaluations provided in Section 2.0, Environmental Initial Study Checklist, below, for additional discussion. The project could potentially result in one or more of the following environmental effects:

☐ Aesthetics	☐ Agriculture/Forestry Resources	■ Air Quality
■ Biological Resources	■ Cultural Resources	☐ Energy
■ Geology, Soils, and Paleontology	☐ Greenhouse Gas Emissions	☐ Hazards/Hazardous Materials
☐ Hydrology/Water Quality	■ Landform Alteration and Aesthetics	☐ Mineral Resources
■ Noise	☐ Land Use and Planning	☐ Public Safety
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	■ Mandatory Findings of Significance

1.6 DETERMINATION

On the basis of this initial evaluation :

●	I find that the proposed project WOULD NOT have any significant effects on the environment that either have not already been analyzed in the prior PEIR or that are more significant than previously analyzed. Pursuant to CEQA Guidelines Section 15168(c}, CEQA does not apply to such effects. A Notice of Determination (Section 15094) will be filed.
○	I find that the proposed project will have effects that either have not been analyzed in the prior PEIR or are more significant than described in the prior PEIR . With respect to those effects that are subject to CEQA, I find that such effects WOULD NOT be significant and a NEGATIVE DECLARATION will be prepared.
○	I find that the proposed project will have effects that either have not been analyzed in the prior PEIR or are more significant than described in the prior PEIR . I find that although those effects could be significant, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
○	I find that the proposed project would have effects that either have not been analyzed in a prior PEIR or are more significant than described in the prior PEIR. I find that those effects WOULD be significant, and an ENVIRONMENTAL IMPACT REPORT is required to analyze those effects that are subject to CEQA.

Signature

Date

For

1.7 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. For the purposes of this checklist, "prior PEIR" means the program environmental impact report certified for the 2018 Master Plan.
4. Once the lead agency has determined that a particular physical impact may occur as a result of an improvement contemplated under the Master Plan, then the checklist must indicate whether that impact has already been analyzed in the prior PEIR or whether the new significant impact is due to unusual circumstances or substantial new information, as indicated in the column headings. If the effect of the project is not more significant than what has already been analyzed, that effect of the project is not subject to CEQA. The brief explanation accompanying this determination should include page and section references to the portions of the prior PEIR containing the analysis of that effect. The brief explanation shall also indicate whether the prior PEIR included any mitigation measures to substantially lessen that effect and whether those measures have been incorporated into the project.
5. If all effects of an improvement contemplated under the Master Plan were analyzed in the prior PEIR, CEQA does not apply to the project, and the lead agency shall file a Notice of Determination.
6. Effects of an improvement contemplated under the Master Plan that has not been analyzed in a prior EIR are subject to CEQA. With respect to those effects of individual improvements contemplated under the 2018 Master Plan that are subject to CEQA, the checklist shall indicate whether impacts have been previously analyzed in the PEIR, new significant impacts due to unusual circumstances or substantial new information, less than significant impact with PEIR mitigation measures applied, less than significant impact, or no impact If there are one or more "Significant Impact" entries when the determination is made, an EIR is required. The EIR should be limited to analysis of those effects determined to be significant. (Section 15128).
7. "PEIR Mitigation Measure(s) Applicable" applies where the incorporation of mitigation measures from the PEIR will reduce an effect of a project that is subject to CEQA from "Significant Impact" to a "Less than Significant Impact." The lead agency must describe the PEIR mitigation measures, and briefly explain how those measures reduce the effect to a less than significant level.
8. The explanation of each issue should identify:
    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to less than significance.

2.0 ENVIRONMENTAL INITIAL STUDY CHECKLIST

I. 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 implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Result in a conflict with or obstruct implementation of the applicable air quality plan?	■	☐	■	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	■	☐	■	☐	☐
c) Create objectionable odors affecting a substantial number of people?	■	☐	■	■	☐
d) Have a cumulatively considerable contribution to a cumulative air quality impact considering past, present, and probable future projects?	■	☐	■	☐	☐

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact.

Direct Effects - Construction and Operations: The area affected by the proposed improvements is located within the San Diego Air Basin (SDAB). The San Diego Air Pollution Control District (SDAPCD) implements the County of San Diego's portion of the State Implementation Plan (SIP) which identifies guidance to be applied as part of the Regional Air Quality Strategy (RAQS) to achieve acceptable air quality. A significant impact would occur if a project would result in a conflict with or obstruct implementation of the San Diego County RAQS or the SIP.

The 2018 Master Plan considered the 2016 RAQS which was the most current air quality planning document for the SDAPCD at the time of preparation. The plan was prepared by the SDAPCD for CARB as part of the SIP to demonstrate how the SDAB would either maintain or strive to attain the National Ambient Air Quality Strategy (NAAQS). The SIP is also applicable to the VWD service area in demonstrating how the NAAQs will be met.

The 2016 RAQS was developed based on growth assumptions, land use, and other information available from the San Diego Association of Governments (SANDAG) and was based on SANDAG's Regional Plan, San Diego Forward. Growth assumptions made within the 2018 Master Plan to establish appropriate future service requirements were also derived from SANDAG growth assumptions and land use information. The 2018 Master Plan is also based on the San Diego Forward regional growth forecasts. Therefore, the 2018 Master Plan was considered to be consistent with the applicable SDAPCD air quality management plan and the California SIP, as these documents use the same growth assumptions. The 2018

Master Plan was determined to be in compliance with applicable rules and regulations adopted by the SDAPCD, and would not conflict with or obstruct implementation of the RAQS or SIP. Consequently, projects identified in the 2018 Master Plan would be consistent with applicable air quality plans.

Further, the proposed infrastructure improvements would not result in changes to the City's General Plan land use designations, nor would they generate unplanned area population growth. Impacts would be less than significant in this regard.

Indirect Effects: The proposed improvements would enhance the existing infrastructure system to ensure that the District can provide adequate reliable service to its customers and reduce the potential for system failure or emergency maintenance. Such improvements would not indirectly generate new area population growth or serve unplanned growth. Indirect impacts would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact.

The SDAPCD establishes daily significance thresholds for the certain criteria air pollutants including carbon monoxide (CO), nitrogen oxides (NO_X), reactive organic gases (ROG), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), and respirable particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$). A significant impact on air quality would occur if a project exceeded the significance thresholds and resulted in violations of air quality standards and/or substantial contributions to existing or anticipated air quality violations.

Direct Effects - Construction: Construction of the CIP projects would result in short-term emissions that would include fugitive dust from ground disturbance activities and from operation of construction equipment and vehicles (i.e., ROG, NO_X, CO, SO_2). The CIP projects would require limited ground disturbance. Standard SDAPCD dust control practices would be implemented during the construction phase. Additionally, exhaust emissions from construction equipment and vehicles would vary depending on the type and intensity of the construction activity.

Maximum daily emissions associated with construction of the CIP projects were assessed in the PEIR. To analyze estimated daily construction emissions, a worst-case daily construction scenario, where the most intense amount of construction for each type of facility would occur concurrently, was assumed (refer to 2018 Master Plan PEIR for specific details on modeling assumptions). The emission estimates used were also considered to be conservative as construction-related emissions are generally reduced over time due to improvements in fuel formulations and exhaust emission reduction requirements for off-road vehicles. Implementation of the 2018 Master Plan was found not violate any air quality standard or contribute substantially to an existing or projected air quality violation with regards to construction sources. A significant impact would not occur, and no mitigation measures were identified.

Although the overall length of the proposed force main to be constructed would be slightly extended with the project as designed (e.g., portions east and west of the Montiel lift station), the pipeline would be installed underground and would therefore not substantially increase the amount of surface land disturbed area as previously modeled in the Master Plan PEIR. (e.g., that might generate fugitive dust

during grading). Additionally, construction of the force main and lift station improvements would be short-term and would be consistent with the conservative parameters previously assumed in prior construction modeling of the CIP projects. As such, consistent with the 2018 Master Plan, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation with regards to construction sources. No new or more severe air quality impacts associated with operations would occur from the proposed project. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. A less than significant impact would result and no mitigation is required.

Direct Effects - Operations: Operational impacts associated with the 2018 Master Plan would result from incremental emissions from stationary and mobile sources. As analyzed in the 2018 Master Plan PEIR, implementation of the 2018 Master Plan would not violate any air quality standard or contribute substantially to an existing or projected air quality violation with regards to stationary sources. Impacts would be less than significant. Additionally, implementation of the 2018 Master Plan would not result in a net increase in vehicle trips and would therefore also not violate any air quality standard or contribute substantially to an existing or projected air quality violation with regards to mobile sources. Impacts would be less than significant.

The proposed force main improvements would not generate operational emissions. Operational emissions for the planned pump and lift station CIP projects were conservatively analyzed in the VWD's 2018 Master Plan PEIR (see document for specific details on modeling assumptions) at a capacity of the largest emergency generator at an existing pump or lift station. Additionally, the 2018 Master Plan includes one fewer pump station than previously analyzed for prior VWDs Master Plans, and therefore, implementation of the 2018 Master Plan would result in lesser air emissions than were previously assessed for the intended CIP projects. The 2018 Master Plan PEIR determined that operational emissions resulting with implementation of the 2018 Master Plan would not violate any air quality standard or contribute substantially to an existing or projected air quality violation with regards to stationary sources. Impacts would be less than significant in this regard.

Operation of the proposed Montiel lift station components would occur consistent with prior assumptions made for the 2018 Master Plan PEIR analyses and would therefore not exceed estimated operational emissions. The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation with regards to stationary sources.

Additionally, the proposed force main and lift station improvements would require a limited number of worker vehicle trips for purposes of inspection and maintenance on a routine basis. Mobile source air emissions associated with vehicle trip requirements for existing and proposed VWD facilities were previously considered in the 2018 PEIR and were found to be less than significant. Implementation of the proposed improvements would not result in a net increase in vehicle trips over that previously analyzed in the 2018 Master Plan PEIR. Therefore, consistent with the 2018 Master Plan PEIR findings, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation relative to mobile sources.

Thus, no new or more severe air quality impacts associated with operations would occur from the proposed project. No substantial changes in circumstances have occurred and there is no new information

showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. A less than significant impact would result and no mitigation is required.

Indirect Effects: Due to the nature of the proposed improvements, the indirect generation of criteria pollutant emissions would not result. The improvements would not spur new area population growth or a change in land use that would generate air pollutant emissions. No indirect impacts would occur.

c) Create objectionable odors affecting a substantial number of people?

2018 Master Plan PEIR Mitigation Measure Applicable.

Direct Effects - Construction: Potential odors generated during construction of the proposed improvement may include use of asphalt during repaving activities and/or emissions from diesel engines (i.e., from construction vehicles or equipment). As the area affected by the proposed improvements is limited, and construction would be short-term, construction activities are not anticipated to expose a substantial number of people to odors. Further, odors (i.e., diesel exhaust) tend to dissipate within short distances. As such, impacts are considered less than significant.

Direct Effects - Operations: Objectionable odors may be generated by the sewer system and/or lift station, due to its nature of collecting and transporting wastewater. The project would be required to conform with SDAPCD Rule 51 and California Health and Safety Code, Division 26, Part 4, Chapter 3, Section 41700, which prohibit emissions, including odor emissions, in such quantities of air contaminants or other material, that may result in injury, detriment, or annoyance to public health.

Additionally, the force main and lift station would be constructed to incorporate odor control measures to ensure that potential effects on surrounding populations are minimized or avoided. As determined in the 2018 Master Plan PEIR, the proposed wastewater pipelines are sealed and do not release odors to open air, except where pipes vent to the outside. Proposed CIP wastewater pipelines that would replace existing facilities that include vents would not result in a new source of odor, provided that the new pipelines would include odor-controlling measures currently implemented by VWD; however, new wastewater pipelines that would not replace existing facilities would introduce new vents that could be a new source of odor. The 2018 PEIR also indicates that replacement of the Montiel lift station would also have the potential to result in a new source of odor if odor-control measures are not installed.

As such, the project proposes an integrated chemical dosing system to reduce potential odors within the wet well and force main. The force main has also been sized to reduce residence time versus the existing system to reduce the potential for hydrogen sulfide gas production. Further, the lift station would be redesigned with a smaller operating wet well to reduce the potential for the production of hydrogen sulfide gas versus the existing system. To ensure that potential odor impacts remain less than significant, 2018 Master Plan PEIR mitigation measure AIR-1 would be required for implementation of odor control measures.

With conformance to standard operating and control measures, in combination with the proposed odor control measures and implementation of 2018 Master Plan PEIR mitigation measure AIR-1, the proposed improvements would not create objectionable odors affecting a substantial number of people. Impacts would be reduced to less than significant with mitigation incorporated.

Indirect Effects: Due to the nature of the proposed infrastructure improvements (generally underground), and the location of the lift station being distanced from residential uses or other sensitive populations, the project would not create objectionable odors affecting a substantial number of people. Minor odors may be generated as the result of routine maintenance activities, but would be limited to the affected area and temporary. No impact would occur in this regard.

d) Have a cumulatively considerable contribution to a cumulative air quality impact considering past, present, and probable future projects?

Less than Significant Impact.

Direct Effects - Construction: The SDAB is designated as nonattainment for the federal standard for ozone and the state standards for ozone, PM_{10}, and $PM_{2.5}$. Significant cumulative air quality impacts may result from emissions of the ozone precursors volatile organic compounds (VOCs) and NO_X, as well as PM_{10} and $PM_{2.5}$. Cumulatively considerable net increases may occur if two or more projects located within proximity would be constructed simultaneously, or if emissions generated by construction of a project exceed adopted thresholds for VOC, NO_X, PM_{10}, or $PM_{2.5}$.

Cumulative development is not expected to result in a significant impact in terms of conflicting with the SDAPCD air quality management plans and the California SIP because the majority of cumulative projects would propose development consistent with the applicable projections anticipated in the air quality management plans. Calculations of future capacity needs under the 2018 Master Plan were based upon the same growth assumptions from SANDAG, as were the RAQS and the SIP. The 2018 Master Plan, in combination with other cumulative projects, would therefore not conflict with or obstruct implementation of the RAQS or SIP air quality plans; no cumulatively considerable contribution would occur.

Construction of the CIP projects and cumulative projects considered in the 2018 Master Plan PEIR would be spread out throughout the VWD service area and would occur intermittently. Construction of the cumulative projects was determined to not exceed the established SDAQMD thresholds, and therefore, implementation of the 2018 Master Plan would not result in a cumulatively considerable contribution to a significant cumulative impact during construction. Additionally, no significant cumulative impacts due to objectionable odors were identified with implementation of the 2018 Master Plan.

The 2018 Master Plan would comply with the applicable air quality standards. Potential operational emissions associated with the proposed CIP projects would not adversely impact the ability of the SDAB to meet the CAAQS and NAAQS, and the 2018 Master Plan PEIR determined that the CIP projects would not exceed any significance thresholds for criteria pollutants. Therefore, implementation of the 2018 Master Plan would not result in a cumulatively considerable contribution to the local cumulative impact area represented by the SDAB.

As indicated, the proposed project would be consistent with the applicable air quality plan. As the land area affected by the proposed improvements is limited, it is not anticipated that construction activities would occur adjacent to and at the same time as another construction project. In addition, construction criteria pollutant emissions generated by the proposed improvements would be below SDAPCD thresholds; refer to Response III(b), above. As a result, construction of the proposed improvements is not

considered to contribute to a potentially significant cumulative air quality impact. Cumulative impacts would be less than significant.

Limited emissions would be generated by routine maintenance of the proposed improvements. Based on the discussion under Response III(b) above, cumulative air quality impacts resulting from operation of the proposed project would therefore be less than significant. No significant cumulative impacts relative to operations would occur with project conformance to VWD standards.

Indirect Effects: The proposed improvements are intended to enhance and maintain the District's sewer infrastructure system and would not result in the generation of new area population growth that could generate air pollutant emissions that would contribute to a cumulatively considerable impact. No indirect impacts would occur in this regard.

2018 Master Plan PEIR Mitigation Measure Applicable:

2018 Master Plan PEIR Mitigation Measure AIR-1: Odor-Control Measures.

AIR-1 **Odor-Control Measures.** Vallecitos Water District will install odor-controlling features, such as activated carbon structures, at all vents along CIP wastewater pipelines and outfall alignments, at the Montiel Lift Station, and the bioxide station, to the extent required to ensure that nuisance odors cannot be detected at the nearest receptor.

II. BIOLOGICAL RESOURCES

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Have a substantial adverse effect, either directly or through habitat modifications, on any plant or wildlife species identified as a candidate, sensitive, or special status species?	■	☐	■	■	☐
b) Have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	■	☐	■	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act?	■	☐	■	☐	☐
d) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	■	☐	■	☐	☐
e) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	■	☐	■	☐	☐
f) Have a cumulatively considerable contribution to a cumulative biological resources impact considering past, present, and probable future projects?	■	☐	■	■	☐

a) Result in a substantial adverse effect, either directly or through habitat modifications, on any plant or wildlife species identified as a candidate, sensitive, or special status species?

2018 Master Plan PEIR Mitigation Measures Applicable.

Direct Effects - Construction: The 2018 Master Plan PEIR determined that implementation of the 2018 Master Plan may result in direct and indirect impacts to sensitive plant and wildlife species. A programmatic analysis was prepared as part of the 2018 Master Plan PEIR. The PEIR determined that significant impacts may result with construction of the intended CIP projects due to direct destruction or displacement of special status species and their habitat through activities such as clearing, grubbing, grading, and other initial land disturbance activities.

Specific to the project, the 2018 Master Plan PEIR indicates that the proposed replacement for CIP SP-9 would occur within disturbed lands; however, no suitable habitat for any special status species was identified. Therefore, no significant impacts to any special status species were anticipated to result from CIP SP-9 (VWD 2018). The 2018 PEIR also states that the proposed replacement activities for the Montiel lift station would occur within existing disturbed lands. No suitable habitat for any special status species was identified for the area affected. Therefore, the 2018 PEIR indicates that no significant impacts to special status species would occur as a result of the lift station improvements (VWD 2018).

A site-specific Biological Resources Assessment was prepared for the proposed project by Michael Baker International in January 2022 to document, and update as needed, existing conditions within the land areas affected by the proposed improvements (see Appendix A). The assessment included a literature review of relevant literature and records searches to determine special-status biological resources having the potential to occur on or within the general project vicinity (approximately 5 miles).

A habitat assessment/field survey was conducted on January 20, 2022 to confirm existing site conditions. A total of two land cover types were observed and mapped within the boundaries of the project site during the field survey: disturbed habitat and urban/developed (Michael Baker 2022); refer to *Figure 5*, *Vegetation Communities*.

Ten special-status vegetation communities have been reported in the USGS Valley Center, Escondido, Rancho Santa Fe, and San Marcos, California 7.5-minute quadrangles by the CNDDB: Maritime Succulent Scrub, San Diego Mesa Claypan Vernal Pool, Southern Coast Live Oak Riparian Forest, Southern Coastal Salt Marsh, Southern Cottonwood Willow Riparian Forest, Southern Maritime Chaparral, Southern Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, and Southern Willow Scrub (refer to Appendix A). Due to the paved/developed/disturbed condition of the lands affected by the proposed improvements, no sensitive natural communities were mapped within the project area during the field survey. As such, no significant impacts to sensitive vegetation communities were identified as resulting with project implementation, and no mitigation measures are required. No further actions were determined necessary in regard to special-status vegetation communities.

Additionally, the project site is not located within designated Critical Habitat for any federally listed species as designated by the federal Endangered Species Act. Designated "Critical Habitat" refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. The closest designated Critical Habitat to the project area is located approximately 1.8 miles to the southwest for coastal California gnatcatcher (Michael Baker 2022).

A total of 68 special-status plant species have been recorded in the USGS Valley Center, Escondido, Rancho Santa Fe, and San Marcos, California 7.5-minute quadrangles by the CNDDB, CIRP, and IPaC databases (refer to Attachment D of Appendix A). No special-status plant species were identified within the project site during the January 2022 field survey. Based on the results of the field survey and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, all of the special-status plant species identified by the California Natural Diversity Database RareFind 5 (CNDDB), California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CIRP), and US Fish and

Wildlife Service (USFWS) Information for Planning and Consultation Project Planning Tool (IPaC) databases, among other databases, either have a low potential or are not expected to occur within the project site (Michael Baker 2022). Due to such conditions, no significant impacts on special status plant species were identified as resulting with project implementation, and no mitigation measures are required.

A total of 46 special-status wildlife species have been recorded in the USGS Valley Center, Escondido, Rancho Santa Fe, and San Marcos, California 7.5-minute quadrangles by the CNDDB and IPaC databases (refer to Attachment D of Appendix A). A total of 18 wildlife species were observed during the January 2022 field survey; no special-status wildlife species were detected; refer to Attachment C of Appendix A for a complete list of species observed within the project area. Cooper's hawk, a semi-common raptor on the California Watch List, has a high potential to hunt within the project site as it readily hunts smaller birds, but there is no nesting habitat for this species within the project site. Based on the results of the field survey and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, it was determined that all remaining special-status wildlife species identified by the CNDDB and IPaC databases either have a low potential or are not expected to occur within the project site. Additionally, the project area is not anticipated to support wildlife movement or serve as a migratory corridor or linkage (Michael Baker 2022). Due to such conditions, no significant impacts on special status wildlife species were identified as resulting with project implementation, and no mitigation measures are required.

As the land area proposed for replacement of the Montiel lift station improvements have been cleared of most woody vegetation, the area provides limited nesting habitat for most year-round and seasonal avian residents other than those that nest on the open ground (e.g., killdeer). However, there is the potential for nesting habitat in areas immediately surrounding the project site. No active nests or birds displaying overt nesting behavior were observed during the field survey (Michael Baker 2022).

To ensure construction does not result in the disturbance of nesting passerines and other non-raptors that may occupy the area, project construction activities would be subject to conformance with requirements of the federal Migratory Bird Treaty Act (MBTA). Mitigation measures BIO-1D and BIO-1E of the 2018 Master Plan PEIR would be implemented to ensure project consistency with MBTA requirements to minimize or avoid impacts to nesting or breeding avian species as well as nesting raptors that may occupy trees or other habitat on lands on or adjacent to the project site. As conformance with the MBTA is a federal requirement, such potential effects do not represent a new or increased significant impact or require a new mitigation measure as compared to that analyzed in the 2018 Master Plan PEIR.

Temporary construction staging areas would largely be located within existing public utility easements or roadway rights-of-way. A laydown/staging area is proposed on the vacant lot adjacent to the east of the Cole's Fine Flooring store in the vicinity of the existing lift station. As stated, this lot is highly disturbed and does not support any sensitive habitat or sensitive plant or wildlife species; refer also to *Figure 5, Vegetation Communities*. All construction equipment and materials would be removed from the staging areas once project construction is completed. No significant impacts would occur as a result of construction staging activities.

No new or more severe impacts, either directly or through habitat modifications, on any plant or wildlife species identified as a candidate, sensitive, or special status species would occur with the proposed project as compared to that identified in the 2018 Master Plan PEIR. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Impacts would be less than significant with mitigation incorporated.

Direct Effects - Operations: Any ongoing operational (e.g., maintenance or repair) activities would occur in previously disturbed/developed areas where the proposed improvements were previously constructed. As such, and due to the disturbed/developed nature of the affected lands, it is not anticipated that project operations would require the removal of any sensitive vegetation or habitat or result in an adverse effect on sensitive plant or wildlife species. Direct impacts from project operations would be less than significant with incorporation of mitigation measures BIO-1-D and BIO-1-E as identified in the 2018 Master Plan PEIR.

Indirect Effects: Due to the existing biological setting and nature of the proposed infrastructure improvements, the project would not indirectly affect any known plant or wildlife species identified as a candidate, sensitive, or special status species. No impact would occur.

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

No Impact.

Direct Effects – Construction and Operations: Refer to Response IV(a), above**.** The area affected by the proposed improvements is highly urbanized and developed/paved or disturbed. Improvements would occur within existing roadway rights-of-way or within previously developed or disturbed properties. No riparian or other sensitive natural community are present on lands that would be affected by the proposed improvements (Michael Baker 2022). No impact would occur in this regard.

Indirect Effects: No riparian habitat or other sensitive natural communities occur on lands affected by the proposed improvements. No indirect impact would occur.

c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act?

No Impact.

Direct Effects - Construction and Operations: The area affected by the proposed improvements is highly urbanized and developed/disturbed. There are no flood control channels, basins, or natural drainage features located within the project site (Michael Baker 2022).

Improvements would occur within existing roadway rights-of-way or within previously disturbed properties. No federally protected wetlands occur within the areas that would be disturbed by the proposed improvements. No direct significant impacts would occur and no mitigation is required.

Indirect Effects: No wetlands are present on lands affected by the proposed improvements. No significant indirect impacts on federally protected wetlands would therefore result and no mitigation is required.

d) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact.

Direct Effects - Construction and Operations: As stated in the 2018 Master Plan PEIR, local zoning regulations only apply to wastewater (not water) CIP projects proposed in the 2018 Master Plan. The CIP improvements that would occur with the proposed project are not identified in the 2018 Master Plan PEIR as having the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The proposed improvements would occur within developed/disturbed properties and/or public easements. Due to the developed/disturbed nature of the land areas that would be affected by the improvements, the project would not involve the removal of any sensitive vegetation types. Additionally, the removal of trees is not required or proposed in accommodating the proposed lift station and supporting improvements or for access purposes. Therefore, project-related construction or operations would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. No impact would occur and no mitigation measures are required.

Indirect Effects: Due to the character of the land areas affected and the nature of the infrastructure improvements proposed, the project would not result in indirect impacts due to conflict with any local policies or ordinances protecting biological resources. No impact would occur and no mitigation measures are required.

e) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant Impact.

Direct Effects - Construction and Operation: As stated in the 2018 Master Plan PEIR, a portion of the VWD service area falls within the boundaries of two regional conservation plans established within San Diego County: the Multiple Habitat Conservation Program (MHCP) and Multiple Species Conservation Plan (MSCP). Relative to the location of the proposed project, a Draft Subarea Plan has been prepared for the City of San Marcos under the MHCP; however, the plan has not yet been adopted. Therefore, projects within the boundary of this plan are not required to demonstrate consistency and compliance with the Draft MHCP Subarea Plan. However, VWD addresses, as feasible, the proposed requirements of Draft Subarea Plans during the design phase of individual CIP projects, and in consultation with the USFWS, California Department of Fish and Wildlife (CDFW), and local jurisdictions. Thus, the 2018 Master Plan PEIR states that no significant impact would occur as the result of conflict with the City of San Marcos Draft Subarea Plan, and no mitigation measures are required.

The proposed infrastructure improvements do not represent new, unplanned development or change in existing or planned land uses anticipated by the City of San Marcos, other area jurisdiction or agency, or the VWD and were anticipated with the 2018 Master Plan. The project is not considered to conflict with

the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No new or more severe impacts to biological resources or substantial changes in circumstances have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Impacts would be less than significant and no mitigation is required.

Indirect Effects: No new, unplanned development or change in existing or planned land uses would occur with the proposed infrastructure improvements. The project would not result in a new indirect impact as the result of conflict with any applicable land use plan, policy, regulation, biological habitat conservation plan, natural communities conservation plan, or result incompatibility with surrounding land uses. Impacts would be less than significant.

f) Have a cumulatively considerable contribution to a cumulative biological resources impact considering past, present, and probable future projects?

2018 Master Plan PEIR Mitigation Measures Applicable.

The 2018 Master Plan PEIR indicates that the cumulative projects considered would have the potential to contribute to cumulative direct and indirect impacts to sensitive species and natural communities, including wetlands. The baseline cumulative impact to sensitive biological resources as the result of loss or disturbance to sensitive species and sensitive natural communities within and adjacent to the regional cumulative impact area was determined to be significant and mitigation measures were identified to reduce such impacts to a less than significant level.

As indicated above, the proposed infrastructure improvements would not result in a significant impact relative to riparian habitat or other sensitive natural community; wetlands; conflict with local policies or ordinances protecting biological resources; or conflict with an adopted habitat conservation or other natural community conservation plan. No impacts on any plant or wildlife identified as a candidate, sensitive, or special status species would occur with project implementation; however, 2018 Master Plan PEIR mitigation measures BIO-1D and BIO-1E would be incorporated to ensure potential effects on nesting avian and raptor species remain less than significant. With incorporation of such mitigation, the project's potential to contribute to a significant cumulative impact is considered less than significant.

Thus, no new or more severe cumulative impacts associated with biological resources would occur with the proposed improvements. No substantial changes in circumstances have occurred and there is no new information showing greater significant cumulative effects than previously disclosed in the 2018 Master Plan PEIR.

2018 Master Plan PEIR Mitigation Measures Applicable:

2018 Master Plan PEIR Mitigation Measure BIO-1D: Avoidance of Nesting Birds.

BIO-1D **Avoidance of Nesting Birds**. To prevent impacts to nesting passerines (song birds) and other non-raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, Vallecitos Water District shall enforce the following:

1. If construction occurs during the general nesting season (February 1 through August 31), and where any mature tree, shrub, or structure capable of supporting a bird nest occurs within 300 feet of proposed CIP project construction activities, Vallecitos Water District shall retain a qualified biologist to conduct a preconstruction survey for nesting birds prior to clearing, grading and/or construction activities. The survey shall be conducted within 72 hours prior to the start of construction.
2. If any nesting birds are present on or within 300 feet of the proposed project construction area, the following shall be required, as approved by the US Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW):
    a. Vallecitos Water District shall retain a qualified biologist to flag and demarcate the location of all nesting birds and monitor construction activities. Temporary avoidance of active bird nests, including the enforcement of an avoidance buffer of 300 feet, as determined by the qualified biological monitor, shall be required until the qualified biological monitor has verified that the young have fledged or the nest has otherwise become inactive. Requests for buffer reductions of less than 300 feet shall be provided to the Wildlife Agencies. Documentation of the nesting bird surveys and any follow-up monitoring shall be provided to USFWS and CDFW within 10 days of completing the final survey or monitoring event.

2018 Master Plan PEIR Mitigation Measure BIO-1E: Avoidance of Raptor Nests.

BIO-1E **Avoidance of Raptor Nests**. To prevent impacts to nesting raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, Vallecitos Water District shall enforce the following:

1. If construction occurs during the raptor nesting season (January 15 through July 31), and where any mature tree or structure capable of supporting a raptor nest occurs within 500 feet of proposed CIP project construction activities, Vallecitos Water District shall retain a qualified biologist to conduct a pre-construction survey for nesting raptors prior to clearing, grading, and/or construction activities. The survey shall be conducted within 72 hours prior to the start of construction.
2. If any nesting raptors are present on or within 500 feet of the proposed project construction area, the following shall be required, as approved by the USFWS and/or CDFW:
    a. Vallecitos Water District shall retain a qualified biologist to flag and demarcate the location of all nesting raptors and monitor construction activities. Temporary avoidance of active raptor nests, including the enforcement of an avoidance buffer of 500 feet shall be required until the qualified biological monitor has verified that the young have fledged or the nest has otherwise become inactive. Documentation of the raptor surveys and any follow-up monitoring, as necessary, shall be provided to USFWS and CDFW within 10 days of completing the final survey or monitoring event.
3. In the event that a California state fully protected species (e.g., white tailed kite) is found to be nesting on the project site, all work in the area shall stop and Vallecitos Water District shall notify the USFWS and/or CDFW. No impacts shall be permitted to occur to fully protected species.

III. CULTURAL RESOURCES

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Cause a substantial adverse change in the significance of an historic resource or cause a substantial adverse change in an archaeological resource pursuant to Section 15064.5?	■	☐	■	■	☐
b) Disturb any human remains, including those interred outside of formal cemeteries?	■	☐	■	■	☐
c) Disturb any tribal cultural resources?	■	☐	■	■	☐
d) Have a cumulatively considerable contribution to a cumulative cultural resources impact considering past, present, and probable future projects?	■	☐	■	■	☐

a) Cause a substantial adverse change in the significance of an historic resource or cause a substantial adverse change in an archaeological resource pursuant to Section 15064.5?

2018 Master Plan PEIR Mitigation Measure Applicable.

Direct Effects – Construction: The 2018 Master Plan PEIR indicates that two historic-era resources are crossed by CIP projects in the 2018 Master Plan. Additionally, several known archaeological resources are located within the VWD service area; however, none of these sites are within the area affected by the proposed improvements (VWD 2018). Therefore, no such resources would be impacted by the proposed force main or lift station improvements.

Consistent with mitigation measures CUL-1 and CUL-2 identified in the 2018 Master Plan PEIR, a Cultural Resources Inventory and Evaluation Report was prepared for the proposed project to determine the potential presence of historic or cultural resources within the area of potential affect (APE) (ECORP 2020; see Appendix B). As part of the investigation, a Sacred Lands Search was requested from the Native American Heritage Commission (NAHC) and a records search was performed at the South Coast Information Center (SCIC). The search of the Sacred Lands File was completed by the California Native American Heritage Commission and resulted in a negative finding; therefore, no Native American Sacred Lands have been recorded in the project area (ECORP 2020). The records search of the California Historical Resources Information System at the SCIC revealed that 87 cultural resources investigations have previously been conducted in or within one mile of the project area. Fifty cultural resources were previously recorded within one mile of the project area as a result of these investigations; however, no cultural resources have been previously identified within the APE itself (ECORP 2020; refer to Appendix B for additional details).

A field survey of the APE was conducted on May 13, 2020. No archaeological resources were found as a result of the field survey; however, three historic period cultural resources, all road segments, were recorded: MLS-001, Leora Lane; MLS-002, a segment of Montiel Road; and MLS-003, a segment of Nordahl Road. Resources MLS-001, -002, and -003 consist of historic-period road alignments known as Leora Lane, Montiel Road, and Nordahl Road (ECORP 2020; see Appendix B).

Review of historical topographic maps and aerials indicate that the route of Leora Lane was constructed in the mid-1940s, and the routes of Montiel Road, and Nordahl Road were constructed as early as 1904. They have been improved over the decades and are presently in use. In order to be determined significant resources, the roads would need to be found to retain integrity of location, setting, feeling, and association in ways that correspond with adopted federal and state eligibility criteria.

These roads were not identified in available historical documentation as having any significant historical associations. The roads were developed as part of regional expansion and the intensification of suburban development in San Marcos during the twentieth century. They were originally carved out as dirt light-duty roads in 1948 and in 1904 and have been used and altered in their materials and design over the years, thus they do not retain integrity of design or materials. The setting has changed from rural orchards and farmland to cityscape and commercial businesses; thus, they do not retain integrity of feeling, setting, or design. Regardless of integrity, these roads were determined ineligible for the National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR) under any criterion as individual resources and are not a part of any known or suspected district. These resources are not considered historical resources according to the California Environmental Quality Act, and therefore, the proposed infrastructure improvements would not result in a significant impact to any such resources.

The proposed improvements would not result in the realignment of an existing local roadway that may have the potential to directly impact existing off-site historic resources. Any ground disturbance would occur within existing public rights-of-way or easements and would be temporary.

However, as stated, the records search results revealed known resources located within one mile of the project area. Further, the project area lies within a region recognized to have been in regular use by Native Americans for thousands of years. The drainage that exists to the southwest (near the westernmost portion of the alignment) contributes to this potential because of the likelihood of pre-contact archaeological sites located in the vicinity of perennial and intermittent waterways in the region. However, based on the geology, presence of other known resources in the region, and proximity to waterways, the potential for subsurface resources is considered moderate. Unanticipated discoveries found during project construction would therefore managed through standard procedures designed to assess and treat any finds in accordance with applicable state and federal law. As identified in the 2018 Master Plan PEIR, implementation of mitigation measure CUL-3 would be required to ensure that procedures for unintentional disturbance of historic and cultural resources are properly undertaken in the event that unknown resources are discovered during project-related ground disturbing activities.

As identified in the 2018 Master Plan PEIR, all CIP projects are subject to implementation of mitigation measures CUL-1 to CUL-3 to ensure that impacts to known historic and archaeological resources, as well as undiscovered resources, are reduced to less than significant. As stated above, mitigation measures CUL-1 and CUL-2 have been fulfilled with completion of the Cultural Resources Inventory and Evaluation Report

and site-specific records searches (ECORP 2020; see Appendix B). With incorporation of mitigation measure CUL-3, impacts related to potential construction-related impacts on unknown resources would be reduced to less than significant. No new impacts would occur with the proposed facilities, and no new mitigation measures are required.

Direct Effects - Operation: Although normal operation of the proposed infrastructure improvements would not result in activities that are anticipated to adversely affect unknown historic or cultural resources, periodic maintenance or repairs requiring ground disturbance or excavation may occur. Any such activities would be subject to 2018 Master Plan PEIR mitigation measure CUL-3 in the event that a resource discovery is made. As such, operational impacts would be reduced to less than significant with mitigation incorporated. No new significant impacts would occur with the proposed facilities, and no new mitigation measures are required.

Indirect Effects: Construction activities may cause ground vibration to occur which can indirectly result in damage to adjacent structures or other physical elements. Due to the limited nature and scope of the proposed infrastructure improvements, it is not anticipated that construction methods or equipment anticipated to be used would generate substantial groundborne vibration that may adversely or indirectly affect area land uses or structures, or cause a substantial or adverse change in the significance of an historic or archaeological resource. Indirect impacts would be less than significant in this regard.

b) Disturb any human remains, including those interred outside of formal cemeteries?

2018 Master Plan PEIR Mitigation Measure Applicable.

Direct Effects - Construction: Refer to Response V(a), above. Due to the developed/disturbed character of the areas affected by the proposed project, is not anticipated that human remains would be encountered during construction of the infrastructure improvements proposed. However, undiscovered human remains may be encountered during limited ground disturbing activities. Consistent with the 2018 Master Plan PEIR, the project, along with all CIP improvements, would be required to implement mitigation measure CUL-4 to ensure that potential impacts to unknown human remains are reduced to less than significant. No new significant impacts would occur with the proposed facilities, and no new mitigation measures are required.

Direct Effects - Operations: The majority of the proposed improvements would be constructed below the ground surface. As such land areas would have been previously disturbed by construction of the proposed improvements, the potential for the discovery of human remains is not anticipated. However, as periodic maintenance or repair may require limited ground disturbance or excavation that may result in the discovery of human remains, mitigation measure CUL-4 would be implemented to ensure that potential impacts to unknown human remains are reduced to less than significant.

Indirect Effects: Due to the nature of the project, the proposed improvements would not induce new area growth or activities that would indirectly affect areas where unknown human remains may be discovered. No significant indirect impacts would occur.

c) Disturb any tribal cultural resources?

2018 Master Plan PEIR Mitigation Measure Applicable.

Direct Effects - Construction: Refer to Response V(a), above. As part of preparation of the 2018 Master Plan PEIR, and consistent with Public Resources Code 21080.3.1, the VWD consulted with traditionally and culturally affiliated Native American Tribes to determine if the CIPs would result in a substantial adverse change in the significance of a tribal cultural resource.

Ground-disturbing activities, such as clearing, trenching, and grading, and the construction of access roads have the potential to damage or destroy tribal cultural resources that may be present on or below the ground surface at these cultural sites, particularly in undeveloped areas. In the event that significant tribal cultural resources are discovered during construction, such resources could be damaged or destroyed, potentially resulting in a significant impact to tribal cultural resources. Thus, construction of the 2018 Master Plan CIP projects was determined to have the potential to result in potentially significant impacts to tribal cultural resources.

As discussed above, a SCIC records search and Sacred Lands File search were conducted (ECORP 2020; see Appendix B). Based on the results of such efforts, no known historical or cultural resources would be adversely affected by construction and/or operation of the project as proposed. Thus, no new or more severe impacts associated with historical, cultural, or tribal cultural resources would occur from the proposed project. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR.

Although it is not anticipated that any tribal cultural resources would be disturbed as part of the proposed project, to ensure that impact remain less than significant in the event of discovery of an unknown cultural resource, mitigation measure CUL-3 would be implemented with the proposed project, consistent with that identified for all VWD projects in the 2018 Master Plan PEIR. With incorporation of mitigation measure CUL-3 of the 2018 Master Plan PEIR, impacts to cultural resources would be less than significant.

Direct Effects - Operations: Once operational, the proposed improvements would generally be below the ground surface and are not anticipated to disturb any previously-undiscovered tribal cultural resources. However, as periodic ground disturbance or excavations may be required for maintenance or repairs, mitigation measure CUL-3 ensures potential for impacts to unknown resources over the life of the project remain less than significant.

Indirect Effects: Due to the nature of the project, the proposed improvements would not induce new area growth or activities that would have the potential to indirectly affect tribal cultural resources. No significant impact would occur in this regard.

d) Have a cumulatively considerable contribution to a cumulative cultural resources impact considering past, present, and probable future projects?

2018 Master Plan PEIR Mitigation Measure Applicable.

Direct Effects - Construction and Operations: Refer to Responses V(a) to V(c), above. Although no known historical, cultural resources, human remains, or tribal cultural resources have been identified in the

vicinity of the proposed improvements, the project would have the potential to contribute to the loss of such resources on a cumulative level, if unknown resources were discovered during ground disturbing activities and resources were damaged or destroyed as a result. In conformance with mitigation measures identified in the 2018 Master Plan PEIR, the proposed project would implement mitigation measures CUL-3 to CUL-4 to ensure that potential impacts on such unknown resources remain less than significant. No new or more severe impacts associated with historical, cultural, human remains, or tribal cultural resources would occur with the proposed project. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR.

Indirect Effects: Due to the nature of the project, the proposed infrastructure improvements would not result in indirect effects on unknown historical, cultural resources, human remains, or tribal cultural resources. No significant indirect impacts would occur.

2018 Master Plan PEIR Mitigation Measures Applicable:

2018 Master Plan PEIR Mitigation Measure CUL-3: Procedure for Unintentional Disturbance of Cultural Resources (applicable parts).

CUL-3 **Procedure for Unintentional Disturbance of Cultural Resources.** If subsurface cultural resources are encountered during CIP project construction, or if evidence of an archaeological site or other suspected historic resources are encountered, all ground-disturbing activity shall cease within 100 feet of the resource. A qualified archaeologist shall be retained by Vallecitos Water District to assess the find, and to determine whether the resource requires further study. Potentially significant cultural resources could consist of, but are not limited to, stone, bone, fossils, wood or shell artifacts or features, including structural remains, historic dumpsites, hearths and middens. Midden features are characterized by darkened soil, and could conceal material remains, including worked stone, fired clay vessels, faunal bone, hearths, storage pits, or burials and special attention should always be paid to uncharacteristic soil color changes. Any previously undiscovered resources found during construction should be recorded on appropriate Department of Parks and Recreation 523 forms and evaluated by a qualified archaeologist retained by Vallecitos Water District for significance under all applicable regulatory criteria.

a. No further grading shall occur in the area of the discovery until Vallecitos Water District approves the measures to protect the resources. Any archaeological artifacts recovered as a result of mitigation shall be donated to a qualified scientific institution approved by Vallecitos Water District where they would be afforded long-term preservation to allow future scientific study. Curation fees are the responsibility of Vallecitos Water District. Upon completion of monitoring, a final results report with resource data and analysis shall be completed and submitted to Vallecitos Water District and the South Coastal Information Center. Should no resources be encountered, a letter report may be submitted to document completion of construction monitoring.

2018 Master Plan PEIR Mitigation Measure CUL-4: Procedure for Unintentional Disturbance of Human Remains.

CUL-4 **Procedure for Unintentional Disturbance of Human Remains**. Implementation of the procedures set forth in Public Resources Code Section 5097.98 and California State Health and Safety Code 7050.5 would reduce impacts to human remains to a less than significant level. The procedures outline steps to be followed upon unintentional disturbance of human remains. California State Health and Safety Code Section 7050.5 dictates that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission shall be notified within 24 hours, and the guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains. A professional archaeologist with Native American burial experience shall conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the Native American Heritage Commission. As necessary and appropriate, a professional archaeologist shall be retained by Vallecitos Water District to provide technical assistance to the Most Likely Descendent, including but not limited to, the excavation and removal of the human remains. Compliance with California State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98 would reduce any potential impacts to human remains from the 2018 Master Plan to a level below significance.

IV. ENERGY

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Result in the inefficient, wasteful, and unnecessary use of energy?	■	☐	■	☐	☐
b) Have a cumulatively considerable contribution to the inefficient, wasteful, and unnecessary use of energy considering past, present, and probable future projects?	■	☐	■	☐	☐

a) Result in the inefficient, wasteful, and unnecessary use of energy?

Less than Significant Impact. As indicated in the 2018 Master Plan PEIR, the proposed CIP projects would result in the consumption of fuel associated with operation of construction equipment and utility infrastructure that would vary with each project. However, no unusual project site characteristics within the District would necessitate the use of construction or operational equipment that would be less energy efficient, more wasteful, or necessary as compared to similar infrastructure projects on a regional or state level.

The new CIP projects would install high-efficiency pumps and motors, energy-efficient security lighting, soft start and stop motors, variable-frequency drives, and periodic pump efficiency testing. Such measures would be implemented to promote energy efficiency. Although the proposed pump and lift stations would increase electricity consumption as compared to existing conditions, consistent with California Energy Commission recommendations, VWD would install energy-efficient mechanical motors, soft start and stop motors, and variable-frequency drives. Further, VWD conducts routine maintenance on all facilities including periodic pump-efficiency testing. Operation of the CIP projects identified would not generate a substantial volume of new vehicle trips. Thus, as determined in the 2018 Master Plan PEIR, increased energy use associated with the CIP projects would not be wasteful, inefficient, or unnecessary. Impacts would be less than significant.

Consistent with 2018 Master Plan PEIR, construction and operation of the proposed project would not result in the consumption of energy that would be considered wasteful, inefficient, or unnecessary. No new or more severe impacts associated with energy use or demand, or substantial changes in circumstances have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Impacts would be less than significant and no mitigation is required.

b) Would the project have a cumulatively considerable contribution to the inefficient, wasteful, and unnecessary use of energy considering past, present, and probable future projects?

Less than Significant Impact. As described in the 2018 Master Plan PEIR, all present and probable future infrastructure projects in the region would comply with Title 24 regulations to ensure that energy use is not wasteful or inefficient. All new structures are required to comply with the current California Green Building Standards Code, which would further ensure that energy use is efficient. The proposed CIP projects are exempt from Title 24, with the exception of outdoor lighting however, VWD would implement project design features to ensure that the CIP projects are energy efficient. Therefore, implementation of the 2018 Master Plan, in combination with other cumulative projects, would not result in a cumulatively significant increase in energy usage.

Consistent with 2018 Master Plan PEIR, construction and operation of the project would not result in the consumption of energy that would be considered wasteful, inefficient, or unnecessary. No new or more severe impacts associated with energy use or demand, or substantial changes in circumstances have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Impacts would be less than significant and no mitigation is required.

V. GEOLOGY, SOILS, AND PALEONTOLOGY

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Expose people or structures to potential substantial adverse effects of:					
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.	■	☐	■	☐	☐
ii. Strong seismic ground shaking;	■	☐	■	☐	☐
iii. Seismic-related ground failure;	■	☐	■	☐	☐
iv. Liquefaction;	■	☐	■	☐	☐
v. Landslides; or,	■	☐	■	☐	☐
vi. Expansive soils?	■	☐	■	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	■	☐	■	■	☐
c) Directly or indirectly destroy a unique paleontological resource or site?	■	☐	■	☐	☐
d) Have a cumulatively considerable contribution to cumulative geology/soils impacts considering past, present, and probable future projects?	■	☐	■	■	☐

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?

Less than Significant Impact. The closest active fault to this site is the offshore segment of the Newport-Inglewood-Rose Canyon Fault Zone located approximately 15.4 miles west of the project alignment. The project alignment is not located in an Alquist-Priolo Earthquake Fault Zone. No active faults are known to underlie or project toward the project site. Therefore, the probability of fault rupture is low (SCST 2020; see Appendix C). Further, the project would be required to conform with current seismic structural design standards of the CCR Title 24 (California Building Standards Code) to ensure stability and minimize potential adverse effects from potential fault rupture. As such, impacts would be less than significant.

ii) Strong seismic ground shaking?

Less than Significant Impact. Refer also to Response VI(a)(i), above. A seismic event along the Newport-Inglewood-Rose Canyon Fault could result in seismic ground shaking at the project site. Seismic ground shaking may have the potential to affect the in-ground structures associated with the proposed improvements. Consistent with mitigation measure GEO-1 of the 2018 Master Plan PEIR, a site-specific geotechnical investigation was prepared for the proposed improvements to ensure that potential impacts are reduced to less than significant (SCST 2020; see Appendix C). Project compliance with design recommendations identified in the geotechnical investigation, in combination with seismic design standards identified in the current version of the California Building Standards Code, which have been incorporated into the District's construction standards, would reduce the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death from strong seismic ground shaking to less than significant.

iii) Seismic-related ground failure?

Less than Significant Impact. Refer to Responses VI(a)(i) and (ii), above. Due to the lack of shallow groundwater and given the dense nature of the materials beneath the site, the potential for liquefaction and dynamic settlement to occur is low (SCST 2020). As such, it is not anticipated that the project would result in exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. The project site is not identified in the 2018 Master Plan PEIR as being located in a liquefaction zone (VWD 2018).

However, consistent with mitigation measure GEO-1 of the 2018 Master Plan PEIR, a site-specific geotechnical investigation was prepared to ensure that potential impacts related to seismic-related ground failure remain less than significant (SCST 2020; see Appendix C). Project compliance with design recommendations identified in the geotechnical investigation, in combination with seismic design standards identified in the current version of the California Building Standards Code, which have been incorporated into the District's construction standards, would reduce the potential to expose people or structures to potential substantial adverse effects, including seismic-related ground failure. Impacts would be less than significant.

iv) Liquefaction?

Less than Significant Impact. Refer also to Response VI(iii), above. Due to the lack of shallow groundwater and given the dense nature of the materials beneath the site, the potential for liquefaction and dynamic settlement to occur is low (SCST 2020). As such, it is not anticipated that the project would result in exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. The project site is not identified in the 2018 Master Plan PEIR as being located in a liquefaction zone (VWD 2018). Impacts would be less than significant.

v) Landslides?

No Impact. Non-seismically induced landslides can be caused by water from rainfall, septic systems, landscaping, or other origins that infiltrate slopes with unstable material. The land areas affected by the proposed improvements are generally flat and do not contain steep slopes (i.e., greater than 25 percent) that would be susceptible to the potential for landslide occurrence. According to findings in the Geotechnical Investigation (SCST 2020; see Appendix C), no signs or evidence of previous or potential slope instability were observed during the field exploration. The potential for landslides or slope instabilities to occur is considered low. Therefore, no impact would occur from the exposure of people or structures to potential adverse effects from landslides.

vi) Expansive soils?

Less than Significant Impact. The land area affected by the proposed improvements exhibit a lack of shallow groundwater. Given the dense nature of the materials beneath the proposed improvement areas, it is not anticipated that the project would result in the exposure of people or structures to potential adverse effects from expansive soils. All improvements would be constructed in conformance with the requirements of the California Building Standards Code, which have been incorporated into the District's construction standards, in combination with the recommendations of the geotechnical report, to ensure that no adverse effects result. Additionally, a site-specific geotechnical investigation has been prepared for the project, consistent with 2018 Master Plan PEIR mitigation measure GEO-1 to reduce the potential for the exposure of people and CIP facilities to substantial adverse effects associated with geotechnical hazards, including expansive soils to less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

2018 Master Plan PEIR Mitigation Measure Applicable.

Direct Effects - Construction and Operations: As indicated in the 2018 Master Plan PEIR, earth-disturbing activities and soil stockpiling associated with the construction of CIP facilities would expose soils that could be subject to erosion during rain and wind events. Upon completion of the proposed improvements, disturbed areas within the existing roadways would be repaved as needed; other improvements proposed would occur below the ground surface and would therefore not substantially disturb affected soils or result in the potential for surface erosion. No stockpiles or open soil would remain at the completion of construction activities.

Due to the nature of the proposed improvements, the project would not result in a substantial increase in impermeable surfaces. All CIP projects would be required to comply with the requirements of the local municipal separate storm sewer systems (MS4) permit requirements regarding storm water discharge, which require no net increase in storm water runoff when compared to existing conditions. Consistent with the findings of the 2018 Master Plan PEIR, project compliance with the applicable MS4 requirements would ensure that impacts relative to soil erosion and the loss of topsoil from CIP activities are reduced to less than significant. Additionally, all CIP projects would be required to implement mitigation measure

GEO-2 from the 2018 Master Plan PEIR to ensure that erosion is minimized during construction and that potential impacts remain less than significant.

Indirect Effects: Indirect effects of soil erosion include the deposition of pollutants and sediment to watershed outlets, an increase in polluted runoff to surface and groundwater receiving bodies, and an increase in flood potential downstream. Project compliance with the applicable MS4 requirements would ensure that indirect impacts relative to soil erosion and the loss of topsoil from CIP activities are reduced to less than significant. Additionally, all CIP projects would be required to implement mitigation measure GEO-2 from the 2018 Master Plan PEIR to ensure that indirect impacts resulting from construction remain less than significant.

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

No Impact.

Direct Effects - Construction and Operations: The proposed improvements would require excavation in the vicinity of the existing Montiel lift station. It is anticipated that excavation activities for the lift station improvements would extend to a maximum of approximately 36 feet below ground surface. The sewer force main improvements would involve trench excavation; preparing the bed for placement of the placement; installing the pipe in the trench; backfilling; and restoring the disturbance area. Trenching along the pipeline alignment would reach an estimated maximum depth of 8 feet below ground surface.

According to the 2018 Master Plan PEIR (and prior paleontological resources evaluation for the 2008 Master Plan Update), the VWD service area contains one geologic unit of high paleontological sensitivity which is the Santiago formation. The Santiago formation is located along the southern portion of the VWD service area's western boundary. As indicated in the 2018 PEIR, other than the Santiago formation, other geologic units in the VWD service area are not expected to contain recoverable paleontological resources.

As shown on Figure 4.5-3, Geologic Formations, of the 2018 Master Plan PEIR, areas where the improvements would occur are located on older alluvial (Qoa) floodplain deposits; metasedimentary and metavolcanic rocks undivided (Mesozoic) (MzU) deposits; and monozogranite of Merriam Mountain (mid-Cretaceous) deposits (VWD 2018). Such deposits are considered to have a low to marginal paleontological sensitivity; the project is not located within or near the Santiago formation. The project is not anticipated to result in a significant impact to paleontological resources and would not be subject to mitigation measure GEO-3, Paleontological Resources Investigation, as identified in the 2018 Master Plan PEIR. No impact would occur.

Indirect Effects: Due to the nature of the project, the proposed sewer infrastructure improvements would not induce new area growth or other activities that would indirectly affect unknown paleontological resources. No indirect impacts would occur.

d) Have a cumulatively considerable contribution to cumulative geology/soils impacts considering past, present, and probable future projects?

2018 Master Plan PEIR Mitigation Measure Applicable.

Less than Significant Impact. As indicated in the 2018 Master Plan PEIR, impacts relative to seismic hazards and other geologic/soil conditions (i.e., fault rupture, ground shaking, ground failure, liquefaction/collapse, landslides, lateral spreading, subsidence, and expansive soils) are generally site-specific. Impacts that may occur geoseismically at one site would not contribute cumulatively with another site unless the sites are contiguous, identical geoseismically or pedologically, and the geoseismic or pedologic stressor is identical for both sites. A significant cumulative impact in this regard was not identified.

To reduce the potential to contribute to a significant cumulative impact relative to soil erosion, the project would implement mitigation measure GEO-2 from the 2018 Master Plan PEIR, as identified above. The project is not anticipated to contribute to the loss of paleontological resources as the result of project construction or maintenance activities; cumulative impacts would be less than significant.

2018 Master Plan PEIR Mitigation Measure Applicable:

2018 Master Plan PEIR Mitigation Measure GEO-2: Construction-Related Erosion Control Plan.

GEO-2 **Construction-Related Erosion Control Plan.** The construction bid documents for each proposed CIP project shall include either a 90 percent Erosion Control Plan (for projects that would result in less than one acre of land disturbance) or a 90 percent Storm Water Pollution Prevention Plan (SWPPP) (for projects that would result in one acre or greater of land disturbance). The Erosion Control Plan shall comply with the storm water regulations or ordinances of the local agency jurisdiction within which the proposed CIP project occurs; the SWPPP shall comply with the NPDES General Construction Permit.

These plans shall be based on site-specific hydraulic and hydrologic characteristics, and identify a range of Best Management Practices (BMPs) to reduce impacts related to storm water runoff, including sedimentation BMPs to control soil erosion. The Erosion Control Plan or SWPPP shall identify the specific storm water BMPs to be implemented during the construction phase of a given CIP project. Typical BMPs to be implemented as part of the Erosion Control Plan or SWPPP may include, but may not be limited to, the actions listed below.

1. Development of a written plan that includes sequencing of construction activities and the implementation of erosion control and sediment control BMPs that shall take local climate (rainfall, wind, etc.) into consideration. The purpose of the written plan is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

2. Preserve existing vegetation to minimize the potential of removing or injuring existing trees, vines, shrubs, and grasses that protect soil from erosion.

3. Use hydraulic mulch on disturbed soils to provide a layer of temporary protection from wind and water erosion.

4. Temporarily protect exposed soils from erosion by water and wind by applying hydraulic seeding, hydroseeding, or other appropriate soil cover.

5. Divert runoff or channel water to a desired location by constructing earth dikes or drainage swales. A drainage swale is a shaped and sloped depression in the soil surface used to convey runoff to a desired location. Earth dikes and drainage swales are used to divert off-site runoff around the construction site to divert runoff from stabilized areas and disturbed areas, and direct runoff into sediment basins or traps.

6. Prevent scour of the soil caused by concentrated, high velocity flows by providing outlet protection; a physical device composed of rock, grouted riprap, or concrete rubble, which is placed at the outlet of a pipe or channel.

7. Apply a compost blanket to slopes and earth-disturbed areas to prevent erosion, and in some cases, increase infiltration and/or establish vegetation. The compost blanket can be applied by hand, conveyor system, compost spreader, or pneumatic delivery (blower) system. The blanket thickness is determined from the slope steepness and anticipated precipitation. A compost blanket protects the soil surface from raindrop erosion, particularly rills and gullies that may form under other methods of erosion control.

8. Detain sediment-laden water, promoting sedimentation behind a silt fence. A silt fence is made of a woven geotextile that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support.

9. Contain sediment-laden runoff in a sediment trap, allowing sediment to settle out before the runoff is discharged. Sediment traps are formed by excavating or constructing an earthen embankment across a waterway or low drainage area.

10. Place fiber rolls at the toe and on the face of slopes along the contours. Fiber rolls intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can reduce sheet and rill erosion until vegetation is established.

11. Intercept or divert sheet flows with a sandbag barrier on a level contour. Sandbag barriers placed on a level contour pond sheet flow, allowing sediment to settle out.

12. Construct a straw bale barrier to pond sheet-flow runoff and allow sediment to settle out. A straw bale barrier is a series of straw bales placed on a level contour to intercept sheet flows.

VI. GREENHOUSE GAS EMISSIONS

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or that would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG, including on a cumulative level?	■	☐	■	☐	☐
b) Result in a cumulative impact relative to GHG emissions?	■	☐	■	☐	☐

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or that would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG, including on a cumulative level?

Less than Significant Impact. Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Prominent GHGs contributing to the greenhouse effect are carbon dioxide ($CO_{2)}$, methane (CH_4), and nitrous oxide (N_2O). Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming.

The project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in Executive Order (EO) S-03-05 and Senate Bill 32 (SB 32). EO S-03-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. SB 32 establishes a statewide GHG emissions reduction target whereby the California Air Resources Board (CARB), in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40 percent below 1990 levels by December 31, 2030.

The 2018 Master Plan PEIR determined that GHG emissions resulting with implementation of the CIP projects would not exceed the adopted significance threshold of 3,000 metric tons of CO_2 equivalent ($MTCO_2e$) and would therefore not result in a significant impact related to GHG emissions. The total net increase in annual direct and indirect GHG emissions from construction and operation of the CIP projects in the 2018 Master Plan is estimated to be 1,550 $MTCO_2e$ per year. This estimate does not take into consideration any GHG reducing project features that would be implemented in the individual CIP projects; however, the District would continue to implement energy-saving features (e.g., energy saving appliances and lighting) over time to achieve GHG emissions below that estimated to occur with implementation of the 2018 Master Plan. Implementation of the 2018 Master Plan would therefore not

generate GHG emissions that would result in a significant impact on the environment or conflict with an applicable plan. Impacts were determined to be less than significant.

Due to the nature and extent of the proposed improvements, such project-related construction emissions would be limited and short term. Over the long term, routine maintenance of the affected sewer infrastructure facilities would occur on a periodic basis and would require use of maintenance vehicles and equipment that would generate GHG emissions; however, long-term maintenance requirements are not expected to generate a substantial number of vehicle trips or GHG-related emissions from equipment operation, due to the typical limited scale and nature.

Consistent with the Master Plan, the proposed lift station improvements would incorporate high-efficiency pumps and motors that meet or exceed the energy efficiency levels listed in the National Electric Manufacturers Associations MGI-1993 publication, as recommended by the California Energy Commission. Further, VWD conducts routine maintenance on all facilities including periodic pump-efficiency testing. As also indicated in the 2018 Master Plan PEIR, all outdoor security lighting installed at the aboveground CIP facilities (i.e., storage reservoirs/tanks and pump/lift stations) would use advanced fluorescent interior lighting, high intensity discharge outdoor lighting, and lighting controls such as timers or motion detectors. Lighting would only be used when personnel are on-site at night and lighting is required.

It should be noted that any increase in GHG emissions resulting with project construction or operation not previously anticipated with the analysis in 2018 Master Plan PEIR for the CIP projects would be minimal and not substantial enough to result in an exceedance of the 3,000 $MTCO_2e$ significance threshold. As GHG emissions calculated for the sum of the CIP projects identified by VWD totaled an estimated 1,500 $MTCO_2e$, emissions generated by the proposed force main and lift station alone (even if previously unaccounted for) would not represent an increase that would near the 3,000 $MTCO_2e$ threshold.

Therefore, no new or more severe impacts associated with GHG emissions would occur from construction or operation of the proposed improvements. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Therefore, it can be assumed that anticipated GHG emissions generated by the proposed improvements would result in a less than significant impact, similar to that identified in the 2018 Master Plan PEIR. No new significant impacts would occur, and no mitigation measures are required.

b) Result in a cumulative impact relative to GHG emissions?

Less Significant Impact. Refer to Response VII(a), above. As stated in the 2018 Master Plan PEIR, due to the nature of assessment of GHG emissions and the effects of climate change, impacts can currently only be analyzed from a cumulative context. Therefore, the analysis provided above includes analysis of both the 2018 Master Plan and cumulative impacts.

No new or more severe impacts associated with GHG emissions would occur from the proposed project. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Cumulative impacts would remain less than significant.

VII. HYDROLOGY AND WATER QUALITY

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality?	■	☐	■	☐	☐
b) Substantially alter existing drainage patterns, including alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would provide substantial additional sources of polluted runoff (including erosion/siltation); result in flooding (and exposure of people or structures to a significant risk of loss, injury, or death); or exceed the capacity of the storm water drainage systems?	■	☐	■	☐	☐
c) Result in exposure to a significant risk of loss by a mudflow, tsunami, seiche, or flooding due to dam inundation or result in flooding due to facility failure?	■	☐	■	☐	☐
d) Have a cumulatively considerable contribution to a cumulative hydrology and water quality impact considering past, present, and probable future projects?	■	☐	■	☐	☐

a) Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality?

Less than Significant Impact.

Direct Effects - Construction: Construction activities associated with the proposed CIP improvements may generate potential sediments, fuels, hydraulic fluids, solvents, and/or other substances that may have the potential to affect water quality. Construction activities would require demolition, excavation/trenching, stockpiling of soils, re-paving, and/or similar activities, and runoff from the sites discharge into the local storm drain system. Compliance with the Construction General Permit Order 2009-0009-DWQ, including the preparation of a storm water pollution prevention plan (SWPPP) for covered construction activities and implementation of applicable best management practices (BMPs), would reduce the potential increase in pollutants associated with construction of the Master Plan CIP projects.

The proposed improvements would be subject to local erosion control and grading standards to ensure that the potential for construction-related contaminants to enter local storm drains and receiving waters is minimized. Construction activities would be subject to District and state standards for the protection of storm water in compliance with the requirements of the NPDES General Construction Permit, in order to minimize any pollutant discharge generated. Best management practices for the protection of storm water are anticipated to include the installation of gravel bags around storm drain inlets and the covering of any stockpiles to achieve erosion and sedimentation control.

Therefore, project construction activities would not violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality. No more severe impacts associated with a change in the existing visual character or quality of the areas affected by the proposed improvements and their surroundings, or substantial changes in circumstances, have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR. No new impacts would occur, and impacts would remain less than significant.

Direct Effects - Operations: The CIP projects would comply with municipal separate storm sewer system (MS4) permit requirements issued by the Regional Water Quality Control Board for storm water collection and discharge into downstream water bodies. The MS4 permit requires development of a hydromodification management plan to ensure that CIP project operations do not result in a violation of water quality standards or the degradation of water quality.

Periodic maintenance of the proposed improvements would be performed via existing/proposed manholes and via the lift station facilities and would not be anticipated to require substantial ground disturbance; however, if ground disturbance (e.g., replacement of major components) is required, all such activities would comply with applicable local and state regulations pertaining to water quality and are therefore not anticipated to contribute to water quality degradation. Operational impacts would be less than significant in this regard.

Indirect Effects: The proposed improvements would enhance operation and functionality of the affected sewer system while reducing the potential for leaks or infrastructure failure, which may in turn, indirectly contribute to decreased water quality. No indirect impacts would occur.

b) Substantially alter existing drainage patterns, including 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 provide substantial additional sources of polluted runoff (including erosion/siltation); result in flooding (and exposure of people or structures to a significant risk of loss, injury or death); or exceed the capacity of storm water drainage systems?

Less than Significant Impact.

Direct Effects - Construction: Land-disturbing construction activities associated with the proposed 2018 Master Plan CIP projects such as grading, trenching, excavation, or the construction of access roads, would have the potential to result in localized temporary or permanent alteration of drainage patterns. The increase in impervious surfaces from reservoirs, pump stations, lift stations, and access roads could increase runoff and potentially result in new erosion problems or the worsening of existing erosion problems. The Construction Storm Water General Permit requires preparation of Storm Water Pollution

and Prevention Plans (SWPPPs) to be prepared for construction sites greater than one acre. Local MS4 jurisdictions have adopted ordinances covering all other construction sites (i.e., sites of less than one acre). Compliance with the Construction Storm Water General Permit, including implementation of applicable construction and post-construction best management practices (BMPs), would reduce the potential increase in polluted runoff, erosion, and siltation associated with the increase in impervious surfaces to a less than significant level.

Additionally, land-disturbing construction activities, such as grading, excavation, and the construction of access roads, required for the CIP projects could result in localized alteration of drainage patterns. Construction of new CIP facilities and access roads on previously undeveloped areas would also result in increased impermeable surfaces, which may have the potential to change natural runoff patterns in a manner that could result in flooding. Additionally, the CIP projects may result in alterations to drainage patterns during construction and post-construction due to an increase in the rate or amount of surface runoff. This alteration in drainage patterns and increase in runoff could exceed the capacity of existing or planned storm water drainage systems. Through compliance with the California Building Code, Construction Storm Water General Permit, and local policies and ordinances, including implementation of construction and post-construction BMPs, the 2018 Master Plan PEIR determined that impacts related to additional sources of polluted runoff, flooding, or exceeding the capacity of storm water drainage systems would be less than significant. No mitigation measures were identified.

Due to the limited grading and excavation required for project implementation, the project design would not substantially change existing drainage patterns, including 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 provide substantial additional sources of polluted runoff (including erosion/siltation). Consistent with VWD standards and conformance with the MS4 permit, BMPs would be implemented to ensure that any potential effects from storm water runoff (including erosion and siltation) are minimized or avoided. The proposed improvements would occur within disturbed and/or developed areas (e.g., roadway rights-of-way, replacement of existing lift station) and would not substantially alter ground surface areas (other than temporary grading or excavation during construction). Ground surfaces would be restored to pre-construction conditions following completion of the construction period. Project implementation is therefore not anticipated to cause substantial flooding or increased amounts of runoff that would exceed the capacity of storm water drainage systems.

No more severe impacts associated with a change in the existing visual character or quality of the areas affected by the proposed improvements and their surroundings, or substantial changes in circumstances, have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR. No new impacts would occur, and impacts would remain less than significant.

Direct Effects - Operations: The proposed infrastructure improvements would largely be located underground, with limited aboveground structures resulting with the lift station facilities. Once constructed, it is not anticipated that project operations would further alter existing drainage patterns, increase the rate or amount of surface runoff, or exceed the capacity of storm water drainage systems. A less than significant impact would occur in this regard.

Indirect Effects: Once constructed, it is not anticipated that project operations would further alter existing drainage patterns, increase the rate or amount of surface runoff, or exceed the capacity of storm water drainage systems. No indirect impacts would occur in this regard.

c) Result in exposure to a significant risk of loss by a mudflow, tsunami, seiche, or flooding due to dam inundation or result in flooding due to facility failure?

Less than Significant Impact. The lands affected by the proposed improvements are generally flat and no steep slopes are present. Due to such conditions, inundation of the site by mudflow is considered to be low.

The project is located inland, in a relatively high elevation area; therefore, the potential for damage due to tsunamis is considered low. Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays, or reservoirs. As identified in the 2018 Master Plan PEIR, no large bodies of water are located in the project vicinity that would be subject to a seiche event. The potential for a seiche to affect the project area is low.

According to the Flood Insurance Rate Maps via the Federal Emergency Management Agency (FEMA) Flood Hazard Map online database, the project site is not located within an area susceptible to flooding. In general, the project is within an area designated as Flood Hazard Zone X which designates the areas determined to be outside of the 0.2% annual chance floodplain (SCST 2020).

As indicated in the 2018 Master Plan PEIR, in the event of a dam failure, certain proposed CIP facilities would be exposed to the risk of flooding that could result in facility failure. However, no 2018 Master Plan CIP project involves housing or human occupancy. Therefore, a dam inundation event would not result in injury or death related to proposed CIP projects.

The VWD maintains a Sewer System Management Plan to prevent facility failure and overflow response programs to respond to facility failures. Measures outlined in the Sewer System Management Plan include cleaning and monitoring schedules for pipelines through closed circuit viewing systems, and instructions for visual inspections and maintenance of pipeline and lift station facilities. Implementation of these programs would reduce the risk associated with any failure of the facilities proposed with the project to less than significant.

d) Have a cumulatively considerable contribution to a cumulative hydrology and water quality impact considering past, present, and probable future projects?

Less than Significant Impact. The 2018 General Plan PEIR indicates that land disturbance and development activities throughout the affected watersheds and basins continue to contribute to the overall surface water quality and flooding effects in the VWD service area and in downstream watercourses. The 2018 Master Plan CIP projects would be required to comply with the Construction Storm Water General Permit to reduce impacts related to water quality, drainage alteration, flooding, and exceedance of capacity of storm water drainage facilities to a level below significance. Therefore, construction and operation activities associated with the CIP projects were determined to not result in a cumulative significant increase in downstream water pollution effects within the regional area or regional alteration of drainage patterns. No mitigation measures were identified.

Similarly, the proposed infrastructure improvements would be subject to VWD design standards and conformance with the Construction Storm Water General Permit to reduce impacts related to water quality, drainage alteration, flooding, and exceedance of capacity of storm water drainage facilities to a level below significance. No more severe impacts associated with a change in the existing conditions within the areas affected by the proposed improvements and their surroundings, or substantial changes in circumstances, have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR. No mitigation measures are required.

VIII. LANDFORM ALTERATION AND AESTHETICS

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Substantially degrade the existing visual character or quality of the project sites and their surroundings?	■	☐	■	■	☐
b) Have a substantial adverse effect on a scenic vista?	■	☐	■	☐	☐
c) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the immediate vicinity of the CIP projects?	■	☐	■	■	☐
d) Have a cumulatively considerable contribution to a cumulative aesthetic impact considering past, present, and probable future projects?	■	☐	■	■	☐

a) Substantially degrade the existing visual character or quality of the project sites and their surroundings?

2018 Master Plan PEIR Mitigation Measures Applicable.

As stated in the 2018 Master Plan PEIR, construction of proposed CIP projects would involve the disturbance of ground cover, grading, excavation, material stockpiles, and the presence of construction equipment, all of which would temporarily degrade the existing visual character at CIP construction sites and their surroundings. Short-term impacts associated with visual character were identified as potentially significant due to the change in existing visual character from ground disturbing construction activities on a CIP site. Short-term construction impacts would remain significant unless disturbed areas are re-vegetated to ensure that all disturbed areas of the construction site return to pre-existing visual character conditions, to the extent feasible, following construction. Additionally, the 2018 PEIR found that potential visual impacts associated with pump and lift station projects would vary depending on the setting, visibility of the project site, the degree of landform alteration required, the size of a pump or lift station, and the existing vegetation or landscaping.

The 2018 Master Plan proposes replacement of the existing Montiel lift station. The 2018 Master Plan PEIR found that, provided the facility design uses materials that are compatible with the surrounding setting, the visual impacts of the lift station would be considered less than significant, as area viewers are already familiar with the existing structures within the natural landscape, the improvements would therefore be consistent with the existing visual character of the site.

Further, the project area is highly urbanized and built out and does not support features or elements having high scenic value or character. Some temporary disturbance would be visible during construction,

but would be limited to the area in proximity to the proposed improvements. All equipment and vehicles would be removed once the improvements are completed. Such temporary disturbance is therefore not anticipated to substantially degrade the existing visual character or quality of the site and its surroundings. Additionally, the project improvements would largely be located below the ground surface, obstructing visibility once construction is completed. Impacts relative to this issue are considered to be less than significant.

The proposed improvements are located in the vicinity of State Route 78; refer to *Figure 3A*, *Proposed Improvements*. SR 78 is not identified as an officially designated as a scenic highway by the California Department of Transportation (Caltrans) (Caltrans 2018). No other scenic highways are located within proximity to the project area.

To ensure that potential aesthetic impacts are reduced to the extent feasible, the 2018 Master Plan PEIR identifies mitigation measures AES-1 and AES-2 which are required for all CIP projects to address landscaping and visual compatibility. The project would be required to implement such measures to reduce potential impacts relative to the existing visual character or quality of the affected land areas or their surroundings. Impacts would be less than significant with mitigation incorporated. No new or more severe impacts associated with a change in the existing visual character or quality of the project sites and their surroundings, or substantial changes in circumstances, have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR.

b) Have a substantial adverse effect on a scenic vista?

No Impact. Temporary construction activities would be visible at the time when the proposed improvements are being undertaken, with a limited number of construction-related vehicles and equipment being present within the areas where improvements would occur. However, once completed, such improvements would largely be undergrounded, or of limited visibility aboveground, and would not be highly discernible from public vantage points.

The City of San Marcos General Plan 2012 does not identify any designated scenic resources (roadways, ridgelines) on lands affected by the project or within the project vicinity (City of San Marcos 2012). Similarly, no designated scenic vistas are identified in either the City of San Marcos General Plan (City of San Marcos 2012) as being located in the project vicinity.

The 2018 Master Plan PEIR states that implementation of the Montiel lift station project would not impact ridgelines or scenic vistas within the City of San Marcos as the site is not located in an area with a Ridgeline Protection and Management Overlay Zone (Ordinance Section 20.131); is located on a topographically flat site and is not located on a hillside or ridgeline; and, would be located on a site that is surrounded by residential and commercial development. As such, the 2018 determined that the lift station would visually blend in with the existing visual character of the area and the improvements would not significantly impact a scenic vista.

Based on the above, the project would not have a substantial adverse effect on scenic resources, including designated scenic vistas. No impact would occur in this regard.

c) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the immediate vicinity of the CIP projects?

2018 Master Plan PEIR Mitigation Measures Applicable.

Construction would occur during typical daytime hours (generally 7:00 a.m. to 6:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday), consistent with the applicable agency regulations pertaining to allowable hours of construction. It is not anticipated that nighttime construction would occur, and therefore, no temporary nighttime lighting would be required. If it is determined that nighttime work is required to avoid or minimize service disruptions, any nighttime lighting would be temporary, and would be shielded and directed downward to reduce potential adverse lighting effects on surrounding land uses.

Limited permanent lighting would be installed at the proposed control room for the lift station to allow for access/maintenance purposes in the event of an emergency. As required by the 2018 VWD Master Plan, low illumination, advanced fluorescent interior lighting, and high-intensity discharge outdoor lighting would be incorporated. Lighting would only be used when personnel are on-site at night and lighting is required. Any exterior lighting would be manually controlled and/or motion-sensored to ensure that such lighting is reduced to a minimum. No other permanent nighttime lighting would be installed for access or maintenance purposes (i.e., along the pipeline alignment). Impacts relative to lighting are therefore considered to be less than significant.

As stated in the 2018 Master Plan PEIR, potential impacts from glare would primarily occur from the sunlight reflecting from the proposed reservoirs, pump station building surfaces, lift station building surfaces, and access roads. However, implementation of mitigation measures AES-1 and AES-2 to require landscaping measures and to ensure visually compatible design that incorporates low-reflective glare resistant paint and materials would reduce potential glare impacts to a less than significant level.

d) Have a cumulatively considerable contribution to a cumulative aesthetic impacts considering past, present, and probable future projects?

2018 Master Plan PEIR Mitigation Measures Applicable.

As indicated in the 2018 Master Plan PEIR, implementation of the CIP projects would have the potential to contribute to a significant cumulative impact relative to scenic resources and lighting and glare. With incorporation of mitigation measures AES-1 to AES-2, such impacts would be reduced to less than significant.

In conformance with the 2018 Master Plan PEIR, the project would implement mitigation measures AES-1 and AES-2 to reduce potential cumulative impacts to a level below significance. No more severe impacts associated with a change in the existing visual character or quality of the areas affected by the proposed improvements and their surroundings, or substantial changes in circumstances, have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR.

2018 Master Plan PEIR Mitigation Measures Applicable:

2018 Master Plan PEIR Mitigation Measure AES-1: Landscaping Measures.

AES-1 Landscaping Measures. The following landscaping measures shall be implemented for all CIP projects:

1. For proposed pipeline projects and access roads installed in naturally vegetated areas, the short-term disturbance footprints associated with construction for the pipeline corridor and associated staging areas (with the exception of the drivable pathway, which shall remain clear) shall be hydroseeded, following backfilling and recontouring, using a non-irrigated native plant mix consistent with original site conditions and surrounding vegetation.

2. For proposed CIP reservoirs, pump stations, lift stations, and access roads in naturally vegetated settings, any disturbed unpaved areas following construction that are not designated for vehicular or pedestrian access shall be revegetated (hydroseeding and/or plantings) using native plant materials consistent with original site conditions and surrounding vegetation. A temporary irrigation system shall be installed and maintained by Vallecitos Water District, or watering trucks shall be used at a frequency to be determined by Vallecitos Water District to maintain successful plant growth. Temporary irrigation shall be discontinued upon Vallecito Water District's determination that the landscaping has permanently established, without the need for supplemental watering.

3. For proposed CIP reservoirs, pump stations and lift stations in urban settings, any disturbed unpaved areas following construction that are not designated for vehicular or pedestrian access shall be landscaped using plant materials consistent with original site conditions and/or surrounding ornamental vegetation in order to return the disturbed area to its existing visual character.

4. The landscaping plan for CIP reservoirs, pump stations, and lift stations shall include the planting of large trees and/or shrubs in addition to native vegetation, where appropriate, to adequately provide screening of the proposed structures.

2018 Master Plan PEIR Mitigation Measure AES-2: Visually Compatible Design.

AES-2 Visually Compatible Design. The following design measures shall be implemented for all CIP projects that include aboveground facilities (including access roads):

1. Reservoirs and access roads shall use appropriate building materials and color palettes that are visually consistent with the surrounding natural vegetation and/or built environment.

2. Reservoirs, pump station buildings, access roads and lift station buildings shall use low-reflective low-glare paint and materials unless required for safety or by law.

3. Access roads shall be designed to minimize grading, slope ratios and the blockage of existing views when possible. Access roads shall not contain features such as asphalt coating, lighting fixtures, signage, guard rails, walls, fences, curbing, pavement marking, or other service structures or appurtenances unless required for safety or by law.

IX. LAND USE AND PLANNING

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Conflict with any applicable land use plan, policy, regulation, biological habitat conservation plan, natural communities conservation plan, or result in incompatibilities with surrounding land uses?	■	☐	■	☐	☐
b) Have a cumulatively considerable contribution to a cumulative land use and planning impact considering past, present, and probable future projects?	■	☐	■	☐	☐

a) Conflict with any applicable land use plan, policy, regulation, biological habitat conservation plan, natural communities conservation plan, or result in incompatibilities with surrounding land uses?

Less than Significant Impact.

Direct Effects - Construction and Operation: The 2018 Master Plan's compatibility with local land use plans and policies has been addressed in various sections within the 2018 Master Plan PEIR. Table 4.9-1 of the 2018 Master Plan PEIR summarizes the consistency of the 2018 Master Plan with local community policies, including habitat conservation plans or natural community conservation plans, and other local policies adopted for the purpose of avoiding an environmental impact. Consistency with local community policies also ensures that any potential impacts that would result in incompatibility with adjacent land uses, such as dust and noise from construction activity, which could impact sensitive receptors or air quality objectives, potential impacts associated with scenic vistas or community aesthetic character, or potential public safety hazards, would be avoided. As stated in the 2018 Master Plan PEIR, with implementation of mitigation measures identified in the following 2018 Master Plan PEIR sections, the 2018 Master Plan was determined to be compatible with adjacent land uses: Section 4.1 (Air Quality), Section 4.2 (Biological Resources), Section 4.3 (Cultural Resources), Section 4.5 (Geology, Soils, and Paleontology), Section 4.7 (Hydrology and Water Quality), Section 4.8 (Landform Alteration and Aesthetics), Section 4.10 (Noise), and Section 4.11 (Public Safety).

The proposed infrastructure improvements do not represent new, unplanned development or change in existing or planned land uses anticipated by the City of San Marcos, other area jurisdiction or agency, or the VWD and were anticipated with the 2018 Master Plan. The project is not considered to conflict with any applicable land use plan, policy, regulation, biological habitat conservation plan, natural communities conservation plan, or result in incompatibility with surrounding land uses, and impacts would remain less than significant with implementation of applicable mitigation identified in Sections 4.1 to 4.11 of the 2018 Master Plan PEIR. No new significant impacts would occur, and no new mitigation measures are required.

Indirect Effects: No new, unplanned development or change in existing or planned land uses would occur with the proposed infrastructure improvements. The project would not result in a new indirect impact as the result of conflict with any applicable land use plan, policy, regulation, biological habitat conservation plan, natural communities conservation plan, or result incompatibility with surrounding land uses. Impacts would be less than significant.

b) Have a cumulatively considerable contribution to a cumulative land use and planning impact considering past, present, and probable future projects?

Less than Significant Impact. As stated in the 2018 Master Plan PEIR, cumulative projects would be consistent with existing adopted plans, or require mitigation measures or design review to ensure consistency, in order for project approvals to occur. The PEIR concluded that cumulative development would be consistent with applicable plans or policies, resulting in a less than significant cumulative impact. Mitigation measures identified in the PEIR for various issue areas would reduce significant impacts, in combination with other cumulative projects, to less than cumulatively considerable relative to conflict with applicable land use plans and conservation plans, or incompatibility with surrounding land uses.

The project does not represent new, unplanned development or a change in existing or planned land uses anticipated with the 2018 Master Plan. The project is not considered to conflict with any applicable land use plan, policy, or regulation or conservation plan, or result in incompatibility with surrounding land uses. Cumulative impacts would remain less than significant with implementation of applicable mitigation identified in the 2018 Master Plan PEIR. No new significant cumulative impacts would occur, and no new mitigation measures are required.

X. NOISE

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Result in a substantial permanent increase in ambient noise levels or expose persons to noise in excess of standards?	■	☐	■	☐	☐
b) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity?	■	☐	■	■	☐
c) Result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	■	☐	■	☐	☐
d) Have a cumulatively considerable contribution to a cumulative noise impact considering past, present, and probable future projects?	■	☐	■	☐	☐

a) Result in a substantial permanent increase in ambient noise levels or expose persons to noise in excess of standards?

Less than Significant Impact.

With several exceptions, operation of the proposed water, wastewater, and outfall CIP projects were determined to result in less than significant operational noise impacts in the 2018 Master Plan PEIR. Operational noise generated from pump and lift station motors with the 2018 Master Plan CIP projects may generate noise levels that exceed maximum thresholds established by the local jurisdictions affected. All CIP and lift station projects adjacent to residential land uses would locate pumps, emergency generators, and any other motorized equipment within a masonry enclosure to minimize noise effects to off-site receptors. Further, CIP projects located adjacent to residential land uses (including LS-1, as stated in the 2018 Master Plan PEIR) would not exceed the exterior noise limit of 50 dB(A) at the property line during daytime hours (7:00 a.m. to 10:00 p.m.) or the exterior noise limit of 45 dB(A) during nighttime hours (10:00 p.m. to 7:00 a.m.). Therefore, with conformance to the VWD design requirement to construct masonry enclosures for the pump and lift station facilities, implementation of the 2018 Master Plan would not result in a substantial permanent increase in ambient noise levels. Impacts would be less than significant.

Once installed, the proposed force main would not require the use of pumps, motors, or other noise-generating machinery. The lift station would be constructed in conformance with VWD standard design measures and equipment would be housed in an enclosure to minimize potential noise effects, in conformance with City of San Marcos Noise Ordinance thresholds; refer also to *Figure 3B*, *Proposed Lift Station Improvements*. Limited noise may be generated by periodic maintenance activities during routine investigations and/or repair. As stated in the 2018 Master Plan PEIR, emergency generators at lift stations

would only generate noise when equipment is tested or in the event of an emergency. Further, all maintenance and repairs would be subject to conformance with the City's Noise Ordinance, and incorporation of noise-reduction measures (i.e., use of sound blankets or temporary noise screens) as appropriate, to minimize disturbance to adjacent properties.

Thus, no new or more severe impacts associated with operational noise would occur with the proposed project. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Impacts would be less than significant and mitigation is not required.

b) Result a substantial temporary or periodic increase in ambient noise levels in the project vicinity?

2018 Master Plan PEIR Mitigation Measure Applicable.

Implementation of the 2018 Master Plan may generate construction and operational noise from equipment and vehicle use, grading, demolition, excavation, trenching, ground clearing, pipe and manhole installation and repair, backfilling, repaving, and/or similar activities, resulting in temporary or periodic increases in ambient noise levels. Blasting and rock removal may also be required for construction of certain CIP projects. The magnitude of the impact would depend on the type of activity and equipment used, duration of use, distance between the noise source and receiver, and any intervening topography. The 2018 Master Plan PEIR determined that, although information regarding the specific number and type of construction equipment required and the duration of construction activities had not been determined, temporary noise impacts associated with construction and blasting activities would have the potential to exceed the applicable local noise ordinances and regulations. With implementation of mitigation measure NOI-1, which requires conformance with relevant city and county noise ordinances, temporary and periodic noise impacts resulting from implementation of the 2018 Master Plan would be reduced to less than significant.

Similarly, construction and operation of the proposed force main and lift station improvements would be subject to noise standards set forth in Chapter 10.24, Noise, of the City of San Marcos Municipal Code. The code restricts noise resulting with the erection or demolition of building, grading, or excavation of land, or the start-up and use of heavy equipment such as dump trucks and graders or jack hammers, to Monday through Friday between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays 8:00 a.m. to 5:00 p.m. (City of San Marcos 2021). Implementation of 2018 Master Plan PEIR mitigation measure NOI-1 would be implemented to ensure project conformance with such restrictions and to reduce potential noise levels to less than significant.

Vehicle trips associated with delivery of supplies to the proposed staging areas or improvement areas, as well as worker-related trips, would be limited and would generate only minimal and temporary noise on local roadways that may potentially affect nearby sensitive uses. It is not anticipated that such activities would result in exceedance of established local noise standards.

Periodic and temporary operational noise may also be generated by routine maintenance of the affected infrastructure components over the long-term which may involve on-site improvements, maintenance worker and delivery vehicle trips, and use of equipment. It is anticipated that system maintenance or repair would be short-term and intermittent and would not substantially differ from existing maintenance

and repair activities currently undertaken by VWD. Temporary, periodic noise generated by future maintenance activities is not anticipated to exceed established noise limits for any residential uses within the project vicinity and would not result in exposure of sensitive receptors to excessive noise levels; however, to ensure that noise levels remain less than significant, the project would be required to implement mitigation measure NOI-1.

c) Result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact.

Direct Effects - Construction: Increases in groundborne vibration and noise levels attributable to the proposed improvements would be primarily associated with short-term construction-related activities. Construction would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers and jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. Excessive groundborne vibration and noise can result from construction activities such as trenching, uses of vibratory rollers for soil compaction, or blasting.

No blasting is required to implement the proposed improvements. As a project design feature of the 2018 Master Plan, all construction activities that would have the potential to impact vibration sensitive land uses would be required to implement the Construction Vibration and Blasting Noise Management Plan. The plan requires VWD to provide notice at least five days prior to construction activities to all vibration sensitive land uses within 200 feet of construction activities. The extent and duration of the construction activity would be included in the notification. With conformance to such measures, the project would have a less than significant impact related to excessive groundborne vibration or noise.

No new or more severe impacts relative to noise or substantial changes in circumstances have occurred, and there is no new information indicating greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Impacts would be less than significant and no mitigation is required.

Direct Effects - Operations: Operation of the force main and lift station would not generate groundborne vibration, due to the nature of the infrastructure proposed. Impacts would be less than significant.

Indirect Effects: The proposed improvements would not result in indirect effects that would generate substantial groundborne vibration levels. No indirect vibration impacts would occur.

d) Have a cumulatively considerable contribution to a cumulative noise impact considering past, present, and probable future projects?

Less than Significant Impact. As stated in the 2018 Master Plan PEIR, noise, by definition, is a localized phenomenon and progressively reduces as the distance from the source increases. Specifically, noise levels decrease by 6 dB for every doubling of distance. Therefore, cumulative noise impacts would be

limited to consideration of development projects occurring within the immediate vicinity of the proposed CIP locations.

All cumulative projects would be required to be constructed and operated in conformance with local noise ordinances. Additionally, it is not anticipated that the CIP projects would be constructed at the same time or in the vicinity of other active development projects. As indicated in the 2018 Master Plan PEIR, cumulative impacts resulting from construction and operation of the CIP projects, in combination with other cumulative impacts, were determined to be less than significant relative to temporary and permanent increases in ambient noise and generation of groundborne vibration.

Similarly, due to the limited nature and urbanized location of the proposed improvements, project construction and operation are not anticipated to contribute to a significant cumulative impact relative to temporary or permanent noise or groundborne vibration. No new or more severe impacts associated with construction of operational noise above that anticipated in the 2018 Master Plan PEIR would occur with the proposed project. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Cumulative impacts would remain less than significant.

2018 Master Plan PEIR Mitigation Measure Applicable:

2018 Master Plan PEIR Mitigation Measure NOI-1: Construction Noise Limits.

NOI-1 **Construction Noise Limits.** Construction activities shall comply with applicable local noise ordinances and regulations specifying sound control, including the County of San Diego, the City of San Marcos, the City of Escondido, the City of Carlsbad, and the City of Vista. Measures to reduce construction/demolition noise to the maximum extent feasible shall be included in contractor specifications and shall include, but not be limited to, the following:

1. Construction activity shall be restricted to the hours specified within each respective jurisdiction's municipal code, depending on the location of the specific CIP project, as follows:

    a. Construction activity for CIP projects occurring within San Diego County shall occur between hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday [see Table 4.10-1 (of the VWD Master Plan PEIR)]. For construction activities on Sunday or during night hours, a variance from the County must be obtained. CIP projects subject to this provision include R-2, R-3, R-4, R-5, R-6, R-9, R-10, R-11, PS-3, PS-4, PS-5, PS-7, P-52, P-53, P-16, P-56, P-30, P-64, P-42, P-57, P-10, SP-15, SP-22 and SP-31.

    b. Construction activity for CIP projects occurring within the City of San Marcos shall occur between hours of 7:00 a.m. to 6:00 p.m. Monday through Friday and between the hours of 8:00 a.m. to 5:00 p.m. on Saturdays. For construction activities on Sunday or during night hours, a waiver from the City Manager must be obtained.

    c. Construction activity for CIP projects occurring within the City of Escondido shall occur only between hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. to 5:00 p.m. on Saturdays [see Table 4.10-3 (of the VWD Master

Plan PEIR)]. For construction activities on Sunday or during night hours, a variance from the City Manager must be obtained. CIP projects subject to this provision include R-8, PS-2 and P-43.

d. Construction activity for CIP projects occurring within the City of Carlsbad shall occur between 7:00 a.m. and before sunset, Monday through Friday, and between 8:00 a.m. and sunset on Saturday; construction shall be prohibited on Sundays, New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and Christmas Day. For construction activities on Sundays, Holidays or during night hours, a permit from the City must be obtained. Projects subject to this provision include SP-6 and SP-13 and the parallel land outfall.

2. Construction noise for CIP projects located within San Diego County, City of Vista, and City of San Marcos shall not exceed an average sound level of 75 dB(A) for an eight-hour period at the CIP project's property boundary.

3. Construction noise for CIP projects located within the City of Escondido shall not exceed a one-hour average sound level limit of 75 dB(A) at any time, unless a variance has been obtained from the City Manager.

4. All construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.

XI. PUBLIC SAFETY

Would implementation of the 2018 Master Plan:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
a) Result in a significant hazard to the public or the environment through the transport, use, or disposal of hazardous materials; through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment; or through hazardous emissions within one quarter mile of an existing or proposed school?	■	☐	■	☐	☐
b) Result in activities located on a listed hazardous materials site creating a significant hazard to the public or environment?	■	☐	■	☐	☐
c) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	■	☐	■	☐	☐
d) Have a cumulatively considerable contribution to a cumulative public safety impact considering past, present, and probable future projects?	■	☐	■	☐	☐

a) Result in a significant hazard to the public or the environment through the transport, use, or disposal of hazardous materials; through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment; or through hazardous emissions within one quarter mile of an existing or proposed school?

Less than Significant Impact.

Direct Effects - Construction: Construction activities would require limited use of potentially hazardous substances that may include fuels and oils associated with construction vehicles and equipment, hydraulic fluids, lubricants, paints, and/or solvents. Minimal amounts of hazardous materials may be transported to and from a site during construction; however, transport of such materials would be temporary and subject to applicable regulations. Although the potential for accidental releases (e.g., spilling of hydraulic fluids or diesel fuel from on-site construction equipment maintenance) does exist, it is anticipated any such incidents would be limited to small volumes and/or low concentrations.

The construction contractor would be required to implement standard construction practice and safety procedures related to the transport, use, and disposal of hazardous materials. With conformance to applicable federal, state, and local regulations pertaining to the use and handling of hazardous substances, typical use and/or transport of construction-related hazardous materials for the proposed improvements would not create a significant hazard to the public. Impacts would be less than significant.

The nearest school to the area affected by the proposed improvements is Knob Hill Elementary School, located at 653 Poinsettia Avenue, adjacent to the southern portion of where maintenance improvements Knob Hill Road in San Marcos, approximately 0.4 mile to the northwest of the Montiel Road/Nordahl Road intersection. However, due to the relatively limited nature of the intended construction activities and conformance with applicable federal, state, and local standards for the handling and disposal of hazardous substances, it is not anticipated that the proposed improvements would result in the emission or handling of hazardous materials that would cause a significant effect to existing schools. Impacts would be less than significant.

Direct Effects - Operations: Operation of the lift station may involve the use, transport, and/or disposal of hazardous chorine, chloramines, diesel fuel, distillates, benzene, 1-methylethyl, or other hazardous materials for water disinfection and distribution. Hazards related to these materials could occur during storage, transportation, use, disposal, or accidental release. However, VWD facilities that involve the use of hazardous materials are required to prepare and implement a Hazardous Material Business Plan (HMBP) for long-term facility operations. Each site-specific HMBP is required to identify best management practices to prevent downstream water quality degradation from runoff pollution associated with CIP operations. Additionally, the proposed improvements are intended to reduce the potential for pipeline leaks or infrastructure failure that could create a significant hazard to the public or the environment. Potential direct effects from system operations are anticipated to be less than significant in this regard.

Materials used at the proposed CIP facilities would be similar to what is already used for existing facilities (i.e., Montiel lift station) operated by VWD. With conformance with local, state, and federal regulations and requirements, such activities are not considered to create a hazard to the public of the environment through the routine transport, use, or disposal of hazardous materials.

Further, the proposed infrastructure improvements would generally operate underground. Once constructed, the proposed improvements would not adversely affect any area schools. Compliance with applicable regulations would minimize foreseeable risk of accident that could result in hazard to the public or the environment. Impacts would be less than significant in this regard, and no mitigation is required.

Indirect Effects: Short-term construction activities may involve the transport, use, and disposal of hazardous materials. These activities are unlikely to result in adverse, indirect effects to adjacent land uses. Indirect impacts are therefore considered less than significant.

No adverse indirect impacts to schools from project implementation are anticipated. No mitigation is required.

b) Result in activities located on a listed hazardous materials site creating a significant hazard to the public or environment?

Less than Significant Impact.

Direct Effects - Construction and Operations: In conformance with mitigation measure GEO-1 of the 2018 Master Plan PEIR, a database search of hazardous materials sites pursuant to Government Code Section 65962.5 was performed within a one-mile radius surrounding the project site. Neither the pipeline alignment(s) nor the lift station improvements are located on a site included on a list of hazardous material

sites pursuant to Government Code Section 65962.5. No sites identified in the State Water Resources Control Board's (SWRCB) Geotracker database (SWRCB 2022) or the California Department of Toxic Substances Control's (DTSC) EnviroStor database (DTSC 2022) occur on-site or directly adjacent to the affected lands; however, a number of sites have been documented in the general vicinity of the proposed improvements, largely concentrated to the south and east. The majority of such cases are identified as having a "closed" status (Geotracker 2022), and therefore, are not considered to represent a potential for hazardous conditions.

Within a one-mile radius of the proposed improvements, three sites identified as having an "open" case status are present. One site is located approximately 0.8 mile northwest of the westernmost extent of the proposed improvements at the Marketplace Cleaners (T10000010497), located at 197 Woodland Parkway in San Marcos. The case is listed as a Cleanup Program Site having a potential release affecting indoor air quality at the site, with potential effects on soil vapor and other groundwater (uses other than groundwater) (Geotracker 2022). However, due to the nature of the proposed infrastructure improvements (unoccupied) and characteristics of the site listed, this site is not anticipated to represent a significant hazard to the public or the environment.

Additionally, Price Club #416 (71003428) (current site of Costco), located at 725 Center Drive, just north of the western extent of the proposed improvements, is listed as a Tiered Permit with cleanup status of "Inactive - Needs Evaluation," with no specified use or contamination of concern, or potential media affected (EnviroStor 2022). However, due to the nature of the proposed infrastructure improvements and characteristics of the site listed, this site is not anticipated to represent a significant hazard to the public or the environment.

The Hebdon Electronics site (former use) (SL209304205) is located at 655-665 Opper Street in the City of Escondido (Geotracker 2022), approximately 0.3 mile to the south of the proposed improvements at the closest point. The site is identified as a Cleanup Program Site with "open" status as of November 29, 2011 (recorded date of November 25, 2003) with potential water and soils contamination due to release of contaminants of concern listed as 1,4 dioxane and trichloroethylene (TCE). The site was formerly used for manufacture of circuit boards and involved on-site activities such as tin-lead plating, solder fusing, copper plating, nickel and gold plating, spent nickel/tin/lead/anode stripping, copper solution deplating, and various etching activities. As of September 1, 2021, the site has been entered into a California Land Reuse and Revitalization Agreement with the San Diego Regional Water Board (Geotracker 2022). Monitoring systems and ongoing management are in place to ensure prohibition of activities that disturb the monitoring systems without approval, disturbance of asphalt cover, and prohibit excavation of any contaminated soils without agency review and approval. Due to the characteristics of the listed site, and the nature of the proposed improvements, this site is not anticipated to represent a significant hazard to the public or the environment.

Additional potentially hazardous materials sites listed with a one-mile radius include the US Circuit, Inc. site (EnviroStor No. 71002680) located at 1526 Sterling Court in Escondido, approximately 0.36 mile southeast of the proposed improvements. The site is listed as a Tiered Permit with no past uses of contamination or potential contaminants of concern. Cleanup status is identified as "No Further Action Required" as of October 2, 2018 is identified. The Gallade Chemical, Inc. (CAT080012651) is located at 1510 Industrial Avenue in Escondido, approximately 0.65 mile southeast of the proposed improvements.

Status is identified as a "protective filer." The site is listed as a permitted hazardous waste facility; no facility history has been entered for the site (EnviroStor 2022) and no sources of contamination identified. Additionally, the A&D Plating, Inc. (71002818) site is located at 2265-A Micro Place in Escondido, approximately 0.27 mile south of the project site (EnviroStor 2022). The site is identified as a tiered permit and site status is listed as "Inactive - Needs Evaluation." No past uses of contamination or potential contaminants of concern are identified. Due to the characteristics of these listed sites, and the nature of the proposed improvements, these sites are not anticipated to represent a significant hazard to the public or the environment.

As stated in Section 4.11, Public Safety, of the 2018 Master Plan PEIR, mitigation measure GEO-1 applies to all CIP sites and requires that, prior to ground disturbing activities associated with the construction at any CIP sites, a hazardous materials database search and environmental site assessment (as applicable) shall be conducted to identify hazardous materials that could be encountered during construction. As indicated above, a database search was conducted and no sites posing a hazard relative to the project were identified. Preparation of a Phase I Environmental Site Assessment (see mitigation measure GEO-1) is therefore not required, and this mitigation measure has been satisfied.

In addition, all construction activities conducted under the 2018 Master Plan would be required to comply with applicable federal and state regulations that require strict adherence to specific guidelines regarding the use, transportation, disposal, and accidental release of hazardous materials. Further, as indicated in the PEIR, VWD construction documents are required to identify contaminants and hazardous materials known to occur or are suspected to occur on a project site, and to state that all hazardous materials must be handled in compliance with state and local laws. Excavation and soil handling work would also be required to comply with applicable local, state, and federal regulations, and health and safety requirements, and in accordance with specific requirements of the County of San Diego Department of Health, the Regional Water Quality Control Board, and the California Department of Resources Recycling and Recovery. Project conformance with such measures would reduce impacts associated with exposure of hazardous materials to the public or the environment to a less than significant level.

Indirect Effects: No adverse, indirect impacts associated with hazardous materials sites have been identified.

c) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact.

Direct Effects - Construction: Construction occurring within Center Drive, M Lane, Nordahl Road, and Montiel Road, as well as other public rights-of-way or easements, may have the potential to result in temporary effects on emergency vehicle circulation patterns or require detours through the area. Lane reductions or temporary road closures may also result in impaired emergency vehicle access. As stated in the 2018 Master Plan PEIR, in the event that CIP construction activities require a lane or roadway closure, or could otherwise substantially interfere with traffic circulation, the contractor will be required to submit a traffic control plan to the local land use agency and local fire protection agency to ensure that adequate emergency access and egress are maintained and that traffic circulation will continue to be efficient and safe in proximity to a construction site. The 2018 Master Plan identifies the requirement for

implementation of a traffic control plan to ensure public safety hazards associated with temporary construction-related lane and road closures or detours and their potential impairment or interference with adopted emergency response and evacuation plans remain less than significant. Therefore, no mitigation measures are required.

Direct Effects - Operations: Once constructed, the majority of the proposed improvements would be underground (force main/pipelines) and/or distanced from public roadways (e.g., lift station) that may be used by emergency vehicles or by the public during an evacuation. As such, no impairment or physical interference with an adopted emergency response plan or emergency evacuation plan would result. Impacts would be less than significant.

Indirect Effects: The majority of the proposed improvements would be underground (force main) and/or distanced from public roadways (lift station) and would not indirectly interfere with emergency access. No impact would occur.

d) Have a cumulatively considerable contribution to a cumulative public safety impact considering past, present, and probable future projects?

Less than Significant Impact. As stated in the 2018 Master Plan PEIR, impacts relative to listed hazardous materials sites and emergency response and evacuation plans are generally specific to CIP project sites and would not result in cumulative impacts. Construction and operation of cumulative projects may involve the transport, use, and disposal of hazardous materials and associated accidental releases may occur. All CIP construction activities are required to comply with applicable federal, state, and local regulations related to the transportation, storage, use, and disposal of hazardous materials. In addition, VWD implements a Hazardous Materials Business Plan to allow for the transportation, storage, use, and disposal of hazardous materials for CIP reservoir and pump station operations. Compliance with applicable regulations would ensure that construction and operation of CIP projects do not result in a cumulatively considerable impacts relative to public safety in this regard.

No new or more severe impacts associated with would occur with the proposed project. No substantial changes in circumstances have occurred and there is no new information showing greater significant effects than previously disclosed in the 2018 Master Plan PEIR. Potential cumulative impacts resulting with the project would be less than significant with conformance to relevant local, state, and federal regulations pertaining to hazardous materials.

XII. MANDATORY FINDINGS

Environmental Issue Area:	Impact Analyzed in the PEIR	New Significant Impact due to Unusual Circum-stances or Substantial New Information	No Impact or Less than Significant Impact	PEIR Mitigation Measure(s) Applicable	New Mitigation Measure(s) Required
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?	☐	☐	■	■	☐
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 current projects, and the effects of probable future projects)?	☐	☐	■	■	☐
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	■	☐

a) 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?

2018 Master Plan PEIR Mitigation Measures Applicable.

Due to the developed/disturbed nature of the area affected by the proposed improvements, and the general absence of biological resources on the site(s), the proposed improvements would have a low 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 level, threaten to eliminate a plant or animal community, or restrict the range of a rare or endangered plant or animal. The proposed

improvements would implement 2018 Master Plan PEIR mitigation measures BIO-1D and BIO-1E to avoid potentially significant impacts to avian species and raptors as protected under the MBTA and that may be nesting in nearby ornamental trees during project construction. Similarly, due to the developed/disturbed nature of the affected lands, and the lack of identified historic or archaeological resources on-site, it is not anticipated that the proposed improvements would eliminate important examples of the major period of California history or prehistory; however, 2018 Master Plan PEIR mitigation measure CUL-3 would be implemented to reduce potential impacts to unknown resources to less than significant. Through implementation of such mitigation, impacts would be reduced to less than significant.

No new or substantially increased impacts, as compared to the 2018 Master Plan PEIR, would occur with the project as proposed. No new mitigation measures are required.

b) 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 current projects, and the effects of probable future projects)?

2018 Master Plan PEIR Mitigation Measures Applicable.

The proposed improvements are located within a highly urbanized area and substantial new development projects are not anticipated to occur in the vicinity. Due to the limited scope of the proposed infrastructure improvements and short-term construction period, combined with a lack of potential impacts resulting with operations, cumulatively considerable impacts are not anticipated when such improvements are considered in connection with other projects with exception of that which may result relative to air quality, biological and cultural resources, geology (hazards), noise, and landform alteration/ aesthetics.

The proposed project, in combination with other VWD CIP projects identified in the 2018 Master Plan and future development occurring within the project vicinity, would be required to implement mitigation measures from the 2018 Master Plan PEIR, as appropriate. Implementation of such measures, in combination to conformance with VWD adopted design and procedural standards, would reduce the project's contribution to potentially significant cumulative impacts to less than significant.

No new or substantially increased cumulative impacts, as compared to the 2018 Master Plan PEIR, would occur with the project as proposed. No new mitigation measures are required.

c) Have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?

2018 Master Plan PEIR Mitigation Measures Applicable.

Potential impacts resulting from the creation of objectionable odors, release or exposure to hazardous materials, and/or generation of substantial temporary or periodic increases in ambient noise levels may have the potential to adversely affect human beings.

Implementation of mitigation measure AIR-1 from the 2018 Master Plan PEIR would reduce or avoid the potential for release or generation of odors that may adversely affect surrounding sensitive receptors.

Conformance with applicable VWD and state design and engineering standards, in combination with the recommendations identified in the Geotechnical Investigation (see Appendix C), would ensure that potential impacts associated with geotechnical hazards are minimized or avoided. Further, standard controls and safety procedures would be implemented during construction and maintenance to minimize potential effects associated with exposure to hazardous materials such as oils, fuels, hydraulic fluids, and/or solvents used. Implementation of mitigation measure NOI-1 from the 2018 Master Plan PEIR would reduce potential operational noise levels at nearby residential uses to within limits identified in the City of San Marcos Noise Ordinance.

Compliance with standard regulations and implementation of the mitigation measures identified herein, consistent with the 2018 Master Plan PEIR, would reduce any such adverse effects on human beings to a less than significant level. No new or substantially increased impacts, as compared to the 2018 Master Plan PEIR, would occur with the project as proposed. No new mitigation measures are required.

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_____. 2018. Water, Wastewater, and Recycled Water Master Plan Program Environmental Impact Report.

4.0 LIST OF PREPARERS

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INTERNATIONAL

Appendix A Biological Resources Assessment

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Michael Baker
INTERNATIONAL

We Make a Difference

January 28, 2022 JN 176090

MICHAEL BAKER INTERNATIONAL
Attn: *Nicole Marotz, LEED AP, AICP*
Senior Environmental Planner, Project Manager
9755 Clairemont Mesa Boulevard
San Diego, CA 92124

SUBJECT: Results of a Biological Resources Assessment for the proposed Montiel Lift Station and Force Main Replacement Project – City of San Marcos, San Diego County, California

Dear Ms. Marotz:

Michael Baker International (Michael Baker) is pleased to submit this report documenting the results of a biological resources assessment for the proposed Montiel Lift Station and Force Main Replacement Project (project or project site) located in the City of San Marcos, San Diego County, California. Michael Baker conducted a thorough literature review and a field survey to confirm existing site conditions and assess the potential for special-status[1] plant and wildlife species that have been documented or that are likely to occur on or within the project site. Specifically, this report provides a detailed assessment of the suitability of the on-site habitat to support special-status plant and wildlife species that were identified in the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database RareFind 5 (CNDDB; CDFW 2022a), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CIRP; CNPS 2022), the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation Project Planning Tool (IPaC; USFWS 2022a), and other databases as potentially occurring in the vicinity of the project site.

Project Location

The project site lies within the service boundaries of the Vallecitos Water District (VWD). The majority of lands affected by the proposed improvements are located in the City of San Marcos in northern San Diego County. The proposed alignment for the pipeline replacement improvements traverses portions of Montiel Road, Center Drive, M Lane, and surface parking areas, as well as several private properties. Improvements associated with replacement of the Montiel lift station would occur within an existing utility easement extending southward from Montiel Road and just east of an existing commercial building (Cole's Fine

[1] As used in this report, "special-status" refers to plant and wildlife species that are federally-/State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank species by the California Native Plant Society; wildlife species that are designated by the California Department of Fish and Wildlife as Fully Protected, Species of Special Concern, or Watch List species; State/locally rare vegetation communities, and those species covered by the San Diego North County Multiple Habitat Conservation Program or proposed to be covered by the draft City of San Marcos Subarea Habitat Conservation Plan/Natural Communities Conservation Plan.

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Flooring). The project site is generally located north and east of State Route 78 (SR-78) and west and south of Interstate 15 (I-15) in the City of San Marcos, San Diego County, California (refer to Figure 1, *Regional and Project Vicinity*, in Attachment A). The project site is depicted in an un-sectioned area of Township 12 South, Range 2 West, on the U.S. Geological Survey's (USGS) *Valley Center, California* 7.5-minute quadrangle. Specifically, the project site is located north of SR-78, west of Deodar Road, along and south of Montiel Road, and east of Center Drive (refer to Figure 2, *Project Site*, in Attachment A).

Project Description

Lift Station Replacement

The project proposes replacement of the existing Montiel sewer lift station. The new lift station would be constructed within the boundaries of an existing 40-foot x 40-foot utility easement which currently supports the existing lift station and wet well. The existing pump station and wet well would be demolished in place prior to construction of the new lift station.

The land area on which the existing lift station is located is highly disturbed/developed. Access to the lift station occurs via an existing 20-foot wide paved utility easement extending from Montiel Road. Portions of the existing asphalt and miscellaneous base of this access drive would be removed and replaced in-kind as part of project construction.

Modification of the existing manhole adjacent to the existing lift station and installation of a proposed 6-inch sewer force main and gravity bypass piping would occur prior to demolition of the existing pump station and wet well and after the new piping is accepted. Additionally, the proposed above ground chemical storage area, electrical/SCADA and control room with restroom, and genset concrete pad would be constructed within the existing 20-foot wide utility easement, adjacent to the existing paved access drive.

The lift station wet well would be approximately 35 feet deep. All pumps will be installed in the wet well. The emergency generator will be installed with sound attenuated enclosure to minimize exterior noise to below applicable noise level thresholds enforced by the City of San Marcos.

Sewer Force Main

The sewer force main design would include the following elements:

- New 6-inch diameter HDPE DR 19 force main from the lift station to Manhole 1712 (MH 1712), on a access roadway, within the California Department of Transportation (Caltrans) right-of-way of SR-78, just south of Costco. Total force main length is approximately 4,135 linear feet.
- Approximately 26 linear feet of new 8-inch diameter PVC SDR 35 sewer gravity pipe from Manhole 1712 (MH 1712) to Manhole 1719 (MH 1719) to connect to the existing gravity.
- Three of 2-inch air valve assemblies and two of 4-inch blow-off assemblies.

The project would result in replacement of approximately 426 linear feet existing 6-inch ductile iron force main in place, from the new lift station to existing Manhole 1699 (MH 1699) at Montiel Road. Additionally, from the lift station eastward, the project would replace approximately 1,366 linear feet of an existing 10-inch ductile iron sewer pipe via pipe reaming technology (i.e., trenchless) within an existing 12-20 foot wide utility easement. Rehabilitation of seven manholes would also be required.

Construction

Site Earthwork and Excavation

Site preparation and construction would occur in accordance with accepted construction standards and requirements. All construction for the pipeline improvements would occur within existing utility easements and/or roadway rights-of-way.

Excavation would be required in the vicinity of the existing Montiel lift station to allow for the proposed improvements. For grading purposes, total cut is estimated to be 100 cubic yards (c.y.) of soil; total fill is estimated to be 100 c.y. of soil. Approximately 300 c.y. of soil would be imported to the site and approximately 1,300 c.y. of soil would be exported. It is anticipated that excavation activities for the lift station improvements would extend to a maximum of approximately 36 feet below ground surface. Following completion of construction, any exposed ground surface areas disturbed by construction activities would be returned to their prior condition (i.e., pavement replacement).

The sewer force main improvements would involve trench excavation; preparing the bed for placement of the placement; installing the pipe in the trench; backfilling; and restoring the disturbance area. Trenching along the pipeline alignment is estimated to be approximately 2 feet in width and would reach an estimated maximum depth of 8 feet below ground surface.

Temporary construction staging is proposed to occur in a disturbed vacant lot adjacent to the lift station. Limited temporary storage may also occur immediately adjacent to the pipeline alignment during daily construction activities to allow for ready access to equipment and materials as needed.

Operations and Maintenance

Typical ongoing operations and maintenance activities over the long-term would include, but may not be limited to, routine monitoring, documentation, and reporting of equipment conditions and maintenance needs; routine maintenance; and repair on an as-needed or emergency basis. It is anticipated that any ongoing monitoring and maintenance would require a minimal number of staff. Additional staff may be required for intermittent repair or replacement purposes, depending on the nature of the work to be performed.

The lift station would be remotely monitored over the long-term via a supervisory control and data acquisition (SCADA) system. The SCADA system would be integrated with the existing VWD SCADA system and radio antenna (to be removed during construction and replaced in the same location when construction is completed). A small solar panel with a small battery pack will run the SCADA.

Methodology

Literature Review

Michael Baker conducted thorough literature reviews and records searches to determine which special-status biological resources have the potential to occur on or within the general vicinity (5-mile radius) of the project site. Previous special-status plant and wildlife species occurrence records within a 5-mile radius of the project site in the USGS *Valley Center, Escondido, Rancho Santa Fe,* and *San Marcos, California*

7.5-minute quadrangles were determined through a query of the CNDDB (CDFW 2022a), CIRP (CNPS 2022), and IPaC (USFWS 2022a).

Current conservation status of species was verified through lists and resources provided by the CDFW, specifically the *Special Animals List* (CDFW 2022b), *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2022c), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2022d), and *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFW 2022e). In addition, Michael Baker reviewed previously prepared reports, survey results, and literature, as available, detailing the biological resources previously observed on or within the vicinity of the project site to gain an understanding of existing site conditions, confirm previous species observations, and note the extent of any disturbances that have occurred within the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status species, as well as the following resources:

- *Vallecitos Water District 2018 Water, Wastewater, and Recycled Water Master Plan Draft Program Environmental Impact Report* (PEIR; RECON 2018)
- Google Earth Pro Historical Aerial Imagery from 1985 to 2021 (Google Inc. 2022)
- Species Accounts provided by Birds of the World (Billerman et. al 2020)
- *Custom Soil Resource Report for San Diego County Area, California* (U.S. Department of Agriculture [USDA] 2022)
- USFWS Critical Habitat Mapper and Environmental Conservation Online System (USFWS 2022b)
- The Cornell Lab of Ornithology's eBird database (eBird 2022)

Habitat Assessment/Field Survey

Michael Baker biologist Ryan Winkleman conducted a habitat assessment/field survey on January 20, 2022 to confirm existing site conditions within the project site. Because the project site sits within an established utility easement restricting work limits, no survey buffer was incorporated outside of the existing easement. Vegetation communities occurring within the project site were mapped on an aerial photograph and classified in accordance with the vegetation descriptions provided in *Draft Vegetation Communities of San Diego County* (Oberbauer 2008). In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site vegetation communities, and the presence of potentially regulated jurisdictional features (e.g., streams, flood control channels) were noted within the project site, if present. Michael Baker used Geographic Information Systems (GIS) ArcView software to digitize the mapped vegetation communities and then transferred these data onto an aerial photograph to further document existing conditions and quantify the acreage of each vegetation community. Refer to Table 1 below for a summary of the survey date, timing, surveyor, and weather conditions.

Table 1: Survey Date, Time, Surveyor, and Weather Conditions

Date	Time (start / finish)	Surveyor	Weather Conditions	
			Temperature (°F) (start / finish)	Wind Speed (mph) (start / finish)
January 20, 2022	1030 / 1245	Ryan Winkleman	71F, clear skies / 75F, clear skies	0 – 2

All plant and wildlife species observed, as well as dominant plant species within each vegetation community, were recorded. Plant species observed during the habitat assessment/field survey were identified by visual characteristics and morphology in the field while unusual and less familiar plant species were photographed and identified later using taxonomic guides. Plant nomenclature used in this report follows the *Jepson eFlora* (Jepson Flora Project 2022) and scientific names are provided immediately following common names of plant species (first reference only). Wildlife detections were made through aural and visual detection, as well as observation of sign including scat, trails, tracks, burrows, and nests. Field guides used to assist with identification of wildlife species during the habitat assessment included *The Sibley Guide to Birds* (Sibley 2014), *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003), *Bats of the United States and Canada* (Harvey et al. 2011), and *A Field Guide to Mammals of North America* (Reid 2006). Although common names of wildlife species are well standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only). To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Society's *Checklist of North American Birds* (Chesser et al. 2020), nomenclature of amphibians and reptiles follows *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother 2017), and nomenclature for mammals follows the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

Existing Site Conditions

According to the *Custom Soil Resource Report for San Diego County Area, California* (USDA 2022), the project site is underlain by the following soil units: Escondido very fine sandy loam, 15 to 30 percent slopes, eroded (EsE2); Fallbrook sandy loam 5 to 9 percent slopes (FaC); Placentia sandy loam, 2 to 9 percent slopes, warm MAAT, MLRA 19 (PeC); Placentia sandy loam, thick surface, 2 to 9 percent slopes (PfC); and Vista coarse sandy loam, 5 to 9 percent slopes (VsC) (refer to Figure 3, *USDA Soils*, in Attachment A). The project site is a mixture of disturbed, developed, and ornamental land uses. The project site consists of an existing paved road, an existing parking lot, landscaping, and residential, commercial, and industrial developments. Topographically, the project site is generally flat, gently sloping downwards to the southeast, ranging in elevation from approximately 715 feet above mean sea level (amsl) to approximately 670 feet amsl. Refer to Attachment B for representative photographs of the project site taken during the field survey.

Vegetation Communities and Land Cover Types

A total of two (2) land cover types, including disturbed habitat and urban/developed areas were mapped within the project site. These land cover types are depicted on Figure 4, *Vegetation Communities and Other Land Uses*, in Attachment A and described in further detail below. Additionally, refer to Attachment C for a complete list of plant species observed within the project site during the field survey. Table 2 provides the acreages of each land use on-site, with each discussed in detail below.

Table 2: Vegetation Communities and Land Uses within the Project Site

Vegetation Communities and Other Land Uses	Acreage Total Within Project Site
Disturbed Habitat	1.34
Urban/Developed	1.70
TOTAL*	**3.04**

*Total may not equal to sum due to rounding.

Disturbed Habitat

Disturbed habitat areas comprise approximately 1.34 acre of the project site. These areas have been physically disturbed by anthropogenic activities (e.g., routine weed abatement activities [i.e., disking, tilling], pedestrian traffic, recreational land uses) and are no longer recognized as a native vegetation community but continue to hold a soil substrate. Surface soils within these areas are heavily disturbed, eroded, and compacted. Vegetation that is present primarily consists of ruderal/weedy plant species including castor bean (*Ricinus communis*), Russian thistle (*Salsola tragus*), shortpod mustard (*Hirschfeldia incana*), wild radish (*Raphanus sativus*), dwarf nettle (*Urtica urens*), oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), prickly lettuce (*Lactuca serriola*), and acacia (*Acacia* sp.).

Urban/Developed

Urban/developed areas comprise approximately 1.70 acres of the project site and generally consist of paved areas that have been constructed upon or physically altered to a degree that natural soil substrates and native vegetation are no longer supported. Vegetation, if present, is generally comprised of non-native and/or ornamental species such as Peruvian pepper (*Schinus molle*), acacia, and eucalyptus (*Eucalyptus* spp.).

Wildlife

Natural vegetation communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a general discussion of common wildlife species that were detected by Michael Baker during the field survey or that are expected to occur based on existing site conditions. This is to be used as a general reference and is limited by the season, time of day, and weather conditions in which the field survey was conducted. A total of eighteen (18) wildlife species were observed during the January 20, 2022 field survey. Refer to Attachment C for a complete list of wildlife species observed within the project site during the field survey.

Due to a lack of aquatic habitat within the project site, fish and amphibians would not be expected to occur. Reptiles that were observed or that could occur within the project site include those that are acclimated to the urban/wild interface and edge habitats may be present including species such as western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), alligator lizard (*Elgaria multicarinata*), and gopher snake (*Pituophis catenifer*). Common mammalian species that were observed or that may occur within the project site include California ground squirrel (*Otospermophilus beecheyi*), fox squirrel (*Sciurus niger*), desert cottontail (*Sylvilagus audubonii*), opossum (*Didelphis virginiana*), and racoon (*Procyon lotor*). Birds that were detected or that could occur within the project site include those that are generally well-acclimated to highly urban environments such as mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), Allen's hummingbird (*Selasphorus sasin*), American crow (*Corvus brachyrhynchos*), black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), lesser

goldfinch (*Spinus psaltria*), white-crowned sparrow (*Zonotrichia leucophrys*), yellow-rumped warbler (*Setophaga petechia*), and house sparrow (*Passer domesticus*).

Nesting Birds

Nesting birds are protected pursuant to the federal Migratory Bird Treaty Act (MBTA) of 1918 and the California Fish and Game Code (CFGC)[2]. To maintain compliance with the MBTA and CFGC, clearance surveys are typically required prior to any ground disturbance or vegetation removal activities to avoid direct or indirect impacts to active bird nests and/or nesting birds. Consequently, if an active bird nest is destroyed or if project activities result in indirect impacts (e.g., nest abandonment, loss of reproductive effort) to nesting birds, it is considered "take" and is potentially punishable by fines and/or imprisonment. Because it has been cleared of most woody vegetation, the project site provides limited nesting habitat for most year-round and seasonal avian residents other than those that nest on the open ground (e.g., killdeer [*Charadrius vociferus*]). However, there is ample nesting habitat in areas immediately surrounding the project site. No active nests or birds displaying overt nesting behavior were observed during the field survey, which was conducted just prior to the general start of the passerine nesting season (generally February 1 to August 31).

Migratory Corridors and Linkages

Wildlife corridors and linkages are key features for wildlife movement between habitat patches. Wildlife corridors are generally defined as those areas that provide opportunities for individuals or local populations to conduct seasonal migrations, permanent dispersals, or daily commutes, while linkages generally refer to broader areas that provide movement opportunities for multiple keystone/focal species or allow for propagation of ecological processes (e.g., for movement of pollinators), often between areas of conserved land. The project site is located in a mostly-developed suburban area in the City of San Marcos. Although there is some open space in the surrounding area, approximately half of the project site is on a paved road with development on both sides and the rest is immediately north of SR-78 going through several fenced backyards and back lots. Therefore, the project site is not expected to support wildlife movement.

State and Federal Jurisdictional Resources

There are three agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (USACE) Regulatory Branch regulates discharge of dredged or fill material into "waters of the U.S." pursuant to Section 404 of the federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the Regional Water Quality Control Board (RWQCB) regulates discharges to surface waters pursuant to Section 401 of the CWA and Section 13263 of the California Porter-Cologne Water Quality Control Act, and the CDFW regulates alterations to streambed and associated vegetation communities under Section 1600 *et seq*. of the CFGC.

There are no flood control channels, basins, or natural drainage features located within the project site. A small depression is located south of a San Diego Gas & Electric (SDG&E) yard, on the eastern end of the

[2] Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or any regulation made pursuant thereto; Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey); and Section 3513 makes it unlawful to take or possess any migratory non-game bird except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act, as amended (16 U.S.C. § 703 *et seq*.).

project site. This feature has a culvert outlet that ultimately drains to a larger culvert inlet south of the project site in the Caltrans right-of-way. However, the depression is almost entirely buried in sediment and is overgrown with ruderal vegetation, mostly wild radish and oats. There are no clear signs of any significant hydrology, with no obvious ordinary high water mark indicators between the outlet and the inlet. This depression is wholly constructed in uplands and likely intended to capture runoff from the surrounding SDG&E yard, with no clear connectivity to upland jurisdictional resources. It is Michael Baker's determination that this small depression constitutes a non-jurisdictional stormwater catchment feature. In addition, although a concrete v-ditch is located to the south of the project site between the project and SR-78, this is located offsite and is separated from the project site by a chain link fence and an additional 15-foot buffer of vegetated ground between the fence and the v-ditch. This concrete v-ditch is not expected to be directly affected by the project.

Special-Status Biological Resources

The CNDDB (CDFW 2022a), CIRP (CNPS 2022), and IPaC (USFWS 2022a) were queried for reported locations of special-status plant and wildlife species as well as special-status natural vegetation communities in the USGS *Valley Center, Escondido, Rancho Santa Fe,* and *San Marcos, California* 7.5-minute quadrangles. The field survey was conducted to assess the conditions of the habitat(s) within the boundaries of the project site and project site to determine if the existing vegetation communities, at the time of the field survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species. Additionally, the potentials for special-status species to occur within the project site were determined based on the reported occurrence locations in the CNDDB and CIRP and the following criteria:

- **Present**: the species was observed or detected within the project site during the field survey.
- **High**: Occurrence records (within 20 years) indicate that the species has been known to occur on or within 1 mile of the project site and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the project site and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate**: Occurrence records (within 20 years) indicate that the species has been known to occur within 1 mile of the project site and the project site is within the normal expected range of this species. There is suitable habitat within the project site, but the site is ecologically isolated from any local known extant populations or sightings.
- **Low**: Occurrence records (within 20 years) indicate that the species has been known to occur within 5 miles of the project site, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the project site.
- **Not Expected**: There are no occurrence records of the species occurring within 5 miles of the project site, there is no suitable habitat within the project site, and/or the project site is outside of the normal expected range for the species.

The CNDDB, CIRP, and IPaC databases identified sixty-eight (68) special-status plant species and forty-six (46) special-status wildlife species as occurring within the USGS *Valley Center, Escondido, Rancho Santa Fe,* and *San Marcos, California* 7.5-minute quadrangles. In addition, ten (10) special-status vegetation communities were identified by the CNDDB. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on specific habitat requirements,

availability/quality of suitable habitat, and known distributions of species/populations. Special-status biological resources identified during the literature review are presented in Attachment D.

Special-Status Plants

A total of sixty-eight (68) special-status plant species have been recorded in the USGS *Valley Center, Escondido, Rancho Santa Fe,* and *San Marcos, California* 7.5-minute quadrangles by the CNDDB, CIRP, and IPaC databases (refer to Attachment D). No special-status plant species were identified within the project site during the January 2022 field survey. Nearly all of the vegetation within the project site is ornamental and intentionally planted as landscaping or is an invasive non-native species that has propagated through continued disturbance. Although Michael Baker's field survey was conducted in January, outside of the typical plant blooming season, because the project site is located in a mixture of developed and/or otherwise maintained areas, Michael Baker determined that none of the special-status plant species identified by the CNDDB, CIRP, and IPaC databases are expected to occur within the project site.

Special-Status Wildlife

A total of forty-six (46) special-status wildlife species have been recorded in the USGS *Valley Center, Escondido, Rancho Santa Fe,* and *San Marcos, California* 7.5-minute quadrangles by the CNDDB and IPaC databases (refer to Attachment D). No special-status wildlife species were identified within the project site during the January 2022 field survey. Of the forty-six special-status wildlife species that were identified by the CNDDB and IPaC databases as occurring in the project vicinity, only Cooper's hawk (*Accipiter cooperii*; a California Watch List species) has a potential to occur within the project site. This species has adapted to nesting and foraging within urban areas and has a high potential to occasionally hunt within the project site; however, there is no nesting habitat for this species within the project site. Based on the results of the field survey and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, Michael Baker determined that the remaining special-status wildlife species identified by the CNDDB and IPaC databases either have a low potential or are not expected to occur within the project site.

Special-Status Vegetation Communities

Ten (10) special-status vegetation communities have been reported in the USGS *Valley Center, Escondido, Rancho Santa Fe,* and *San Marcos, California* 7.5-minute quadrangles by the CNDDB: Maritime Succulent Scrub, San Diego Mesa Claypan Vernal Pool, Southern Coast Live Oak Riparian Forest, Southern Coastal Salt Marsh, Southern Cottonwood Willow Riparian Forest, Southern Maritime Chaparral, Southern Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, and Southern Willow Scrub. These special-status vegetation communities identified by the CNDDB were not observed in the project site during the field survey. According to the latest draft of the CDFW's *California Natural Communities List* (dated August 18, 2021), sensitive natural communities with sensitivity ranks of S1, S2, and S3 are required to be addressed in the California Environmental Quality Act (CEQA) review process. However, no vegetation communities defined as sensitive and requiring consideration for significant impacts under CEQA were identified within the project site.

Critical Habitat

Under the definition used by the federal Endangered Species Act (FESA), designated "Critical Habitat" refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated Critical Habitat if they contain one or more of the physical or biological features that are essential to that species' conservation and if the other areas that are occupied are inadequate to ensure the species' recovery. If a project may result in take or adverse modification to a species' designated Critical Habitat and the project has a federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a federal nexus may include projects that occur on federal lands, require federal permits (e.g., CWA Section 404 permit), or receive any federal oversight or funding. If there is a federal nexus, then the federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA. As shown in Figure 5, *Critical Habitat*, in Attachment A, the project site is not located within designated Critical Habitat for any federally listed species; the closest designated Critical Habitat is located approximately 1.8 miles to the southwest for coastal California gnatcatcher (*Polioptila californica californica*).

Local Policies and Ordinances

North County Multiple Habitat Conservation Program

The MHCP is a conservation agreement encompassing 175 square miles within seven cities in northwestern San Diego County that was approved in 2003. These cities include Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. The MHCP contains guidelines and plans by which natural habitats should be conserved, or where applicable, can be developed. Additionally, the MHCP is intended to act as an overlying permitting tool for projects in the seven cities, all of which are required to have their own subarea plans. Carlsbad, Encinitas, Escondido, Oceanside, and San Marcos all submitted draft plans at the same time that the MHCP was under public review; only Carlsbad's plan has been finalized.

Based on Figure 2-1 of the MHCP Volume I, the project site is not located within the Core Gnatcatcher Conservation Area, an area partially inside and partially outside of the seven-city planning area that will be conserved by the MHCP for coastal California gnatcatcher (*Polioptila californica californica*) (AMEC et al. 2003a). Based on Figure 2-3 of the MCHP Volume II, the project site is not located within a designated Biological Core or Linkage Area, areas that are intended to support major or critical species populations, large blocks of remaining habitat, and critical linkages between those blocks (AMEC et al. 2003b). The project site is not expected to support any covered species, wetland obligate species, or narrow endemic species. No additional mitigation or avoidance measures except those typically required under CEQA and those required under the PEIR are expected to be required for compliance with the MHCP.

City of San Marcos Subarea Plan

The San Marcos SAP is intended to be consistent with the MHCP and, upon its adoption by the San Marcos City Council, would become a standalone component of the MHCP and would supersede the implementation requirements of the MHCP with those adopted by the City of San Marcos within its municipal boundaries. At the date of this submittal, the San Marcos SAP has not yet been adopted and is

still considered to be a draft document. The San Marcos SAP revolves around a preserve system that is split into areas north of SR-78 and south of SR-78, referred to as the Northern and Southern Focused Planning Areas, respectively (Northern FPA and Southern FPA) (City of San Marcos 2001). Each of these FPAs in turn has wildlife linkages linking preserved lands in the FPAs to lands outside of San Marcos.

The project site is not located within either the Northern FPA or the Southern FPA and has no naturally-occurring or native vegetation communities located on-site. All vegetation in the project site can be characterized as the "Disturbed, agriculture, eucalyptus" habitat type described in the San Marcos SAP, which requires no mitigation for loss. The project site is also not located within any of linkages.

City of San Marcos Tree Ordinance

Under Chapter 14.20 of the San Marcos, California Code of Ordinances, the City of San Marcos prohibits the trimming, breaking, defacing, destruction, burning, or removal of any trees, hedges, or large shrubs growing on any public property or public right-of-way without authorization by the Director or City Council. Tree removal is not required with the proposed improvements. However, in the event that any trees on public property or within public right-of-way require trimming or removal during project construction, VWD may be required to submit a permit application with the City prior to doing so.

Conclusions and Recommendations

A total of two (2) land cover types were observed and mapped within the boundaries of the project site during the field survey: disturbed habitat and urban/developed areas. No sensitive natural communities were mapped within the project site. As such, no further actions are necessary in regard to special-status vegetation communities.

No special-status plant species were identified within the project site during the January 2022 field survey and based on the results of the field survey and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, Michael Baker determined that all of the special-status plant species identified by the CNDDB, CIRP, and IPaC databases either have a low potential or are not expected to occur within the project site.

No special-status wildlife species were detected within the project site during the January 2022 field survey. Cooper's hawk, a semi-common raptor on the California Watch List, has a high potential to hunt within the project site as it readily hunts smaller birds, but there is no nesting habitat for this species within the project site. Based on the results of the field survey and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, Michael Baker determined that all remaining special-status wildlife species identified by the CNDDB and IPaC databases either have a low potential or are not expected to occur within the project site.

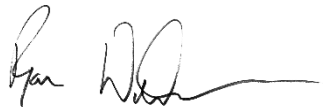
In order to avoid and/or minimize potential impacts to biological resources, it is recommended that the following Avoidance and Minimization Measure (AMM) be implemented:

AMM BIO-1: If project-related activities are to be initiated during the nesting season (January 1 to August 31), a pre-construction nesting bird clearance survey shall be conducted by a qualified biologist no more than three (3) days prior to the start of any vegetation removal or ground disturbing activities. The qualified biologist shall survey all suitable nesting habitat within the project impact area, and areas within a biologically defensible buffer zone surrounding the project impact area. If no active bird nests are

detected during the clearance survey, project activities may begin, and no additional avoidance and minimization measures shall be required. If an active bird nest is found, the species shall be identified, and a "no-disturbance" buffer shall be established around the active nest. The size of the "no-disturbance" buffer shall be increased or decreased based on the judgement of the qualified biologist and level of activity and sensitivity of the species. The qualified biologist shall periodically monitor any active bird nests to determine if project-related activities occurring outside the "no-disturbance" buffer disturb the birds and if the buffer shall be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, project activities within the "no-disturbance" buffer may occur following an additional survey by the qualified biologist to search for any new bird nests in the restricted area.

Please do not hesitate to contact me at (949) 533-0918 or ryan.winkleman@mbakerintl.com should you have any questions or require further information.

Sincerely,



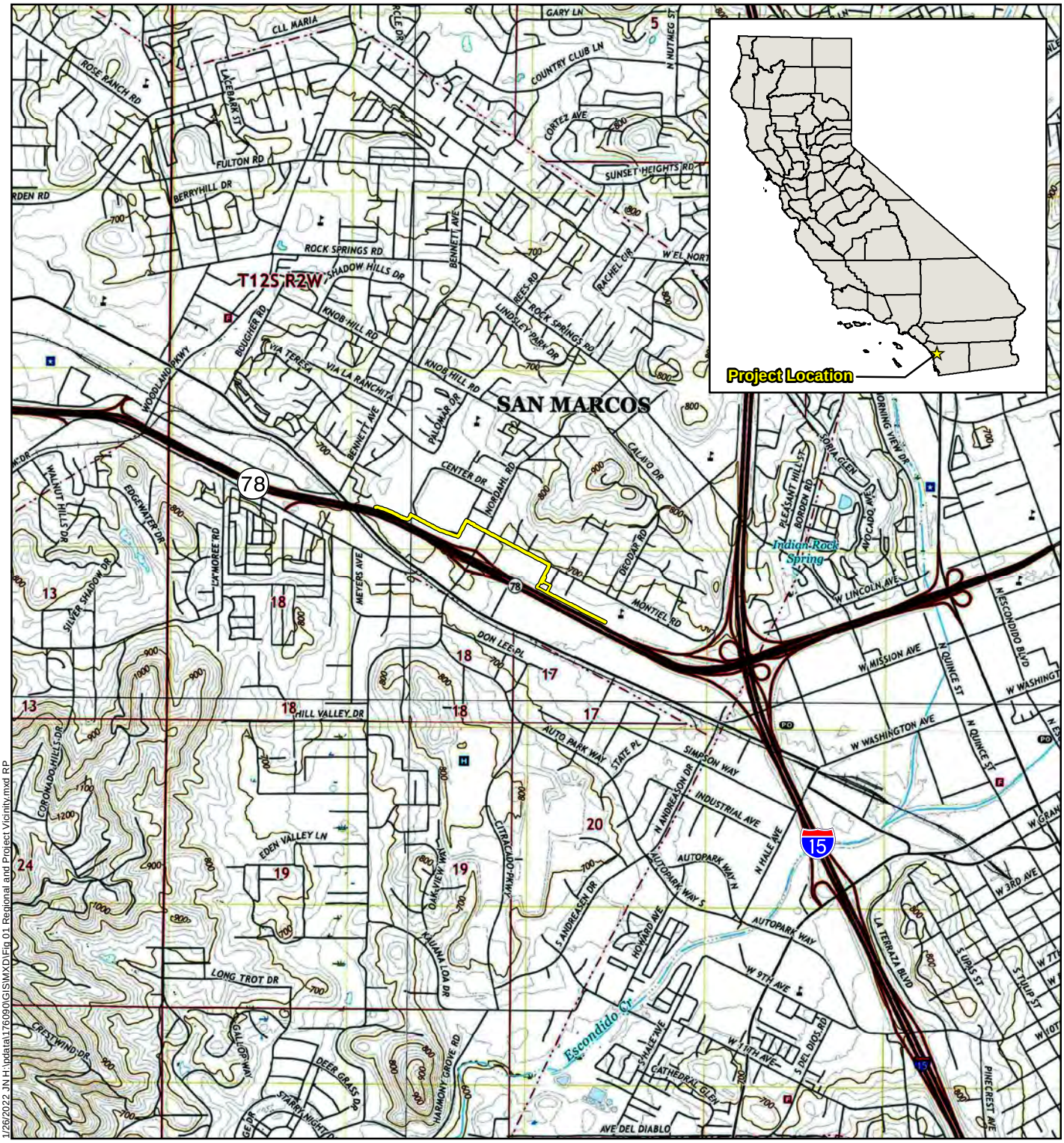
Ryan Winkleman
Senior Biologist
Natural Resources

Attachments:

A. *Project Figures*
B. *Site Photographs*
C. *Plant and Wildlife Species Observed List*
D. *Literature Review Results*
E. *References*

Attachment A

Project Figures



1/26/2022 JN H:\pdata\176090\GIS\MXD\Fig 01 Regional and Project Vicinity.mxd RP

Legend

Project Site

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT
BIOLOGICAL RESOURCES ASSESSMENT

Regional and Project Vicinity

Michael Baker INTERNATIONAL

0 0.25 0.5 Miles

Source: USGS 7.5-Minute topographic quadrangle maps: *Escondido, Rancho Santa Fe, San Marcos, Valley Center, California (2018)*

Figure 1

1/27/2022, JN Hlodata\176090\GIS\MXD\Fig 02 Project Site.mxd RP

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT
BIOLOGICAL RESOURCES ASSESSMENT

Project Site

Figure 2

Michael Baker INTERNATIONAL

Source: Nearmap (01/2022)

1/26/2022 JN Hindahl 176900\GIS\MXD\Fig 03 USDA Soils.mxd RP

Legend

- Project Site
- EsE2 — Escondido very fine sandy loam, 15 to 30 percent slopes, eroded
- FaC — Fallbrook sandy loam, 5 to 9 percent slopes
- FaD2 — Fallbrook sandy loam, 9 to 15 percent slopes, eroded
- PeC — Placentia sandy loam, 2 to 9 percent slopes, warm MAAT, MLRA 19
- PfC — Placentia sandy loam, thick surface, 2 to 9 percent slopes
- VsC — Vista coarse sandy loam, 5 to 9 percent slopes
- VsD — Vista coarse sandy loam, 9 to 15 percent slopes, MLRA 20
- Reference Point

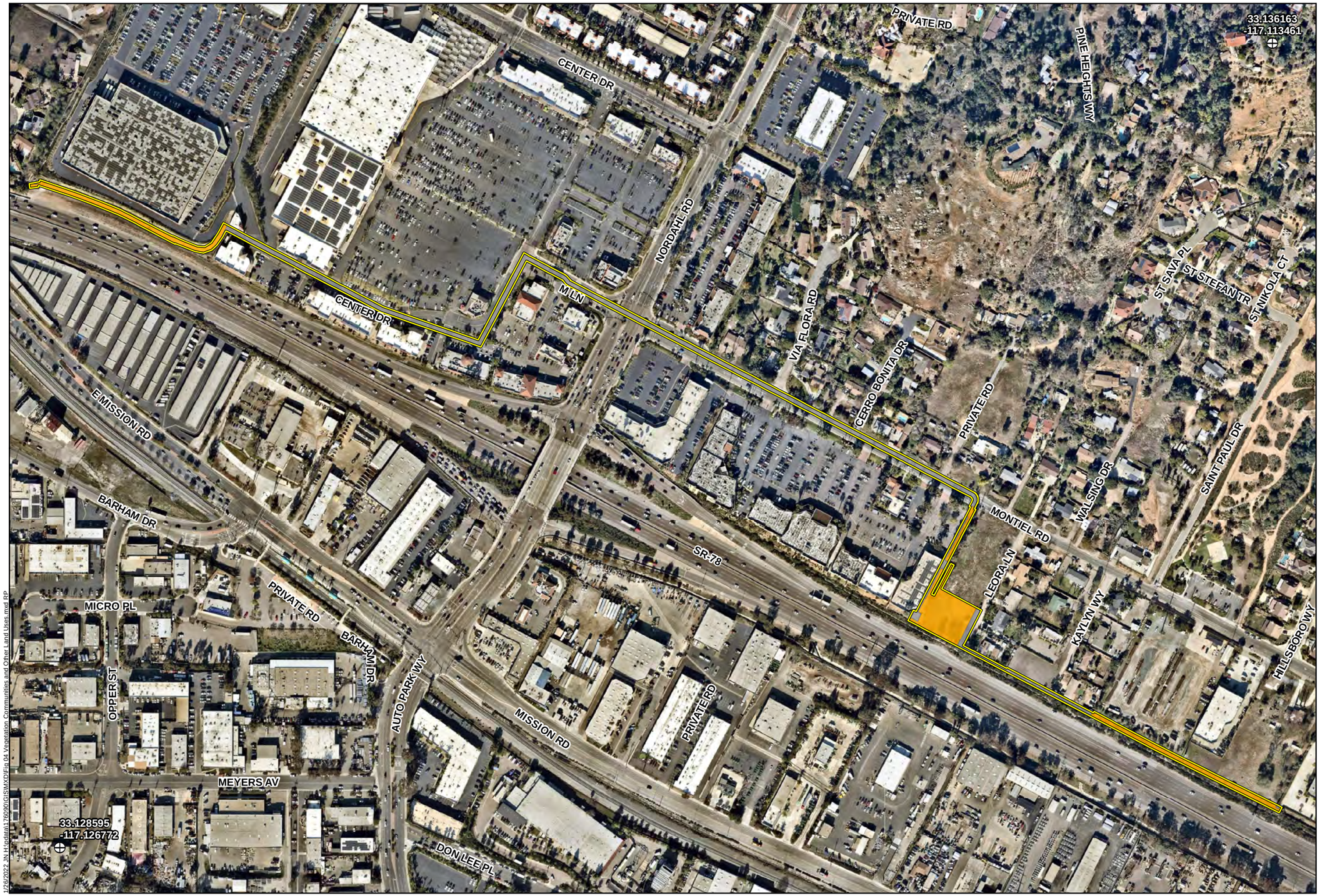
0 160 320 Feet

Source: Nearmap (01/2022), USDA (2019)

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT
BIOLOGICAL RESOURCES ASSESSMENT

USDA Soils

Figure 3



Legend

- Project Site
- Disturbed Habitat (1.34 acres)
- Urban/Developed (1.70 acres)
- Reference Point

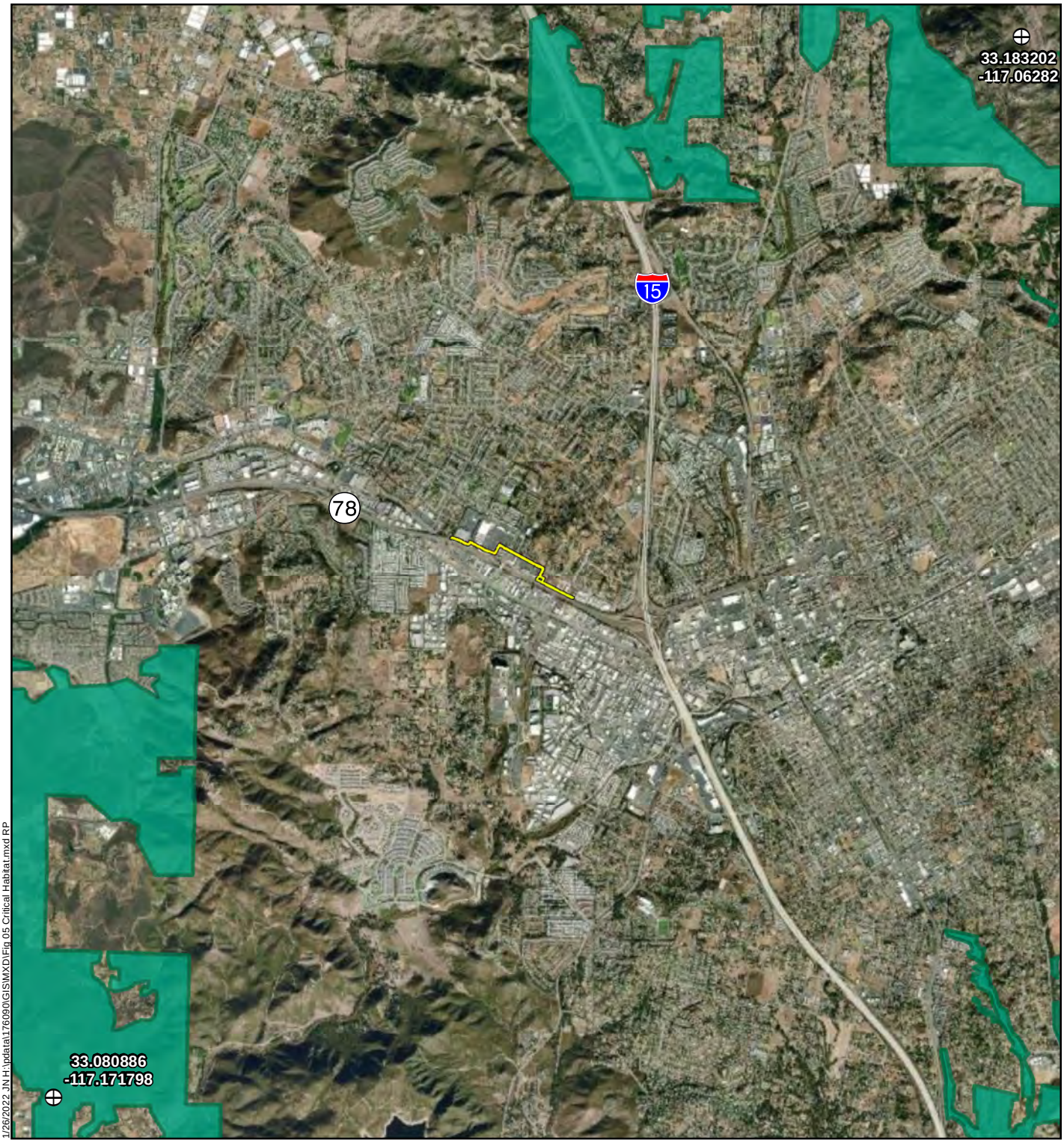
0 160 320 Feet

Source: Nearmap (01/2022)

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT
BIOLOGICAL RESOURCES ASSESSMENT

Vegetation Communities and Other Land Uses

Figure 4



1/26/2022 JN H:\pdata\176090\GIS\MXD\Fig 05 Critical Habitat.mxd RP

Legend

- Project Site
- Coastal Californica Gnatcatcher (*Polioptila californica californica*)
- ⊕ Reference Point

Michael Baker INTERNATIONAL

0 2,500 5,000 Feet

Source: Esri (2020), USFWS (12/2021)

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT
BIOLOGICAL RESOURCES ASSESSMENT

Critical Habitat

Figure 5

Attachment B

Site Photographs

Photograph 1: Standing at the western end of the project facing west. Two manholes in the background (not visible in this photo) mark the western terminus.

Photograph 2: Standing at the western end of the project facing east at one of the two manholes marking the access points along the western terminus.

Photograph 3: Standing at the western end of the project facing east along an earthen access road.

Photograph 4: Standing near the corner of Center Drive and M Lane facing southeast.

Photograph 5: Standing at the corner of Nordahl Road and Montiel Road facing northwest.

Photograph 6: Standing south of the junction of Montiel Road and Via Flora Road, facing northwest.

Photograph 7: Standing near the junction of Montiel Road and Alsing Drive facing southeast.

Photograph 8: Facing southwest along the paved access road for the Montiel Lift Station, visible in the center of the photo in the background.

Photograph 9: Facing southwest at the Montiel Lift Station.

Photograph 10: Facing east at a vacant lot that is proposed for temporary construction staging immediately adjacent to the Montiel Lift Station access road.

Photograph 11: Facing north at a vacant lot that is proposed for temporary construction staging immediately adjacent to the Montiel Lift Station access road.

Photograph 12: Standing in a vacant lot at the end of Kaylyn Way facing northwest. The Caltrans right-of-way is located on the left side of the photo on the other side of the fence.

Photograph 13: Standing on the south end of a San Diego Gas & Electric yard at Montiel Road and St. Paul Drive, facing northwest.

Photograph 14: Standing near the eastern terminus of the project, facing northwest across a vacant lot.

Attachment C

Plant and Wildlife Species Observed List

Table C-1: Plant and Wildlife Species Observed List

*Scientific Name**	Common Name	Cal-IPC Rating**	Special-Status Rank
Plants			
Acacia sp.*	acacia		
Ambrosia psilostachya	ragweed		
*Arundo donax**	giant reed	High	
Avena sp.*	oats	Moderate	
Baccharis pilularis	coyote brush		
*Bromus diandrus**	ripgut brome	Moderate	
*Bromus hordeaceus**	soft chess	Limited	
*Carpobrotus edulis**	iceplant	High	
Datura wrightii	jimsonweed		
Eriogonum fasciculatum	California buckwheat		
*Erodium cicutarium**	red-stemmed filaree	Limited	
Eschscholzia californica	California poppy		
Eucalyptus sp.*	eucalyptus		
Heterotheca grandiflora	telegraph weed		
*Hirschfeldia incana**	shortpod mustard	Moderate	
*Lactuca serriola**	prickly lettuce		
*Melia azedarach**	China berry		
Quercus agrifolia	coast live oak		
*Raphanus sativus**	wild radish	Limited	
*Ricinus communis**	castor bean	Limited	
*Salsola tragus**	Russian thistle	Limited	
*Schinus molle**	Peruvian pepper	Limited	
*Sonchus asper**	spiny sowthistle		
*Urtica urens**	dwarf nettle		
*Washingtonia robusta**	Mexican fan palm	Moderate	
Birds			
Aphelocoma californica	California scrub-jay		
Calypte anna	Anna's hummingbird		
Cathartes aura	turkey vulture		
Corvus brachyrhynchos	American crow		
Dryobates nuttallii	Nuttall's woodpecker		
Haemorhous mexicanus	house finch		
Larus delawarensis	ring-billed gull		
Melozone crissalis	California towhee		
Mimus polyglottos	northern mockingbird		
*Passer domesticus**	house sparrow		
Psaltriparus minimus	bushtit		
Sayornis nigricans	black phoebe		
Sayornis saya	Say's phoebe		

Table C-1: Plant and Wildlife Species Observed List

*Scientific Name**	Common Name	Cal-IPC Rating**	Special-Status Rank
Setophaga coronata auduboni	Audubon's yellow-rumped warbler		
Spinus psaltria	lesser goldfinch		
Zenaida macroura	mourning dove		
Mammals			
Otospermophilus beecheyi	California ground squirrel		
Reptiles			
Sceloporus occidentalis longipes	western fence lizard		

* **Non-native species**

** **California Invasive Plant Council (Cal-IPC) Ratings**

High — These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate — These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited — These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Attachment D

Literature Review Results

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Marcos (3311722) OR Valley Center (3311721) OR Rancho Santa Fe (3311712) OR Escondido (3311711))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Artemisiospiza belli belli Bell's sage sparrow	ABPBX97021	None	None	G5T2T3	S3	WL
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	SSC
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2	SSC
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T2T3	S2S3	
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G3G4	S4	
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G4G5	S3	SSC
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plegadis chihi white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
Plestiodon skiltonianus interparietalis Coronado skink	ARACH01114	None	None	G5T5	S2S3	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rallus obsoletus levipes light-footed Ridgway's rail	ABNME05014	Endangered	Endangered	G3T1T2	S1	FP
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S2S3	SSC
Spea hammondii western spadefoot	AAABF02020	None	None	G2G3	S3	SSC
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 47

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Marcos (3311722) OR Valley Center (3311721) OR Rancho Santa Fe (3311712) OR Escondido (3311711))
 AND Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acanthomintha ilicifolia San Diego thorn-mint	PDLAM01010	Threatened	Endangered	G1	S1	1B.1
Adolphia californica California adolphia	PDRHA01010	None	None	G3	S2	2B.1
Ambrosia pumila San Diego ambrosia	PDAST0C0M0	Endangered	None	G1	S1	1B.1
Arctostaphylos glandulosa ssp. crassifolia Del Mar manzanita	PDERI040E8	Endangered	None	G5T2	S2	1B.1
Arctostaphylos rainbowensis Rainbow manzanita	PDERI042T0	None	None	G2	S2	1B.1
Artemisia palmeri San Diego sagewort	PDAST0S160	None	None	G3?	S3?	4.2
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Baccharis vanessae Encinitas baccharis	PDAST0W0P0	Threatened	Endangered	G1	S1	1B.1
Bloomeria clevelandii San Diego goldenstar	PMLIL1H010	None	None	G2	S3	1B.1
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Brodiaea orcuttii Orcutt's brodiaea	PMLIL0C0B0	None	None	G2	S2	1B.1
Ceanothus cyaneus Lakeside ceanothus	PDRHA04070	None	None	G2	S2	1B.2
Ceanothus verrucosus wart-stemmed ceanothus	PDRHA041J0	None	None	G2	S2?	2B.2
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chorizanthe orcuttiana Orcutt's spineflower	PDPGN040G0	Endangered	Endangered	G1	S1	1B.1
Clarkia delicata delicate clarkia	PDONA050D0	None	None	G3	S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Corethrogyne filaginifolia var. linifolia Del Mar Mesa sand aster	PDAST2M027	None	None	G4T1Q	S1	1B.1
Dudleya variegata variegated dudleya	PDCRA040R0	None	None	G2	S2	1B.2
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Ericameria palmeri var. palmeri Palmer's goldenbush	PDAST3L0C1	None	None	G4T2?	S2	1B.1
Eryngium aristulatum var. parishii San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
Ferocactus viridescens San Diego barrel cactus	PDCAC08060	None	None	G3?	S2S3	2B.1
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Hazardia orcuttii Orcutt's hazardia	PDAST4H070	None	Threatened	G1	S1	1B.1
Heterotheca sessiliflora ssp. sessiliflora beach goldenaster	PDAST4V0K2	None	None	G4T2T3	S1	1B.1
Horkelia truncata Ramona horkelia	PDROS0W0G0	None	None	G3	S3	1B.3
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Iva hayesiana San Diego marsh-elder	PDAST580A0	None	None	G3	S2	2B.2
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Leptosyne maritima sea dahlia	PDAST2L0L0	None	None	G2	S1S2	2B.2
Monardella hypoleuca ssp. lanata felt-leaved monardella	PDLAM180A2	None	None	G4T3	S3	1B.2
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Pogogyne abramsii San Diego mesa mint	PDLAM1K010	Endangered	Endangered	G1	S1	1B.1
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Salvia munzii Munz's sage	PDLAM1S140	None	None	G2	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Sphaerocarpos drewiae bottle liverwort	NBHEP35030	None	None	G1	S1	1B.1
Stemodia durantifolia purple stemodia	PDSCR1U010	None	None	G5	S2	2B.1
Tetracoccus dioicus Parry's tetracoccus	PDEUP1C010	None	None	G2G3	S2	1B.2

Record Count: 42

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Marcos (3311722) OR Valley Center (3311721) OR Rancho Santa Fe (3311712) OR Escondido (3311711))
 AND Taxonomic Group IS (Dune OR Scrub OR Herbaceous OR Marsh OR Riparian OR Woodland OR Forest OR Alpine OR Inland Waters OR Marine OR Estuarine OR Riverine OR Palustrine)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Maritime Succulent Scrub	CTT32400CA	None	None	G2	S1.1	
Maritime Succulent Scrub						
San Diego Mesa Claypan Vernal Pool	CTT44322CA	None	None	G2	S2.1	
San Diego Mesa Claypan Vernal Pool						
Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coast Live Oak Riparian Forest						
Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
Southern Coastal Salt Marsh						
Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Cottonwood Willow Riparian Forest						
Southern Maritime Chaparral	CTT37C30CA	None	None	G1	S1.1	
Southern Maritime Chaparral						
Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Southern Riparian Forest						
Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Riparian Scrub						
Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Sycamore Alder Riparian Woodland						
Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
Southern Willow Scrub						

Record Count: 10

Search Results

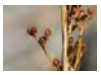
67 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3311721:3311722:3311712:3311711**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Acanthomintha ilicifolia	San Diego thorn-mint	Lamiaceae	annual herb	Apr-Jun	FT	CE	G1	S1	1B.1	 © 2013 Keir Morse
Adolphia californica	California adolphia	Rhamnaceae	perennial deciduous shrub	Dec-May	None	None	G3	S2	2B.1	 © 2007 Andrew Borcher
Ambrosia pumila	San Diego ambrosia	Asteraceae	perennial rhizomatous herb	Apr-Oct	FE	None	G1	S1	1B.1	No Photo Available
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	Ericaceae	perennial evergreen shrub	Jun-Apr	FE	None	G5T2	S2	1B.1	No Photo Available
Arctostaphylos rainbowensis	Rainbow manzanita	Ericaceae	perennial evergreen shrub	Dec-Mar	None	None	G2	S2	1B.1	No Photo Available
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2	No Photo Available
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G4	S4	4.2	No Photo Available
Astragalus albens	Cushenbury milk-vetch	Fabaceae	perennial herb	Mar-Jun	FE	None	G1	S1	1B.1	No Photo Available
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	None	None	G3	S1S2	1B.2	No Photo Available
Atriplex pacifica	south coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4	S2	1B.2	No Photo Available
Baccharis vanessae	Encinitas baccharis	Asteraceae	perennial deciduous shrub	Aug-Nov	FT	CE	G1	S1	1B.1	No Photo Available
Bloomeria clevelandii	San Diego goldenstar	Themidaceae	perennial bulbiferous herb	Apr-May	None	None	G2	S3	1B.1	No Photo Available

Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	 © 2016 Keir Morse
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	perennial bulbiferous herb	May-Jul	None	None	G2	S2	1B.1	 © 2001 Ellen Friedman & Ted Dunning
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2	No Photo Available
Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	No Photo Available
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	None	None	G4	S4	3	No Photo Available
Ceanothus cyaneus	Lakeside ceanothus	Rhamnaceae	perennial evergreen shrub	Apr-Jun	None	None	G2	S2	1B.2	No Photo Available
Ceanothus verrucosus	wart-stemmed ceanothus	Rhamnaceae	perennial evergreen shrub	Dec-May	None	None	G2	S2?	2B.2	No Photo Available
Centromadia parryi ssp. *australis*	southern tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.1	No Photo Available
Centromadia pungens ssp. *laevis*	smooth tarplant	Asteraceae	annual herb	Apr-Sep	None	None	G3G4T2	S2	1B.1	No Photo Available
Chamaebatia australis	southern mountain misery	Rosaceae	perennial evergreen shrub	Nov-May	None	None	G4	S4	4.2	No Photo Available
Chorizanthe orcuttiana	Orcutt's spineflower	Polygonaceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	No Photo Available
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	None	None	G3G4	S3	4.2	No Photo Available
Clarkia delicata	delicate clarkia	Onagraceae	annual herb	Apr-Jun	None	None	G3	S3	1B.2	No Photo Available
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	None	None	G3T2	S2	1B.2	No Photo Available

Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2	No Photo Available
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	Asteraceae	perennial herb	May-Sep	None	None	G4T1Q	S1	1B.1	No Photo Available
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	None	None	G3G4	S3S4	4.2	No Photo Available
Dudleya variegata	variegated dudleya	Crassulaceae	perennial herb	Apr-Jun	None	None	G2	S2	1B.2	No Photo Available
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	None	None	G2	S2	1B.2	No Photo Available
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	Asteraceae	perennial evergreen shrub	(Jul)Sep-Nov	None	None	G4T2?	S2	1B.1	No Photo Available
Eryngium aristulatum var. *parishii*	San Diego button-celery	Apiaceae	annual/perennial herb	Apr-Jun	FE	CE	G5T1	S1	1B.1	No Photo Available
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	None	None	G4	S3	4.3	 Ron Vanderhoff, 2019
Ferocactus viridescens	San Diego barrel cactus	Cactaceae	perennial stem	May-Jun	None	None	G3?	S2S3	2B.1	No Photo Available
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2	 © 2015 Keir Morse
Hazardia orcuttii	Orcutt's hazardia	Asteraceae	perennial evergreen shrub	Aug-Oct	None	CT	G1	S1	1B.1	 © 2011 Keir Morse
Heterotheca sessiliflora ssp. *sessiliflora*	beach goldenaster	Asteraceae	perennial herb	Mar-Dec	None	None	G4T2T3	S1	1B.1	No Photo Available
Holocarpha virgata ssp. *elongata*	graceful tarplant	Asteraceae	annual herb	May-Nov	None	None	G5T3	S3	4.2	 © 2013 Anna Bennett
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2	No Photo Available
Horkelia truncata	Ramona horkelia	Rosaceae	perennial herb	May-Jun	None	None	G3	S3	1B.3	

										© 2008 Andrew Borcher
Isocoma menziesii var. *decumbens*	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	None	None	G3G5T2T3	S2	1B.2	No Photo Available
Iva hayesiana	San Diego marsh-elder	Asteraceae	perennial herb	Apr-Oct	None	None	G3	S2	2B.2	No Photo Available
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	 © 2020 Zoya Akulova
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2	 © 2019 Belinda Lo
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1	 © 2013 Keir Morse
Lathyrus splendens	pride-of-California	Fabaceae	perennial herb	Mar-Jun	None	None	G4	S4	4.3	 © 2012 Ron Clark
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3	 © 2015 Keir Morse
Leptosyne maritima	sea dahlia	Asteraceae	perennial herb	Mar-May	None	None	G2	S1S2	2B.2	No Photo Available
Lycium californicum	California box-thorn	Solanaceae	perennial shrub	Mar-Aug(Dec)	None	None	G4	S4	4.2	No Photo Available
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	Asteraceae	annual herb	Mar-May	None	None	G4T4	S4	4.2	No Photo Available
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	None	None	G4T3	S3	1B.2	No Photo Available
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	FT	None	G2	S2	1B.1	No Photo Available
Ophioglossum californicum	California adder's-tongue	Ophioglossaceae	perennial rhizomatous herb	Jan-Jun(Dec)	None	None	G4	S4	4.2	No Photo

										Available
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	Asteraceae	annual herb	Mar-Jul	None	None	G4T3	S3	4.2	No Photo Available
Pogogyne abramsii	San Diego mesa mint	Lamiaceae	annual herb	Mar-Jul	FE	CE	G1	S1	1B.1	No Photo Available
Psilocarphus brevissimus var. *multiflorus*	Delta woolly-marbles	Asteraceae	annual herb	May-Jun	None	None	G4T3	S3	4.2	No Photo Available
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	None	None	G3	S3	1B.1	No Photo Available
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2	No Photo Available
Rupertia rigida	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3	No Photo Available
Salvia munzii	Munz's sage	Lamiaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	2B.2	No Photo Available
Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb		None	None	G3G4	S3	4.1	No Photo Available
Sphaerocarpos drewiae	bottle liverwort	Sphaerocarpaceae	ephemeral liverwort		None	None	G1	S1	1B.1	No Photo Available
Stemodia durantifolia	purple stemodia	Plantaginaceae	perennial herb	(Jan)Apr-Dec	None	None	G5	S2	2B.1	No Photo Available
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	perennial deciduous shrub	Apr-May	None	None	G2G3	S2	1B.2	No Photo Available
Viguiera laciniata	San Diego County viguiera	Asteraceae	perennial shrub	Feb-Jun(Aug)	None	None	G4	S4	4.3	No Photo Available
Xanthisma junceum	rush-like bristleweed	Asteraceae	perennial herb	Jan-Oct	None	None	G5	S4	4.3	No Photo Available

Showing 1 to 67 of 67 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Website https://www.rareplants.cnps.org [accessed 11 January 2022].

Send questions and comments to rareplants@cnps.org.

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IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

San Diego County, California

Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Stephens' Kangaroo Rat Dipodomys stephensi (incl. D. cascus) Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3495	Endangered

Birds

NAME	STATUS
Coastal California Gnatcatcher Polioptila californica californica Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5945	Endangered
Light-footed Clapper Rail Rallus longirostris levipes Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6035	Endangered
Southwestern Willow Flycatcher Empidonax traillii extimus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/6749	Endangered

Amphibians

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad Anaxyrus californicus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3762	Endangered

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Candidate
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Crustaceans

NAME	STATUS

Riverside Fairy Shrimp Streptocephalus woottoni — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8148

San Diego Fairy Shrimp Branchinecta sandiegonensis — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/6945

Flowering Plants

NAME	STATUS

Del Mar Manzanita Arctostaphylos glandulosa ssp. crassifolia — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7673

San Diego Ambrosia Ambrosia pumila — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8287

San Diego Button-celery Eryngium aristulatum var. parishii — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5937

San Diego Thornmint Acanthomintha ilicifolia — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/351

Spreading Navarretia Navarretia fossalis — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/1334

Thread-leaved Brodiaea Brodiaea filifolia — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/6087

Willowy Monardella Monardella viminea — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/250

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php

- Nationwide conservation measures for birds
  http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31

Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any

week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

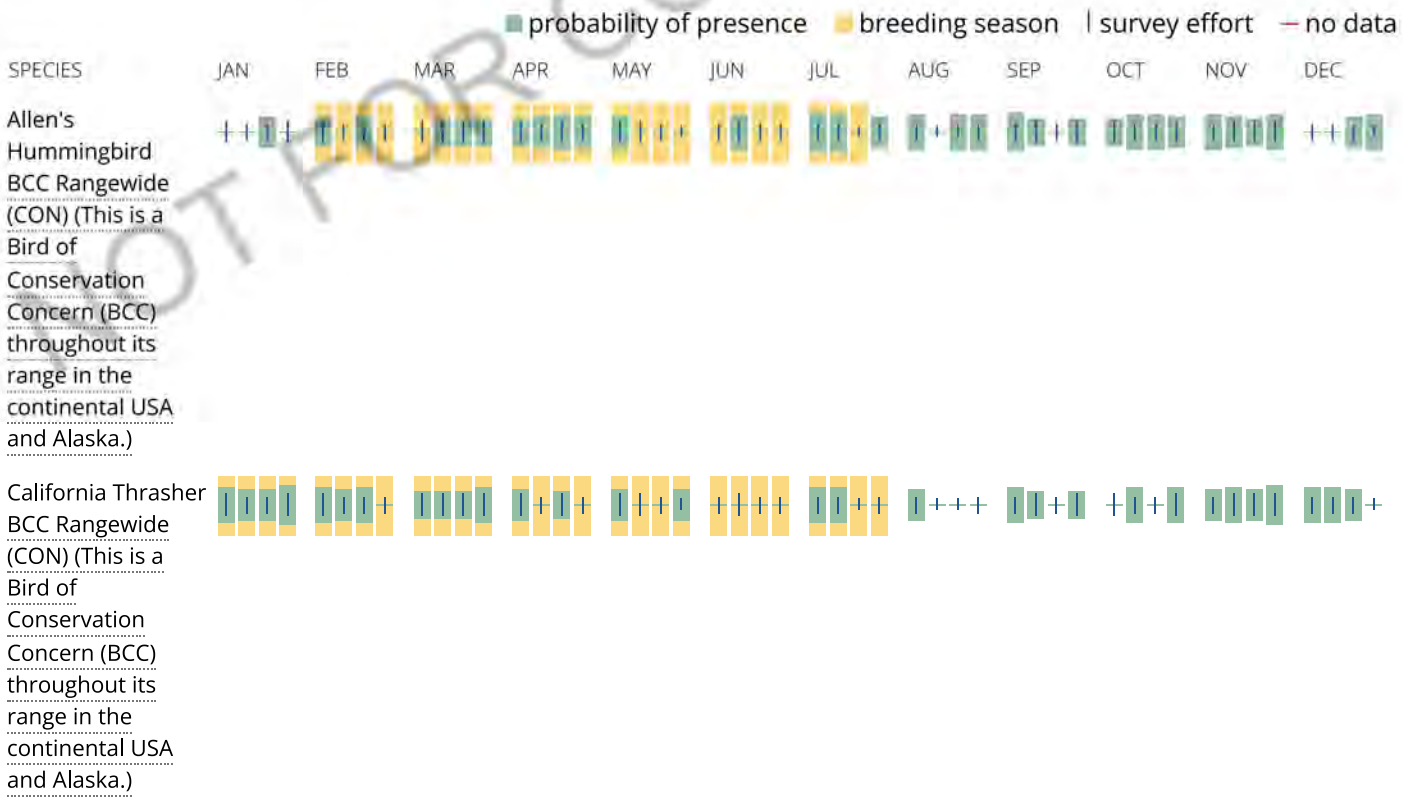
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

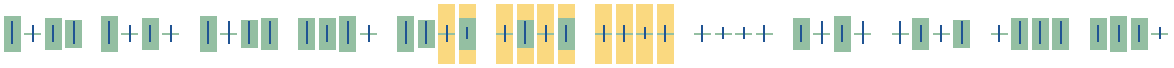
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

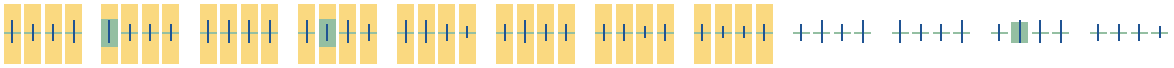
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Common Yellowthroat BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

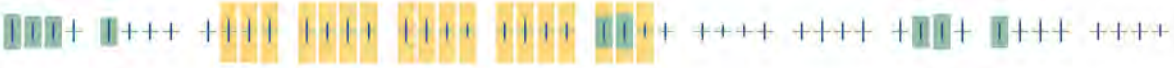


Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

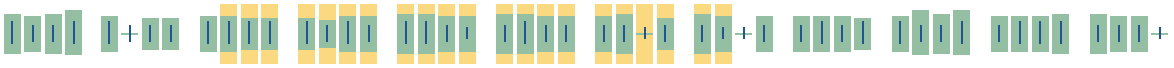


Nuttall's Woodpecker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Oak Titmouse BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wrentit BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds

guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize

potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters.

Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment E

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Michael Baker
INTERNATIONAL

Appendix B
Cultural Resources Inventory and Evaluation Report

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Cultural Resources Inventory and Evaluation Report

Montiel Lift Station and Forcemain Replacement Project

City of San Marcos, San Diego County, California

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June 2020

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

MANAGEMENT SUMMARY

In 2020, ECORP Consulting, Inc. was retained to conduct a cultural resources inventory for the proposed Montiel Lift Station and Force Main Replacement Project in the City of San Marcos in San Diego County, California. The Vallecitos Water District proposes to redevelop the Montiel Lift Station and replace the six-inch force main that currently serves the lift station.

The inventory included a records search, literature review, and field site visit. A records search of the California Historical Resources Information System at the South Coastal Information Center revealed that 87 cultural resources investigations had previously been conducted in or within one mile of the Project Area. Fifty cultural resources were previously recorded within one mile of the Project Area as a result of these investigations; however, no cultural resources have been previously identified within the Project Area itself. A search of the Sacred Lands File was completed by the California Native American Heritage Commission and resulted in a negative finding, meaning that no Native American Sacred Lands have been recorded in the Project Area.

As a result of the field survey, three historic period cultural resources, all road segments, were recorded: MLS-001, Leora Lane; MLS-002, a segment of Montiel Road; and MLS-003, a segment of Nordahl Road. ECORP used archival research to evaluate the three historic-period resources using National Register of Historic Places and California Register of Historical Resources eligibility criteria and found all three resources not eligible. Therefore, these resources are not considered Historic Properties according to Section 106 or Historical Resources according to the California Environmental Quality Act. Recommendations for the management of unanticipated discoveries are provided.

CONTENTS

LIST OF FIGURES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	Area of Potential Effects
APN	Assessor Parcel Number
BLM	Bureau of Land Management
BP	Before present
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Encinitas
CRHR	California Register of Historical Resources
CHRIS	California Historical Resources Information System
GLO	General Land Office
Ma	Million Years Ago
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
Project	Fox Point Farms Project
PRC	Public Resources Code
RPA	Registered Professional Archaeologist
SCCIC	South Coastal Information Center
USC	U.S. Code
USGS	U.S. Geological Survey

1.0 INTRODUCTION

In 2020, ECORP Consulting, Inc. was retained by Michael Baker International to conduct a cultural resources inventory of the proposed Montiel Lift Station and Force Main Replacement Project Area located in the City of San Marcos in San Diego County, California (Figure 1). A cultural resources inventory of the Project Area was required to identify potentially eligible cultural resources (i.e., archaeological sites and historic buildings, structures, and objects) that could be affected by the Project. The Vallecitos Water District is the Lead Agency for the Project.

1.1 Project Location

The Project Area consists of approximately 0.75 mile of existing road right-of-way, including portions of Montiel Road, Nordahl Road, Center Drive, adjacent parking lots, and other easement areas, plus a 40-x-40-foot easement to the southeast of a business building located at 2175 Montiel Road, on which the lift station exists. It is located in an unsectioned portion of the Vallecitos de San Marcos land grant of Township 12 South, Range 2 West, San Bernardino Base and Meridian as depicted on the 1996 Valley Center, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 2). The Project Area is located north of California State Route 78 (SR 78), east of East Mission Road, and west of Interstate 15 in the City of San Marcos. As it currently exists, the Project Area is almost completely paved and obstructed by modern facilities.

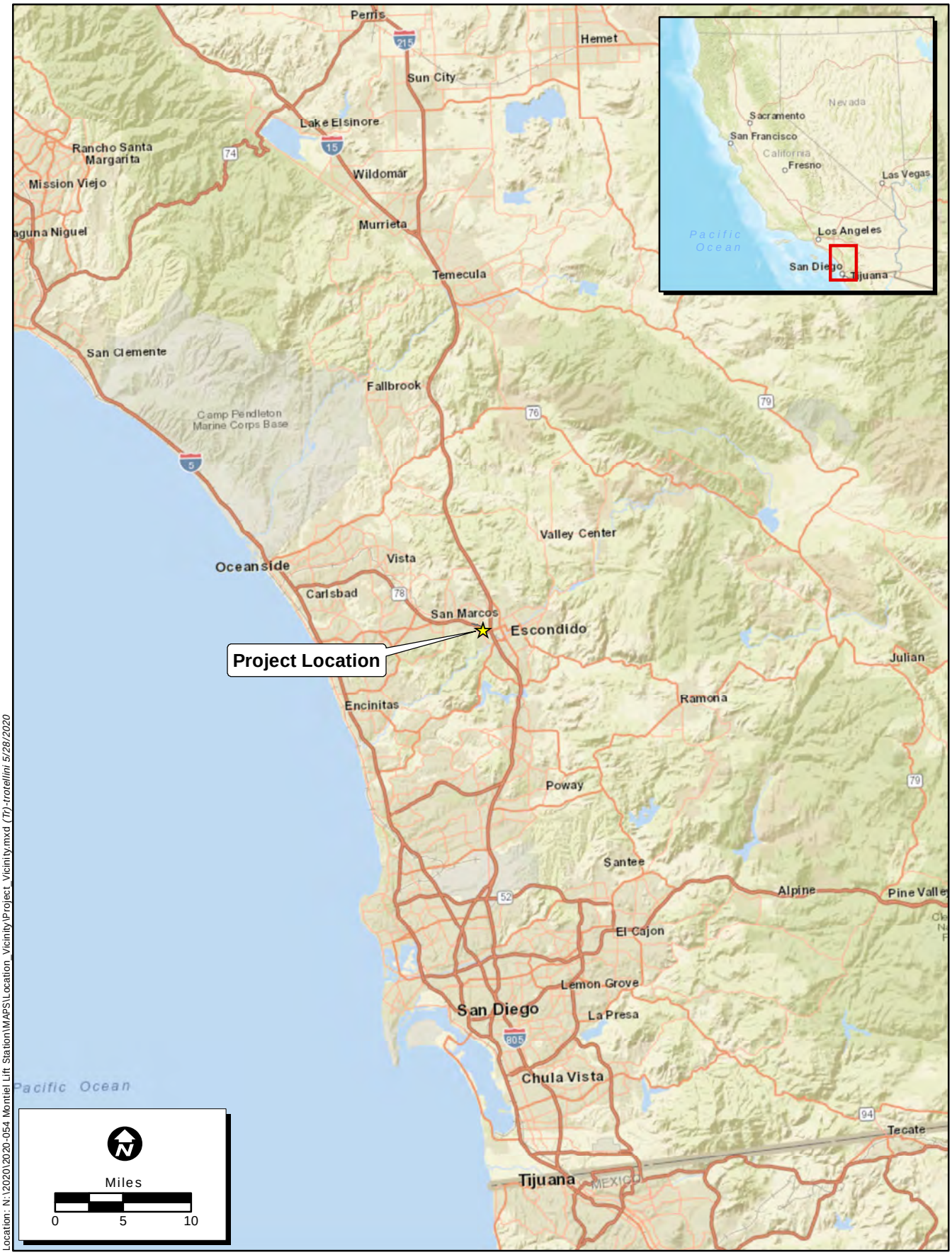
1.2 Project Description

The proposed Project, when completed, will redevelop the existing Montiel Lift Station and replace the six-inch force main that currently serves the lift station. The Project will mitigate for any danger of lift station failure due to outdated system components.

1.3 Area of Potential Effects

The Area of Potential Effects (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 or Historic Properties could occur as a result of the Project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to the California Environmental Quality Act (CEQA), the term Project Area is used rather than APE. For the purpose of this document, the terms Project Area and APE are interchangeable.

The horizontal APE consists of all areas where activities associated with the Project are proposed and in the case of the current Project, equals the Project area subject to environmental review under the National Environmental Policy Act and CEQA. 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 approximately 5.51 acres and is illustrated in Figures 1 and 2 and also represents the survey coverage area.



Location: N:\2020\2020-054 Montiel Lift Station\MAPS\Location_Vicinity\Project_Vicinity.mxd (TI)-trotellini 5/28/2020

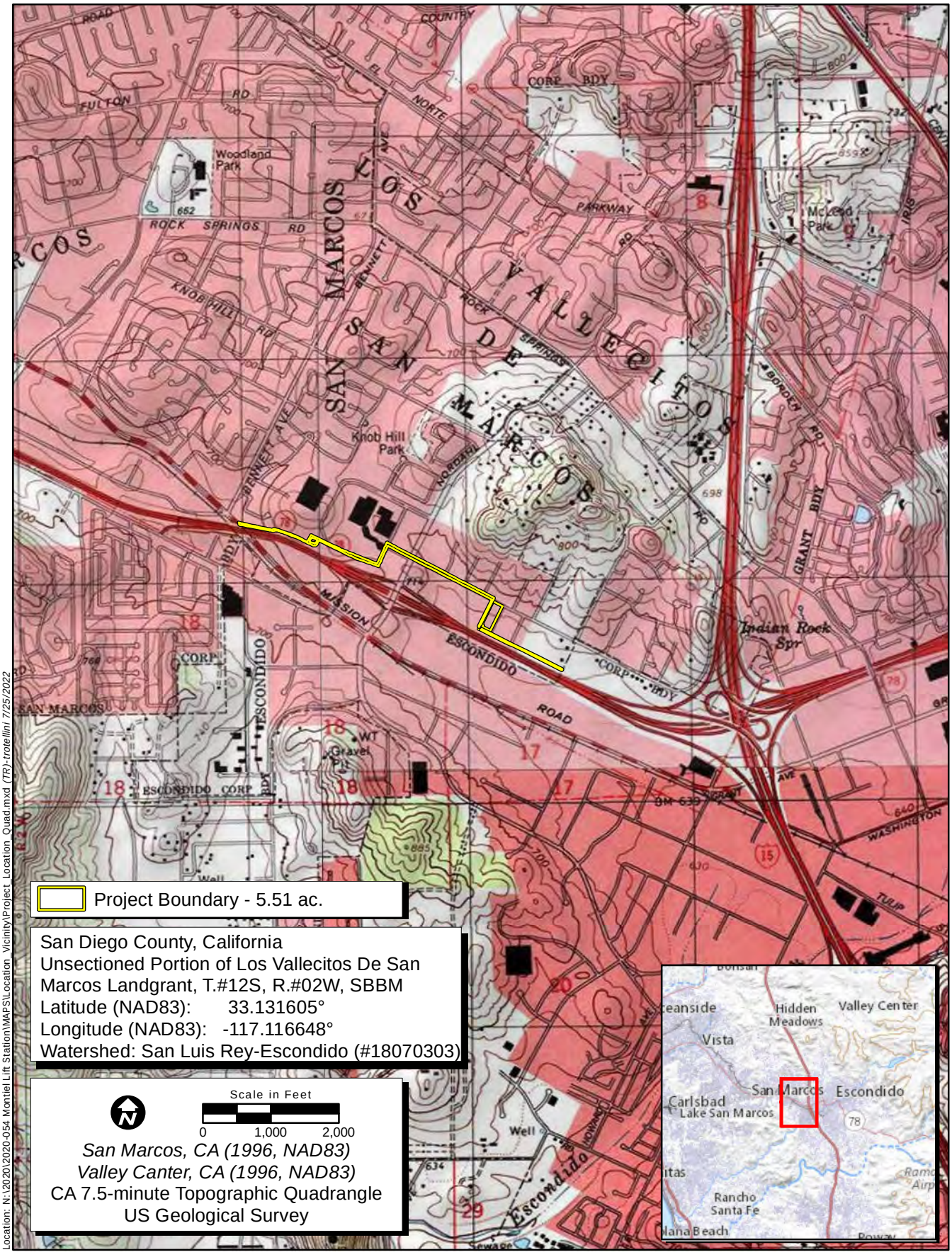
Map Date: 5/28/2020

Sources:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Project Vicinity

2020-054 Montiel Lift Station



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Map Date: 5/28/2020

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2. Project Location and Vicinity

2020-054 Montiel Lift Station

The vertical APE is described as the maximum depth below the surface to which excavations for Project foundations and facilities will extend. Therefore, the vertical APE includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the Project, depending on the depth of the grading or trenching for installation of facilities. This study assumes the ground disturbance will not exceed 36 feet below the current surface. A review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.

The vertical APE also is described as the maximum height of structures that could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. Following completion of the proposed Project, the majority of the Project Area will be returned to pre-construction conditions with the exception of limited supporting structures associated with the replacement lift station..

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 contained within Section 106 of the National Historic Preservation Act (NHPA) and in CEQA (Public Resources Code [PRC] § 21000 et seq.) The goal of NHPA and 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 development project maps. The NHPA pertains to projects that entail some degree of federal funding or permit approval.

The NHPA and CEQA (Title 14, California Code of Regulations [CCR], Article 5, § 15064.5) apply to cultural resources of the historical and pre-contact (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 on either the California Register of Historic Resources (CRHR, PRC § 5024.1, Title 14 CCR, § 4852) or the National Register of Historic Places (NRHP) (36 Code of Federal Regulations [CFR] 60.4). Cultural resources eligible for listing on the NRHP are considered Historic Properties under CFR 36 Part 800 and are automatically eligible for the CRHR. Resources listed on or eligible for inclusion in the CRHR are considered Historical Resources under CEQA.

Tribal Cultural Resources are defined in Section 21074 of the California PRC as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the CRHR, or are included in a local register of historical resources as defined in subdivision (k) of Section 5020.1, or are a resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. Section 1(b)(4) of Assembly Bill (AB) 52 established that only California Native American

tribes, as defined in Section 21073 of the California PRC, are experts in the identification of Tribal Cultural Resources and impacts thereto. Because ECORP does not meet the definition of a California Native American tribe, this report only addresses information for which ECORP is qualified to identify and evaluate, and that which is needed to inform the cultural resources section of CEQA documents. This report, therefore, does not identify or evaluate Tribal Cultural Resources. Should California Native American tribes ascribe additional importance to or interpretation of archaeological resources described herein, or provide information about non-archeological Tribal Cultural Resources, that information is documented separately in the AB 52 tribal consultation record between the tribe(s) and Lead Agency, and summarized in the Tribal Cultural Resources section of the CEQA document, if applicable.

In addition, in the event that the Project may affect Waters of the U.S., thereby requiring the Project proponent to meet the requirements of Section 404 of the Clean Water Act and obtain a permit from the U.S. Army Corps of Engineers' Regulatory Division, this report was prepared to contribute to compliance with Section 106 and all implementing regulations. In such a case, regulations (36 CFR 800) implementing Section 106 of the NHPA require that cultural resources be identified and then evaluated using NRHP eligibility criteria. This is in addition to the requirements of 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 (OHP) *Archaeological Resource Management Reports: Recommended Contents and Format*. Attachment A includes a confirmation of the records search with the California Historical Resources Information System (CHRIS). Attachment B contains documentation of a search of the Sacred Lands File. Attachment C presents photographs of the Project Area. Attachment D contains cultural resources California Department of Parks and Recreation 523 site record 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. Under Exemption 3 of the federal Freedom of Information Act (5 U.S. Code [USC] 5), because the disclosure of cultural resources location information is prohibited by the Archaeological Resources Protection Act of 1979 (16 USC 470hh) and Section 307103 of the NHPA, it is also exempted from disclosure under the Freedom of Information Act. Likewise, the Information Centers of the CHRIS maintained by the OHP prohibit public dissemination of records search information. In compliance with these requirements, the results of this cultural resource investigation were prepared as a confidential document, which is not intended for public distribution in either paper or electronic format.

2.0 SETTING

2.1 Environmental Setting

The Project Area is located in a fully developed urban and suburban neighborhood setting. The Project Area is 11.4 miles east of the Pacific Ocean and 29.3 miles north of downtown San Diego. An unnamed drainage runs approximately 2 miles to the southwest. Elevations range from 671 to 736 feet above mean

sea level across the Project Area. The Project Area extends in a southeast to northwest orientations and exists within paved roads and modified landscape along the northern edge of westbound SR 78.

2.2 Geology and Soils

The underlying geology of the Project Area is comprised primarily of Jurassic Marine Rocks (Unit 4, Peninsular Ranges and Western Traverse Ranges), which includes shale, sandstone, minor conglomerate, chert, slate and limestone dating from the Paleozoic (542 Ma to 251 Ma) to Late Jurassic period (165 to 145 Ma). It also contains Mesozoic granite rocks, (Unit 2, Peninsular ranges), dating from the Middle Jurassic (174.1 to 163.5 Ma) to Late Cretaceous period (100.5 to 66 Ma) (Jennings et al 1977).

According to the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) Web Soil Survey website (NRCS 2020), six soil types are located within the Project Area:

- Fallbrook sandy loam (FaC), 5 to 9 percent slopes, consist of deep, well-drained soils found on rolling hills that formed in materials weather from granitic rocks.
- Fallbrook sandy loam (FaD2), 5 to 9 percent slopes, eroded consist of deep, well-drained soils found on rolling hills that formed in materials weather from granitic rocks.
- Placentia sandy loam (PeC), 2 to 9 percent slopes, warm MAAT, MLRA 19, is comprised of fine, montmorillonitic, thermic family of Typic Natrixeralfs with medium acidic, sandy loam A horizons and heavy sandy clay B2t horizons with prismatic structure.
- Escondido very fine sandy loam (EsE2), 15 to 30 percent slopes, eroded, which have slightly acidic very fine sandy loam A horizons and very fine sandy loam B2 horizons over hard metamorphic bedrock.
- Vista course sandy loam (VsD), 9 to 15 percent slopes, MLRA 20, consist of moderately deep well drained soils found on hills and mountainous uplands that formed in materials weathered from decomposed granite.
- Vista course sandy loam (VsC), 9 to 15 percent slopes, consist of moderately deep well drained soils found on hills and mountainous uplands that formed in materials weathered from decomposed granite.

There exists the potential for buried pre-contact archaeological sites in the Project Area due to its proximity to the Pacific Ocean and presence in a region that is recognized to have been in regular use by Native Americans for thousands of years. The drainage that exists to the southwest contributes to this potential because of the likelihood of pre-contact archaeological sites located along perennial and intermittent waterways in the region.

3.0 CULTURAL CONTEXT

3.1 Regional Pre-contact History

The archaeological history of southern California is remarkably complex, with a great deal of variation and the overlapping of specific technological and cultural traditions from the onset of documented human habitation in the terminal Pleistocene to the period of European contact in the Late Holocene. Today, archaeology and culture history are typically described according to geological epoch, with delineations in years before present (BP) between the Pleistocene (>10,000 BP), Early Holocene (10,000-6,500 BP), Middle Holocene (6,500 BP-3,500 BP) and the Late Holocene (3,500 BP to present). This approach places human history squarely in the realm of greater ecology and geological history in a way that allows discussion of human activity through time without limitations imposed by provincial labels. In California, this distinct use of geological terminology is not entirely arbitrary, as elements of technological change and diversification in cultural practices are observable at the transition of temporal periods (Erlandson and Colten 1991). However, terminology that is generally accepted by California archaeologists and the California OHP is still helpful in describing ancient patterns of human activity. The predominant archaeological patterns through time in San Diego County in relation to behavioral traditions and temporal periods, and in specific reference to the Project Area are discussed below.

3.1.1 San Dieguito Complex – 10,000 to 8,500 BP

Terminal Pleistocene archaeological deposits are notably present on the California Channel Islands, but the onset of human activity in coastal areas of the Southern Bight appear after 10,000 BP (Erlandson et al. 2007). Early Holocene warming temperatures, rising sea levels, and megafaunal extinction resulted in landscape and resource changes that contributed to alternative subsistence strategies in local populations, with an emphasis on hunting smaller game and increasing reliance on plant gathering. Early Holocene archaeological sites in San Diego County occur around bays, sloughs, and coastal valleys that allowed early peoples continued access to aquatic resources. These coastal sites contain large amounts of marine faunal remains along with worked tools, such as lithic bifaces, milling tools, and bone tools from which archaeologists may reconstruct the human past in southern California (Gallegos 1991).

The San Dieguito Complex is a cultural tradition originating in the Early Holocene and defined by material found at the Harris archaeological site (CA-SDI-149) on the San Dieguito River near Lake Hodges in San Diego County (Warren 1968). Diagnostic artifacts associated with the San Dieguito Complex include lithic manufacturing implements and a variety of chipped stone tools, including projectile points, knives, scrapers, engraving tools, and stone crescents (Knell and Becker 2017; Koerper et al. 1991). Particular interest has been paid to the stone crescents that appear in Terminal Pleistocene and Early Holocene deposits throughout the region. Though only a single specimen was found at CA-SDI-149, this class of artifacts has come to define human-environmental interactions of the period due to association with paleoshorelines and wetland habitats that existed on the Channel Islands, along the California coast, in interior areas of California and the Great Basin, and further east in what is today Wyoming and Colorado between approximately 12,000-8,000 cal BP (Moss and Erlandson 2013). The majority of these crescents appear to be utilitarian implements for the hunting of birds (Erlandson and Braje 2008; Moss and

Erlandson 2013). Sanchez et al. (2017) have confirmed a strong spatial association between stone crescents and reconstructed wetland habitats, supporting the argument that these artifacts were predominantly used for the harvesting of aquatic species and avifaunal resources that once existed along Terminal Pleistocene-Early Holocene paleoshorelines.

The San Dieguito Complex at CA-SDI-149 dates to between 9,030 ±350 BP and 8,490 ±400 BP (Gallegos 1991; Knell and Becker 2017). The presence of comparable artifacts and archaeological deposits are seen specifically throughout Southern California and northwestern Mexico between 9,000 and 7,000 BP. However, it is important to note the scarcity of San Dieguito materials and radiocarbon age determinations as well as the substantial spatiotemporal overlap with artifacts and faunal assemblages typically associated with later cultural traditions (Scharlotta 2015). The established use of groundstone technologies during the Early Holocene provides support for the continuation of certain subsistence practices during the Middle Holocene concurrent with decreases in wetland associated flaked-stone lithic assemblages. Early Holocene sites in coastal San Diego County have yielded artifacts and subsistence remains characteristic of succeeding technological traditions, including manos, metates, core-cobble tools, and species of marine shell more closely associated with the lagoon ecosystems, hotter and drier environmental contexts, and variable behavioral practices of the Middle Holocene (Gallegos 1991; Koerper et al. 1991).

3.1.2 La Jolla Complex – 8,500 to 1,300 BP

Sea levels continued to rise during the Early to Middle Holocene transition, eventually stabilizing around 6,000 BP and filling low-lying coastal areas and canyons in what became a relatively dense concentration of highly productive estuaries and coastal ecosystems (Masters and Gallegos 1997). The relationship of human populations to coastal resources consequently changed through time. Rocky reefs and kelp beds were more extensive during the earlier part of the Holocene and exploited by humans settling on the coast. Early Holocene coastal populations tended to aggregate around estuaries and areas of dense intertidal and littoral sustenance resources, but a greater focus on lagoon resources can be seen in later archaeological deposits. As sea level rose, a transition in species of exploited shellfish and vertebrates is seen, from rocky reef species to sandy beach species that reflects the changes in shoreline during the Middle Holocene. Western North America experienced a period of increased warmth and aridity during the Middle Holocene that likely impacted migrations and settlement patterns from the continental interior to the coast (Kennett et al. 2007). Increasingly, human populations in California began to process plant foods with the manos (pestles) and metates (mortars) in an observable shift in technology and subsistence practices that effectively replaced the San Dieguito Complex with a lengthy tradition of cultural behaviors alternately termed the La Jolla Complex (Warren et al. 1961; Byrd and Raab 2007), Encinitas Tradition (Warren 1968), and Milling Stone Period (Wallace 1955). The term "La Jolla Complex" is used here.

The La Jolla Complex is most identified with the manos and metates found along the San Diego County coast beginning about 8,500 BP (Sutton and Gardner 2010), but La Jolla tool kits included a wide array of lithic and bone tools. Most La Jolla Complex sites are located around Middle Holocene coastal lagoons, which continued filling with sea water due to the sustained retreat of ice caps and global influx of liquid water following the last glacial maximum (approximately 20,000 BP). Shellfish from these lagoons were an

important part of the diet, and most La Jolla sites are classified as shell middens. Both rocky shores shellfish, such as *Mytilus* sp. (mussels), and bay/estuary shellfish, such as *Argopecten* sp. (scallops), *Chione* sp. (cockles), and *Ostrea lurida* (oyster) are found in La Jolla sites. Rocky shores species are much reduced in quantity and almost disappear from the middens in the Late Holocene. This has been attributed to increased sediment deposition around the mouths of the lagoons along the northern and central San Diego coast, which covered the rocky habitats. Fewer sites were occupied in these areas during the Late Holocene. However, the larger bays to the south (Mission and San Diego bays) never silted in, and there are numerous La Jolla Complex sites in this area (Masters and Gallegos 1997).

The Pauma Complex is a term to describe an inland cultural pattern beginning around 7,500 BP in San Diego County and occurring up to approximately 1,000 BP (Sutton and Gardner 2010; True 1958, 1970). Pauma archaeological deposits have numerous manos and metates similar to coastal sites of the same period but lack the marine subsistence remains seen in La Jolla sites. Other Pauma Complex artifacts include core and cobble tools, scraper planes, unifacial scrapers, and infrequent cogged stones and discoidals. In most Pauma Pattern sites, the mano-metate tool kit predominates, which suggests the collection and processing of seeds and other plant materials. Pauma sites are located on older high-elevation alluvial terraces in valleys and canyons. Some Pauma sites may be buried in shallow alluvium. Shared similarities between the inland Pauma Complex and the coastal La Jolla Complex may reflect extended cultural ties or different seasonal manifestations of the same people, with the La Jolla Complex emphasizing marine resources (shellfish and fish) and the Pauma Complex emphasizing hard seeds. There are more planing and scraping tools in the La Jolla Complex and more grinding tools (i.e., manos and metates) in the Pauma Complex, which undoubtedly correspond to differential resource procurement and processing throughout this time period (Waugh 1986:55-56).

The San Diego coastline began to resemble its current appearance after about 3,500 BP, with estuaries silting in and a consequential decline in lagoon resources due to increased sedimentation along the San Diego coastline (Gallegos 2002). A warming climate, combined with the loss of estuarine resources during the Middle Holocene, resulted in an observable transition in settlement patterns during the Late Holocene as many people moved away from the coasts to more fully exploit inland habitats, though San Diego Bay remained due to freshwater runoff and tidal flushing. Additionally, coastal sedimentation and infilling events coincided with the development of the sandy beaches seen today that eliminated majority rocky coastal environments and gave way to a shift in the kinds of subsistence resources available at these locations (Byrd and Reddy 2002). This increased reliance on sandy shore species and the dominance of small terrestrial taxa in archaeological contexts, such as lagomorphs and waterfowl, is reflective of the unique coastal environment of much of San Diego in the Late Holocene.

3.1.3 Late Period (Kumeyaay) – 1,300 BP to Contact

The Late Period (Kumeyaay) in San Diego archaeology is determined to have begun with substantial cultural and technological changes occurring around 1,300 BP. The Late Holocene exemplified major cultural shifts with the entrance of Shoshonean language speakers, now known as the Cahuilla, Cupeño, and Luiseño, into the northern part of San Diego County sometime between and 3,500 and 1,300 BP. This coincided with the establishment of definitive Ipai and Tipai (Kumeyaay peoples, Yuman language

speakers) societal structures throughout the central and southern parts of the County. An abrupt decrease in coastal deposits appears to have occurred after 3,300 BP (Gallegos 2002), though increases in coastal occupation beginning around 1,600 to 1,200 BP appear to mirror sustained population increases throughout San Diego County during the Late Holocene to the present day (Byrd and Reddy 2002). Late Period settlement patterns are characterized by the establishment of permanent, sometimes seasonal, villages and ephemeral satellite sites dedicated to specific tasks, such as tool production, food processing, or resource acquisition (Byrd and Raab 2007). A focus on reliable water sources and intensified subsistence practices is evident in the location and nature of regional Late Period archaeological sites.

The Kumeyaay Period has been associated with population increases, particularly in coastal areas, and changes in settlement patterns (Scharlotta 2015). The Late Holocene was a time of technological change. Choices regarding technology and subsistence practices influenced the nature of human-environmental interactions with an expansion of diet breadth, the establishment of permanent villages, and changes in hunting and gathering processes that also affected social structure during the Kumeyaay period (Bettinger 2013; Gamble and Mattingly 2012). Transition to more sedentary settlement patterns can be witnessed in aspects of technological variation such as the greater use of bedrock mortars in addition to portable milling stones (Byrd and Raab 2007). The Late Period is primarily characterized by use of the bow and arrow, which was introduced to the western United States sometime between 2,300 and 1,300 BP (Bettinger 2013). Bettinger argues that the adoption of bow hunting effected an expansion in the utilization of once peripheral subsistence resources (i.e., intensification of plant resource harvesting and processing) due to the increased efficacy of hunting among small groups and a shift to more localized resource harvesting among smaller family bands. Decreases in time spent hunting are thought to encourage greater time spent collecting foodstuffs once perceived as too costly.

In San Diego, principal foods for inland populations included acorns, grasses, other seeds, and lagomorphs, in addition to continued hunting of deer. However, people had returned to the coasts during the Kumeyaay Period and were exploiting a wide variety of marine resources in addition to the extensive trade networks along the southern California coast and that of Baja California (Byrd and Raab 2007). Gamble and Mattingly (2012) document more than 200 fire-affected rock features at Torrey Pines State Natural Reserve, positing the use of these features in the processing of Torrey pine nuts (*Pinus torreyana*) by Kumeyaay peoples on the coast over the last two millennia. The introduction of the bow and arrow to Southern California was followed by other archaeologically observable shifts prior to European contact, such as distinguishable changes in projectile point morphology, a switch from Coso (Sierra Nevada source) to Obsidian Butte (Salton Sea) as a source for volcanic glass, and even a transition from burial to cremation for the dead (Gallegos 2002). Ceramics appear in the archaeological record after 1,300 BP, with the distribution of reddish-brown sherds across San Diego County from the Peninsular Ranges to the Coast that differs from a lighter-colored buff pottery found in the deserts to the east (Quinn et al. 2013). Common ceramic forms include round-bottomed jars with restricted necks, bowls, scoops, plates, and other vessels used for cooking and storage. Ceramic pipes were also made (Gallegos 2002). Recovered ceramic specimens exhibit chemical signatures derived from similar geological contexts in the Laguna and Cuyamaca mountains, suggesting the transfer of materials from mountain to coast within the extensive trade networks that undoubtedly existed at this time (Quinn et al. 2013).

3.2 Ethnohistory (Luiseño and Kumeyaay)

The Project Area is located in what is generally accepted as traditional Luiseño territory. However, boundaries between ancestral territories are often fluid or loosely defined due to movement and interaction among pre-contact and post-contact populations. The Luiseño are one of the Takic-speaking groups that were present in southern California prior to the arrival of Euro-Americans. Luiseño occupied most of the area drained by the San Luis Rey and Santa Margarita rivers.

The Luiseño lived in sedentary and autonomous village groups, each with specific subsistence territories encompassing hunting, collecting, and fishing areas. Villages were typically located in valley bottoms, along streams, or along coastal strands near mountain ranges where water was available and village defense was possible. Inland populations had access to fishing and gathering sites on the coast, which they used during the winter months (Bean and Shipek 1978).

Luiseño subsistence was based on the gathering of acorns, seeds, greens, bulbs, roots, berries, and other vegetal foods. This was supplemented by hunting mammals such as deer, antelope, rabbit, woodrat, ground squirrels, and mice, as well as birds including quail, doves, and ducks. Bands along the coast also exploited marine resources, such as sea mammals, fish, crustaceans, and mollusks. Inland, trout and other fish were taken from mountain streams (Bean and Shipek 1978).

Hunting was done both individually and by organized groups. Tool technology for food acquisition, storage, and preparation reflects the size and quantity of items procured. Small game was hunted with the use of curved throwing sticks, nets, slings, or traps. Bows and arrows were used for hunting larger game. Dugout canoes, basketry fish traps, and shell hooks were used for near-shore ocean fishing. Coiled and twined baskets were made for food gathering, preparation, storing, and serving. Other items used for food processing included large shallow trays for winnowing chaff from grain, ceramic and basketry storage containers, manos and metates for grinding seeds, and ceramic jars for cooking (Bean and Shipek 1978).

Luiseño social organization was based on patrilineal and patrilocal lineages. Exogamy rules required that a man could not marry a woman related to them within five generations. Women moved to their husband's village but kept their identity as a member of their natal lineage (Cultural Systems Research 2005). The Luiseño corporate group was a "party" composed of one major lineage with a ceremonial leader (chief), a ceremonial bundle, and a ceremonial house or enclosure. Members of other lineages within the party could live in the same village as the major lineage or within other villages within the party territory. The ceremonial chief was also the hereditary chief of the party who organized religious, economic, and military activities (Goldberg 2001:47). An advisory council of ritual specialists and shamans was consulted for their specialized knowledge. Resources within the party territory were owned by the party. The party territory was marked by boundary markers and was defended against trespassers (Waugh 1986).

Houses were circular with conical roofs and were made of a framework of logs covered by tules, sedge, or bark and a layer of earth. The floors of the houses were about two feet below the ground surface. Houses had a central fireplace, but most cooking was done outside. Round earth-covered semi-subterranean sweathouses with an interior fire pit were primarily used by men and were located next to a stream or pond. Ramadas, flat-roofed open structures, provided shade for work areas (Cultural Systems Research

2005). Women's work areas often consisted of a circular windbreak made of arrow weed or tule. They had a hard-packed earth floor that was swept to remove debris. Earth ovens consisted of a pit with a ring of rocks. Granaries for storing acorns, seeds, and nuts were made of woven arrow weed or willow, sealed with mud. They were built on platforms, on top of houses, or on boulders to keep burrowing animals out. Caves and rock shelters in or near villages were used for activity areas, as caches, and for ceremonies. Rock shelters away from the village could be used as temporary camps. Other temporary camps had lean-tos made of willows with an adjacent fire pit (Cultural Systems Research 2005).

When the Spanish arrived in southern California in 1769, it is estimated that there were 50 Luiseño villages with a population of about 200 each, suggesting a total population of about 10,000 (White 1963).

The Kumeyaay (also known as Ipai and Tipai) are the Yuman-speaking native people of central and southern San Diego County and the northern Baja Peninsula in Mexico. Spanish missionaries and settlers used the collective term Diegueño for these people, which referred to people living near the presidio and mission of San Diego de Alcalá. Today, these people refer to themselves as Kumeyaay or as Ipai and Tipai, which are northern and southern subgroups of Kumeyaay language speakers, respectively (Luomala 1978). The ancestral lands of the Kumeyaay extend north from Todos Santos Bay near Ensenada, Mexico to Agua Hedionda Lagoon in north San Diego County, and east to the west side of the Imperial Valley.

The primary source of Kumeyaay subsistence was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Acorns, grass and sage seeds, cactus fruits, wild plums, pinyon nuts, and agave stalks were the principal plant foods. Women sometimes transplanted wild onion and tobacco plants to convenient locations and sowed wild tobacco seeds. Deer, rabbits, small rodents, and birds provided meat. Village locations were selected for seasonal use and were occupied by exogamous, patrilineal clans or bands. Three or four clans might winter together, then disperse into smaller bands during the spring and summer (Luomala 1978).

The Kumeyaay were loosely organized into exogamous patrilineal groups termed sibs, clans, gens, and tribelets by ethnographers. The Kumeyaay term was cimul. The cimul used certain areas for hunting and gathering, but apparently did not control a bounded and defended territory, as did the Luiseño and Cahuilla. In addition, members of several different cimul usually lived in the same residential base, unlike the Luiseño, where a single party or clan controlled a village and its territory. Kumeyaay lived in residential bases during the winter and subsisted on stored resources. No permanent houses were built. Brush shelters were temporary and were not reused the next year. Ceremonies, including rites of passage and ceremonies to ensure an abundance of food, were held in the winter residential bases. The cimul leader directed the ceremonies and settled disputes (Christenson 1990:58, 62). One of the most important ceremonies was the mourning ceremony. Upon death, the Kumeyaay cremated the body of the deceased. Ashes were placed in a ceramic urn and buried or hidden in a cluster of rocks. The family customarily held a mourning ceremony one year after the death of a family member. During this ceremony, the clothes of the deceased individual were burned to ensure that the spirit would not return for his or her possessions (Gifford 1931; Luomala 1978).

The Kumeyaay were geographically and linguistically divided into western and eastern Kumeyaay. The western and eastern Kumeyaay spoke two different dialects (Christenson 1990:64). The western Kumeyaay

lived along the coast and in the valleys along the drainages west of the mountains. The eastern Kumeyaay lived in the canyons and desert east of the mountains. The western Kumeyaay spent the winter in residential bases in the lowland valleys and then broke into smaller cimul groups that moved gradually eastward toward the mountains, following ripening plants and occupying temporary residential bases along the way. Thus, each group occupied several different residential bases during the course of a year (Christenson 1990:292-293). The eastern Kumeyaay spent the winter in villages on the desert margin where water was available from springs at canyon mouths. They moved up the canyons toward the mountains during spring and summer. The eastern and western Kumeyaay met in the mountains in the fall where they gathered black oak acorns, traded, and held ceremonies (Christenson 1990:63). The large residential bases in the mountains appear archaeologically to be village sites (Gross and Sampson 1990).

The Kumeyaay population was estimated to be between 10,000 and 20,000 at the time of European contact, based on Spanish accounts and ethnographies (Gallegos 2002). Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with Euro-Americans, particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay were forced to adopt a sedentary lifestyle and accept Christianity (Luomala 1978).

3.3 Regional History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port (Castillo 1978). Vizcaíno also named San Diego Bay to commemorate Saint Didacus. San Diego began to appear on European maps of the New World by 1624 (Gudde 1998:332).

In 1769, the Gaspar de Portolá Spanish land expedition arrived in the San Diego area from New Spain (Mexico), and Mission San Diego de Alcalá was founded by Father Junipero Serra as the first of 21 Spanish missions in Alta California. A presidio (military facility for Spanish soldiers) was built near the mission. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. The missions sustained themselves through cattle ranching and traded hides and tallow for supplies brought by ship. Mission San Diego was established to convert the Native Americans that lived in the area, known as the Kumeyaay or Diegueño. The presidio and mission were located on a hill on the south side of the San Diego River about three miles inland from the coast. After being destroyed by attacking Kumeyaay in 1775 during an attempt to drive out the Spanish (Robinson 1948:63; Castillo 1978:103), Mission San Diego was rebuilt in its present location on the north side of the river about 5.5 miles upstream from the presidio. However, the presidio remained in its original location and a small town or pueblo developed around it (Caughey 1933:123).

Mexico became independent from Spain in 1821, and what is now California became the Mexican province of Alta California. The Mexican government closed the missions in the 1830s and former mission lands were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or "ranchos"

(Robinson 1948). During the Mexican period there were small towns at San Diego (near the presidio), San Juan Capistrano (around the mission), and Los Angeles. The rancho owners lived in one of the towns or in an adobe house on the rancho. The Mexican Period includes the years 1821 to 1848.

The American period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the United States in 1848. Alta California became part of the United States as the territory of California, officially becoming the State of California in 1850. Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries which were surveyed by the U.S. Surveyor General's office. Land that was not part of a land grant was owned by the U.S. government until it was acquired by individuals through purchase or homesteading. Floods and drought in the 1860s greatly reduced the cattle herds on the ranchos, making it difficult to pay the new American taxes on the thousands of acres they owned. At the same time, the Homestead Act of 1862 brought American settlers to southern California in search of land to claim. Many Mexican-American cattle ranchers borrowed money at usurious rates from newly arrived Anglo-Americans. The resulting foreclosures and land sales transferred most of the land grants into the hands of Anglo-Americans (Cleland 1941:137-138).

3.4 Local History

The Project Area is located in San Diego County, which was created in 1850 as one of the first counties within the new state of California (Coy 1973; Marschner 2000). At that time, the area designated as San Diego County included nearly all of present-day San Diego, Imperial, Riverside, and San Bernardino counties, as well as a small portion of present-day Inyo County (Coy 1973:221; Marschner 2000:39). The City of San Diego continued as a small settlement around the presidio until a new town was platted south of the old town by Alonzo Horton, a San Francisco furniture dealer. He sold lots beginning in 1867 and built a 700-foot wharf in 1869. By 1870 San Diego had 800 buildings and a population of 3,000 (Dumke 1944:134). The completion of the California Southern Railroad from National City and San Diego to San Bernardino via Oceanside in 1883 and the completion of the Santa Fe line from Los Angeles to Oceanside (connecting to San Diego via the California Southern track) in 1888 resulted in a real estate boom and the economic development of the San Diego area (Dumke 1944:136-137). The population continued to increase throughout the earlier part of the twentieth century, with continued growth in the City of San Diego as well as the gradual growth and eventual incorporation of various rural communities throughout San Diego County.

The Project Area is located within the City of San Marcos, approximately 30 miles north of downtown San Diego. San Marcos is situated between the cities of Escondido to the east and Vista to the northwest, east of Interstate 15 along SR 78. San Marcos began as a rural town in the late 1800s, establishing itself along the Santa Fe Railroad tracks in the early 1900s, and incorporating as the City of San Marcos in 1963. Today, the city is a community of nearly 100,000 people. From its beginnings as a rural town, the city has become a locus for suburban living with freeway access to the beaches and mountains of San Diego County.

Rancho Vallecito de San Marcos was comprised of 8,975 acres in present-day San Diego County, granted to Jose Maria Alvarado and his wife Maria Lugarda Osuna in 1840 by Mexican governor Juan Alvarado. Less than a year later, they sold the Rancho to Lorenzo Soto. Lorenzo Sot died in 1863, and his second

wife and Widow Maria Ygnacia Morena de Soto remarried Tomas Alvarado. Tomas Alvarado sold Rancho Vallecitos de San Marco to Cave Johnson Couts in 1866 (Brackett 1939).

3.5 Historic Context of Roads

Road development in the U.S. primarily consisted of expanding local urban streets, utilitarian in design and function, in the eastern U.S. and moving westward across the nation. California roadways, in particular, largely consisted of dirt utilitarian roads from the period of the Gold Rush through the turn of the twentieth century. From 1890 to 1926, the groundwork was laid for the modern road network, largely due to a number of factors including the advent of the pneumatic tire and the expansion of production of the affordable personal automobile (the Ford Model T being the industry leader). These new convenient modes of transportation began the slow decline in the use of the railroad, consisting of several hundred thousand miles of track in the U.S. and previously considered the most efficient and reliable mode of transportation and shipping. This decline led automobile and automobile accessory manufacturers to usher in the "Good Roads Movement" (Marriott 2010).

The Good Roads Movement was first advocated by bicycle organizations seeking hard-surfaced roads. Automobile industry advocates, however, quickly found the development of a better planned road network a greater concern. Despite national efforts to develop hard-surface roads, the prohibitive cost caused a priority shift in the Good Roads Movement from hard-surface roads to a well-planned road network. In California, many of these road networks began to be constructed during the late part of the nineteenth and into the early part of the twentieth century, particularly in rural areas. Rural road development was crucial for the expansion of agricultural lands since farmers and ranchers needed a better network of roads to transport their crops or goods from the farms and fields to train stations for transport. Prior to the Good Roads Movement, rural farmers depended on extremely underdeveloped roads, consisting mostly of known paths or routes to get to those stations while access to urban or other rural areas was limited because existing road networks often did not connect simply with each other. The agricultural industry began to flourish with use of the new road networks as a result of the Good Roads Movement. Light-duty developed roads, such as Site AM-001, were constructed and used by rural farmers and ranchers to transport their goods not only to local train stations but, through the new networks of decent roads, to other urban areas or even other rural towns (Marriott 2010).

By the end of the Good Roads Movement, from 1910 to 1926, large intrastate and interstate highways, even transcontinental highways such as the Lincoln Highway, were constructed. These large networks of roads were primarily in response to the advent of World War I and the nation's realization that if the war was ever fought on U.S. soil, the existing road networks could not support the necessary military mobilization for the war effort. Therefore, better connectivity in large roads and urban centers became a top priority toward the end of the Good Roads Movement. In addition, pavement became the new medium for these larger roads and was also used extensively in these larger highways and roads (Hokanson 1999).

The network of roads in the U.S., and California, was beginning to come together toward the end of the Good Roads Movement. One of the last stages of the Movement was the development of scenic roads. Scenic road development was largely advocated by the NPS to allow automobile access within their parks.

Prior to road development, access to National Parks was reliant on railroads and simple carriage rides within parks. At the end of the Good Roads Movement, however, automobile safe routes were constructed within National Parks and other scenic roads were built to attract travelers away from the urban areas (Marriott 2010).

4.0 METHODS

4.1 Personnel Qualifications

All phases of the cultural resources investigation were conducted or supervised by Registered Professional Archaeologist (RPA) John O'Connor, Ph.D., who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. Dr. O'Connor requested and reviewed the CHRIS records search results and Native American Heritage Commission (NAHC) Sacred Lands File results, conducted the fieldwork, and prepared the report, with assistance from Senior Archaeologist Theadora Fuerstenberg, RPA. Lisa Westwood, RPA, provided technical report review and quality assurance.

John O'Connor, Ph.D., is an RPA with over 10 years of archaeological experience in North America and the Pacific Islands, experience that includes cultural resources management, academic research, museum collections management, and university teaching. Dr. O'Connor meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. He is well versed in the evaluation of impacts to cultural resources for CEQA and NHPA projects, and he has written or otherwise contributed to numerous environmental compliance documents. Dr. O'Connor serves as the Southern California Cultural Resources Manager for ECORP.

Theadora Fuerstenberg is a Senior Archaeologist for ECORP who meets Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. She holds a B.A. in Anthropology and an M.A. degree in Cultural Resources Management and is an RPA with more than 16 years of experience in California and the Great Basin. Her principal professional abilities include identification and treatment of cultural resources and preparation of technical documents as required for compliance with CEQA, NEPA, and Sections 106 and 110 of the NHPA; and writing research designs, management plans, and reports for archaeological and cultural resource management projects.

Lisa Westwood is an RPA who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology with 25 years of experience. She holds a B.A. degree in Anthropology and an M.A. degree in Anthropology (Archaeology). She is the Director of Cultural Resources for ECORP.

4.2 Records Search Methods

ECORP requested a records search for the property at the South Coastal Information Center (SCIC) of the CHRIS at San Diego State University on March 24, 2020 (Attachment A). The purpose of the records search was to determine the extent of previous surveys within a one-mile (1600-meter) radius of the proposed project location, and whether previously documented pre-contact or historic-period 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 (OHP 2012); *The National Register Information System* (National Park Service [NPS] 2020); *Office of Historic Preservation, California Historical Landmarks* (OHP 2020); *California Historical Landmarks* (OHP 1996 and updates); *California Points of Historical Interest* (OHP 1992 and updates); *Directory of Properties in the Historical Resources Inventory* (1999); *Caltrans Local Bridge Survey* (California Department of Transportation [Caltrans] 2019); *Caltrans State Bridge Survey* (Caltrans 2018); and *Historic Spots in California* (Kyle 2002).

Aerial photographs taken in 1938, 1947, 1953, 1964, 1967, 1980, 1989, 1994, 1995, 1996, 1999, 2002, 2003, 2005, 2009, 2010, 2012, 2014, and 2016 to present were reviewed for any indications of property usage and built environment (NETROnline 2020). BLM GLO Plat Maps from 1876 and 1885 were reviewed, as well as historic USGS topographic maps from 1901, 1904, 1942, 1948, and 1968.

4.3 Sacred Lands File Coordination Methods

In addition to the record search, ECORP contacted the California NAHC on March 24, 2020 to request a search of the Sacred Lands File for the APE (Attachment B). This search will determine whether or not Sacred Lands have been recorded by California Native American tribes within the APE, because the Sacred Lands File is populated by members of the Native American community who have knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding tribal cultural resources, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal law.

4.4 Archival Research Methods

Focused archival research on the three historic period roads was carried out by Dr. O'Connor. Research utilized newspaper articles, historical maps, and secondary resources where available. Very few records were found containing specific information about the resources. Online research was undertaken for other documents relating specifically to roads in general and to the City of San Marcos. ECORP also completed searches with online repositories, including a search of the Online Archive of California to browse the collections of archives and libraries throughout the state in search of relevant historical information pertinent to the property or appropriate historic context. This included the California Digital Newspaper Collection, newspaper abstracts.com, Find A Grave.com, the BLM GLO survey plats at glorecords.blm.gov, and historical topographic maps at geonames.usgs.gov. The archival research, the online research, and review of historic maps and aerial photographs resulted in sufficient information for ECORP to prepare an evaluation of the roads.

4.5 Field Methods

On May 13, 2020, ECORP subjected the Project Area to a pedestrian survey under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) (Figure 3). ECORP expended one-quarter of one person-day in the field. At that time, developed and exposed ground surfaces were examined for indications of surface or subsurface cultural resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances were examined for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

All cultural resources encountered during the survey were recorded using Department of Parks and Recreation (DPR) 523-series forms approved by the California OHP. The resources were photographed, mapped using a handheld Global Positioning System receiver, and sketched as necessary to document their presence. Isolates were recorded with a Primary Record and Location Map, while sites were recorded with a Primary Record, Archaeological Site Record, Location Map, Sketch Map, and any other pertinent forms.

4.6 Evaluation Criteria

4.6.1 State Evaluation Criteria

Under state law (CEQA) cultural resources are evaluated using CRHR eligibility criteria in order to determine whether any of the sites are historical resources, as defined by CEQA. CEQA requires that impacts to historical resources be identified and, if the impacts would be significant, that mitigation measures to reduce the impacts be applied.

A historical resource is a resource that:

1. is listed in or has been determined eligible for listing in the CRHR by the State Historical Resources Commission;

2. is included in a local register of historical resources, as defined in PRC 5020.1(k);

3. has been identified as significant in an historical resources survey, as defined in PRC 5024.1(g); or

4. is determined to be historically significant by the CEQA lead agency [CCR Title 14, § 15064.5(a)]. In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria.

In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria. The eligibility criteria for the CRHR are as follows [CCR Title 14, § 4852(b)]:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. it is associated with the lives of persons important to local, California, or national history;

3. it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4. it has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, § 4852(c)].

Impacts to an historical resource (as defined by CEQA) are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, § 15064.5(a)].

4.6.2 Federal Evaluation Criteria

Under federal regulations implementing Section 106 of the NHPA (36 CFR 800), cultural resources identified in a Project APE are evaluated using NRHP and eligibility criteria. The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

> "The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and
>
> A. is associated with events that have made a significant contribution to the broad patterns of our history;
> B. is associated with the lives of a person or persons significance in our past;
> C. embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; or
> D. has yielded or may be likely to yield information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances (36 CFR 60.4)".

Effects to NRHP-eligible resources (historic properties) are adverse if the project may alter, directly or indirectly, any of the characteristics of an historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

5.0 RESULTS

5.1 Records Search

The results of the CHRIS records search were received by ECORP on May 4, 2020 (Attachment A). The records search consisted of a review of previous research and literature, records on file with the SCIC for previously recorded resources, and historical aerial photographs and maps of the vicinity.

5.1.1 Previous Research

Eighty-seven previous cultural resource investigations have been conducted within one mile of the Project Area between 1974 and 2019. The records search indicates that the entire Project Area was previously surveyed through a combination of overlapping investigations conducted in the years 1976, 1979, 1980, 2003, 2007, and 2009 (reference report numbers SD-00225, SD-01689, SD-08588, SD-11087, SD-11201, SD-13541, SD-14140, SD-14597). Though the records search revealed cultural resources investigations that overlapped portions of the Project Area as late as 2009, these studies were carried out over 10 years ago and are considered obsolete under current standards and protocols. An updated site visit was warranted. A list of previous cultural resource investigations identified during this records search may be found in Attachment A.

The CHRIS records search also determined that 50 previously recorded cultural resources are located within one mile of the Project Area. Previously recorded resources are comprised of 25 pre-contact resources and 25 historic-period resources. Pre-contact resources comprise a mix of habitation/camp sites, middens, lithic scatters, lithic tools, and bedrock milling stations. Historic-period resources include craftsman and Victorian style cottages, farmhouses and complexes, a Spanish style house, an adobe brick house, a radio transmitting tower, and portions of Old Highway 395. No previously recorded resources are located within the Project Area. A list of previously recorded cultural resources may also be found in Attachment A.

5.1.2 Records

The National Register Information System (NPS 2020) did not list any eligible or listed properties within the Project Area. The nearest National Register property is the Hotel Charlotta in Escondido, 1.6 miles southeast of the Project Area.

Resources listed as *California Historical Landmarks* (OHP 1996) and by the OHP (2020) were reviewed on March 28, 2020. The nearest listed landmark is #452 Mule Hill, located on Pomerado Road 5 miles southeast of Escondido, 6.7 miles southeast of the Project Area.

A search of historic GLO land patent records from the BLM's patent information database (BLM 2020) revealed that Lorenzo Soto was granted 8875.83 acres of Los Vallecitos, DE, on March 1, 1883 (BLM Serial No. CACAAA 081425), under the authority of the Spanish-Mexican Land Grant (9 Stat. 631). Although this patent date was after Lorenzo's death; Mexican land grant patents were not legitimized until after the Treaty of Guadalupe Hidalgo in 1848, and claims had to be fined under the Land Act of 1851. Lorenzo Soto likely filed the claim in the early 1850s, and office finally issued the patent in 1883.

The Caltrans Bridge Local and State Inventories (Caltrans 2018, 2019) lists two historic period bridges within 0.5 mile of the Project Area:

- Bridge No. 57 0390, Nordahl Road over State Route 78, a continuous concrete bridge built in in 1962 and reconstructed in 2013, 0.1 mile south of the Project Area.

- Bridge No. 57 0135, State Route 78 over Mission Rd, NCTD, BNSF RY, a concrete continuous cast-in-place bridge built in 1962 and reconstructed in 2013, 0.14 mile southwest of the Project Area.

Caltrans lists both of these as Category 5, not eligible for the NRHP under Criterion C.

5.1.3 Map Review and Aerial Photographs

The review of historical aerial photographs and maps of the Project Area provide information on the past land uses of the property and potential for buried archaeological sites. Based on this, the area surrounding the Project Area has been inhabited as early as 1885, with increased road and lot development throughout the early and mid-1900s, when it was used primarily for farmland and orchards. Following is a summary of the review of historical maps and photographs.

- The 1876 BLM GLO Plat Maps for Township 12 South, Range 2 West shows the Project Area land as undeveloped and labeled as part of Lot No. 39 Rancho Los Vallecitos de San Marcos.
- The 1885 BLM GLO Plat for Township 12 South, Range 2 West shows the Project Area land with the same designation as the 1876 version and maps a "large conical rock" and "San Pasqual Road" in the vicinity of the Project Area.
- The 1901 USGS Escondido, California topographic map (1:62,500 scale) shows the Southern California Railroad running along the route of today's East Mission Road adjacent to the south of the Project Area, and one light duty road in the vicinity of the Project Area, but no other buildings or features were mapped within the Project Area.
- The USGS 1904 Southern California Sheet 2 (1:250,000 scale) shows the railroad and one road in the same location and alignment of today's East Mission Road; one road adjacent to the north in the Project Area appears to correspond to today's Montiel Road (MLS-002), and another road appears to correspond to today's Nordahl Road (MLS-003).
- Aerial photographs from 1938 shows Nordahl Road (MLS-003), which is clearly pronounced on the landscape, and Montiel Road (MLS-002), which is present but less pronounced in the picture.
- The USGS 1942 Escondido, California topographic map (1:62,500 scale) shows the railroad, and a road running adjacent to the north; a segment of an unimproved dirt road is mapped to the north in the location of Montiel Road (MLS-002), and a loose surface graded dry weather road is mapped in the location of today's Nordahl Road (MLS-003).
- Aerial photographs from 1947 show both Montiel Road (MLS-002) and Nordahl Road (MLS-003) as dirt roads in their current location. Leora Lane (MLS-001) is not pictured.
- The 1948 USGS Valley Center, California topographic map (1:24,000 scale) shows today's West Mission Road along the route that was once the railroad to the south of the Project Area, which provides scale to discern that an improved dirt road to the north corresponds to the current alignment of Montiel Road (MLS-002); an improved dirt road running north from Montiel Road corresponds to the current alignment of Nordahl Road (MLS-003) and an unimproved dirt road

running south from Montiel Road corresponding to the current alignment of Leora Lane (MLS-001). None of the roads are labeled on this map.

- Aerial photographs from 1953 show both Montiel Road (MLS-002) and Nordahl Road (MLS-003) as dirt roads in their current location. Leora Lane (MLS-001) is not visible. The surrounding landscape is farmland and orchards.
- The 1968 USGS Valley Center, California topographic map (1:24,000 scale) depicts all three roads: Leora Lane (MLS-001), Montiel Road (MLS-002), and Nordahl Road (MLS-003), mapped as light-duty in their current locations.
- Aerial photographs from 1964 and 1967 show both Montiel Road (MLS-002) and Nordahl Road (MLS-003) as pronounced roadways, and Leora Lane (MLS-001) is present as a fainter dirt road. The surrounding landscape still shows primarily orchards with more buildings and houses.
- Aerial photographs from 1980 show all three roads and increased residential and commercial development which likely came about with Highway 78; depicted south of the Project Area.
- Aerial photographs from 1989 show increased developments, and all other aerial photographs to present depict the Project Area relatively how it appears today; no changes in the roads are shown.

In summary, development in and around the Project Area began as early as 1885 with roads and landmarks in the vicinity, with more development in the early 1900s with the routes of Montiel Road (MLS-002) and Nordahl Road (MLS-003) showing us as early as 1904. As development in the area increased though the mid-century, Leora Lane appears as early as 1948. By 1968 the roads in the area were fully developed, and by the late 1980s, the Project Area appeared much as it does today.

5.2 Sacred Lands File Results

The results of the Sacred Lands File search by the NAHC were received on April 3, 2020. The search of the Sacred Lands File failed to indicate the presence of Native American cultural resources in the Project Area. A record of all correspondence is provided in Attachment B.

5.3 Field Survey Results

ECORP conducted the survey of the Project Area on May 13, 2020. The Project Area consists of paved and graded roadways, parking lots, and portions of modified and landscaped drainages along the SR 78 freeway and modern buildings. Nearly the entire Project Area is currently developed with artificial paving and other modern permanent structures and modern built environment features that obscure any native soils or surfaces. Due to the developed nature of the Project Area, a mixed strategy of survey methods were employed that involved reconnaissance level review of completely built-over areas to look for above-surface historical features, combined with an intensive pedestrian survey of all exposed soils for indications of archaeological depositsThe Project Area is located in an urban/suburban environment, with a mix of private residences, retail and industrial facilities, and shopping centers. The Project Area was primarily developed in the modern era (i.e., less than 50 years ago). Overall, the visibility throughout open

areas of the Project Area was good (approximately 80 to 100 percent). However, these areas consisted of paved roadways, a graded dirt road, and artificial dirt and landscaped drainages. Visible soil is all imported fill or highly disturbed local material that has been graded or transported throughout the Project Area.

No archaeological resources were found as a result of the field survey; however, three historic-period cultural resources were identified as a result of the survey. MLS-001 is Leora Lane, a historic-period road bounded by private residences in the suburban neighborhood in the eastern portion of the Project Area. MLS-002 is a segment of Montiel Road, a historic-period road that extends southeast to northwest across the eastern and central portions of the Project Area. A substantial portion of the proposed Project would occur within Montiel Road. MLS-003 is a segment of historic-period Nordahl Road located in the center of the Project Area at its intersection with Montiel Road.

Figure 3. Manholes at southern end of Kaylyn Way (view south). May 13, 2020.

Figure 4. Access next to Coles building with pump station in background (view south). May 13, 2020.

Figure 5. Center Drive and retail stores (east). May 13, 2020.

5.3.1 MLS-001: Leora Lane

MLS-001 is an approximately 450-foot long Leora Lane, a small single-lane road that is not heavily used. It is approximately 28 feet wide with cracked, faded asphalt pavement and no shoulder. It first appears on USGS topographic maps from 1948. It is in poor condition, with cracks and potholes and although it is still in use, it is not well maintained (Figure 6).

Figure 6. Leora Lane from Montiel Road (view southwest). May 13, 2020.

5.3.2 MLS-002: Montiel Road

MLS-002 is a an approximately 0.28 mile (1,500 feet)-long segment of historic period Montiel Road, between Nordahl Road and Leora Lane. It is an active two-lane road (one lane in each direction) that is moderately used, approximately 32 feet wide, paved with asphalt, and has a soft gravel shoulder in most places. It first appears on USGS topo maps from 1904. It is in fair condition, with impacts from cracking, some potholing, and general weathering. It is in current used and moderately maintained (Figure 7).

5.3.3 MLS-001: Nordahl Road

MLS-003 is an approximately 200-foot long segment of historic-period Nordahl Road that crosses the Project Area at an intersection with Montiel Road. It is an actively used, six lane route (two lanes in each direction) that is heavily trafficked and regularly maintained. It is approximately 114 feet wide from shoulder to shoulder, paved with asphalt, has concrete shoulders, curbs, and modern gutters. It first appears on USGS topo maps from 1904. It is in fair to good condition, with impacts from some cracking and general weathering. It is in current use and is moderately maintained (Figure 8).

Figure 7. Montiel Road (view northwest). May 13, 2020.

Figure 8. Nordahl Road at intersection with Montiel Road (view northwest). May 13, 2020.

5.4 Evaluation of Historic-Period Resources

Resources MLS-001, -002, and -003 consist of historic-period road alignments known as Leora Lane, Montiel Road, and Nordahl Road. Review of historical topographic maps and aerials indicate that the route of Leora Lane was constructed in the mid-1940s, and the routes of Montiel Road, and Nordahl Road were constructed as early as 1904. They have been improved over the decades and century and are presently in use. If these resources are significant, then it would be expected that the roads retain integrity of location, setting, feeling, and association in ways that correspond with the federal and state eligibility criteria outlined above.

As a result of available research references, the roads were not identified in available historical documentation as having any significant historical associations and were not identified as being associated with the Good Roads Movement. The roads were originally developed for access between major thoroughfares, agricultural parcels and orchards, and residential neighborhoods and businesses with no other significant purpose. These roads were developed as part of regional expansion and the intensification of suburban development in San Marcos during the twentieth century. As such, the resources are not associated with any specific historic event or activity and are, therefore, not eligible under NRHP Criterion A or CRHR Criterion 1.

Similarly, the lack of historical documentation for these roads makes it clear that no specific individuals or groups of people significant in history are linked with the roads. The resources do not demonstrate any association with the lives of persons significant in history and are, therefore, not eligible under NRHP Criterion B or CRHR Criterion 2.

These resources are currently paved roads that follow the same alignment as when originally constructed by 1948 and 1904. The original roads were unimproved dirt or light-duty roads which, through decades of maintenance and repairs, were converted to the paved roads they are today. The roads as they were originally, including years of maintenance and changes, and as they are now, do not have any significant historical associations and the historical use, construction, improvement, and maintenance is typical among roads. The roads are not uniquely artistic or designed with any distinctive engineering characteristics. Therefore, these resources do not embody any distinctive characteristics of a type, period, or method of road construction; nor do they possess any artistic value. In addition, no archival evidence, or physical aspect of the roads, indicates that the resources represent the work of a master road grader or specific construction crew or company. Therefore, these resources are not eligible under NRHP Criterion C or CRHR Criterion 3.

The information potential in historic roads lies in their alignment and route. The alignment and route of these roads was accurately mapped in historic times, and therefore information regarding the historical route of these roads is represented in the archival record. Furthermore, these resources do not possess the potential for subsurface archaeological deposits, and, accordingly, were not tested. The resources do not possess the potential to yield any additional information regarding the relationship or functionality of roads or provide any information that isn't already represented in the archival record and, therefore, they are not eligible under NRHP Criterion D or CRHR Criterion 4.

These resources retain integrity of location and association. They are located in the same place as when they first appeared on topo maps from 1904 and 1948; however, they hold no significance of association with the Good Roads Movement. They were originally carved out as dirt light-duty roads in 1948 and in 1904 and have been used and altered in their materials and design over the years, thus they do not retain integrity of design or materials. The setting has changed from rural orchards and farmland to cityscape and commercial businesses; thus, they do not retain integrity of feeling, setting, or design.

Regardless of integrity, these roads are not eligible for the NRHP or CRHR under any criteria as individual resources and are not a part of any known or suspected district.

6.0 MANAGEMENT CONSIDERATIONS

6.1 Conclusions

ECORP evaluated the three historic-period roads: MLS-001, MLS-002, and MLS-003. These resources were found to be not eligible for inclusion on the NRHP or CRHR under any criteria. Therefore, no Historic Properties under Section 106 of the NHPA or Historical Resources under CEQA will be affected by the proposed Project.

6.2 Likelihood for Subsurface Cultural Resources

The CHRIS records search results revealed that 50 resources are located within one mile of the Project Area, including 25 pre-contact resources. Although the underlying geology of the Project Area is comprised of sediments that pre-date human occupation by about 60 million years, the Project Area is in a region that is recognized to have been in regular use by Native Americans for thousands of years. The drainage that exists to the southwest contributes to this potential because of the likelihood of pre-contact archaeological sites located in the vicinity of perennial and intermittent waterways in the region. Therefore, based on the geology, presence of other known resources in the region, and proximity to the ocean and waterways, potential for subsurface resources is considered moderate.

In all cases, the Lead Agency will require that any unanticipated (or post-review) discoveries found during Project construction be managed through a procedure designed to assess and treat the find as quickly as possible and in accordance with applicable state and federal law. ECORP recommends the following mitigation measure be adopted and implemented by the Lead Agency to reduce potential adverse impacts to less than significant

6.3 Post-Review Discovery Procedures

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 50-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for pre-contact and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the Vallecitos Water District. The agency shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Diego County Medical Examiner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Medical Examiner determines the remains are Native American and not the result of a crime scene, the Medical Examiner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC may mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). 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 reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

The lead agency 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."

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LIST OF ATTACHMENTS

Attachment A – Records Search Confirmation

Attachment B – Sacred Lands File Coordination

Attachment C – Project Area Photographs

Attachment D – ***CONFIDENTIAL*** Cultural Resource Site Locations and Site Records

ATTACHMENT A

Records Search Confirmation

CHRIS Data Request Form

ACCESS AND USE AGREEMENT NO.: 34 **IC FILE NO.:** _____

To: South Coastal Information Center

Print Name: John O'Connor Date: 03/24/2020

Affiliation: ECORP Consulting, Inc.

Address: 3838 Camino del Rio North, Suite 370

City: San Diego State: CA Zip: 92108

Phone: 858-279-4040 Fax: 858-279-4043 Email: joconnor@ecorpconsulting.com

Billing Address (if different than above): _____

Billing Email: _____ Billing Phone: _____

Project Name / Reference: Montiel Lift Station Project

Project Street Address: Montiel Road, San Marcos

County or Counties: San Diego

Township/Range/UTMs: T12S / R3W, R2W / Lat: 33.132943, Long. -117.118986

USGS 7.5' Quad(s): San Marcos, Valley Center, Rancho Santa Fe, Escondido (1996, NAD83)

PRIORITY RESPONSE (Additional Fee): yes ☐ / no ☒

TOTAL FEE NOT TO EXCEED: $ 800
(If blank, the Information Center will contact you if the fee is expected to exceed $1,000.00)

Special Instructions:

Please call me if there are any issues or delays with completion of the search, cost, etc.

Information Center Use Only

Date of CHRIS Data Provided for this Request: _____

Confidential Data Included in Response: yes ☐ / no ☐

Notes: _____

CHRIS Data Request Form

Mark the request form as needed. Attach a PDF of your project area (with the radius if applicable) mapped on a 7.5' USGS topographic quadrangle to scale 1:24000 ratio 1:1 neither enlarged nor reduced and include a shapefile of your project area, if available. Shapefiles are the current CHRIS standard for submitting digital spatial data for your project area or radius. **Check with the appropriate Information Center for current availability of digital data products.**

- Documents will be provided in PDF format. Paper copies will only be provided if PDFs are not available at the time of the request or under specially arranged circumstances.
- Location information will be provided as a digital map product (Custom Maps or GIS data) unless the area has not yet been digitized. In such circumstances, the IC may provide hand drawn maps.

For product fees, see the CHRIS IC Fee Structure on the OHP website

1. Map Format Choice:

Select One: Custom GIS Maps ☐ GIS Data ☐ Custom GIS Maps **and** GIS Data ☒ No Maps ☐

Any selection below left unmarked will be considered a "no. "

2. Location Information:	Within project area	Within 1.0 mi. radius
ARCHAEOLOGICAL Resource Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Locations	yes ☒ / no ☐	yes ☒ / no ☐
Report Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
"Other" Report Locations[2]	yes ☒ / no ☐	yes ☒ / no ☐

3. Database Information:
(contact the IC or CHRIS Coordinator for product examples)

ARCHAEOLOGICAL Resource Database[1]	Within project area	Within 1.0 mi. radius
List	yes ☒ / no ☐	yes ☒ / no ☐
Detail	yes ☒ / no ☐	yes ☒ / no ☐
Excel Spreadsheet	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Database		
List	yes ☒ / no ☐	yes ☒ / no ☐
Detail	yes ☒ / no ☐	yes ☒ / no ☐
Excel Spreadsheet	yes ☒ / no ☐	yes ☒ / no ☐
Report Database[1]		
List	yes ☒ / no ☐	yes ☒ / no ☐
Detail	yes ☒ / no ☐	yes ☒ / no ☐
Excel Spreadsheet	yes ☒ / no ☐	yes ☒ / no ☐
Include "Other" Reports[2]	yes ☐ / no ☒	yes ☐ / no ☒

4. Document PDFs (paper copy only upon request)**:**	Within project area	Within 1.0 mi. radius
ARCHAEOLOGICAL Resource Records[1]	yes ☒ / no ☐	yes ☐ / no ☐
NON-ARCHAEOLOGICAL Resource Records	yes ☒ / no ☐	yes ☒ / no ☐
Reports[1]	yes ☒ / no ☐	yes ☐ / no ☒
"Other" Reports[2]	yes ☒ / no ☐	yes ☐ / no ☒

CHRIS Data Request Form

5. Eligibility Listings and Documentation:

	Within project area	Within 1.0 mi. radius
OHP Built Environment Resources Directory[3]:		
(only available as Excel spreadsheet, digital database rows)		
Directory listing only	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☒ / no ☐	yes ☐ / no ☒
OHP Archaeological Resources Directory[1, 3]:		
(only available as Excel spreadsheet, digital database rows)		
Directory listing only	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☒ / no ☐	yes ☐ / no ☒
***California Inventory of Historic Resources* (1976):**		
Directory listing only	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☒ / no ☐	yes ☐ / no ☒

6. Additional Information:

The following sources of information may be available through the Information Center. However, several of these sources are now available on the OHP website and can be accessed directly. The Office of Historic Preservation makes no guarantees about the availability, completeness, or accuracy of the information provided through these sources. Indicate below if the Information Center should review and provide documentation (if available) of any of the following sources as part of this request.

Caltrans Bridge Survey	yes ☒ / no ☐
Ethnographic Information	yes ☐ / no ☒
Historical Literature	yes ☐ / no ☒
Historical Maps	yes ☒ / no ☐
Local Inventories	yes ☒ / no ☐
GLO and/or Rancho Plat Maps	yes ☒ / no ☐
Shipwreck Inventory	yes ☐ / no ☒
Soil Survey Maps	yes ☐ / no ☒

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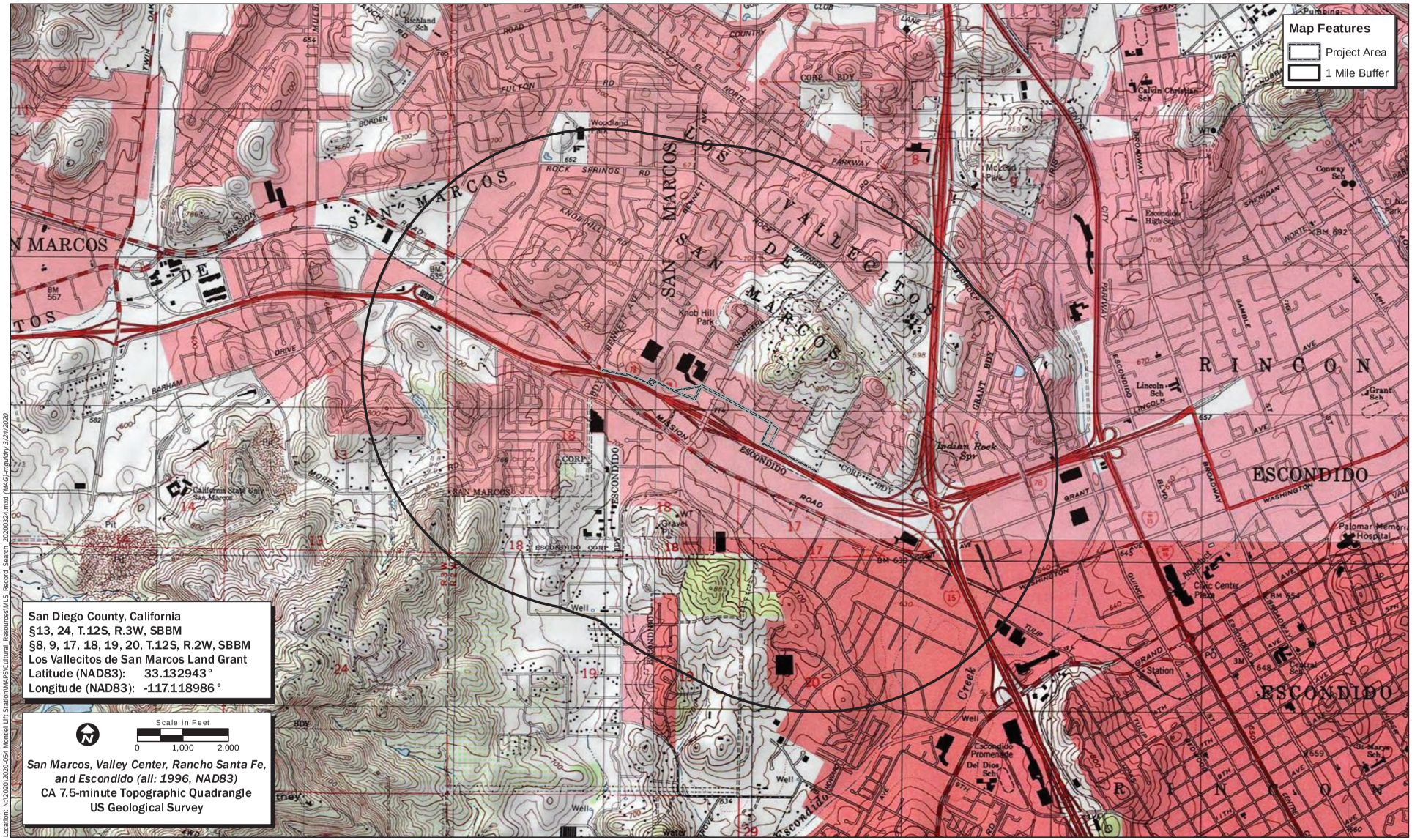
[1] In order to receive archaeological information, requestor must meet qualifications as specified in Section III of the current version of the California Historical Resources Information System Information Center Rules of Operation Manual and be identified as an Authorized User or Conditional User under an active CHRIS Access and Use Agreement.

[2] "Other" Reports GIS layer consists of report study areas for which the report content is almost entirely non-fieldwork related (e.g., local/regional history, or overview) and/or for which the presentation of the study area boundary may or may not add value to a record search.

[3] Includes, but is not limited to, information regarding National Register of Historic Places, California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and historic building surveys. Previously known as the HRI then as HPD, now it is known as the Built Environment Resources Directory (BERD). Electronic fees will apply at 25¢ per excel line up to 999, 10¢ following. This documentation is the source of the official status codes for evaluated resources and compiled by the Office of Historic Preservation.

[4] Associated documentation will vary by resource. Contact the IC for further details.



Location: N:\2020\2020-054 Montiel Lift Station\MAPS\Cultural_Resources\MLS_Record_Search_20200324.mxd (MAG)-mgudry 3/24/2020

Map Date: 3/24/2020

IService Layer Credits: Copyright© 2013 National Geographic Society, i-cubed

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Record Search

2020-054 Montiel Lift Station

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: ECORP Consulting, Inc.

Company Representative: John O'Connor

Date Processed: 4/29/2020

Project Identification: Montiel Lift Station Project

Search Radius: 1 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:	2712
RUSH:	no
Hours:	1
Spatial Features:	137
Address-Mapped Shapes:	yes
Digital Database Records:	161
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	231

This is not an invoice. Please pay from the monthly billing statement

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-00080	NADB-R - 1120080; Voided - APEC 13	1979	American Pacific Environmental Consultants, Inc.	Archaeological Investigation of the Pacific Scene Property in the city of Escondido	American Pacific Environmental Consultants, Inc.	37-005505
SD-00225	NADB-R - 1120225; Voided - CARRICO35	1976	Carrico, Richard	Archaeological Sensitivity and Potentiality Survey for Richland Neighborhood Study San Marcos, California.	WESTEC Services, Inc.	37-000560
SD-00439	NADB-R - 1120439; Voided - CHACE 15	1977	Chace, Paul G.	An Archaeological Survey Rock Springs West.	Paul G. Chace Associates	37-000152, 37-001036
SD-00483	NADB-R - 1120483; Voided - CHACE 37	1979	Chace, Paul G.	An Archaeological Survey of the Rock Springs Properties, City of Escondido (E.I. S. No. 650).	Paul G. Chace & Associates	
SD-00491	NADB-R - 1120491; Voided - CHACE 45	1979	Chace, Paul G.	An Archaeological/Historical Recordation and Testing Program for the Westridge Industrial Park.	Paul G. Chace & Associates	37-005501, 37-005502, 37-005503, 37-005504, 37-005505
SD-00562	NADB-R - 1120562; Voided - CHACE 89	1986	Chace, Paul G.	Supplemental Archaeological Survey for the Louetto Business Park Project, City of Escondido.	Paul G. Chace & Associates	
SD-00632	NADB-R - 1120632; Voided - CHACE 76	1983	Chace, Paul G.	An Archaeological Survey of Escondido Tract No. 562, City of Escondido	Paul G. Chace and Associates	37-009828, 37-009829, 37-009830
SD-00691	NADB-R - 1120691; Other - 3c5060; Voided - FINK 41	1974	Fink, Gary R.	Archaeological Survey for the Proposed Realignment of Valley Center Road, Valley Center, California	San Diego County Engineer Department	37-000265, 37-000289, 37-000295, 37-001048, 37-007303, 37-007304, 37-007305
SD-01031	NADB-R - 1121031; Voided - GALLEGO 17	1983	Gallegos, Dennis	Archaeological Report for Business/Industrial, Richmar, Lake San Marcos and Barham/Discovery Community Plan, San Marcos, California	WESTEC Services, Inc.	37-000560, 37-004667, 37-004668, 37-005080, 37-005081, 37-005082, 37-005541, 37-005542, 37-005543, 37-005632, 37-005633, 37-008328, 37-008329, 37-008386, 37-008462, 37-008720
SD-01079	NADB-R - 1121079; Voided - FIR 19	1978	Flower, Douglas, Darcy Ike, and Linda Roth	Archaeological and Historical Survey of Westridge Industrial Park, Escondido, California.	Flower, Ike & Roth Archaeological Consultants	
SD-01327	NADB-R - 1121327; Voided - PIGNIOLO13	1990	Pigniolo, Andrew	Cultural Resource Survey of the Rock Springs TM Parcel San Diego County, California.	ERC Environmental and Energy Services Company	
SD-01689	NADB-R - 1121689; Voided - WALKERC 03	1979	Walker, Carol J. and Charles S. Bule	A Cultural Resource Study of Proposed Access Roads Between the Escondido Substation and the Proposed Substation Site at Rainbow	RECON	37-004356, 37-004914, 37-005441

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-01766	NADB-R - 1121766; Voided - MORIARTY 8	1980	Moriarty, James Robert III and Larry J. Pierson	Archaeological Survey and Test of the Shelly Group/San Marcos Project San Marcos, California	Archaeological/Historical Research Services	
SD-01889	NADB-R - 1121889; Voided - MORIARTY 5	1980	Moriarty, James Robert III and Larry J. Pierson	An Archaeological Survey of the North County Christian Center Subdivision San Marcos, California	Archaeological/Historical Research Services	
SD-02033	NADB-R - 1122033; Voided - APEC 02	1979	American Pacific Environmental Consultants Inc.	Assessment District 76-2 of the San Marco County Water District Draft Environmental Impact Report	American Pacific Environmental Consultants Inc.	
SD-02043	NADB-R - 1122043; Voided - BRANDMAN 2	1989	Micheal Brandman Associates, Inc.	Draft Environmental Impact Report San Marco Flood Control Channel San Marcos Creek/Las Posas Reach SCH #88061505	Micheal Brandman Associates, Inc.	
SD-02285	NADB-R - 1122285; Other - 957; Voided - SRS 52	1990	SRS Inc.	Archaeological Reconnaissance Report for Eden Valley Project Rancho Los Vallecitos De San Marcos San Diego County	Scientific Resources Inc.	
SD-02764	NADB-R - 1122764; Voided - GALLEGO 01	1993	GALLEGOS, DENNIS and ET AL	CULTURAL RESOURCE LITERATURE REVIEW FOR THE SAN DIEGUITO RIVER VALLEY REGIONAL OPEN SPACE PARK FOCUSED PLANNING AREA, SAN DEIGO COUNTY, CALIFORNIA	GALLEGOS & ASSOCIATES	
SD-03534	NADB-R - 1123534; Voided - KYLE 73	1996	KYLE, CAROLYN E. and DENNIS R. GALLEGOS	CULTURAL RESOURCE SURVEY FOR THE SAN MARCOS GENERAL PLAN WOODLAND PARK MIDDLE SCHOOL PROJECT SAN MARCOS, CALIFORNIA	SAN MARCOS UNIFIED SCHOOL DISTRICT	
SD-03821	NADB-R - 1123821; Voided - GHABHLN 02	1999	GHABHLAIN, SINEAD NI, TRACY STROPES, and DENNIS R. GALLEGOS	CULTURAL RESOURCE EVALUATION REPORT FOR THE OCEANSIDE-ESCONDIDO BIKEWAY PROJECT SAN MARCOS, CALIFORNIA	GALLEGOS AND ASSOCIATES	
SD-04114	NADB-R - 1124114; Voided - RECON 12	1977	Recon	Draft Environmental Impact Report for Bright Skies Mobile Estates	Recon	
SD-04121	NADB-R - 1124121; Voided - GALLEGOS95	1991	Dennis Gallegos	Historical/Archaeological Survey Report for Richland Hills, San Marcos, Calfifornia	Gallegos & Associates	
SD-04301	NADB-R - 1124301; Voided - BANKS07	1980	BANKS, THOMAS and DAVID M. VAN HORN	ARCHAEOLOGICAL SURVEY REPORT: THE PROPOSED ESCONDIDO AUTO PARK IN THE CITY OF ESCONDIDO , CALIFORNIA	THOMAS BANKS	37-000153, 37-000154, 37-000156, 37-001035, 37-001505, 37-005501, 37-005502, 37-005503, 37-005504

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-04441	NADB-R - 1124441; Voided - APEC29	1979	AMERICAN PACIFIC ENVIRONMENTAL CONSULTANTS	ARCHAEOLOGICAL RECONNAISSANCE OF SAN MARCOS COUNTY WATER DISTRICT PROPOSED ASSESSMENT DISTRICT 76-2, SAN DIEGO COUNTTY, CALIFORNIA	APEC	
SD-04652	NADB-R - 1124652; Voided - GALLEGO257	2001	GALLEGOS AND ASSOCIATES	CULTURAL RESOURCE TEST REPORT FOR OCEANSIDE - ESCONDIDO RAIL PROJECT OCEANSIDE, CALIFORNIA	GALLEGOS & ASSOCIATES	37-005633, 37-008386, 37-012095, 37-012096, 37-012097, 37-013212, 37-015576, 37-015595
SD-04744	NADB-R - 1124744; Voided - BISSELL28	1986	Bissell, Ronald M.	Archaeological Reconnaissance of the San Marcos Creek Flood Channel Projects, San Marcos, San Diego County, California	RMW Paleo Associates	37-000749, 37-008720
SD-05269	NADB-R - 1125269; Voided - PIGNIOLO95	2001	PIGNIOLO, ANDREW, STEPHANIE MURRAY, and JOHN DIETLER	TESTING THE ROCK SPRINGS SITE: DRAFT CULTURAL RESOURCE EVALUATION REPORT FOR THE ROCK SPRINGS ROAD PROJECT, CITY OF ESCONDIDO, CALIFORNIA	TIERRA ENVIRONMENTAL SERVICES	37-005210
SD-05270	NADB-R - 1125270; Voided - PIGNIOLO96	2001	PIGNIOLO, ANDREW and STEPHANIE MURRAY	DRAFT CULTURAL RESOURCE SURVEY FOR THE ROCK SPRINGS ROAD PROJECT, CITY OF ESCONDIDO, CA	TIERRA ENVIRONMENTAL SERVICES	37-005210
SD-05712	NADB-R - 1125712; Voided - ANDERSON 1	1993	ANDERSON, SHANNA	ARCHAEOLOGICAL SURVEY FOR ESCONDIDO MASTER PLAN CORRECTION OF DISCREPANCY FOR PARCEL P11, SITE EPS-30H/CA-SDI-12547H	OGDEN	37-012547
SD-06172	NADB-R - 1126172; Voided - HARRIS 10	1999	HARRIS, NINA	CULTURAL RESOURCE SURVEY REPORT FOR THE HIGHPOINTE PROPOERTY SAN MARCOS, CALIF.	GALLEGOS & ASSOC.	
SD-06249	NADB-R - 1126249; Voided - ERCE 03	1990	ERCE	CULTURAL RESOURCE SURVEY OF THE OCEANSIDE TO ESCONDIDO RAIL PROJECT, SAN MARCOS LOOP SEGMENT, SAN MARCOS, CALIFORNIA	ERC	
SD-07359	NADB-R - 1127359; Voided - PIGNIO 128	2001	PIGNIOLO, ANDREW	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT .64 KILOMETER SEGMENT OF CITRACADO PARKWAY (VINEYARD AVENUE) WIDENING	ANDREW PIGNIOLO	
SD-07537	NADB-R - 1127537; Voided - TIERRA 02	2002	TIERRA ENVIRONMENTAL	CITRACADO PARKWAY WIDENING PROJECT NEGATIVE HISTORIC PROPOERTY SURVEY REPORT	TIERRA ENVIRONMENTAL	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-08159	NADB-R - 1128159; Voided - TUMA 08	2002	TUMA, MICHAEL W.	RESULTS OF A DATA RECOVERY PROGRAM AT SITE SDI-5210B, THE ROCK SRINGS ROAD PROJECT A LATE PREHISTORIC SITE ALONG THE ESCONDIDO CREEK VALLEY, ESCONDIDO, CALIFORNIA	BRIAN F. SMITH	37-005210
SD-08588	NADB-R - 1128588; Voided - CITYESC03	1980	CITY OF ESCONDIDO	DRAFT ENVIRONMENTAL IMPACT REPORT FOR EXPANSION OF WASTEWATER TREATMENT FACILITY	CITY OF ESCONDIDO	
SD-08596	NADB-R - 1128596; Other - KEA JOB NO. 91-25; Voided - KELLER03	1992	KELLER ENVIRONMENTAL ASSOCIATES, INC	APPENDICES-RECLAIMED WATER DISTRIBUTION SYSTEM PROJECT: DRAFT ENVIRONMENTAL IMPACT REPORT	KELLER ENVIRONMENTAL ASSOC.	
SD-08729	NADB-R - 1128729; Voided - ERCE 25	1989	MITCHELL, PATRICIA	THE OCEANSIDE TO ESCONDIDO RAIL PROJECT	ERC ENVIRONMENTAL AND ENERGY SERVICES CO.	
SD-08758	NADB-R - 1128758; Voided - HCH 06	1980	HCH & ASSOCIATES	PALOS VISTA GENERAL PLAN AMENDMENT DRAFT ENVIRONMENTAL IMPACT REPORT	HCH & ASSOCIATES	
SD-08951	NADB-R - 1128951; Voided - AA14	1978	ARCHAEOLOGICAL ASSOCIATES	ARCHAEOLOGICAL SURVEY REPORT FOR THE E.I.R. OF THE PROPOSED ESCONDIDO REGIONAL SHOPPING CENTER NORTH WEST OF RTS. 78 AND 395, ESCONDIDO, CA	ARCHAEOLOGICAL ASSOCIATES	37-000152, 37-001036, 37-001049, 37-005176, 37-005210
SD-08987	NADB-R - 1128987; Voided - KYLE199	2004	KYLE, CAROLYN	CULTURAL RESOURCE SURVEY FOR A NINE ACRE PARCEL LOCATED ON SEVEN OAKS DRIVE CITY OF ESCONDIDO, CALIFORNIA	KYLE CONSULTING	
SD-09247	NADB-R - 1129247; Voided - PIERSON124	2004	PIERSON, LARRY J.	A CULTURAL RESOURCES SURVEY OF THE PALOMAR POWER PLANT WATER PIPELINE RIGHT-OF-WAY PROJECT	BRIAN F. SMITH & ASSOCIATES	
SD-09250	NADB-R - 1129250; Voided - SMITH463	2004	SMITH, BRIAN F. and K. HARLEY MEIER	MITIGATION AND MONITORING REPORT FOR THE ESCONDIDO RESEARCH AND TECHNOLOGY CENTER	BRIAN F. SMITH & ASSOCIATES	37-025575, 37-025576, 37-025577, 37-025651
SD-09451	NADB-R - 1129451; Voided - MOSLAK02	2005	Moslak, Ken and Cook, John	Cultural Resources Study for the Barham Drive Widening Project, San Marcos and Escondido, San Diego County, California	ASM Affiliates	37-012045, 37-012046

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-09543	NADB-R - 1129543; Other - CYG530; Voided - FULTON01	2005	Fulton, Terri and Carmack, Shannon	Cultural Resource Assessment Verizon Wireless Services Harmony Grove Facility City of Escondido, San Diego County, California	LSA	
SD-09546	NADB-R - 1129546; Voided - GUERREM06	2001	Guerrero, Monica, Gallegos, Dennis, Stropes, Tracy, Bouscaren, Steve, Bugbee, Susan, and Cerreto, Richard	Cultural Resource Test Report for Oceanside-Escondido Rail Project Oceanside, California	Gallegos & Associates	
SD-09585	NADB-R - 1129585; Other - 34-03; Voided - GUERREM 33	2003	GUERRERO, MONICA C. and DENNIS R. GALLEGOS	CULTURAL RESOURCE SURVEY FOR THE BARHAM ROAD PROPERTY SAN MARCOS, CALIFORNIA	GALLEGOS & ASSOCIATES	
SD-09674	NADB-R - 1129674; Voided - BUYSSE 36	2005	Buysse, Johnna and Scott Mattingly	An Archaeological/Historical Survey and Resource Evaluation of the Eden Hills Project, San Diego County, California, APN's 232-013-01 through -03, 232-020-55	Brian F. Smith & Associates	37-026709, 37-026710, 37-026711, 37-026712, 37-026713, 37-026714, 37-026762
SD-09905	NADB-R - 1129905; Voided - BONNEW01	2005	Bonner, Wayne H. and Marnie Aislin-Kay	Cultural Resource Records Search Results for Cingular Telecommunications Facility Candidate NS-332-02 (Nordahl Marketplace), Center Drive, San Marcos, San Diego County, California	Michael Brandman and Associates	
SD-10260	NADB-R - 1130260; Voided - BONNEW44	2006	Bonner, Wayne H. and Marnie Aislin Kay	Cultural Resource Search and Site Visit Results for Cricket Telecommunications Facility Candidate SAN-210 (Padilla Properties) 1039 East Mission Road, San Marcos, San Diego, California	Michael Brandman Associates	
SD-10311	NADB-R - 1130311; Voided - PIERSON141	2006	PIERSON, LARRY J.	RESULTS OF THE CULTURAL RESOURCES MONITORING AND MITIGATION PLAN (CRMMP) FOR THE PALOMAR ENERGY CENTER PROJECT	BRIAN F. SMITH AND ASSOCIATES	
SD-10352	NADB-R - 1130352; Voided - ROBBIM169	2006	ROBBINS-WADE, MARY	LOWE'S GENERAL PLAN AMENDMENT - ESCONDIDO CASE NUMBERS: ER 2005-40, 2005-02-GPA, 2005-58/PD/CP/CZ, TRACT 946 CULTURAL RESOURCES (AFFINIS JOB NO. 2089)	AFFINIS	37-005210, 37-006726, 37-006727, 37-006728, 37-006729, 37-007785
SD-10398	NADB-R - 1130398; Voided - ROSENM116	2006	Rosen, Martin D.	HISTORIC PROPERTY SURVEY REPORT (HPSR) STATE ROUTE 78 WOODLAND PARKWAY INTERCHANGE PROJECT	EDAW, Inc.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-10551	NADB-R - 1130551; Voided - ARRINGT01	2006	ARRINGTON, CINDY	CULTURAL RESOURCES FINAL REPORT OF MONITORING AND FINDINGS FOR THE QWEST NETWORK CONSTRUCTION PROJECT, STATE OF CALIFORNIA	SWCA ENVIRONMENTAL CONSULTANTS	
SD-10626	NADB-R - 1130626; Voided - LOSEE12	2006	LOSEE, CAROLYN	CULTURAL RESOURCES ANALYSIS FOR T-MOBILE SITE # SD07129: 1165 AVOCADO AVENUE, ESCONDIDO, CA 92028	ARCHAEOLOGICAL RESOURCES TECHNOLOGY	
SD-11087	NADB-R - 1131087; Voided - ROSENM117	2007	ROSEN, MARTIN	COMPLETION OF SECTION 106 AND FILING OF HISTORIC PROPERTY SURVEY REPORT (HPSR) / CULTURAL RESOURCES SURVEY OF THE NORDAHL ROAD INTERCHANGE PROJECT COUNTY OF SAN DIEGO, CALIFORNIA	CALTRANS	
SD-11187	NADB-R - 1131187; Voided - PIERSON170	2007	PIERSON, LARRY J.	RESULTS OF THE CULTURAL RESOURCES MITIGATION MONITORING PROGRAM FOR THE PALOMAR ENERGY PROJECT, ESCONDIDO, CALIFORNIA	BRIAN F. SMITH AND ASSOCIATES	
SD-11201	NADB-R - 1131201; Voided - MCGINNIS77	2007	MCGINNIS. PATRICK	CULTURAL REOSURCES SURVEY OF THE NORDAHL ROAD INTERCHANGE PROJECT, COUNTY OF SAN DIEGO, CALIFORNIA	TIERRA ENVIRONMENTAL SERVICES	
SD-12015	NADB-R - 1132015; Voided - GALLEGO317	2004	GUERRERO, MONICA and DENNIS R. GALLEGOS	CULTURAL RESOURCE SURVEY FOR THE PATTISON PROPERTY SAN MARCOS, CALIFORNIA	GALLEGOS & ASSOCIATES	
SD-12039	NADB-R - 1132039; Voided - GALLEGO341	2007	GUERRERO, MONICA and DENNIS R. GALLEGOS	CULTURAL RESOURCES MONITORING REPORT FOR THE NORTH COUNTY TRANSIT DISTRICT (NCTD) SPRINTER RAIL PROJECT OCEANSIDE TO ESCONDIDO, CALIFORNIA	GALLEGOS & ASSOCIATES	37-012095, 37-012096, 37-012097, 37-015576, 37-015595
SD-12394	NADB-R - 1132394; Voided - PIERSON201	2009	PIERSON, LARRY J.	A HISTORICAL ASSESSMENT OF 1050 WEST WASHINGTON AVENUE, ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA, APN 228-250-17	BRIAN F. SMITH & ASSOCIATES	
SD-12723	NADB-R - 1132723; Voided - WILLOK08	2010	WILLOUGHBY, KERRY and SHANNON L. LOFTUS	AT&T SITE NS0332 HIGHWAY 78 AND NORDAHL ROAD 842 NORDAHL ROAD SAN MARCOS, SAN DIEGO COUNTY, CALIFORNIA 92069	ACE ENVIRONMENTAL, LLC	
SD-12835	NADB-R - 1132835; Voided - ROBBINS306	2010	ROBBINS-WADE, MARY	ESCONDIDO BALLPARK- CULTURAL RESOURCES SURVEY	AFFINIS	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-13124	NADB-R - 1133124; Voided - FRANCS01	2011	FRANCISCO, SONNIER and DON C. PEREZ	PROPOSED NEW TOWER PROJECT 2629 GINGER WAY, ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA	EBI CONSULTING	
SD-13320	NADB-R - 1133320; Voided - PEREZD05	2011	PEREZ, DON	NEW TOWER, CITRACADO, 2629 GINGER WAY, ESCONDIDO	EBI CONSULTING	37-024452, 37-024453, 37-024454, 37-024455, 37-024456, 37-025576
SD-13358	NADB-R - 1133358; Voided - PEREZD09	2011	PEREZ, DON C.	CITRACADO 2629 GINGER WAY ESCONDIDO SAN DIEGO COUNTY, CALIFORNIA 92029	EBI CONSULTING	37-024452, 37-024453, 37-024454, 37-024455, 37-024456, 37-024546, 37-025576, 37-025577, 37-025651
SD-13541	NADB-R - 1133541; Voided - ROSENBE30	2009	ROSENBERG, SETH A.	ETS #8021; TL 688 AND TL 6932 RELOCATION AND UNDERGROUND CONVERSION PROJECT	E2M	37-004908, 37-013463, 37-013510, 37-013761, 37-014110, 37-014111
SD-14140	NADB-R - 1134140; Voided - ROBBINS385	2003	ROBBINS-WADE, MARY	ARCHAEOLOGICAL RECORDS SEARCH AND LITERATURE REVIEW, VALLECITOS WATER DISTRICT MASTER PLAN UPDATE SAN DIEGO COUNTY, CALIFORNIA	AFFINIS	
SD-14146	NADB-R - 1134146; Voided - SMITHB647	2011	SMITH, BRIAN F.	AN ARCHAEOLOGICAL/ HISTORICAL SURVEY AND RESOURCE EVALUATION OF THE EDEN HILLS PROJECT, SAN DIEGO COUNTY, CALIFORNIA	BRIAN F. SMITH AND ASSOCIATES, INC.	37-026709, 37-026710, 37-026711, 37-026712, 37-026713, 37-026714, 37-026762
SD-14328	NADB-R - 1134328; Voided - WILSONS44	2013	WILSON, STACIE	LETTER REPORT: ETS 20872 CULTURAL RESOURCES MONITORING FOR TL6956 UNDERGROUNDING TRENCH EXCAVATION, CITY OF ESCONDIDO, CALIFORNIA- IO 200414230	AECOM	
SD-14420	NADB-R - 1134420; Voided - LOFTUSS73	2012	LOFTUS, SHANNON	CULTURAL RESOURCES RECORDS SEARCH AND SITE SURVEY AT&T SITE NS0332 HIGHWAY 78 AND NORDAHL ROAD SAN MARCOS, SAN DIEGO COUNTY, CALIFORNIA 92069	ACE ENVIRONMENTAL, INC.	
SD-14597	NADB-R - 1134597; Voided - MCGINNI115	2009	MCGINNIS, PATRICK	CULTURAL RESOURCES SURVEY OF THE NORDAHL ROAD INTERCHANGE PROJECT COUNTY OF SAN DIEGO, CALIFORNIA	TIERRA ENVIRONMENTAL SERVICES	
SD-14666	NADB-R - 1134666; Voided - LOFTUSS87	2012	LOFTUS, SHANNON	CULTURAL RESOURCES RECORDS SEARCH AND SITE SURVEY AT&T SITE SD0503 ESCONDIDO UNION HIGH SCHOOL DISTRICT 2310 ALDERGROVE AVENUE ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA 92029	ACE ENVIRONMENTAL	37-000153, 37-001035, 37-005503, 37-005505, 37-024455, 37-024457, 37-024546

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-14796	NADB-R - 1134796; Voided - MCLEANR10	2012	MCLEAN, RODERIC	CULTURAL RESOURCES ASSESSMENT CLASS III INVENTORY VERIZON WIRELESS SERVICES WOODLAND GLEN FACILITY CITY OF SAN MARCOS SAN DIEGO COUNTY, CALIFORNIA	LSA ASSOCIATES	
SD-15138	NADB-R - 1135138	2014	PHIL FULTON	CULTURAL RESOURCE ASSESSMENT CLASS I INVENTORY VERIZON WIRELESS SERVICES CITRACADO NCD FACILITY CITY OF ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA	LSA ASSOCIATES, INC.	
SD-15668	NADB-R - 1135668	2015	Don C. Perez	CULTURAL RESOURCES SURVEY, NORDAHL MARKET PLACE / ENSITE #22336 (290500), 842 NORDAHL ROAD, SAN MARCOS, SAN DIEGO COUNTY, CALIFORNIA 92069, EBI PROJECT NO. 61148937	EBI Consulting	
SD-15669	NADB-R - 1135669	2015	Phil Fulton	CULTURAL RESOURCE ASSESSMENT CLASS III INVENTORY, VERIZON WIRELESS SERVICES, LA MOREE FACILITY, CITY OF SAN MARCOS, COUNTY OF SAN DIEGO, CALIFORNIA	LSA Associates	
SD-16428	NADB-R - 1136428	2014	ROBBINS-WADE, MARY and GILETTI. ANDREW	CULTURAL RESOURCES INVENTORY AND ASSESSMENT: VALIANO, SAN DIEGO COUNTY, CALIFORNIA, CASE NUMBER PDS2013-SP-13-001, PDS2013-GPA-13-001, PDS2013-STP-13-003, PDS2013-TM-5575, PDS2013-REZ-13-001, PDS2013-ER-13-08-002	Affinis, HELIX Environmental	
SD-16429	NADB-R - 1136429	2015	ROBBINS-WADE, MARY	CULTURAL RESOURCES SURVEY AND ASSESSMENT: VALIANO, SAN DIEGO COUNTY, CALIFORNIA	HELIX Environmental	
SD-16442	NADB-R - 1136442; Submitter - 2527	2014	ROBBINS-WADE, MARY and GILETTI, ANDREW	RESEARCH DESIGN AND DATA RECOVERY PLAN: VALIANO, SAN DIEGO COUNTY, CALIFORNIA, CASE NUMBER PDS2013-SP-13-001, PDS2013-GPA-13-001, PDS2013-STP-13-003, PDS2013-TM-5575, PDS2013-REZ-13-001, PDS2013-ER-13-08-002	Affinis	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-16492	NADB-R - 1136492	2013	LOFTUS, SHANNON L.	CULTURAL RESOURCE RECORDS SEARCH AND SITE SURVEY AT&T SITE SD0184 INTERSTATE 15 AND HIGHWAY 78, 1326 WEST MISSION ROAD, ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA 92029 CASPR# 3601003118	ACE Environmental	
SD-16628	NADB-R - 1136628	2016	PIGNIOLO, ANDREW and SERR, CAROL	CULTURAL RESOURCE SURVEY OF THE NORDAHL TENTATIVE MAP 5602 PROJECT, SAN MARCOS, SAN DIEGO COUNTY, CALIFORNIA (PDS2015-TM-5602)	Laguna Mountain Environmental, Inc	
SD-16854	NADB-R - 1136854	2016	CRISMON, HOLLY and DIETTERICH, JAMES	ADDENDUM TO FCC FORM 620 NORDAHL MARKET PLACE / ENSITE #22336 (290500) 842 NORDAHL ROAD SAN MARCOS, SAN DIEGO COUNTY, CA, 92069 EBI PROJECT NO. 6114008937 SHPO NO. FCC_2015_0206_001	EBI Consulting	
SD-16896	NADB-R - 1136896	2016	SMITH, BRIAN F. and REINICKE, KRISTEN R.	HISTORIC STRUCTURE ASSESSMENT FOR 852 METCALF STREET ESCONDIDO, CALIFORNIA APN 228-220-22	Brian F. Smith and Associates	
SD-17419	NADB-R - 1137419	2014	WADE, SUE	P14-0037 CONDITIONAL USE PERMIT CUP 14-013 & SPECIFIC PLAN MODIFICATION SP 14-005 - VERIZON WIRELESS TELECOMMUNICATION FACILITY (842 NORDAHL ROAD): CULTURAL RESOURCES SURVEY	HERITAGE RESOURCES	
SD-17439	NADB-R - 1137439	2012	WADE, SUE	AT&T SITE SD0503, ESCONDIDO UNION SCHOOL DISTRICT, 2310 ALDERGROVE AVE., ESCONDIDO (FCC 120711C): ARCHAEOLOGICAL SUBSURFACE TESTING - NEGATIVE FINDINGS	HERITAGE RESOURCES	37-005505
SD-17598	NADB-R - 1137598	2017	PIGNIOLO, ANDREW and CAROL SERR	CULTURAL RESOURCE SURVEY, TEST, AND EVALUATION OF THE NORDAHL TENTATIVE MAP 5602 PROJECT, SAN MARCOS, SAN DIEGO COUNTY, CALIFORNIA (PDS2015-TM-5602)	LAGUNA MOUNTAIN ENVIRONMENTAL, INC.	37-035639, 37-035640, 37-035641
SD-18178	NADB-R - 1138178	2019	PIGNIOLO, ANDREW and CAROL SERR	CULTURAL RESOURCES MONITORING REPORT FOR THE ROCK SPRINGS SEWER REPLACEMENT PROJECT VALLECITOS WATER DISTRICT, CITY OF SAN MARCOS, CALIFORNIA	LAGUNA MOUNTAIN ENVIRONMENTAL, INC.	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-37-000152	CA-SDI-000152						SD-00434, SD-00439, SD-08951, SD-11977
P-37-000153	CA-SDI-000153						SD-00433, SD-04301, SD-04639, SD-04719, SD-11977, SD-14666
P-37-000598	CA-SDI-000598		Site	Prehistoric	AP02 (Lithic scatter)	1960 (True)	SD-00224
P-37-001035	CA-SDI-001035						SD-00433, SD-04301, SD-04719, SD-14666
P-37-004667	CA-SDI-004667	Resource Name - SDM-W-1130	Site	Prehistoric	AP02 (Lithic scatter)	1976 (M.J. Hatley, M. Wiedauer, RECON)	SD-01031
P-37-004668	CA-SDI-004668	Resource Name - SDM-W-1164	Site	Prehistoric	AP02 (Lithic scatter)	1976 (M. Weidauer, RECON)	SD-01031
P-37-005210	CA-SDI-005210						SD-05269, SD-05270, SD-08159, SD-08951, SD-10352, SD-11977
P-37-005503	CA-SDI-005503						SD-00491, SD-00636, SD-00757, SD-04301, SD-04719, SD-11977, SD-14666
P-37-005504	CA-SDI-005504						SD-00491, SD-04301, SD-04719
P-37-005505	CA-SDI-005505						SD-00080, SD-00491, SD-04719, SD-11977, SD-14666, SD-17439
P-37-008328	CA-SDI-008328	Other - SGSM-1	Site	Prehistoric	AP02 (Lithic scatter)	1980 (Larry J. Pierson)	SD-01031
P-37-008329	CA-SDI-008329	Other - SGSM-2	Site	Prehistoric	AP04 (Bedrock milling feature)	1980 (Larry J. Pierson)	SD-01031
P-37-008386	CA-SDI-008386	Other - NCCC-I	Site	Prehistoric	AP04 (Bedrock milling feature)	1980 (James R. Moriarty, Larry J. Pierson); 1996 (Del James); 2007 (D. Gallegos, M. Guerrero, Gallegos & Associates)	SD-01031, SD-04652, SD-05517

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-37-009830	CA-SDI-009830						SD-00632, SD-11977
P-37-010896	CA-SDI-010896	Resource Name - San Marcos Tract 238-1	Site	Prehistoric	AP02 (Lithic scatter); AP04 (Bedrock milling feature)	1988 (S. Shackley, K. Norwood, R. Apple, Dames & Moore)	
P-37-012045	CA-SDI-012045	Other - CE-389	Building	Historic	HP02 (Single family property)	1990 (Kathie Joyner, Lara Maier, County of San Diego, Department of Public Works Environmental Unit)	SD-09451
P-37-012046	CA-SDI-012046	Other - CE-390	Building	Historic	HP02 (Single family property)	1990 (Kathie Joyner, Lara Maier, County of San Diego, Department of Public Works Environmental Services Unit)	SD-09451
P-37-012096	CA-SDI-012096	Other - SM-1	Site	Prehistoric, Historic	AH04 (Privies/dumps/trash scatters); AH11 (Walls/fences) - rock wall; AP02 (Lithic scatter)	1991 (Steven H. Briggs, Andrew Pigniolo, ERC Environmental); 1996 (Del James); 2007 (D. Gallegos, M. Guerrero, Gallegos & Associates)	SD-04652, SD-05517, SD-12039
P-37-013743		Resource Name - Hollandia -H1	Building	Protohistoric	HP02 (Single family property); HP33 (Farm/ranch); HP39 (Other) - dairy	1994	
P-37-013744		Resource Name - Hollandia -H2	Building	Historic	HP02 (Single family property)	1994	
P-37-015576	CA-SDI-014325	Other - N-S-2	Site	Prehistoric	AP04 (Bedrock milling feature)	1996 (Delman James, Rich Bark, Brian Glenn, Jerry Sabio, Ted Cooley, Ogden Environmental Services, Inc.); 2007 (D. Gallegos, M. Guerrero, Gallegos & Associates)	SD-04652, SD-05517, SD-11977, SD-12039
P-37-019436		OHP PRN - 2025-0701-0000; Other - 559 N. Hale Ave.				2002	
P-37-019526		OHP PRN - 2025-0791-0000; Other - Rear 610 Metcalf Street				2002 (Cotton Associates)	
P-37-019527		OHP PRN - 2025-0792-0000; Other - 646 Metcalf Street				2002 (Cotton Associates)	
P-37-019528		OHP PRN - 2025-0793-0000; Other - 775 Metcalf Street				2002 (Cotton Associates)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-37-019529		OHP PRN - 2025-0794-0000; Other - 1048 Metcalf Glen				2002 (Cotton Associates)	
P-37-019558		OHP PRN - 2025-0823-0000; Other - 945 West Mission Ave				2002 (Cotton Associates)	
P-37-019559		OHP PRN - 2025-0824-0000; Other - 957 West Mission Ave				2002 (Cotton Associates)	
P-37-019560		OHP PRN - 2025-0825-0000; Other - 1024 West Mission Ave				2002 (Cotton Associates)	
P-37-019561		OHP PRN - 2025-0826-0000; Other - 1070 West Mission				2002 (Cotton Associates)	
P-37-019562		OHP PRN - 2025-0827-0000; Other - 1100 West Mission Ave				2002 (Cotton Associates)	
P-37-019563		OHP PRN - 2025-0828-0000; Other - 1105-07 West Mission Ave.				2002 (Cotton Associates)	
P-37-019564		OHP PRN - 2025-0829-0000; Other - 1112 West Mission Ave				2002 (Cotton Associates)	
P-37-019565		OHP PRN - 2025-0830-0000; Other - 1110 West Mission Ave				2002 (Cotton Associates)	
P-37-019566		OHP PRN - 2025-0831-0000; Other - 1155 West Mission Ave				2002 (Cotton Associates)	
P-37-019567		OHP PRN - 2025-0832-0000; Other - 1120 West Mission Ave				2002 (Cotton Associates)	
P-37-019700		OHP PRN - 2025-0965-0000; Other - 1100 West Washington Avenue				2002 (Cotton Associates)	
P-37-024439		Other - 917 Lincoln Ave				2002 (Historic Research Services)	
P-37-024452	CA-SDI-016222	Other - S1				2002 (Edaw)	SD-11977, SD-13320, SD-13358
P-37-024453	CA-SDI-016223	Other - S2				2002 (Edaw)	SD-11977, SD-13320, SD-13358, SD-13674
P-37-024454	CA-SDI-016224	Other - S3				2002 (Edaw)	SD-11977, SD-13320, SD-13358
P-37-024455	CA-SDI-016225	Other - S4				2002 (Edaw)	SD-11977, SD-13320, SD-13358, SD-14666

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-37-024456	CA-SDI-016226	Other - S5				2002 (Edaw)	SD-11977, SD-13320, SD-13358
P-37-024546		Other - KOWN Transmitting Tower				2002 (EDAW)	SD-11977, SD-13358, SD-14666
P-37-025576	CA-SDI-016989	Other - Escondido Tech Center - Temp 2				2004 (Brian F. Smith & Associates)	SD-09250, SD-11977, SD-13320, SD-13358
P-37-025577	CA-SDI-016990	Other - Escondido Tech Center - Temp 3				2004 (Brian F. Smith & Associates)	SD-09250, SD-11977, SD-13358
P-37-033557		Other - SXPQ 13 Pomerado Road; Resource Name - Highway 395; Other - SXPQ-13 Historic road	Object, Site	Historic	AH07 (Roads/trails/railroad grades); HP37 (Highway/trail)	2013 (Larry Tift, ASM Affiliates, Inc.); 2015 (Kent Manchen, Matt DeCarlo, ASM Affiliates, Inc.); 2017 (Haley Chateene, PanGIS); 2017 (A. Foglia, K. Keckeisen, PanGIS, Inc.); 2018 (Sarah Stringer-Bowsher, ASM Affiliates, Inc.)	SD-17576
P-37-035639	CA-SDI-022191	IC Informal - RNID-2983; IC Informal - RNID-3440					SD-17598
P-37-035640	CA-SDI-022192	IC Informal - RNID-2984; IC Informal - RNID-3440					SD-17598
P-37-035641		IC Informal - RNID-2985					SD-17598

ATTACHMENT B

Sacred Lands File Coordination

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Montiel Lift Station Project

County: San Diego

USGS Quadrangle Name: San Marcos, Valley Center, Rancho Santa Fe, Escondido

Township: 12S **Range:** 3W; 2W **Section(s):** 13, 24; 8, 9, 17, 18 19, 20

Company/Firm/Agency: ECORP Consulting, Inc.

Street Address: 3838 Camino del Rio North, Suite 370

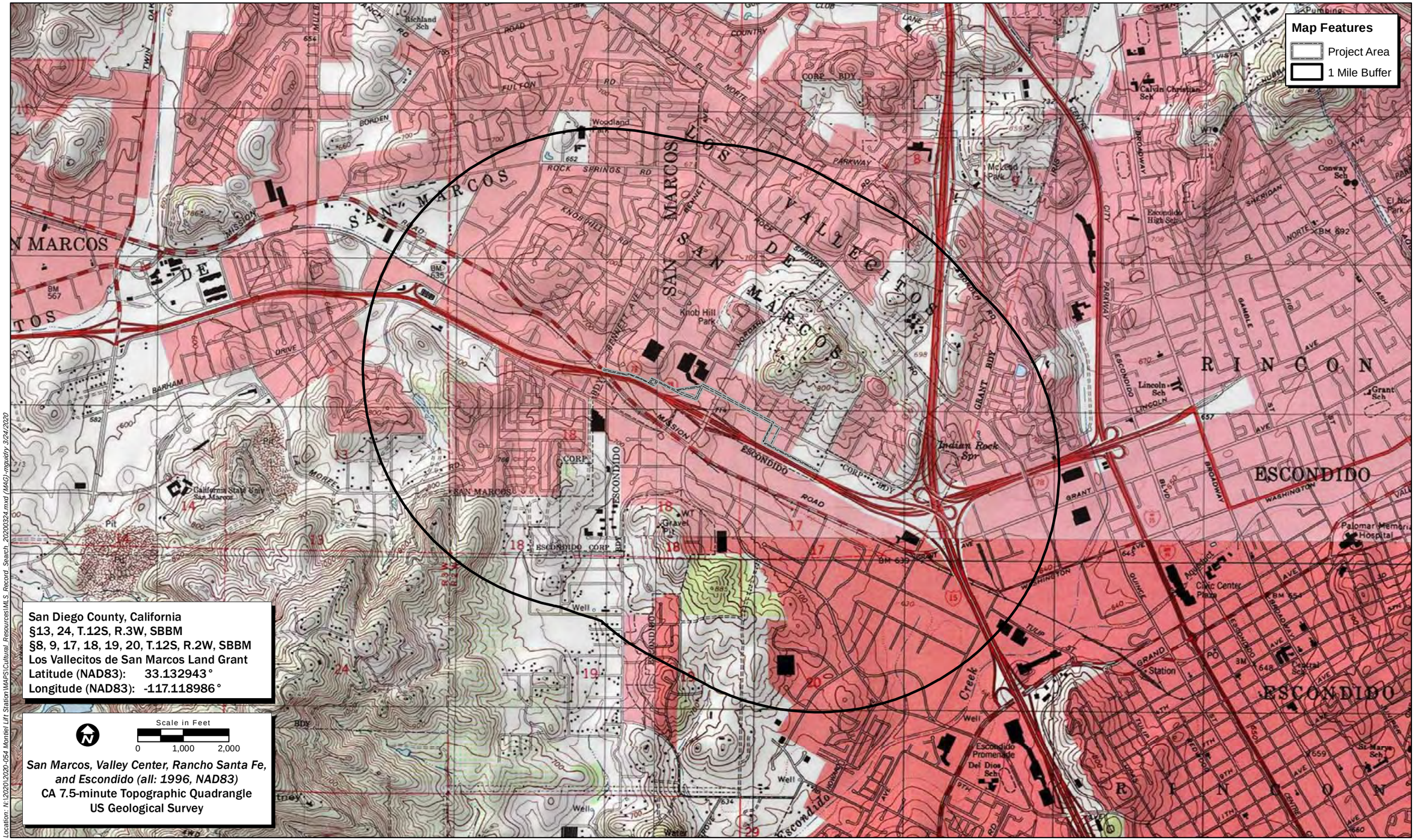
City: San Diego **Zip:** 92108

Phone: 858-279-4040

Fax: 858-279-4043

Email: joconnor@ecorpconsulting.com

Project Description: This is for the Montiel lift station and force main replacement.



Map Date: 3/24/2020

iService Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Record Search

2020-054 Montiel Lift Station

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

April 1, 2020

John O'Connor
ECORP

Via Email to: joconnor@ecorpconsulting.com

Re: Montiel Lift Station Project, San Diego County

Dear Mr. O'Connor:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Diego County
4/1/2020

Barona Group of the Capitan Grande
Edwin Romero, Chairperson
1095 Barona Road — Diegueno
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov

Campo Band of Diegueno Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Diegueno
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Band of Kumeyaay Indians
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

Ewiiaapaayp Band of Kumeyaay Indians
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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Montiel Lift Station Project, San Diego County.

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ATTACHMENT C

Project Area Photographs

State of California ♦ Natural Resources Agency **Primary** **#**
DEPARTMENT OF PARKS AND RECREATION HRI #

PHOTOGRAPH RECORD

Trinomial

Page 1 **of** 2 **Project Name:** Montiel Lift Station
Camera Format: iPhone 6 Lens Size:
Film Type and Speed: **Negatives Kept at:** ECORP Consulting, Inc.

Mo.	Day	Time	Exp./Frame	Subject/Description	View Toward	Accession #
May	13	7:45	IMG_1081	Man-made drainage along north side of 78 at southern end of Kaylyn Way	SSE	1
May	13	7:45	IMG_1082	Drainage	S	2
May	13	7:45	IMG_1083	Drainage and empty lot	W	3
May	13	7:50	IMG_1084	Manholes south of Kaylyn Way	S	4
May	13	8:00	IMG_1085	Leora Lane	SW	5
May	13	8:05	IMG_1088	Proposed path of project through empty lot, pump station in background	W	8
May	13	8:10	IMG_1089	Proposed path showing pump station	W	9
May	13	8:10	IMG_1090	Montiel Road from Leora Lane	NW	10
May	13	8:15	IMG_1092	Path from pump station	S	12
May	13	8:20	IMG_1093	Path along Coles building with empty lot and pump station in background	S	13
May	13	8:25	IMG_1094	Montiel Road	E	14
May	13	8:25	IMG_1095	Intersection of Montiel Road and Nordahl Road	NW	15
May	13	8:35	IMG_1096	View toward Montiel from Center Drive	SE	16
May	13	8:35	IMG_1097	Center Drive	S	17
May	13	8:40	IMG_1098	Proposed path across parking lot	W	18
May	13	8:45	IMG_1099	Center Drive	W	19

May	13	8:50	IMG_1100	Center Drive	E	20
May	13	8:50	IMG_1101	View toward Costco from Center Drive	W	21
May	13	9:15	IMG_1102	Western end of proposed project	E	22
May	13	9:25	IMG_1104	Dirt road south of Costco	SW	24
May	13	9:25	IMG_1105	Dirt road south of Costco	W	25
May	13	9:30	IMG_1106	Dirt road south of Costco	E	26
May	13	9:30	IMG_1107	Man-made drainage along SR 78 from western end of dirt road	W	27


IMG_1101


IMG_1102


IMG_1104


IMG_1105


IMG_1106


IMG_1107


IMG_1081


IMG_1082


IMG_1083


IMG_1084


IMG_1085


IMG_1088


IMG_1089


IMG_1090


IMG_1092


IMG_1093


IMG_1094


IMG_1095


IMG_1096


IMG_1097


IMG_1098


IMG_1099


IMG_1100


COSTCO
WHOLESALE


Lakeshore

Confidential Cultural Resource Site Locations and Site Records

Redacted - Available Under Separate Cover

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Michael Baker
INTERNATIONAL

Appendix C
Geotechnical Investigation

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GEOTECHNICAL INVESTIGATION

MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT

San Marcos, California

Prepared By:
SCST, LLC
6280 Riverdale Street
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Prepared For:

Ryan Fane
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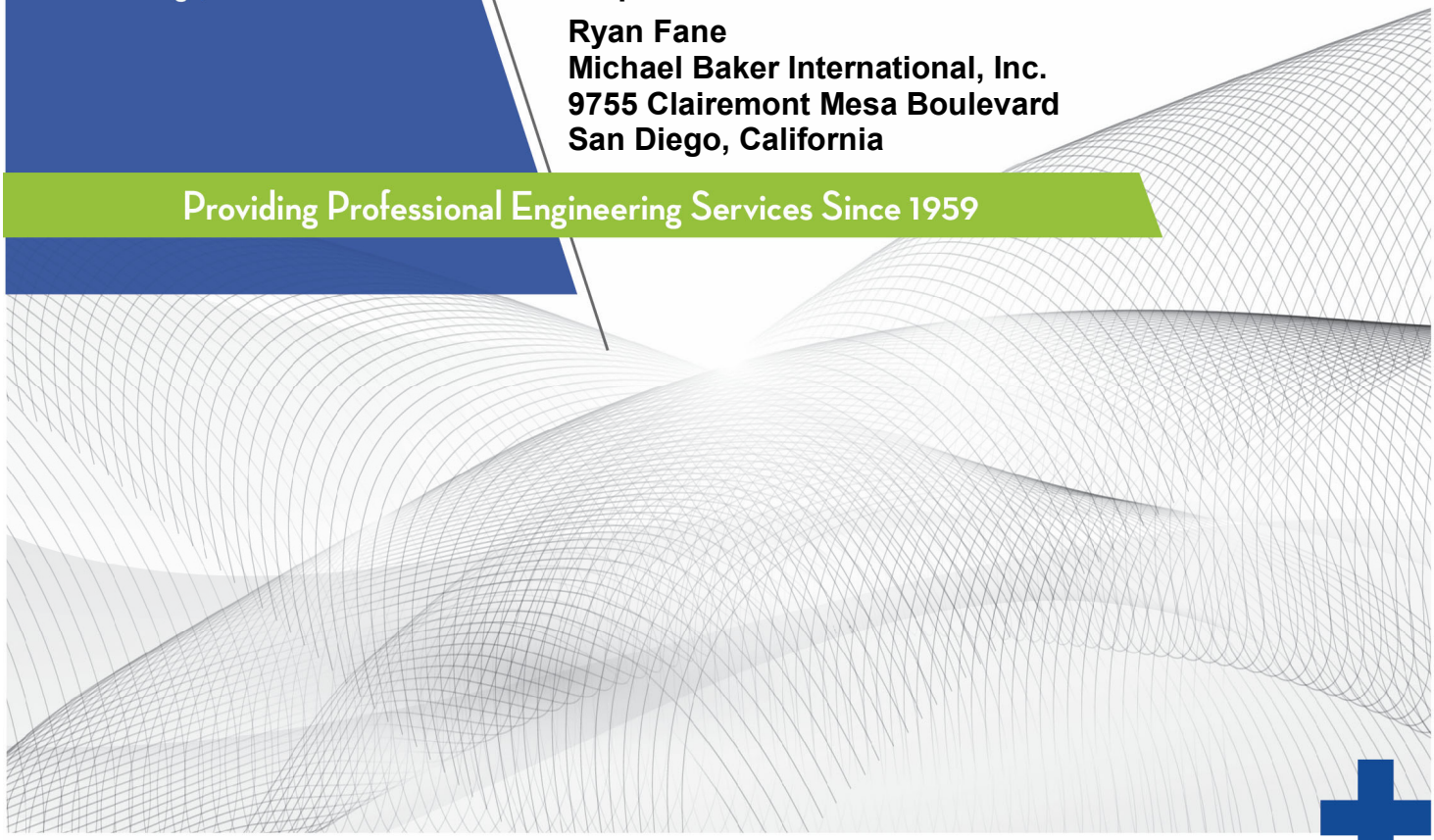
Providing Professional Engineering Services Since 1959



March 16, 2020

SCST No. 190332P4
Report No. 1

Mr. Ryan Fane
Michael Baker International, Inc.
9755 Clairmont Mesa Boulevard
San Diego, California 92124-1324

Subject: GEOTECHNICAL INVESTIGATION
MONTIEL LIFT STATION AND FORCE MAIN REPLACEMENT PROJECT
SAN MARCOS, CALIFORNIA

Dear Mr. Fane:

In accordance with your request and our proposal #19-0613R, SCST, LLC (SCST), an Atlas company, performed a geotechnical investigation to assess the geologic conditions for the project, including potential geologic hazards, and provide recommendations based on our findings. Our investigation consisted of a review of readily available geologic literature, site reconnaissance, exploratory borings, geotechnical laboratory testing, and the preparation of this report.

If you have any questions, please call us at (619) 280-4321.

Respectfully submitted,
SCST, LLC

Isaac Chun, GE 2469
Principal Engineer

Andrew K. Neuhaus, CEG 2591
Chief Geologist

Drew Mc Peak, GIT 1090
Staff Geologist

JPS:DJM:AKN:IC:ds

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TABLE OF CONTENTS

SECTION **PAGE**

ATTACHMENTS

FIGURES

APPENDICES

1. INTRODUCTION

This report presents the results of the geotechnical investigation SCST, LLC (SCST), an Atlas company, performed for the Montiel Lift Station and Force Main project within the city of San Marcos, California. We understand the Montiel Lift Station pumps wastewater collected from the Montiel sewer shed through a 6-inch force main to a gravity sewer heading west through the Nordahl Shopping Center, from the intersection of Nordahl Road and Montiel Road in San Marcos, California. The lift station was constructed in 1985 on a 40-foot by 40-foot easement to the southeast of the Coles Fine Flooring building located at 2175 Montiel Road that was supposed to be in temporary operation for less than 5 years. Current average flows to the lift station are approximately 80 gallons per minute and are expected to increase with the proposed small subdivisions and a hotel along Montiel Road in the next few years. The project will be limited to the Montiel Lift Station and 6-inch force main replacements only. Enlargement of the existing 8-inch gravity sewer through the Nordahl Shopping Center will commence following project completion. The purpose of our work is to provide conclusions and recommendations regarding the geotechnical aspects of the project. Figure 1 presents a site vicinity map.

2. PURPOSE AND SCOPE OF WORK

The purpose of our work is to provide conclusions and recommendations regarding the geotechnical aspects of the project to aid in the design and construction of the project. The scope of work performed by SCST consisted of the following:

- Review geologic maps, topographic maps, prior geotechnical reports, as-built plans, and other readily available literature pertinent to the geotechnical conditions at the site to obtain pertinent information of the subsurface soil and rock conditions.
- Provide site-specific geotechnical parameters for seismic design in accordance with the 2019 California Building Code.
- Discuss geologic hazards, including flooding, liquefaction, land sliding, faulting, and tsunami inundation.
- Discuss geotechnical issues, including excavatability, expansive soil, compressible soil, and settlement.
- Discuss typical remedial measures if geotechnical constraints are identified.
- Recommend further design-level investigations, if necessary.
- Prepare a summary letter of our findings, conclusions, and recommendations.

3. FIELD INVESTIGATION

SCST performed a geologic investigation to address potential geologic hazards and geotechnical conditions that could impact the proposed construction. Pertinent documents reviewed included published maps, project plans, and a previous geotechnical report prepared by SCST, Inc. (SCST, 2017). The previous geotechnical investigation by SCST consisted of the portion of the force main replacement south of Highway 78 and at the lift station on the north side of Highway 78. Additionally, SCST explored subsurface conditions of locations selected by your office by drilling four borings to depths between about 19½ feet and 30 feet below the existing ground surface using a truck-mounted drill rig equipped with a hollow stem auger. Figure 2 shows the approximate locations and depths of the borings. An SCST geologist logged the borings and collected samples of the material encountered for geotechnical laboratory testing. Logs of the borings are presented in Appendix I. Soils were classified according to the Unified Soil Classification System illustrated on Figure I-1. Logs of the borings from the previous investigation (SCST, 2017) are also presented in Appendix I.

Additionally, we performed two seismic P-wave refraction traverses and two multichannel analysis of surface waves (MASW) profiles to evaluate rippability characteristics of the bedrock underlying the alignment. Figure 2 presents the general locations of the seismic traverses. Appendix III presents the detailed results of the seismic refraction survey.

4. LABORATORY TESTING

Selected samples from the exploratory borings were tested to evaluate pertinent soil classification and engineering properties to enable the development of geotechnical conclusions and recommendations. The laboratory testing consisted of in situ moisture and density, Atterberg limits, particle-size distribution, corrosivity, and direct shear. The results of the laboratory tests and brief explanations of the test procedures are presented in Appendix II.

5. SITE CONDITIONS

The subject pipeline alignments are located primarily on the north side of State Highway 78 in San Marcos, California. The project alignment passes through a vacant lot, Montiel Road, and an outlet mall parking lot. Major roadways in these areas include Montiel Road and Nordahl Road.

6. PROPOSED CONSTRUCTION

It is SCST's understanding that the proposed alignment will be constructed using cut and cover methods. The alignment begins at the south end of the vacant lot located directly to the west of Leora Lane, trends northeast to Montiel Road, then trends northwest along Montiel Road, makes a southwest bend at the intersection of M Lane and Center Drive, and proceeds to follow Center Drive. The alignment ends at the parking lot located at 713 Center Drive in San Marcos.

7. GEOLOGY AND SUBSURFACE CONDITIONS

Based on published geologic maps (Kennedy and Tan, 2007), and depending on location, the alignment is underlain by surficial deposits consisting of young and old alluvial flood-plain deposits and granitic and metavolcanic rock. However, materials encountered in our borings consisted of fill, old alluvial floodplain deposits and weathered Monzogranite of Merriam Mountain. Descriptions of the materials encountered in the field investigation are presented below. Figure 3 presents a regional geology map.

Fill (Qf): Fill ranged from about 2 to 8½ feet in deep and consisted of loose to medium dense, silty sand with trace amounts of gravel and construction debris.

Old alluvial flood-plain deposits (Qoa): Old alluvial flood-plain deposits were encountered at depths ranging from between about 2 and 8½ feet below the ground surface. The deposits generally consisted of medium dense to very dense clayey sand.

Monzogranite of Merriam Mountain (Kgmm): The granitic rock was encountered at depths ranging from between about 5½ and 15 feet below the ground surface to the total depths explored. The granitic rock encountered consisted of moderately weathered to weathered, hard rock.

Groundwater: Groundwater was not encountered in our borings. However, it should be recognized that groundwater conditions can develop at a site where none were previously present. These are often the result of alteration of the permeability characteristics of the soil, an alteration in drainage patterns, and/or increased precipitation or irrigation water. These types of conditions can be most effectively corrected on an individual basis if and when they develop.

7.1 GEOLOGIC HAZARDS

7.1.1 Fault-Rupture Hazard

Faulting in the San Diego County area is dominantly characterized by a series of Quaternary-age and older fault zones that typically consist of several individual en echelon faults. Generally striking in a northerly to northwesterly direction. Active fault zones are those that have shown conclusive evidence of faulting during the Holocene Epoch (the most recent 11,000 years), while potentially active fault zones have demonstrated movement during the Pleistocene Epoch (11,000 to 1.6 million years before the present) but no evidence of movement during Holocene time. Faults that can be shown to have experienced no movement within the Holocene or Pleistocene Epochs are generally considered to be inactive.

The closest active fault to this site is the offshore segment of the Newport-Inglewood-Rose Canyon Fault Zone located approximately 15.4 miles west of the project alignment. The project alignment is not located in an Alquist-Priolo Earthquake Fault Zone. No active faults are known to underlie or project toward the site. Therefore, the probability of fault rupture is low.

7.1.2 Liquefaction and Dynamic Settlement

Liquefaction occurs when loose, saturated, generally fine sands and silts are subjected to strong ground shaking. The soils lose shear strength and become liquid, potentially resulting in large total and differential ground surface settlements as well as possible lateral spreading during an earthquake. Due to the lack of shallow groundwater and given the dense nature of the materials beneath the site, the potential for liquefaction and dynamic settlement to occur is low.

7.1.3 Tsunamis, Seiches, and Flooding

The project is located inland, in a relatively high elevation area; therefore, damage due to tsunamis is considered low. Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays, or reservoirs. The project is not located adjacent to any lakes or confined bodies of water; therefore, the potential for a seiche to affect the project is low. SCST reviewed the Flood Insurance Rate (FIRM) maps via Federal Emergency Management Agency (FEMA) Flood Hazard Map online database to determine if the subject project alignment is located within an area susceptible to flooding. In general, the project is within an area designated as a Flood Hazard Zone X. Zone X designates the areas determined to be outside the outside the 0.2% annual chance flood plain.

7.1.4 Landslides and Slope Stability

Evidence of landslides or slope instabilities was not observed. The potential for landslides or slope instabilities to occur along the alignment is considered low.

7.1.5 Subsidence

The project is not located in an area of known subsidence associated with fluid withdrawal (groundwater or petroleum); therefore, the potential for subsidence due to the extraction of fluids is negligible.

7.1.6 Hydro-Consolidation

Hydro-consolidation can occur in recently deposited (less than 10,000 years old) sediments that were deposited in a semi-arid environment. Examples of such sediments are eolian sands, alluvial fan deposits, and mudflow sediments deposited during flash floods. The pore space between particle grains can re-adjust when inundated by

groundwater causing the material to consolidate. The relatively dense materials underlying the project are not considered susceptible to hydro-consolidation.

8. GEOPHYSICAL SURVEY SUMMARY

Two seismic P-wave refraction traverses and two multichannel analysis of surface waves (MASW) profiles were performed to evaluate rippability characteristics of the bedrock underlying the proposed sewer alignment. Based on the results, it appears the study areas are underlain by low-velocity materials (e.g. topsoil and colluvium-low failure PSI) in the near surface and high-velocity igneous bedrock at depth (high failure PSI). Distinct vertical and lateral velocity variations are evident in the tomography models (See Appendix III). Moreover, the degree of bedrock weathering and the depth to bedrock appears to be highly variable across the site. In addition, remnant boulder core stones may be present in the subsurface in some areas.

Based on the refraction results, variability in the excavatability (including depth of rippability) of the subsurface materials should be expected across the project area. Furthermore, blasting may be required depending on the excavation depth, location, equipment used, and desired rate of production. In addition, oversized materials should be expected in excavated materials.

In general, the seismic P-wave velocity of a material can be correlated to rippability (see Table 1 below), or to some degree “hardness”. In general, S-wave velocities are about 0.4 to 0.6 of that of the P-wave velocities depending on the nature of the subsurface materials. Table 1 is based on published information from the Caterpillar Performance Handbook (Caterpillar, 2011) as well as our experience with similar materials, and assumes that a Caterpillar D-9 dozer ripping with a single shank is used. We emphasize that the cutoffs in this classification scheme are approximate and that rock characteristics, such as fracture spacing and orientation, play a significant role in determining rock quality or rippability. The rippability of a mass is also dependent on the excavation equipment used and the skill and experience of the equipment operator. A contractor with excavation experience in similarly difficult conditions should be consulted for expert advice on excavation methodology, equipment, and production rate.

For trenching operations, the rippability values should be scaled downward. For example, velocities as low as 3,500 feet/second may indicate difficult ripping during trenching operations. In addition, the presence of boulders, which can be troublesome in a narrow trench, should be anticipated.

It should be noted that the rippability cutoffs presented in Table 1 are slightly more conservative than those published in the Caterpillar Performance Handbook. Accordingly, the above classification scheme should be used with discretion, and contractors should not be relieved of making their own independent evaluation of the rippability of the on-site materials prior to submitting their bids.

Table 1 – Rippability Classification	
Seismic P-wave Velocity	**Rippability**
0 to 2,000 feet/second	Easy
2,000 to 4,000 feet/second	Moderate
4,000 to 5,500 feet/second	Difficult, Possible Blasting
5,500 to 7,000 feet/second	Very Difficult, Probable Blasting
Greater than 7,000 feet/second	Blasting Generally Required

9. CONCLUSIONS

For those portions of the alignment that will undergo new construction, we consider that cut and cover pipeline construction is feasible from a geotechnical standpoint. There are no geologic hazards of sufficient magnitude that preclude the intended improvements. The main geotechnical consideration affecting the project is the presence of granitic rock along the planned project alignment that may require special handling. The materials anticipated below the pipeline depths are expected to generally provide good pipeline support.

10. RECOMMENDATIONS

10.1 SITE PREPARATION AND GRADING

10.1.1 Site Preparation

Site preparation should begin with the removal of existing improvements, topsoil, vegetation, and debris. Subsurface improvements that are to be abandoned should be removed, and the resulting excavations should be backfilled and compacted in accordance with the recommendations of this report. Pipeline abandonment can consist of capping or rerouting at the project perimeter and removal within the project perimeter. If appropriate, abandoned pipelines can be filled with grout or slurry as recommended by and observed by the geotechnical consultant.

10.1.2 Excavation Characteristics

It is anticipated that excavations can be achieved with earthwork equipment in good working order. Excavations in fill and old alluvial flood-plain deposits may be locally unstable and may contain construction debris and cobbles or boulders. Difficult excavation should be anticipated in zones of granitic rock. Rock breakers, carbide/diamond-tipped equipment and/or blasting may be required to excavate less weathered rock. Localized “floaters” or large boulder inclusions may also be encountered. Excavations in rock may generate oversized material that will require extra effort to crush or haul offsite. Special handling may be required to excavate zones of hard rock, as auger refusal was

encountered. Contract documents should specify that the contractor mobilize equipment capable of excavating and compacting the granitic rock.

10.1.3 Temporary Excavations

Temporary slopes greater than 4 feet in the fill and old alluvial flood plain deposits should not be steeper than 1½:1 (horizontal: vertical) per Cal/OSHA type C soil classification and in the weathered granitic rock should not be steeper than 1:1 (horizontal: vertical) per Cal/OSHA type B soil classification. The faces of temporary slopes should be inspected daily by the contractor's Competent Person before personnel are allowed to enter the excavation. Zones of potential instability, sloughing or raveling should be brought to the attention of the engineer and corrective action implemented before personnel begin working in the trench.

Slopes steeper than those described above will require shoring. Soldier piles and lagging, corrugated metal pipe, internally braced shoring, trench boxes, or anchor tie-back walls could be used. If trench boxes or metal pipe are used, the soil immediately adjacent to the shoring is not directly supported. Ground surface deformations adjacent to the excavation could be greater when these methods are used compared to other methods of shoring.

Excavated materials should not be stockpiled behind temporary excavations within a distance equal to the depth of the excavation. SCST should be notified if other surcharge loads are anticipated so that lateral load criteria can be developed for the specific situation. If temporary slopes are to be maintained during the rainy season, berms are recommended along the tops of the slopes to prevent runoff water from entering the excavation and eroding the slope faces.

10.1.4 Temporary Shoring

For design of cantilevered shoring, an active soil pressure equal to a fluid weighing 40 pcf can be used for level retained ground or 60 pcf for 2:1 (horizontal:vertical) sloping ground. The surcharge loads on shoring from traffic and construction equipment adjacent to the excavation can be modeled by assuming an additional 2 feet of soil behind the shoring. For design of soldier piles, an allowable passive pressure of 300 psf per foot of embedment over twice the pile diameter up to a maximum of 4,500 psf can be used. Soldier piles should be spaced at least three pile diameters, center to center. Continuous lagging will be required throughout. The soldier piles should be designed for the full anticipated lateral pressure; however, the pressure on the lagging will be less due to arching in the soils. For design of lagging, the earth pressure but can be limited to a maximum value of 400 psf.

Piles should be filled with concrete immediately after drilling. The concrete should be pumped to the bottom of the drilled holes using the tremie method. If casing is used, the casing should be removed as the concrete is placed, keeping the level of the concrete at least 5 feet above the bottom of the casing at all times.

10.1.5 Temporary Dewatering

Groundwater seepage may occur locally and should be anticipated in excavations. Dewatering can be accomplished by sloping the excavation bottom to a sump and pumping from the sump. A layer of gravel about 6 inches thick placed in the bottom of the excavation will facilitate groundwater flow and can be used as a working platform.

10.1.6 Imported Soil

Imported soil should consist of predominately granular soil free of organic matter and rocks greater than 6 inches. Imported soil should have an expansion index of 20 or less and should be inspected and, if appropriate, tested by SCST prior to transport to the site.

10.2 PIPELINES

10.2.1 Modulus of Soil Reaction

The modulus of soil reaction (E') is used to characterize the stiffness of soil backfill placed along the side of buried flexible pipelines for evaluating deflection due to the load of associated with trench backfill over the pipe. A value of 2,000 psi is recommended for the modulus of soil reaction assuming that granular bedding material is placed adjacent to the pipe and is compacted to a minimum of 90% relative compaction.

10.2.2 Pipe Bedding

Pipe bedding should comply with the Vallecitos Water District Standard Specifications. Bedding material should consist of a minimum of 4 inches of maximum 1-inch crushed rock aggregate below the bell of the pipe in accordance with Section 02223, Part 2-E of the Standard Specifications for Vallecitos Water District. Gravel should not be added to crushed rock. Samples of materials proposed for use as bedding should be provided to the engineer for inspection and testing before the material is imported for use on the project. The pipe bedding material should be placed over the full width of the trench. After placement of the pipe, the bedding should be brought up uniformly on both sides of the pipe to reduce the potential for unbalanced loads. No voids or uncompacted areas should be left beneath the pipe haunches. Ponding or jetting the pipe bedding should not be allowed.

10.2.3 Backfill

Utility trench sections should conform to the minimum requirements of Section 02223, Part 3-A of the Standard Specification for Vallecitos Water District. Backfill should be placed in 6-inch to 8-inch thick loose lifts, moisture conditioned to near optimum moisture content, and compacted to at least 90% relative compaction. Where fill is to be placed on surfaces inclined steeper than 5:1 (horizontal: vertical), benches should be excavated to provide a relatively level surface for fill placement. Benches should extend through any loose soils to expose competent material.

The top 12 inches of fill beneath paved areas should be moisture conditioned to near optimum moisture content and compacted to at least 95% relative compaction. Aggregate base material should be compacted to at least 95% relative compaction. Materials and methods of construction should conform to good engineering practices and the minimum standards of the Vallecitos Water District Standard Specifications.

On-site materials, except for soil containing roots, debris, and rock greater than 6 inches, can be used as compacted fill or trench backfill. The maximum dry density and optimum moisture content for the evaluation of relative compaction should be determined in accordance with ASTM D1557.

10.3 SOIL CORROSIVITY

Representative samples of the on-site soils from the project alignment were tested to evaluate corrosion potential. The test results are presented in Appendix II. The project design engineer can use the sulfate results in conjunction with ACI 318 to specify the water/cement ratio, compressive strength and cementitious material types for concrete exposed to soil. A corrosion engineer should be contacted to provide specific corrosion control recommendations.

10.4 GEOTECHNICAL ENGINEERING DURING CONSTRUCTION

The geotechnical engineer should review project plans and specifications prior to bidding and construction to check that the intent of the recommendations in this report has been incorporated. Observations and tests should be performed during construction. If the conditions encountered during construction differ from those anticipated based on the subsurface exploration program, the presence of the geotechnical engineer during construction will enable an evaluation of the exposed conditions and modifications of the recommendations in this report or development of additional recommendations in a timely manner.

11. CLOSURE

SCST should be advised of any changes in the project scope so that the recommendations contained in this report can be evaluated with respect to the revised plans. Changes in recommendations will be verified in writing. The findings in this report are valid as of the date of this report. Changes in the condition of the site can, however, occur with the passage of time, whether they are due to natural processes or work on this or adjacent areas. In addition, changes in the standards of practice and government regulations can occur. Thus, the findings in this report may be invalidated wholly or in part by changes beyond our control. This report should not be relied upon after a period of two years without a review by us verifying the suitability of the conclusions and recommendations to site conditions at that time.

In the performance of our professional services, we comply with a level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions and in the same locality. The client recognizes that subsurface conditions may vary from those encountered at the test pit locations and that our data, interpretations, and recommendations are based solely on the information obtained by us. We will be responsible for those data, interpretations, and recommendations, but shall not be responsible for interpretations by others of the information developed. Our services consist of professional consultation and observation only, and no warranty of any kind whatsoever, express or implied, is made or intended in connection with the work performed or to be performed by us, or by our proposal for consulting or other services, or by our furnishing of oral or written reports or findings.

12. REFERENCES

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ATLAS SCST	**SITE VICINITY MAP** Montiel Lift Station and Force Main Replacement San Marcos, California	Date: March, 2020 By: ACF Job No.: 190332P4-1	Figure: 1

0 200 400

SCALE (feet)

NOTE: All locations are approximate

All Plans provided by Michael Baker International (2020).

SCST LEGEND:

- B-10 (20) Location of Boring (Depth in Feet)
- ML-2 MASW Line
- Sewer Alignment
- SL-2 Seismic Line

Date: March, 2020

By: ACF

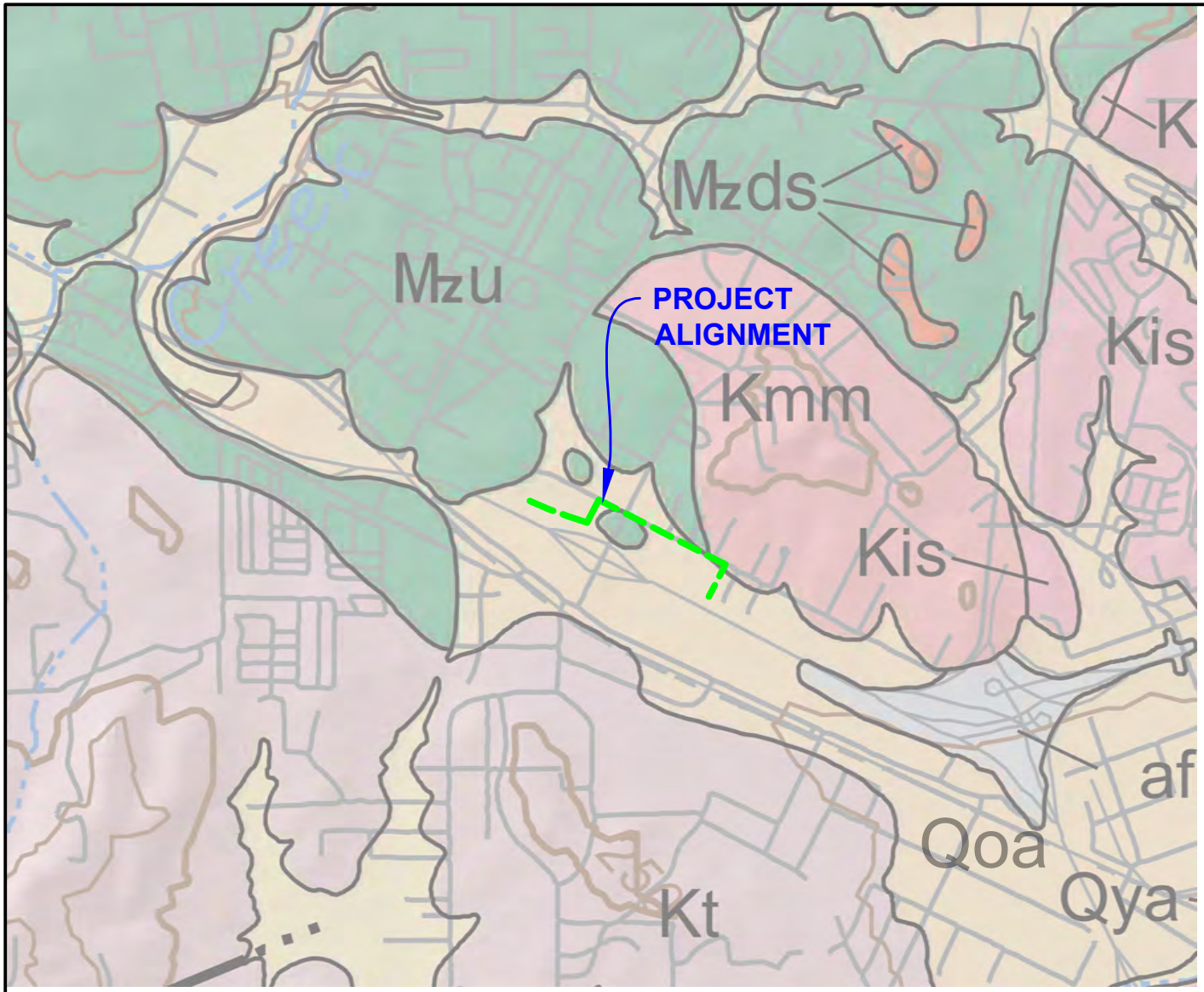
Job No.: 190332P4-1

SUBSURFACE EXPLORATION MAP

Montiel Lift Station and Force Main Replacement
San Marcos, California

ATLAS SCST

Figure:
2



EXPLANATION:

af	Artificial fill
Qya	Young alluvial flood-plain deposits
Qoa	Old alluvial flood-plain deposits
Kis	Tonalite, undivided
Kt	Granite of Indian Springs
Kmm	Monzogranite of Merriam Mountain
M_zu	Metasedimentary and metavolcanic rocks, undivided
M_zds	Metavolcanic dikes
	Sewer Alignment

N

0 2,000 4,000

SCALE (feet)

Reference:
Kennedy, M.P. and Tan, S.S. (2007), Geologic Map of the Oceanside 30' x 60' Quadrangle, California, California Geological Survey, Scale 1:100,000

All Plans provided by Michael Baker International.

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REGIONAL GEOLOGY MAP

Montiel Lift Station and Force Main Replacement
San Marcos, California

Date: March, 2020
By: ACF/JJH
Job No.: 190332P4-1

Figure:
3

APPENDIX I
TITLE SUBSURFACE EXPLORATION

Relatively undisturbed samples were obtained using a modified California (CAL) and Standard Penetration Test (SPT) sampler. A CAL sampler which is a ring-lined split tube sampler with a 3-inch outer diameter and 2½-inch inner diameter. SPTs were performed using a 2-inch outer diameter and 1⅜-inch inner diameter split tube sampler. The CAL and SPT samplers were driven with a 140-pound weight dropping 30 inches. The number of blows needed to drive the samplers the final 12 inches of an 18-inch drive is noted on the boring logs as "Driving Resistance (blows/ft of drive)." SPT and CAL sampler refusal was encountered when 50 blows were applied during any one of the three 6-inch intervals, a total of 100 blows was applied, or there was no discernible sampler advancement during the application of 10 successive blows. Because the SPT sampler was driven with a cathead and rope, the driving resistance is representative of a 60% energy transfer ratio (N_{60}). Disturbed bulk samples were obtained from the SPT sampler and the drill cuttings. The soils are classified in accordance with the Unified Soil Classification System as illustrated on Figure I-1. The boring log of boring B-10 from the previous SCST investigation is presented at the end of Appendix I (SCST, 2017).

SUBSURFACE EXPLORATION LEGEND

UNIFIED SOIL CLASSIFICATION CHART

SOIL DESCRIPTION		GROUP SYMBOL	TYPICAL NAMES
I. COARSE GRAINED, more than 50% of material is larger than No. 200 sieve size.			
GRAVELS More than half of coarse fraction is larger than No. 4 sieve size but smaller than 3".	CLEAN GRAVELS	GW	Well graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels, gravel sand mixtures, little or no fines.
	GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
		GC	Clayey gravels, poorly graded gravel-sand, clay mixtures.
SANDS More than half of coarse fraction is smaller than No. 4 sieve size.	CLEAN SANDS	SW	Well graded sand, gravelly sands, little or no fines.
		SP	Poorly graded sands, gravelly sands, little or no fines.
		SM	Silty sands, poorly graded sand and silty mixtures.
		SC	Clayey sands, poorly graded sand and clay mixtures.
II. FINE GRAINED, more than 50% of material is smaller than No. 200 sieve size.			
	SILTS AND CLAYS (Liquid Limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, sandy silt or clayey-silt-sand mixtures with slight plasticity.
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silty clays or low plasticity.
	SILTS AND CLAYS (Liquid Limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH	Inorganic clays of high plasticity, fat clays.
		OH	Organic clays of medium to high plasticity.
III. HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils.

SAMPLE SYMBOLS

- ☒ - Bulk Sample
- CAL - Modified California Sampler
- CK - Undisturbed Chunk sample
- MS - Maximum Size of Particle
- ST - Shelby Tube
- SPT - Standard Penetration Test sampler

GROUNDWATER SYMBOLS

- ▽ - Water level at time of excavation or as indicated
- ≈ - Water seepage at time of excavation or as indicated

LABORATORY TEST SYMBOLS

- AL - Atterberg Limits
- CON - Consolidation
- COR - Corrosivity Tests (Resistivity, pH, Chloride, Sulfate)
- DS - Direct Shear
- EI - Expansion Index
- MAX - Maximum Density
- RV - R-Value
- SA - Sieve Analysis

ATLAS SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	I-1

LOG OF BORING B-1

Date Drilled: 1/22/2020 | Logged by: JPS
Equipment: CME-75 with 8 inch diameter Hollow Stem Auger | Reviewed by: AKN
Elevation (ft): 676 MSL | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
1–5	SM	**FILL (Qf):** SILTY SAND, dark brown to reddish brown, loose to medium dense, moist, fine to medium grained, trace gravel.		X					SA COR
6		**MONZOGRANITE OF MERRIAM MOUNTAIN (Kmm):** MONZOGRANITE, brown to dark gray, very dense, moist, intensely weathered, fractured.	SPT		75/11"	98/11"			
9			SPT		50/1"	65/1"			
10			SPT		50/6"	65/6"			
15			CAL		50/1"	>50	2.3	117.0	
16		Harder Drilling.							
17		No recovery.	CAL		50/1"	>50			
18		No recovery.	SPT		50/1"	65/1"			
19									
20		**AUGER REFUSAL AT 19½ FEET ON GRANITIC ROCK**							

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Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	I-2

LOG OF BORING B-2

Date Drilled: 1/22/2020 | Logged by: JPS
Equipment: CME-75 with 8 inch diameter Hollow Stem Auger | Reviewed by: AKN
Elevation (ft): 689 MSL | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
1	SM	**FILL (Qf):** SILTY SAND, brown to reddish brown, loose to medium dense, moist, fine to medium grained.		X					
2									
3	SC	**OLD ALLUVIAL FLOOD-PLAIN DEPOSITS (Qoa):** CLAYEY SAND, brown, medium dense, moist, fine to medium grained, trace gravel.		X					SA COR
4									
5		Mottled brown and gray, very dense, fine to coarse grained.							
6			CAL		92/11"	>50	11.3	103.7	DS
7									
8									
9									
10		**MONZOGRANITE OF MERRIAM MOUNTAIN (Kmm):** MONZOGRANITE, brown to dark gray, very dense, moist, intensely weathered, fractured, decomposed to SILTY SAND.							
11			SPT		76	99			
12									
13									
14									
15			CAL		50/2"	>50	4.9	116.9	
16									
17									
18									
19			CAL		50/2"	>50	2.5	113.2	
20									

BORING CONTINUED ON I-4

LOG OF BORING B-2 (continued)

Date Drilled: 1/22/2020 | Logged by: JPS
Equipment: CME-75 with 8 inch diameter Hollow Stem Auger | Reviewed by: AKN
Elevation (ft): 689 MSL | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
21		**MONZOGRANITE OF MERRIAM MOUNTAIN (Kmm):** MONZOGRANITE, brown to dark gray, soft, moist, intensely weathered, fractured.	CAL		50/2"	>50			
			SPT		50/1"	65/1"			
22		**AUGER REFUSAL AT 21½ FEET ON GRANITIC ROCK**							
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	I-4

LOG OF BORING B-3

Date Drilled: 1/22/2020 | Logged by: JPS
Equipment: CME-75 with 8 inch diameter Hollow Stem Auger | Reviewed by: AKN
Elevation (ft): 713 MSL | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
1	SM	**FILL (Qf):** SILTY SAND, brown, loose to medium dense, moist, fine to medium grained, trace gravel, asphalt concrete debris.		X					
2									
3									SA
4		Plant debris.							
5									
6		Mottled light brown to brown, medium dense.	SPT		26	34			
7									
8									
9	SM	**OLD ALLUVIAL FLOOD-PLAIN DEPOSITS (Qoa):** SILTY SAND, mottled light brown to reddish brown, very dense, moist, fine to medium grained, trace gravel, oxidation, decomposed granite fragments.	CAL		66	56	14.1	91.8	DS
10									
11			CAL		50/3"	>50	13.0	119.5	
12									
13									
14									
15		**MONZOGRANITE OF MERRIAM MOUNTAIN (Kmm):**	SPT		50/4"	65/4"			
16		MONZOGRANITE, brown, very dense, moist, intensely weathered, fractured, decomposed to SILTY SAND.							
17									
18									
19									
20									

BORING CONTINUED ON I-6

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Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	I-5

LOG OF BORING B-3 (continued)

Date Drilled: 1/22/2020 | Logged by: JPS
Equipment: CME-75 with 8 inch diameter Hollow Stem Auger | Reviewed by: AKN
Elevation (ft): 713 MSL | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
21		**MONZOGRANITE OF MERRIAM MOUNTAIN (Kmm):** MONZOGRANITE, brown, very dense, moist, intensely weathered, fractured.	CAL		50/2"	>50	3.2	113.1	
25			SPT		50/1"	65/1"			
29			CAL		50/1"	>50			
30		**BORING TERMINATED AT 30 FEET**							

ATLAS SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	I-6

LOG OF BORING B-4

Date Drilled: 1/22/2020 | Logged by: JPS
Equipment: CME-75 with 8 inch diameter Hollow Stem Auger | Reviewed by: AKN
Elevation (ft): 713 MSL | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
1		**3½ inches of Asphalt Concrete over 6 inches of Aggregate Base**							
1–5	SM	**FILL (Qf):** SILTY SAND, brown to reddish brown, loose to medium dense, moist, fine to medium grained.		X					SA AL
6	SC	**OLD ALLUVIAL FLOOD-PLAIN DEPOSITS (Qoa):** CLAYEY SAND, reddish brown, medium dense, moist, fine to medium grained, trace gravel.	CAL		18	15	10.1	114.5	
7–9									
10		Mottled reddish brown and light brown, very dense.	SPT		94/ 10"	123/ 10			
11–14									
15		**MONZOGRANITE OF MERRIAM MOUNTAIN (Kmm):** MONZOGRANITE, brown to dark gray, soft, moist, intensely weathered, fractured, decomposed to SILTY SAND.	CAL		50/1"	>50	3.0	107.2	
16–20									

BORING CONTINUED ON I-8

SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	I-7

LOG OF BORING B-4 (continued)

Date Drilled: 1/22/2020 | Logged by: JPS
Equipment: CME-75 with 8 inch diameter Hollow Stem Auger | Reviewed by: AKN
Elevation (ft): 713 MSL | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
21		**MONZOGRANITE OF MERRIAM MOUNTAIN (Kmm):** MONZOGRANITE, brown to dark gray, soft, moist, intensely weathered, fractured, decomposed to SILTY SAND.	SPT		50/2"	65/2"			
22									
23									
24									
25		Hard rock, hard drilling, no recovery.	CAL		50/0"	65/0"			
26		**AUGER REFUSAL AT 25½ FEET ON GRANITIC ROCK**							
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

PREVIOUS BORING LOG

LOG OF BORING B-10

Date Drilled: 6/30/2017 | Logged by: MN

Equipment: CME-75 with 8-inch Hollow Stem Auger | Project Manager: AKN

Elevation (ft): 675 | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	DRIVING RESISTANCE (blows/ft of drive)	N_{60}	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
1	SM	**FILL (Qf):** SILTY SAND (SM), dark reddish brown, fine grained, moist, medium dense.		X					SA
2				X					
3				X					
4		Becomes brown with black mottling, fine to medium grained, dense.	SPT	X	30	39			
5				X					
6									
7									
8									
9		**IGNEOUS ROCK (GRANITE):** brown, intensely weathered to decomposed, very dense; (Poorly Graded SAND with SILT(SP), fine to medium grained, moist).	CAL		50/5		6.4	114.1	DS
10									
11									
12									
13									
14			SPT		50/3	65/3			
15									
16									
17									
18									
19			SPT		50/5	65/3			
20									

BORING TERMINATED AT 20 FEET.

SCST, Inc.

VWD, Montiel Gravity Outfall
Escondido, California

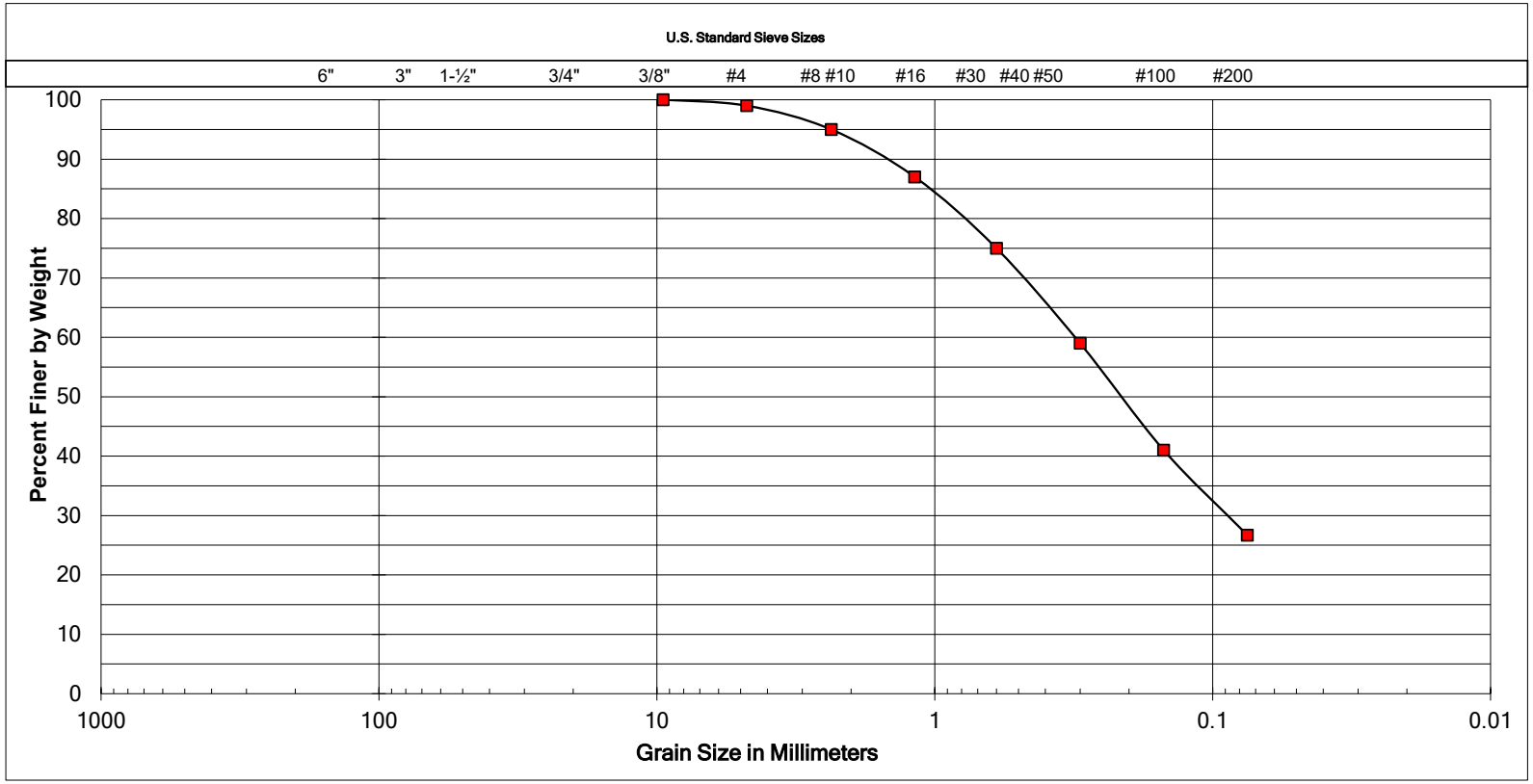
By:	MAN	Date:	March, 2020
Job Number:	170124P4-1	Figure:	I-13

APPENDIX II
LABORATORY TESTING

Laboratory tests were performed to provide geotechnical parameters for engineering analyses. The following tests were conducted:

- **CLASSIFICATION:** Field classifications were verified in the laboratory by visual examination. The final soil classifications are in accordance with the Unified Soil Classification System.
- **IN SITU MOISTURE AND DENSITY:** The in situ moisture content and dry unit weight were determined on samples collected from the borings. The test results are presented on the boring logs in Appendix I.
- **ATTERBERG LIMITS:** The Atterberg limits were evaluated on soil samples in accordance with ASTM D4318.
- **PARTICLE-SIZE DISTRIBUTION:** The particle-size distribution was evaluated on soil samples in accordance with ASTM D422.
- **CORROSIVITY:** Corrosivity tests were performed on soil samples. The pH and minimum resistivity were evaluated in general accordance with California Test 643. The soluble sulfate content was evaluated in accordance with California Test 417. The total chloride ion content was evaluated in accordance with California Test 422.
- **DIRECT SHEAR:** Direct shear tests were performed on soil samples in accordance with ASTM D3080. The shear stress was applied to inundated samples at a constant rate of strain of 0.003 inch per minute.

Soil samples not tested are now stored in our laboratory for future reference and analysis, if needed. Unless notified to the contrary, all samples will be disposed of 30 days from the date of this report.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-1 at 0 to 5 Feet
SAMPLE NUMBER
50814

UNIFIED SOIL CLASSIFICATION:	SM
DESCRIPTION	SILTY SAND

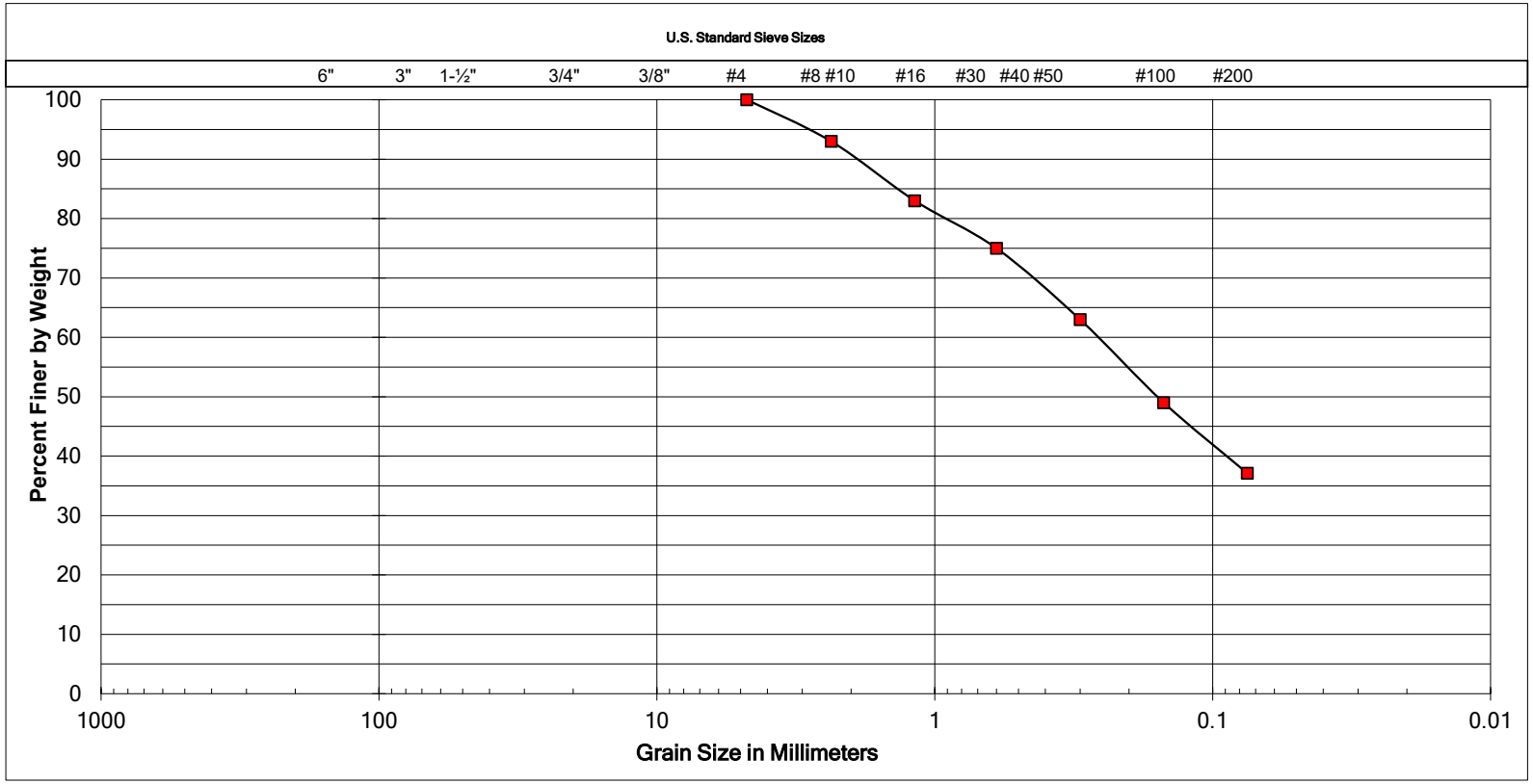
ATTERBERG LIMITS	
LIQUID LIMIT	-
PLASTIC LIMIT	-
PLASTICITY INDEX	-

ATLAS SCST

SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	II-1



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-2 at 2 to 5 Feet
SAMPLE NUMBER
50816

UNIFIED SOIL CLASSIFICATION:	SC
DESCRIPTION	CLAYEY SAND

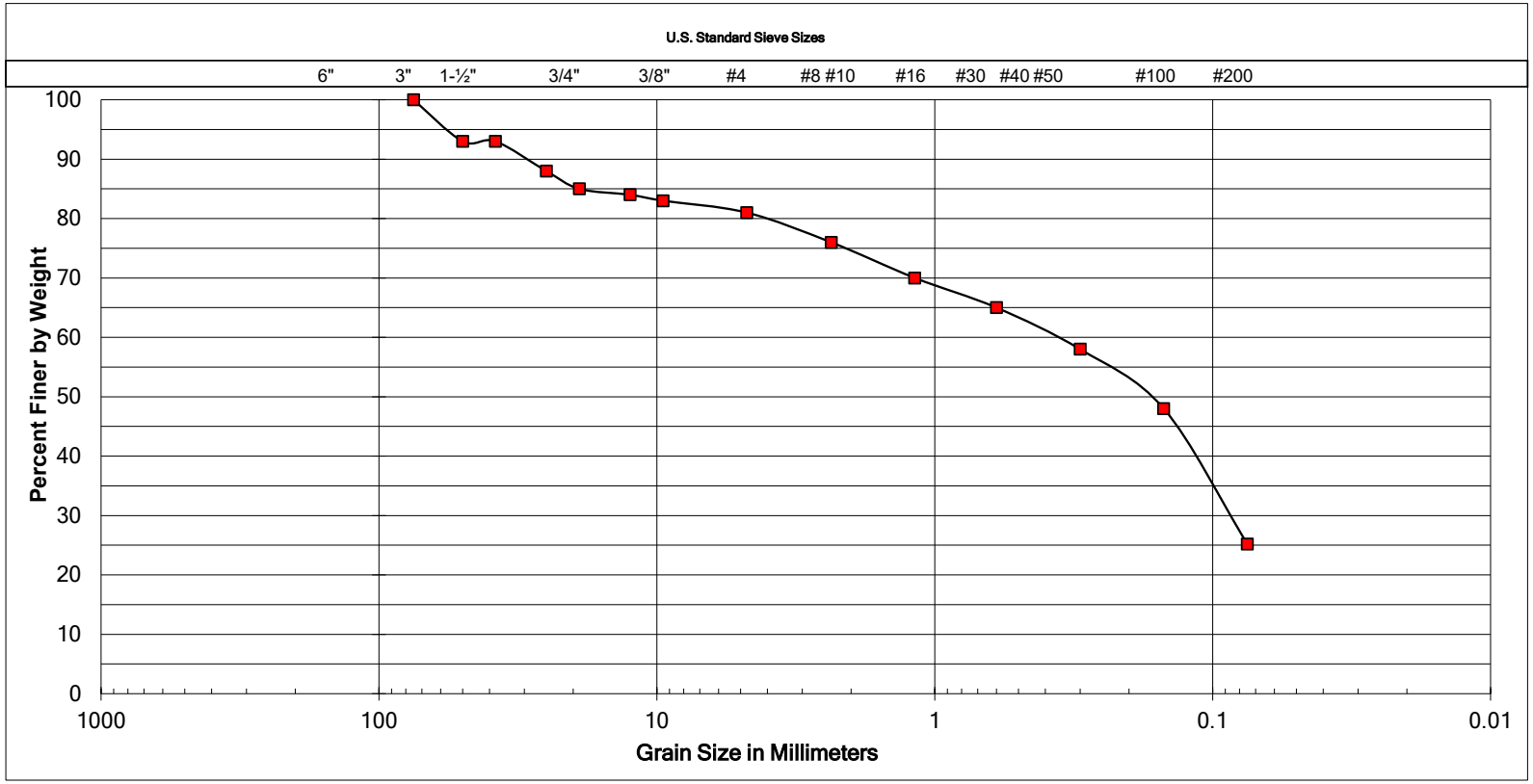
ATTERBERG LIMITS	
LIQUID LIMIT	26
PLASTIC LIMIT	14
PLASTICITY INDEX	12

ATLAS SCST

SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	II-2



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-3 at 0 to 5 Feet
SAMPLE NUMBER
50821

UNIFIED SOIL CLASSIFICATION:	SM
DESCRIPTION	SILTY SAND

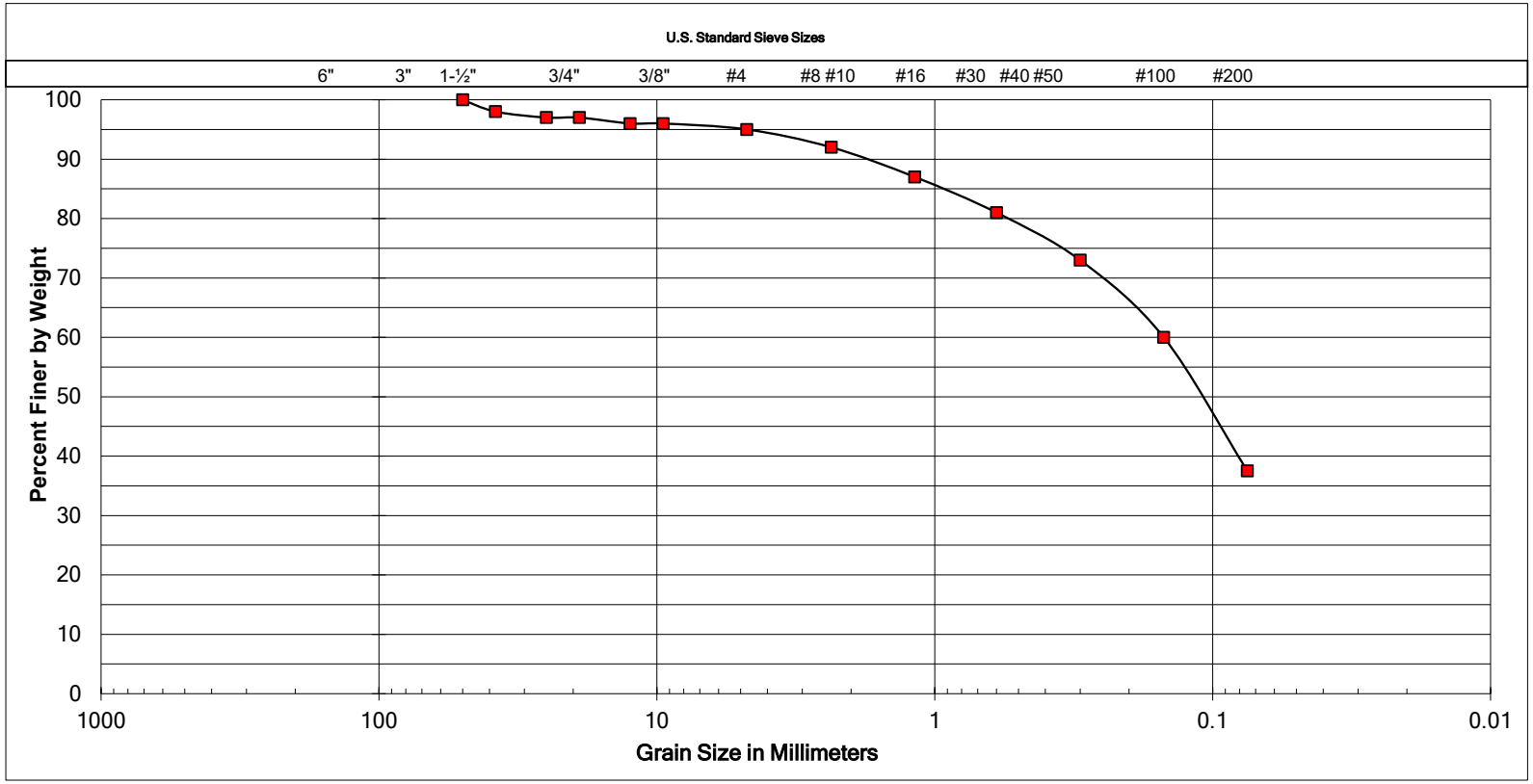
ATTERBERG LIMITS	
LIQUID LIMIT	-
PLASTIC LIMIT	-
PLASTICITY INDEX	-

ATLAS SCST

SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	II-3



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-4 at 2½ to 5 Feet
SAMPLE NUMBER
50826

UNIFIED SOIL CLASSIFICATION:	SM
DESCRIPTION	SILTY SAND

ATTERBERG LIMITS	
LIQUID LIMIT	-
PLASTIC LIMIT	-
PLASTICITY INDEX	-

ATLAS SCST

SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	II-4

RESISTIVITY, pH, SOLUBLE CHLORIDE and SOLUBLE SULFATE

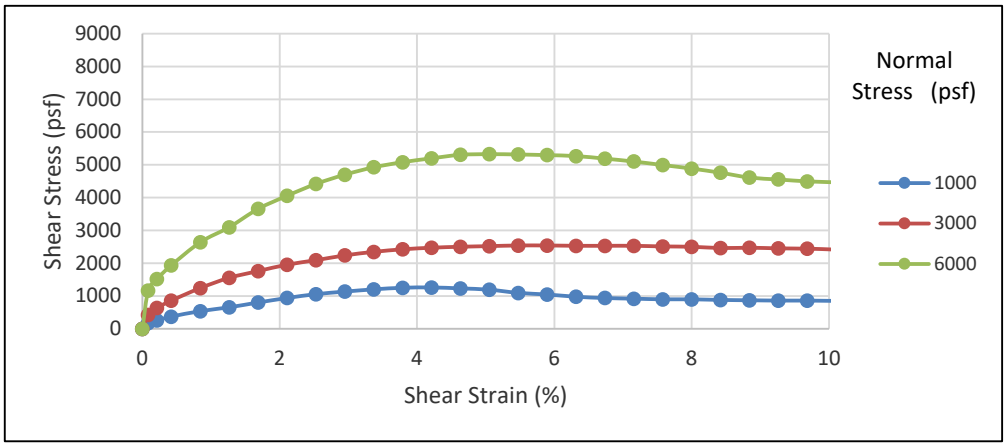
pH & Resistivity (Cal 643, ASTM G51)
Soluble Chlorides (Cal 422)
Soluble Sulfate (Cal 417)

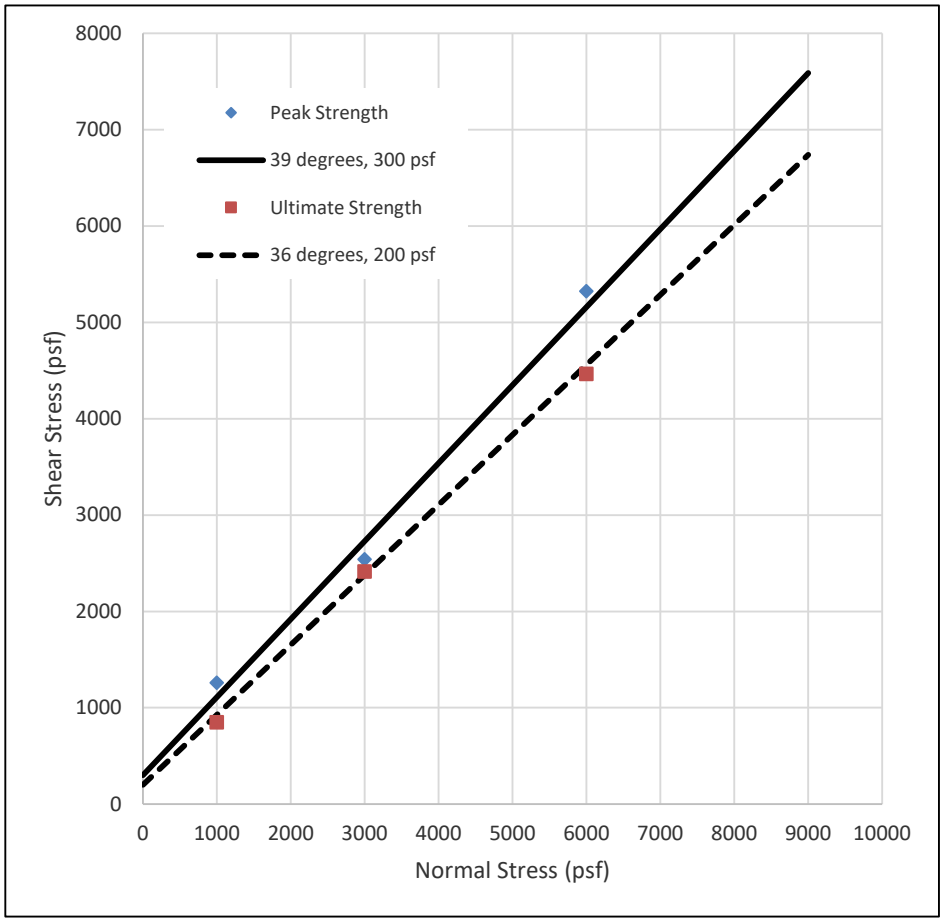
SAMPLE	RESISTIVITY (Ω-cm)	pH	CHLORIDE (%)	SULFATE (%)
B-1 at 0 to 5 Feet	5130	7.39	0.004	0.003
B-2 at 2 to 5 Feet	2370	6.15	0.005	0.014

Sulphate Exposure Classes [1]

CLASS	SEVERITY	WATER-SOLUBLE SULFATE (SO_4) IN SOIL, PERCENT BY MASS
S0	Not applicable	$SO_4 < 0.10$
S1	Moderate	$0.10 \le SO_4 < 0.20$
S2	Severe	$0.20 \le SO_4 \le 2.00$
S3	Very Severe	$SO_4 > 2.00$

1. ACI 318, Table 19.3.1.1





SAMPLE ID: B-2 at 6 to 6½ Feet

CLAYEY SAND (Qoa)

NOTES: Insitu
Strain Rate: 0.003 in/min
Sample was consolidated and drained

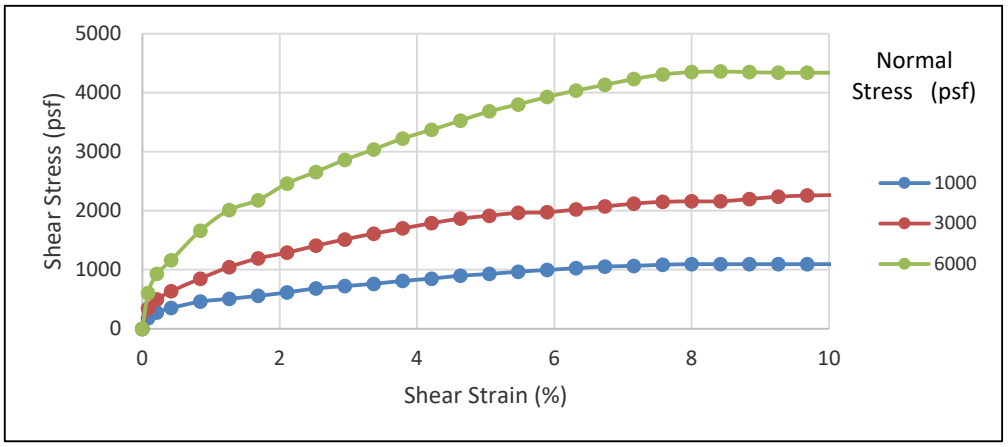
	Peak	Ultimate
Φ	39 °	36 °
c	300 psf	200 psf

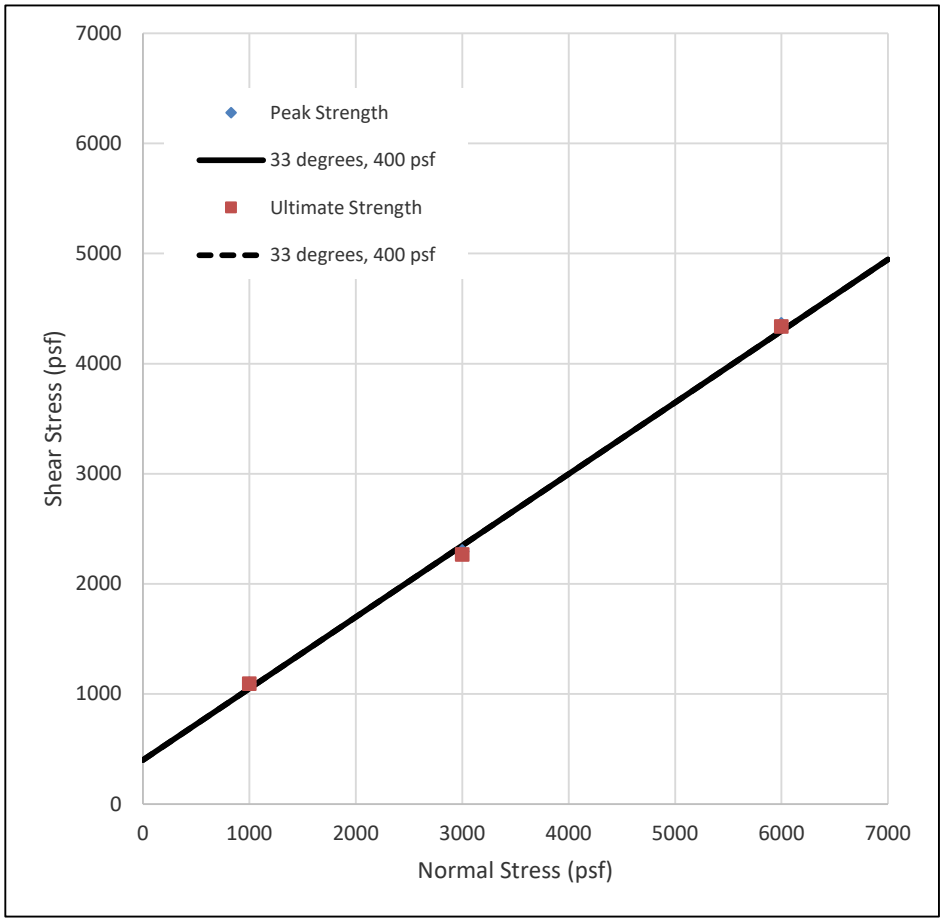
	Initial	Final
γ_d	103.7 pcf	106.6 pcf
w_c	11.3 %	16.4 %
Saturation	50 %	72 %

SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	II-6





SAMPLE ID: B-3 at 9½ to 10 Feet

SILTY SAND (Qoa)

NOTES: Insitu
Strain Rate: 0.003 in/min
Sample was consolidated and drained

	Peak	Ultimate
Φ	33 °	33 °
c	400 psf	400 psf

	Initial	Final
γ_d	91.8 pcf	94.4 pcf
w_c	14.1 %	29.8 %
Saturation	46 %	97 %

ATLAS SCST, LLC

Montiel Lift Station and Force Main Replacement
San Marcos, California

By:	DJM	Date:	March, 2020
Job Number:	190332P4-1	Figure:	II-7

APPENDIX III
SEISMIC REFRACTION SURVEY

ATLAS
SOUTHWEST GEOPHYSICS LLC
YOUR SUBSURFACE SOLUTION

GEOPHYSICAL EVALUATION

MONTIEL LIFT STATION & FORCE MAIN REPLACEMENT SAN MARCOS, CALIFORNIA

PREPARED FOR:

SCST, LLC
6280 Riverdale Street
San Diego, California 92120

PREPARED BY:

Southwest Geophysics, LLC
6280 Riverdale Street, Suite 200
San Diego, California 92120

March 3, 2020
190332P4

ATLAS
SOUTHWEST GEOPHYSICS LLC
YOUR SUBSURFACE SOLUTION

March 3, 2020

Project No. 190332P4
Report No. 1

Mr. Andrew McPeak
SCST, LLC
6280 Riverdale Street
San Diego, California 92120

Subject: GEOPHYSICAL EVALUATION
MONTIEL LIFT STATION &
FORCE MAIN REPLACEMENT
SAN MARCOS, CALIFORNIA

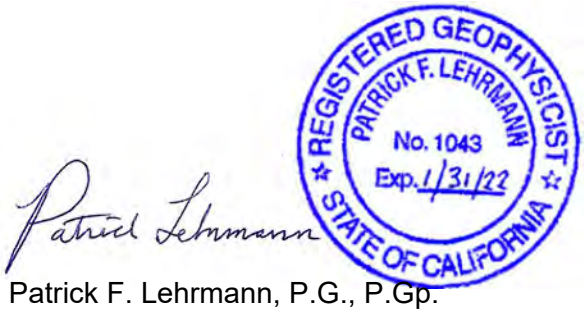
Dear Mr. McPeak:

In accordance with your authorization, we have performed a geophysical evaluation pertaining to the Montiel Lift Station & Force Main Replacement project located in San Marcos, California. Specifically, our evaluation consisted of performing two seismic P-wave refraction traverses and two multichannel analysis of surface waves (MASW) profiles at the project site. The purpose of our study was to characterize the subsurface conditions in the study area. Our field services were conducted on February 7, 2020. This data report presents our methodology, equipment used, analysis, and results.

We appreciate the opportunity to be of service on this project. Should you have any questions please contact the undersigned at your convenience.

Respectfully submitted,
SOUTHWEST GEOPHYSICS, LLC

Paul Neuberger
Staff Geophysicist



Patrick F. Lehrmann, P.G., P.Gp.
Principal Geologist/Geophysicist

PN:PFL:MDE:ds

Distribution: Addressee via e-mail at amcpeak@scst.com

ATLAS SOUTHWEST GEOPHYSICS LLC
YOUR SUBSURFACE SOLUTION

TABLE OF CONTENTS

SECTION **PAGE**

TABLES

ATTACHMENTS

FIGURES

1. INTRODUCTION

In accordance with your authorization, we have performed a geophysical evaluation pertaining to the Montiel Lift Station & Force Main Replacement project located in San Marcos, California (Figure 1). Specifically, our evaluation consisted of performing two seismic P-wave refraction traverses and two multichannel analysis of surface waves (MASW) profiles at the project site. The purpose of our study was to characterize the subsurface conditions in the study areas. Our field services were conducted on February 7, 2020. This data report presents our methodology, equipment used, analysis, and results.

2. SCOPE OF SERVICES

Our scope of services included:

- Performance of two seismic P-wave refraction lines at the project site.
- Performance of two Multichannel Analysis of Surface Waves (MASW) profiles at the project site.
- Compilation and analysis of the data collected.
- Preparation of this data report presenting our results and conclusions.

3. SITE AND PROJECT DESCRIPTION

The project site is generally located southeast of the intersection of Montiel Road and Nordahl Road in San Marcos, California (Figure 1). The seismic refraction lines were conducted in an empty lot south of Montiel Road and east of Nordahl Road. The MASW profiles were conducted in the median of Montiel Road. Vegetation consists of trees, shrubs, and annual grass. Figures 2 and 3 depict the general site conditions in the area of the seismic traverses.

Based on our discussions with you, it is our understanding that your office is conducting a geotechnical evaluation pertaining to the installation of a lift station and replacement of the sewer force main. We also understand that the results from our study may be used in the formulation of design and construction parameters for the project.

4. SURVEY METHODOLOGY AND ANALYSIS

As previously indicated, the primary purpose of our services was to characterize the subsurface site conditions at pre-selected locations through the collection of seismic data. The following sections provide an overview of the methodologies used during our study.

4.1 Seismic P-Wave Refraction

The seismic refraction method uses first-arrival times of refracted seismic waves to estimate the thicknesses and seismic velocities of subsurface layers. Seismic P-waves (compression waves) generated at the surface are refracted at boundaries separating materials of contrasting velocities. These refracted seismic waves are then detected by a series of surface vertical component 14-Hz geophones and recorded with a 24-channel Geometrics Geode seismograph. The travel times of the seismic P-waves are used in conjunction with the shot-to-geophone distances to obtain thickness and velocity information on the subsurface materials. In general, the effective depth of evaluation for a seismic refraction traverse is approximately one-third to one-fifth the length of the traverse

The refraction method requires that subsurface velocities increase with depth. A layer having a velocity lower than that of the layer above will not generally be detectable by the seismic refraction method and, therefore, could lead to errors in the depth calculations of subsequent layers. In addition, lateral variations in velocity, such as those caused by buried boulders, fractures, dikes, etc. can result in the misinterpretation of the subsurface conditions.

Two 140-foot long seismic traverses (SL-1 and SL-2) were conducted in the study area. Multiple shot points (signal generator locations) were conducted at the ends, midpoint and intermediate locations between the ends and midpoint of the line. The P-wave signal (shot) was generated using a 16-pound hammer and an aluminum plate. The locations of the profiles, which were selected by your office, are depicted on Figure 2.

In general, the seismic P-wave velocity of a material can be correlated to rippability (see Table 1 below), or to some degree “hardness.” Table 1 is based on published information from the Caterpillar Performance Handbook (Caterpillar, 2018) as well as our experience with similar materials, and assumes that a Caterpillar D-9 dozer ripping with a single shank is used. We emphasize that the cutoffs in this classification scheme are approximate and that rock characteristics, such as fracture spacing and orientation, play a significant role in determining rock quality or rippability. The rippability of a mass is also dependent on the excavation equipment used and the skill and experience of the equipment operator.

For trenching operations, the rippability values should be scaled downward. For example, velocities as low as 3,500 feet/second may indicate difficult ripping during trenching operations. In addition, the presence of boulders, which can be troublesome in a narrow trench, should be anticipated.

Table 1 – Rippability Classification

Seismic P-wave Velocity	Rippability
0 to 2,000 feet/second	Easy
2,000 to 4,000 feet/second	Moderate
4,000 to 5,500 feet/second	Difficult, Possible Blasting
5,500 to 7,000 feet/second	Very Difficult, Probable Blasting
Greater than 7,000 feet/second	Blasting Generally Required

It should be noted that the rippability cutoffs presented in Table 1 are slightly more conservative than those published in the Caterpillar Performance Handbook. Accordingly, the above classification scheme should be used with discretion, and contractors should not be relieved of making their own independent evaluation of the rippability of the on-site materials prior to submitting their bids.

Collected P-wave data were processed using SIPwin (Rimrock Geophysics, 2003) and SeisOpt® Pro™ (Optim, 2008). SIPwin was used to evaluate first arrival times and SeisOpt® Pro™ was used for analysis and interpretation. SeisOpt® Pro™ uses a nonlinear optimization technique called adaptive simulated annealing. The resulting velocity model provides a tomography image of the estimated geologic conditions. Both vertical and lateral velocity information is contained in the tomography model. Changes in layer velocity are revealed as gradients rather than discrete contacts, which typically are more representative of actual conditions.

4.2 Multichannel Analysis of Surface Waves (MASW)

Surface waves (specifically Rayleigh waves) were recorded along line ML-1 and ML-2, which were located in the asphalt paved median of Montiel Road (see Figure 2). The surface wave method is not adversely affected by the presence of pavement, like the refraction method. The surface waves were generated by a hammer and plate (shot) and were recorded using a 24-channel Geometrics Geode seismograph and 24 4.5-Hz vertical component geophones. The geophones were coupled to the ground surface using a Geostuff Landstreamer with geophones spaced 4 feet apart and shots conducted off the end of the line. Prior to the collection of surface wave data, near and far field effects were evaluated for several shot offset distances. The results indicated that an offset of 24 feet was optimum for our study.

Three records, 1 second long, were recorded at each shot location and then the shot location and geophones were moved 8 feet longitudinally along the profile direction and the line was reshot. The number of shots and the spread length are presented in Table 2.

The recorded data were processed using SurfSeis® (Kansas Geological Survey, 2012), a Multichannel Analysis of Surface Waves (MASW) software program. One dimensional (1-D) shear-wave (S-wave) velocity (Vs) profiles were generated for each shot location, which correspond to the middle of the geophone array. A two-dimensional color gradient model was then created from the 1-D models using the SurfSeis® interpolation scheme. It should be emphasized that the 2-D profile represents the area between the midpoint of the first shot location and the midpoint of the last shot location. The actual model section length and start and end stations for the sections are also listed in Table 2.

Table 2 – MASW Array Geometry

Line No.	No. of Shots	Total Spread Length (feet)	Profile Length/Start and End Stations (feet)
ML-1	22	268	176/46-222
ML-2	20	244	152/46-198

5. RESULTS

The results of our P-wave refraction survey are presented in Figures 4a and 4b, and the results for the MASW profile are shown in Figures 5a and 5b. It should be emphasized that Figures 4a and 4b present the P-wave (compression wave) velocity model for SL-1 and SL-2, respectively. Figures 5a and 5b present the shear-wave (S-wave) velocity model for ML-1 and ML-2, respectively. In general, S-wave velocities are about 0.4 to 0.6 of that of the P-waves velocities depending on the nature of the subsurface materials.

As illustrated in the models, low velocity materials are present in the near surface, which are underlain by higher velocity materials at depth. In addition, lateral variations are evident in the models indicating that the subsurface geology is somewhat inhomogeneous. The specific cause of these velocity variations or contrasts is unknown.

6. LIMITATIONS

The field evaluation and geophysical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by consultants performing similar tasks in the project area. No warranty, express or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be present. Uncertainties relative to subsurface

conditions can be reduced through additional subsurface exploration. Additional subsurface surveying will be performed upon request.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Southwest Geophysics should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

7. SELECTED REFERENCES

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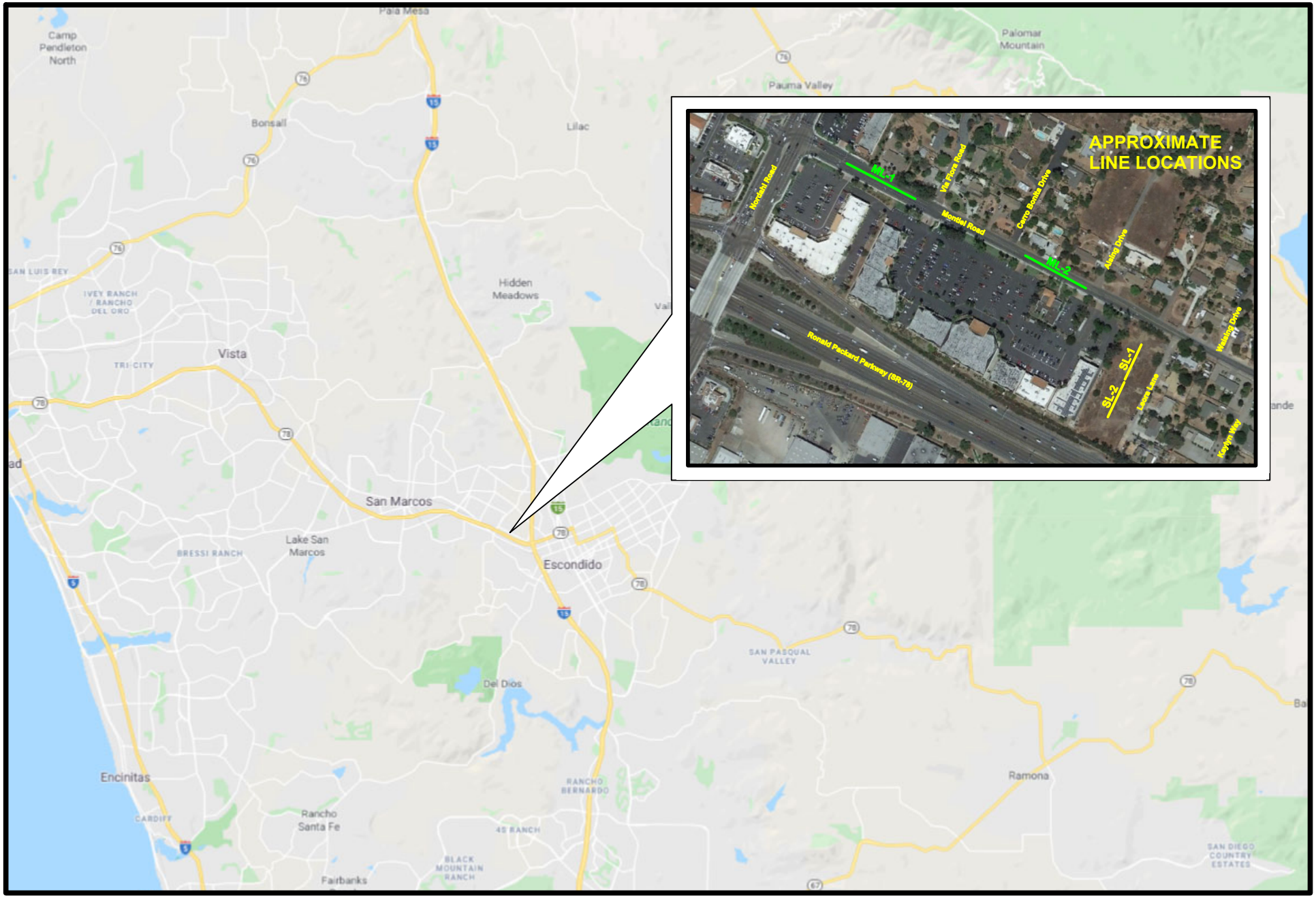


SITE LOCATION MAP

N

Montiel Lift Station &
Force Main Replacement
San Marcos, California

Project No.: 190332P4 | Date: 03/20

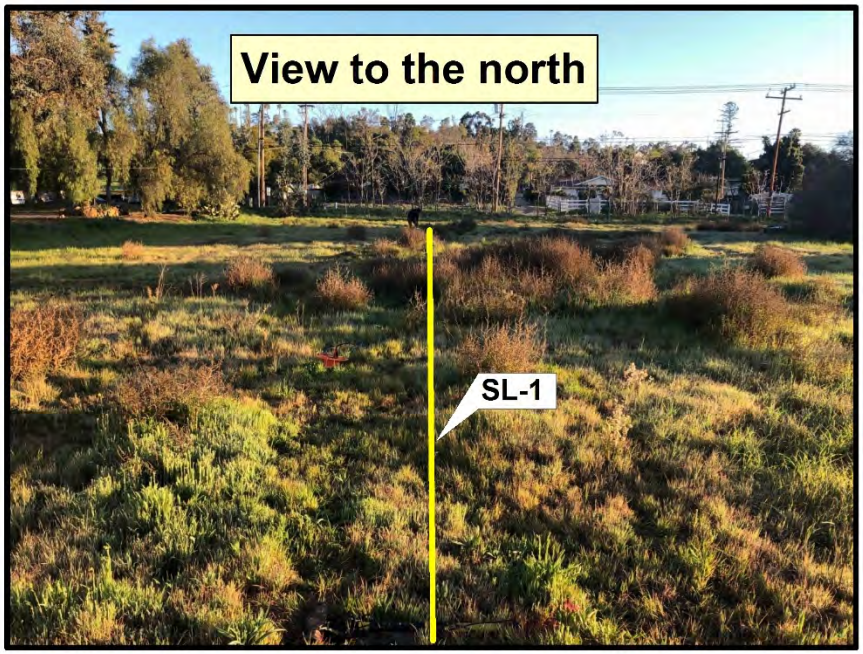
ATLAS SOUTHWEST GEOPHYSICS

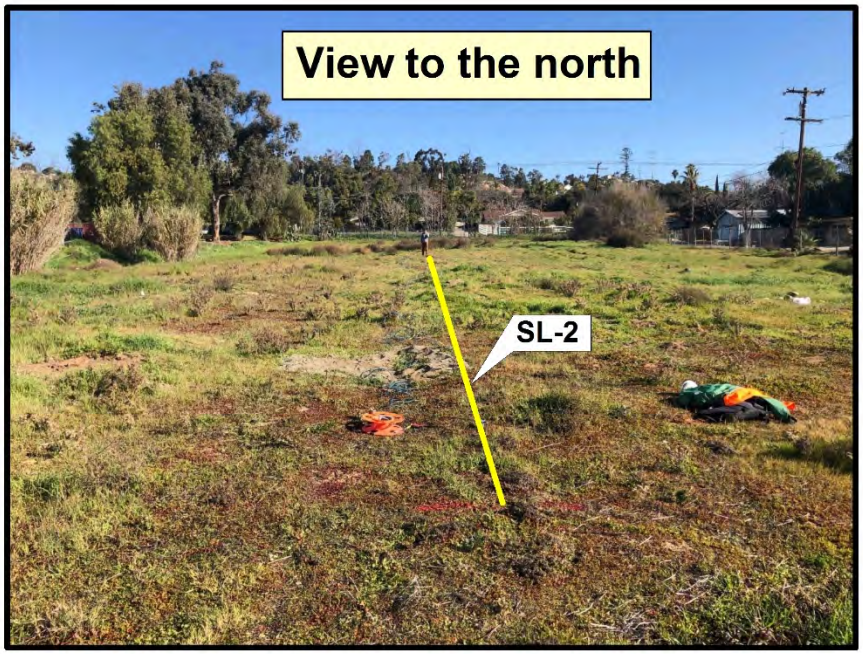
Figure 1

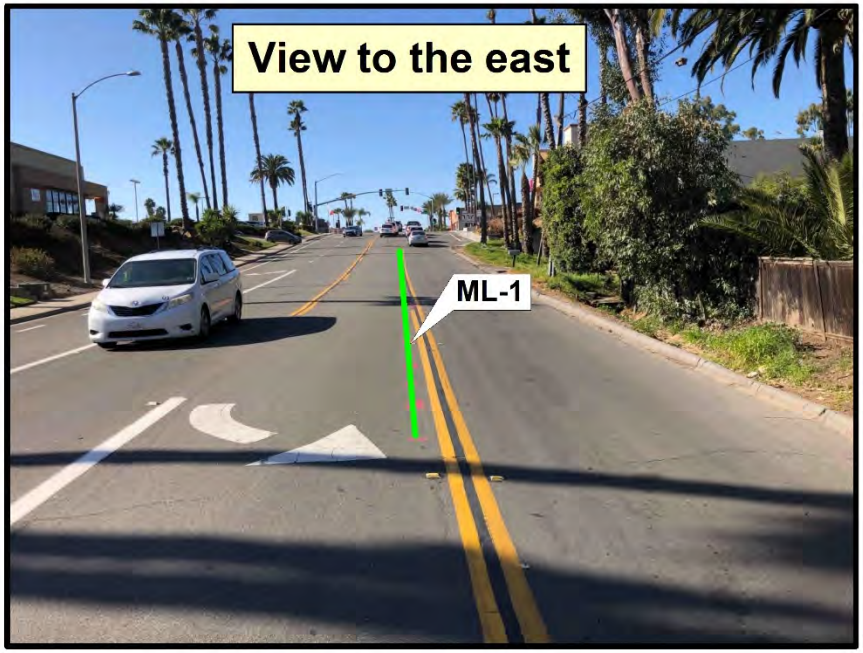
SEISMIC LINE LOCATION MAP	N	Montiel Lift Station & Force Main Replacement San Marcos, California Project No.: 190332P4 Date: 03/20	ATLAS SOUTHWEST GEOPHYSICS Figure 2

0 150 300 450 600

approximate scale in feet







SITE PHOTOGRAPHS

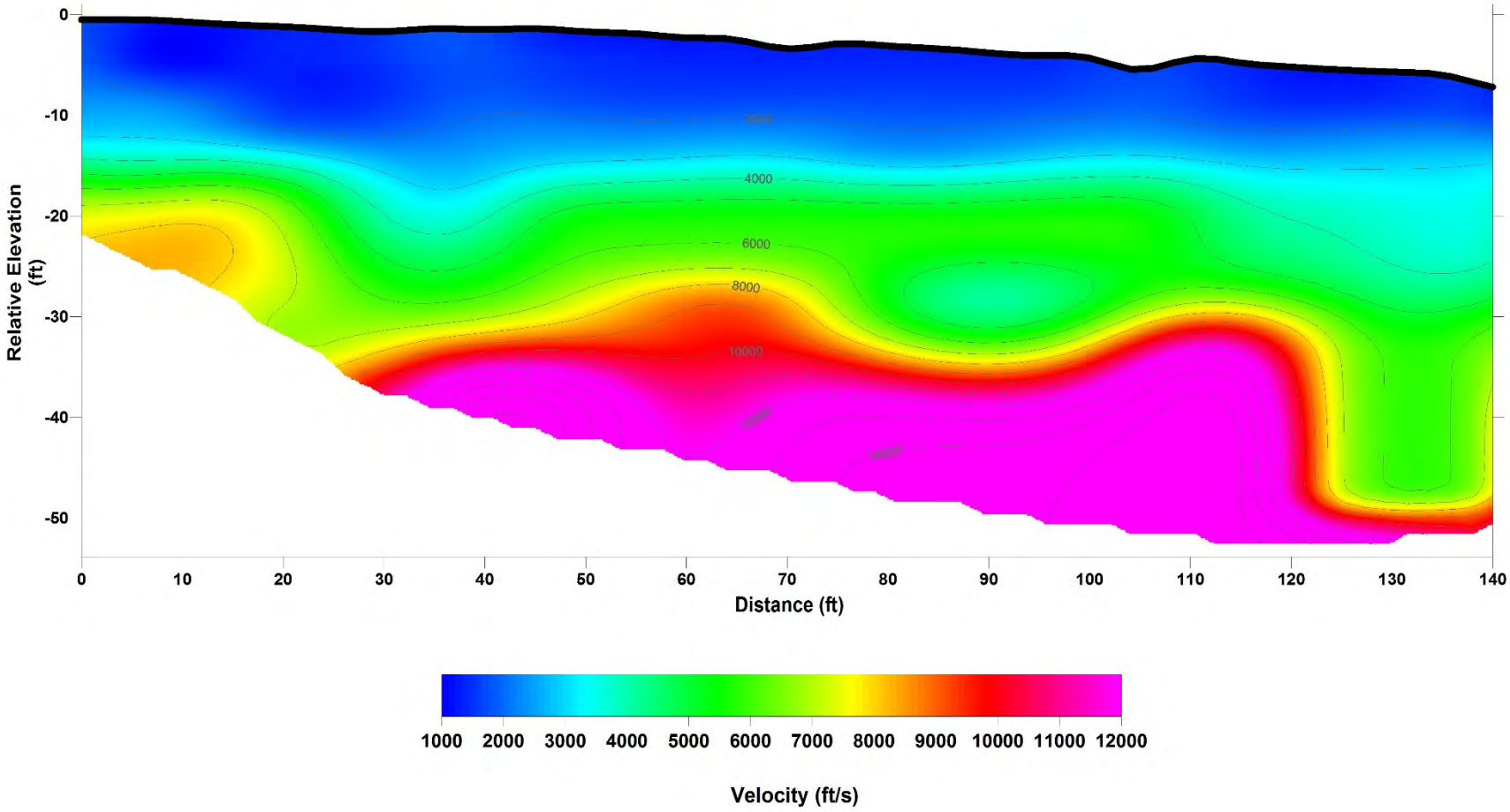
Montiel Lift Station &
Force Main Replacement
San Marcos, California

Project No.: 190332P4 | Date: 03/20

ATLAS
SOUTHWEST GEOPHYSICS

Figure 3

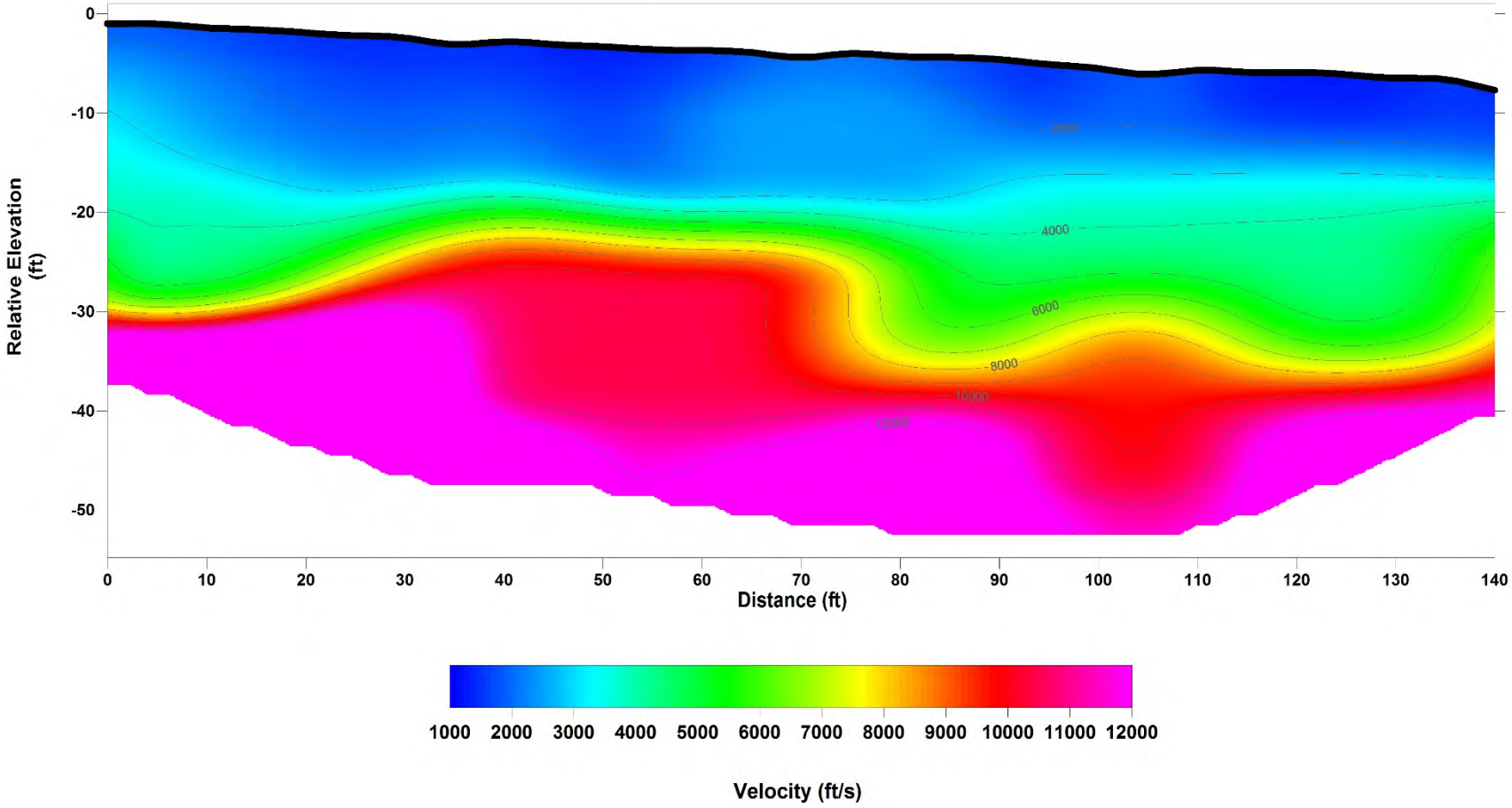
TOMOGRAPHY MODEL



P-WAVE PROFILE SL-1	Montiel Lift Station & Force Main Replacement San Marcos, California Project No.: 190332P4 Date: 03/20	ATLAS SOUTHWEST GEOPHYSICS Figure 4a

Note: Contour Interval = 1,000 feet per second

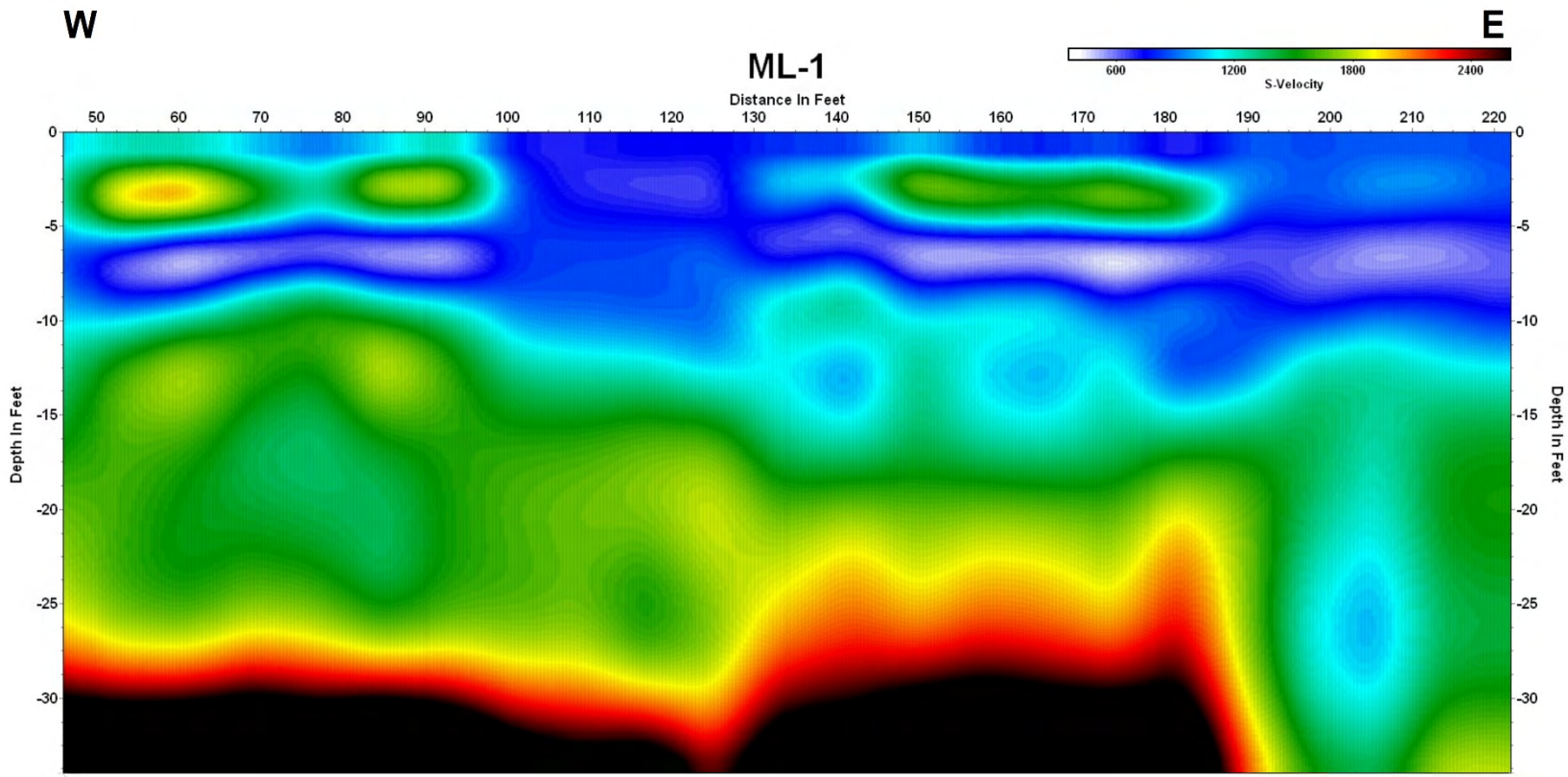
TOMOGRAPHY MODEL



P-WAVE PROFILE SL-2	Montiel Lift Station & Force Main Replacement San Marcos, California Project No.: 190332P4 Date: 03/20	ATLAS SOUTHWEST GEOPHYSICS Figure 4b

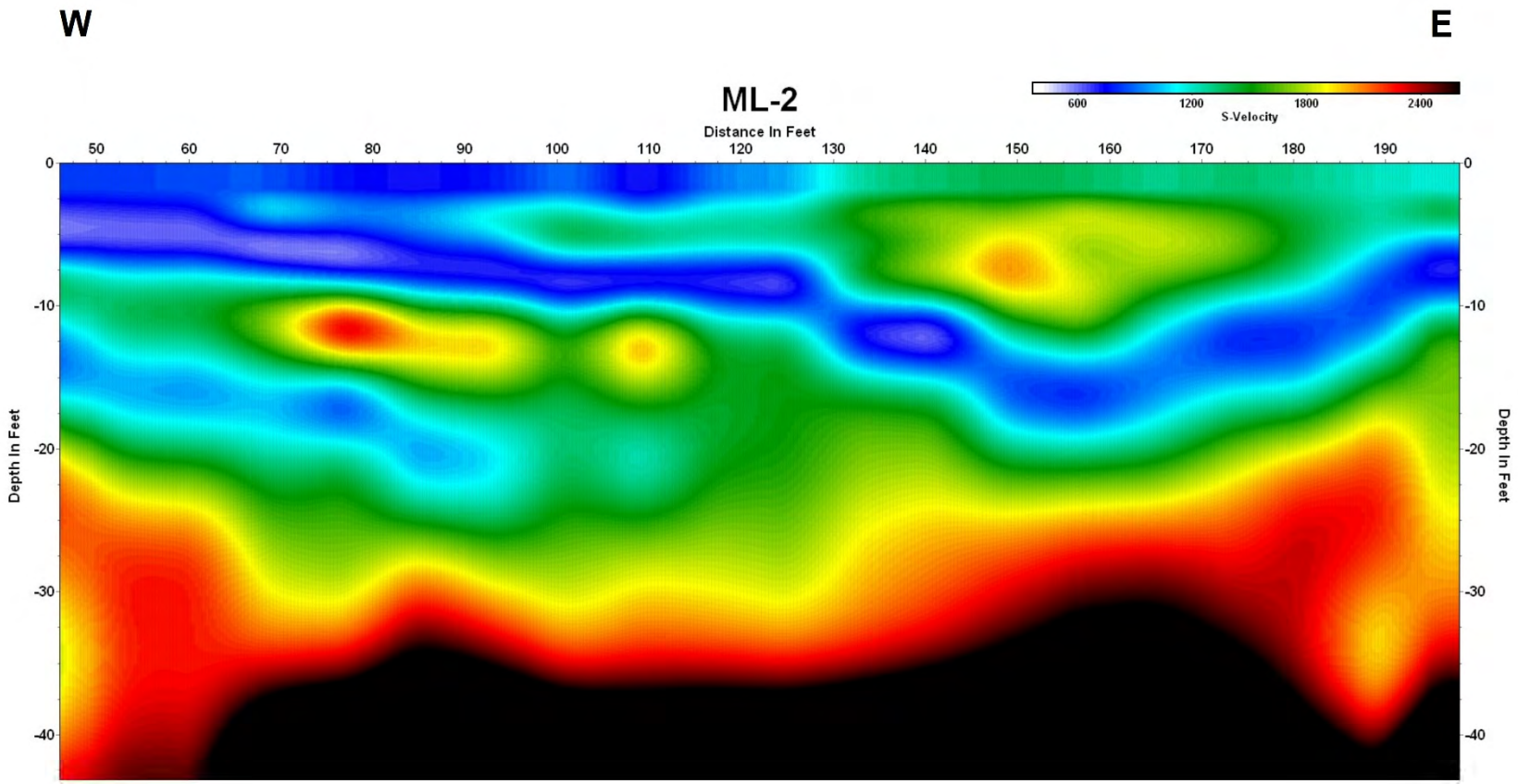
Note: Contour Interval = 1,000 feet per second

S-WAVE VELOCITY MODEL



MASW SEISMIC PROFILE ML-1	Montiel Lift Station & Force Main Replacement San Marcos, California	ATLAS SOUTHWEST GEOPHYSICS
	Project No.: 190332P4 / Date: 03/20	Figure 5a

S-WAVE VELOCITY MODEL



MASW SEISMIC PROFILE ML-2	Montiel Lift Station & Force Main Replacement San Marcos, California	
	Project No.: 190332P4	Date: 03/20

ATLAS SOUTHWEST GEOPHYSICS

Figure 5b

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