ADDENDUM 2
ENVIRONMENTAL IMPACT REPORT
FOR THE
MISSION TRAILS FRS II, PIPELINE TUNNEL, AND VENT DEMOLITION PROJECT
(SCH# 2005041025)

Prepared for:

San Diego County Water Authority
4677 Overland Avenue
San Diego, California 92123
Contact: Mark Tegio

Prepared by:

AECOM
401 West A Street, Suite 1200
San Diego, California 92101
Phone: (619) 610-7600
Contact: Alex Hardy

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LIST OF ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
ARB	California Air Resources Board
Army Corps	U.S. Army Corps of Engineers
BO	Biological Opinion
BSRA	Biological Significant Resource Area
CAAQS	California Ambient Air Quality Standards
CAGN	coastal California gnatcatcher
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CHRIS	California Historic Resources Information System
CO	carbon monoxide
CO_2e	carbon dioxide equivalents
cy	cubic yards
dBA	A-weighted decibel(s)
diesel PM	diesel particulate matter
EIR	Final Environmental Impact Report for the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project
ESA	Endangered Species Act
FBS	flow balancing structure
FCF	flow control facility
FRS	flow regulatory structure
GHG	greenhouse gas
HCP	Habitat Conservation Plan
I-15	Interstate 15
LOS	Level of Service
MHPA	Multi-Habitat Planning Area
MMRP	Mitigation Monitoring and Reporting Program
MSCP	Multiple Species Conservation Program
MT	metric tons
MTRP	Mission Trails Regional Park
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plan
NO_2	nitrogen dioxide
OEHHA	Office of Environmental Health Hazard Assessment
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
QCB	Quino checkerspot butterfly
RAQS	Regional Air Quality Strategy
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAQMD	San Diego Air Quality Management District
SDG&E	San Diego Gas & Electric

Second Aqueduct	Second San Diego Aqueduct
SO_2	sulfur dioxide
SR-52	State Route 52
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic Air Contaminant
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Services
Water Authority	San Diego County Water Authority

SECTION 1
INTRODUCTION

The San Diego County Water Authority (Water Authority) has undertaken a multi-component project to upgrade Pipelines 3 and 4 facilities along the Water Authority's Second San Diego Aqueduct (Second Aqueduct). The project is located in Mission Trails Regional Park (MTRP) in the northeastern portion of the City of San Diego, just south of State Route 52 (SR-52). The project was originally planned as featuring four main components, as analyzed in the Final Environmental Impact Report for the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project (EIR) (SCH #2005041025):

1) construction of an up to 18-million-gallon, belowground flow regulatory structure (FRS II) for Pipelines 3 and 4, an aboveground access/control building, and inlet and outlet piping;
2) construction of new inlet/outlet pipeline sections (pipeline tunnels) to connect the FRS II to Pipelines 3 and 4, replacement of approximately 5,000 feet of existing Pipelines 3 and 4 with a single 96-inch welded steel pipeline, and construction of associated shafts and portals;
3) removal of existing aboveground vents and blow-off valve structures, which are generally referred to as “appurtenances,” located along the affected reach of Pipelines 3 and 4 and replacement of some of the vents with smaller structures that are less visually obtrusive; and
4) construction of a stabilized crossing of the San Diego River to enable safe access for construction and maintenance vehicles working on the proposed facilities.

In addition, the EIR addressed the impacts of reconfiguring flows in the various pipelines leading into the project area (i.e., reactivating inactive pipelines, switching pipelines to carry untreated water instead of treated water, etc.), a project component known as the pipeline interconnect reconfiguration. This component entails construction of one or two crossover pipelines in the vicinity of the Water Authority's Shepherd Canyon Wye facility to reconnect pipes in the optimal configuration.

The Water Authority Board of Directors certified the EIR on August 24, 2006, and permits were issued for the project subsequent to EIR certification. Work began on the pipeline tunnel portion of the project in October 2008, including the new inlet/outlet pipeline construction, the new river crossing, and the pipeline interconnect reconfiguration. Work on these portions of the project was complete in 2011. Due to economic conditions at the time of implementation, related uncertainty of the scale of future demand, and shifting priority to other projects, the Water Authority decided to delay construction of the following components: FRS II reservoir, access/control building, on-site pipeline, and appurtenance demolition/replacement. The Water Authority prepared Addendum 1 to the EIR dated February 24, 2009, to document the project changes.

The delayed components of the project were fully evaluated for environmental impacts in the EIR. As discussed in Addendum 1, the delay would amount to minor changes in the circumstances under which the project would be undertaken, primarily due to the changes in construction phasing and the scale of simultaneous construction that was previously assumed. Since Addendum 1, minor project design refinements have been made to reduce the capacity of the FRS II and include a flow control facility (FCF) along the Water Authority right-of-way (ROW) in MTRP previously planned for location farther downstream. The project refinements would not result in new impacts or increase the severity of previously identified impacts. Because these project changes do not constitute "substantial changes...which will require major revisions of the previous EIR," the Water Authority is not required to prepare a subsequent EIR pursuant to Section 15162 of the California Government Code (California Environmental Quality Act [CEQA] Guidelines). Water Authority staff members have determined that an addendum to the EIR is the appropriate CEQA document to address the project changes presented by the project design refinements.

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SECTION 2
PROJECT CHANGES, CHANGED CIRCUMSTANCE, OR NEW INFORMATION

2.1 PREVIOUSLY APPROVED PROJECT

Components of the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project proposed for delay included the FRS II and its related facilities and the demolition/replacement of appurtenant structures, as discussed in Addendum 1. Detail on the project components and construction activities associated with these components is provided below. The project site is located within the northwestern portion of MTRP, just east of the Tierrasanta community, within the City of San Diego (Figures 1 and 2). SR-52 is just north of the northern project boundary and Mission Gorge Road forms the southern project boundary. Interstate 15 (I-15) is 2.8 miles to the west.

2.1.1 Project Components

The buried reservoir was initially planned to consist of two basins housed in a concrete structure located completely below ground surface, measuring up to 296 feet by 392 feet, with an overall height of 28 feet from floor to roof. Each basin was assumed to have a capacity of 9 million gallons and feature an overflow structure to prevent accidental filling above safe levels. Such emergency overflow was planned to be conveyed by a pipeline to the canyon on the north side of the buried reservoir. An energy dissipater was also planned to be constructed at the end of the pipeline to prevent erosion of the canyon in an event of an emergency overflow situation. An inlet valve vault was planned to be constructed on the northern side of the buried reservoir to bring water into the reservoir. An outlet valve vault was planned to be constructed on the southern side of the buried reservoir to allow water to exit the reservoir. A 2-foot-thick layer of soil was anticipated be placed on top of the buried reservoir following construction, and be vegetated with a native plant mix. (EIR, Section 2.3.1)

As planned in the EIR, the above ground access/control building for the reservoir was to be located on the southern edge of the reservoir, and measure approximately 20 feet by 50 feet with a height of 10 feet. A vegetated earthen berm was planned around the building to partially screen public views by residents and park users, though a portion of the structure would remain visible from various viewpoints. The entire structure was anticipated to be surrounded by an eight-foot security fence. Exterior lights were to be provided, but only used to ensure safety and security at night, as most routine work was planned during the day. Access to the site was to be provided by a dirt road connecting to an existing MTRP trail providing Water Authority access to FRS I and other points along the Second Aqueduct. Electrical conduit was planned within the Second Aqueduct ROW, between Corte Playa Cantina and the FRS II control building. (EIR, Section 2.3.1)

The on-site inlet and outlet piping on the FRS II site was planned to consist of buried welded steel pipe connecting the inlet and outlet valves to the FRS II reservoirs. The inlet piping was to be 96 inches in diameter, branching into two 72-inch-diameter pipes entering the FRS II through the inlet valve vault on the reservoir's northern side. The outlet structure piping was to be two, 72-inch-diameter pipes exiting the reservoir from the south and leading to the outlet valve vault where they would combine into a single 96-inch-diameter outlet pipeline. Overflow piping was assumed to be constructed on the northern side of the buried reservoir, near the inlet valve vault, and built of concrete or welded steel. (EIR, Section 2.3.1)

Source: ESRI 2014; SDCWA 2011, 2019

10 5 0 10 Miles

Scale: 1:633,600 ; 1 inch = 10 Miles

Figure 1
Regional Location

Mission Trails FRS II EIR Addendum 2

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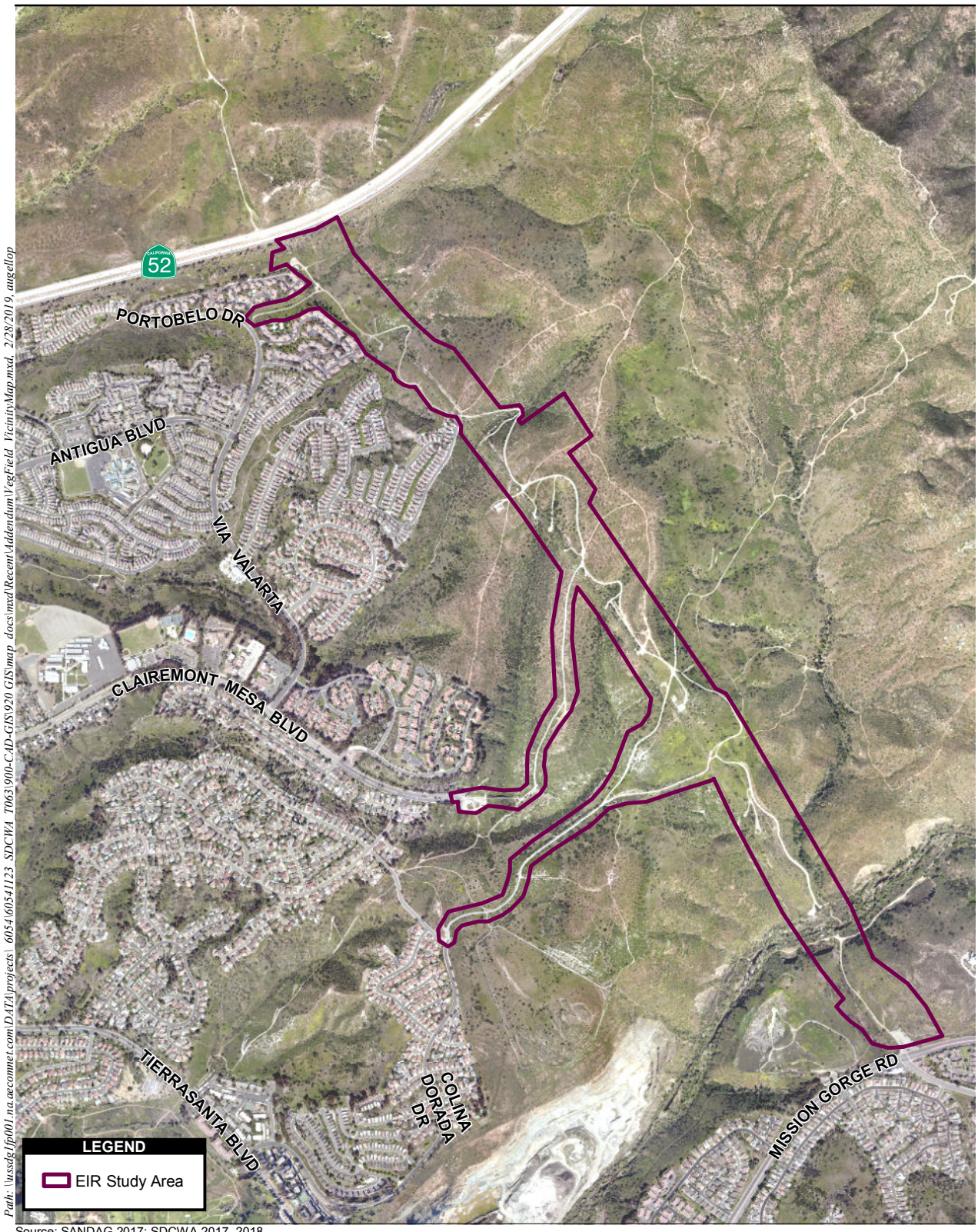

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Source: SANDAG 2017; SDCWA 2017, 2018

1,750 875 0 1,750 Feet

Scale: 1:21,000 ; 1 inch = 1,750 Feet

Figure 2
EIR Study Area

As planned in the EIR, the inlet and outlet piping described above was planned to replace approximately 5,000 feet of existing 69-inch-diameter Pipeline 3 and 72-inch-diameter Pipeline 4 in MTRP with a single 96-inch-diameter welded steel pipeline. The pipelines were designed without localized high or low points so that, instead of following the contours of the ridges and valleys, the pipelines would follow a continuous grade, which would increase the flow capacity of the alignment, as would the increased pipe diameter. The pipelines were also planned to be placed in tunnels and require vents at the inlet and outlet connections adjacent to the FRS II. The total length of the tunnel was assumed to be approximately 4,800 feet. (EIR, Section 2.3.2)

The vent removal component of the project was planned to entail removing or replacing most or all of the existing, highly visible vent structures, as well as other appurtenant structures, located along the affected segment of Pipelines 3 and 4 within MTRP. Where the structures were to be replaced, construction of new structures was planned consisting of concrete boxes or cylinders up to 10 square feet in area and extending up to 3 feet above the ground surface. (EIR, Section 2.3.3)

The project also involved construction of a stabilized crossing of the San Diego River at the location of an existing unimproved gravel road crossing, upstream of Pipelines 3 and 4. The stabilized crossing was planned to facilitate site access for future operation and maintenance activities, and security patrol. Water Authority operation and maintenance personnel drive the Second Aqueduct access road on a daily basis to inspect facilities and perform routine maintenance. Increased maintenance activities for the FRS II and pipeline tunnel were expected to require enhanced access to the site. As discussed in the EIR, water flows in the San Diego River forced Water Authority personnel, park rangers, and emergency vehicles to make a lengthy detour to access Mission Gorge Road from the park when the water is more than 12 to 18 inches deep, depending on the condition of the riverbed and banks. The crossing was planned to consist of a concrete slab at grade with the existing riverbed. (EIR, Section 2.3.4)

2.1.2 Project Construction

Constructing the FRS II, the access/control building, and the inlet/outlet pipelines was estimated to require clearing and grubbing of the project site and excavating up to 105,000 cubic yards (cy) of rock and soil to expose the belowground reservoir site and pipe locations. Excavation for this portion of the project may require blasting and work with rock hammers due to the potential presence of cemented sandstone beneath the surface. (EIR, Section 2.4.4). Construction of the FRS II structure was to be followed by partial backfilling and construction of the access/control building, then final grading and revegetation. Heavy equipment would be brought to the site and remain in the on-site staging area for the duration of construction. Three staging areas were assumed to be required—one for the FRS II structure and one each for the inlet and outlet shaft areas. Excavated material was planned to be hauled off site in 10- or 15-cy-capacity dump trucks, with hauling estimated at 10,500 or 7,000 truck trips, respectively. Equipment and materials delivery and excavated material hauling access was planned via Clairemont Mesa Boulevard, where possible, but heavier loads would access MTRP via Calle de Vida due to the posted weight limit on the bridge near the Clairemont Mesa Boulevard entrance.

The new pipeline tunnels (construction was completed in 2010) were planned to be connected to Pipelines 3 and 4 following the construction of the FRS II. This work requires shutdown of the two existing water supply pipelines in the Second Aqueduct. Work was needed to be completed in 10 consecutive days to minimize the time these water supply pipelines are shut down, and this was planned to occur during the winter months, when water demand is typically at its lowest point of the year. Work was planned to entail trenching at the new connection points, dewatering existing pipeline sections, removing existing pipelines, fitting new connections, and backfilling excavated areas. Where abandoned pipeline sections were assumed to be left in place, they would be encased with sand or concrete. (EIR, Section 2.4.6)

Construction work for appurtenance removal/replacement was anticipated to be accomplished at small, individual staging areas (150 feet by 150 feet) adjacent to the respective locations. Work was determined to require a minor amount of excavation to access the structures. The aboveground portion of the structures were planned to be removed with a crane and hauled off site, and the top of the buried portion was to be dug up, cut off, and hauled off site. The remaining belowground portions of the structures were to be filled with concrete to prevent groundwater infiltration. New structures would be installed at certain locations and, following the work, the excavated areas would be backfilled and restored with a native seed mix. Access to the structures would vary, depending on their location, but was planned to be accomplished via existing access points to MTRP and trails within MTRP. (EIR, Section 2.4.7)

Topsoil and other soil needed for backfilling in the project's disturbed areas was to be temporarily stockpiled on site. Excess materials not used for backfilling were planned to be hauled off site for use as fill at other construction sites or as cover material at a local landfill. The EIR identified five potential receivers of excavated material, depending on the type and quality of the material: Canyon Rock and Asphalt Quarry (Mission Gorge Road adjacent to the southern border of MTRP), Vulcan Materials Mission Valley quarry, Hansen Aggregates Miramar Recycle Site, Hansen Aggregates Carroll Canyon Plant, and Sycamore Canyon Landfill. (EIR, Section 2.4.8)

Section 2.4.1 of the EIR addresses the project's general construction schedule, and depicts the schedule graphically in Table 2-1. The originally approved 2-year schedule anticipated construction of the FRS reservoirs and associated structures to occur simultaneously with tunnel mobilization and excavation. Appurtenance demolition/replacement was identified as the project's final phase, following pipeline reconnection. Construction for the FRS II, the access/control building, the on-site inlet/outlet pipelines, and the appurtenance removal/replacement would be conducted between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday. During the 10-day pipeline connection periods, work was planned to be conducted 24 hours a day, 7 days a week to limit the duration of pipelines being out of service. (EIR, Section 2.4.1)

2.1.3 Project Operation

Operation and maintenance of the FRS II and pipeline tunnels is generally discussed in Section 2.5 of the EIR. FRS II operation and maintenance activities involved visiting and inspecting the site approximately once per day to monitor daily operations and security at the site; maintaining the valves periodically at the valve vaults; cleaning the bottom of the basins to remove silt, clam and mussel shells, and other debris every 2 to 5 years; and responding to outages or other emergency situations as needed. Pipeline tunnel operation and maintenance activities consisted of weekly visual inspection, grading and repair of access roads as needed, testing and servicing of valves, yearly walking of alignment and inspection, and pressure testing.

2.2 PROPOSED CHANGES

Due to changing demand forecasts, economic conditions, and shifting priorities in their Capital Improvement Program, the Water Authority elected to proceed with constructing the inlet and outlet pipelines, the stabilized crossing of the San Diego River, and the pipeline interconnect reconfiguration, while delaying the other project components by approximately 2 years, as discussed in Addendum 1. The delayed components were the FRS II, the access/control building, the on-site inlet/outlet piping, and the appurtenance removal/replacement. Because FRS II construction was planned to be delayed by approximately 2 years, connecting the new pipeline tunnel to the upgraded system would also be delayed by this amount of time.

Addendum 1 determined that the project changes would not alter the physical components as initially proposed in the EIR and would only affect the schedule under which the project would be undertaken. Because of the changes to the schedule, certain impacts were determined to be slightly different from how they were initially analyzed in the EIR. In some areas, impacts were determined to be reduced due to the avoidance of simultaneous construction phases. In other areas, the duration for which impacts would be perceived was determined to be increased.

Since certification of the EIR and preparation of Addendum 1, project design refinements have resulted in a smaller FRS II and inclusion of FCF along the Water Authority ROW within MTRP to meter downstream flow and regulate FRS II storage levels. These revised components of the original project, along with previously anticipated components of the original project that have yet to be implemented, are referred to together in this Addendum as the "modified project." The effects of the proposed changes on the impacts identified for the project in the EIR and Addendum 1 are discussed below in Section 3 of this Addendum. The proposed changes would not result in new impacts or substantially increase the severity of any previously identified impacts.

2.2.1 Description of Proposed Changes in the Modified Project

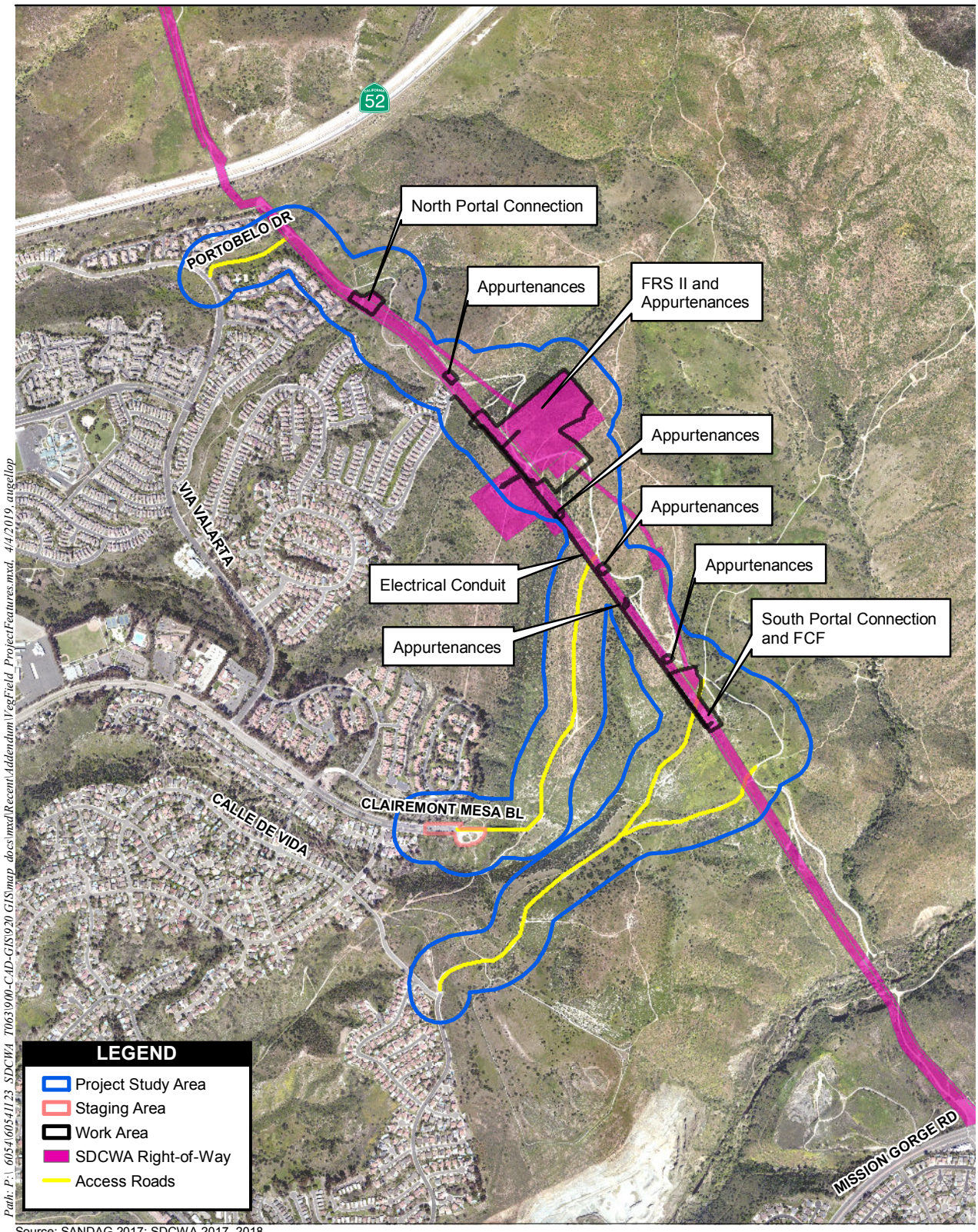
The Water Authority plans to proceed with implementing the delayed components as analyzed in the EIR and Addendum 1, but with a smaller FRS II and the addition of an FCF, which is analyzed in this Addendum (Addendum 2). The purpose of the proposed changes in the project is to respond to reduced demand forecasts and relocate the FCF, which was planned to be located at Lake Murray, to just downstream of the FRS II. Locating the FCF just downstream of the FRS II, within MTRP, would eliminate the need for an isolation valve vault. Additional conduit installation would be needed beyond that anticipated in the EIR, extending down the Second Aqueduct ROW to the FCF. The smaller FRS II and ancillary components, pipeline tunnel connections, and appurtenance removal/replacement would be located in areas that were analyzed for project impacts in the EIR. Figure 3 depicts the components proposed under the modified project. Appendix A provides a selection of plan sheets from the current project design.

Flow Regulatory Structure

Buried Reservoir

The modified project proposes a 5-million-gallon FRS II, smaller than the 18-million-gallon tank addressed in the EIR. The reduced capacity is a result of reduced demands reflecting 2015 projections based on a reduction of the 2010 Urban Water Management Plan and 2013 Regional Water Facilities Optimization and Master Plan Update baseline demands.

As a result of the reduced capacity, the structure is proposed to be 178 feet by 178 feet with an overall height of up to 25 feet from floor to roof based on the slope of the floor and roof. The EIR analyzed a larger tank, 296 feet by 392 feet, with an overall height of up to 28 feet from floor to roof. The smaller FRS II would still contain an emergency overflow structure and discharge pipeline, which would convey flows to the canyon on the northwest side of the tank to an energy dissipater, as analyzed in the EIR. The entirety of the pipeline, overflow pipeline, and energy dissipater would be located within the Water Authority ROW. The Water Authority would acquire a temporary use permit from the City for construction activity associated with rip rap installation, just west of the Water Authority ROW.



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Source: SANDAG 2017; SDCWA 2017, 2018

1,500 750 0 1,500 Feet

Scale: 1:18,000 ; 1 inch = 1,500 Feet

Figure 3
Project Features

The modified project would include a new gravel access road leading from an existing dirt access road to a proposed gravel maintenance apron that would be installed around the perimeter of the FRS II. The proposed road would be 16 feet wide and approximately 250 feet long. The maintenance apron would be 20 feet wide on the northeastern, southeastern, and southwestern sides, and 40 feet wide on the northwestern side, allowing maintenance area around the tunnel inlet shaft adjacent to the FRS II roof. All existing access road alignments in the vicinity of the FRS II would be preserved. Proposed access features are shown in sheet C-102 in Appendix A.

Similar to the project described in the EIR, a 3-foot- to 5-foot-thick layer of soil would be placed on top of the buried reservoir following construction, and this would be vegetated with a native plant mix. The proposed soil addition would be more than the 2 feet discussed in the EIR, allowing for an increase in the variability of the proposed topography. The modified project would also incorporate several landscaped berms around the FRS II that would act as visual barriers to the FRS II and its maintenance apron and access road. These features are shown in sheet C-102 of Appendix A.

Access/Control Building

The project, as analyzed in the EIR, was planned to contain an aboveground access/control building associated with the buried reservoir that would house the control room and access room. As a result of project refinements, a separate access/control building is no longer needed, but these features would instead be built into the FRS II structure. FRS II access would consist of an 18-foot by 16-foot roof hatch with a 5-foot by 10-foot access hatch. The access hatch would extend 6 to 12 inches above grade, depending on grade variations. As discussed in the EIR, underground electrical conduit would be installed to provide power to the FRS II. Under the modified project, a new electrical conduit would be installed from existing San Diego Gas & Electric (SDG&E) facilities at the northeast terminus of Corte Playa Catalina, running to the existing FRS I, and a new line would be installed from FRS I to the proposed FRS II. Conduit would be installed within the Second Aqueduct ROW, with the exception of the SDG&E connection in the north, which would extend a short segment beyond the ROW and in the public pedestrian entrance to MTRP at the end of Corte Playa Catalina.

FRS II On-Site Piping

Water would flow into the FRS II from the north through the previously constructed 96-inch pipeline tunnel and associated existing inlet shaft. This would eliminate the need for the inlet piping described in the EIR. Water would flow out of the FRS II through a proposed outlet pipe that would flow to an existing outlet shaft associated with the previously constructed 96-inch pipeline tunnel. The outlet piping described in the EIR was planned to consist of two 72-inch-diameter steel pipes. Due to the reduced capacity of the FRS II, the outlet piping is now proposed to be a single 96-inch-diameter concrete-lined pipe.

Pipeline Tunnels and Tunnel Shafts

Construction of the pipeline tunnel was completed in 2010 and included nearly 1 mile of 92-inch-diameter welded steel pipe contained in two 10-foot-wide horseshoe tunnels, and two vertical shafts up to 150 feet deep. The tunnel currently remains disconnected from the Second Aqueduct. As analyzed in the EIR, the connections would link the previously constructed pipeline tunnels to existing Water Authority Pipelines 3 and 4. The inlet shaft access would be located adjacent to the FRS II roof, on the northwestern side. The outlet shaft access would be located approximately 320 feet southeast of the FRS II. A 24-foot by 44-foot gravel maintenance pad would be constructed just south of the outlet shaft access, and would be connected to two existing dirt access roads currently used by the Water Authority to access their aqueduct appurtenances. A short segment (approximately 200 feet) of one of the existing roads would be slightly

realigned to lessen the grade and make truck and equipment access safer. The realigned portion would be covered in gravel base.

Vent and Blow-Off Structure Abandonment

As planned in the original project, existing aboveground in-line structures, including eight vent structures and nine blow-off structures along Pipeline 3 and Pipeline 4 would be demolished after the remaining portion of the project is complete, and the Mission Trails pipeline tunnel is placed into service and the existing pipelines are made obsolete. The aboveground portions of the structures would be removed, and the belowground portions would be capped and sealed.

Flow Control Facility

While not evaluated in the EIR, a new FCF on Pipeline 3 downstream of the FRS II would be needed to regulate flow out of the FRS II for distribution to Water Authority member agencies. During the original preliminary project planning, the FCF was planned to be located at a site near Lake Murray, outside of MTRP. However, the original plan would require environmental review and further geotechnical investigations, and would entail other construction and coordination challenges. As such, the FCF is now proposed at MTRP, just downstream of the FRS II and downstream of the existing flow balancing structure (FBS). Relocating the FCF would reduce costs and eliminate the need for the isolation valve vault on Pipeline 3 just downstream of the existing FBS in MTRP.

The FCF would be 26 feet by 42 feet and would be entirely below the ground, with the exception of a small aboveground entrance with stairs leading down into the FCF, and an air vent. The FCF would be located on Pipeline 3, just southeast of the existing FBS on Pipeline 4, and just north of the previous location of Elliot Vent #5, which was removed and replaced with a smaller air release/vacuum structure in the project's first phase. Additional conduit would be installed to power the FCF, running from the existing FRS I and within the Second Aqueduct ROW.

Construction

Construction of the modified project is expected to take approximately 18 months. As discussed in the EIR, overall construction was expected to last approximately 2 years. Construction of the FRS II and associated structures was expected to occur simultaneously with tunnel mobilization and excavation. As discussed in Addendum 1, the Water Authority proceeded with constructing the pipeline tunnel and associated access shafts, the stabilized crossing of the San Diego River, and the pipeline interconnect reconfiguration. Under the modified project, construction of the FRS II and its ancillary components would be first, followed by construction of the proposed FCF. The north and south tunnel connections to the Second Aqueduct and appurtenance removal/replacement would occur last.

Based on the current design, up to approximately 111,100 cy of soil and rock would be removed from the FRS II site during excavation for the buried reservoir. Approximately 56,000 cy of excavated materials would be hauled off site in dump trucks for disposal at an approved landfill, while the remaining quantity of material would be placed as fill in the work area adjacent to the FRS II, including in areas surrounding the roof to establish berms as visual barriers, further limiting the view of the reservoir area to park users. The berm heights would reach 15 to 25 feet above the finished grade of the reservoir roof and would be contoured to approximate natural grades to the extent practicable. Up to approximately 1,300 cy of soil and rock would be removed from the north and south tunnel connections to complete the tunnel connection work, and up to approximately 1,300 cy of soil and rock would be removed from the FCF site during excavation for the FCF. All soil and rock excavated for the tunnel connections and FCF would be hauled off site.

Construction would require an estimated daily maximum of 45 workers for FRS II construction and 15 workers for FCF construction, which includes the tunnel connections and appurtenance removal/replacement work, for a total of 60 workers. The general working time would be 7:00 a.m. to 7:00 p.m., Monday through Friday. Some 24-hour work would be conducted at the portal connections during the shutdown of the existing pipelines for the final connection work.

Electrical conduit would be installed by excavating trenches approximately 16 inches wide and 30 inches deep, generally running within the western edge of the Second Aqueduct ROW. Following construction, the trenches would be backfilled and the disturbed areas would be returned to their original conditions. (This is not a change from the previously anticipated project approach, but details on conduit installation were not specified in the EIR.)

Equipment staging would be the same as analyzed in the EIR with general staging occurring at the Clairemont Mesa Boulevard MTRP entrance and some stockpiling of excavated soil, pipe, and other equipment and materials occurring at the FRS II site. As discussed in the EIR, other staging would occur at the appurtenance removal/replacement locations and pipeline tunnel connections. Equipment staging for the FCF would be located along the existing Water Authority ROW and on an area previously disturbed by the previously constructed pipeline tunnel. The primary staging yard is shown in Figure 3. Access to the staging yard would be provided off Clairemont Mesa Boulevard and existing access roads.

Access to the project site would be provided by the use of substantially the same existing access roads as described in the EIR. Due to capacity/loading restrictions, the bridge located just inside the public park entrance at the east end of Clairemont Mesa Boulevard cannot be used by trucks carrying heavy loads, including equipment deliveries and material hauling traffic. Therefore, the entrance on Calle de Vida will be the main access for the majority of the project traffic. This route is analyzed in the *Mission Trails Flow Regulatory Structure II and Flow Control Facility Project Transportation Impact Analysis* (2018 traffic analysis) included as Appendix C to this Addendum. There is also the possibility for equipment to travel along another existing park road off of the Calle de Vida entrance road that was not accounted for in the EIR. This existing added route would initially follow the same route as analyzed in the EIR but would then follow the fork to the south, crossing the Water Authority ROW, and turning to the north to access the eastern side of the Water Authority ROW near the proposed FCF and southern pipeline tunnel connection. As discussed below in Section 3.3, the traffic analysis for the modified project assumed a "worst-case" scenario that the southern entrance on Calle de Vida would be the main access for the majority of the traffic.

Areas adjacent to the Water Authority ROW and easements that are cleared for use as temporary work zones would be seeded with a native vegetation seed mix pursuant to the Water Authority's Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). The primary staging yard is paved; therefore, no seeding would be required and the staging yard would be returned to its prior condition.

Operation

Operation and maintenance activities for the modified project are generally not expected to differ from the description provided in Section 2.5 of the EIR. However, operation and maintenance of the FRS II is expected to entail less work as the basin would be smaller than originally planned. Addition of the FCF would entail maintenance work at this facility in MTRP, in an area that already sees operational traffic associated with the FBS. Routine operation and maintenance discussed in the EIR would generally remain and is similar to current operation and maintenance activities associated with the existing Water Authority facilities within MTPR such as the FRS I, the FBS, and other access points along the First Aqueduct pipelines.

Biological Resources Impact Compliance

Another change in circumstances under which the modified project will be implemented is related to compliance with biological resources requirements. The impact analysis of the original project and construction of the initial components pre-dated the Water Authority's finalization of their NCCP/HCP, which went into effect in December 2011, achieving approval from the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). Accordingly, the original project received a Biological Opinion (BO) from USFWS in October 2007 (2007 BO, USFWS reference BO 2007-B-14/2007-F-22) authorizing take of the listed wildlife species San Diego fairy shrimp and least Bell's vireo pursuant to the federal Endangered Species Act (ESA).[1]

During impact analysis of the modified project pursuant for this Addendum, the project was deemed to have the potential to affect two species listed pursuant to the ESA that were not provided take authorization by USFWS in the 2007 BO. These species, the Quino checkerspot butterfly (*Euphydryas editha quino*, QCB, endangered pursuant to the ESA) and the coastal California gnatcatcher (*Polioptila californica californica*, CAGN, threatened pursuant to the ESA). Take authorization was not provided because, at the time, on-site habitat was recovering from the 2003 Cedar Fire and was determined by USFWS to be unsuitable for these species such that the project construction would not result in direct take of the species. The 2007 BO did acknowledge past occupation of the site by these species, and noted that the recovering habitat could eventually support these species again in the future, so subsequent project implementation would need to consider these species if conditions changed compared to those described in the 2007 BO.

CAGN was observed on site during the 2018 biological resources field surveys, which also identified on-site presence of suitable QCB habitat. These species are Covered Species under the NCCP/HCP, so instead of the Water Authority requesting U.S. Army Corps of Engineers (Army Corps) reinitiation of the 2007 BO with USFWS, the Water Authority is electing to cover the project and its impacts on sensitive species under their NCCP/HCP. The Water Authority is assuming presence of CAGN based on results of the 2018 biological resources surveys, and is conducting USFWS protocol surveys for QCB during the 2019 flight season to determine pre-construction presence or absence. This shift in listed species take coverage results in changes to mitigation measures for biological resources impacts compared with those identified in the EIR, with the Water Authority implementing conditions of coverage specified in the NCCP/HCP. Because the EIR and 2007 BO identified the potential for future impacts on these species and included measures to conduct surveys prior to construction of project-related facilities, this change does not constitute a new significant impact pursuant to CEQA. Additionally, where habitat-based off-site mitigation ratios specified in the EIR are higher than those required by the NCCP/HCP, the Water Authority will apply the higher ratios when securing credits for project-related impacts.

2.3 WATER AUTHORITY STANDARD SPECIFICATIONS/PROJECT DESIGN FEATURES

The EIR identified several standard conditions contained in the construction project specifications that avoid or minimize significant environmental impacts, and design features specific to the proposed project that were incorporated into the project description to minimize or avoid environmental effects. These standard specifications and project design features will be incorporated into the project's Mitigation Monitoring and Reporting Program (MMRP). For the purposes of Addendum 2, the design features pertaining to biological resources have been updated to reflect existing condition changes since the EIR. The updated measures are provided in Appendix B, and replace the measures that appeared in the EIR for biological resources. The measures for other issue areas have not been changed, and will be incorporated into the MMRP as they appeared in the EIR. None of the changes have an appreciable effect on project implementation or impact analysis. All other measures discussed in the EIR would apply to the modified project.

[1] The 2007 BO was associated with the proposed project's Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers for impacts on jurisdictional waters (Army Corps File No. 2006-2097-RRS).

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SECTION 3
ENVIRONMENTAL ASSESSMENT

This section presents a discussion of how the proposed minor changes to the project affect the analysis and impact conclusions of the environmental issues analyzed in the EIR.

3.1 LAND USE

The following analysis is based on the Land Use section of the EIR (Section 3.1). The EIR determined the project would be consistent with the City of San Diego Mission Trails Regional Master Plan (MTRP Master Plan), the Water Authority's 2013 Regional Water Facilities Optimization and Master Plan (Water Authority's Master Plan), and the Tierrasanta Community Plan. The EIR also determined that the project would avoid significant land use impacts associated with conformance with an applicable HCP or NCCP as it would conform to the guidelines contained within Section 1.4 of the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan. Impacts were found to be less than significant and no mitigation was required.

The modified project's temporary and permanent impact areas would be within the same general area assumed for project-related impacts in the EIR. Subsequent planning work has identified a smaller FRS II than analyzed in the EIR, approximately 13 million gallons less than identified in the EIR, resulting in a slightly smaller footprint for the facility, but within the same area examined in the EIR. The newly proposed FCF would be within the Water Authority's Second Aqueduct ROW and adjacent to the existing FBS, so it does not represent a substantial change in use of this portion of the ROW within MTRP. The FCF is also within the impact area addressed in the EIR for impacts from the pipeline tunnel's southern portal, so it does not represent an addition to the previously anticipated impact area. The modified project would require permanent acquisition by the Water Authority of a small piece of land from the City of San Diego for installation and maintenance of the overflow pipe outfall, as was previously anticipated in the EIR. Acquisition of small areas for temporary construction easements would also be required from the City for implementation of the project.

As discussed in the EIR, MTRP is designated as parkland in the Tierrasanta Community Plan, with the understanding that land uses within MTRP are overseen by the City of San Diego Park and Recreation Department under the MTRP Master Plan. The MTRP Master Plan acknowledges the Water Authority's water conveyance infrastructure that exists within MTRP and includes an Appendix detailing the good neighbor policy agreement established between the Water Authority and MTRP. Communication with the City Park and Recreation Department, and with MTRP neighbor and park user groups regarding the modified project is ongoing. The modified project would also still be generally consistent with the Water Authority's Master Plan, most recently updated in 2013. The Water Authority's Master Plan includes discussion of the modified project, anticipating a 12-million-gallon underground water storage reservoir. Since the Water Authority's Master Plan was adopted, the Water Authority has modified the project to include a smaller 5-million-gallon underground concrete storage reservoir based on system need.

The project area is located within a Multi-Habitat Planning Area (MHPA) as designated by the MSCP. Accordingly, the entire area would be considered Biological Significant Resource Area (BSRA) pursuant to Section 6.5.1.4.1 of the Water Authority's NCCP/HCP. As discussed in the EIR, the MSCP allows for utility impacts within an MHPA where no viable alternatives exist. In the case of the proposed project, the Water Authority's ROW was established long before the MHPA boundaries were drawn and nearly all of the permanent impacts associated with the water conveyance facilities are belowground. As with the original project, although the modified project would result in impacts to sensitive biological resources

within the City's MHPA (see Section 3.8 of this Addendum), the project would be considered compatible with the biological objectives of the MSCP as long as access and construction activities conform to the guidelines of Section 1.4 of the MSCP. Construction would conform to these guidelines, and appropriate biological mitigation would be provided (see Section 3.8 of this Addendum).

The project changes would not result in any considerable changes to land use impacts compared with those described in the EIR, and impacts would remain less than significant. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to land use would occur.

3.2 AESTHETICS/VISUAL QUALITY

The following analysis is based on the Aesthetics/Visual Quality section of the EIR (Section 3.2). The EIR concluded that the project would result in short-term impacts to scenic views of the West Fortuna area of MTRP due to visibility of construction work, but these impacts would be less than significant because the changes would be temporary. The EIR also determined that the project would not result in long-term impacts on scenic views, as nearly all permanent project features would be below ground and surfaces would be revegetated with native plant material. The EIR identified a beneficial impact associated with removal of the existing vent structures that are highly visible from MTRP trails. The EIR also found that the project would not substantially damage scenic resources within a state scenic highway, degrade the existing visual character of the site, or create a new source of substantial light or glare. Impacts were found to be less than significant and no mitigation was required.

The main change in the modified project from a visual quality standpoint is that the access/control building originally proposed is no longer required. Instead, access to the FRS II would be through a roof hatch that would extend 6 to 12 inches above grade. This will remove the most visible aboveground component of the proposed project, resulting in an improvement on visual impacts to park users, compared to the project addressed in the EIR. As was anticipated in the prior project, the finished ground surface above the FRS II structure is proposed with topographic contouring to resemble natural conditions to the greatest extent feasible, and would be revegetated to blend in with surrounding areas of the park. The modified project would also include elevated earthen berms on the southeastern and southwestern edges of the FRS II that would act as permanent visual barriers for views of the facility's at-grade components, including the access road and vault hatches. As with the earth placed on top of the FRS II roof, these berms would be contoured to resemble natural conditions, and would be revegetated to blend in with the varied topography existent elsewhere in MTRP.

The modified project would include an FCF adjacent to the existing FBS, which was not anticipated in the EIR. The FCF would be located primarily belowground with the exception of a low, unobtrusive vent/vault accessway, similar to the existing adjacent FBS, and the permanent tunnel access vault built during the project's first phase. This addition to an area already featuring visible at-grade and aboveground components of the Water Authority system would not constitute a significant change in the visual landscape of the area.

The modified project would implement the vent demolition component of the original project, as identified in the EIR, removing visible elements from MTRP and resulting in a beneficial impact on park users.

As noted in the EIR, construction would require staging of equipment and materials, open excavations, and soil stockpiles that would be visible to park users on a temporary basis. Following construction, all temporary staging areas and other areas disturbed by construction would be restored and revegetated.

The project changes would not result in any considerable changes to aesthetics and visual quality impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to aesthetics and visual quality would occur. The relevant project design features identified in the EIR would be implemented (PDF 2.6.2).

3.3 TRAFFIC/CIRCULATION

The following analysis is based on the Traffic/Circulation section of the EIR (Section 3.3), with updated information provided in the *Mission Trails Flow Regulatory Structure II and Flow Control Facility Project Transportation Impact Analysis* (2018 traffic analysis) included as Appendix C to this Addendum.[2] As discussed in the EIR, a traffic impact analysis was prepared for the original project (2006 traffic analysis), which considered impacts on the local circulation system due to construction traffic. The 2006 traffic analysis included all project components as originally planned with the exception of the FCF. The 2018 traffic analysis considered the project components under the modified project (i.e., smaller FRS II, pipeline connections, appurtenance demolition, and FCF) and excluded the previously completed components (pipeline tunnels and river crossing).

The modified project would result in construction traffic using substantially the same access routes assumed in the EIR. Off-hauling of excavated material is anticipated to result in the greatest amount of construction traffic, and this phase is anticipated to last 2 months. Due to the reduced size of the FRS II structure and associated excavation, and because some of the originally anticipated components have already been built, the overall volume of project-related traffic is anticipated to be less than originally considered in the EIR, and with a shorter overall duration than when one continuous construction process was presumed. However, because of the time that has transpired between the original analysis and construction of the remaining components, the Water Authority commissioned a new report to consider impacts based on updated existing conditions, to confirm that construction of the modified project will still not result in a significant impact on the local circulation system used for site access. As described in the 2018 traffic analysis, the following routes to/from I-15 and SR-52 are proposed for construction equipment and hauling of excavated material via trucks under the modified project:

- North Portal Connection Construction Activities Ingress and Egress – East/West on Clairemont Mesa Boulevard from I-15 to Via Valarta to Portobelo Drive to MTRP access point (Route A-1) or north/south on Santo Road from SR-52 to Antigua Boulevard to Portobelo Drive, to MTRP access point.
- South Portal Connection, FRS II, and FCF Construction Activities Ingress and Egress – East/West on Clairemont Mesa Boulevard to Rueda Drive, to Calle de Vida, to park entrance, to South Portal Connection, FRS II, and FCF sites via MTRP roads; or north/south on Santo Road from SR-52 to Clairemont Mesa Boulevard to Rueda Drive, to Calle de Vida, to park entrance, to South Portal Connection, FRS II, and FCF sites via MTRP roads.

The EIR considered worst-case construction traffic conditions and determined the project would result in 1,935 daily trips (see Table 3.3-7 of the EIR). With the addition of project trips, all study area intersections would remain operating at Level of Service (LOS) D or better (see Table 3.3-9 of the EIR) and all roadways would remain operating at LOS C or better (see Table 3.3-10 of the EIR). The EIR also determined the project would not cause an unannounced traffic delay greater than 15 minutes, substantially increase

[2] The traffic report Appendix, which includes detailed modeling output, is not included in the version attached to this Addendum, to reduce the document's page volume; the traffic report Appendix is on file at the Water Authority and can be provided on request.

hazards due to a design feature, result in inadequate emergency access, or result in inadequate parking capacity. Impacts were found to be less than significant and no mitigation was required.

The 2018 traffic analysis determined the modified project would not increase delay at any intersection by 2 seconds or more and all intersections would continue to operate at LOS D or better. The updated traffic analysis also determined that street segments would continue to operate at LOS C or better. Therefore, impacts associated with intersection delay and roadway capacity would remain less than significant. The EIR determined FRS II construction activities alone would generate 611 daily trips. The 2018 traffic analysis determined all remaining project components under the modified project, including the addition of the proposed FCF, would generate 276 trips, assuming a "worst case" scenario that the southern entrance on Calle de Vida would be the main access for the majority of construction truck traffic. Due to the smaller size of the FRS II, construction trips would be considerably less than originally analyzed; therefore, no new or increased significant impacts would be associated with unannounced traffic delays, increased hazards due to a design feature or incompatible use, inadequate emergency access, and inadequate parking supply. While no significant impact is identified, the 2018 traffic analysis recommends construction truck trips access the site over a 10-hour workday with two 1-hour breaks during the morning between 8:00 a.m. and 9:00 a.m. and during the afternoon between 3:45 p.m. and 4:45 p.m., to avoid conflicts with school traffic during these times. As with the original project, the Water Authority would require preparation and implementation of a traffic control plan for the modified project, and restrict hours of operation for trucks associated with project grading and construction to 7:00 a.m. to 7:00 p.m. Monday through Sunday.

The project changes would not result in any considerable changes to traffic and circulation impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to traffic and circulation would occur. The relevant project design features identified in the EIR would be implemented (PDF 2.6.3).

3.4 AIR QUALITY

The following analysis is based on the Air Quality section of the EIR (Section 3.4). The EIR determined the project would exceed significant thresholds for nitrogen dioxide (NO_2) and particulate matter less than 10 microns in diameter (PM_{10}). Mitigation was identified to reduce these impacts, including properly maintaining equipment in compliance with emissions regulations and requiring that vehicles hauling dirt or fill be covered with a tarp or other means during construction (Mitigation Measures AQ 1-1 and AQ 2-1). Even with implementation of Mitigation Measures AQ 1-1 and AQ 2-1, the EIR determined it may not be possible to mitigate construction air quality impacts below a level of significance. The EIR found that air quality impacts associated with conflicting with the applicable air quality plan, cumulatively considerable net increases of criteria pollutants, exposing sensitive receptors to pollutant concentration, and objectionable odors were less than significant.

Subsequent planning work has identified a smaller FRS II than analyzed in the EIR, and construction of the pipeline tunnels and San Diego river crossing have been previously completed. The addition of the FCF would be a minor, ancillary facility within the same vicinity as existing Water Authority facilities. The Water Authority commissioned an updated analysis of the project's pollutant emissions to determine if the modified project would exceed applicable thresholds. The updated analysis incorporates considerations of current emissions standards and existing regional conditions that are relevant to assessment of a project's construction emissions.

Regulatory and Environmental Setting

As identified in the EIR, the U.S. Environmental Protection Agency (USEPA) established National Ambient Air Quality Standards (NAAQS), which are concentrations of pollutants in the ambient air for

which no adverse effects on the public health and welfare are anticipated. The USEPA established NAAQS for carbon monoxide (CO), sulfur dioxide (SO_2), NO_2, ozone, PM_{10}, particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead. Similarly, the California Air Resources Board (ARB) has established the more stringent California Ambient Air Quality Standards (CAAQS) for the seven pollutants under the NAAQS as well as for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Since adoption of the EIR and Addendum 1, the NAAQS and CAAQS have become more stringent. In December 2012, the NAAQS for the annual $PM_{2.5}$ primary standard was lowered from 15 micrograms per cubic meter ($\mu g/m^3$) to 12 $\mu g/m^3$. In October 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 parts per million (ppm) to 0.070 ppm.

The San Diego Air Basin (SDAB) currently meets the NAAQS for all criteria air pollutants except ozone and is classified an attainment/maintenance area for CO, and unclassifiable for PM_{10}. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. As discussed in the EIR, ambient air pollutant concentrations in the SDAB are measured at air quality monitoring stations operated by ARB and the San Diego Air Pollution Control District (SDAPCD). Table 1 presents 3 years of the most recent information available at the Kearny Mesa monitoring station, summarizing the exceedances of standards and the highest recorded pollutant.

As shown in Table 1, ambient air concentrations of CO and NO_2 have not exceeded the NAAQS or CAAQS in the past 3 years. The 8-hour ozone concentration was exceeded in 2016 and 2017. PM_{10} and $PM_{2.5}$ concentrations did not exceed the NAAQS or the CAAQS between 2015 and 2017.

Since adoption of the EIR and Addendum 1, the most recent federal air quality plan for the SDAB is the 2008 Eight-Hour Ozone Attainment Plan for San Diego County approved in 2016, which identifies the control measures and emission reductions necessary to bring San Diego County into attainment for the 2008 8-hour ozone National Ambient Air Quality Standard (SDAPCD 2016b). In addition, the most recent Regional Air Quality Strategy (RAQS) is the 2016 Revision of the RAQS for San Diego County approved in December 2016, which identifies feasible emission control measures to attain the state ozone standards (SDAPCD 2016c).

As discussed in the EIR, the project's primary source of emissions is temporary construction emissions, which would not conflict with or obstruct implementation of the air quality plan. Due to the smaller size of the FRS II and the phased construction of the modified project, construction of the modified project would involve similar types of off-road equipment in fewer quantities as the original project. The use of construction equipment in the RAQS is estimated for the region on an annual basis and the modified project would not increase the assumptions for off-road equipment use. Following construction, operation would be consistent with the existing land uses and assumptions for land uses and vehicle trips as anticipated in the SIP and RAQS. As such, the modified project's impact would be the same as disclosed in the EIR.

As discussed in more detail in Section 2.2, construction of the modified project would include construction of the delayed components as analyzed in the EIR and Addendum 1, but with a smaller FRS II and the addition of an FCF. Thus, construction-related emission estimates were updated for construction of the modified project. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. CalEEMod allows the user to enter project-specific construction information, such as a specific construction schedule, and the types and number of construction equipment. Construction emissions, including both exhaust emissions and fugitive dust, were estimated for construction worker commutes, material delivery trips, and the use of off-road equipment. Construction of the modified project is anticipated to begin in January 2020 and last approximately 18 months. It was assumed construction would occur over three non-overlapping construction phases as described in Section 2.2: construction of the FRS II; construction of the FCF, and construction of the tunnel connections and

Table 1
Ambient Air Quality Summary

Pollutant Standards	2015	2016	2017
Ozone			
State maximum 1-hour concentration (ppm)	0.077	0.087	0.097
National maximum 8-hour concentration (ppm)	0.070	0.075	0.084
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	0	0	2
CAAQS 8- hour (>0.070 ppm)/NAAQS 8-hour (>0.070 ppm)	0/0	3/3	6/6
Carbon Monoxide (CO) [a]			
Maximum 8-hour concentration (ppm)	2.0	1.7	*
Maximum 1-hour concentration (ppm)	3.1	2.2	*
Number of Days Standard Exceeded			
NAAQS 8-hour (>9.0 ppm)	0	0	*
Nitrogen Dioxide (NO_2)			
State maximum 1-hour concentration (ppb)	51	53	54
Annual Average (ppb)	9	9	9
Number of Days Standard Exceeded			
NAAQS 1-hour	0	0	0
CAAQS 1-hour	0	0	0
Particulate Matter (PM_{10})			
National maximum 24-hour concentration ($\mu g/m^3$)	39.0	36.0	46.0
State maximum 24-hour concentration ($\mu g/m^3$)	37.0	35.0	47.0
State annual average concentration ($\mu g/m^3$)	16.7	*	17.6
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>150 $\mu g/m^3$)	0	0	0
CAAQS 24-hour (>50 $\mu g/m^3$)	0	0	0
Particulate Matter ($PM_{2.5}$)			
National maximum 24-hour concentration ($\mu g/m^3$)	25.7	19.4	27.5
State maximum 24-hour concentration ($\mu g/m^3$)	25.7	20.3	27.5
National annual average concentration ($\mu g/m^3$)	7.2	7.5	7.9
State annual average concentration ($\mu g/m^3$)	*	7.8	8.0
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>35 $\mu g/m^3$)	0	0	0

Notes: $\mu g/m^3$ = micrograms per cubic meter; ppb = parts per billion; ppm = parts per million
[a] Data obtained from the SDAPCD 2016 Monitoring Network Plan, Table 5.8: CO Concentrations for San Diego.
*Insufficient data to determine the value.
Source: ARB 2017a; SDAPCD 2016a

appurtenance removal. Construction of the pipeline tunnel and north portal excavation is complete; therefore, no blasting would occur. The analysis for the modified project assumed approximately 56,000 cy of material would be exported during construction of the FRS II, approximately 1,300 cy of material would be exported during construction of the FCF, and approximately 1,300 cy of material would be exported during construction of the tunnel connections and appurtenance removal. In addition, the modified project assumes a maximum of 45 workers per day would be on site during construction of the FRS II and approximately 15 workers would be on site during the remaining phases. As shown in Table 2, due to the smaller size of the FRS II, reduced construction equipment quantities, and phased construction schedule, emissions of nitrogen oxides (NO_x) and PM_{10} are no longer anticipated to exceed the air quality screening thresholds for the City of San Diego, which are based on SDAPCD thresholds for stationary sources. Further, due to the delay in construction, exhaust emissions from the construction equipment fleet have decreased because of stricter standards and the advancements in engine technology. Therefore, construction-related emissions associated with the modified project would not violate any air quality

standard or contribute substantially to an existing or projected air quality violation, and the modified project's emissions would not be cumulatively considerable. This impact would be less than significant.

Table 2
Estimated Maximum Daily Construction Emissions

Phase[1]	VOC (lbs/day)	NO_X (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)[3]
FRS II Construction	9.25	133.55	67.29	0.27	17.01	8.42
FCF Construction	3.20	29.17	29.42	0.05	1.92	1.54
Tunnel Connections Construction and Vent Removal	3.23	30.20	33.74	0.06	1.87	1.52
Threshold of Significance[2]	137	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

Modeled by AECOM in 2019
Notes: [1] Phases of construction are not anticipated to overlap. Additional details for construction of each phase are provided in Appendix D.
[2] City of San Diego 2016.
[3] $PM_{2.5}$ emissions were not analyzed in the EIR, and the City of San Diego and the SDAPCD have not established a threshold of significance for this pollutant. However, it is recommended that $PM_{2.5}$ emissions are quantified; thus, the $PM_{2.5}$ threshold was obtained from SCAQMD thresholds of significance (SCAQMD 2015).
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter; lbs/day = pound per day

Following construction, emissions associated with operations of the modified project would consist of routine inspection, repair, and maintenance that are not expected to increase substantially beyond the original project analyzed in the EIR. Accordingly, the modified project would not create a new significant impact or substantially increase the severity of the previously identified significant impacts in the EIR and Addendum 1.

As discussed in the EIR, due to the short-term construction schedule and the distance to the nearest sensitive receptors, construction activities would not generate substantial emissions of toxic air contaminants (TACs), specifically diesel particulate matter (diesel PM). The EIR concluded this impact would be less than significant. The nearest sensitive receptors to the modified project are single-family residences located approximately 80 to 2,000 feet away from construction and staging areas. Since adoption of the EIR and Addendum 1, the Office of Environmental Health Hazard Assessment (OEHHA) released a final version of the *Air Toxics Hot Spots Program Guidance Manual*, which states that health risks associated with exposure of sensitive receptors to TAC emissions should be based on a 30-year exposure period (OEHHA 2015). As stated previously, construction activities for the project are anticipated to last approximately 18 months and would cease following completion of the project. Therefore, the total exposure period for construction activities would be approximately 5 percent of the total exposure period used for typical health risk calculations (i.e., 30 years). In addition, construction activities would span across the project area and emissions would occur intermittently throughout the construction period and would not occur as a constant plume of emissions from a single location. Therefore, considering the varying buffer distance from the nearest sensitive receptors and that emissions sources are intermittent, exposure period is limited, and diesel PM emissions are highly dispersive, construction of the modified project would not be anticipated to exceed exposure levels that would result in health effects for sensitive receptors. Operation of the modified project would involve maintenance activities that are not anticipated to increase substantially beyond the levels

covered under the EIR and Addendum 1. Thus, consistent with the EIR and Addendum 1, this impact would be less than significant.

As discussed in the EIR, odors would be generated from vehicles or equipment exhaust emissions during construction of the project. However, odors related to construction would be temporary and generally occur at magnitudes that would not affect a substantial number of people. In addition, operation of the project would also not create objectionable odors because raw water has a faint odor that is not considered objectionable, the vents and valves in MTRP do not emit objectionable odors, and prevailing winds blow from west to east, away from the closest development. Thus, the EIR concluded this impact would be less than significant.

Construction of the modified project would involve similar types of equipment in fewer quantities as the project analyzed in the EIR. Thus, because of the amount and types of equipment, the temporary nature of these emissions, and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by diesel exhaust odors associated with project construction. Consistent with the project analyzed in the EIR, operation of the modified project and additional project components would not be typical odor-generating land uses.

The project changes would not result in any considerable changes to air quality impacts. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to air quality would occur. The relevant project design features and mitigation measures identified in the EIR would be implemented (PDF 2.6.3, and Mitigation Measures AQ 1-1 and AQ 2-1). The impacts and mitigation measures have been accounted for in the EIR, and this is not a considerable change in the EIR's impact conclusions. A Statement of Overriding Considerations was adopted for the significant and unmitigated impacts, and no further action is required.

3.5 NOISE AND VIBRATION

The following analysis is based on the Noise and Vibration section of the EIR (Section 3.5). The EIR determined construction noise levels would likely be less than 75 A-weighted decibels (dBA) when averaged over an 8-hour day. The exception to this would be at the north portal and adjacent pipeline interconnect reconfiguration where the proximity of sensitive receptors to the proposed work site was identified as having the potential to result in daytime noise levels over 75 dBA, resulting in a significant impact. The EIR also determined noise generated during nighttime construction work would not be in conformance with the nighttime hourly average threshold of 45 dBA in residential zones, resulting in a significant impact. Vibration impacts at the north portal site were also found to be significant. Mitigation was identified to reduce these impacts, including using portable noise screens or enclosures and monitoring noise and vibration levels during construction (Mitigation Measures N 1-1 through N 1-3, N 2-1 and N 2-2, and N 3-1 through N 3-5). Even with implementation of Mitigation Measures N 1-1 through N 1-3 and N 2-1 and N 2-2, the EIR determined it was possible that construction noise impacts may not be able to be mitigated below a level of significance; however, the mitigation would reduce vibration impacts to a less than significant level. The EIR found that noise impacts associated with construction traffic and permanent increases in ambient noise levels were less than significant.

Noise associated with construction of the revised project's remaining primary components, including the FRS II and tunnel connections, was addressed in the EIR, and changes in the project are not anticipated to substantially affect those impacts. However, subsequent planning work has identified a smaller FRS II than analyzed in the EIR and construction of the pipeline tunnels and San Diego river crossing completed under a prior construction phase, so in general, construction-related noise would be generated for a shorter duration than the full project extent identified in the EIR. Construction of the FCF under the modified project would occur in the vicinity of the south tunnel connection, and the addition of the FCF would extend

the duration of construction noise generated in this area. This part of the project construction zone is remote from residential receptors, with the nearest residence approximately 2,000 feet to the west, and is separated by intervening topography. Therefore, additional construction noise would not be received by residential receptors, and there would be no increase in impacts.

Construction of the modified project would result in similar daytime impacts as described in the EIR. Construction of the pipeline interconnect reconfiguration is complete; therefore, no construction noise would be generated at that location as part of the modified project addressed in this addendum. However, construction at the north tunnel connection is proposed at the same location as the significant daytime and nighttime impact identified for the north tunnel portal in the EIR. Construction at the north portal connection would consist of demolishing the existing Water Authority Second Aqueduct pipe in this area to connect the previously constructed pipeline tunnel to the Water Authority system. Therefore, potential exists for noise levels associated with the north portal connection to exceed 75 dBA received by nearby residences during daytime hours, as identified in the EIR. To mitigate daytime construction noise impacts, the modified project (north portal connection) would be required to incorporate Mitigation Measure N 1-1 (erect a temporary noise barrier or use enhanced mufflers if equipment will operate within 500 feet of any residence at night), Mitigation Measure N 1-2 (noise screens or enclosures for high noise activities or equipment), and Mitigation Measure N 1-3 (construction noise monitoring). These impacts and mitigation measures have been accounted for in the EIR. Consistent with the EIR, construction of the FRS II, south portal connection, and vent demolition would not result in significant daytime noise impacts. Operation of the modified project would not include any noise-generating elements that were not discussed in the EIR.

Construction of the modified project would also result in similar nighttime impacts as described in the EIR. The modified project would also still entail nighttime construction at the north and south portals to connect the previously constructed pipeline tunnel to the existing Water Authority Second Aqueduct pipeline. As discussed in the EIR, nighttime construction at the north portal would not be in conformance with the nighttime hourly average threshold of 45 dBA in residential zones. Therefore, nighttime construction noise impacts on residences located near the north tunnel connection would remain the same as those identified in the EIR. As such, as discussed in the EIR, the modified project (north portal connection) would be required to incorporate Mitigation Measure N 2-1 (temporary sound wall installed prior to the start of construction activity) and Mitigation Measure N 2-2 (nighttime construction noise monitoring). These impacts and mitigation measures have been accounted for in the EIR.

As discussed in the EIR, construction traffic would be received by residences along the haul routes and construction access routes. The routes would remain substantially as previously planned and identified in the EIR, which determined the impact would be less than significant. Construction traffic would be generated for a shorter duration than anticipated in the EIR, due to the reduced size of the reservoir and less material needing off-hauling. The modified project's impact would also be reduced because off-hauling of the reservoir material will not overlap with off-hauling of the tunnel spoils, as was anticipated in the EIR.

As discussed in the EIR, while unlikely, construction of the FRS II or the tunnel connections could require blasting depending on conditions encountered during excavation. If blasting is required, the modified project would be required to implement Mitigation Measures N 3-1 and N 3-2 (monitor blasting activities), Mitigation Measure N 3-3 (blasting during daytime hours), Mitigation Measure N 3-4 (modify procedures if blasting results in vibration or blast levels above threshold and implement modified procedures [different delay patterns; reduction in size of blast; shorter and/or smaller blast holes; closer spacing of blast holes; reduction of explosives; and blast mats or sound walls, or a combination]), and Mitigation Measure N 3-5 (public outreach program). These impacts and mitigation measures have been accounted for in the EIR, and there is no change relative to the modified project.

The project changes would not result in any considerable alteration to noise and vibration impacts disclosed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to noise and vibration would occur. The relevant project design features and mitigation measures identified in the EIR would be implemented (PDF 2.6.4, Mitigation Measures N 1-1 through N 1-3, Mitigation Measures N 2-1 and N 2-2, and Mitigation Measures N 3-1 through N 3-5).The impacts and mitigation measures have been accounted for in the EIR, and this is not a considerable change in the EIR's impact conclusions. A Statement of Overriding Considerations was adopted for the significant and unmitigated impacts, and no further action is required.

3.6 RECREATION

The following analysis is based on the Recreation section of the EIR (Section 3.6). As discussed previously, all modified project components would be located in the same general vicinity as analyzed in the EIR. The added FCF would be minor facilities near previously proposed components and within Water Authority ROW.

The EIR determined impacts related to recreation would be less than significant. The EIR discussed that while temporary dirt road and trail closures within the West Fortuna area of MTRP would be required during construction, other portions of the park for recreation would be available during this time. There would be no long-term impacts to recreation as the facilities would be almost entirely below ground and in an area that currently contains Water Authority infrastructure.

The modified project would occur in the same West Fortuna area discussed in the EIR. As determined in the EIR, since MTRP offers multiple access points and trails, the closure of the West Fortuna area would not substantially increase the use of existing parks or other portions of MTRP. The modified project would also result in the temporary closure of the same dirt roads and trails in the West Fortuna area of MTRP and would use the same access routes as described in the EIR. The Water Authority would conduct outreach to residents, park users, and other interested parties to inform them of the closures. Following construction, the modified project components would also be located belowground and be restored and revegetated. Therefore, no considerable changes would occur that would result in the direct disturbance or displacement of established recreation facilities.

The project changes would not result in any considerable changes to recreation impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to recreation would occur. The relevant project design features identified in the EIR would be implemented (PDF 2.6.5).

3.7 WATER RESOURCES

The following analysis is based on the Water Resources section of the EIR (Section 3.7). The EIR identified less than significant impacts related to water resources as the contractor would be required to comply with the provisions of a Storm Water Pollution Prevention Plan (SWPPP) and General Construction Storm Water Permit.

As discussed in the EIR for the original project, the remaining components that would be constructed under the modified project would be required to comply with the General Construction Stormwater Permit and provisions of a project-specific SWPPP that would be prepared by the Water Authority's contractor. If dewatering is necessary for the FRS II, this work would conform to the requirements of the applicable Discharge Requirements for Groundwater Remediation and Dewatering Waste Discharges, as discussed in the EIR. The modified project would also be subject to the Water Authority's *General Conditions and Standard Specifications* as discussed in Section 2.6 of the EIR.

Implementation of the standard best management practices for water quality and erosion control as outlined in Section 2.6 of the EIR would ensure that runoff during construction is diverted away from drainages and riparian habitats. A new concrete operation and maintenance pad would be constructed near the outlet valve vault shaft; however, this amount of new impermeable surface would be minimal and would not result in a substantial increase in runoff volumes. Access to the FRS II would consist of a gravel access road that leads up to and surrounds the tank. In addition, an existing dirt access road near the outlet valve vault shaft would be realigned and consist of gravel that would control runoff from the road, which is currently subject to erosion that reduces the effectiveness of access to the area.

The project changes would not result in any considerable changes to water resources impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to water resources would occur. The relevant project design features identified in the EIR would be implemented (PDF 2.6.6).

3.8 BIOLOGICAL RESOURCES

The following analysis is based on the Biological Resources section of the EIR (Section 3.8), with updated information provided in the biological resources assessment (2019 biological report), included as Appendix E to this Addendum. As discussed in Section 3.8 of the EIR, a biological resources technical report (2006 biological report) was prepared for the original project. The report summarized the results of biological reconnaissance, habitat assessments, vegetation mapping, and an inventory of plant and wildlife species. The FRS II and ancillary components were within the study area of the 2006 biological report and therefore addressed in the EIR. As they would be new additions related to the modified project, the FCF and additional conduit were not considered in the EIR analysis.

The EIR determined the project would result in significant impacts to sensitive natural communities (see Tables 3.8-2 and 3.8-3 of the EIR for specific communities), sensitive plant species, sensitive wildlife species (QCB, CAGN, and least Bell's vireo), and jurisdictional waters of the U.S. (see Table 3.8-4). The EIR determined less than significant impacts would occur to wildlife corridors and the City of San Diego's MSCP and no impacts would occur related to nesting migratory bird species and local policies protecting biological resources. Mitigation was identified for these impacts to reduce them to less than significant levels. Mitigation consisted of on-site revegetation and off-site creation of vegetation communities, and acquisition and preservation of off-site habitat (Mitigation Measures BR 1-1 through BR 11-2).

Following certification of the EIR, the Water Authority received a BO for the original project from USFWS on October 11, 2007 (BO 2007-B-14/2007-F-22), which was associated with the proposed project's Clean Water Act (CWA) Section 404 permit from the Army Corps for impacts on jurisdictional waters. The BO was issued for the project's impacts on least Bell's vireo, associated with the Arizona crossing at the San Diego River, and San Diego fairy shrimp, associated with impacts on vernal pools located at the FRS II reservoir site. Both of these impacts occurred during the project's prior phase.

The modified project addressed in this Addendum was covered by the 2007 BO, but the modified project has been deemed to have the potential to affect two species listed pursuant to the federal ESA that were not provided take authorization by USFWS in the 2007 BO. These species, QCB (endangered pursuant to the ESA) and CAGN (threatened pursuant to the ESA), were not covered by the 2007 BO because at the time on-site habitat was recovering from the 2003 Cedar Fire and was determined by USFWS as unsuitable for these species such that the project construction would not have an impact on the species. However, the 2007 BO acknowledged past occupation of the site by these species and noted that the recovering habitat could eventually support the species again in the future, so future project implementation would need to consider these species if conditions changed compared to those described in the 2007 BO. The 2019 biological report

concluded that the habitat had recovered, as anticipated in the BO. CAGN was observed during the 2018 surveys documented in the 2019 biological report, and the Water Authority is performing protocol surveys for QCB during the 2019 flight season, as suggested in the BO. QCB and CAGN are Covered Species under the NCCP/HCP, so the Water Authority is electing to cover the project and its impacts on sensitive species under their NCCP/HCP. Accordingly, this report identifies NCCP/HCP conditions for coverage that will be implemented as part of project coverage. Because the EIR and 2007 BO identified the potential for future impacts on these two listed species and included measures to conduct surveys prior to construction of project-related facilities, this change does not constitute a new significant impact pursuant to CEQA.

The 2019 biological report summarizes existing conditions and analyzes biological resources that have the potential to be affected by the proposed project. To facilitate the preparation of the 2018 biological report, an AECOM botanist conducted vegetation community mapping and sensitive plant species survey on August 21, 2018, and generated a comprehensive plant list (see Attachment 1 of Appendix E). An AECOM wildlife biologist conducted a general wildlife survey, including a habitat assessment that was conducted at the same time as the botanical survey and vegetation mapping on August 21, 2018, and generated a list of species detected (see Attachment 2 of Appendix E).

Vegetation Communities

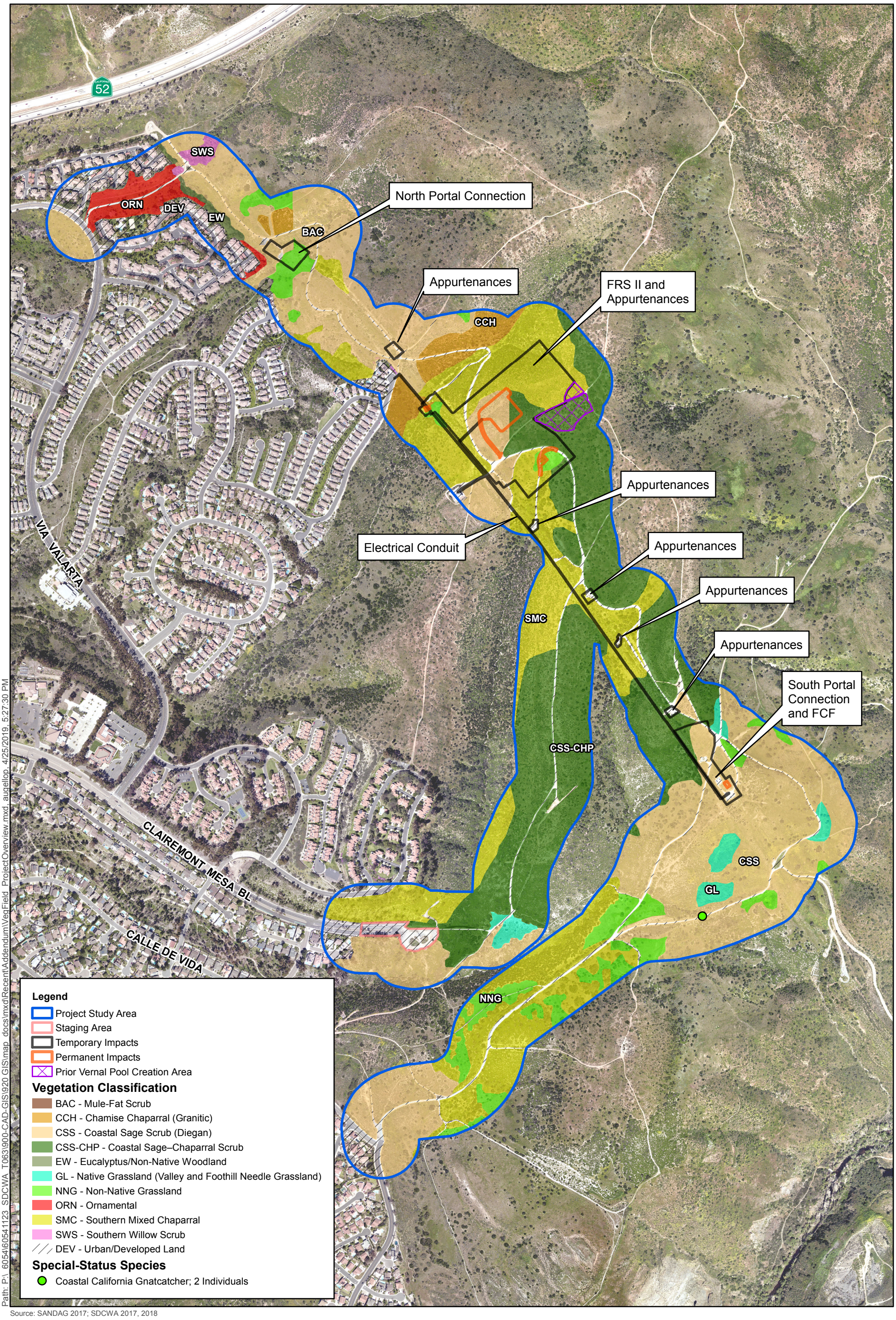
The permanent and temporary impacts on vegetation communities resulting from the modified project are presented in Tables 3 and 4, along with the habitat tier identified in the NCCP/HCP. The NCCP/HCP requires mitigation for Tier I, Tier II, and Tier III communities, so the project would result in impacts on five vegetation communities that would require mitigation in accordance with the NCCP/HCP. Figure 4 shows the vegetation communities and land cover types in the study area.

The City of San Diego's MHPA and lands within it have been designated for conservation pursuant to the MSCP. MTRP is within the MHPA, so these lands would be considered BSRAs, as defined in Section 6.5.1.4.1 of the NCCP/HCP. Therefore, pursuant to the NCCP/HCP, Tables 3 and 4 also distinguish that existing Water Authority ROW is excluded from the BSRA designation because these lands have been, and will continue to be, impacted by operations and maintenance activities. For consideration of the proposed project's impacts, land inside the Second Aqueduct linear aqueduct ROW would be exempt from BSRA consideration. However, property acquired for project construction, including temporary construction easements and new ROW associated with the FRS II reservoir and pipeline tunnel, would not be exempt, and would be considered BSRA.

Table 3
Permanent Impacts on Vegetation Communities and Land Cover Types

Vegetation Communities and Land Cover Types	NCCP/HCP Tier	Work Areas outside ROW (acres)	Work Areas within ROW (acres)	Total Permanent Impacts (acres)
Diegan Coastal Sage Scrub	II	1.20	0.03	1.23
Coastal Sage-Scrub Chaparral	II	0.28	-	0.28
Chamise Chaparral (Granitic)	III	0.01	<0.01	0.01
Southern Mixed Chaparral	III	0.02	-	0.02
Non-native Grassland	III	0.10	0.01	0.11
Urban/Developed	IV	0.06	-	0.06
Total	**-**	**1.66**	**0.04**	**1.70**

Note: Totals may not add due to rounding.



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Source: SANDAG 2017; SDCWA 2017, 2018

700 0 700 Feet

Scale: 1:8,400 1 in = 700 feet

Figure 4
Vegetation Community and Special Status Species

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Table 4
One-Time Temporary Impacts on Vegetation Communities and Land Cover Types

Vegetation Communities and Land Cover Types	NCCP/HCP Tier	Work Area outside ROW (acres)	Work Areas within ROW (acres)	Total Temporary Impacts (acres)
Diegan Coastal Sage Scrub	II	2.98	1.79	4.77
Coastal Sage-Scrub Chaparral	II	2.87	0.55	3.41
Mule-Fat Scrub	II	--	0.01	0.01
Chamise Chaparral (Granitic)	III	0.02	0.09	0.11
Southern Mixed Chaparral	III	6.59	1.62	8.21
Non-Native Grassland	III	0.93	0.53	1.46
Urban/Developed	IV	2.67	1.07	3.75
+Total	**-**	**16.07**	**5.66**	**21.73**

Note: Totals may not add due to rounding.

As shown in Tables 8 through 10 of the 2006 biological report, construction of the original project was anticipated to result in impacts to a total of 32.19 acres, including permanent impacts to 6.25 acres and temporary impacts to 25.94 acres. Several components of the original project have been constructed and the impacts have previously occurred. Many of the impact areas associated with the modified project are within areas that were previously impacted by the project's prior phase, and were restored with native vegetation after completion of construction.

The modified project would add a very small amount of disturbance that was not assumed in the EIR, due to addition of the FCF, which includes temporary and permanent impacts, and extension of the previously planned conduit to that facility, which entail temporary impacts only. The proposed project would be implemented pursuant to the Water Authority's NCCP/HCP, and subject to the relevant on-site and off-site mitigation requirements for habitat-based impacts stated therein. However, because the coastal sage scrub mitigation ratio of 2:1 identified in the EIR is higher than the NCCP/HCP ratio of 1.5:1, the Water Authority will apply the EIR ratio.

Estimated mitigation acreages for the project's temporary and permanent impacts to sensitive vegetation communities are presented in Table 5. Mitigation for temporary impacts is anticipated to be accomplished through habitat restoration of disturbed areas following construction, pursuant to the Water Authority's *Final San Diego County Water Authority Master Restoration Plan for Work within Mission Trails Regional Park* (Water Authority 2009).

Mitigation for the modified project's permanent impacts on Tier II and Tier III habitat, including the FRS II access road and adjacent hatches, the tunnel outlet shaft and associated access, the overflow pipe outfall structure, and the FCF hatch, is anticipated to be accomplished through use of credits by debiting credits from an existing Water Authority Habitat Management Area, as identified in the NCCP/HCP. Impacts to Tier IV communities (i.e., urban/developed land) do not require on-site habitat restoration, as these communities are not sensitive. Impacted developed areas that are currently paved will be repaved, and unpaved access roads and Water Authority maintenance areas would be returned to their prior condition and use; other disturbed areas will be stabilized for erosion-control purposes after construction is complete.

As part of a previous Water Authority project, installation of Pipeline 4B2, coastal sage scrub (Diegan) and coastal sage-chaparral scrub occurring within the 130-foot Second Aqueduct ROW were mitigated for off-site at the Water Authority's Crestridge Habitat Management Area (HMA). Therefore, permanent impacts to these vegetation communities resulting from the proposed project that occur within the Second Aqueduct ROW corridor would not require mitigation. These include permanent impacts at the proposed FCF and a

portion of the overflow pipe outfall. Permanent impacts that occur outside the Second Aqueduct ROW corridor include the access area surrounding the roof of the FRS II, and the southern access shaft and surrounding access area, which would occur on property adjacent to the Second Aqueduct ROW corridor purchased by the Water Authority from SDUSD. In addition, a portion of the overflow pipe rip rap basin is located just beyond the aqueduct corridor.

Mitigation for permanent impacts occurring outside the Second Aqueduct ROW would be mitigated pursuant to ratios dictated in the NCCP/HCP, as shown below in Table 5. All mitigation would occur in an existing Water Authority HMA, which is considered inside a BSRA. Therefore, the respective mitigation ratios listed in Tables 6-6 and 6-7 of the Water Authority's NCCP/HCP would be applied.

Table 5
Off-Site Mitigation Summary

Vegetation Communities and Land Cover Types	NCCP/ HCP Tier	Impacts Requiring Off-Site Mitigation (in BSRA)	Off-Site Mitigation Ratio[1]	Required Off-Site Mitigation (acres)
Diegan Coastal Sage Scrub	II	1.20[2]	2:1	2.40
Coastal Sage-Scrub Chaparral	II	0.28	2:1	0.56
Chamise Chaparral (Granitic)	III	0.01	1:1	0.01
Southern Mixed Chaparral	III	0.02	1:1	0.02
Non-Native Grassland	III	0.11	1:1	0.11
Total		**1.61**	**-**	**3.09**

Note: Totals may not add due to rounding.
[1] Mitigation ratios for Diegan coastal sage scrub and coastal sage-chaparral scrub are based on the ratios identified for these communities in the project's EIR, which is higher than would be required under the NCCP/HCP. Mitigation ratios for other communities in this table were not provided in the EIR, so the ratios are based on Table 6-6 of the Water Authority's NCCP/HCP, assuming the impacts and mitigation both occur inside BSRA.
[2] Does not include 0.03 acre within the Second Aqueduct ROW, which has already been mitigated.

The proposed project would be implemented pursuant to the Water Authority's NCCP/HCP, and subject to the relevant on-site and off-site mitigation requirements for habitat-based impacts stated therein. Impacts associated with the modified project would remain significant but would be mitigated by the measures identified in the EIR and NCCP/HCP. No new significant impacts or increase in the severity of previously identified impacts related to vegetation communities would occur.

Jurisdictional Waters and Wetlands

The project would have an impact on three small drainages, including permanent and temporary impacts associated with construction of the FRS II overflow pipe outfall, temporary impacts at the work area for the north tunnel connection, and temporary impacts associated with trench installation of the electrical conduit. The jurisdictional delineation report prepared for the project is included as Attachment 3 to Appendix E. Table 6 presents the temporary and permanent impacts to waters of the U.S. and CDFW jurisdictional streambed and associated riparian canopy that would result from construction of the project.

Table 6
Proposed Cumulative Impacts to Jurisdictional Aquatic Resources

Project Component	RWQCB/Army Corps Jurisdiction Waters of the U.S. (acres)		RWQCB/Army Corps Jurisdiction Waters of the U.S. (linear feet)	CDFW Jurisdiction (acres)		CDFW Jurisdiction (linear feet)
	Temp	Permanent		Temp	Permanent	
Outfall	-	-	-	-[1]	<0.001	11.40
Trenching	-	-	5.00	0.003	-	5.00
Temporary Work Area	0.032	-	426.80	0.124[1]	-	842.60
TOTAL	**0.032**	**-**	**431.80**	**0.127**	**<0.001**	**859.00**

[1] Temporary work area associated with the overflow pipe permanent outfall and north tunnel connection are included in the temporary work area.

The project's temporary and permanent impacts on jurisdictional resources would require permits. The proposed project is expected to qualify for coverage as a Category 2 eligible activity under the Water Authority's Programmatic Master Plan Permit (PMPP) issued by Army Corps on May 8, 2015, as a programmatic permit for coverage under Section 404 of the Clean Water Act. Among the activities eligible for coverage under the PMPP is New Construction Activity No. 13 for the construction of new minor support facilities in waterways. Under Activity No. 13, impacts to waters of the U.S. may occur as a result of protection of underground facilities that may occur wherever facilities cross a waterway in a project area.[3] Impacts to CDFW jurisdictional streambed and associated riparian habitat in the project area are expected to require a Lake and Streambed Alteration Agreement (LSAA) with CDFW. As a covered activity under the NCCP/HCP, the project qualifies for a streamlined permitting process with CDFW, as set forth in Section 6.7.2 of the NCCP/HCP.

Mitigation for the project's impacts on jurisdictional resources is anticipated to entail on-site restoration of temporary impacts, similar to the requirement in the NCCP/HCP, and acquisition of credits from an off-site bank for the very small amount of permanent impacts. Off-site mitigation requirements would be subject to discussion with CDFW as part of the proposed project's permitting process.

Sensitive Plant and Wildlife Species

The 2019 biological report concluded that the proposed project would not have an impact on sensitive plant species. No plant species listed as threatened or endangered under the federal ESA or state ESA were observed in the study area, and no plant species listed as a California Rare Plant Rank (CRPR) List 1A, 1B, or 2B species or covered by the Water Authority NCCP/HCP were observed. The 2006 biological report and EIR identified impacts on two sensitive plant species, variegated dudleya (*Dudleya variegata*) and San Diego thorn-mint (*Acanthomintha ilicifolia*), both of which are NCCP/HCP narrow endemic species. One small population of variegated dudleya was within the temporary work area affected by the project's prior phase. The remaining populations of both species are outside the modified project's impact area.

San Diego thornmint and variegated dudleya are narrow endemic species pursuant to the NCCP/HCP. While not observed during the updated 2018 surveys, those surveys were conducted outside of the herbaceous plants' flowering season. If they were present on-site, their presence would not have been easily evident. Because suitable habitat for these plants exists in the work areas, the Water Authority will conduct surveys during the spring blooming season for these species. If they are present on-site, then the Water

[3] The Army Corps has determined that the Regional Water Quality Control Board, San Diego Region, waived the water quality certification for the PMPP; therefore, the Water Authority will not be required to obtain a Clean Water Act Section 401 permit.

Authority would apply the relevant NCCP/HCP narrow endemic policy and species-specific conditions for coverage for these plants.

The 2019 biological report identified potential impacts on sensitive wildlife species, including species that were observed and species that were deemed to have a high potential to occur on site and be affected by project construction. Because the Water Authority has elected to obtain coverage for the project under the NCCP/HCP, which dictates a habitat-based approach to identifying species impacts, the determination of wildlife species impacts in the 2019 report included several species that were not identified for impacts pursuant to CEQA in the EIR. CAGN was observed in the buffer of the biological study area during the updated habitat assessment conducted in 2018, and the Water Authority has elected to assume presence of this species and implement the relevant species-specific conditions of coverage. In addition, the 2019 biological report concluded that 17 other sensitive wildlife species, including NCCP/HCP covered species, are considered to have high potential for occurrence due to presence of quality habitat in the study area. The NCCP/HCP wildlife Covered Species identified for potential impacts by the modified project are:

- QCB,
- western spadefoot toad (*Spea hammondi*),
- coastal (western) whiptail (*Aspidoscelis tigris stejnegeri*),
- Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*),
- coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillei*),
- (northern) red diamond rattlesnake (*Crotalus ruber ruber*),
- Coronado skink (Plestiodon skiltonianus interparietalis),
- coastal rosy boa (Lichanura trivirgata roseofusca),
- San Diego ringneck snake (*Diadophis punctatus similis*),
- loggerhead shrike (*Lanius ludovicianus*),
- California horned lark (*Eremophila alpestris actia*),
- grasshopper sparrow (*Ammodramus savannarum*),
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*),
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*),
- Dulzura pocket mouse (Perognathus californicus femoralis),
- northwestern San Diego pocket mouse (*Perognathus fallax fallax*), and
- San Diego desert woodrat (*Neotoma lepida intermedia*).

Two other California species of special concern that are not covered by the NCCP/HCP were determined to have a high potential for occurrence (coast patch-nosed snake [*Salvadora hexalepis virgultea*]) and two-striped garter snake [*Thamnophis hammondii*]). Impacts are identified for these species for purposes of CEQA and NCCP/HCP compliance based on the high potential for presence.

The 2006 EIR identified short-term impacts to QCB, CAGN, and least Bell's vireo, including construction noise and loss of habitat, that would be significant. Potential short-term impacts to nesting birds covered by the Migratory Bird Treaty Act would be avoided with implementation of the Standard Conditions for Biological Resources presented in the EIR. Therefore, the impact assessment for QCB and CAGN is not a new conclusion for the modified project. As discussed in the 2019 biological report, least Bell's vireo is present in the San Diego River, outside of the modified project footprint, and is not anticipated to occur in the impact areas for the modified project; therefore, impacts on this species are not anticipated.

As discussed in the EIR, grading and other activities associated with construction of the modified project also have the potential to create airborne dust, sedimentation, and erosion that could degrade habitat for the aforementioned species. Indirect impacts would be avoided with implementation of the Standard Conditions for Biological Resources presented in Section 2.6 of the EIR and appropriate NCCP/HCP measures.

To mitigate for impacts on Covered Species, the Water Authority will implement NCCP/HCP Covered Species General Conditions for Coverage, as stated in the Section 2.1 of Appendix B of the Water Authority's NCCP/HCP, and all relevant species-specific special conditions, which are addressed in Appendix B, Sections 5.0 through 9.0 of the NCCP/HCP. The relevant measures that will ensure avoidance and minimization of the modified project's impacts on Covered Species are presented in Appendix B of this Addendum.

Two-striped garter snake and coast patch-nosed snake are not covered by the NCCP/HCP and are CDFW-listed species of special concern. These species were identified have a high potential to occur on the site. Implementation of the NCCP/HCP General Conditions of Coverage, listed in Section 2.1 of NCCP/HCP Appendix B, and included in Appendix B of this Addendum, would be sufficient to ensure the project would not have a significant impact on this species pursuant to CEQA.

The project changes would not result in any considerable changes to impacts on biological resources beyond those anticipated in the EIR. By implementing the modified project under the NCCP/HCP instead of the 2007 BO, the Water Authority is revising its mitigation measures and the means of agency coordination for project impacts . This change means a revision the mitigation measures previously stated in the EIR, as shown in Table 7. This replacement of mitigation approach does not indicate new significant impacts or an increase in the severity of previously identified impacts related to sensitive plant and wildlife species associated with the revised project.

Table 7
Mitigation Measures Comparison

2006 EIR Mitigation Measure	Revised Project Mitigation Measure
BR 1-1, 2-1, and 3-1. Temporary impacts to Diegan coastal sage scrub, coastal sage scrub-chaparral scrub, and valley needlegrass[4] shall be mitigated through revegetation with a coastal sage scrub seed mix that includes valley needlegrass seed. Permanent impacts to Diegan coastal sage scrub, coastal sage scrub chaparral scrub, and valley needlegrass shall be mitigated off site using mitigation credits from the Water Authority's Crestridge Habitat Management Area.	The Water Authority will apply off-site mitigation at the ratios dictated in the NCCP/HCP, as shown above in Table 5, except for coastal sage scrub, for which the Water Authority will mitigate at the higher ratio identified in the EIR. All mitigation would occur inside a BSRA, as reflected in the respective mitigation ratios listed in Tables 6-6 and 6-7 of the Water Authority's NCCP/HCP.
BR 4-1. Permanent impacts to San Diego claypan vernal pool habitat shall be mitigated at a 2:1 ratio by the creation of replacement vernal pool habitat. The Water Authority shall request enrollment under the RWQCB General Waste Discharge Requirements (WDR) for Dredged of Fill Discharges to Waters Deemed by the U.S. ACOE to be Outside of Federal Jurisdiction (Order No. 2004- 0004-DWQ). The site selected for the creation of claypan vernal pool habitat shall have the appropriate topography and soil type for vernal pool creation and shall ideally be disturbed. The vernal pool creation effort shall not have an adverse effect on existing vernal pools. The created vernal pools shall be protected through the use of fencing, education, signage and enforcement to keep park visitors away from the pools.	N/A; impacts to vernal pool habitat previously occurred during the first phase of project construction, and BR 4-1 was implemented as required. The revised project would not impact vernal pool habitat.

[4] Valley needlegrass was not documented within the modified project impact area as discussed in the 2019 biological report.

2006 EIR Mitigation Measure	Revised Project Mitigation Measure
Two sites that are potentially suitable for vernal pool mitigation have been identified within MTRP. The final vernal pool creation program shall be prepared to the mutual satisfaction of the Water Authority, MTRP staff, and the RWQCB.	
BR 5-1. Mitigation for temporary and permanent impacts southern willow scrub at the stabilized crossing of the San Diego River shall be mitigated through the revegetation of disturbed areas adjacent to the San Diego River with southern willow scrub species.	N/A; impacts to this vegetation community previously occurred during the first phase of project construction, and BR 5-1 was implemented as required. The revised project would not impact southern willow scrub.
BR 6-1. Mitigation for temporary and permanent impacts to southern cottonwood-willow riparian forest shall be mitigated through the planting of southern cottonwood-willow riparian forest container stock within disturbed areas adjacent to the San Diego River.	N/A; impacts to this vegetation community previously occurred during the first phase of project construction, and BR 6-1 was implemented as required. The revised project would not impact southern cottonwood-willow riparian forest.
BR 7-1. Mitigation for temporary impacts to mule-fat scrub shall be mitigated through the planting of mule fat scrub within disturbed areas adjacent to the San Diego River.	Impacts to this vegetation community previously occurred during the first phase of project construction associated with work at the San Diego River crossing, and BR 7-1 was implemented as required. The revised project would temporarily impact 0.01 acre of mule-fat scrub associated with appurtenance removal. Following construction, the area would be restored, in compliance with the NCCP/HCP. The Water Authority is pursuing permits that will identify mitigation for these impacts consistent with the NCCP/HCP and PMPP.
BR 8-1. Mitigation for permanent impacts to waters of the U.S. shall be mitigated through the creation of wetlands along the San Diego River in MTRP and the restoration/enhancement of an adjacent area.	Impacts to waters of the U.S. resulting from the first phase of project construction were mitigated in accordance with measure BR 8-1. The revised project would also result in impacts on waters of the U.S./State, associated with the electrical conduit installation and construction of the overflow pipe outfall, as discussed in this Addendum. The Water Authority is pursuing permits that will identify mitigation for these impacts consistent with the NCCP/HCP and PMPP.
BR 9-1. A qualified biologist shall conduct a pre-construction survey for the Quino checkerspot butterfly during the flight season prior to the commencement of project construction. Should Quino checkerspot butterflies be present, the Water Authority shall provide mitigation in the form of habitat preservation, enhancement, or creation to the mutual satisfaction of the USFWS and the Water Authority.	As discussed in this Addendum, the Water Authority has initiated protocol surveys for this species during the 2019 flight season, in conformance with measure BR 9-1. The proposed project would be implemented pursuant to the Water Authority's NCCP/HCP, and subject to the relevant Quino checkerspot butterfly mitigation requirements stated therein. See Appendix B.
BR 10-1. All on-site grading and construction activities adjacent to Diegan coastal sage scrub shall occur outside the gnatcatcher breeding season (March 1 through August 15). It is possible that construction activities could overlap the gnatcatcher breeding season and, therefore, indirect impacts to gnatcatchers could occur. If grading or construction is planned to commence during the breeding season, a pre-construction survey shall be conducted to determine the presence or absence of gnatcatchers within areas affected by noise. If no nesting birds occur within this area, development would be allowed to proceed. However, if nesting birds are observed within this area, development shall be postponed until all nesting activity has ceased or until after August 15. Work that has commenced prior to the breeding season shall be allowed to continue without interruption. Traffic shall continue to traverse occupied habitat enroute to construction sites in unoccupied areas.	The proposed project would be implemented pursuant to the Water Authority's NCCP/HCP, and subject to the relevant gnatcatcher mitigation requirements stated therein. See Appendix B. NCCP/HCP requirements are similar to those of measure BR-10.

2006 EIR Mitigation Measure	Revised Project Mitigation Measure
BR 11-1. Indirect impacts to least Bell's vireos resulting from loss of habitat at the proposed stabilized San Diego River crossing shall be mitigated by the planting of southern willow scrub (Mitigation Measure BR 5-1).	N/A, impacts on least Bell's vireo habitat previously occurred during the first phase of project construction, associated with work at the San Diego River crossing, and BR 11-1 was implemented as required. The revised project would not result in impacts to least Bell's vireo habitat.
BR 11-2. If feasible, indirect impacts to least Bell's vireos resulting from construction noise at the San Diego River shall be mitigated by prohibiting construction of the San Diego River stabilized crossing during the breeding season (March 15- September 15). If not feasible, the Water Authority shall consult with the USFWS and implement any required mitigation measures.	N/A, impacts to least Bell's vireo previously occurred during the first phase of project construction, associated with work at the San Diego River crossing, and BR 11-2 was implemented as required. The revised project would not result in impacts to least Bell's vireo.

3.9 CULTURAL RESOURCES

The following analysis is based on the Cultural Resources section of the EIR (Section 3.9), with updated information from the California Historic Resources Information System (CHRIS) database. As discussed in Section 3.9 of the EIR, a cultural resources technical report (2006 cultural report) was prepared for the original project. The 2006 cultural report included a site records search and literature review, an in-depth historical archival review and historic map check, and systematic field survey of all areas to be potentially affected by the original project. The FRS II and additional components of the modified project are within the study area of the 2006 cultural report and therefore addressed in the EIR. The FCF is a new addition, but is within an area previously disturbed for trench installation of the Second Aqueduct pipelines and also disturbed by pipeline tunnel construction during the first phase of the project addressed in the EIR. Conduit installation from the FRS I to the FCF is also a new addition but is within the previous study area considered in the EIR; it is also within the corridor disturbed by Second Aqueduct installation.

The EIR determined the project would result in less than significant impacts to historical resources as the one historical resource, the Mission Flume, is not located near the FRS II and other components. The EIR also determined the project would result in less than significant impacts to human remains, as no evidence of human remains had been discovered in the project area through a literature search and intensive site survey. The EIR determined the project would result in significant impacts to archaeological resources. Mitigation was identified to reduce these impacts to a less than significant level. Mitigation consisted of flagging the construction zone to avoid resource boundaries and ceasing earthwork activities if unanticipated resources were encountered during construction (Mitigation Measures CR 1-1, CR 2-1, and CR 2-2).

Construction of the pipeline tunnel and San Diego River crossing is complete, and no cultural resources were discovered during completion of those. Construction of the modified project would be located near the previously constructed components, near the Water Authority ROW, which is not near the historical resource identified in the EIR, Mission Flume. As described in the EIR, no work or equipment would be located near the resource under the modified project. Much of the area that will be impacted for the modified project was previously impacted during construction of the project's first phase.

The cultural/archaeological resources records search conducted in support of the EIR included a 1-mile buffer. The 1-mile buffer contains all areas of the modified project footprint. In August 2018, the Water Authority conducted an updated search of the CHRIS database. No new resources outside of the ones identified for the original project were returned. In addition, the majority of the modified project components are within Water Authority ROW and adjacent to the Second Aqueduct, an area that has been previously disturbed by trench-based installation of the aqueduct pipelines. A review of the prior records search results, available in the confidential version of the previous cultural resources report, confirmed no

resources are mapped within the proposed FCF or conduit alignments as proposed under the modified project. Potential exists for unknown resources to be encountered during excavation activities, particularly at the FRS II site, which has not been subject to prior disturbance. Therefore, the impacts on cultural resources identified in the EIR would remain the same, including disturbance of known cultural resources or disturbance of previously undiscovered archaeological resources. As such, as discussed in the EIR, the modified project would be required to incorporate Mitigation Measure CR 1-1 (flagging and avoiding known resources), Mitigation Measure CR 2-1 (construction monitoring by a qualified archeologist and cessation of earthmoving activity if cultural resource is uncovered), and Mitigation Measure CR 2-2 (consultation with County Coroner and Native American contact [if applicable] in the event of uncovering human remains). These impacts and mitigation measures have been accounted for in the EIR.

The EIR was certified prior to the CEQA Appendix G Environmental Checklist Form update, which includes the tribal cultural resource threshold question pursuant to Assembly Bill (AB) 52. The modified project is not subject to CEQA public review; therefore, no AB 52 consultation is required. During preparation of the EIR, the Water Authority conducted a Native American contact program, as is common practice for preparation of cultural resources reports. The Native American contact program did not identify any tribal representatives requesting to be kept informed of project progress, and no tribal representatives commented on the Draft EIR during the public review period.

The modified project would implement Mitigation Measure CR 2-1 (construction monitoring by a qualified archeologist and cessation of earthmoving activity if cultural resource is uncovered), and Mitigation Measure CR 2-2 (consultation with County Coroner and Native American contact [if applicable] in the event of uncovering human remains). These impacts and mitigation measures have been accounted for in the EIR.

The project changes would not result in any considerable changes to cultural resources impacts. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to cultural resources would occur. The relevant mitigation measures identified in the EIR would be implemented (Mitigation Measures CR 1-1, CR 2-1, and CR 2-2). The impacts and mitigation measures have been accounted for in the EIR, and this is not a considerable change in the EIR's impact conclusions.

3.10 GEOLOGY AND SOILS

The following analysis is based on the Geology and Soils section of the EIR (Section 3.10). The FRS II would be on the same site analyzed in the EIR and is of smaller capacity than originally proposed, so excavation would be slightly shallower than previously addressed. The FCF and additional conduit would be minor, ancillary facilities located in the same vicinity of the original project and within areas previously disturbed by installation of Water Authority infrastructure.

The EIR determined the project would result in less than significant impacts related to geologic hazards (earthquake faults, strong seismic ground shaking, liquefaction, and landslides), soil erosion or loss of topsoil, unstable geologic units, and expansive soils.

The modified project would be located in the same general area identified for project-related impacts in the EIR; therefore, risk regarding geologic hazards would be the same as discussed in the EIR. As previously stated in the EIR, the modified project would be constructed in accordance with all applicable California Building Code requirements and would be required to implement the Water Authority’s applicable standard specifications and project design features described in Section 2.6 of the EIR, which include preparation of geotechnical engineer studies to inform the proper design of all facilities to ensure geological conditions are adequately addressed.

The project changes would not result in any considerable changes to geology and soils impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to geology and soils would occur. The relevant project design features identified in the EIR would be implemented (PDF 2.6.8).

3.11 PALEONTOLOGICAL RESOURCES

The following analysis is based on the Paleontological Resources section of the EIR (Section 3.11). The FRS II would be on the same site analyzed in the EIR and is of smaller capacity than originally proposed. The added FCF and conduit would be minor, ancillary facilities located in the same vicinity of the original project and within Water Authority ROW.

The EIR determined the project has the potential to impact paleontological resources and would result in a significant impact. Mitigation was identified to reduce the impact to a less than significant level. Mitigation consisted of testing for fossil remains and conducting surface collection and cataloguing in the event resources are discovered (Mitigation Measure PR 1-1).

The modified project would be located in the same areas previously studied and surveyed during preparation of the EIR, so project-related excavation into native soils of the Mission Valley Formation (high sensitivity for paleontological resources) and Pomerado Conglomerate (moderate sensitivity for paleontological resources) would occur, as anticipated in the EIR. The potential impacts on paleontological resources identified in the EIR would remain the same, including grading in formations considered to have moderate to high potential for the presence of fossil remains. Therefore, the modified project would be required to incorporate Mitigation Measure PR-1 (inspection of surface bedrock prior to construction and proper collection/management of any uncovered fossil remains). These impacts and mitigation measures have been accounted for in the EIR.

The project changes would not result in any considerable changes to paleontological resources impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to paleontological resources would occur. The relevant mitigation measures identified in the EIR would be implemented (Mitigation Measure PR 1-1).

3.12 PUBLIC SAFETY AND HAZARDOUS MATERIALS

The following analysis is based on the Public Safety and Hazardous Materials section of the EIR (Section 3.12). The modified project would entail construction and operation of facilities that are similar to those already addressed in the EIR, and no changes in the modified project affect the analysis of impacts on public safety and hazardous materials.

The EIR determined the project would result in less than significant impacts related to the routine transport, use, or disposal of hazardous materials, accident conditions involving the release of hazardous materials, hazardous emissions near schools, and emergency response and evacuation plans. The EIR found that the project has the potential to be located on a hazardous materials site and has the potential to expose people or structures to wildland fire risk, and would result in a significant impact. Mitigation was identified to reduce the impacts to less than significant levels. Mitigation for hazardous material site impacts consisted of conducting a Phase I Environmental Site Assessment (ESA) and Phase II ESA, if warranted, and surveying for unexploded ordnance prior to the start of construction (Mitigation Measure PS 1-1 through PS 1-3). Mitigation for wildland fire impacts consisted of preparing and implementing a Fire Prevention Program prior to approval of final design and an Emergency Response Plan for project operations prior to completion of construction (Mitigation Measures PS 2-1 and PS 2-2).

As with the original project, construction of the modified project would involve the transport and use of commonly used hazardous substances such as fossil fuels, lubricants, and solvents. These materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Once construction is complete, the transport, use, or disposal of hazardous materials would be limited to common hazardous materials such as cleaning agents, paints and thinners, fuels, insecticides, and herbicides. The modified project would also incorporate the Water Authority's *General Conditions and Standard Specifications* and measures described in Section 2.6 of the EIR.

The modified project would be located in the same general area discussed in the EIR; therefore, no schools are located or planned within one-quarter mile of the FRS II. Limited amounts of some hazardous materials could be used during construction including standard construction materials, cleaning and other maintenance products, diesel and other fuels, and the limited application of pesticides associated with habitat maintenance and restoration. None of these materials would result in hazardous emissions or are considered acutely hazardous. The routine transport, use, and disposal of these materials would be subject to a wide range of laws and regulations intended to minimize potential health risks.

The project site is within an area that was once used for military training, and unexploded ordnance or chemical contamination may exist within the areas to be graded for the modified project. Due to the potential for unexploded ordnance or chemical contamination, the modified project would be required to implement Mitigation Measure PS 1-3 (survey for unexploded ordnance) at the FRS II, FCF, and appurtenance removal/replacement work areas to reduce impacts to a less than significant level. Mitigation Measure PS 1-3 was previously implemented at the inlet and outlet shafts and tunnel portals during the project's first phase of construction and, therefore, would not be required at these sites under the modified project. This impact and mitigation were accounted for in the EIR. The Water Authority acquired the parcel for construction of the FRS II prior to commencing the first phase of project construction. It is unclear whether a Phase I ESA was prepared prior to that acquisition. Accordingly, the modified project must prepare the equivalent of a Phase I ESA and, if needed, a Phase II ESA, prior to start of construction, in order to identify any site conditions to the construction contractor that must be addressed during project implementation.

Access for emergency vehicles would be the same as discussed in the EIR, where an emergency-only access gate and road from Seda Drive would allow emergency crews to bypass construction equipment and haul trucks within MTRP to reach the FRS II site in the event of an emergency.

Because the modified project would be located in the same general area discussed in the EIR, wildland fire conditions and risk would be the same as previously described in the EIR. The modified project would still be required to adhere to the mitigation measures discussed in the EIR that require development of a Fire Prevention Program and an Emergency Response Plan. The modified project would be required to incorporate Mitigation Measures PS 2-1 (prepare fire prevention program) and PS 2-2 (prepare Emergency Response Plan) to reduce these impacts to less than significant. This impact and mitigation were been accounted for in the EIR.

The project changes would not result in any considerable changes to public safety and hazardous materials impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to public safety and hazardous materials would occur. The relevant project design features and mitigation measures identified in the EIR would be implemented (PDF 2.6.9 and Mitigation Measures PS 1-1 through PS 1-3, and PS 2-1 and PS 2-2).

3.13 UTILITIES AND PUBLIC SERVICES

The following analysis is based on the Utilities and Public Services section of the EIR (Section 3.13). The EIR determined the project would result in less than significant impacts related to utilities and public services. Under the modified project, the FRS II would be on the same site analyzed in the EIR and is of smaller capacity than originally proposed. The added FCF and conduit would be minor, ancillary facilities located in the same vicinity of the original project and within Water Authority ROW.

The modified project would consist of a smaller FRS II and an FCF, which would not involve generation or treatment of wastewater, involve construction of new water or wastewater treatment facilities, require new or expanded water supplies or entitlements, or generate significant solid waste. The modified project would construct a smaller FRS II, which would contain an overflow pipe that would drain through an energy dissipater into a rip rap basin. However, the reservoir overflow is not an intentional operational feature of the FRS II; overflow conveyance would only occur under the very unlikely scenario in which multiple levels of operational controls and alerts failed to result in shutoff of water inflow. The modified project would not require or result in construction of new storm drain facilities, and the overflow pipe was included and analyzed in the EIR. The modified project would require a temporary shutdown of the Second Aqueduct pipelines to make connections between the existing pipelines and the previously constructed pipeline tunnel, after completion of the FRS II. Shutdowns are common occurrences of Water Authority operations, and they are scheduled when member agency demand is low. These do not disrupt water service to member agency customers, so there is no impact on utilities and service system.

The modified project would entail construction of a smaller FRS II and FCF, which are complementary to the original project and would not increase emergency calls nor require additional employees/response. The FCF is similar to the structures currently present in the project area. The modified project would still be required to implement the project design features discussed in Section 2.6 of the EIR. As analyzed in the EIR, the modified project would be located well within MTRP and would not interfere with school operations and would maintain emergency access routes during construction.

The project changes would not result in any considerable changes to utilities and public services impacts. The impacts would remain less than significant as analyzed in the EIR. As discussed above, no new significant impacts or increase in the severity of previously identified impacts related to utilities and public services would occur. The relevant project design features identified in the EIR would be implemented (PDF 2.6.10).

3.14 GREENHOUSE GAS EMISSIONS

Pursuant to California Senate Bill (SB) 97, the CEQA Guidelines were revised in 2010 to include greenhouse gas (GHG) emissions thresholds and require that an agency "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" (CEQA Guidelines Section 15064.4). GHG emissions were not a CEQA consideration when the EIR was certified; therefore, GHG emissions were not estimated and quantified in the EIR. This Addendum includes a GHG emission analysis for the modified project based on the modified project's construction assumptions discussed in Section 2.2.

Executive Order S-3-05, signed by former Governor Arnold Schwarzenegger on June 1, 2005, included a goal to reduce California's GHG emissions to year 2000 levels by 2010, 1990 levels by 2020, and 80% below the 1990 levels by the year 2050. In 2006, this goal was reinforced with the passage of AB 32, the Global Warming Solutions Act (California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG

emissions and establishes a cap on statewide GHG emissions. It requires that statewide GHG emissions be reduced to 1990 levels by 2020.

In 2008 and 2014, ARB approved the Scoping Plan and the first update to the Scoping Plan, respectively (ARB 2008, 2014). In 2016, the State Legislature passed SB 32, which established a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In response to SB 32 and the companion legislation of AB 197, ARB approved the Final Proposed 2017 Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target in November 2017 (ARB 2017b). The 2017 Scoping Plan draws from the previous plans to present strategies to reaching California's 2030 GHG reduction target. None of these statewide plans or policies constitute a regulation to adopt or implement a regional or local plan for reduction or mitigation of GHG emissions. In addition, it is assumed that any requirements formulated under the mandate of AB 32 and SB 32 would be implemented consistent with statewide policies and laws.

In March 2014, the Water Authority Board approved a Climate Action Plan (CAP) consistent with the goals of AB 32 (Water Authority 2015). The CAP demonstrates how the Water Authority will achieve the 2020 emission reduction goals, as well as GHG emission reductions beyond 2020. Future emissions were estimated for ongoing facility operations and construction projects, including the remaining components of the MTRP FRS II, and operational emissions associated with future projects. While construction of the original project was identified in the CAP, the design for the FRS II components has changed since the CAP analysis, resulting in minor differences in emission estimates. Although the construction emissions for the original project were identified in the CAP, the CAP does not include any specific GHG emission reduction measures for construction activities that would be applicable to the modified project. Therefore, construction and operation of the modified project and additional project components would not conflict with implementation of the CAP and would not conflict with the overall reduction measures currently pursued by the Water Authority.

Since the Water Authority has not adopted a specific GHG threshold for the CEQA-related significance of a project's emissions, it is appropriate to refer to guidance from other agencies when analyzing the significance of GHG emissions pursuant to CEQA for the modified project. The California Air Pollution Control Officers Association (CAPCOA) report, *CEQA, and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* recommends a threshold of 900 metric tons of carbon dioxide equivalents (MT CO_2e) per year for any residential, commercial, or industrial project (CAPCOA 2008). These significance thresholds were developed to assess consistency of a project's emissions with the statewide framework for reducing GHG emissions. Using this approach, if the project does not exceed the conservative threshold of 900 MT CO_2e per year, then the climate change impacts would be less than significant. It is not the intent of the Water Authority to adopt this threshold as a mass emissions limit for this or other projects, but rather to provide this additional information to put the modified project-generated GHG emissions in the appropriate statewide context and consider the modified project's impacts pursuant to CEQA.

Construction-related GHG emission estimates were modeled for the modified project. Construction-related GHG emissions associated with the modified project would be generated by sources such as off-road equipment, material delivery trips, and worker commute vehicles. As shown in Table 8, amortized construction-related GHG emissions would not exceed the conservative screening threshold of 900 MT CO_2e per year. Additional modeling assumptions and details are provided in Appendix D of this Addendum.

Table 8
Estimated Construction GHG Emissions

Construction Year	Emissions (MT CO_2e)
2020	1,111
2021	330
2022	147
Total	1,588
Amortized Construction Emissions [1]	79
Screening Threshold	900
Significant Impact?	No

Notes: Modeled by AECOM in 2019. Totals may not add due to rounding.
MT CO_2e = metric tons of carbon dioxide equivalents
[1] Per Water Authority emission calculation methodology presented in the CAP, construction emissions are amortized over 20 years.

Further, the modified project is not anticipated to generate new vehicle trips and would not generate any additional activities related to maintenance or operations that would increase beyond the project analyzed in the EIR. As such, impacts to GHG emissions associated with the modified project would be less than significant.

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SECTION 4
FINDINGS

A.	Do the project changes, changes in circumstances and/or new information considered fall within a CEQA exemption and/or NEPA exclusion? *(If* [ ] *yes, set forth the exemption(s) and/or exclusion(s) below.)*	Yes [ ]	No [X]

For all of the project changes, changes in circumstances, and/or new information that are not covered by an exemption or exclusion, complete the following based upon the factual information set forth above:

B. If your assessment included review of project changes or changes in circumstances under which the project will be undertaken, complete the following:

B-1	Is the project change or change in circumstance substantial?	Yes [ ]	No [X]
B-2	Does the project change or change in circumstance involve new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	Yes [ ]	No [X]
B-3	Will the project change or change in circumstance require major revisions to the project EIR due to new or more severe impacts identified in Paragraph B.2 above?	Yes [ ]	No [X]

C. If your assessment involved evaluation of new information (i.e., facts, calculations, study results, laws, regulations, etc. that were unknown or unavailable at the time the project EIR was certified and approved), complete the following:

C-1.	Does the new information reveal significant effects not discussed in the project EIR?	Yes [ ]	No [X]
C-2.	Does the new information reveal that significant effects previously examined will be substantially more severe than shown in the project EIR?	Yes [ ]	No [X]
C-3.	Does the new information reveal that mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project?	Yes [ ]	No [X]
C-4.	Does the new information reveal that mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR and that substantially reduce one or more significant effects on the environment?	Yes [ ]	No [X]

D. For all project changes, changes m circumstances, and new information considered, complete the following:

D-1.	Are there other project changes, changes in circumstances under which the project will be undertaken, or new information not included in this assessment that concern the project components or resources considered in this assessment? *(If the answer is yes, describe the other project changes, changes in circumstances and/or new information below.)*	Yes [ ]	No [X]

		Yes	No
D-2.	If the answer to the question above was "yes", when considered in conjunction with other project changes, changes in circumstances under which the project will be undertaken and new information, does the information considered in this assessment reveal cumulatively significant impacts or impacts substantially more severe than those considered in the project EIR?	[ ]	[X]

Guidelines Section 15162 (a); therefore, this addendum is the proper procedure for documenting these changes and achieving CEQA compliance for the changes in the project.

	August 24, 2006
Signature	Date of Final EIR Certification
Kelley Gage	July 31, 2019
Director of Water Resources	Date of EIR Addendum
San Diego County Water Authority	

SECTION 5
DETERMINATION REGARDING
FURTHER ENVIRONMENTAL REVIEW

The Water Authority's decision to prepare this Addendum to the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project EIR is made pursuant to Section 15164 of the CEQA Guidelines, which "provides clear authority for an addendum as a way of making minor corrections in EIRs and negative declarations without recirculating the EIR or negative declaration." Specifically, CEQA Guidelines Section 15164 (a) states:

The lead agency or a 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 EIR have occurred.

The modified project would not result in the need for substantial changes to the EIR, as described in CEQA Guidelines Section 15162 (a); therefore, this Addendum is the proper procedure for documenting these changes and achieving CEQA compliance for the changes in the project.

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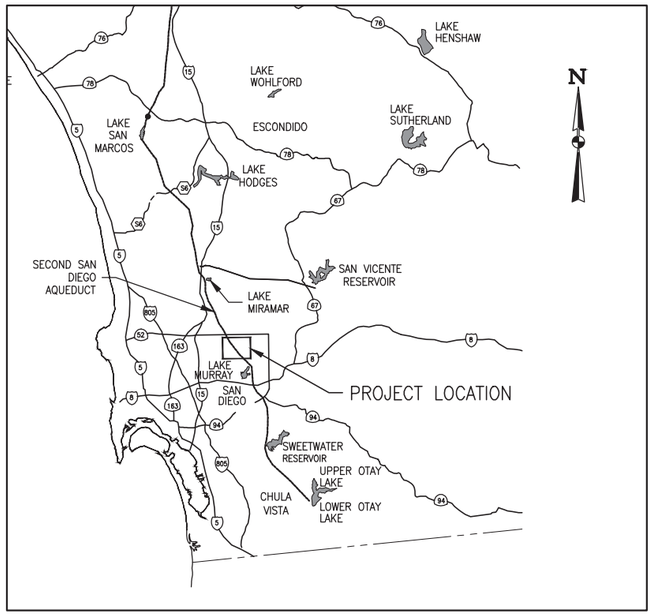
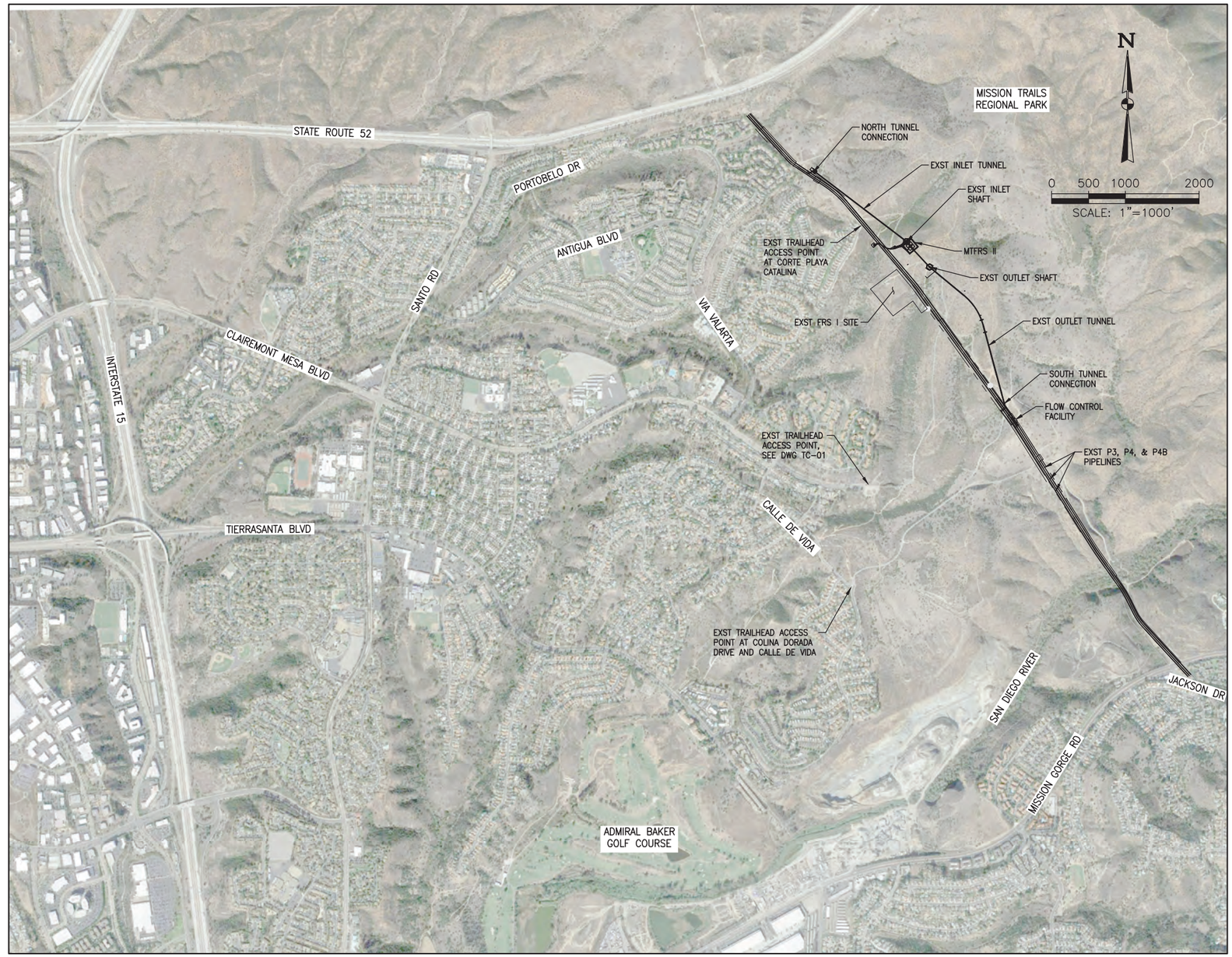
APPENDIX A

SELECT PROJECT PLAN SHEETS



VICINITY MAP
NTS



LOCATION MAP
NTS

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m:

DESIGN BY A MURDOCK
DRAWN BY C HOGGARD
CHECKED BY T MATSUURA

XX/XX/XXX PRINCIPAL ENGINEER DATE
XX/XX/XXXX PROJECT MANAGER DATE

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY
4677 OVERLAND AVENUE SAN DIEGO, CA 92123 858-522-6600
610 W. FIFTH AVENUE ESCONDIDO, CA 92025 760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

LOCATION AND VICINITY MAP

SPEC. NO. XXX
DRAWING NO. G-2
SHEET NO. XX OF XX

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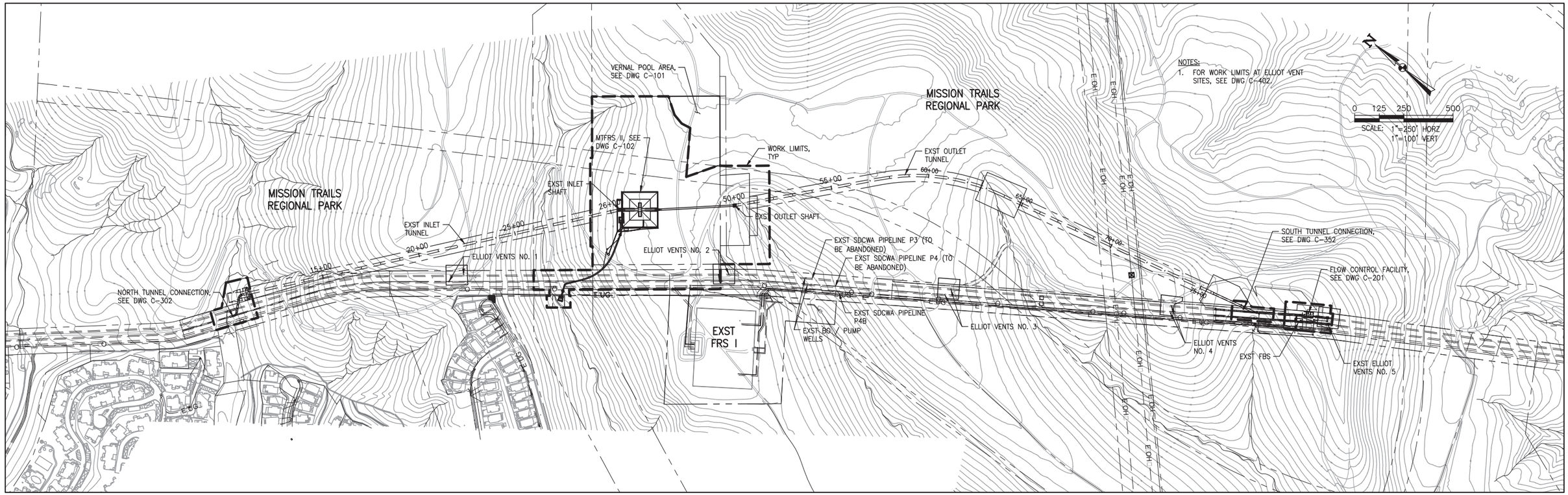
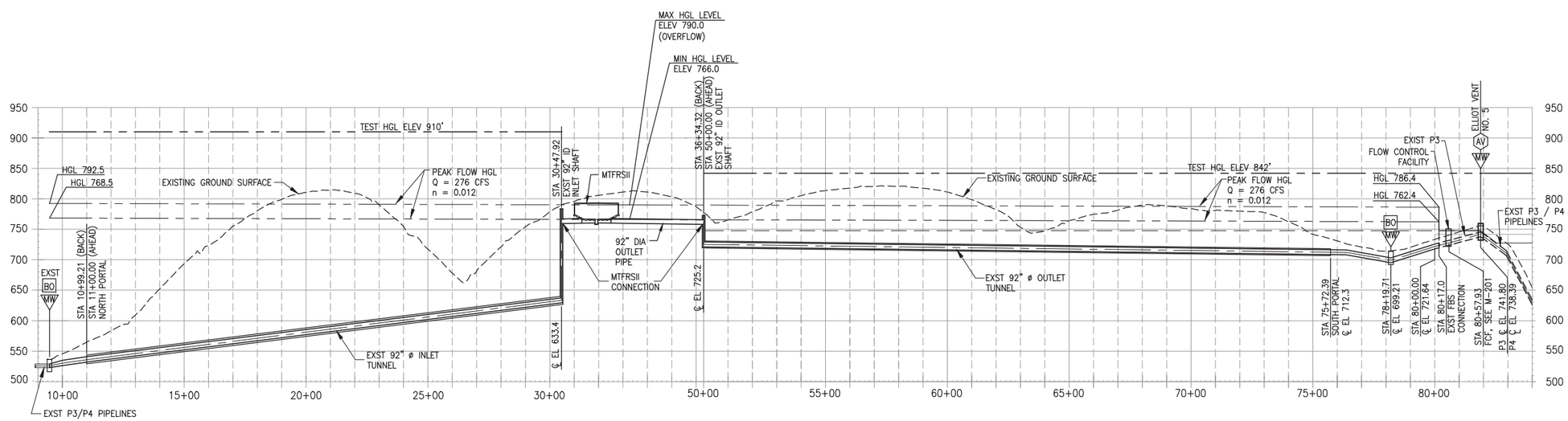
MTFR-g02_700658.dwg

SDCWA DWG. NO. S-XXXX





INLET TUNNEL (NORTH)

OUTLET TUNNEL (SOUTH)

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m:

DESIGN BY: M DABLING
DRAWN BY: C HOGGARD
CHECKED BY: A MURDOCK

PRINCIPAL ENGINEER — DATE: XX/XX/XXX
PROJECT MANAGER — DATE: XX/XX/XXXX

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY
4677 OVERLAND AVENUE, SAN DIEGO, CA 92123, 858-522-6600
610 W. FIFTH AVENUE, ESCONDIDO, CA 92025, 760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

OVERALL PLAN AND HYDRAULIC PROFILE

SPEC. NO. XXX
DRAWING NO. G-5
SHEET NO. XX OF XX

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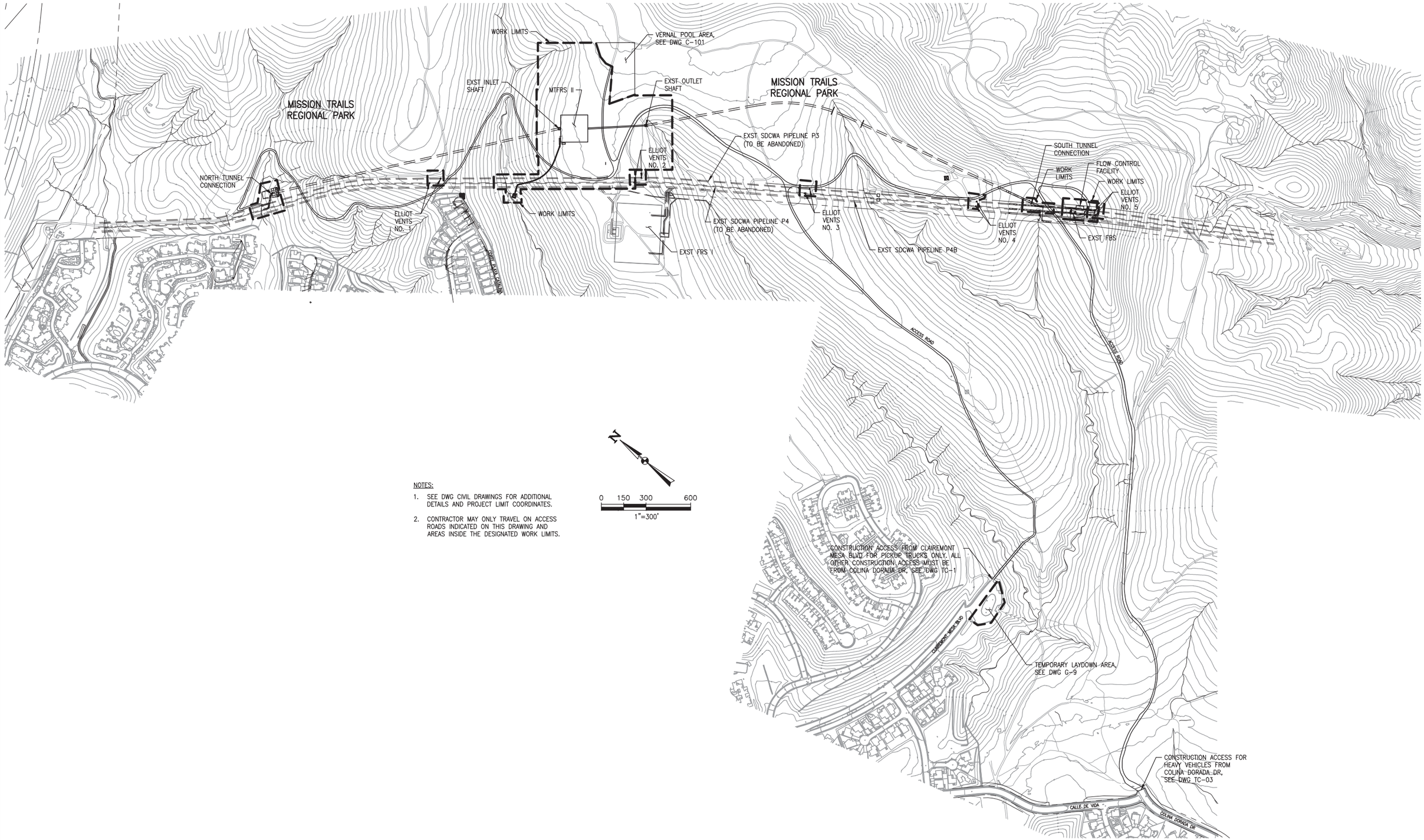
SDCWA DWG. NO. S-XXXX



NOTES:

1. SEE DWG CIVIL DRAWINGS FOR ADDITIONAL DETAILS AND PROJECT LIMIT COORDINATES.
2. CONTRACTOR MAY ONLY TRAVEL ON ACCESS ROADS INDICATED ON THIS DRAWING AND AREAS INSIDE THE DESIGNATED WORK LIMITS.

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m:

DESIGN BY J CHADWICK
DRAWN BY C HOGGARD
CHECKED BY A MURDOCK

XX/XX/XXX PRINCIPAL ENGINEER DATE
XX/XX/XXXX PROJECT MANAGER DATE

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY

4677 OVERLAND AVENUE
SAN DIEGO, CA 92123
858-522-6600

610 W. FIFTH AVENUE
ESCONDIDO, CA 92025
760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

WORK LIMITS AND ACCESS ROADS

SPEC. NO. XXX
DRAWING NO. G-8
SHEET NO. XX OF XX

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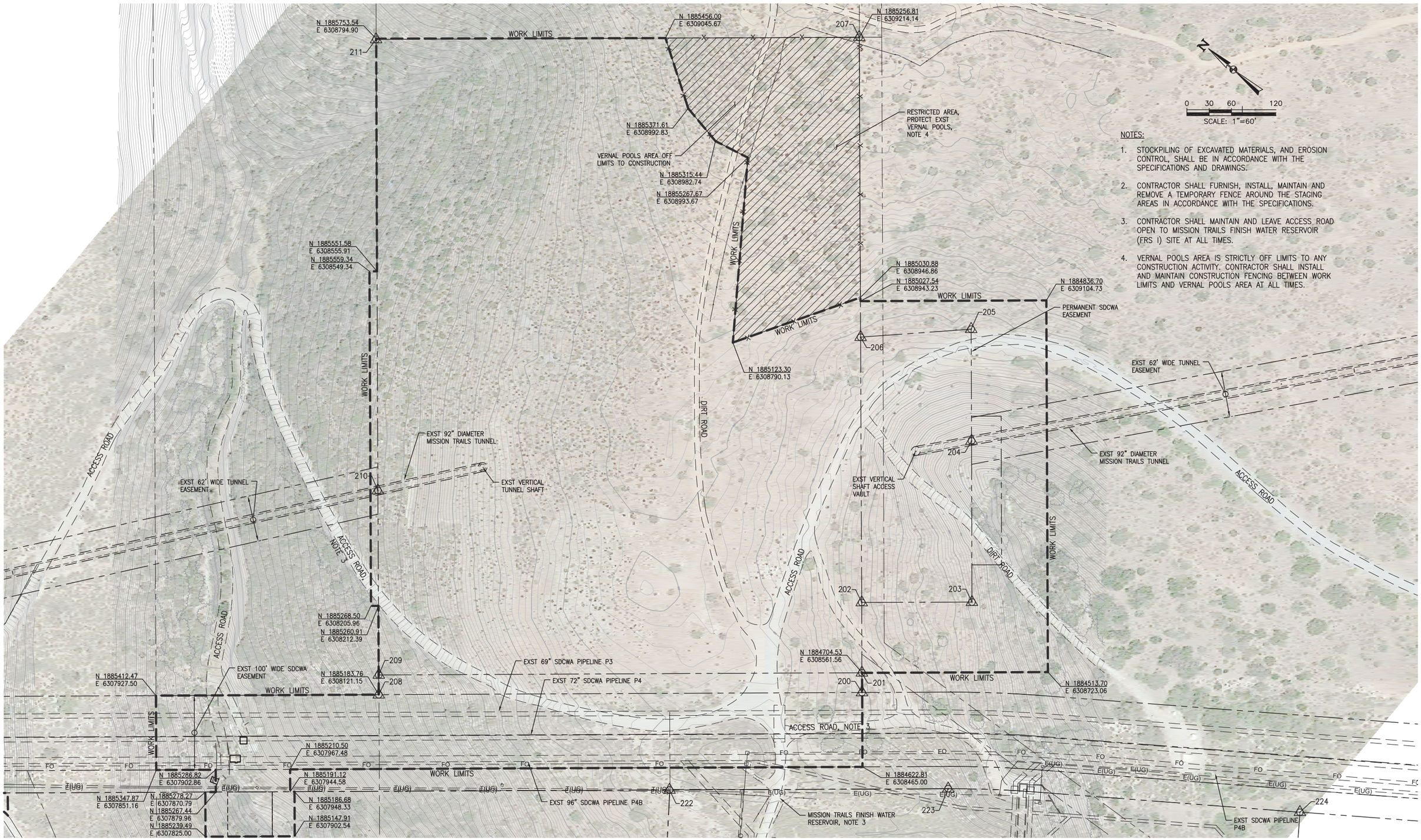
SDCWA DWG. NO. S-XXXX



NOTES:

1. STOCKPILING OF EXCAVATED MATERIALS, AND EROSION CONTROL, SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
2. CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE A TEMPORARY FENCE AROUND THE STAGING AREAS IN ACCORDANCE WITH THE SPECIFICATIONS.
3. CONTRACTOR SHALL MAINTAIN AND LEAVE ACCESS ROAD OPEN TO MISSION TRAILS FINISH WATER RESERVOIR (FRS I) SITE AT ALL TIMES.
4. VERNAL POOLS AREA IS STRICTLY OFF LIMITS TO ANY CONSTRUCTION ACTIVITY. CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION FENCING BETWEEN WORK LIMITS AND VERNAL POOLS AREA AT ALL TIMES.

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m

DESIGN BY: A MURDOCK
DRAWN BY: C HOGGARD
CHECKED BY: T MATSUURA

PRINCIPAL ENGINEER — XX/XX/XXX — DATE
PROJECT MANAGER — XX/XX/XXXX — DATE

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY

4677 OVERLAND AVENUE
SAN DIEGO, CA 92123
858-522-6600

610 W. FIFTH AVENUE
ESCONDIDO, CA 92025
760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

MTFRS II
EXISTING SITE PLAN

SPEC. NO. XXX
DRAWING NO. C-101
SHEET NO. XX OF XX

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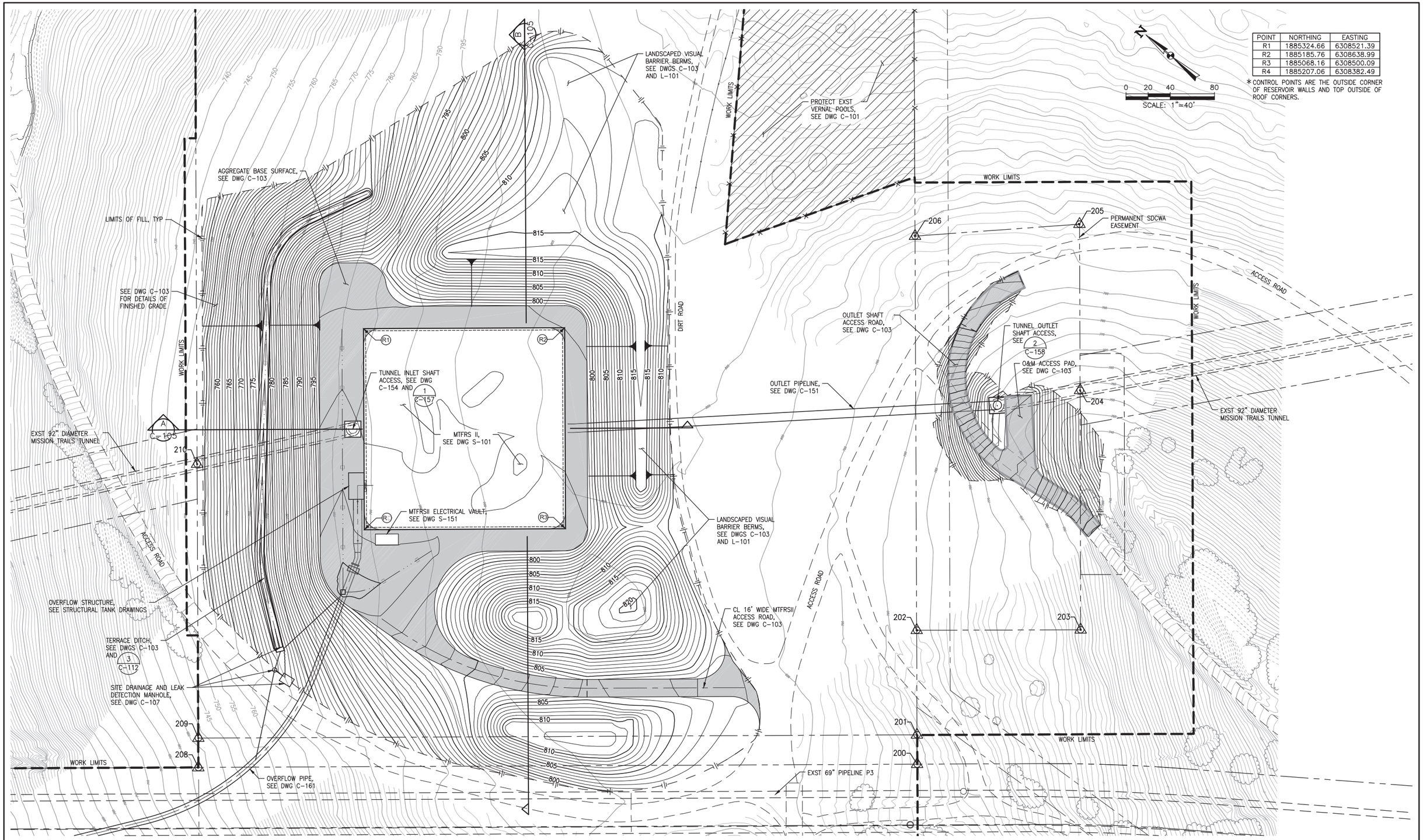
SDCWA DWG. NO. S-XXXX



POINT	NORTHING	EASTING
R1	1885324.66	6308521.39
R2	1885185.76	6308638.99
R3	1885068.16	6308500.09
R4	1885207.06	6308382.49

*CONTROL POINTS ARE THE OUTSIDE CORNER OF RESERVOIR WALLS AND TOP OUTSIDE OF ROOF CORNERS.

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m:

DESIGN BY: A MURDOCK
DRAWN BY: C HOGGARD
CHECKED BY: T MATSUURA

PRINCIPAL ENGINEER — DATE: XX/XX/XXX
PROJECT MANAGER — DATE: XX/XX/XXXX

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY
4677 OVERLAND AVENUE, SAN DIEGO, CA 92123, 858-522-6600
610 W. FIFTH AVENUE, ESCONDIDO, CA 92025, 760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

MTFRS II SITE PLAN

SPEC. NO. XXX
DRAWING NO. C-102
SHEET NO. XX OF XX

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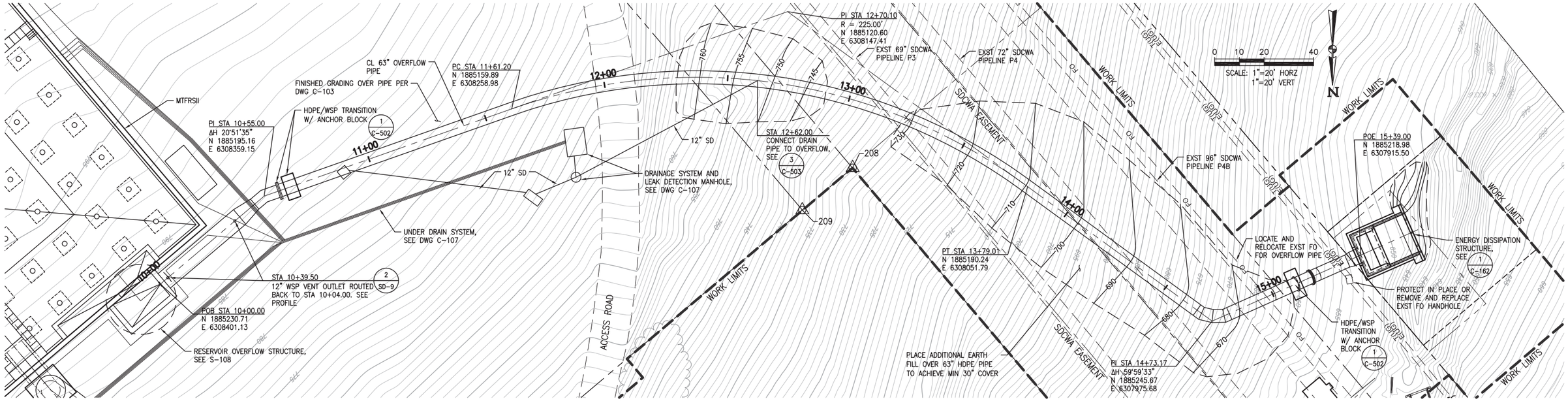
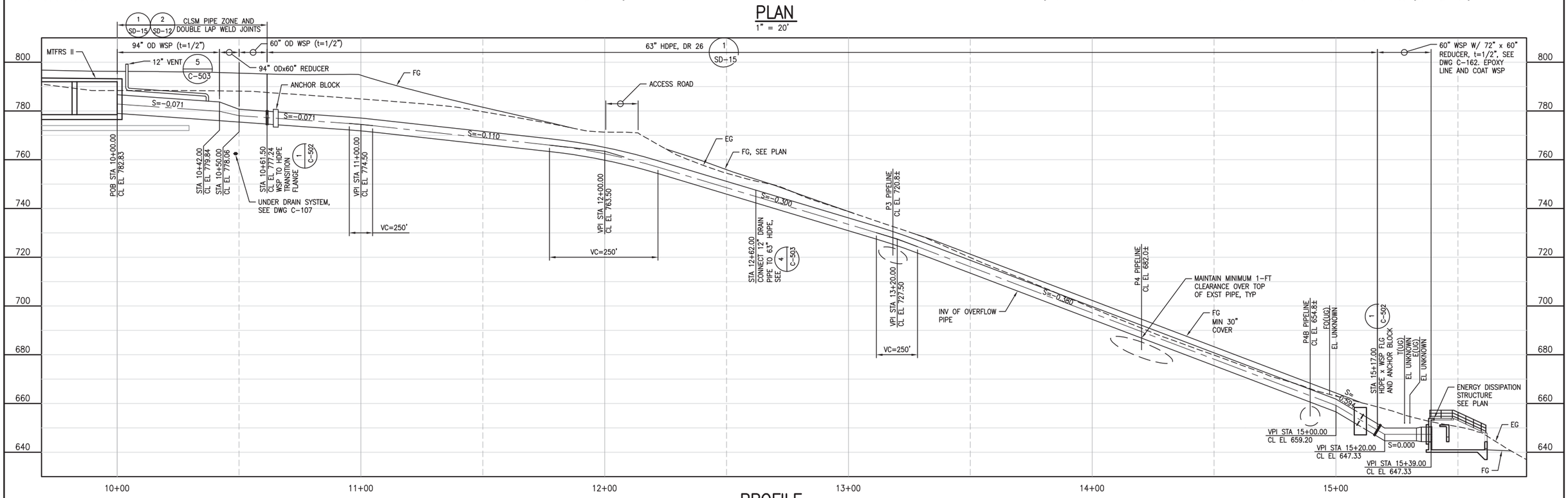
SDCWA DWG. NO. S-XXXX



PLAN

1" = 20'



PROFILE

1" = 20' (HORZ & VERT)

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m

DESIGN BY: J CHADWICK
DRAWN BY: C HOGGARD
CHECKED BY: A MURDOCK

PRINCIPAL ENGINEER — DATE: XX/XX/XXXX
PROJECT MANAGER — DATE: XX/XX/XXXX

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY

4677 OVERLAND AVENUE
SAN DIEGO, CA 92123
858-522-6600

610 W. FIFTH AVENUE
ESCONDIDO, CA 92025
760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

OVERFLOW PIPE PLAN AND PROFILE

SPEC. NO. XXX
DRAWING NO. C-161
SHEET NO. XX OF XX

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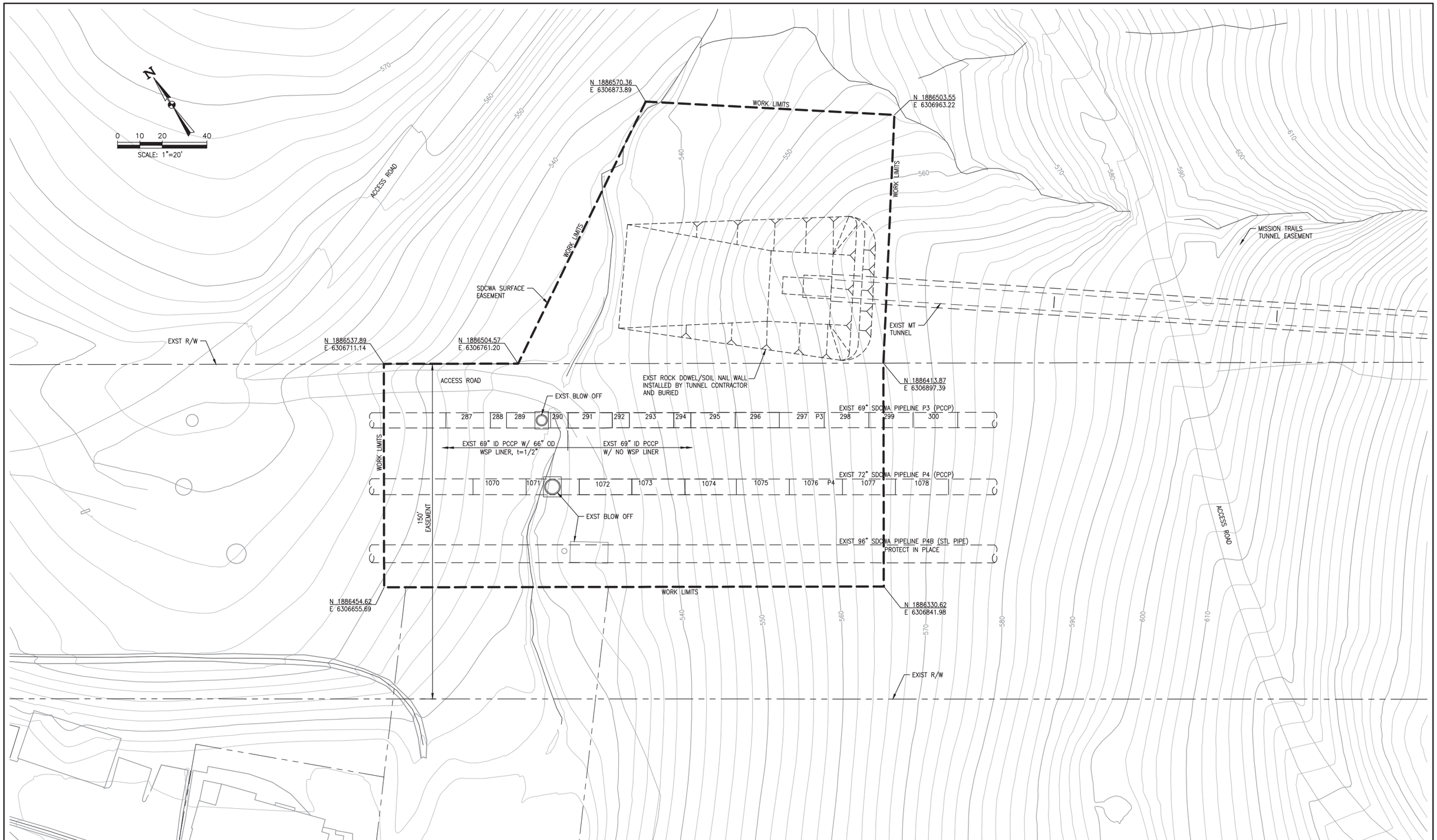
SDCWA DWG. NO. S-XXXX



NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m:

DESIGN BY: M DABLING
DRAWN BY: C HOGGARD
CHECKED BY: A MURDOCK

PRINCIPAL ENGINEER — XX/XX/XXX DATE
PROJECT MANAGER — XX/XX/XXXX DATE

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY
4677 OVERLAND AVENUE
SAN DIEGO, CA 92123
858-522-6600

610 W. FIFTH AVENUE
ESCONDIDO, CA 92025
760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

NORTH TUNNEL
EXISTING CIVIL SITE PLAN

SPEC. NO. XXX
DRAWING NO. C-301
SHEET NO. XX OF XX

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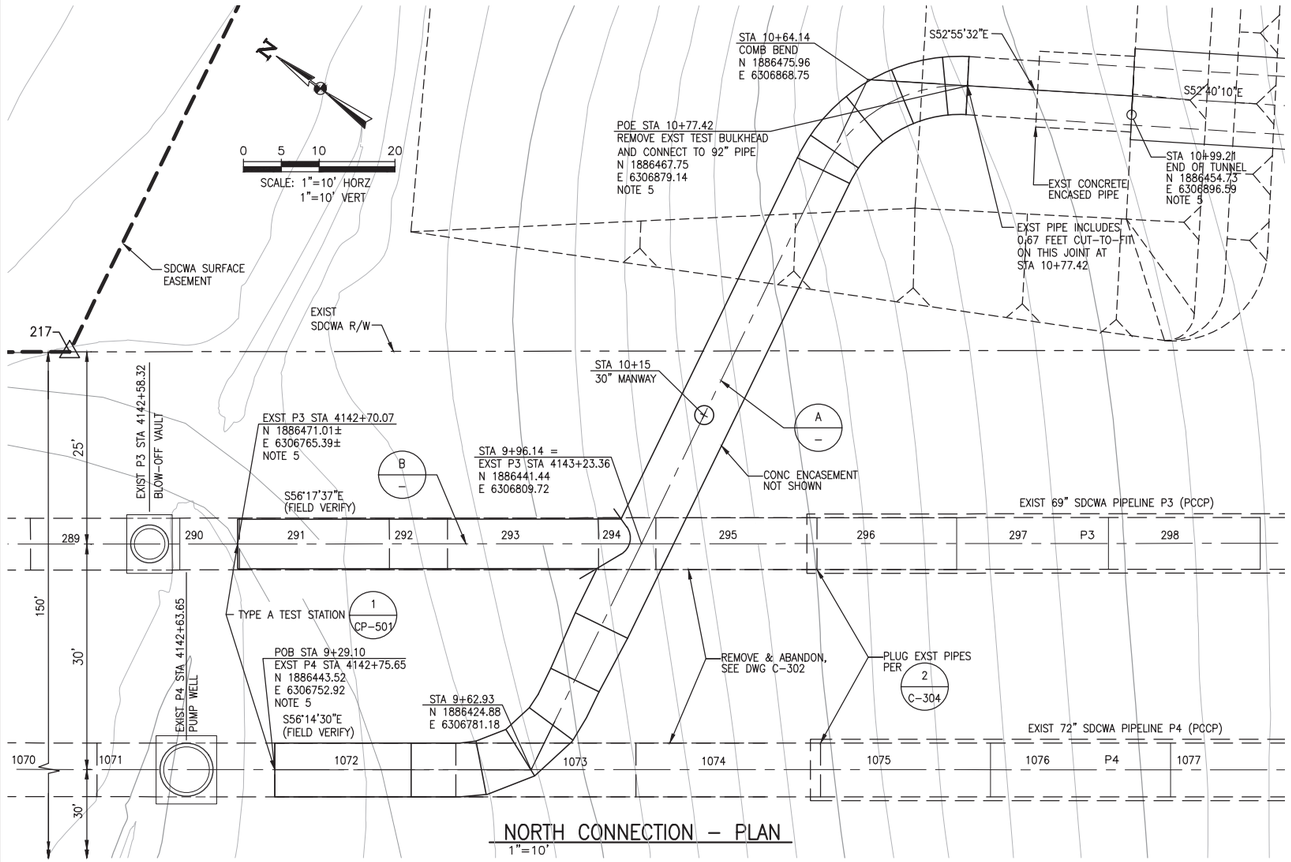
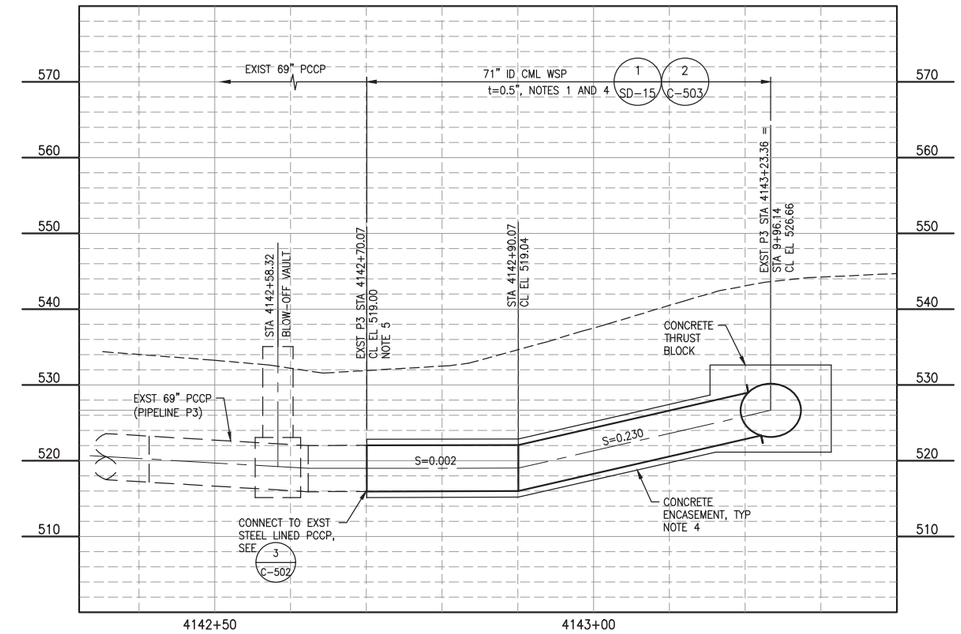
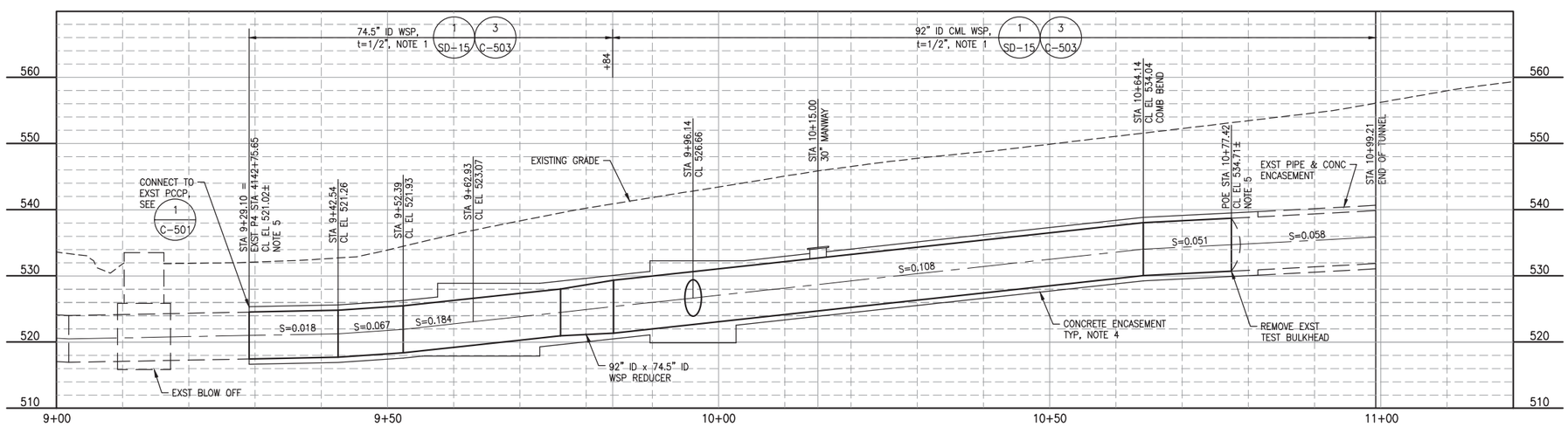
SDCWA DWG. NO. S-XXXX



NORTH CONNECTION – PLAN
1"=10'



PROFILE B
1"=10'



PROFILE A
1"=10'

NOTES:

1. WSP CONNECTION PIPE WILL BE FURNISHED BY THE OWNER. SEE DWG C-304 FOR DETAIL OF PIPING. SEE CONNECTION SUMMARY TABLES AND WORK SEQUENCE PHASING REQUIREMENTS ON DWG C-305.
2. VERTICAL CONTROL FOR THIS PROJECT IS BASED ON NGVD 29. AS-BUILT PLANS AND SHOP DRAWINGS FOR THE MISSION TRAILS TUNNEL ARE BASED ON NAVD 88.
3. REFER TO SPECIFICATION SECTION 01530 FOR REQUIREMENTS WHERE CROSSING AQUEDUCT PIPELINES.
4. NOT USED.
5. FIELD VERIFY LOCATIONS AND ELEVATIONS FOR CONNECTIONS TO EXST PIPELINES AND SUBMIT TO ENGINEER FOR REVIEW 180 DAYS PRIOR TO CONNECTION. THE N/E LOCATION SHOWN AT STA 10+99.21 WAS OBTAINED FROM THE 2010 MISSION TRAILS PIPELINE TUNNEL AND VENT DEMOLITION RECORD DRAWINGS. OTHER COORDINATES FOR THE PIPE ALIGNMENT ARE BASED ON COORDINATING THE SHOP DRAWINGS FOR THE NEW PIPELINE WITH THE COORDINATE AT STA 10+99.21.

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m:

DESIGN BY: M DABLING
DRAWN BY: C HOGGARD
CHECKED BY: A MURDOCK

PRINCIPAL ENGINEER — XX/XX/XXX DATE
PROJECT MANAGER — XX/XX/XXXX DATE

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY
4677 OVERLAND AVENUE, SAN DIEGO, CA 92123, 858-522-6600
610 W. FIFTH AVENUE, ESCONDIDO, CA 92025, 760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

NORTH TUNNEL CONNECTION PLAN AND PROFILE

SPEC. NO. XXX
DRAWING NO. C-303
SHEET NO. XX OF XX

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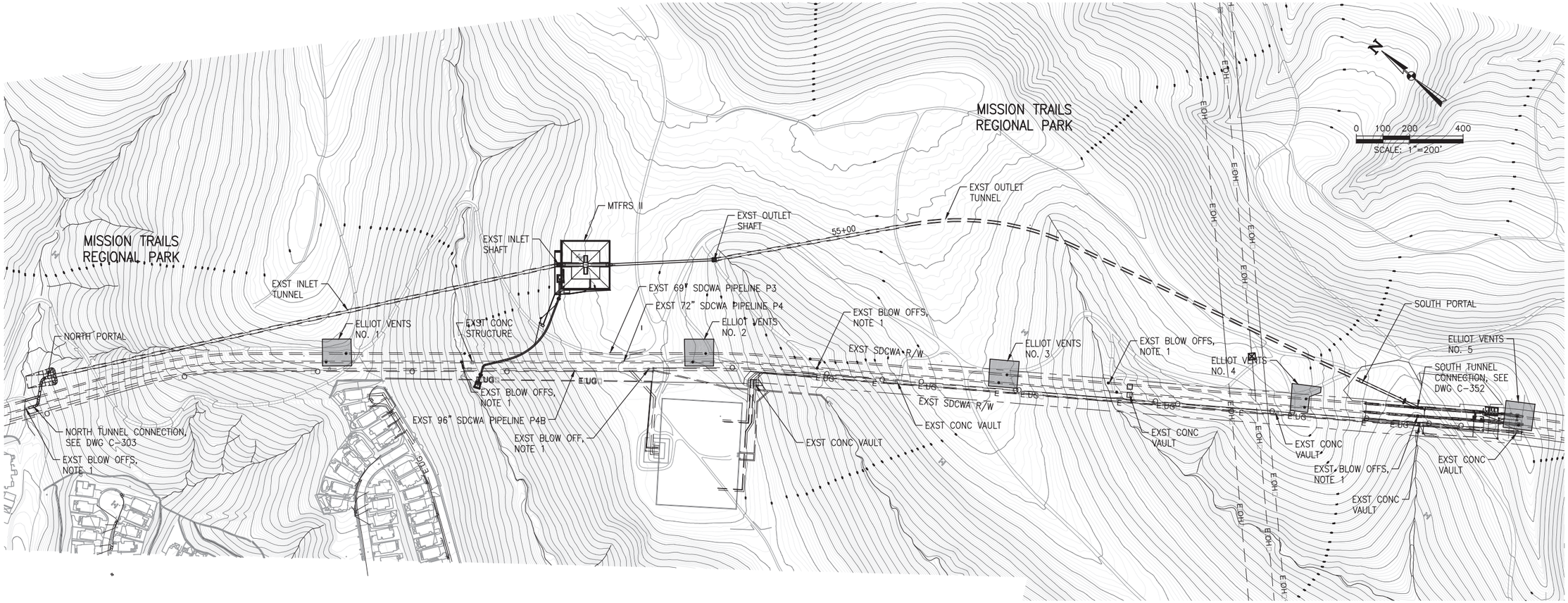
SDCWA DWG. NO. S-XXXX



NOTES:

1. BLOW OFFS TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.

NO.	DATE	REVISIONS	DWN	CKD	APPR

ch2m:

DESIGN BY: A MURDOCK
DRAWN BY: C HOGGARD
CHECKED BY: T MATSUURA

PRINCIPAL ENGINEER — XX/XX/XXX DATE
PROJECT MANAGER — XX/XX/XXXX DATE

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY
4677 OVERLAND AVENUE, SAN DIEGO, CA 92123, 858-522-6600
610 W. FIFTH AVENUE, ESCONDIDO, CA 92025, 760-480-1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

ELLIOT VENTS DEMOLITION OVERALL PLAN

SPEC. NO. XXX
DRAWING NO. C-401
SHEET NO. XX OF XX

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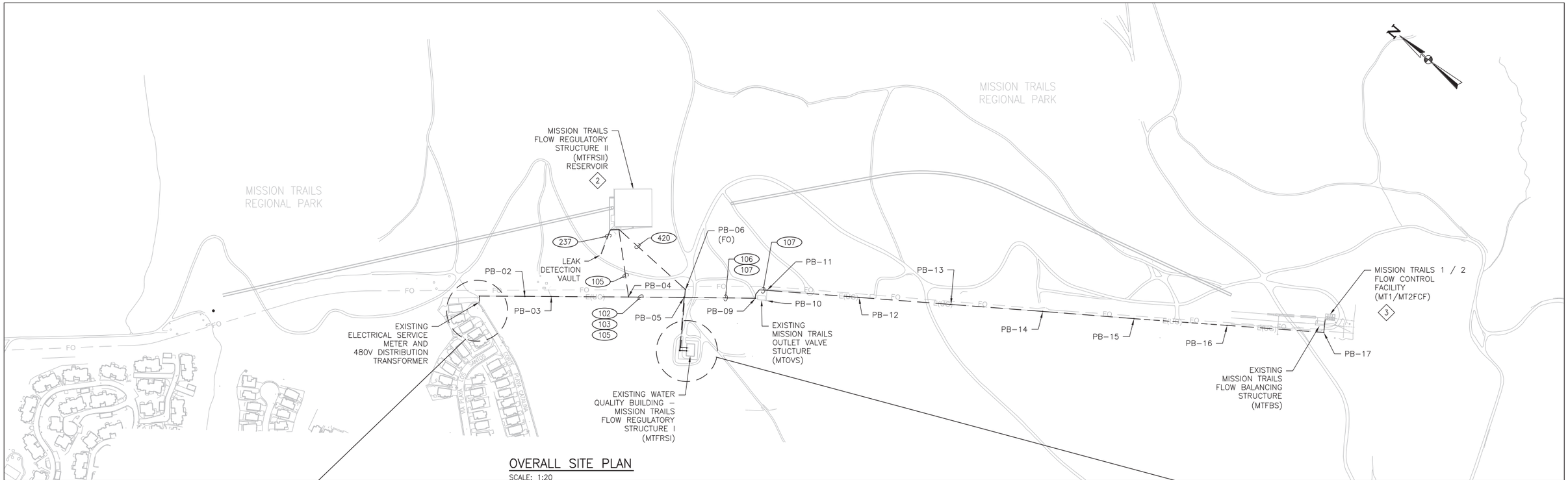
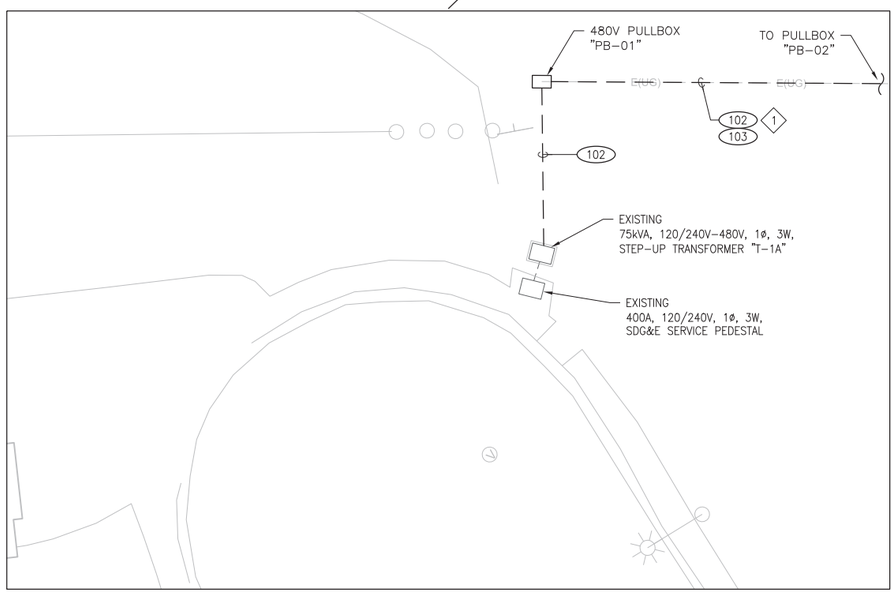
SDCWA DWG. NO. S-XXXX



OVERALL SITE PLAN

SCALE: 1:20



CORTE PLAYA CATALINA ELECTRICAL SERVICE

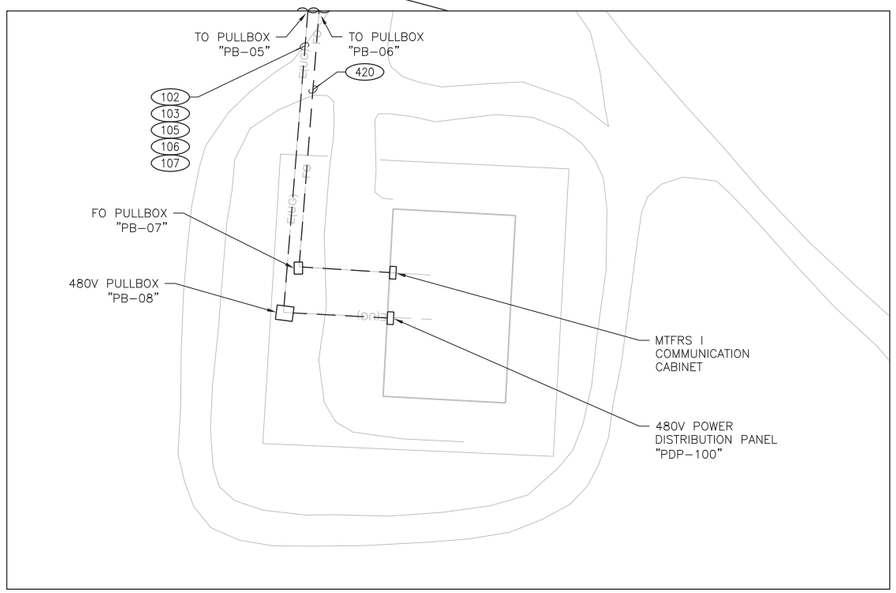
SCALE: 1"=1'

GENERAL NOTES:

1. COORDINATE NEW ELECTRICAL WORK WITH ALL OTHER ASSOCIATED DISCIPLINES.
2. FIELD VERIFY ALL EXISTING CONDUIT ROUTING AND CROSSINGS TO REMAIN AND COORDINATE NEW CONDUIT AND WIRE EXTENSIONS TO NEW PANEL LOCATIONS AS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM.
3. THE PLANS DO NOT ALWAYS SHOW RACEWAYS AND CONDUCTORS BETWEEN RECEPTACLES, LIGHTING FIXTURES AND SWITCHES. HOWEVER, FURNISH AND INSTALL THESE CONNECTIONS IN ACCORDANCE WITH THE ASSIGNED FIXTURE OR RECEPTACLE CIRCUIT NUMBER AND SWITCH DESIGNATIONS. HOMERUN SHOWN CONCEALED SHALL BE INDICATIVE OF THE ENTIRE CIRCUIT INSTALLATION. THE SAME SHALL APPLY FOR HOMERUNS SHOWN EXPOSED. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS.
4. MAINTAIN AT LEAST 3'–0" IN FRONT OF ELECTRICAL EQUIPMENT PER CEC ARTICLE NO. 110.
5. ALL EQUIPMENT SHALL BE GROUNDED. PROVIDE A COMPLETE GROUNDING SYSTEM IN ACCORDANCE WITH ARTICLE 250 OF THE CEC.
6. CONDUIT ROUTING AND WALL PENETRATIONS SHOWN DIAGRAMMATICALLY. EXACT ROUTING SHALL BE COORDINATED IN THE FIELD.
7. SWITCHES SHALL BE MOUNTED 4'–0" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE. RECEPTACLES SHALL BE MOUNTED AT 3'–0" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
8. SEE SHEET E–103 FOR LIGHTING FIXTURE SCHEDULE, CONDUIT AND WIRE SCHEDULE.
9. PROVIDE REDLINE MARKUPS FOR AS–BUILT CONDUIT ROUTING.
10. ALL CONDUITS SHALL BE CONCEALED UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.
11. SEE DETAIL 7/E–501 FOR CONDUIT TRENCH DETAILS.

KEY NOTES: ◇

1. INSTALL NEW 480V POWER CONDUITS AND CABLES AND ADDITIONAL PARALLEL SPARE CONDUITS PER CONDUIT SCHEDULE.
2. SEE MTFRS II ELECTRICAL PLAN ON SHEET E–105 FOR POWER AND CONTROL REQUIREMENTS.
3. SEE MT FCF ELECTRICAL PLAN ON SHEET E–201 FOR POWER AND CONTROL REQUIREMENTS.



MTFRS I (WATER QUALITY BUILDING)

SCALE: 1"=1'

NO.	DATE	REVISIONS	DWN	CKD	APPR

BRADY
2655 Camino Del Rio North, Suit 100
San Diego, California 92108
P:858.496.0500 F:858.496.0505

DESIGN BY: C WEBER
DRAWN BY: C WEBER
CHECKED BY: R NISHIMURA

PRINCIPAL ENGINEER — DATE: XX/XX/XXX
PROJECT MANAGER — DATE: XX/XX/XXXX

San Diego County Water Authority

SAN DIEGO COUNTY WATER AUTHORITY
4677 OVERLAND AVENUE, SAN DIEGO, CA 92123, 858–522–6600
610 W. FIFTH AVENUE, ESCONDIDO, CA 92025, 760–480–1991

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY

OVERALL ELECTRICAL SITE PLAN

SPEC. NO. XXX
DRAWING NO. E–104
SHEET NO. XX OF XX

MTFR–e104_700658.dwg

SDCWA DWG. NO. S–XXXX

APPENDIX B

CONDITIONS FOR COVERAGE AND MINIMIZATION MEASURES

Appendix B
NCCP/HCP Conditions for Coverage and Minimization Measures

E-1: General Conditions for Coverage

The following general measures apply to all Covered Species, as listed in Section 2.1 of Appendix B of the NCCP/HCP, and will be implemented on the project:

1. Conduct pre-activity surveys within suitable habitat to ensure that Covered Species are adequately addressed by impact avoidance, minimization, and mitigation. Surveys must be conducted by an Environmental Surveyor during the appropriate field conditions for detection prior to any proposed impacts in the Plan Area.

2. Avoid and minimize impacts to occupied Covered Species habitat or potential migration and/or dispersal corridors for all new facilities and O&M Activities of existing facilities through project design considerations.

3. Establish a habitat buffer when appropriate and feasible around covered plant species populations to support the natural suite of pollinators unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

4. Fence and/or flag Covered Species populations and sensitive habitat in or adjacent to work areas. Where necessary, install signage to prohibit access and/or flag areas being restored or protected for their biological value.

5. Avoid driving or parking on sensitive and/or occupied habitat by keeping vehicles on roads and in designated staging areas.

6. Deter unauthorized activities (such as trampling and off-road vehicle use) and perform litter abatement, including proper disposal of illegally dumped materials, as part of routine patrol of access roads.

7. Monitor encroachment of non-native and invasive species into Covered Species populations and perform weed abatement as needed to improve the habitat.

8. Stabilize work areas to control erosion or sedimentation problems when working near Covered Species populations within the Plan Area. Populations within or adjacent to work areas would be protected from vehicular traffic, excessive foot traffic, or other activities that result in soil surface disturbance.

9. Control dust when working near Covered Species populations and/or habitat in accordance with applicable regulations.

10. All identified populations of Covered Species within rights-of-ways must be managed to control edge effects to the maximum extent possible.

11. Any restoration and monitoring program prepared as a component of the mitigation plan for impacts to a Covered Species shall include, but not be limited to, species propagation ratios, restoration site selection and assessment, site preparation, implementation strategies, weed control procedures, required management and

monitoring in perpetuity, funding commitment, and reporting procedures. The program would be prepared in advance of project impacts and approved by the Wildlife Agencies.

12. Any planting stock used shall be inspected by an Environmental Surveyor to ensure that it is free of pest species that may invade natural areas, including, but not limited to, Argentine ants (*Iridomyrmex humii*), fire ants (*Solenopsis invicta*), and other pests. Any planting stock that is infested would not be allowed within restoration areas or within 300 feet of native areas unless documentation is provided to the Wildlife Agencies that these pests already occur in the native areas around the project site. The stock would be quarantined, treated, or disposed of according to best management principles by qualified experts in a manner that precludes invasions into native habitat. Runoff from mitigation sites into native habitat would be minimized and managed.

13. To the maximum extent possible, conduct Covered Activities occurring within wetland habitats during the dry season when flows are at their lowest or nonexistent to minimize impacts to aquatic species and/or habitats.

14. Reseed temporary impact areas with an appropriate native seed mix and allow for natural recolonization of the area by adjacent populations.

15. For new facilities adjacent to native habitat, minimize ornamental landscaping or irrigation not associated with native habitat restoration.

16. Collection of covered plant and wildlife species by Water Authority personnel and contractors is prohibited.

17. Maintain and manage dispersal/movement corridors within the Plan Area that contribute to long-term population viability.

18. The use of outdoor lighting within or adjacent to potential Covered Species habitat will be discouraged. If lighting must be used for reasons of safety and security, light sources would be shielded away from habitat and only low pressure sodium lighting would be used.

E-2: NCCP/HCP Minimization Measures

The following minimization measures listed in Section 6.4 of the NCCP/HCP will be incorporated as design features on the project:

Environmental Surveyor (Section 6.4.1.1)

1. The Water Authority will identify an Environmental Surveyor for the project to oversee pre-project evaluations/needs of Covered Activities and work with the project engineer and contractors to ensure implementation compliance of Covered Activities with Plan commitments.

2. If the Environmental Surveyor discovers that the Water Authority is out of compliance with the permits associated with this Plan, he/she will report the noncompliance to the Water Authority within one working day and to the Wildlife Agencies within five working days so that the Water Authority and Wildlife Agencies can determine how to put the Plan back into compliance.

3. Before any clearing and/or construction activities are performed in habitat areas that may support Covered Species, the Environmental Surveyor will review the site, identify any sensitive plant and animal species, and identify requirements pursuant to the Plan for impact avoidance and minimization. A standard PSF will be prepared for each project and submitted to the Water Authority for review and tracking purposes.

4. The Environmental Surveyor will determine the extent of potential Covered Species habitat and will flag the sensitive resources to be avoided. If a Covered Species is present, the Environmental Surveyor will refer to Appendix B of the NCCP/HCP for species-specific conservation measures. In the case of unavoidable impacts to a Covered Species, the Environmental Surveyor will determine the extent of impact, the appropriate mitigation measures, and recommend to the project engineer additional measures to minimize impacts in accordance with Appendix B of the NCCP/HCP.

5. The Environmental Surveyor will work with the project engineer to identify and mark areas appropriate for staging and temporary equipment storage, placement of heavy machinery, as well as vehicle turn around and access, that will result in the least amount of impact to sensitive vegetation and/or Covered Species. The Environmental Surveyor will verify that all areas specified on the plans to be avoided are marked with flagging in the field prior to construction start.

6. The Environmental Surveyor will attend pre-construction meetings for projects in sensitive areas. The Environmental Surveyor will provide brief presentations to field staff, as needed, to familiarize field personnel with the natural resources to be protected and avoid on project sites and outline environmental expectations. The Environmental Surveyor will also be available to answer questions and address any last-minute construction changes.

7. The Environmental Surveyor will be present during clearing, topsoil salvage, and construction activities located within sensitive habitat. The frequency and duration of required monitoring will be specified in the PSF that is completed by the Environmental Surveyor and submitted to the Water Authority on a project-by-project basis prior to the start of construction.

8. The Environmental Surveyor will advise the construction manager during construction to ensure compliance with all avoidance, minimization, and mitigation measures.

9. The Environmental Surveyor will conduct (and document) monitoring as required by the PSF. At the completion of the Covered Activity, the Environmental Surveyor will prepare a brief report to verify compliance with the avoidance and minimization recommendations in the PSF. This report will include documentation that the flagged areas were avoided and that minimization measures were properly implemented. The Environmental Surveyor will be responsible for the identification and monitoring of any Covered Species that are found on the project site prior to and during construction activities. Monitoring activities will be in accordance with the species-specific measures (see Appendix B of the NCCP/HCP).

10. If any previously unidentified Covered Species or otherwise sensitive species, nests, dens, or burrows are located on a project site during construction activities, the Environmental Surveyor will provide guidance, through the construction manager, as to how best to minimize or avoid impacting the resource(s).

11. The Environmental Surveyor will be on-call (via phone) to respond within 24 hours for potential emergency deployment to assess and monitor potentially critical biological issues.

12. If the Environmental Surveyor determines that the Covered Activity is out of compliance with the requirements of the Plan, the Environmental Surveyor will report it to the Water Authority. The Water Authority will be responsible for bringing the project back into compliance and determine the appropriate remedial action, if necessary, through coordination with the Wildlife Agencies.

13. The Environmental Surveyor or construction manager will be responsible for ensuring the removal of all habitat flagging from the construction site at completion of work.

14. If included in the PSF, the Environmental Surveyor will direct the relocation of Covered Species that can be moved from harm's way in coordination with the species-specific Conditions of Coverage in Appendix B of the NCCP/HCP (in non-emergency situations) with notification to the Wildlife Agencies.

Pre-Activity Survey Form (Section 6.4.1.2)

1. The PSF will include avoidance, minimization, and mitigation requirements based on the general measures outlined in this section and the species-specific conditions in Appendix B of the NCCP/HCP. USFWS biological survey protocols performed by qualified and appropriately authorized personnel will be conducted where appropriate and required.

2. The pre-activity survey will be valid for 30 days unless the project is scheduled to begin during the avian breeding season, in which case the nesting bird clearance must be conducted within five days of project implementation. If ground disturbance activities have not commenced within 30 days after the survey is completed, the Environmental Surveyor will conduct a verification survey to confirm that biological conditions have not significantly changed that would alter the specified avoidance, minimization and mitigation commitments prior to construction.

Field Personnel Education Training (Section 6.4.1.3)

1. Field personnel working within sensitive habitat areas, including both Water Authority employees and contractors, will participate in an education training program at the start of each project. The program will be conducted on-site by an Environmental Surveyor under the direction of the Water Authority. The training will include: an overview of Covered Species identification and the legal protections afforded to each species; a brief discussion of their biology; habitat requirements; status under ESA and CESA; conservation measures being taken by the project for the protection of the Covered Species and their habitats under this Plan; and penalties for non-compliance. The training program will also educate field personnel in the identification of invasive species that may be removed, as well as desirable seeded and planted species, to ensure that native species are not affected by invasive species control. A fact sheet conveying this information will also be available to all personnel working in the project area. The Water Authority, either directly or through the services of the Environmental Surveyor, will be responsible for the education and training for new field personnel coming on-site after the start of a project.

Field Personnel (and Contractor) Responsibilities (Section 6.4.1.4)

1. Contractors or other project personnel will not collect plants or wildlife, unless specifically authorized and directed by the Environmental Surveyor. Only qualified and appropriately authorized personnel will handle or collect plants or wildlife as required by species-specific measures.

2. Field personnel will not intentionally harm or harass wildlife or damage nests, burrows, rock outcrops, or other habitat components.

3. Drivers on unpaved roads in native habitats will not exceed a speed of 20 miles per hour in order to avoid injury to animals and minimize dust generation.

4. Impacts to adjacent native vegetation that would be significantly affected by excessive fugitive dust will be avoided and minimized through watering of access roads (except in areas with vernal pools) or other appropriate measures, such as reducing the number or speed of vehicles or adding inert materials that reduce dust. Projects with the potential for excessive dust generation include those that involve more than occasional use of roads in dust-prone soils (i.e., more than three to five vehicle roundtrips per day) or require multiple vehicles to transport heavy equipment and supplies.

5. Vehicles will not park in areas where catalytic converters may ignite vegetation. Construction vehicles will be equipped with shovels and fire extinguishers in order to reduce the risk of wildfires.

6. Littering will be strictly prohibited. All trash will be deposited in secured, closed containers or hauled out daily by field personnel.

7. No pets will be allowed on any construction site.

8. No firearms or other weapons will be allowed on any construction site except as carried by governmental law enforcement, or as authorized in writing by Water Authority staff.

9. Field personnel will be prohibited from pushing or dumping soil and brush into sensitive habitats.

10. All vehicles, tools, and machinery will be restricted to access roads, approved staging areas, or within designated construction zones.

11. If any field personnel identify a previously unnoticed Covered Species on a construction site, work activities will cease in order to immediately notify the Water Authority's construction manager, project engineer, and the Environmental Surveyor. In conjunction with Water Authority environmental staff, the Environmental Surveyor will determine what actions would be taken to avoid or minimize impacts to the species according to the species-specific conditions outlined in Appendix B of the NCCP/HCP.

12. Field personnel will notify the project engineer/environmental staff of any sick, injured, or dead wildlife found on site.

13. Parking or driving underneath oak trees, except in established traffic areas, will not be allowed in order to protect root structures.

Stormwater Best Management Practices (Section 6.4.2.6)

1. Prior to the start of ground disturbing activities, the Water Authority or their consultants will prepare a Storm Water Pollution Prevention Plan (SWPPP) to reduce or eliminate pollutants during and after construction. The most current and applicable Best Management Practices (BMPs) will be implemented at all construction sites in or adjacent to native habitat in accordance with the project specifications. In addition to the approved manual, BMPs listed in the most recent National Pollutant Discharge Elimination System (NPDES) General Permit and the BMP Fact Sheet located in State Water Resources Control Board (SWRCB) General Permit for Small Linear Underground/Overhead Projects will apply. The fact sheet is attached as an Appendix G and the SWRCB or RWQCB will be contacted for the latest requirements.

Cleanup (Section 6.2.4.8)

1. Refuse and trash will be regularly removed from activity sites and disposed of in a lawful manner. Timing of refuse and trash removal will be determined by the Environmental Surveyor and comply with the project specifications that require debris to be removed as work is completed. Petroleum products, including gasoline, diesel, and hydraulic fluid, will be used during construction in accordance with all federal, state, and local laws, regulations, and permitting requirements. In the event that hazardous materials are encountered or generated during construction, contractors certified by the responsible regulatory agency will conduct all recovery operations and dispose of hazardous waste in accordance with existing regulations and required permits. As required, petroleum products, trash, and other materials will be taken to a disposal facility authorized to accept such materials.

E-3: Plant Species Conditions for Coverage

The following conditions for coverage for plant species that were considered to have a high potential or are known to occur within the project work areas (species known to occur or with a high potential in the buffer only are not included below), as listed in Section 3 of NCCP/HCP Appendix B, will be incorporated into the project.

San Diego Thorn-Mint (Section 3.1.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement the Narrow Endemic Policy (see Section E-5).

3. Encroachment of non-native species will be minimized by limiting soil disturbance within 50 feet of San Diego thorn-mint populations.

4. Establish a minimum habitat buffer of 100 feet when feasible around populations to support the natural suite of pollinators, unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

5. [not applicable, related to preserve management]

6. Focused surveys for this species are conducted by the Environmental Surveyor for detection prior to any proposed impacts (e.g., during CEQA review). As this species is an

herbaceous annual, surveys for San Diego thorn-mint shall be conducted during its blooming period (April-June) to ensure proper identification.

Variegated Dudleya (Section 3.13.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement the Narrow Endemic Policy (see Section E-5).

3. Establish a minimum habitat buffer of 100 feet when feasible around populations to support the natural suite of pollinators, unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

4. For unavoidable impacts, prepare a mitigation plan to re-establish populations at a final mitigation ratio that results in a no-net-loss of species population. The plan shall include, but not limited to, species propagation ratios, restoration site selection and assessment, site preparation, implementation strategies, weed control procedures, required management and monitoring in perpetuity, funding commitment, and reporting procedures. This plan would be prepared in advance of project impacts and approved by the Wildlife Agencies.

San Diego Barrel Cactus (Section 3.16.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, related to preserve management]

San Diego Goldenstar (Section 3.20.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, no impacts warranting implementation of Vernal Pool Protection Policy]

3. Establish a minimum habitat buffer of 100 feet when feasible around vernal pool watersheds to support the natural suite of pollinators, unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

4. [not applicable, project has no vernal pool impacts]

5. Prescribed burning or mechanical thatch reduction can be effectively used to encourage San Diego goldenstar populations.

6. Encroachment of non-native species will be minimized by limiting soil disturbance when feasible within 50 feet of San Diego goldenstar populations.

7. Focused surveys for this species are conducted by the Environmental Surveyor for detection prior to any proposed impacts (e.g., during CEQA review). As this species is a bulbiferous perennial herb, surveys for San Diego goldenstar shall be conducted during its blooming period (April-May) to ensure proper identification.

E-4: Wildlife Species Conditions for Coverage

The following conditions for coverage for wildlife species that were considered to have a high potential or are known to occur within the project work areas (species known to occur or with a high potential in the buffer only are not included below), as listed in Sections 5, 6, 7, and 8 of NCCP/HCP Appendix B, will be incorporated into the project.

Quino Checkerspot Butterfly (Section 4.6.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Conduct a habitat assessment per USFWS protocol as part of the pre-activity survey to identify if suitable Quino checkerspot butterfly habitat (as defined by USFWS 2002) is present within the project area. The pre-activity survey may be conducted year-round, regardless of the butterfly flight season.

3. Where no suitable habitat for Quino checkerspot butterfly is present, construction may occur in accordance with the Plan general Conditions for Coverage (see Section E-1).

4. If suitable Quino checkerspot butterfly habitat is present, the project will avoid impacts to the habitat through project design considerations, to the extent feasible. If impacts are avoided, no species-specific mitigation is required.

5. If impacts to suitable Quino checkerspot butterfly habitat cannot be avoided and project timing allows, conduct USFWS protocol adult flight season surveys by a permitted Environmental Survey under favorable conditions in areas of suitable habitat for all Covered Activities.

6. If project timing does not allow adult flight season surveys in suitable Quino checkerspot butterfly habitat, it will be assumed that the habitat is occupied. Unavoidable impacts to suitable but unoccupied habitat (as determined by protocol adult flight season surveys) will be mitigated in accordance with Tables 6-6 and 6-7 in the Plan. Unavoidable impacts to occupied Quino checkerspot butterfly habitat will be mitigated at a 2:1 ratio with occupied habitat.

7. If proposed impacts to occupied Quino checkerspot butterfly habitat, as determined by surveys or assumed, are greater than 1 acre, the Water Authority will consult with the Wildlife Agencies to ensure that project implementation will not cause the extirpation of a Quino checkerspot butterfly population.

8. Projects having direct or indirect impacts to occupied Quino checkerspot butterfly habitat shall establish biological buffers of at least 100 feet that shall be maintained adjacent to occupied Quino checkerspot butterfly habitat, measured from the outer edge of the habitat patch.

9. Reseed temporarily disturbed areas with appropriate native seed mix including Quino checkerspot butterfly nectar sources and dot-seed plantain in appropriate habitat to regionally enhance re-colonization efforts.

10. Participate in regional Quino checkerspot butterfly recovery efforts and implementation of recovery actions as specified in the recovery plan and by actively coordinating with the Wildlife Agencies and other Quino conservation entities.

Western Spadefoot (Section 5.2.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, no impacts warranting implementation of Vernal Pool Protection Policy]

3. Avoid or minimize impacts to western spadefoot toad habitat through project design and placement.

4. Conduct pre-activity surveys under favorable conditions for the western spadefoot in areas of potential habitat (including both potential breeding habitat and adjacent upland aestivation habitat) for all new facilities and O&M Activities conducted during the breeding and active foraging season of January 1 through June 30. Surveys must be performed for this species during appropriate field conditions (e.g., following adequate rainfall that would trigger breeding activity) in all vernal pools, seasonal depressions, or other areas that show evidence of standing water, prior to any proposed impact as part of the project review process (e.g., CEQA process). Surveys shall be conducted for potential spadefoot habitat within the project impact area and within a 1,500 foot buffer around the impact area.

5. If work must be done in occupied breeding habitat during the breeding season, the following measures would be used to avoid or reduce impacts:

    a. If an Environmental Surveyor determines a need for fencing, exclusionary toad fences would be used to keep toads out of construction areas. These fences would be placed and monitored daily by an Environmental Surveyor familiar with western spadefoot ecology.

    b. Silt fence/drift fence and pitfall traps would be installed around the impact area adjacent to occupied breeding habitat at least 21 days prior to impact to minimize access by spadefoots and to allow for removal of spadefoots from the impact area to an adjacent protected area. An Environmental Surveyor experienced with the identification, handling, and ecology of the spadefoot shall implement and oversee proper installation of the toad exclusion fencing, relocation efforts, and monitoring. The exclusion fencing would be maintained until the completion of all construction activities within or adjacent to occupied spadefoot habitat. For the duration of construction, the enclosure would be surveyed on a daily basis early in the morning, and any spadefoots that may have breached the fencing would be relocated.

6. Any wetlands created for mitigation for impacts to wetlands occupied by western spadefoot toads must be demonstrated to be capable of supporting the species prior to impacts, to ensure no–net-loss of occupied breeding habitat.

7. To ensure that diseases are not conveyed between work sites by the authorized biologist or assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF) will be followed at all times. The DAPTF fieldwork code of practice is contained in Attachment B-2 at the end of this Appendix.

8. When available, maintain and manage a 100-foot buffer area as foraging and burrowing habitat around known and newly discovered locations of this species.

9. When possible, enhance populations that are declining and restore damaged habitat based on information obtained through monitoring or research of this species.

Enhancement may include reduction of non-native species and other site-specific habitat improvement activities.

10. Bullfrogs and other exotic species that prey upon or displace spadefoots would be removed from occupied habitat areas during restoration efforts.

11. [not applicable, related to preserve management]

Coronado Skink (Section 6.2.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to Coronado skink habitat through project design and placement.

Belding's Orange-throated Whiptail (Section 6.3.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to Belding's orange-throated whiptail habitat through project design and placement.

3. Minimize and manage effects from introduced ant species that may exclude the termite prey base during restoration efforts. All nursery stock plants will be checked for non-native ants before installation at restoration sites. Non-native ants that penetrate native habitats appear to be partially supported by artificial irrigation associated with landscaping (Suarez et al. 1998). Therefore, runoff from mitigation sites in native habitat would be minimized and managed.

Coastal (Western) Whiptail (Section 6.4.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to coastal whiptail habitat through project design and placement.

Coast (San Diego) Horned Lizard (Section 6.6.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to coast horned lizard habitat through project design and placement.

3. Minimize and manage effects from introduced ant species that may exclude the horned lizard's termite prey base during restoration efforts. All nursery stock plants will be checked for non-native ants before installation at restoration sites. Non-native ants that penetrate native habitats appear to be partially supported by artificial irrigation associated with landscaping (Suarez et al. 1998). Therefore, runoff from mitigation sites in native habitat would be minimized and managed.

Coastal Rosy Boa (Section 6.7.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Maintain adequate rocky, downed woody, and other organic debris.

3. Avoid or minimize impacts to coastal rosy boa habitat through project design and placement.

San Diego Ringneck Snake (Section 6.8.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to rocky outcrop and/or boulder-dominated microhabitats through project design and placement.

(Northern) Red Diamond Rattlesnake (Section 6.9.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. If a northern red diamond rattlesnake is observed in the construction area, the snake should be moved by an Environmental Surveyor to the closest safe, suitable habitat in the area. Exclusionary fences may be used to keep snakes out of construction areas. These fences would be placed and monitored daily.

3. Avoid or minimize impacts to red diamond rattlesnake habitat through project design and placement.

Loggerhead Shrike (Section 7.3.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in suitable habitat to avoid the nesting season whenever possible, or ensure that habitat is removed prior to the initiation of the breeding season. If construction activities must commence during the breeding season, minimize impacts through conducting nest surveys within 300 feet of all proposed activities should be conducted during the breeding season (see Section 2.3 for the Avian Breeding Season Policy). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4, Buffers). Direct take of individuals and destruction of nests within an active territory is not allowed.

3. [not applicable, related to preserve management]

California Horned Lark (Section 7.5.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in grassland habitat to avoid the breeding season for upland avian species whenever possible, or ensure that habitat is removed prior to the initiation of the breeding season. If construction activities must commence during the upland avian breeding season, develop a Wildlife Agency approved survey protocol to improve the detectability of horned lark nests (see Section 2.3 of the NCCP/HCP for the Avian Breeding Season Policy). Minimize impacts through conducting nest surveys within 300 feet of all proposed activities. If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of

100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4, Buffers). Take of active nests is not authorized.

Coastal California Gnatcatcher (Section 7.7.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Conduct USFWS protocol surveys for the California gnatcatcher under favorable conditions in areas of potential foraging or breeding habitat for all new facilities and O&M Activities, or assume occupancy of potential habitat, to ensure that this species is adequately addressed by impact avoidance, minimization, and mitigation. A permitted Environmental Surveyor would conduct surveys.

3. Minimize impacts through timing of work in suitable California gnatcatcher habitat to avoid the nesting season for upland avian species whenever possible, or ensure that habitat is removed prior to the initiation of the breeding season. If construction activities must commence during the upland avian breeding season, minimize impacts through conducting nest surveys within 300 feet of all proposed activities (see Section 2.3 of the NCCP/HCP for the Avian Breeding Season Policy). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4 of the NCCP/HCP).

4. Direct take of individuals and destruction of nests within an active territory are not allowed.

5. For temporary impacts to occupied California gnatcatcher habitat, the work site would be returned to preexisting contours, where feasible, and revegetation with appropriate locally native species. All revegetation plans would require written concurrence of the Wildlife Agencies. Also, see Section 6.4, Plan Minimization Measures, of the NCCP/HCP.

Southern California Rufous-crowned Sparrow (Section 7.11.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in suitable habitat to avoid the nesting season for upland avian species whenever possible, or ensure that habitat is removed prior to the initiation of the upland avian breeding season. If construction activities must commence during the upland avian breeding season, minimize impacts through conducting nest surveys within 300 feet of all proposed activities (see Section 2.3 of the NCCP/HCP). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4 of the NCCP/HCP). Direct take of individuals and destruction of nests within an active territory is not allowed.

Grasshopper Sparrow (Section 7.12.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in suitable habitat to avoid the nesting season for this species whenever possible. Clearing of occupied grasshopper sparrow habitat shall be avoided during the upland avian breeding season unless a Wildlife Agency approved nest detection protocol is developed, or ensure that habitat is removed prior to the initiation of the upland avian breeding season. If a nest is detected, minimize impacts through conducting nest surveys within 300 feet of all proposed activities (see Section 2.3 for the Avian Breeding Season Policy). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4, Buffers).

3. Direct take of individuals and destruction of nests within an active territory is not allowed.

4. [not applicable, related to preserve management]

San Diego Black-tailed Jackrabbit (Section 8.1.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, related to preserve management]

Dulzura (California) Pocket Mouse (Section 8.4.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement a small-mammal live trapping and identification program in suitable habitat to determine the presence or absence of Dulzura pocket mouse. Alternatively, assume presence of this species and implement condition 3, as listed below.

3. If the species is observed and burrows will be affected by project-related disturbance, a pre-construction live trapping and relocation program will be implemented by the Environmental Surveyor at the impact areas in which this species was observed. Individuals will be relocated into adjacent suitable habitat areas or preserves, and/or the Environmental Surveyor will provide measures to ensure exclusion during construction activities. Relocation would be determined and conducted by an Environmental Surveyor in consultation with the Wildlife Agencies.

4. [not applicable, related to preserve management]

Northwestern San Diego Pocket Mouse (Section 8.5.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement a small-mammal live trapping and identification program in suitable habitat to determine the presence or absence of northwestern San Diego pocket mouse. Alternatively, assume presence of this species and implement condition 3, as listed below.

3. If the species is observed and burrows will be affected by project-related disturbance, a pre-construction live trapping and relocation program will be implemented by the Environmental Surveyor at the impact areas in which this species was observed. Individuals will be relocated into adjacent suitable habitat areas or preserves, and/or the Environmental Surveyor will provide measures to ensure exclusion during construction activities. Relocation would be determined and conducted by an Environmental Surveyor in consultation with the Wildlife Agencies.

San Diego Desert Woodrat (Section 8.7.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement a small-mammal live trapping and identification program in suitable habitat to determine the presence or absence of northwestern San Diego desert woodrat. Alternatively, assume presence of this species and implement condition 3, as listed below.

3. If the species is observed and nests would be affected by project-related disturbance, a pre-construction live trapping and relocation program will be implemented by the Environmental Surveyor at the impact areas in which this species was observed. Individuals will be relocated into adjacent suitable habitat areas or preserves, and/or the Environmental Surveyor will provide measures to ensure exclusion during construction activities. Relocation would be determined and conducted by an Environmental Surveyor in consultation with the Wildlife Agencies.

4. Avoid to the maximum extent possible impacts to San Diego desert woodrat sticknests.

5. For temporary impacts to occupied desert woodrat habitat, incorporate suitable habitat elements, such as rock and brush piles, into the habitat restoration plan.

E-5: Narrow Endemic Policy (Section 6.5.1.6)

1. Narrow endemic species populations will always be avoided to the maximum extent practicable.

2. For new projects, an 80 percent avoidance policy will apply, excluding existing Water Authority rights-of-way (including easements and fee-owned parcels). For plant species, 80 percent of the species' mapped distribution area will be avoided; for animal species, 80 percent of the occupied habitat and suitable habitat will be avoided. Covered Projects that cannot meet the 80 percent avoidance policy due to additional site and planning constraints will implement a Wildlife Agency-approved biologically equivalent or superior alternative.

3. Pre-activity surveys will be used to identify the location of narrow endemic populations to ensure that they are avoided and protected in accordance with this policy (see Appendix F of the Plan).

4. Mitigation for unavoidable impacts will be designed to minimize adverse effects to species viability and to contribute to the biological objectives of the Plan.

APPENDIX C

TRANSPORTATION IMPACT ANALYSIS

LINSCOTT
LAW &
GREENSPAN
engineers

TRANSPORTATION IMPACT ANALYSIS

MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY PROJECT

San Diego, California
December 13, 2018

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Prepared by:
Narasimha Prasad
Senior Transportation Engineer

Under the Supervision of:
John Boarman, P. E.
Principal

Linscott, Law & Greenspan, Engineers
4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

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MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY PROJECT

San Diego, California
December 13, 2018

1.0 INTRODUCTION

The following traffic study addresses the potential traffic impacts on the local circulation system due to the proposed Mission Trails Flow Regulatory Structure II and Flow Control Facility Project (proposed project) along the Second San Diego Aqueduct (Second Aqueduct) in the northwestern portion of Mission Trails Regional Park (MTRP). The proposed project is described further in Section 2.0 of this report.

This traffic study analyzes the operation of the project study area intersections and segments (as discussed in Section 9.0) during construction to determine significant impacts, if any, due to the increased traffic, and recommends any necessary mitigation measures.

This traffic study includes the following:

- Introduction
- Project Description
- Existing Conditions Description
- Analysis Approach and Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Construction Year Baseline Traffic
- Trip Generation/Distribution/Assignment
- Analysis of Construction Year Scenarios
- Significance of Impacts and Mitigation Measures

2.0 PROJECT DESCRIPTION

The San Diego County Water Authority (Water Authority) is planning to construct the Mission Trails Flow Regulatory Structure II (FRS II) and Flow Control Facility Project (proposed project) along the Second San Diego Aqueduct (Second Aqueduct) in the northwestern portion of Mission Trails Regional Park (MTRP).

2.1 Project Background

FRS II was a primary component of the proposed project subject to CEQA review in the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project Environmental Impact Report (EIR; Tierra Environmental Services 2006a), which was certified by the Water Authority Board of Directors in 2006. The EIR addressed construction and operation of FRS II—an underground reservoir to store imported water along the Water Authority's Second San Diego Aqueduct—as well as a pipeline tunnel into and out of the reservoir, demolition of a series of aboveground vents that will become obsolete once the tunnel replaces sections of existing aqueduct pipelines, and an improved crossing of the San Diego River.

After EIR certification, the Water Authority constructed the tunnel-based pipeline, referred to as the Mission Trails Tunnel, but deferred construction of FRS II and other the remaining project components to conduct additional demand planning and ensure the reservoir would be built at the appropriate capacity. The Water Authority prepared an addendum to the EIR to address splitting up implementation of the proposed project, with construction of the pipeline tunnel and river crossing improvement to proceed first. The pipeline tunnel, associated infrastructure, and the river crossing portion of the original project were constructed between 2008 and 2010. The Water Authority is now planning to implement the remaining portion of the proposed project, including FRS II and its connections to the tunnel, the tunnel connections to the existing aqueduct pipes, and the vent demolition. FRS II is now planned as a 5-million-gallon reservoir, substantially smaller than the 18-million-gallon facility addressed in the 2006 EIR. The Water Authority has also identified the need to construct a new flow-control facility (and underground vault with valves and a flow meter) near the tunnel's southern connection to the existing aqueduct, to control deliveries to its member agencies from the reservoir.

2.2 Project Location

The proposed project is located in the northwestern portion of MTRP, east of Tierrasanta and north of Navajo, two communities of the City of San Diego. The proposed project area can be described as a northwest-to-southeast–trending construction corridor, bound to the north by State Route 52 (SR-52) and to the south by an extension of Colina Dorada Drive in the hills north of the San Diego River. Access points from public roads to the construction area within MTRP are located at Portobelo Drive, Clairemont Mesa Boulevard, and Calle de Vida. The project-related portion of MTRP consists of open space featuring native vegetation, traversed by publicly accessible trails, and is underlain by existing Water Authority infrastructure. Ground elevations on the project site range from 760 feet above mean sea level (AMSL) in the northwest to 820 feet AMSL in the southeast.

Single-family residences of the City of San Diego's Tierrasanta neighborhood are located west of the project site.

Figure 2-1 is the Project Vicinity Map.

2.3 Project Description

The project addressed in this report entails work at several locations along the Second Aqueduct alignment in MTRP. Project features include, from north to south, the North Portal Connection, vent number 1 demolition, the FRS II, vent number 2 demolition, vent number 3 demolition, vent number 4 demolition the south portal connection, vent number 5 demolition, and a new flow-control facility (FCF). These project features are shown in *Figure 2-2* and further described below. With the exception of the FCF, these features are part of the project addressed in the EIR.

2.3.1 *Flow Regulatory Structure II*

The primary component of the project addressed in this report is the proposed FRS II, which consists of a 5-million-gallon buried concrete reservoir, inlet and outlet piping, emergency overflow pipe and outfall, and appurtenant facilities for system operation. FRS II would be constructed on a 12.78-acre parcel that the Water Authority acquired from the San Diego Unified School District (SDUSD) for this project, located northeast of the Water Authority's existing FRS I, and adjacent to the east side of the 130-foot-wide Water Authority's Second Aqueduct (*Figure 2-2*). In the EIR, the Water Authority analyzed the impacts of a much larger FRS tank, up to 18 million gallon in capacity and potentially made up of two separate reservoir tanks. The Water Authority now plans to construct a much smaller facility at the same location examined in the EIR.

The reservoir would consist of a cast-in-place concrete tank, connected to the previously completed pipeline tunnel. A layer of up to 3 to 5 feet of soil would be placed on top of the buried reservoir structure, with a gently undulating final grade to better blend in with surrounding land of the park and reduce the facility's visual impact to trail users. This layer would be vegetated with a native plant mix. If necessary, temporary irrigation would be provided during the first year to sufficiently establish the vegetative cover. A paved maintenance access road would be constructed around the perimeter of the reservoir's roof, connecting to two roof hatches provided for equipment access to the interior of the structure. Portions of the FRS II site were disturbed during construction of the Mission Trails Tunnel, but much of the impact area will represent new disturbance.

FRS II construction would also include installation of outlet and inlet pipes to connect FRS II to the existing Mission Trails Tunnel sections. The inlet pipe would be a short (approximately 15 feet long) segment of 96-inch welded steel pipe extending north of the reservoir, and a new inlet shaft for worker access would be built within the paved access area north of the reservoir's surface. The outlet pipe would be approximately 400 feet of 96-inch welded steel pipe extending south from the reservoir to the existing southern tunnel. Another access shaft would be constructed at this connection, along with a paved road providing worker access to the shaft. The access shafts would be located in areas previously disturbed by portal development on the Mission Trails Tunnel construction.

A 63-inch-diameter emergency overflow pipe for FRS II would also be installed via trench, extending underground approximately 500 feet northwest of the reservoir and discharging into a proposed rip rap energy dissipater that would be built near the bottom of a dry channel, with a concrete headwall at the end of the pipe. The overflow pipe is a code-mandated safety feature of the FRS, intended to convey overflow water from the FRS reservoir during unanticipated emergency situations. The rip rap energy dissipater has been designed to reduce the velocity of flow, which would protect the potential overflow area from erosion. Reservoir overflow is not an intentional operational feature of the FRS; overflow conveyance would only occur under the very unlikely scenario in which multiple levels of operational controls and alerts failed to result in shutoff of water inflow to the tank. Therefore, substantial flows into and downstream of the proposed rip rap basin are not anticipated as a result of this project.

2.3.2 *Portal Connections*

The North Portal Connection and the south portal connection consist of constructing sections of underground pipe and joints to connect the previously built Mission Trails Tunnel sections to the Second Aqueduct pipes. This would be accomplished by excavating large pits to expose the existing pipes and proposed pipe installation areas. No aboveground features are proposed at these connection points, and the sites would be restored to existing grade and revegetated after completion. The north portal connection work area is located approximately 0.3-mile northwest of the FRS II site, and the South Portal Connection is located approximately 0.5 mile southwest of the FRS II site.

2.3.3 *Flow Control Facility*

South of the south portal connection, the project entails construction of a new FCF, which is an underground valve vault that meters flows of water deliveries to the Water Authority's member agencies. The facility would be below ground and the area would mostly be revegetated, but an access hatch and graveled pad for vehicle and equipment parking would be provided, connecting to an existing access road. This is a new feature of the project and is the only primary feature that was not anticipated as part of the project addressed in the EIR.

2.3.4 *Vent Demolition*

As planned in the original project, five existing vent structures along Pipeline 3 and Pipeline 4 would be demolished after the remaining portion of the project is complete, and the Mission Trails Tunnel pipeline is placed into service and the existing pipelines are made obsolete. The aboveground portions of the vent stacks would be removed, and the belowground portions would be capped and sealed.

Figure 2-2 depicts the proposed project location and the entry points to the North and South portal connections and the Flow Regulatory Structure II.

2.4 Project Construction, Staging and Access

Overall, construction is expected to last approximately 18 months, with the level of intensity varying from high intensity for the first 6 months during excavation in the FRS II area; to moderate intensity for the remaining months during FRS II construction; to low intensity at the end of the project during vent demolition and pipeline connections. The general working time would be 7:00 AM. to 7:00 PM, Monday through Friday. Some 24-hour work would be conducted at the portal connections during the shutdown of the existing pipelines for the final connection work.

The entire Clairemont Mesa Boulevard park entrance area may be used for staging for the duration of construction (*Figure 2-2*). Construction trailers and other support facilities that would not have to be on the portal or FRS II sites would be located in this staging area. Parking for crew/engineering vehicles would be allotted in this space as well, to minimize individual vehicles on park roads. An additional staging area would be graded on the FRS II site for stockpiling of excavated soil, and other equipment and materials.

The following routes to/from Interstate 15 (I-15) and SR-52 have been proposed for construction equipment and hauling of excavated material via trucks:

- North Portal ConnectionConstruction Activities Ingress and Egress – East/West on Clairemont Mesa Boulevard from I-15 to Via Valarta to Portobelo Drive to MTRP access point (*Route A-1*) or north/south on Santo Road from SR-52 to Antigua Boulevard to Portobelo Drive, to MTRP access point (*Route B-1*).

- South Portal Connection and FRS II Construction Activities Ingress and Egress – East/West on Clairemont Mesa Boulevard to MTRP access point at the end of the street, over the park bridge to South Portal Connection and FRS II sites via MTRP roads (*Route A-2*) or north/south on Santo Road from SR-52 to Clairemont Mesa Boulevard to MTRP access point at the end of the street, over the park bridge to South Portal Connection and FRS II sites via MTRP roads (*Route B-2*).

- South Portal Connection and FRS II Oversize Load Construction Activities Ingress/Egress – South and west on MTRP trails to Calle de Vida access point, Calle de Vida to Clairemont Mesa Boulevard (*Routes A-3 and B-3*).

Large equipment (weighing in excess of 30 tons), such as track-type tractors, track loaders, excavators, dozers, scrapper, cranes, and end dump trucks, would be brought into and out of the MTRP South Portal Connection and FRS II sites via Clairemont Mesa Boulevard and Calle de Vida. These types of equipment would generally be brought to the site for the duration of their use during construction, and then be removed and would not enter and leave the sites on a frequent basis.

Park roads used for access were widened during the construction of the pipeline and no new road enhancements would be required for the proposed project. Crushed rock may be placed on park access roads to minimize erosion damage and stabilize the surface for heavy trucks.

Up to approximately 111,100 cubic yards of soil and rock would be removed from the FRS II site during excavation for the buried reservoir. Approximately 56,000 cubic yards of the excavated material would be hauled off site in dump trucks for disposal at an approved landfill, while the remaining quantity of material would be placed as fill in the work area adjacent to FRS II, including in areas surrounding the roof to establish berms as visual barriers, further limiting the view of the reservoir area to park users. The berm heights would reach 15 to 25 feet above the finished grade of the reservoir roof and would be contoured to approximate natural grades to the extent practicable.

Figure 2-3 and ***2-4*** depict the proposed truck routes to and from I-15 and SR 52, respectively.

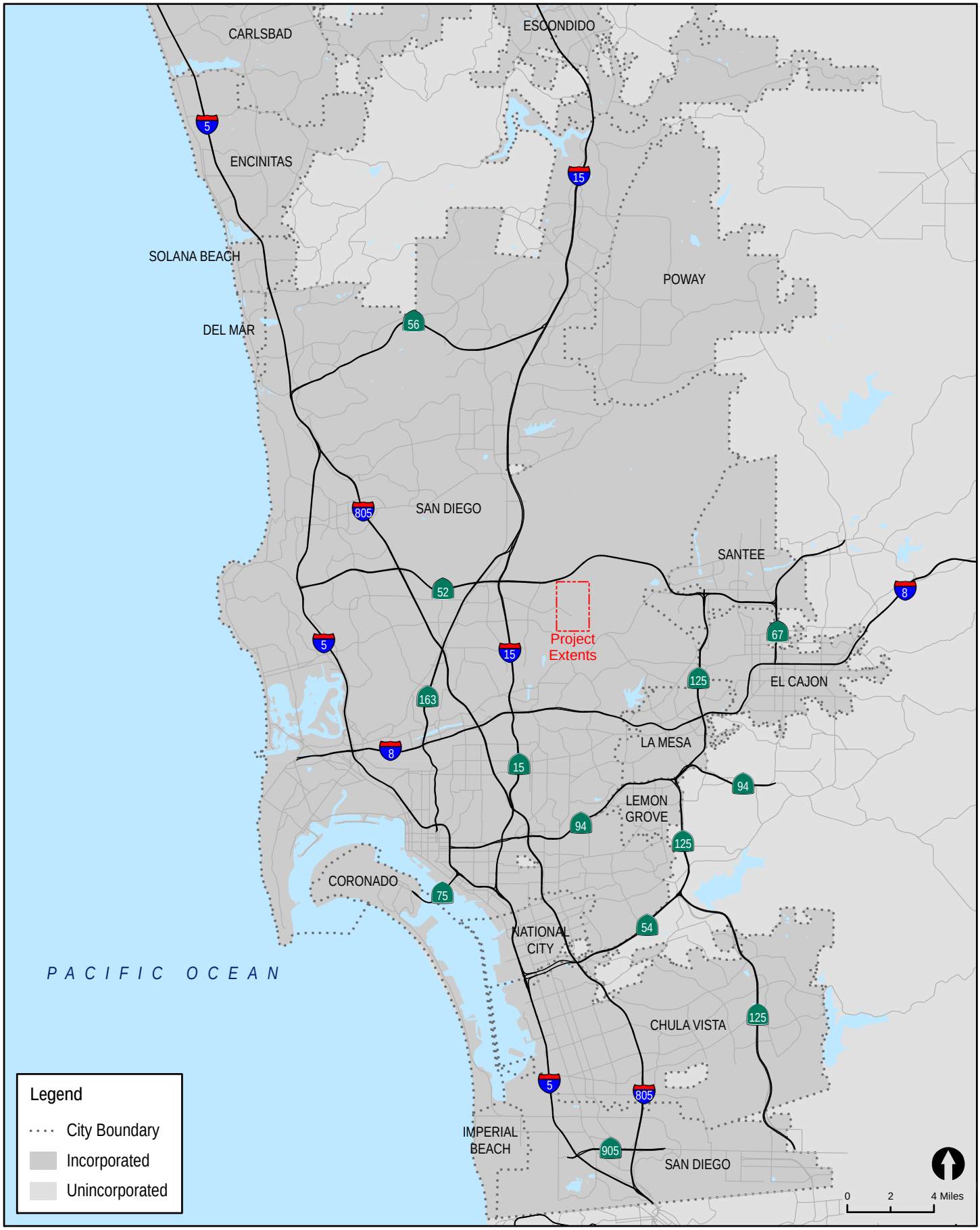

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Figure 2-1

Vicinity Map

MISSION TRAILS FRSII

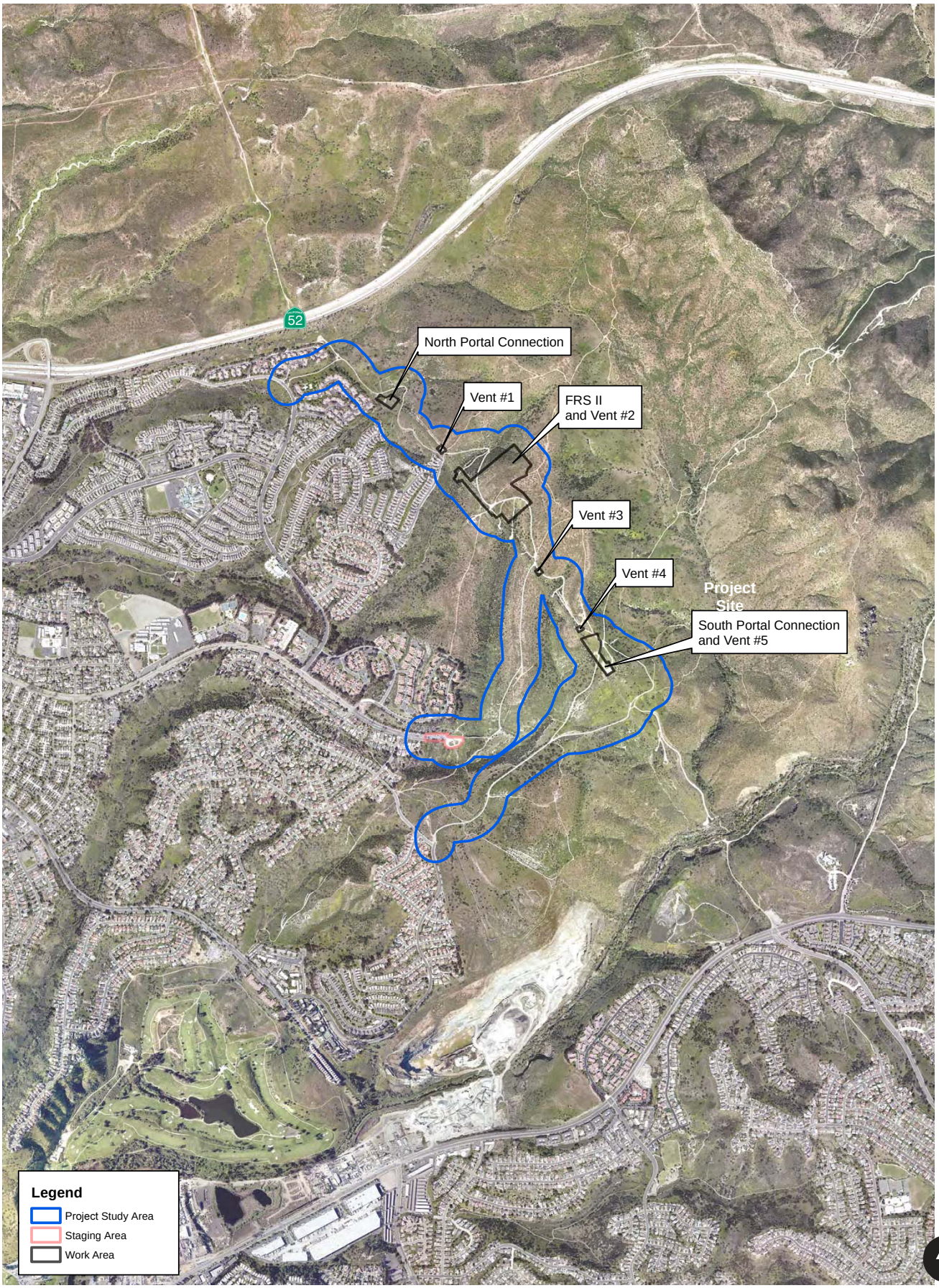

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Figure 2-2

Project Area Map

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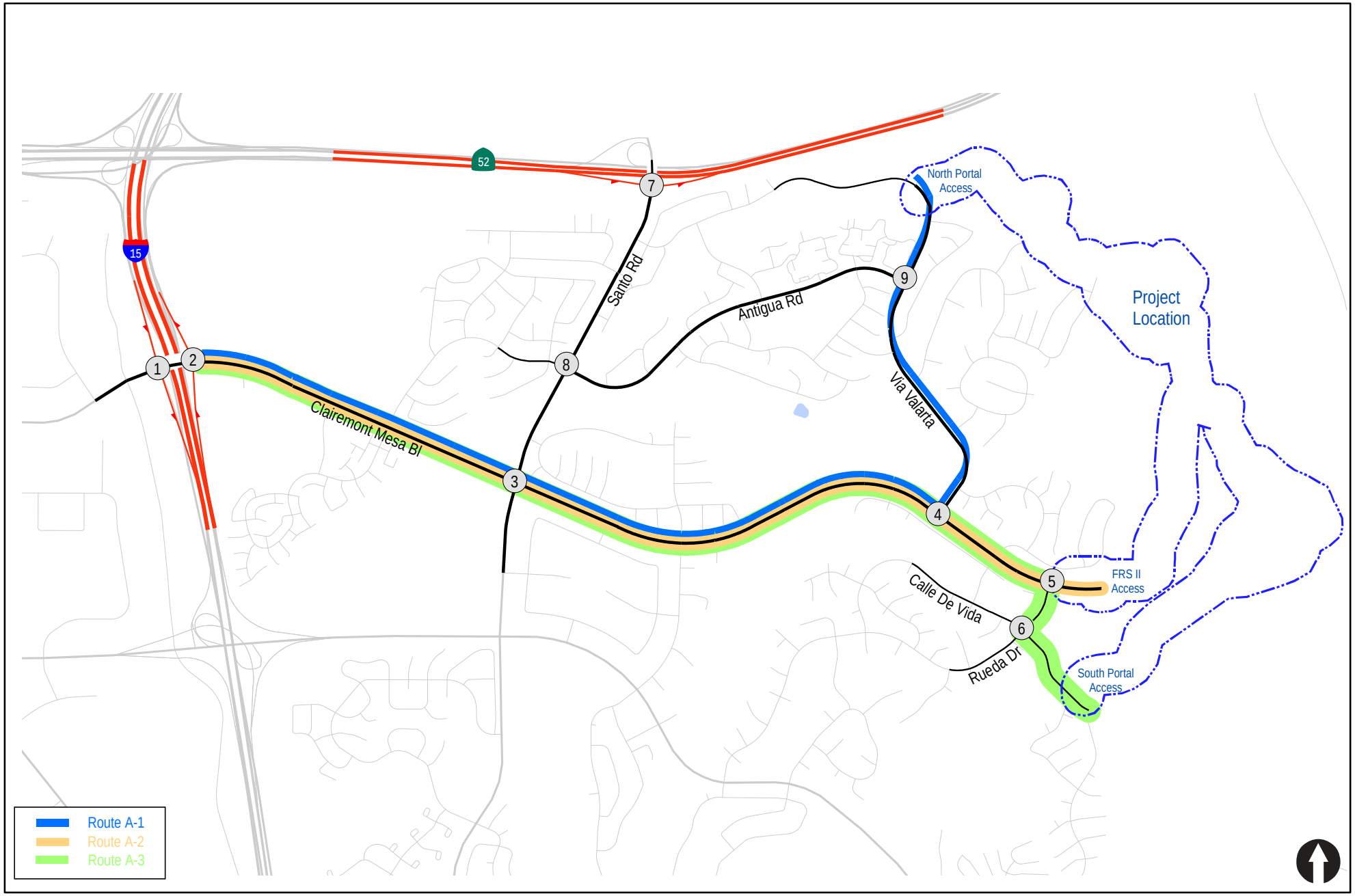

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Figure 2-3

Interstate 15 Proposed Truck Routes

MISSION TRAILS FRSII

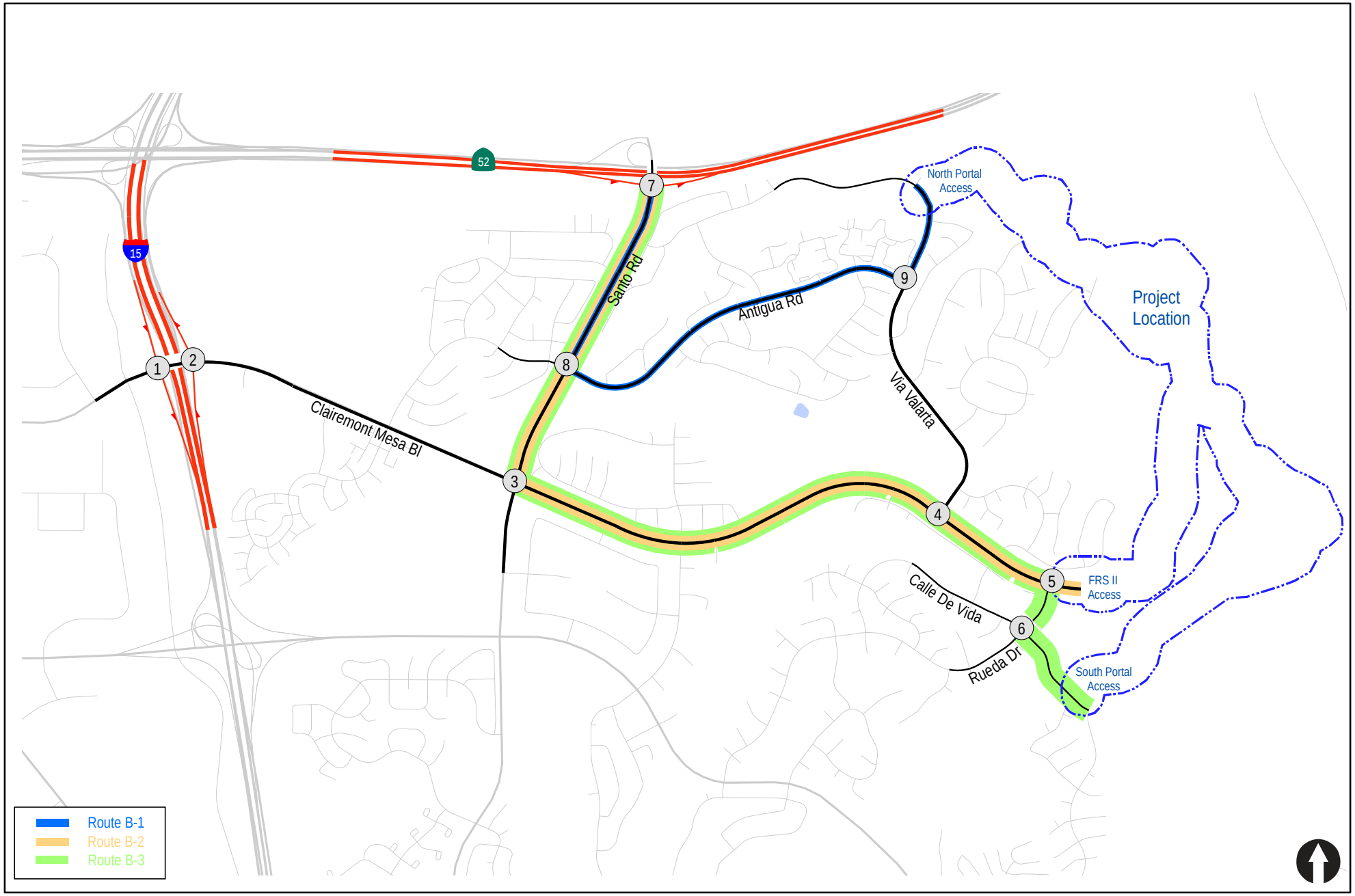

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Figure 2-4

State Route 52 Proposed Truck Routes

MISSION TRAILS FRSII

3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area.

Figure 3–1 shows the existing conditions diagram, including signalized intersections and lane configurations.

3.1 Existing Street Network

Effective evaluation of the traffic impacts associated with the proposed development requires an understanding of the existing transportation system in the project study area. Existing transportation conditions in the study area include roadway geometry, traffic control, and characteristics.

The principal roadways in the project study area are described briefly below. The description includes the physical characteristics and adjacent land uses.

Clairemont Mesa Boulevard is classified as a Four-Lane Major Road on the Tierrasanta Community Plan. Currently, it is constructed as a four-lane divided roadway from I-15 to Rueda Drive and a two-lane roadway with parking on both sides from Rueda Drive to its eastern terminus at Mission Trails Regional Park entrance. The roadway width is approximately 80 feet (including 18-foot median) between I-15 and Rueda Drive, and 80 feet (including 18 foot median & 20 feet of parking on both sides) between Rueda Drive and Mission Trails Regional Park. The posted speed limit varies between 40 and 50 mph, and on-street parking is prohibited. Bus service is provided on this roadway. Curbs, gutters, bike lanes, and sidewalks are provided. This roadway provides access to commercial, office, recreational and educational/school land uses.

Via Valarta is classified as a Four-Lane Collector on the Tierrasanta Community Plan. Currently, it is constructed as a two-lane roadway between the Mission Trails Regional Park Entrance and Playa Cancun, and a four-lane undivided roadway between Playa Cancun and Clairemont Mesa Boulevard. The roadway width is approximately 40 feet between the Mission Trails Regional Park Entrance and Playa Cancun, and 64 feet between Playa Cancun and Clairemont Mesa Boulevard. The posted speed limit varies between 35 and 40 mph, and on-street parking is prohibited. Curbs, gutters, and sidewalks are provided. This roadway provides access to residential and recreational land uses. Bike lanes are provided.

Rueda Drive is currently constructed as a two-lane undivided residential street. The roadway width is approximately 40 feet. The posted speed limit is 25 mph, and on-street parking is provided. Curbs, gutters, and sidewalks are provided. This roadway provides access to residential land uses.

Calle de Vida is currently constructed as a two-lane undivided residential street. The roadway width is approximately 40 feet. The posted speed limit is 30 mph, and on-street parking is provided. Curbs, gutters, and sidewalks are provided. This roadway provides access to recreational land uses.

Santo Road is classified as a 4-Lane Major Road on the Tierrasanta Community Plan Circulation Map. It is currently constructed as a 4-Lane Major Road. A raised median is provided in some sections. The posted speed limit is 45 mph, and on-street parking is prohibited. Curbs, gutters, and sidewalks are provided. Bike lanes are provided. Bike lanes are provided.

Antigua Boulevard is classified as a Four-Lane Collector on the Tierrasanta Community Plan. Currently, Between Santo Road and Via Valarta, it is constructed as a four-lane undivided roadway between Playa Cancun and Clairemont Mesa Boulevard. The roadway width is approximately 78 feet. two lanes in each direction, a center two-way-left-turn lane and bike lanes are provided. The posted speed limit is 40 mph, and curbside parking is prohibited. Curbs, gutters, and sidewalks are provided. This roadway provides access to residential and recreational land uses.

SR-52 is generally a six-lane freeway that extends from La Jolla to SR 67 in Santee.

1-15 is generally an eight-lane freeway in the Project vicinity.

3.2 Existing Bicycle Network

Currently, there is a Class II bike lane on Claremont Mesa Boulevard all throughout the study area. There is also a Class II bike lane on Santo Road starting north of Claremont Mesa Boulevard to SR-52. There are no other bicycle facilities provided along the street segments within the study area.

3.3 Existing Pedestrian Conditions

Continuous sidewalks are provided along both sides of Clairemont Mesa Boulevard, Santo Road, Via Vallarta, Rueda Drive and Calle de Vida in the study area.

3.4 Existing Transit Conditions

Transit service is provided to the project area via the Route 25 Bus Route. No Trolley Line operates in the project area. Route 25 provides bus service to the area via Clairemont Mesa Boulevard, with stops along Clairemont Mesa Boulevard and Santo Road. The route operates hourly between the hours of 6:00AM and 7:00PM, Monday through Friday.

3.5 Existing Traffic Volumes

Table 3–1 is a summary of the most recent available average daily traffic (ADT) volumes from LLG counts on August 28, 2018, when area schools were in session. Manual hand counts at the study area intersections, including bicycle and pedestrian counts, were also conducted on August 28, 2018.

Figure 3–2 shows the Existing Traffic Volumes. ***Appendix A*** contains the manual count sheets.

TABLE 3–1
EXISTING TRAFFIC VOLUMES

Street Segment	ADT Volumes [a]
Clairemont Mesa Boulevard	
I-15 to Santo Road	18,580
Santo Road to Via Valarta	8,440
Via Valarta to Rueda Drive	4,090
Via Valarta	
Mission Trails Regional Park Entrance to Camino Playa Cancun	1,070
Playa Cancun to Clairemont Mesa Boulevard	2,690
Rueda Drive	
Clairemont Mesa Boulevard to Calle da Vida	1,290
Calle de Vida	
Rueda Drive to Colina Dorada Drive	1,040
Santo Road	
SR-52 to Clairemont Mesa Boulevard	11,810
Antigua Boulevard	
Santo Road to Via Valarta	4,310

Footnotes:
a. ADT – Average Daily Traffic Volume counts conducted by LLG during the week of August 27, 2018, when area schools were in session.

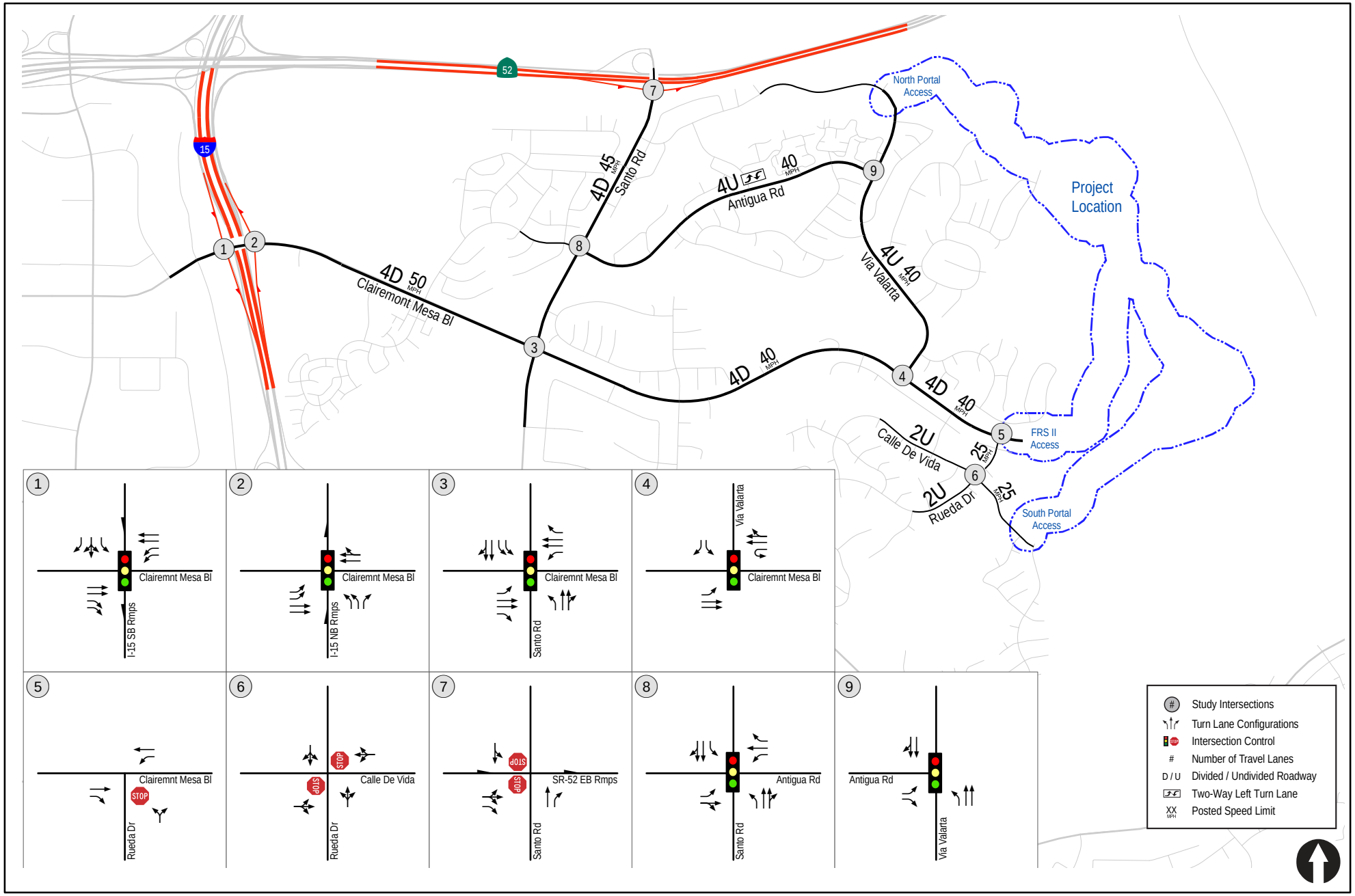

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Figure 3-1

Existing Conditions Diagram

MISSION TRAILS FRSII

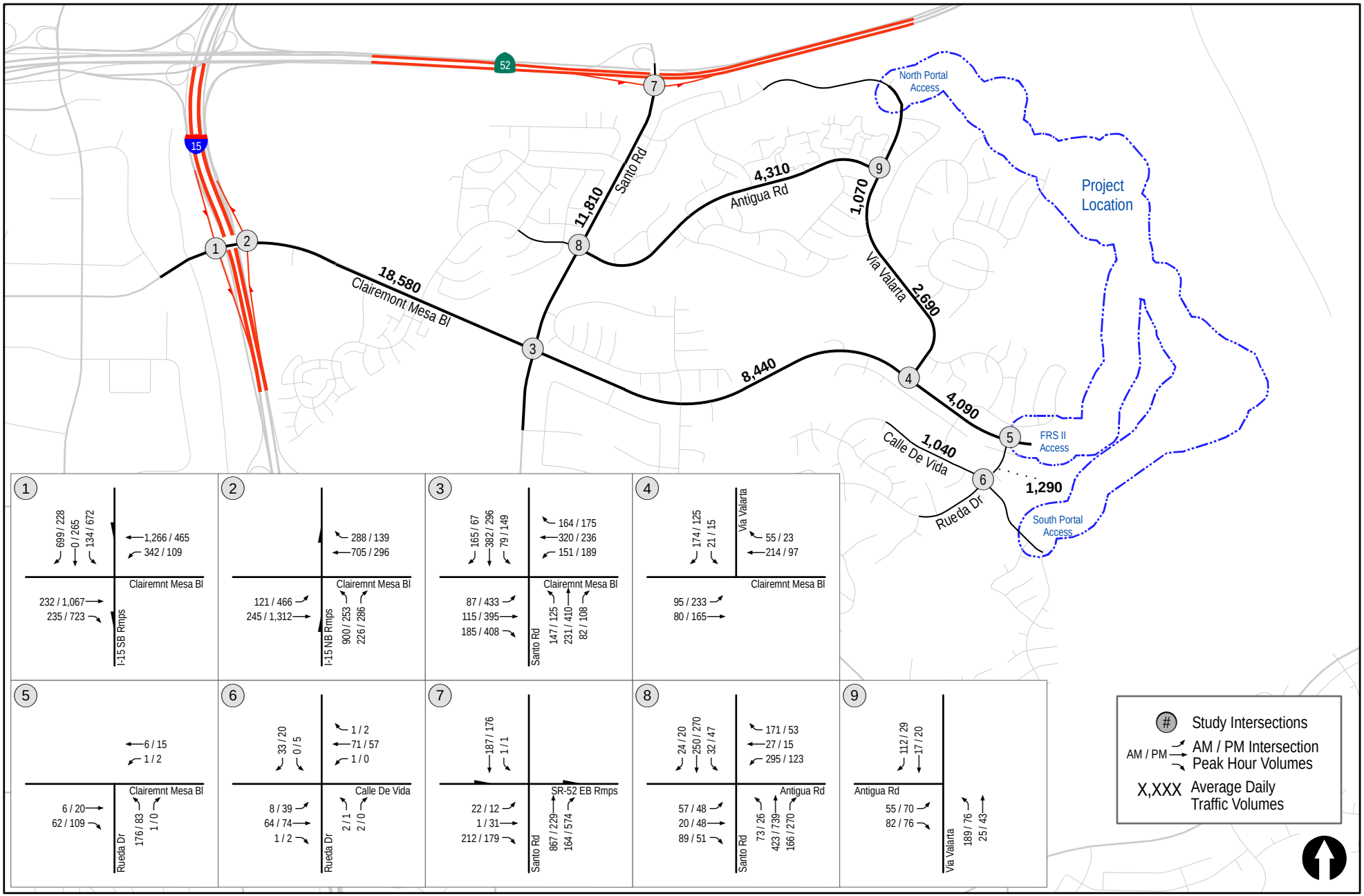

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Figure 3-2

Existing Traffic Volumes

MISSION TRAILS FRSII

4.0 ANALYSIS APPROACH AND METHODOLOGY

There are various methodologies used to analyze signalized intersections, unsignalized intersections, and street segments. The measure of effectiveness for intersection and segment operations is level of service (LOS), which denotes the operating conditions which occur at a given intersection or on a given roadway segment under various traffic volume loads.

LOS is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Levels of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Level of service designation is determined differently for signalized and unsignalized intersections, as well as for roadway segments. In the Highway Capacity Manual (HCM Version 6.0), Level of Service for signalized and all-way stop controlled intersections is defined in terms of weighted average control delay. The level of service analysis results in seconds of delay expressed in terms of letters A through F. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

Table 4–1 summarizes the signalized intersections levels of service descriptions. ***Table 4–2*** depicts the intersection LOS and corresponding delay ranges, which are based on overall intersection control delay (signalized intersections) and the average control delay for any particular minor movement (minor-street stop-controlled intersections), respectively. LOS relative to signalized and unsignalized intersection is further described below.

4.1.1 *Signalized Intersections*

For signalized intersections, level of service criteria is stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of service B describes operations with delay in the range 10.1 seconds and 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of Average delay.

Level of service C describes operations with delay in the range 20.1 seconds and 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

TABLE 4–1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Description
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels

TABLE 4–2
INTERSECTION LOS & DELAY RANGES

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: 2010 Highway Capacity Manual

Level of service D describes operations with delay in the range 35.1 seconds and 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or higher volume (demand) / capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are frequent.

Level of service E describes operations with delay in the range of 55.1 seconds to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of service F describes operations with delay in excess of over 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

4.1.2 *Unsignalized Intersections*

For minor street stop controlled unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement: for All-Way Stop-Controlled (AWSC) intersections and roundabouts, overall intersection delay is reported. For Minor-Street-Stop-Controlled (MSSC) intersections, level of service is not defined for the intersection as a whole. Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

4.1.3 *Street Segments*

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of San Diego's *Roadway Classification, Level of Service, and ADT Table (City of San Diego Traffic Impact Study Manual, July 1998))*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of San Diego's *Roadway Classification, Level of Service and ADT* table is shown in ***Table 4–3.***

TABLE 4-2
ROADWAY CLASSIFICATIONS, LEVELS OF SERVICE (LOS) AND AVERAGE DAILY TRAFFIC (ADT)

			Level of Service				
Classification	**Lanes**	**Cross Sections**	**A**	**B**	**C**	**D**	**E**
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Prime Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

LEGEND:

XXX/XXX = curb to curb width (feet/right-of-way width (feet): based on the City of San Diego Street Design.

XX,XXX = Approximate recommended ADT Based on the City of San Diego Street Design Manual.

Notes:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.
2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Source: City of San Diego Traffic Impact Study Manual, 1998

5.0 SIGNIFICANCE CRITERIA

The project-related construction activity and the affected road network occur within the boundaries of the City of San Diego, so the Water Authority has elected to analyze impacts pursuant to City of San Diego significance thresholds. According to the City of San Diego's *Significance Determination Thresholds* dated July 2016, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. For projects deemed complete on or after January 1, 2007, the City defined thresholds are shown in ***Table 5–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds*,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."
>
> It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."
>
> For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 5–1*, then the project is considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

5.1 Significance Thresholds

The following thresholds have been established to determine significant traffic impacts:

1. If any intersection, roadway segment, or freeway segment affected by a project would operate at LOS E or F under either direct or cumulative conditions, the impact would be significant if the project exceeds the thresholds shown in the table below.

2. At any ramp meter location with delays above 15 minutes, the impact would be significant if the project exceeds the thresholds shown in the table below.

3. If a project would add a substantial amount of traffic to a congested freeway segment, interchange, or ramp, the impact may be significant.

4. Addition of a substantial amount of traffic to a congested freeway segment, interchange, or ramp as shown in the table below.

5. If a project would increase traffic hazards to motor vehicles, bicyclists or pedestrians due to proposed non-standard design features (e.g., poor sight distance, proposed driveway onto an access-restricted roadway), the impact would be significant. Note: analysts should refer readers to a discussion of this issue in the Health and Safety section of the environmental document.

6. If a project would result in the construction of a roadway which is inconsistent with the General Plan and/or a community plan, the impact would be significant if the proposed roadway would not properly align with other existing or planned roadways.

7. If a project would result in a substantial restriction in access to publicly or privately owned land, the impact would be significant.

TABLE 5–1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANCE THRESHOLDS

Level of Service with Project [b]	Allowable Increase Due to Project Impacts [a]					
	Freeways		Roadway Segments		Intersections	Ramp Metering [c]
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	1.0	2.0	2.0
F	0.005	0.5	0.01	0.5	1.0	1.0

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections or minutes for ramp meters
2. LOS = Level of Service
3. V/C = Volume to Capacity ratio
4. Speed = Arterial speed measured in miles per hour

Source: CEQA, significance determination thresholds, City of San Diego, July 2016

6.0 ANALYSIS OF EXISTING CONDITIONS

6.1 Peak Hour Intersection Levels of Service

Table 6-1 summarizes the Existing intersection operations. As seen in *Table 6-1*, all study area intersections are calculated to currently operate at LOS D or better.

Appendix B contains the Existing intersection analysis worksheets.

6.2 Daily Street Segment Levels of Service

Table 6-2 summarizes the Existing intersection operations. As seen in *Table 6-2*, all study area segments are calculated to currently operate at LOS C or better.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Delay[a]	LOS[b]
1. Clairemont Mesa Blvd / I-15 SB Ramps	Signal	AM	25.2	C
		PM	26.1	C
2. Clairemont Mesa Blvd / I-15 NB Ramps	Signal	AM	26.9	C
		PM	27.7	C
3. Clairemont Mesa Blvd / Santo Rd	Signal	AM	40.0	D
		PM	50.7	D
4. Clairemont Mesa Blvd / Via Valarta	Signal	AM	12.2	B
		PM	15.2	B
5. Clairemont Mesa Blvd / Rueda Drive	TWSC [c]	AM	9.7	A
		PM	9.2	A
6. Rueda Dr / Calle de Vida	TWSC	AM	9.7	A
		PM	9.9	A
7. SR-52 EB Ramps / Santo Rd	TWSC	AM	13.8	B
		PM	10.2	B
8. Antigua Blvd / Santo Rd	Signal	AM	23.8	C
		PM	20.1	C
9. Antigua Blvd / Via Valarta	Signal	AM	12.3	B
		PM	9.3	A

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. TWSC – Two-Way Stop Controlled intersection. Worst-case movement approach delay and LOS is reported.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Class	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
Clairemont Mesa Boulevard					
I-15 to Santo Rd	Major Arterial	40,000	18,580	B	0.465
Santo Rd to Via Valarta	Major Arterial	40,000	8,440	A	0.211
Via Valarta to Rueda Dr	Major Arterial	40,000	4,090	A	0.102
Via Valarta					
Mission Trls Reg Park Ent to Cam Playa Cancun	2-Ln Collector	8,000	1070	A	0.134
Playa Cancun to Clairemont Mesa Blvd	4-Ln Collector	15,000	2,690	A	0.179
Rueda Drive					
Clairemont Mesa Blvd to Calle da Vida	2-Ln Sub Coll	2,200 [e]	1,290	A	NA [f]
Calle de Vida					
Rueda Dr to Colina Dorada Dr	2-Ln Sub Coll	2,200 [e]	1,040	A	NA [f]
Santo Road					
SR-52 to Clairemont Mesa Blvd	Major Arterial	40,000	11,810	A	0.295
Antigua Boulevard					
Santo Rd to Via Valarta	4-Ln Collector	30,000	4,310	C	0.144

Footnotes:

a. Capacities based on City of San Diego Roadway Classification & LOS table corresponding to the classification the roadway currently operates at.
b. Average Daily Traffic Volumes.
c. Level of Service.
d. Volume to Capacity ratio.
e. Capacity of a two-lane residential sub-collector.
f. Not Applicable since levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors. Therefore, V/C or Δ V/C is not shown.

7.0 CONSTRUCTION YEAR BASE TRAFFIC

The completion of construction is scheduled for the summer of 2021.

The City of San Diego Open DSD website was reviewed and it was determined that there are no projects planned in the vicinity of the study area that could contribute additional traffic affecting the project's construction-phase traffic. It was therefore decided to apply an annual growth factor. A review of historical traffic volumes in the study area showed a general decline in traffic over the years. Hence, for a conservative analysis, a growth of 1% per year for three years was used to establish the baseline traffic condition.

Appendix C contains a table summarizing the historical growth in traffic volumes in the study area.

Figure 7-1 depicts the Construction Year 2021 (Baseline) Traffic Volumes.

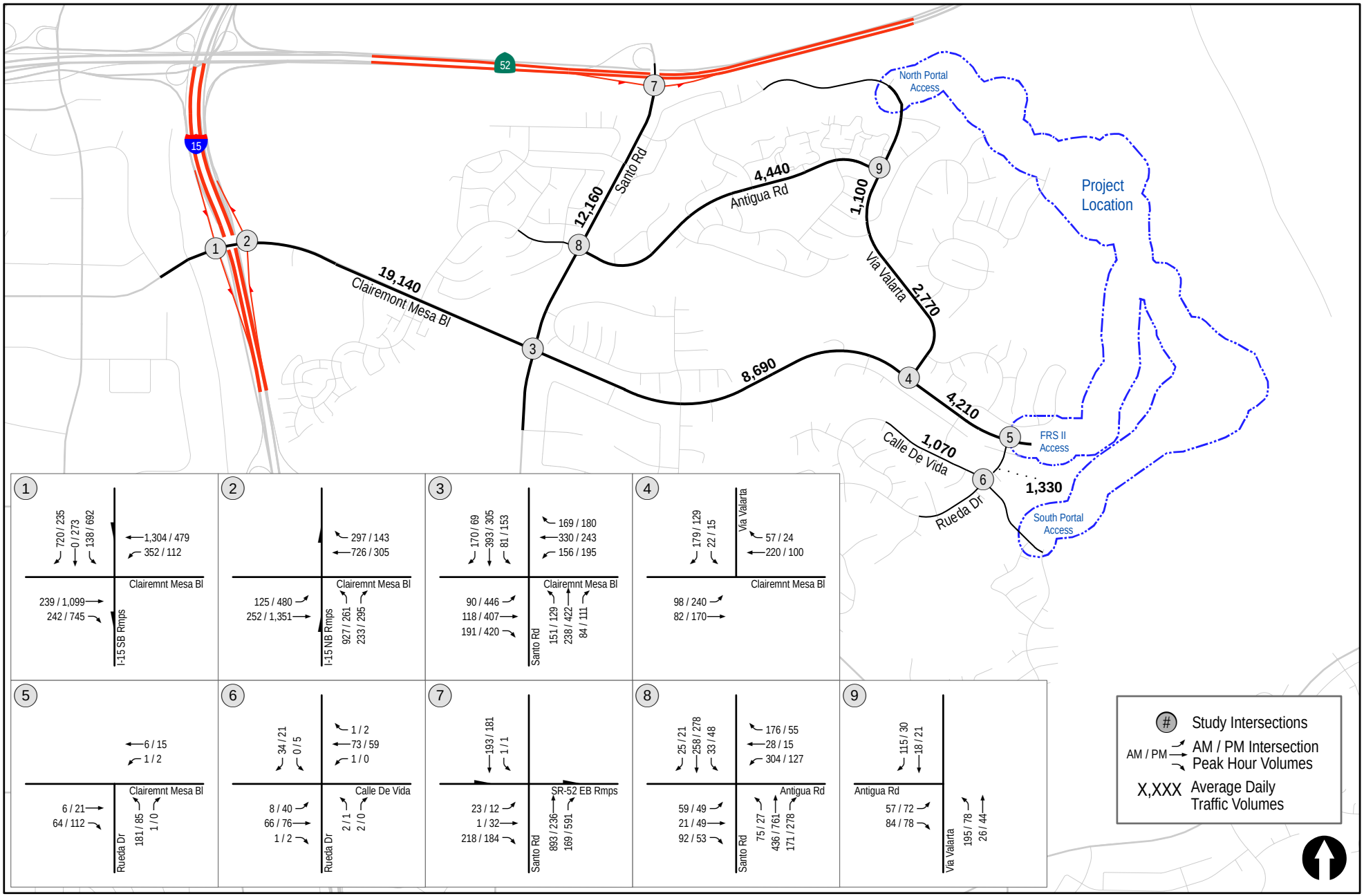

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Figure 7-1

Near-Term (Existing + Ambient Growth) Traffic Volumes

MISSION TRAILS FRSII

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

Construction is planned to occur at three locations, the North Portal, FRS II and the South Portal. Construction truck and workers traffic generated by activities at each of these locations were reviewed and are summarized in ***Table 8-1***. The truck traffic and employees for each of the Construction phases are included in this table.

8.1.1 *Daily Trucks and Workers*

North Portal Connection

The "Connection with Existing Pipelines Phase" is estimated to generate the highest amount of construction traffic at 5 trucks and 15 workers per day.

FRS II and the South Portal Connection

The "Excavation Phase I" and the "Site Floor Construction" Phases are estimated to generate the highest amount of construction traffic at 31 trucks and 45 workers per day.

It is anticipated that the trucks will access the site over a 10-hour workday with two one-hour breaks, one during the morning between 8:00 AM and 9:00 AM and the second during the afternoon between 3:45 PM and 4:45 PM. These breaks are planned in order to avoid school traffic in the morning and afternoon hours.

8.1.2 *Passenger Car Equivalence*

Passenger Car Equivalence (PCE) is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars since:

- They are larger than passenger cars, and therefore, occupy more roadway space; and
- Their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream (especially on upgrades) which cannot always be effectively filled by normal passing maneuvers.

Most of the project-generated traffic consists of heavy vehicles (trucks). The peak hour analysis accounts for trucks in terms of heavy vehicle percentage. The daily traffic generation (ADT) is calculated with the PCE factor. Exhibit 12-25, Passenger Car Equivalents on General Terrain Segments, Highway Capacity Manual (HCM), Version 6.0, summarizes PCE factors for various types of terrain. The type of terrain along the truck route is level. The passenger car equivalent of 3.0 for trucks on a rolling terrain is used in this analysis.

Table 8-1 summarizes a comparison of construction traffic related various phases of construction. This table includes the number of days, the total number of trucks required, the number of daily truck trips, and the equivalent passenger cars, for each activity, As explained previously, the

construction includes three areas of construction, the North Portal, the FRS II underground water storage and the South Portal. These activities will occur distinctly and will not overlap.

North Portal Connection

As seen in *Table 8-1*, the *North Portal Connection* activities are estimated to generate a maximum of 10 daily truck trips (30 with PCE) and 30 worker trips with 18 AM peak hour trips (15 inbound and 3 outbound) and 18 PM peak hour trips (3 inbound and 15 outbound).

TABLE 8–1
COMPARISON OF TRAFFIC FOR VARIOUS CONSTRUCTION PHASES

Construction Phase	Duration		Number of Trucks / Workers			Daily Trips		
	Months	Days	Type	Total	Inbound [a]	Inbound & Outbound	PCE	ADT
NORTH PORTAL CONNECTION CONSTRUCTION ACTIVITIES								
Connection with Existing Pipelines	1	22	Construction	100	5	10	3	30
Demobilize and restore North Portal Site	1	22	Construction	60	3	6	3	18
Workers	-	-	-	-	15	30	1	30
SOUTH PORTAL CONNECTION AND FRS II CONSTRUCTION ACTIVITIES								
Mobilization	1	22	Delivery	60	1	2	3	6
Brushing	1	22	Water Trucks	220	10	20	3	60
Excavation Phase I	2	44	Construction	1,364	31	62	3	186
Structural Concrete	2	44	Construction	1,320	30	60	3	180
Site Floor	3	66	Construction	2,046	31	62	3	186
Backfill	2	44	Water Trucks	44	1	2	3	6
Site Piping / Electrical	2	44	Construction	132	3	6	3	18
Final Grading	0.25	8	Construction	237	30	60	3	180
Startup and Testing	1	22	-	0	0	0	3	0
Demobilize and Restore Site	2	44	Construction	88	2	4	3	12
Workers	-	-	-	-	45	90	1	90

Footnotes:
a. Calculated assuming 10-hour work day and 5-day work week.
b. Per Exhibit 12-25 Passenger Car Equivalent (PCE) for General Terrain Segments, Highway Capacity Manual (HCM) Version 6.0, the PCE for trucks is 3.0 for rolling terrain.

General
Highest traffic to be used to estimate the Construction traffic trip generation.

FRS II and the South Portal Connection

Of the various phases of construction for the *FRS II and the South Portal*, the Phase I excavation and the site Floor construction are both estimated to generate 62 daily truck trips (186 with PCE). The worker trips for the Excavation phase is around 90 daily trips. Hence, for a conservative analysis this is the trip generation that is analyzed in this report. The trips generated by the North Portal Connection were added to the trips generated by FRS II and the South Portal, since the construction traffic will use a different route to the North Portal.

Table 8-2 summarizes the daily and peak hour trip generation analyzed in this report. As seen in *Table 8-2*, the North Portal Connection construction activities are estimated to generate 60 daily trips with 18 AM peak hour trips (15 inbound and 3 outbound) and 18 PM peak hour trips (3 inbound and 15 outbound).

The South Portal Connection and FRS II construction activities are estimated to generate 276 daily trips with 64 AM peak hour trips (50 inbound and 14 outbound) and 64 PM peak hour trips (14 inbound and 50 outbound).

TABLE 8–2
PROJECT TRIP GENERATION

Construction Phase	Daily Trips			AM Peak Hour				PM Peak Hour			
	Inbound & Outbound	PCE	Total Daily Trips	In: Out	In	Out	Total	In: Out	In	Out	Total
North Portal Connection Construction Activities											
Connection with Existing Pipelines	10	3	30	50:50	2	1	3	50:50	1	2	3
Worker Trips	-	-	30	90:10	13	2	15	10:90	2	13	15
Total North Portal			**60**		**15**	**3**	**18**		**3**	**15**	**18**
FRS II and South Portal Connection Construction Activities											
Excavation Phase I	62	3	186	50:50	10	9	19	50:50	9	10	19
Worker Trips	-	-	90	90:10	40	5	45	10:90	5	40	45
Total FRS II & South Portal			**276**		**50**	**14**	**64**		**14**	**50**	**64**

Footnotes:

a. Calculated assuming 10-hour work day and 5-day work week.

b. Per Exhibit 12-25 Passenger Car Equivalent (PCE) for General Terrain Segments, Highway Capacity Manual (HCM) Version 6.0, the PCE for trucks is 2.0 for level terrain.

General:

It is assumed that the peak of the worker trips occurs during the adjacent street peak hour. However, since the workday ends at 7:00 PM, the workers will leave the site at or after 7:00 PM and hence the PM peak hour of the construction workers will likely occur after 7:00 PM.

8.2 Construction Traffic Distribution

The overall distribution of Construction Truck traffic is based on the planned Truck Routes (*Figures 2-3 and 2-4*). Three routes each are possible from both I-15 and SR 52 to the three access points in the park. It was assumed that 20% of the construction truck traffic is oriented to the west on SR 52, 40% to the north on I-15 and the remaining 40% to the south on I-15.

A separate distribution was developed for the traffic related to the construction workers. It was assumed that 15% of the traffic generated by the construction workers is oriented to the west on SR 52, 15% to the north on I-15 and the remaining 70% to the south on I-15.

Figure 8-1 depicts the Construction Truck Traffic distribution, while ***Figure 8-2*** depicts the Construction Workers Traffic distribution.

8.3 Construction Traffic Assignment

Construction truck traffic and construction workers traffic was assigned separately to the study area intersections and segments using the distribution percentages on *Figures 8-1* and *8-2* as described in the following sections. Construction truck traffic for the North Portal Connection and for the FRS II and the South Portal Connection were assigned separately, and added to obtain the total truck traffic. Similarly, the construction worker traffic for the North Portal Connection and for the FRS II and the South Portal Connection were assigned separately and added to obtain the total construction worker traffic.

A bridge is located just inside the public park entrance at the east end of Clairemont Mesa Boulevard. It is yet to be determined if this bridge can be used by trucks carrying heavy loads, including equipment deliveries and material hauling traffic. If this entrance cannot be used, heavy trucks will need to use the southern entrance on Calle de Vida. If the bridge is strong enough to handle all the heavy truck traffic, it will be beneficial to the residents on Rueda Drive and Calle de Vida as truck traffic to FRS II will not use that route. For the "worst-case" scenario, the southern entrance on Calle de Vida is assumed to be the main access for the majority of the traffic and this route is analyzed in this report. Either of the routes will necessitate truck traffic using Clairemont Mesa Boulevard west of the Rueda Drive intersection.

Figure 8-3 depicts the Construction Truck Traffic Volumes, while ***Figure 8-4*** depicts the Construction Workers Traffic Volumes. ***Figure 8-5*** depicts the Total Construction Traffic Volumes and ***Figure 8-6*** depicts the Opening Year (2021) + Construction Workers Traffic Volumes.

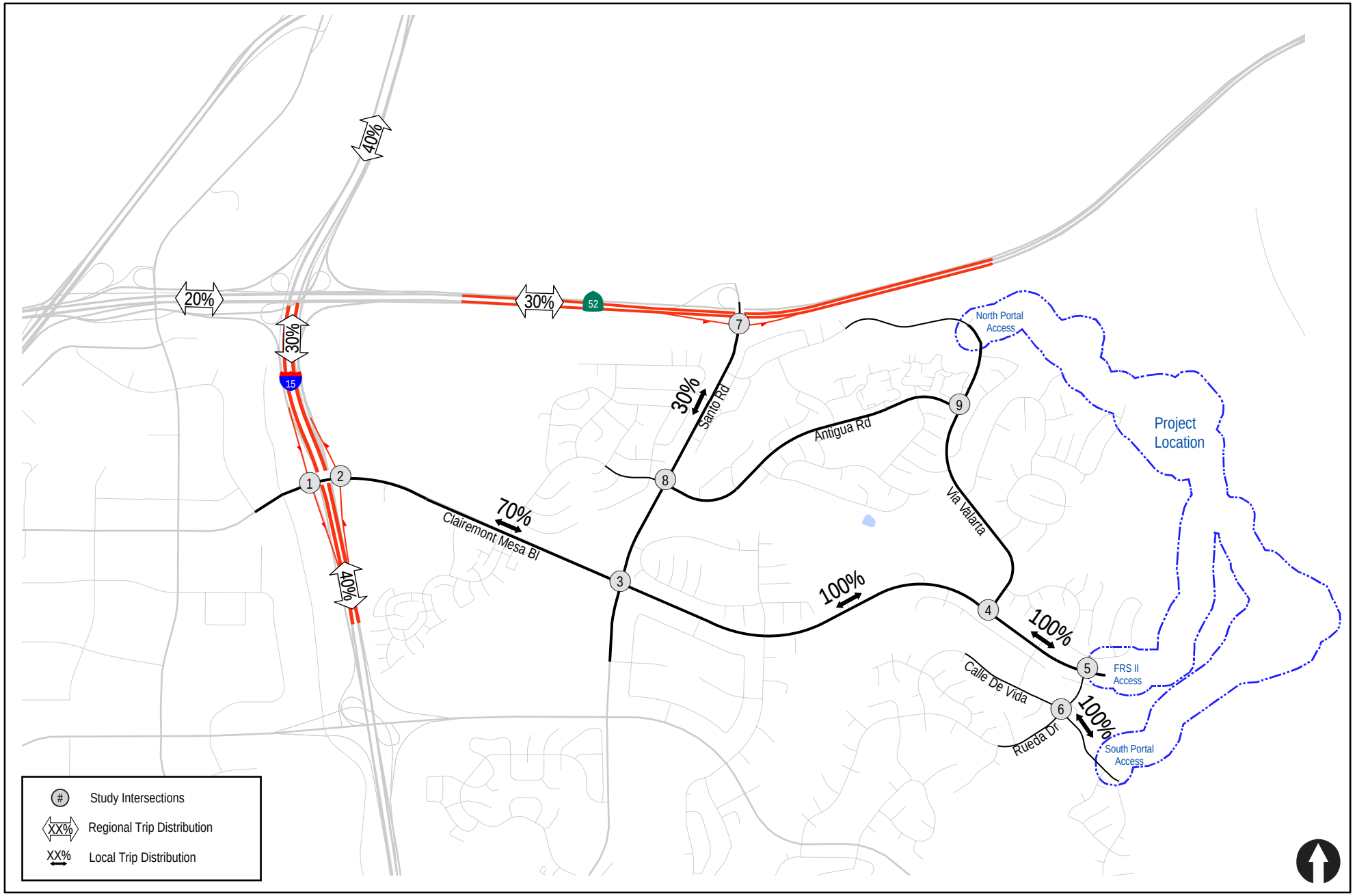

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Figure 8-1

Construction Truck Traffic Distribution

MISSION TRAILS FRSII

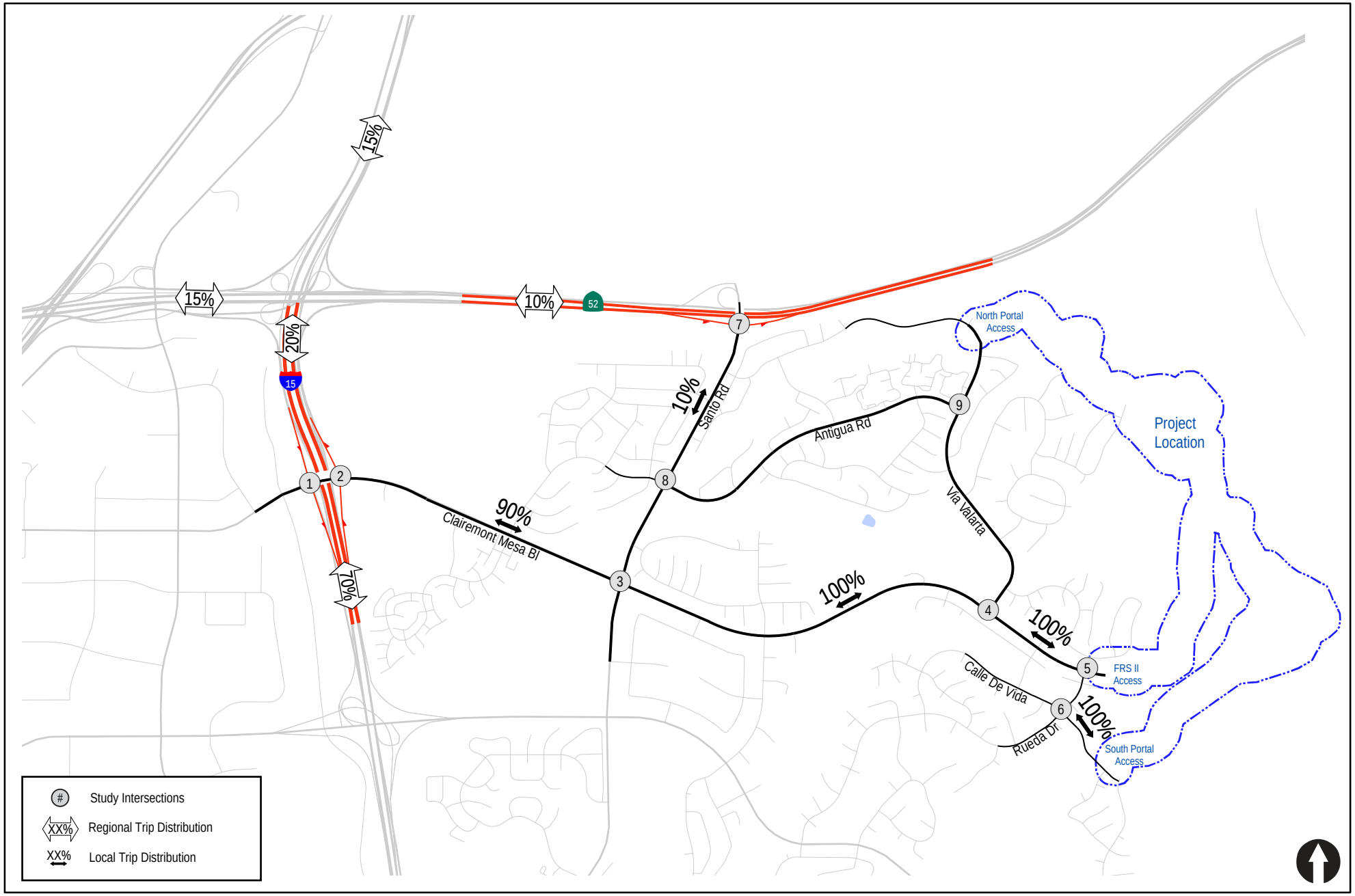

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Figure 8-2

Construction Workers Traffic Distribution

MISSION TRAILS FRSII

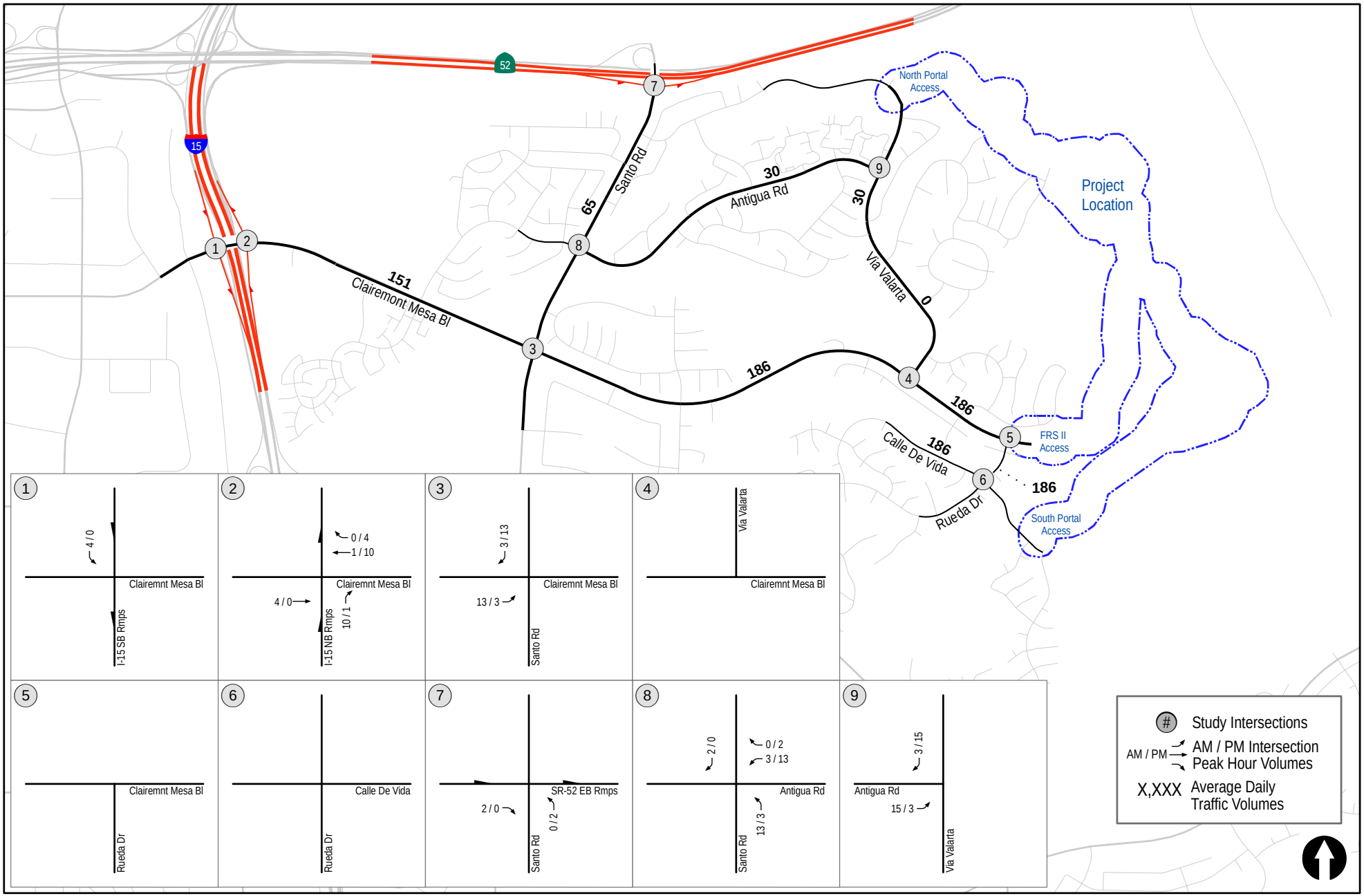

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Figure 8-3

Construction Truck Traffic Volumes

MISSION TRAILS FRSII

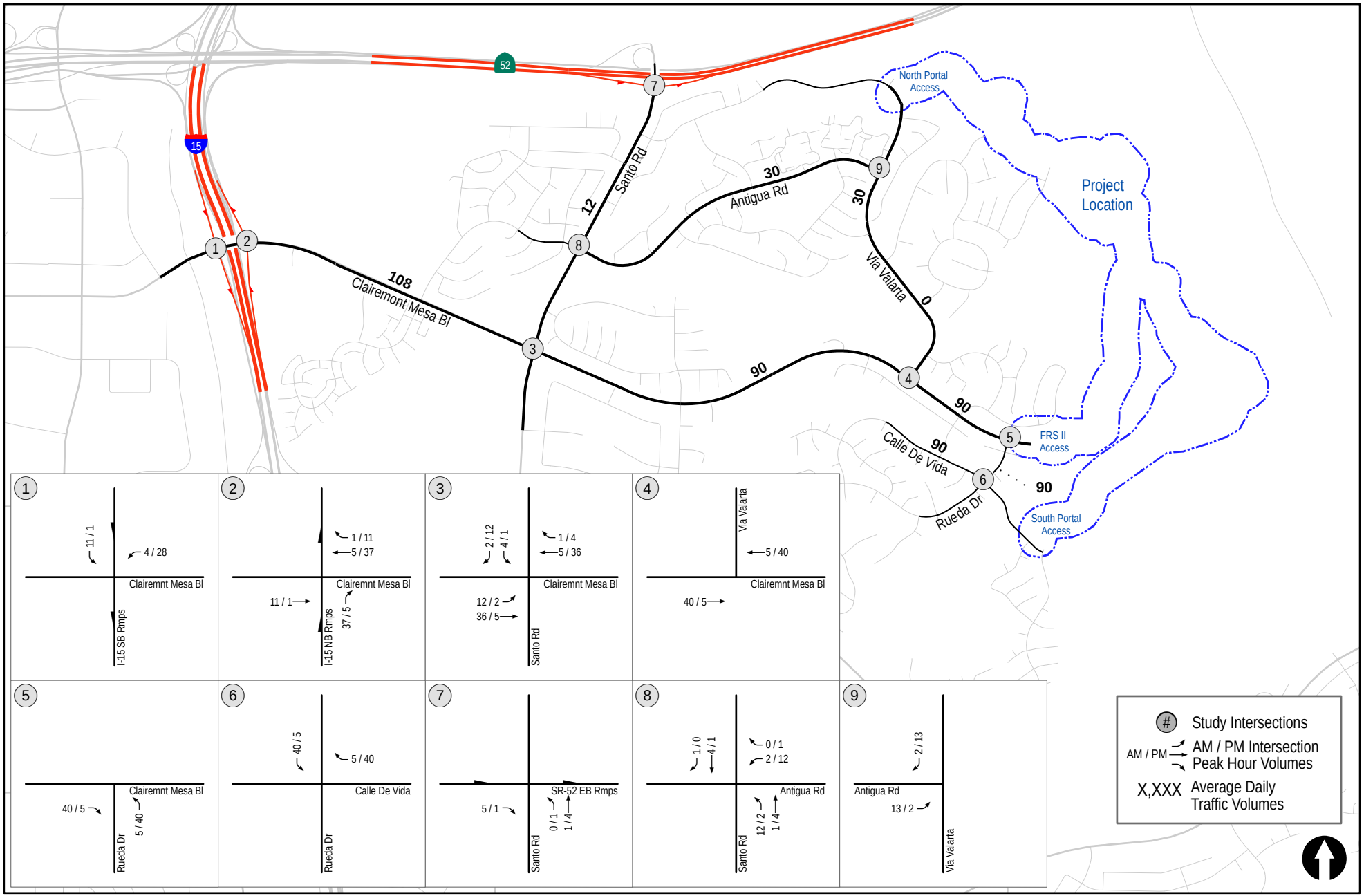

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Figure 8-4

Construction Workers Traffic Volumes

MISSION TRAILS FRSII

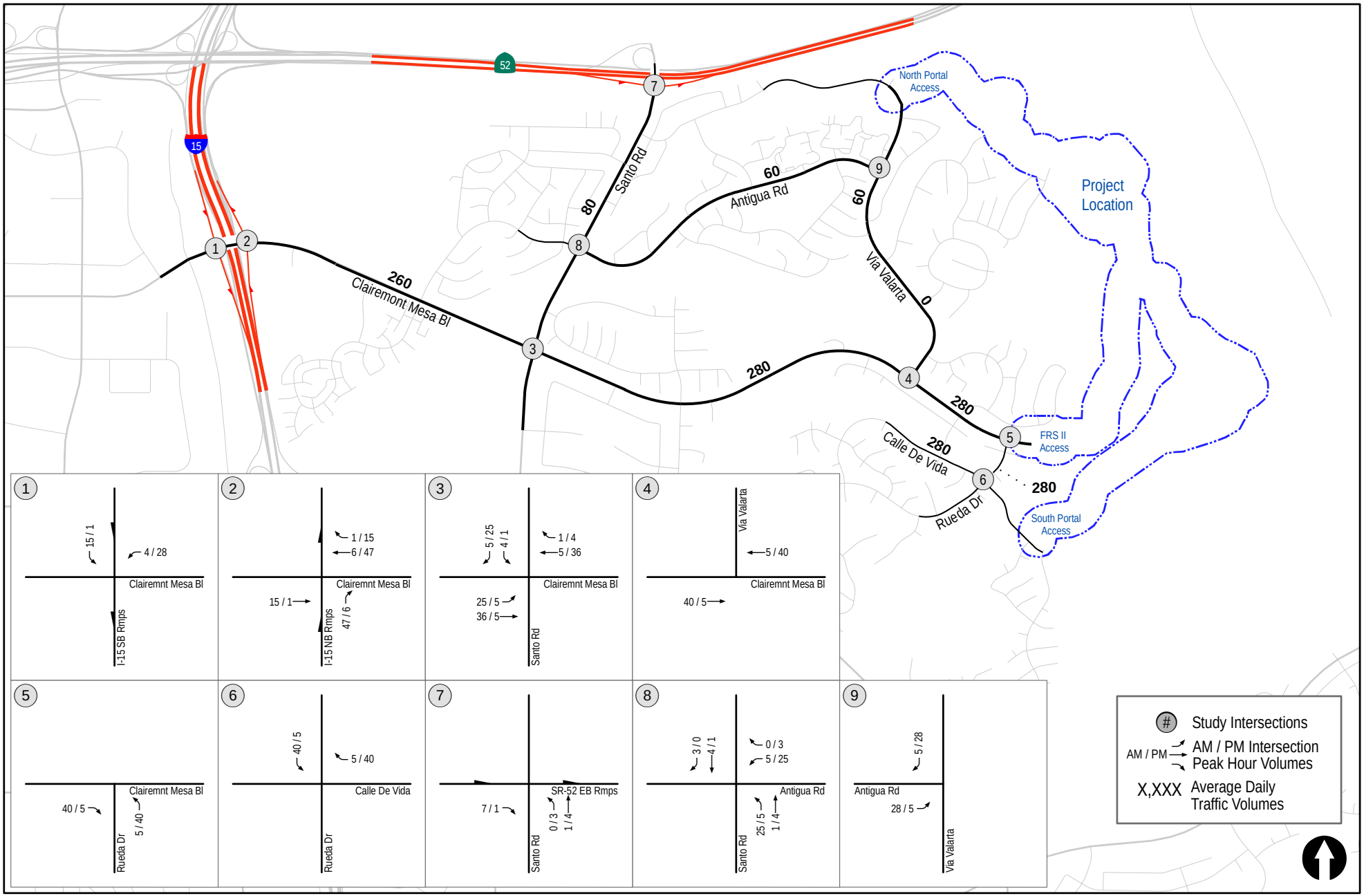

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Figure 8-5

Total Construction Traffic Volumes

MISSION TRAILS FRSII

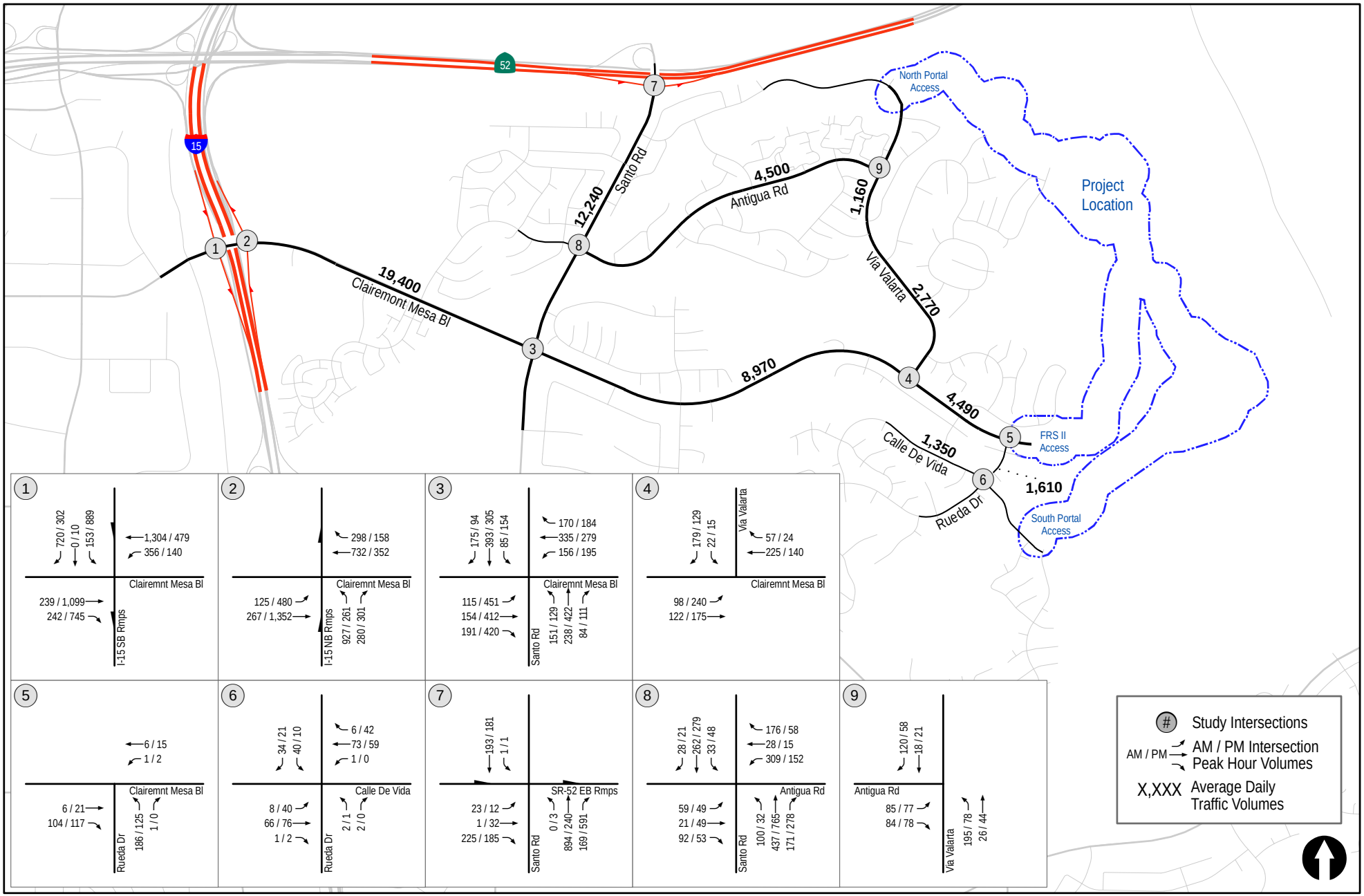

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Figure 8-6

Opening Year (2021) + Construction Traffic Volumes

MISSION TRAILS FRSII

9.0 ANALYSIS OF CONSTRUCTION YEAR SCENARIOS

9.1 Construction Year 2021 (Baseline)

9.1.1 *Intersection Analysis*

Table 9-1 summarizes the Construction Year 2021 (Baseline) intersection operations. As seen in *Table 9-1*, all study area intersections are calculated to operate at LOS D or better.

Appendix D contains the Construction Year 2021 (Baseline) intersection analysis worksheets.

9.1.2 *Daily Street Segment Levels of Service*

Table 9-2 summarizes the Construction Year 2021 (Baseline) segment operations. As seen in *Table 9-2*, all study area segments are calculated to operate at LOS C or better.

9.2 Construction Year 2021 + Construction Traffic

9.2.1 *Intersection Analysis*

Table 9-1 summarizes the Construction Year 2021 + Construction Traffic intersection operations. As seen in *Table 9-1*, with the addition of Construction traffic, all study area intersections are calculated to continue to operate at LOS D or better.

Appendix E contains the Construction Year 2021 + Construction Traffic intersection analysis worksheets.

9.2.2 *Daily Street Segment Levels of Service*

Table 9-2 summarizes the Construction Year 2021 With Construction Traffic segment operations. As seen in *Table 9-2*, with the addition of Construction traffic, all study area segments are calculated to continue to operate at LOS C or better.

TABLE 9–1
CONSTRUCTION YEAR 2021 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Construction Year 2021 (Baseline)		Construction Year 2021 + Construction Traffic		Δ Delay [c]	Significant Impact?
			Delay [a]	LOS [b]	Delay	LOS		
1. Clairemont Mesa Blvd / I-15 SB Ramps	Signal	AM	25.8	C	26.0	C	0.2	No
		PM	27.1	C	27.7	C	0.6	No
2. Clairemont Mesa Blvd / I-15 NB Ramps	Signal	AM	28.6	C	28.7	C	0.1	No
		PM	28.2	C	28.2	C	0.0	No
3. Clairemont Mesa Blvd / Santo Rd	Signal	AM	43.3	D	46.8	D	3.5	No
		PM	54.0	D	54.7	D	0.7	No
4. Clairemont Mesa Blvd / Via Valarta	Signal	AM	12.2	B	12.3	B	0.1	No
		PM	15.8	B	15.8	B	0.0	No
5. Clairemont Mesa Blvd / Rueda Drive	TWSC [d]	AM	9.8	A	9.8	A	0.0	No
		PM	9.2	A	9.5	A	0.3	No
6. Rueda Dr / Calle de Vida	TWSC	AM	9.7	A	10.5	B	0.8	No
		PM	10.0	A	10.3	B	0.3	No
7. SR-52 EB Ramps / Santo Rd	TWSC	AM	14.3	B	14.3	B	0.0	No
		PM	10.2	B	10.3	B	0.1	No
8. Antigua Blvd / Santo Rd	Signal	AM	24.5	C	24.9	C	0.4	No
		PM	20.7	C	21.8	C	1.1	No
9. Antigua Blvd / Via Valarta	Signal	AM	12.4	B	13.0	B	0.6	No
		PM	9.3	A	9.8	A	0.5	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase in delay due to project.
d. TWSC – Two-Way Stop Controlled intersection. Worst-case movement approach delay and LOS is reported.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 9–2
CONSTRUCTION YEAR 2021 STREET SEGMENT OPERATIONS

Street Segment	Functional Capacity (LOS E) [a]	Construction Year 2021 (Baseline)			Construction Year 2021 + Construction Traffic			Δ V/C [e]	Significant Impact?
		ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C		
Clairemont Mesa Boulevard									
I-15 to Santo Rd	40,000	19,140	B	0.479	19,400	B	0.485	0.007	No
Santo Rd to Via Valarta	40,000	8,690	A	0.217	8,970	A	0.224	0.007	No
Via Valarta to Rueda Dr	40,000	4,210	A	0.105	4,490	A	0.112	0.007	No
Via Valarta									
Mission Trls Reg Park Ent to Cam Playa Cancun	8,000	1,100	A	0.138	1,160	A	0.145	0.007	No
Playa Cancun to Clairemont Mesa Blvd	15,000	2,770	A	0.185	2,770	A	0.185	0.000	No
Rueda Drive									
Clairemont Mesa Blvd to Calle da Vida	2,200 [f]	1,330	C+	NA [f]	1,610	C+	NA [f]	NA [f]	No
Calle de Vida									
Rueda Dr to Colina Dorada Dr	2,200 [f]	1,070	C+	NA [f]	1,350	C+	NA [f]	NA [f]	No
Santo Road									
SR-52 to Clairemont Mesa Blvd	40,000	12,160	A	0.304	12,240	A	0.306	0.002	No
Antigua Boulevard									
Santo Rd to Via Valarta	30,000	4,440	C	0.148	4,500	C	0.150	0.002	No

Footnotes:

a. Capacities based on City of San Diego Roadway Classification & LOS table corresponding to the classification the roadway currently operates at.
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a project-induced increase in the Volume to Capacity ratio.
f. Not Applicable since levels of service are not applied to residential streets as their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally applies to roads carrying through traffic between major trip generators and attractors. Therefore, V/C or Δ V/C is not shown.

10.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

The preceding analysis indicates that all study area intersections and segments are calculated to operate at acceptable LOS D or better during construction.

It is recommended that trucks access the site over a 10-hour workday with two one-hour breaks, one during the morning between 8:00 AM and 9:00 AM and the second during the afternoon between 3:45 PM and 4:45 PM. These breaks will help to avoid school traffic in the morning and afternoon hours.

APPENDIX D

AIR QUALITY AND GREENHOUSE GAS MODELING DATA

Phase 1: FRS II

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	16.77	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Phase 1: FRS II - San Diego County, Winter

Project Characteristics -

Land Use - Based on acreage for the FRS II phase.

Construction Phase - Project specific construction schedule.

Off-road Equipment - No offroad equipment.

Off-road Equipment - Project specific equipment based on a 10 hour workday.

Off-road Equipment - Project specific equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - No offroad equipment

Grading - Default acres graded. Total excavation quantity: 111,100 cy. Only 56,00 off-hauled.

Trips and VMT - Peak construction at 45 workers per day. Mobilization and demobilization phases based on CalEEMod defaults per quantity of equipment. Delivery and truck trips modeled as vendor trips. Assumes 10 cy haul truck capacity. Haul truck trip length conservatively assumes distances to HA at Carroll Canyon Plant.

Construction Off-road Equipment Mitigation - SDAPCD Rule 55

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	66.00
tblConstructionPhase	NumDays	30.00	44.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	30.00	43.00
tblConstructionPhase	NumDays	30.00	6.00
tblConstructionPhase	NumDays	10.00	44.00

Phase 1: FRS II - San Diego County, Winter

tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	7/16/2021	9/30/2020
tblConstructionPhase	PhaseEndDate	5/21/2021	4/30/2020
tblConstructionPhase	PhaseEndDate	3/27/2020	2/28/2020
tblConstructionPhase	PhaseEndDate	6/18/2021	6/30/2020
tblConstructionPhase	PhaseEndDate	2/14/2020	1/31/2020
tblConstructionPhase	PhaseStartDate	6/19/2021	7/1/2020
tblConstructionPhase	PhaseStartDate	3/28/2020	3/1/2020
tblConstructionPhase	PhaseStartDate	2/15/2020	2/3/2020
tblConstructionPhase	PhaseStartDate	5/22/2021	5/1/2020
tblConstructionPhase	PhaseStartDate	2/1/2020	1/1/2020
tblGrading	MaterialExported	0.00	56,000.00
tblLandUse	LotAcreage	0.00	16.77
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	158.00	0.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	187.00	295.00
tblOffRoadEquipment	HorsePower	187.00	180.00
tblOffRoadEquipment	HorsePower	187.00	180.00
tblOffRoadEquipment	HorsePower	247.00	354.00
tblOffRoadEquipment	HorsePower	367.00	550.00
tblOffRoadEquipment	HorsePower	97.00	0.00
tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	97.00	94.00

Phase 1: FRS II - San Diego County, Winter

tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	97.00	318.00
tblOffRoadEquipment	HorsePower	402.00	309.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	97.00	850.00
tblOffRoadEquipment	HorsePower	158.00	244.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	402.00	309.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	402.00	309.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	65.00	190.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38

Phase 1: FRS II - San Diego County, Winter

tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes

Phase 1: FRS II - San Diego County, Winter

tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

Phase 1: FRS II - San Diego County, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripNumber	7,000.00	11,200.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00

tblTripsAndVMT	VendorTripNumber	0.00	79.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	90.00
tblTripsAndVMT	WorkerTripNumber	25.00	90.00
tblTripsAndVMT	WorkerTripNumber	13.00	90.00
tblTripsAndVMT	WorkerTripNumber	8.00	90.00
tblTripsAndVMT	WorkerTripNumber	13.00	90.00
tblTripsAndVMT	WorkerTripNumber	5.00	90.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	90.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.2450	133.5462	67.2927	0.2736	13.8605	3.1525	17.0130	5.5163	2.9068	8.4230	0.0000	28,260.5849	28,260.5849	5.3910	0.0000	28,395.3589
2021	0.9674	10.3278	8.1630	0.0336	1.6333	0.1592	1.7925	0.4441	0.1470	0.5912	0.0000	3,491.3276	3,491.3276	0.3138	0.0000	3,499.1735
Maximum	**9.2450**	**133.5462**	**67.2927**	**0.2736**	**13.8605**	**3.1525**	**17.0130**	**5.5163**	**2.9068**	**8.4230**	**0.0000**	**28,260.5849**	**28,260.5849**	**5.3910**	**0.0000**	**28,395.3589**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.2450	133.5462	67.2927	0.2736	8.5283	3.1525	11.6808	3.1075	2.9068	6.0143	0.0000	28,260.5849	28,260.5849	5.3910	0.0000	28,395.3589
2021	0.9674	10.3278	8.1630	0.0336	1.6333	0.1592	1.7925	0.4441	0.1470	0.5912	0.0000	3,491.3276	3,491.3276	0.3138	0.0000	3,499.1735
Maximum	**9.2450**	**133.5462**	**67.2927**	**0.2736**	**8.5283**	**3.1525**	**11.6808**	**3.1075**	**2.9068**	**6.0143**	**0.0000**	**28,260.5849**	**28,260.5849**	**5.3910**	**0.0000**	**28,395.3589**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.42**	**0.00**	**28.35**	**40.41**	**0.00**	**26.72**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization	Site Preparation	1/1/2020	1/31/2020	5	23	
2	Brushing	Site Preparation	2/3/2020	2/28/2020	5	20	
3	Excavation Phase I	Grading	3/1/2020	4/30/2020	5	44	
4	Structural Concrete	Paving	5/1/2020	6/30/2020	5	43	
5	Site Floor	Grading	7/1/2020	9/30/2020	5	66	
6	Backfill	Grading	10/1/2020	11/30/2020	5	43	
7	Site Piping Electrical	Trenching	12/1/2020	1/29/2021	5	44	
8	Final Grading	Grading	2/1/2021	2/8/2021	5	6	
9	Start Up and Testing	Site Preparation	2/9/2021	4/9/2021	5	44	
10	Demobilize and Restore Site	Site Preparation	4/10/2021	6/10/2021	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase 1: FRS II - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Floor	Off-Highway Trucks	1	10.00	370	0.38
Backfill	Off-Highway Trucks	1	10.00	370	0.38
Backfill	Cranes	1	10.00	350	0.29
Site Piping Electrical	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Final Grading	Skid Steer Loaders	1	10.00	190	0.37
Site Floor	Air Compressors	0	0.00	78	0.48
Excavation Phase I	Excavators	1	10.00	173	0.38
Site Floor	Excavators	0	0.00	0	0.38
Brushing	Excavators	0	0.00	158	0.38
Excavation Phase I	Cranes	0	0.00	231	0.29
Excavation Phase I	Forklifts	0	0.00	89	0.20
Excavation Phase I	Generator Sets	0	0.00	84	0.74
Structural Concrete	Pavers	0	0.00	130	0.42
Structural Concrete	Rollers	0	0.00	80	0.38
Backfill	Excavators	1	10.00	173	0.38
Brushing	Rubber Tired Dozers	0	0.00	247	0.40
Excavation Phase I	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Brushing	Graders	0	0.00	187	0.41
Brushing	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Structural Concrete	Paving Equipment	0	0.00	132	0.36
Mobilization	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization	Rubber Tired Dozers	0	0.00	247	0.40
Brushing	Scrapers	0	0.00	367	0.48
Excavation Phase I	Welders	0	0.00	46	0.45
Final Grading	Excavators	0	0.00	158	0.38
Excavation Phase I	Graders	1	10.00	295	0.41

Phase 1: FRS II - San Diego County, Winter

Site Floor	Graders	1	10.00	180	0.41
Backfill	Graders	1	10.00	180	0.41
Final Grading	Graders	0	0.00	187	0.41
Excavation Phase I	Rubber Tired Dozers	1	10.00	354	0.40
Site Floor	Rubber Tired Dozers	0	0.00	247	0.40
Backfill	Rubber Tired Dozers	0	0.00	247	0.40
Final Grading	Rubber Tired Dozers	0	0.00	247	0.40
Demobilize and Restore Site	Rubber Tired Dozers	0	0.00	247	0.40
Start Up and Testing	Rubber Tired Dozers	0	0.00	247	0.40
Excavation Phase I	Scrapers	1	10.00	550	0.48
Site Floor	Scrapers	0	0.00	367	0.48
Backfill	Scrapers	0	0.00	367	0.48
Final Grading	Scrapers	0	0.00	367	0.48
Site Floor	Tractors/Loaders/Backhoes	0	0.00	0	0.37
Backfill	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Final Grading	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Demobilize and Restore Site	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Start Up and Testing	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Brushing	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Brushing	Tractors/Loaders/Backhoes	1	10.00	318	0.37
Brushing	Off-Highway Trucks	1	10.00	309	0.38
Brushing	Off-Highway Trucks	1	10.00	370	0.38
Excavation Phase I	Tractors/Loaders/Backhoes	1	10.00	850	0.37
Excavation Phase I	Excavators	1	10.00	244	0.38
Excavation Phase I	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Excavation Phase I	Off-Highway Trucks	1	10.00	309	0.38
Excavation Phase I	Off-Highway Trucks	1	10.00	370	0.38

Structural Concrete	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Structural Concrete	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Structural Concrete	Excavators	1	10.00	173	0.38
Structural Concrete	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Structural Concrete	Off-Highway Trucks	1	10.00	309	0.38
Site Floor	Cranes	1	10.00	350	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backfill	5	90.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Mobilization	0	6.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Brushing	5	90.00	20.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation Phase I	10	90.00	60.00	11,200.00	16.80	6.60	11.90	LD_Mix	HDT_Mix	HHDT
Structural Concrete	5	90.00	60.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Floor	3	90.00	60.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading	2	90.00	79.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Demobilize and Restore Site	0	4.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Start Up and Testing	1	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Piping Electrical	1	90.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Mobilization - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0185	0.5382	0.1525	1.2300e-003	0.0306	2.5600e-003	0.0332	8.8100e-003	2.4500e-003	0.0113		132.0697	132.0697	0.0110		132.3446
Worker	0.0354	0.0247	0.2311	7.3000e-004	0.0766	5.2000e-004	0.0772	0.0203	4.8000e-004	0.0208		73.0854	73.0854	2.1200e-003		73.1385
Total	**0.0538**	**0.5629**	**0.3835**	**1.9600e-003**	**0.1073**	**3.0800e-003**	**0.1103**	**0.0291**	**2.9300e-003**	**0.0321**		**205.1551**	**205.1551**	**0.0131**		**205.4831**

3.2 Mobilization - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0185	0.5382	0.1525	1.2300e-003	0.0306	2.5600e-003	0.0332	8.8100e-003	2.4500e-003	0.0113		132.0697	132.0697	0.0110		132.3446
Worker	0.0354	0.0247	0.2311	7.3000e-004	0.0766	5.2000e-004	0.0772	0.0203	4.8000e-004	0.0208		73.0854	73.0854	2.1200e-003		73.1385
Total	**0.0538**	**0.5629**	**0.3835**	**1.9600e-003**	**0.1073**	**3.0800e-003**	**0.1103**	**0.0291**	**2.9300e-003**	**0.0321**		**205.1551**	**205.1551**	**0.0131**		**205.4831**

3.3 Brushing - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.9954	31.0992	18.4683	0.0662		1.0973	1.0973		1.0095	1.0095		6,407.4247	6,407.4247	2.0723		6,459.2319
Total	**2.9954**	**31.0992**	**18.4683**	**0.0662**	**0.0000**	**1.0973**	**1.0973**	**0.0000**	**1.0095**	**1.0095**		**6,407.4247**	**6,407.4247**	**2.0723**		**6,459.2319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0738	2.1526	0.6099	4.9200e-003	0.1225	0.0103	0.1327	0.0353	9.8100e-003	0.0451		528.2786	528.2786	0.0440		529.3785
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.6046**	**2.5236**	**4.0760**	**0.0159**	**1.2720**	**0.0180**	**1.2900**	**0.3401**	**0.0170**	**0.3571**		**1,624.5596**	**1,624.5596**	**0.0759**		**1,626.4561**

3.3 Brushing - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.9954	31.0992	18.4683	0.0662		1.0973	1.0973		1.0095	1.0095	0.0000	6,407.4247	6,407.4247	2.0723		6,459.2319
Total	**2.9954**	**31.0992**	**18.4683**	**0.0662**	**0.0000**	**1.0973**	**1.0973**	**0.0000**	**1.0095**	**1.0095**	**0.0000**	**6,407.4247**	**6,407.4247**	**2.0723**		**6,459.2319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0738	2.1526	0.6099	4.9200e-003	0.1225	0.0103	0.1327	0.0353	9.8100e-003	0.0451		528.2786	528.2786	0.0440		529.3785
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.6046**	**2.5236**	**4.0760**	**0.0159**	**1.2720**	**0.0180**	**1.2900**	**0.3401**	**0.0170**	**0.3571**		**1,624.5596**	**1,624.5596**	**0.0759**		**1,626.4561**

3.4 Excavation Phase I - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.6949	0.0000	9.6949	4.3796	0.0000	4.3796			0.0000			0.0000
Off-Road	7.0616	74.4669	50.0250	0.1218		2.9690	2.9690		2.7315	2.7315		11,797.8939	11,797.8939	3.8157		11,893.2858
Total	**7.0616**	**74.4669**	**50.0250**	**0.1218**	**9.6949**	**2.9690**	**12.6639**	**4.3796**	**2.7315**	**7.1111**		**11,797.8939**	**11,797.8939**	**3.8157**		**11,893.2858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4312	52.2505	11.9719	0.1261	2.6487	0.1450	2.7936	0.7261	0.1387	0.8648		13,781.5743	13,781.5743	1.4114		13,816.8599
Vendor	0.2214	6.4578	1.8297	0.0148	0.3674	0.0308	0.3981	0.1058	0.0294	0.1352		1,584.8358	1,584.8358	0.1320		1,588.1355
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**2.1834**	**59.0793**	**17.2677**	**0.1518**	**4.1656**	**0.1835**	**4.3491**	**1.1367**	**0.1753**	**1.3120**		**16,462.6911**	**16,462.6911**	**1.5753**		**16,502.0731**

3.4 Excavation Phase I - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.3627	0.0000	4.3627	1.9708	0.0000	1.9708			0.0000			0.0000
Off-Road	7.0616	74.4669	50.0250	0.1218		2.9690	2.9690		2.7315	2.7315	0.0000	11,797.8939	11,797.8939	3.8157		11,893.2858
Total	**7.0616**	**74.4669**	**50.0250**	**0.1218**	**4.3627**	**2.9690**	**7.3317**	**1.9708**	**2.7315**	**4.7023**	**0.0000**	**11,797.8939**	**11,797.8939**	**3.8157**		**11,893.2858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4312	52.2505	11.9719	0.1261	2.6487	0.1450	2.7936	0.7261	0.1387	0.8648		13,781.5743	13,781.5743	1.4114		13,816.8599
Vendor	0.2214	6.4578	1.8297	0.0148	0.3674	0.0308	0.3981	0.1058	0.0294	0.1352		1,584.8358	1,584.8358	0.1320		1,588.1355
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**2.1834**	**59.0793**	**17.2677**	**0.1518**	**4.1656**	**0.1835**	**4.3491**	**1.1367**	**0.1753**	**1.3120**		**16,462.6911**	**16,462.6911**	**1.5753**		**16,502.0731**

3.5 Structural Concrete - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3180	24.2739	17.7993	0.0493		0.9636	0.9636		0.8865	0.8865		4,770.1104	4,770.1104	1.5428		4,808.6792
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3180**	**24.2739**	**17.7993**	**0.0493**		**0.9636**	**0.9636**		**0.8865**	**0.8865**		**4,770.1104**	**4,770.1104**	**1.5428**		**4,808.6792**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2214	6.4578	1.8297	0.0148	0.3674	0.0308	0.3981	0.1058	0.0294	0.1352		1,584.8358	1,584.8358	0.1320		1,588.1355
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.7522**	**6.8288**	**5.2958**	**0.0258**	**1.5170**	**0.0385**	**1.5555**	**0.4106**	**0.0366**	**0.4472**		**2,681.1168**	**2,681.1168**	**0.1639**		**2,685.2132**

3.5 Structural Concrete - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3180	24.2739	17.7993	0.0493		0.9636	0.9636		0.8865	0.8865	0.0000	4,770.1104	4,770.1104	1.5428		4,808.6792
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3180**	**24.2739**	**17.7993**	**0.0493**		**0.9636**	**0.9636**		**0.8865**	**0.8865**	**0.0000**	**4,770.1104**	**4,770.1104**	**1.5428**		**4,808.6792**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2214	6.4578	1.8297	0.0148	0.3674	0.0308	0.3981	0.1058	0.0294	0.1352		1,584.8358	1,584.8358	0.1320		1,588.1355
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.7522**	**6.8288**	**5.2958**	**0.0258**	**1.5170**	**0.0385**	**1.5555**	**0.4106**	**0.0366**	**0.4472**		**2,681.1168**	**2,681.1168**	**0.1639**		**2,685.2132**

3.6 Site Floor - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6628	0.0000	0.6628	0.0716	0.0000	0.0716			0.0000			0.0000
Off-Road	2.0528	23.5282	12.5198	0.0341		0.8548	0.8548		0.7864	0.7864		3,301.8150	3,301.8150	1.0679		3,328.5119
Total	**2.0528**	**23.5282**	**12.5198**	**0.0341**	**0.6628**	**0.8548**	**1.5176**	**0.0716**	**0.7864**	**0.8580**		**3,301.8150**	**3,301.8150**	**1.0679**		**3,328.5119**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2214	6.4578	1.8297	0.0148	0.3674	0.0308	0.3981	0.1058	0.0294	0.1352		1,584.8358	1,584.8358	0.1320		1,588.1355
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.7522**	**6.8288**	**5.2958**	**0.0258**	**1.5170**	**0.0385**	**1.5555**	**0.4106**	**0.0366**	**0.4472**		**2,681.1168**	**2,681.1168**	**0.1639**		**2,685.2132**

3.6 Site Floor - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2983	0.0000	0.2983	0.0322	0.0000	0.0322			0.0000			0.0000
Off-Road	2.0528	23.5282	12.5198	0.0341		0.8548	0.8548		0.7864	0.7864	0.0000	3,301.8150	3,301.8150	1.0679		3,328.5119
Total	**2.0528**	**23.5282**	**12.5198**	**0.0341**	**0.2983**	**0.8548**	**1.1531**	**0.0322**	**0.7864**	**0.8186**	**0.0000**	**3,301.8150**	**3,301.8150**	**1.0679**		**3,328.5119**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2214	6.4578	1.8297	0.0148	0.3674	0.0308	0.3981	0.1058	0.0294	0.1352		1,584.8358	1,584.8358	0.1320		1,588.1355
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.7522**	**6.8288**	**5.2958**	**0.0258**	**1.5170**	**0.0385**	**1.5555**	**0.4106**	**0.0366**	**0.4472**		**2,681.1168**	**2,681.1168**	**0.1639**		**2,685.2132**

3.7 Backfill - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6629	0.0000	0.6629	0.0716	0.0000	0.0716			0.0000			0.0000
Off-Road	2.8319	32.2148	19.3360	0.0508		1.1911	1.1911		1.0958	1.0958		4,915.5153	4,915.5153	1.5898		4,955.2598
Total	**2.8319**	**32.2148**	**19.3360**	**0.0508**	**0.6629**	**1.1911**	**1.8540**	**0.0716**	**1.0958**	**1.1674**		**4,915.5153**	**4,915.5153**	**1.5898**		**4,955.2598**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.5308**	**0.3710**	**3.4661**	**0.0110**	**1.1496**	**7.7600e-003**	**1.1573**	**0.3049**	**7.1500e-003**	**0.3120**		**1,096.2810**	**1,096.2810**	**0.0319**		**1,097.0776**

3.7 Backfill - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2983	0.0000	0.2983	0.0322	0.0000	0.0322			0.0000			0.0000
Off-Road	2.8319	32.2148	19.3360	0.0508		1.1911	1.1911		1.0958	1.0958	0.0000	4,915.5153	4,915.5153	1.5898		4,955.2598
Total	**2.8319**	**32.2148**	**19.3360**	**0.0508**	**0.2983**	**1.1911**	**1.4894**	**0.0322**	**1.0958**	**1.1280**	**0.0000**	**4,915.5153**	**4,915.5153**	**1.5898**		**4,955.2598**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.5308**	**0.3710**	**3.4661**	**0.0110**	**1.1496**	**7.7600e-003**	**1.1573**	**0.3049**	**7.1500e-003**	**0.3120**		**1,096.2810**	**1,096.2810**	**0.0319**		**1,097.0776**

3.8 Site Piping Electrical - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2528	2.5397	2.7503	3.7500e-003		0.1606	0.1606		0.1478	0.1478		362.8560	362.8560	0.1174		365.7898
Total	**0.2528**	**2.5397**	**2.7503**	**3.7500e-003**		**0.1606**	**0.1606**		**0.1478**	**0.1478**		**362.8560**	**362.8560**	**0.1174**		**365.7898**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0221	0.6458	0.1830	1.4800e-003	0.0367	3.0800e-003	0.0398	0.0106	2.9400e-003	0.0135		158.4836	158.4836	0.0132		158.8136
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.5529**	**1.0168**	**3.6491**	**0.0125**	**1.1863**	**0.0108**	**1.1971**	**0.3154**	**0.0101**	**0.3255**		**1,254.7645**	**1,254.7645**	**0.0451**		**1,255.8912**

3.8 Site Piping Electrical - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2528	2.5397	2.7503	3.7500e-003		0.1606	0.1606		0.1478	0.1478	0.0000	362.8560	362.8560	0.1174		365.7898
Total	**0.2528**	**2.5397**	**2.7503**	**3.7500e-003**		**0.1606**	**0.1606**		**0.1478**	**0.1478**	**0.0000**	**362.8560**	**362.8560**	**0.1174**		**365.7898**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0221	0.6458	0.1830	1.4800e-003	0.0367	3.0800e-003	0.0398	0.0106	2.9400e-003	0.0135		158.4836	158.4836	0.0132		158.8136
Worker	0.5308	0.3710	3.4661	0.0110	1.1496	7.7600e-003	1.1573	0.3049	7.1500e-003	0.3120		1,096.2810	1,096.2810	0.0319		1,097.0776
Total	**0.5529**	**1.0168**	**3.6491**	**0.0125**	**1.1863**	**0.0108**	**1.1971**	**0.3154**	**0.0101**	**0.3255**		**1,254.7645**	**1,254.7645**	**0.0451**		**1,255.8912**

3.8 Site Piping Electrical - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2259	2.2872	2.7268	3.7500e-003		0.1349	0.1349		0.1241	0.1241		363.0147	363.0147	0.1174		365.9498
Total	**0.2259**	**2.2872**	**2.7268**	**3.7500e-003**		**0.1349**	**0.1349**		**0.1241**	**0.1241**		**363.0147**	**363.0147**	**0.1174**		**365.9498**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0181	0.5844	0.1660	1.4600e-003	0.0367	1.2300e-003	0.0380	0.0106	1.1700e-003	0.0118		157.0192	157.0192	0.0127		157.3354
Worker	0.5020	0.3375	3.2394	0.0106	1.1496	7.6400e-003	1.1572	0.3049	7.0400e-003	0.3119		1,059.4159	1,059.4159	0.0294		1,060.1514
Total	**0.5201**	**0.9218**	**3.4054**	**0.0121**	**1.1863**	**8.8700e-003**	**1.1952**	**0.3154**	**8.2100e-003**	**0.3236**		**1,216.4351**	**1,216.4351**	**0.0421**		**1,217.4868**

3.8 Site Piping Electrical - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2259	2.2872	2.7268	3.7500e-003		0.1349	0.1349		0.1241	0.1241	0.0000	363.0147	363.0147	0.1174		365.9498
Total	**0.2259**	**2.2872**	**2.7268**	**3.7500e-003**		**0.1349**	**0.1349**		**0.1241**	**0.1241**	**0.0000**	**363.0147**	**363.0147**	**0.1174**		**365.9498**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0181	0.5844	0.1660	1.4600e-003	0.0367	1.2300e-003	0.0380	0.0106	1.1700e-003	0.0118		157.0192	157.0192	0.0127		157.3354
Worker	0.5020	0.3375	3.2394	0.0106	1.1496	7.6400e-003	1.1572	0.3049	7.0400e-003	0.3119		1,059.4159	1,059.4159	0.0294		1,060.1514
Total	**0.5201**	**0.9218**	**3.4054**	**0.0121**	**1.1863**	**8.8700e-003**	**1.1952**	**0.3154**	**8.2100e-003**	**0.3236**		**1,216.4351**	**1,216.4351**	**0.0421**		**1,217.4868**

3.9 Final Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2269	2.2965	2.7379	3.7600e-003		0.1354	0.1354		0.1246	0.1246		364.4924	364.4924	0.1179		367.4395
Total	**0.2269**	**2.2965**	**2.7379**	**3.7600e-003**	**0.0000**	**0.1354**	**0.1354**	**0.0000**	**0.1246**	**0.1246**		**364.4924**	**364.4924**	**0.1179**		**367.4395**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2386	7.6939	2.1857	0.0192	0.4837	0.0162	0.4999	0.1393	0.0154	0.1547		2,067.4193	2,067.4193	0.1665		2,071.5827
Worker	0.5020	0.3375	3.2394	0.0106	1.1496	7.6400e-003	1.1572	0.3049	7.0400e-003	0.3119		1,059.4159	1,059.4159	0.0294		1,060.1514
Total	**0.7406**	**8.0314**	**5.4250**	**0.0299**	**1.6333**	**0.0238**	**1.6571**	**0.4441**	**0.0225**	**0.4666**		**3,126.8352**	**3,126.8352**	**0.1960**		**3,131.7341**

3.9 Final Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2269	2.2965	2.7379	3.7600e-003		0.1354	0.1354		0.1246	0.1246	0.0000	364.4924	364.4924	0.1179		367.4395
Total	**0.2269**	**2.2965**	**2.7379**	**3.7600e-003**	**0.0000**	**0.1354**	**0.1354**	**0.0000**	**0.1246**	**0.1246**	**0.0000**	**364.4924**	**364.4924**	**0.1179**		**367.4395**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2386	7.6939	2.1857	0.0192	0.4837	0.0162	0.4999	0.1393	0.0154	0.1547		2,067.4193	2,067.4193	0.1665		2,071.5827
Worker	0.5020	0.3375	3.2394	0.0106	1.1496	7.6400e-003	1.1572	0.3049	7.0400e-003	0.3119		1,059.4159	1,059.4159	0.0294		1,060.1514
Total	**0.7406**	**8.0314**	**5.4250**	**0.0299**	**1.6333**	**0.0238**	**1.6571**	**0.4441**	**0.0225**	**0.4666**		**3,126.8352**	**3,126.8352**	**0.1960**		**3,131.7341**

3.10 Start Up and Testing - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2269	2.2965	2.7379	3.7600e-003		0.1354	0.1354		0.1246	0.1246		364.4924	364.4924	0.1179		367.4395
Total	**0.2269**	**2.2965**	**2.7379**	**3.7600e-003**	**0.0000**	**0.1354**	**0.1354**	**0.0000**	**0.1246**	**0.1246**		**364.4924**	**364.4924**	**0.1179**		**367.4395**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0223	0.0150	0.1440	4.7000e-004	0.0511	3.4000e-004	0.0514	0.0136	3.1000e-004	0.0139		47.0852	47.0852	1.3100e-003		47.1178
Total	**0.0223**	**0.0150**	**0.1440**	**4.7000e-004**	**0.0511**	**3.4000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**47.0852**	**47.0852**	**1.3100e-003**		**47.1178**

3.10 Start Up and Testing - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2269	2.2965	2.7379	3.7600e-003		0.1354	0.1354		0.1246	0.1246	0.0000	364.4924	364.4924	0.1179		367.4395
Total	**0.2269**	**2.2965**	**2.7379**	**3.7600e-003**	**0.0000**	**0.1354**	**0.1354**	**0.0000**	**0.1246**	**0.1246**	**0.0000**	**364.4924**	**364.4924**	**0.1179**		**367.4395**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0223	0.0150	0.1440	4.7000e-004	0.0511	3.4000e-004	0.0514	0.0136	3.1000e-004	0.0139		47.0852	47.0852	1.3100e-003		47.1178
Total	**0.0223**	**0.0150**	**0.1440**	**4.7000e-004**	**0.0511**	**3.4000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**47.0852**	**47.0852**	**1.3100e-003**		**47.1178**

3.11 Demobilize and Restore Site - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0121	0.3896	0.1107	9.7000e-004	0.0245	8.2000e-004	0.0253	7.0500e-003	7.8000e-004	7.8300e-003		104.6795	104.6795	8.4300e-003		104.8903
Worker	0.0223	0.0150	0.1440	4.7000e-004	0.0511	3.4000e-004	0.0514	0.0136	3.1000e-004	0.0139		47.0852	47.0852	1.3100e-003		47.1178
Total	**0.0344**	**0.4046**	**0.2546**	**1.4400e-003**	**0.0756**	**1.1600e-003**	**0.0767**	**0.0206**	**1.0900e-003**	**0.0217**		**151.7646**	**151.7646**	**9.7400e-003**		**152.0081**

3.11 Demobilize and Restore Site - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0121	0.3896	0.1107	9.7000e-004	0.0245	8.2000e-004	0.0253	7.0500e-003	7.8000e-004	7.8300e-003		104.6795	104.6795	8.4300e-003		104.8903
Worker	0.0223	0.0150	0.1440	4.7000e-004	0.0511	3.4000e-004	0.0514	0.0136	3.1000e-004	0.0139		47.0852	47.0852	1.3100e-003		47.1178
Total	**0.0344**	**0.4046**	**0.2546**	**1.4400e-003**	**0.0756**	**1.1600e-003**	**0.0767**	**0.0206**	**1.0900e-003**	**0.0217**		**151.7646**	**151.7646**	**9.7400e-003**		**152.0081**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phase 2: Flow Control Facility

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.31	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on acreage for the FCF phase.

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific equipment based on a 10 hour workday

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Trips and VMT - Based on approximately 15 workers. Delivery and truck trips modeled as vendor trips. Haul truck trip length conservatively assumes distances to HA at Carroll Canyon Plant.

Grading - Approximately 1,269 cubic yards off-hauled.

Construction Off-road Equipment Mitigation - SDAPCD Rule 55.

Phase 2: Flow Control Facility - San Diego County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	21.00
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	PhaseEndDate	6/16/2021	7/9/2021
tblConstructionPhase	PhaseEndDate	6/30/2021	9/10/2021
tblConstructionPhase	PhaseEndDate	6/16/2021	12/10/2021
tblConstructionPhase	PhaseStartDate	6/17/2021	7/10/2021
tblConstructionPhase	PhaseStartDate	6/17/2021	9/11/2021
tblGrading	MaterialExported	0.00	1,269.00
tblLandUse	LotAcreage	0.00	1.31
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	97.00	850.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

Phase 2: Flow Control Facility - San Diego County, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Concrete Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripNumber	159.00	0.00

tblTripsAndVMT	HaulingTripNumber	0.00	260.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	7.00
tblTripsAndVMT	WorkerTripNumber	10.00	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	30.00
tblTripsAndVMT	WorkerTripNumber	20.00	30.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.2043	29.1673	29.4235	0.0534	0.5290	1.4942	1.9203	0.1428	1.4214	1.5353	0.0000	5,158.0144	5,158.0144	1.2357	0.0000	5,182.7912
Maximum	**3.2043**	**29.1673**	**29.4235**	**0.0534**	**0.5290**	**1.4942**	**1.9203**	**0.1428**	**1.4214**	**1.5353**	**0.0000**	**5,158.0144**	**5,158.0144**	**1.2357**	**0.0000**	**5,182.7912**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.2043	29.1673	29.4235	0.0534	0.5290	1.4942	1.9203	0.1428	1.4214	1.5353	0.0000	5,158.0144	5,158.0144	1.2357	0.0000	5,182.7912
Maximum	**3.2043**	**29.1673**	**29.4235**	**0.0534**	**0.5290**	**1.4942**	**1.9203**	**0.1428**	**1.4214**	**1.5353**	**0.0000**	**5,158.0144**	**5,158.0144**	**1.2357**	**0.0000**	**5,182.7912**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Excavation	Grading	6/11/2021	7/9/2021	5	21	
2	Concrete Work	Paving	7/10/2021	9/10/2021	5	45	
3	Mechanical Electrical Work	Trenching	9/11/2021	12/10/2021	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase 2: Flow Control Facility - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Excavation	Excavators	1	10.00	173	0.38
Excavation	Graders	0	0.00	187	0.41
Excavation	Off-Highway Trucks	1	10.00	370	0.38
Excavation	Rubber Tired Dozers	0	0.00	247	0.40
Excavation	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Excavation	Tractors/Loaders/Backhoes	1	10.00	850	0.37
Concrete Work	Cement and Mortar Mixers	0	0.00	9	0.56
Concrete Work	Excavators	1	10.00	173	0.38
Concrete Work	Pavers	0	0.00	130	0.42
Concrete Work	Paving Equipment	0	0.00	132	0.36
Concrete Work	Rollers	0	0.00	80	0.38
Concrete Work	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Concrete Work	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Mechanical Electrical Work	Air Compressors	1	10.00	78	0.48
Mechanical Electrical Work	Concrete/Industrial Saws	1	10.00	81	0.73
Mechanical Electrical Work	Cranes	1	10.00	231	0.29
Mechanical Electrical Work	Excavators	1	10.00	158	0.38
Mechanical Electrical Work	Forklifts	1	10.00	89	0.20
Mechanical Electrical Work	Generator Sets	1	10.00	84	0.74
Mechanical Electrical Work	Other Construction Equipment	1	10.00	172	0.42
Mechanical Electrical Work	Tractors/Loaders/Backhoes	1	10.00	97	0.37

Trips and VMT

Phase 2: Flow Control Facility - San Diego County, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Excavation	4	30.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	30.00	14.00	260.00	16.80	6.60	11.90	LD_Mix	HDT_Mix	HHDT
Mechanical Electrical Work	8	30.00	7.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Excavation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4900e-003	0.0000	8.4900e-003	1.2900e-003	0.0000	1.2900e-003			0.0000			0.0000
Off-Road	1.6107	14.9425	13.1112	0.0385		0.5792	0.5792		0.5328	0.5328		3,725.0768	3,725.0768	1.2048		3,755.1960
Total	**1.6107**	**14.9425**	**13.1112**	**0.0385**	**8.4900e-003**	**0.5792**	**0.5876**	**1.2900e-003**	**0.5328**	**0.5341**		**3,725.0768**	**3,725.0768**	**1.2048**		**3,755.1960**

3.2 Excavation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0302	0.9739	0.2767	2.4300e-003	0.0612	2.0400e-003	0.0633	0.0176	1.9500e-003	0.0196		261.6987	261.6987	0.0211		262.2257
Worker	0.1673	0.1125	1.0798	3.5400e-003	0.3832	2.5500e-003	0.3857	0.1016	2.3500e-003	0.1040		353.1386	353.1386	9.8100e-003		353.3838
Total	**0.1975**	**1.0864**	**1.3565**	**5.9700e-003**	**0.4444**	**4.5900e-003**	**0.4490**	**0.1193**	**4.3000e-003**	**0.1235**		**614.8373**	**614.8373**	**0.0309**		**615.6095**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.8200e-003	0.0000	3.8200e-003	5.8000e-004	0.0000	5.8000e-004			0.0000			0.0000
Off-Road	1.6107	14.9425	13.1112	0.0385		0.5792	0.5792		0.5328	0.5328	0.0000	3,725.0768	3,725.0768	1.2048		3,755.1959
Total	**1.6107**	**14.9425**	**13.1112**	**0.0385**	**3.8200e-003**	**0.5792**	**0.5830**	**5.8000e-004**	**0.5328**	**0.5334**	**0.0000**	**3,725.0768**	**3,725.0768**	**1.2048**		**3,755.1959**

3.2 Excavation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0302	0.9739	0.2767	2.4300e-003	0.0612	2.0400e-003	0.0633	0.0176	1.9500e-003	0.0196		261.6987	261.6987	0.0211		262.2257
Worker	0.1673	0.1125	1.0798	3.5400e-003	0.3832	2.5500e-003	0.3857	0.1016	2.3500e-003	0.1040		353.1386	353.1386	9.8100e-003		353.3838
Total	**0.1975**	**1.0864**	**1.3565**	**5.9700e-003**	**0.4444**	**4.5900e-003**	**0.4490**	**0.1193**	**4.3000e-003**	**0.1235**		**614.8373**	**614.8373**	**0.0309**		**615.6095**

3.3 Concrete Work - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9540	9.9207	9.5573	0.0204		0.4362	0.4362		0.4013	0.4013		1,978.0079	1,978.0079	0.6397		1,994.0011
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9540**	**9.9207**	**9.5573**	**0.0204**		**0.4362**	**0.4362**		**0.4013**	**0.4013**		**1,978.0079**	**1,978.0079**	**0.6397**		**1,994.0011**

3.3 Concrete Work - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0305	1.0997	0.2667	2.8200e-003	0.0601	2.8900e-003	0.0630	0.0165	2.7700e-003	0.0193		308.9563	308.9563	0.0315		309.7426
Vendor	0.0423	1.3635	0.3873	3.4100e-003	0.0857	2.8600e-003	0.0886	0.0247	2.7400e-003	0.0274		366.3781	366.3781	0.0295		367.1159
Worker	0.1673	0.1125	1.0798	3.5400e-003	0.3832	2.5500e-003	0.3857	0.1016	2.3500e-003	0.1040		353.1386	353.1386	9.8100e-003		353.3838
Total	**0.2401**	**2.5756**	**1.7338**	**9.7700e-003**	**0.5290**	**8.3000e-003**	**0.5373**	**0.1428**	**7.8600e-003**	**0.1506**		**1,028.4731**	**1,028.4731**	**0.0708**		**1,030.2423**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9540	9.9207	9.5573	0.0204		0.4362	0.4362		0.4013	0.4013	0.0000	1,978.0079	1,978.0079	0.6397		1,994.0011
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9540**	**9.9207**	**9.5573**	**0.0204**		**0.4362**	**0.4362**		**0.4013**	**0.4013**	**0.0000**	**1,978.0079**	**1,978.0079**	**0.6397**		**1,994.0011**

3.3 Concrete Work - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0305	1.0997	0.2667	2.8200e-003	0.0601	2.8900e-003	0.0630	0.0165	2.7700e-003	0.0193		308.9563	308.9563	0.0315		309.7426
Vendor	0.0423	1.3635	0.3873	3.4100e-003	0.0857	2.8600e-003	0.0886	0.0247	2.7400e-003	0.0274		366.3781	366.3781	0.0295		367.1159
Worker	0.1673	0.1125	1.0798	3.5400e-003	0.3832	2.5500e-003	0.3857	0.1016	2.3500e-003	0.1040		353.1386	353.1386	9.8100e-003		353.3838
Total	**0.2401**	**2.5756**	**1.7338**	**9.7700e-003**	**0.5290**	**8.3000e-003**	**0.5373**	**0.1428**	**7.8600e-003**	**0.1506**		**1,028.4731**	**1,028.4731**	**0.0708**		**1,030.2423**

3.4 Mechanical Electrical Work - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0158	28.3731	28.1500	0.0482		1.4903	1.4903		1.4177	1.4177		4,621.6867	4,621.6867	0.9665		4,645.8495
Total	**3.0158**	**28.3731**	**28.1500**	**0.0482**		**1.4903**	**1.4903**		**1.4177**	**1.4177**		**4,621.6867**	**4,621.6867**	**0.9665**		**4,645.8495**

3.4 Mechanical Electrical Work - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0212	0.6817	0.1937	1.7000e-003	0.0429	1.4300e-003	0.0443	0.0123	1.3700e-003	0.0137		183.1891	183.1891	0.0148		183.5580
Worker	0.1673	0.1125	1.0798	3.5400e-003	0.3832	2.5500e-003	0.3857	0.1016	2.3500e-003	0.1040		353.1386	353.1386	9.8100e-003		353.3838
Total	**0.1885**	**0.7942**	**1.2735**	**5.2400e-003**	**0.4261**	**3.9800e-003**	**0.4300**	**0.1140**	**3.7200e-003**	**0.1177**		**536.3277**	**536.3277**	**0.0246**		**536.9418**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0158	28.3731	28.1500	0.0482		1.4903	1.4903		1.4177	1.4177	0.0000	4,621.6867	4,621.6867	0.9665		4,645.8495
Total	**3.0158**	**28.3731**	**28.1500**	**0.0482**		**1.4903**	**1.4903**		**1.4177**	**1.4177**	**0.0000**	**4,621.6867**	**4,621.6867**	**0.9665**		**4,645.8495**

3.4 Mechanical Electrical Work - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0212	0.6817	0.1937	1.7000e-003	0.0429	1.4300e-003	0.0443	0.0123	1.3700e-003	0.0137		183.1891	183.1891	0.0148		183.5580
Worker	0.1673	0.1125	1.0798	3.5400e-003	0.3832	2.5500e-003	0.3857	0.1016	2.3500e-003	0.1040		353.1386	353.1386	9.8100e-003		353.3838
Total	**0.1885**	**0.7942**	**1.2735**	**5.2400e-003**	**0.4261**	**3.9800e-003**	**0.4300**	**0.1140**	**3.7200e-003**	**0.1177**		**536.3277**	**536.3277**	**0.0246**		**536.9418**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phase 3: Tunnel Connections and Vent Removal

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	2.88	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Winter

Project Characteristics -

Land Use - Based on acreage for the tunnel connections and vent removal phase.

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific construction schedule based on a 10 hour workday.

Off-road Equipment - No off-road equipment.

Off-road Equipment - Project specific equipment based on a 10 hr workday. Muck skip modeled as other material handling equipment.

Off-road Equipment - No off-road equipment.

Off-road Equipment - Project specific equipment based on 10 hour workday. Cellular concrete plant modeled as other construction equipment.

Grading - Assumes 1,300 cubic yards off-hauled.

Demolition - No on-site demolition. Aboveground portion of the vents removed via crane. Below-ground portion filled with concrete. Demolition square footage based on google earth square footage for 5 vents.

Trips and VMT - Assumes 15 workers per day. Delivery and truck trips modeled as vendor trips. Assumes 10 cy haul truck capacity to offhaul 1,300 cy. Haul truck trip length conservatively assumes distances to HA at Carroll Canyon Plant.

Construction Off-road Equipment Mitigation - SDAPCD Rule 55

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	22.00
tblConstructionPhase	NumDays	3.00	23.00
tblConstructionPhase	NumDays	20.00	44.00
tblGrading	MaterialExported	0.00	650.00
tblGrading	MaterialExported	0.00	650.00
tblLandUse	LotAcreage	0.00	2.88
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Winter

tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripNumber	2.00	0.00
tblTripsAndVMT	HaulingTripNumber	81.00	0.00
tblTripsAndVMT	HaulingTripNumber	81.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	130.00
tblTripsAndVMT	HaulingTripNumber	0.00	130.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00

tblTripsAndVMT	WorkerTripNumber	10.00	30.00
tblTripsAndVMT	WorkerTripNumber	0.00	30.00
tblTripsAndVMT	WorkerTripNumber	0.00	30.00
tblTripsAndVMT	WorkerTripNumber	20.00	30.00
tblTripsAndVMT	WorkerTripNumber	23.00	30.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.1797	30.2037	29.3237	0.0551	0.3825	1.4923	1.8749	0.1027	1.4197	1.5224	0.0000	5,357.5096	5,357.5096	1.0170	0.0000	5,382.9336
2022	3.2327	29.9555	33.7431	0.0630	0.4280	1.4340	1.8125	0.1138	1.3600	1.4625	0.0000	6,131.6984	6,131.6984	1.2403	0.0000	6,162.7065
Maximum	**3.2327**	**30.2037**	**33.7431**	**0.0630**	**0.4280**	**1.4923**	**1.8749**	**0.1138**	**1.4197**	**1.5224**	**0.0000**	**6,131.6984**	**6,131.6984**	**1.2403**	**0.0000**	**6,162.7065**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.1797	30.2037	29.3237	0.0551	0.3825	1.4923	1.8749	0.1027	1.4197	1.5224	0.0000	5,357.5096	5,357.5096	1.0170	0.0000	5,382.9336
2022	3.2327	29.9555	33.7431	0.0630	0.4280	1.4340	1.8125	0.1138	1.3600	1.4625	0.0000	6,131.6984	6,131.6984	1.2403	0.0000	6,162.7065
Maximum	**3.2327**	**30.2037**	**33.7431**	**0.0630**	**0.4280**	**1.4923**	**1.8749**	**0.1138**	**1.4197**	**1.5224**	**0.0000**	**6,131.6984**	**6,131.6984**	**1.2403**	**0.0000**	**6,162.7065**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	North Half Connections	Trenching	12/13/2021	1/13/2022	5	24	
2	Demobilization North Portal	Site Preparation	1/14/2022	2/14/2022	5	22	
3	South Half Connections	Trenching	2/15/2022	3/15/2022	5	21	
4	Demobilization South Portal	Site Preparation	3/16/2022	4/15/2022	5	23	
5	Vent Removal	Demolition	4/16/2022	6/16/2022	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vent Removal	Concrete/Industrial Saws	1	10.00	81	0.73
Demobilization North Portal	Graders	0	0.00	187	0.41
Demobilization South Portal	Graders	0	0.00	187	0.41
Vent Removal	Rubber Tired Dozers	0	0.00	247	0.40
Demobilization North Portal	Scrapers	0	0.00	367	0.48

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Winter

Demobilization South Portal	Scrapers	0	0.00	367	0.48
Vent Removal	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Demobilization North Portal	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Demobilization South Portal	Tractors/Loaders/Backhoes	0	0.00	97	0.37
North Half Connections	Concrete/Industrial Saws	1	10.00	81	0.73
North Half Connections	Air Compressors	1	10.00	78	0.48
North Half Connections	Excavators	1	10.00	158	0.38
North Half Connections	Generator Sets	1	10.00	84	0.74
North Half Connections	Cranes	1	10.00	231	0.29
North Half Connections	Other Construction Equipment	1	10.00	172	0.42
North Half Connections	Forklifts	1	10.00	89	0.20
North Half Connections	Tractors/Loaders/Backhoes	1	10.00	97	0.37
South Half Connections	Concrete/Industrial Saws	1	10.00	81	0.73
South Half Connections	Air Compressors	1	10.00	78	0.48
South Half Connections	Excavators	1	10.00	158	0.38
South Half Connections	Generator Sets	1	10.00	84	0.74
South Half Connections	Cranes	1	10.00	231	0.29
South Half Connections	Other Construction Equipment	1	10.00	172	0.42
South Half Connections	Other Material Handling Equipment	1	10.00	168	0.40
South Half Connections	Forklifts	1	10.00	89	0.20
South Half Connections	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Vent Removal	Other Construction Equipment	1	10.00	172	0.42
Vent Removal	Air Compressors	1	10.00	78	0.48
Vent Removal	Cranes	1	10.00	231	0.29

Trips and VMT

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Vent Removal	4	30.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization North Portal	0	30.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization South Portal	0	30.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Half Connections	8	30.00	8.00	130.00	10.80	7.30	11.90	LD_Mix	HDT_Mix	HHDT
South Half Connections	9	30.00	10.00	130.00	10.80	7.30	11.90	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 North Half Connections - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0080	28.2846	28.0946	0.0481		1.4861	1.4861		1.4139	1.4139		4,611.4433	4,611.4433	0.9632		4,635.5233
Total	**3.0080**	**28.2846**	**28.0946**	**0.0481**		**1.4861**	**1.4861**		**1.4139**	**1.4139**		**4,611.4433**	**4,611.4433**	**0.9632**		**4,635.5233**

3.2 North Half Connections - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0286	1.0310	0.2500	2.6400e-003	0.0819	2.7100e-003	0.0846	0.0217	2.5900e-003	0.0243		289.6466	289.6466	0.0295		290.3837
Vendor	0.0255	0.8125	0.2312	2.1100e-003	0.0542	1.7800e-003	0.0559	0.0156	1.7000e-003	0.0173		227.0554	227.0554	0.0177		227.4977
Worker	0.1177	0.0757	0.7480	2.3000e-003	0.2464	1.7000e-003	0.2482	0.0654	1.5700e-003	0.0669		229.3643	229.3643	6.5900e-003		229.5290
Total	**0.1717**	**1.9191**	**1.2292**	**7.0500e-003**	**0.3825**	**6.1900e-003**	**0.3887**	**0.1027**	**5.8600e-003**	**0.1086**		**746.0663**	**746.0663**	**0.0538**		**747.4104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0080	28.2846	28.0946	0.0481		1.4861	1.4861		1.4139	1.4139	0.0000	4,611.4433	4,611.4433	0.9632		4,635.5233
Total	**3.0080**	**28.2846**	**28.0946**	**0.0481**		**1.4861**	**1.4861**		**1.4139**	**1.4139**	**0.0000**	**4,611.4433**	**4,611.4433**	**0.9632**		**4,635.5233**

3.2 North Half Connections - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0286	1.0310	0.2500	2.6400e-003	0.0819	2.7100e-003	0.0846	0.0217	2.5900e-003	0.0243		289.6466	289.6466	0.0295		290.3837
Vendor	0.0255	0.8125	0.2312	2.1100e-003	0.0542	1.7800e-003	0.0559	0.0156	1.7000e-003	0.0173		227.0554	227.0554	0.0177		227.4977
Worker	0.1177	0.0757	0.7480	2.3000e-003	0.2464	1.7000e-003	0.2482	0.0654	1.5700e-003	0.0669		229.3643	229.3643	6.5900e-003		229.5290
Total	**0.1717**	**1.9191**	**1.2292**	**7.0500e-003**	**0.3825**	**6.1900e-003**	**0.3887**	**0.1027**	**5.8600e-003**	**0.1086**		**746.0663**	**746.0663**	**0.0538**		**747.4104**

3.2 North Half Connections - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7306	25.0656	27.8434	0.0481		1.2773	1.2773		1.2157	1.2157		4,611.5181	4,611.5181	0.9562		4,635.4237
Total	**2.7306**	**25.0656**	**27.8434**	**0.0481**		**1.2773**	**1.2773**		**1.2157**	**1.2157**		**4,611.5181**	**4,611.5181**	**0.9562**		**4,635.4237**

3.2 North Half Connections - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0268	0.9529	0.2467	2.6000e-003	0.1274	2.3000e-003	0.1297	0.0329	2.2000e-003	0.0351		285.9013	285.9013	0.0289		286.6244
Vendor	0.0237	0.7673	0.2189	2.0900e-003	0.0542	1.5300e-003	0.0557	0.0156	1.4700e-003	0.0171		224.8821	224.8821	0.0171		225.3102
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1621**	**1.7892**	**1.1597**	**6.9100e-003**	**0.4280**	**5.5000e-003**	**0.4335**	**0.1138**	**5.2000e-003**	**0.1190**		**731.7411**	**731.7411**	**0.0521**		**733.0431**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7306	25.0656	27.8434	0.0481		1.2773	1.2773		1.2157	1.2157	0.0000	4,611.5181	4,611.5181	0.9562		4,635.4237
Total	**2.7306**	**25.0656**	**27.8434**	**0.0481**		**1.2773**	**1.2773**		**1.2157**	**1.2157**	**0.0000**	**4,611.5181**	**4,611.5181**	**0.9562**		**4,635.4237**

3.2 North Half Connections - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0268	0.9529	0.2467	2.6000e-003	0.1274	2.3000e-003	0.1297	0.0329	2.2000e-003	0.0351		285.9013	285.9013	0.0289		286.6244
Vendor	0.0237	0.7673	0.2189	2.0900e-003	0.0542	1.5300e-003	0.0557	0.0156	1.4700e-003	0.0171		224.8821	224.8821	0.0171		225.3102
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1621**	**1.7892**	**1.1597**	**6.9100e-003**	**0.4280**	**5.5000e-003**	**0.4335**	**0.1138**	**5.2000e-003**	**0.1190**		**731.7411**	**731.7411**	**0.0521**		**733.0431**

3.3 Demobilization North Portal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1500e-003	0.0000	4.1500e-003	6.3000e-004	0.0000	6.3000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.1500e-003**	**0.0000**	**4.1500e-003**	**6.3000e-004**	**0.0000**	**6.3000e-004**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Demobilization North Portal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0148	0.4795	0.1368	1.3000e-003	0.0339	9.6000e-004	0.0348	9.7400e-003	9.2000e-004	0.0107		140.5513	140.5513	0.0107		140.8189
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1263**	**0.5485**	**0.8308**	**3.5200e-003**	**0.2803**	**2.6300e-003**	**0.2829**	**0.0751**	**2.4500e-003**	**0.0776**		**361.5090**	**361.5090**	**0.0167**		**361.9274**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8700e-003	0.0000	1.8700e-003	2.8000e-004	0.0000	2.8000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8700e-003**	**0.0000**	**1.8700e-003**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Demobilization North Portal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0148	0.4795	0.1368	1.3000e-003	0.0339	9.6000e-004	0.0348	9.7400e-003	9.2000e-004	0.0107		140.5513	140.5513	0.0107		140.8189
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1263**	**0.5485**	**0.8308**	**3.5200e-003**	**0.2803**	**2.6300e-003**	**0.2829**	**0.0751**	**2.4500e-003**	**0.0776**		**361.5090**	**361.5090**	**0.0167**		**361.9274**

3.4 South Half Connections - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0609	27.8383	32.4935	0.0552		1.4278	1.4278		1.3541	1.3541		5,302.8938	5,302.8938	1.1798		5,332.3895
Total	**3.0609**	**27.8383**	**32.4935**	**0.0552**		**1.4278**	**1.4278**		**1.3541**	**1.3541**		**5,302.8938**	**5,302.8938**	**1.1798**		**5,332.3895**

3.4 South Half Connections - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0307	1.0891	0.2820	2.9700e-003	0.0644	2.6300e-003	0.0670	0.0177	2.5200e-003	0.0202		326.7444	326.7444	0.0331		327.5708
Vendor	0.0297	0.9591	0.2736	2.6100e-003	0.0677	1.9200e-003	0.0696	0.0195	1.8300e-003	0.0213		281.1026	281.1026	0.0214		281.6377
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1718**	**2.1171**	**1.2496**	**7.8000e-003**	**0.3786**	**6.2200e-003**	**0.3848**	**0.1025**	**5.8800e-003**	**0.1084**		**828.8047**	**828.8047**	**0.0605**		**830.3170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0609	27.8383	32.4935	0.0552		1.4278	1.4278		1.3541	1.3541	0.0000	5,302.8938	5,302.8938	1.1798		5,332.3895
Total	**3.0609**	**27.8383**	**32.4935**	**0.0552**		**1.4278**	**1.4278**		**1.3541**	**1.3541**	**0.0000**	**5,302.8938**	**5,302.8938**	**1.1798**		**5,332.3895**

3.4 South Half Connections - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0307	1.0891	0.2820	2.9700e-003	0.0644	2.6300e-003	0.0670	0.0177	2.5200e-003	0.0202		326.7444	326.7444	0.0331		327.5708
Vendor	0.0297	0.9591	0.2736	2.6100e-003	0.0677	1.9200e-003	0.0696	0.0195	1.8300e-003	0.0213		281.1026	281.1026	0.0214		281.6377
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1718**	**2.1171**	**1.2496**	**7.8000e-003**	**0.3786**	**6.2200e-003**	**0.3848**	**0.1025**	**5.8800e-003**	**0.1084**		**828.8047**	**828.8047**	**0.0605**		**830.3170**

3.5 Demobilization South Portal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9700e-003	0.0000	3.9700e-003	6.0000e-004	0.0000	6.0000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.9700e-003**	**0.0000**	**3.9700e-003**	**6.0000e-004**	**0.0000**	**6.0000e-004**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Demobilization South Portal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0148	0.4795	0.1368	1.3000e-003	0.0339	9.6000e-004	0.0348	9.7400e-003	9.2000e-004	0.0107		140.5513	140.5513	0.0107		140.8189
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1263**	**0.5485**	**0.8308**	**3.5200e-003**	**0.2803**	**2.6300e-003**	**0.2829**	**0.0751**	**2.4500e-003**	**0.0776**		**361.5090**	**361.5090**	**0.0167**		**361.9274**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7900e-003	0.0000	1.7900e-003	2.7000e-004	0.0000	2.7000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.7900e-003**	**0.0000**	**1.7900e-003**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Demobilization South Portal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0148	0.4795	0.1368	1.3000e-003	0.0339	9.6000e-004	0.0348	9.7400e-003	9.2000e-004	0.0107		140.5513	140.5513	0.0107		140.8189
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1263**	**0.5485**	**0.8308**	**3.5200e-003**	**0.2803**	**2.6300e-003**	**0.2829**	**0.0751**	**2.4500e-003**	**0.0776**		**361.5090**	**361.5090**	**0.0167**		**361.9274**

3.6 Vent Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0101	0.0000	0.0101	1.5300e-003	0.0000	1.5300e-003			0.0000			0.0000
Off-Road	1.7242	15.8482	14.9942	0.0277		0.7899	0.7899		0.7526	0.7526		2,656.3629	2,656.3629	0.5388		2,669.8320
Total	**1.7242**	**15.8482**	**14.9942**	**0.0277**	**0.0101**	**0.7899**	**0.8000**	**1.5300e-003**	**0.7526**	**0.7542**		**2,656.3629**	**2,656.3629**	**0.5388**		**2,669.8320**

3.6 Vent Removal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9300e-003	0.1918	0.0547	5.2000e-004	0.0135	3.8000e-004	0.0139	3.9000e-003	3.7000e-004	4.2600e-003		56.2205	56.2205	4.2800e-003		56.3276
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1174**	**0.2608**	**0.7488**	**2.7400e-003**	**0.2600**	**2.0500e-003**	**0.2620**	**0.0693**	**1.9000e-003**	**0.0712**		**277.1782**	**277.1782**	**0.0103**		**277.4361**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5400e-003	0.0000	4.5400e-003	6.9000e-004	0.0000	6.9000e-004			0.0000			0.0000
Off-Road	1.7242	15.8482	14.9942	0.0277		0.7899	0.7899		0.7526	0.7526	0.0000	2,656.3629	2,656.3629	0.5388		2,669.8320
Total	**1.7242**	**15.8482**	**14.9942**	**0.0277**	**4.5400e-003**	**0.7899**	**0.7944**	**6.9000e-004**	**0.7526**	**0.7533**	**0.0000**	**2,656.3629**	**2,656.3629**	**0.5388**		**2,669.8320**

3.6 Vent Removal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9300e-003	0.1918	0.0547	5.2000e-004	0.0135	3.8000e-004	0.0139	3.9000e-003	3.7000e-004	4.2600e-003		56.2205	56.2205	4.2800e-003		56.3276
Worker	0.1115	0.0690	0.6941	2.2200e-003	0.2464	1.6700e-003	0.2481	0.0654	1.5300e-003	0.0669		220.9577	220.9577	6.0300e-003		221.1085
Total	**0.1174**	**0.2608**	**0.7488**	**2.7400e-003**	**0.2600**	**2.0500e-003**	**0.2620**	**0.0693**	**1.9000e-003**	**0.0712**		**277.1782**	**277.1782**	**0.0103**		**277.4361**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phase 1: FRS II

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	16.77	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Phase 1: FRS II - San Diego County, Annual

Project Characteristics -

Land Use - Based on acreage for the FRS II phase.

Construction Phase - Project specific construction schedule.

Off-road Equipment - No offroad equipment.

Off-road Equipment - Project specific equipment based on a 10 hour workday.

Off-road Equipment - Project specific equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - No offroad equipment

Grading - Default acres graded. Total excavation quantity: 111,100 cy. Only 56,00 off-hauled.

Trips and VMT - Peak construction at 45 workers per day. Mobilization and demobilization phases based on CalEEMod defaults per quantity of equipment. Delivery and truck trips modeled as vendor trips. Assumes 10 cy haul truck capacity. Haul truck trip length conservatively assumes distances to HA at Carroll Canyon Plant.

Construction Off-road Equipment Mitigation - SDAPCD Rule 55

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	66.00
tblConstructionPhase	NumDays	30.00	44.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	30.00	43.00
tblConstructionPhase	NumDays	30.00	6.00
tblConstructionPhase	NumDays	10.00	44.00

Phase 1: FRS II - San Diego County, Annual

tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	7/16/2021	9/30/2020
tblConstructionPhase	PhaseEndDate	5/21/2021	4/30/2020
tblConstructionPhase	PhaseEndDate	3/27/2020	2/28/2020
tblConstructionPhase	PhaseEndDate	6/18/2021	6/30/2020
tblConstructionPhase	PhaseEndDate	2/14/2020	1/31/2020
tblConstructionPhase	PhaseStartDate	6/19/2021	7/1/2020
tblConstructionPhase	PhaseStartDate	3/28/2020	3/1/2020
tblConstructionPhase	PhaseStartDate	2/15/2020	2/3/2020
tblConstructionPhase	PhaseStartDate	5/22/2021	5/1/2020
tblConstructionPhase	PhaseStartDate	2/1/2020	1/1/2020
tblGrading	MaterialExported	0.00	56,000.00
tblLandUse	LotAcreage	0.00	16.77
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	158.00	0.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	187.00	295.00
tblOffRoadEquipment	HorsePower	187.00	180.00
tblOffRoadEquipment	HorsePower	187.00	180.00
tblOffRoadEquipment	HorsePower	247.00	354.00
tblOffRoadEquipment	HorsePower	367.00	550.00
tblOffRoadEquipment	HorsePower	97.00	0.00
tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	97.00	94.00

Phase 1: FRS II - San Diego County, Annual

tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	97.00	318.00
tblOffRoadEquipment	HorsePower	402.00	309.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	97.00	850.00
tblOffRoadEquipment	HorsePower	158.00	244.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	402.00	309.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	402.00	309.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	HorsePower	231.00	350.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	65.00	190.00
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tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38

tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes

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tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripNumber	7,000.00	11,200.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00

tblTripsAndVMT	VendorTripNumber	0.00	79.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	90.00
tblTripsAndVMT	WorkerTripNumber	25.00	90.00
tblTripsAndVMT	WorkerTripNumber	13.00	90.00
tblTripsAndVMT	WorkerTripNumber	8.00	90.00
tblTripsAndVMT	WorkerTripNumber	13.00	90.00
tblTripsAndVMT	WorkerTripNumber	5.00	90.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	90.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4712	5.7128	3.3399	0.0120	0.4710	0.1592	0.6302	0.1603	0.1467	0.3070	0.0000	1,105.1015	1,105.1015	0.2297	0.0000	1,110.8429
2021	0.0160	0.1248	0.1577	4.0000e-004	0.0197	5.0000e-003	0.0247	5.2800e-003	4.6000e-003	9.8800e-003	0.0000	36.0934	36.0934	4.9300e-003	0.0000	36.2165
Maximum	**0.4712**	**5.7128**	**3.3399**	**0.0120**	**0.4710**	**0.1592**	**0.6302**	**0.1603**	**0.1467**	**0.3070**	**0.0000**	**1,105.1015**	**1,105.1015**	**0.2297**	**0.0000**	**1,110.8429**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4712	5.7128	3.3399	0.0120	0.3338	0.1592	0.4930	0.1052	0.1467	0.2519	0.0000	1,105.1008	1,105.1008	0.2297	0.0000	1,110.8422
2021	0.0160	0.1248	0.1577	4.0000e-004	0.0197	5.0000e-003	0.0247	5.2800e-003	4.6000e-003	9.8800e-003	0.0000	36.0934	36.0934	4.9300e-003	0.0000	36.2165
Maximum	**0.4712**	**5.7128**	**3.3399**	**0.0120**	**0.3338**	**0.1592**	**0.4930**	**0.1052**	**0.1467**	**0.2519**	**0.0000**	**1,105.1008**	**1,105.1008**	**0.2297**	**0.0000**	**1,110.8422**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**27.96**	**0.00**	**20.95**	**33.30**	**0.00**	**17.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-6-2020**	**4-5-2020**	2.1869	2.1869
2	**4-6-2020**	**7-5-2020**	2.0745	2.0745
3	**7-6-2020**	**10-5-2020**	1.0912	1.0912
4	**10-6-2020**	**1-5-2021**	0.7743	0.7743
5	**1-6-2021**	**4-5-2021**	0.1174	0.1174
6	**4-6-2021**	**7-5-2021**	0.0133	0.0133
		Highest	2.1869	2.1869

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase 1: FRS II - San Diego County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization	Site Preparation	1/1/2020	1/31/2020	5	23	
2	Brushing	Site Preparation	2/3/2020	2/28/2020	5	20	
3	Excavation Phase I	Grading	3/1/2020	4/30/2020	5	44	
4	Structural Concrete	Paving	5/1/2020	6/30/2020	5	43	
5	Site Floor	Grading	7/1/2020	9/30/2020	5	66	
6	Backfill	Grading	10/1/2020	11/30/2020	5	43	
7	Site Piping Electrical	Trenching	12/1/2020	1/29/2021	5	44	
8	Final Grading	Grading	2/1/2021	2/8/2021	5	6	
9	Start Up and Testing	Site Preparation	2/9/2021	4/9/2021	5	44	
10	Demobilize and Restore Site	Site Preparation	4/10/2021	6/10/2021	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Floor	Off-Highway Trucks	1	10.00	370	0.38
Backfill	Off-Highway Trucks	1	10.00	370	0.38
Backfill	Cranes	1	10.00	350	0.29
Site Piping Electrical	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Final Grading	Skid Steer Loaders	1	10.00	190	0.37
Site Floor	Air Compressors	0	0.00	78	0.48

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Excavation Phase I	Excavators	1	10.00	173	0.38
Site Floor	Excavators	0	0.00	0	0.38
Brushing	Excavators	0	0.00	158	0.38
Excavation Phase I	Cranes	0	0.00	231	0.29
Excavation Phase I	Forklifts	0	0.00	89	0.20
Excavation Phase I	Generator Sets	0	0.00	84	0.74
Structural Concrete	Pavers	0	0.00	130	0.42
Structural Concrete	Rollers	0	0.00	80	0.38
Backfill	Excavators	1	10.00	173	0.38
Brushing	Rubber Tired Dozers	0	0.00	247	0.40
Excavation Phase I	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Brushing	Graders	0	0.00	187	0.41
Brushing	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Structural Concrete	Paving Equipment	0	0.00	132	0.36
Mobilization	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization	Rubber Tired Dozers	0	0.00	247	0.40
Brushing	Scrapers	0	0.00	367	0.48
Excavation Phase I	Welders	0	0.00	46	0.45
Final Grading	Excavators	0	0.00	158	0.38
Excavation Phase I	Graders	1	10.00	295	0.41
Site Floor	Graders	1	10.00	180	0.41
Backfill	Graders	1	10.00	180	0.41
Final Grading	Graders	0	0.00	187	0.41
Excavation Phase I	Rubber Tired Dozers	1	10.00	354	0.40
Site Floor	Rubber Tired Dozers	0	0.00	247	0.40
Backfill	Rubber Tired Dozers	0	0.00	247	0.40
Final Grading	Rubber Tired Dozers	0	0.00	247	0.40

Phase 1: FRS II - San Diego County, Annual

Demobilize and Restore Site	Rubber Tired Dozers	0	0.00	247	0.40
Start Up and Testing	Rubber Tired Dozers	0	0.00	247	0.40
Excavation Phase I	Scrapers	1	10.00	550	0.48
Site Floor	Scrapers	0	0.00	367	0.48
Backfill	Scrapers	0	0.00	367	0.48
Final Grading	Scrapers	0	0.00	367	0.48
Site Floor	Tractors/Loaders/Backhoes	0	0.00	0	0.37
Backfill	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Final Grading	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Demobilize and Restore Site	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Start Up and Testing	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Brushing	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Brushing	Tractors/Loaders/Backhoes	1	10.00	318	0.37
Brushing	Off-Highway Trucks	1	10.00	309	0.38
Brushing	Off-Highway Trucks	1	10.00	370	0.38
Excavation Phase I	Tractors/Loaders/Backhoes	1	10.00	850	0.37
Excavation Phase I	Excavators	1	10.00	244	0.38
Excavation Phase I	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Excavation Phase I	Off-Highway Trucks	1	10.00	309	0.38
Excavation Phase I	Off-Highway Trucks	1	10.00	370	0.38
Structural Concrete	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Structural Concrete	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Structural Concrete	Excavators	1	10.00	173	0.38
Structural Concrete	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Structural Concrete	Off-Highway Trucks	1	10.00	309	0.38
Site Floor	Cranes	1	10.00	350	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backfill	5	90.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Mobilization	0	6.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Brushing	5	90.00	20.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation Phase I	10	90.00	60.00	11,200.00	16.80	6.60	11.90	LD_Mix	HDT_Mix	HHDT
Structural Concrete	5	90.00	60.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Floor	3	90.00	60.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading	2	90.00	79.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Demobilize and Restore Site	0	4.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Start Up and Testing	1	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Piping Electrical	1	90.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Mobilization - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	6.2600e-003	1.6600e-003	1.0000e-005	3.5000e-004	3.0000e-005	3.7000e-004	1.0000e-004	3.0000e-005	1.3000e-004	0.0000	1.4008	1.4008	1.1000e-004	0.0000	1.4035
Worker	3.6000e-004	2.8000e-004	2.6800e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.7000e-004	2.3000e-004	1.0000e-005	2.3000e-004	0.0000	0.7702	0.7702	2.0000e-005	0.0000	0.7707
Total	**5.7000e-004**	**6.5400e-003**	**4.3400e-003**	**2.0000e-005**	**1.2100e-003**	**4.0000e-005**	**1.2400e-003**	**3.3000e-004**	**4.0000e-005**	**3.6000e-004**	**0.0000**	**2.1709**	**2.1709**	**1.3000e-004**	**0.0000**	**2.1742**

3.2 Mobilization - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	6.2600e-003	1.6600e-003	1.0000e-005	3.5000e-004	3.0000e-005	3.7000e-004	1.0000e-004	3.0000e-005	1.3000e-004	0.0000	1.4008	1.4008	1.1000e-004	0.0000	1.4035
Worker	3.6000e-004	2.8000e-004	2.6800e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.7000e-004	2.3000e-004	1.0000e-005	2.3000e-004	0.0000	0.7702	0.7702	2.0000e-005	0.0000	0.7707
Total	**5.7000e-004**	**6.5400e-003**	**4.3400e-003**	**2.0000e-005**	**1.2100e-003**	**4.0000e-005**	**1.2400e-003**	**3.3000e-004**	**4.0000e-005**	**3.6000e-004**	**0.0000**	**2.1709**	**2.1709**	**1.3000e-004**	**0.0000**	**2.1742**

3.3 Brushing - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0300	0.3110	0.1847	6.6000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	58.1272	58.1272	0.0188	0.0000	58.5972
Total	**0.0300**	**0.3110**	**0.1847**	**6.6000e-004**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**0.0101**	**0.0101**	**0.0000**	**58.1272**	**58.1272**	**0.0188**	**0.0000**	**58.5972**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2000e-004	0.0218	5.7800e-003	5.0000e-005	1.2000e-003	1.0000e-004	1.3000e-003	3.5000e-004	1.0000e-004	4.4000e-004	0.0000	4.8722	4.8722	3.9000e-004	0.0000	4.8818
Worker	4.6600e-003	3.6500e-003	0.0349	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9800e-003	7.0000e-005	3.0500e-003	0.0000	10.0454	10.0454	2.9000e-004	0.0000	10.0527
Total	**5.3800e-003**	**0.0254**	**0.0407**	**1.6000e-004**	**0.0124**	**1.8000e-004**	**0.0126**	**3.3300e-003**	**1.7000e-004**	**3.4900e-003**	**0.0000**	**14.9176**	**14.9176**	**6.8000e-004**	**0.0000**	**14.9345**

3.3 Brushing - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0300	0.3110	0.1847	6.6000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	58.1271	58.1271	0.0188	0.0000	58.5971
Total	**0.0300**	**0.3110**	**0.1847**	**6.6000e-004**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**0.0101**	**0.0101**	**0.0000**	**58.1271**	**58.1271**	**0.0188**	**0.0000**	**58.5971**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2000e-004	0.0218	5.7800e-003	5.0000e-005	1.2000e-003	1.0000e-004	1.3000e-003	3.5000e-004	1.0000e-004	4.4000e-004	0.0000	4.8722	4.8722	3.9000e-004	0.0000	4.8818
Worker	4.6600e-003	3.6500e-003	0.0349	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9800e-003	7.0000e-005	3.0500e-003	0.0000	10.0454	10.0454	2.9000e-004	0.0000	10.0527
Total	**5.3800e-003**	**0.0254**	**0.0407**	**1.6000e-004**	**0.0124**	**1.8000e-004**	**0.0126**	**3.3300e-003**	**1.7000e-004**	**3.4900e-003**	**0.0000**	**14.9176**	**14.9176**	**6.8000e-004**	**0.0000**	**14.9345**

3.4 Excavation Phase I - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2133	0.0000	0.2133	0.0964	0.0000	0.0964	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1554	1.6383	1.1006	2.6800e-003		0.0653	0.0653		0.0601	0.0601	0.0000	235.4631	235.4631	0.0762	0.0000	237.3670
Total	**0.1554**	**1.6383**	**1.1006**	**2.6800e-003**	**0.2133**	**0.0653**	**0.2786**	**0.0964**	**0.0601**	**0.1564**	**0.0000**	**235.4631**	**235.4631**	**0.0762**	**0.0000**	**237.3670**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0308	1.1639	0.2498	2.8200e-003	0.0571	3.1300e-003	0.0602	0.0157	2.9900e-003	0.0187	0.0000	279.3824	279.3824	0.0274	0.0000	280.0681
Vendor	4.7400e-003	0.1438	0.0381	3.3000e-004	7.9200e-003	6.7000e-004	8.5900e-003	2.2900e-003	6.4000e-004	2.9300e-003	0.0000	32.1566	32.1566	2.5400e-003	0.0000	32.2202
Worker	0.0103	8.0300e-003	0.0768	2.4000e-004	0.0247	1.7000e-004	0.0249	6.5600e-003	1.6000e-004	6.7200e-003	0.0000	22.0998	22.0998	6.4000e-004	0.0000	22.1159
Total	**0.0458**	**1.3157**	**0.3647**	**3.3900e-003**	**0.0897**	**3.9700e-003**	**0.0936**	**0.0245**	**3.7900e-003**	**0.0283**	**0.0000**	**333.6388**	**333.6388**	**0.0306**	**0.0000**	**334.4041**

3.4 Excavation Phase I - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0960	0.0000	0.0960	0.0434	0.0000	0.0434	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1554	1.6383	1.1006	2.6800e-003		0.0653	0.0653		0.0601	0.0601	0.0000	235.4628	235.4628	0.0762	0.0000	237.3667
Total	**0.1554**	**1.6383**	**1.1006**	**2.6800e-003**	**0.0960**	**0.0653**	**0.1613**	**0.0434**	**0.0601**	**0.1035**	**0.0000**	**235.4628**	**235.4628**	**0.0762**	**0.0000**	**237.3667**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0308	1.1639	0.2498	2.8200e-003	0.0571	3.1300e-003	0.0602	0.0157	2.9900e-003	0.0187	0.0000	279.3824	279.3824	0.0274	0.0000	280.0681
Vendor	4.7400e-003	0.1438	0.0381	3.3000e-004	7.9200e-003	6.7000e-004	8.5900e-003	2.2900e-003	6.4000e-004	2.9300e-003	0.0000	32.1566	32.1566	2.5400e-003	0.0000	32.2202
Worker	0.0103	8.0300e-003	0.0768	2.4000e-004	0.0247	1.7000e-004	0.0249	6.5600e-003	1.6000e-004	6.7200e-003	0.0000	22.0998	22.0998	6.4000e-004	0.0000	22.1159
Total	**0.0458**	**1.3157**	**0.3647**	**3.3900e-003**	**0.0897**	**3.9700e-003**	**0.0936**	**0.0245**	**3.7900e-003**	**0.0283**	**0.0000**	**333.6388**	**333.6388**	**0.0306**	**0.0000**	**334.4041**

3.5 Structural Concrete - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0498	0.5219	0.3827	1.0600e-003		0.0207	0.0207		0.0191	0.0191	0.0000	93.0385	93.0385	0.0301	0.0000	93.7908
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0498**	**0.5219**	**0.3827**	**1.0600e-003**		**0.0207**	**0.0207**		**0.0191**	**0.0191**	**0.0000**	**93.0385**	**93.0385**	**0.0301**	**0.0000**	**93.7908**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6300e-003	0.1405	0.0373	3.2000e-004	7.7400e-003	6.5000e-004	8.4000e-003	2.2400e-003	6.3000e-004	2.8600e-003	0.0000	31.4258	31.4258	2.4900e-003	0.0000	31.4879
Worker	0.0100	7.8500e-003	0.0750	2.4000e-004	0.0241	1.7000e-004	0.0243	6.4100e-003	1.5000e-004	6.5600e-003	0.0000	21.5976	21.5976	6.3000e-004	0.0000	21.6133
Total	**0.0147**	**0.1484**	**0.1123**	**5.6000e-004**	**0.0319**	**8.2000e-004**	**0.0327**	**8.6500e-003**	**7.8000e-004**	**9.4200e-003**	**0.0000**	**53.0233**	**53.0233**	**3.1200e-003**	**0.0000**	**53.1012**

3.5 Structural Concrete - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0498	0.5219	0.3827	1.0600e-003		0.0207	0.0207		0.0191	0.0191	0.0000	93.0384	93.0384	0.0301	0.0000	93.7906
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0498**	**0.5219**	**0.3827**	**1.0600e-003**		**0.0207**	**0.0207**		**0.0191**	**0.0191**	**0.0000**	**93.0384**	**93.0384**	**0.0301**	**0.0000**	**93.7906**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6300e-003	0.1405	0.0373	3.2000e-004	7.7400e-003	6.5000e-004	8.4000e-003	2.2400e-003	6.3000e-004	2.8600e-003	0.0000	31.4258	31.4258	2.4900e-003	0.0000	31.4879
Worker	0.0100	7.8500e-003	0.0750	2.4000e-004	0.0241	1.7000e-004	0.0243	6.4100e-003	1.5000e-004	6.5600e-003	0.0000	21.5976	21.5976	6.3000e-004	0.0000	21.6133
Total	**0.0147**	**0.1484**	**0.1123**	**5.6000e-004**	**0.0319**	**8.2000e-004**	**0.0327**	**8.6500e-003**	**7.8000e-004**	**9.4200e-003**	**0.0000**	**53.0233**	**53.0233**	**3.1200e-003**	**0.0000**	**53.1012**

3.6 Site Floor - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0219	0.0000	0.0219	2.3600e-003	0.0000	2.3600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0677	0.7764	0.4132	1.1300e-003		0.0282	0.0282		0.0260	0.0260	0.0000	98.8468	98.8468	0.0320	0.0000	99.6460
Total	**0.0677**	**0.7764**	**0.4132**	**1.1300e-003**	**0.0219**	**0.0282**	**0.0501**	**2.3600e-003**	**0.0260**	**0.0283**	**0.0000**	**98.8468**	**98.8468**	**0.0320**	**0.0000**	**99.6460**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1100e-003	0.2157	0.0572	5.0000e-004	0.0119	1.0000e-003	0.0129	3.4300e-003	9.6000e-004	4.3900e-003	0.0000	48.2349	48.2349	3.8200e-003	0.0000	48.3303
Worker	0.0154	0.0121	0.1151	3.7000e-004	0.0370	2.6000e-004	0.0373	9.8400e-003	2.4000e-004	0.0101	0.0000	33.1498	33.1498	9.6000e-004	0.0000	33.1738
Total	**0.0225**	**0.2277**	**0.1724**	**8.7000e-004**	**0.0489**	**1.2600e-003**	**0.0502**	**0.0133**	**1.2000e-003**	**0.0145**	**0.0000**	**81.3846**	**81.3846**	**4.7800e-003**	**0.0000**	**81.5041**

3.6 Site Floor - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8400e-003	0.0000	9.8400e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0677	0.7764	0.4132	1.1300e-003		0.0282	0.0282		0.0260	0.0260	0.0000	98.8466	98.8466	0.0320	0.0000	99.6459
Total	**0.0677**	**0.7764**	**0.4132**	**1.1300e-003**	**9.8400e-003**	**0.0282**	**0.0381**	**1.0600e-003**	**0.0260**	**0.0270**	**0.0000**	**98.8466**	**98.8466**	**0.0320**	**0.0000**	**99.6459**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1100e-003	0.2157	0.0572	5.0000e-004	0.0119	1.0000e-003	0.0129	3.4300e-003	9.6000e-004	4.3900e-003	0.0000	48.2349	48.2349	3.8200e-003	0.0000	48.3303
Worker	0.0154	0.0121	0.1151	3.7000e-004	0.0370	2.6000e-004	0.0373	9.8400e-003	2.4000e-004	0.0101	0.0000	33.1498	33.1498	9.6000e-004	0.0000	33.1738
Total	**0.0225**	**0.2277**	**0.1724**	**8.7000e-004**	**0.0489**	**1.2600e-003**	**0.0502**	**0.0133**	**1.2000e-003**	**0.0145**	**0.0000**	**81.3846**	**81.3846**	**4.7800e-003**	**0.0000**	**81.5041**

3.7 Backfill - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0143	0.0000	0.0143	1.5400e-003	0.0000	1.5400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0609	0.6926	0.4157	1.0900e-003		0.0256	0.0256		0.0236	0.0236	0.0000	95.8745	95.8745	0.0310	0.0000	96.6497
Total	**0.0609**	**0.6926**	**0.4157**	**1.0900e-003**	**0.0143**	**0.0256**	**0.0399**	**1.5400e-003**	**0.0236**	**0.0251**	**0.0000**	**95.8745**	**95.8745**	**0.0310**	**0.0000**	**96.6497**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0100	7.8500e-003	0.0750	2.4000e-004	0.0241	1.7000e-004	0.0243	6.4100e-003	1.5000e-004	6.5600e-003	0.0000	21.5976	21.5976	6.3000e-004	0.0000	21.6133
Total	**0.0100**	**7.8500e-003**	**0.0750**	**2.4000e-004**	**0.0241**	**1.7000e-004**	**0.0243**	**6.4100e-003**	**1.5000e-004**	**6.5600e-003**	**0.0000**	**21.5976**	**21.5976**	**6.3000e-004**	**0.0000**	**21.6133**

3.7 Backfill - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.4100e-003	0.0000	6.4100e-003	6.9000e-004	0.0000	6.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0609	0.6926	0.4157	1.0900e-003		0.0256	0.0256		0.0236	0.0236	0.0000	95.8744	95.8744	0.0310	0.0000	96.6496
Total	**0.0609**	**0.6926**	**0.4157**	**1.0900e-003**	**6.4100e-003**	**0.0256**	**0.0320**	**6.9000e-004**	**0.0236**	**0.0243**	**0.0000**	**95.8744**	**95.8744**	**0.0310**	**0.0000**	**96.6496**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0100	7.8500e-003	0.0750	2.4000e-004	0.0241	1.7000e-004	0.0243	6.4100e-003	1.5000e-004	6.5600e-003	0.0000	21.5976	21.5976	6.3000e-004	0.0000	21.6133
Total	**0.0100**	**7.8500e-003**	**0.0750**	**2.4000e-004**	**0.0241**	**1.7000e-004**	**0.0243**	**6.4100e-003**	**1.5000e-004**	**6.5600e-003**	**0.0000**	**21.5976**	**21.5976**	**6.3000e-004**	**0.0000**	**21.6133**

3.8 Site Piping Electrical - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9100e-003	0.0292	0.0316	4.0000e-005		1.8500e-003	1.8500e-003		1.7000e-003	1.7000e-003	0.0000	3.7855	3.7855	1.2200e-003	0.0000	3.8162
Total	**2.9100e-003**	**0.0292**	**0.0316**	**4.0000e-005**		**1.8500e-003**	**1.8500e-003**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**3.7855**	**3.7855**	**1.2200e-003**	**0.0000**	**3.8162**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	7.5200e-003	1.9900e-003	2.0000e-005	4.1000e-004	3.0000e-005	4.5000e-004	1.2000e-004	3.0000e-005	1.5000e-004	0.0000	1.6809	1.6809	1.3000e-004	0.0000	1.6842
Worker	5.3600e-003	4.2000e-003	0.0401	1.3000e-004	0.0129	9.0000e-005	0.0130	3.4300e-003	8.0000e-005	3.5100e-003	0.0000	11.5522	11.5522	3.4000e-004	0.0000	11.5606
Total	**5.6100e-003**	**0.0117**	**0.0421**	**1.5000e-004**	**0.0133**	**1.2000e-004**	**0.0134**	**3.5500e-003**	**1.1000e-004**	**3.6600e-003**	**0.0000**	**13.2331**	**13.2331**	**4.7000e-004**	**0.0000**	**13.2448**

3.8 Site Piping Electrical - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9100e-003	0.0292	0.0316	4.0000e-005		1.8500e-003	1.8500e-003		1.7000e-003	1.7000e-003	0.0000	3.7855	3.7855	1.2200e-003	0.0000	3.8161
Total	**2.9100e-003**	**0.0292**	**0.0316**	**4.0000e-005**		**1.8500e-003**	**1.8500e-003**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**3.7855**	**3.7855**	**1.2200e-003**	**0.0000**	**3.8161**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	7.5200e-003	1.9900e-003	2.0000e-005	4.1000e-004	3.0000e-005	4.5000e-004	1.2000e-004	3.0000e-005	1.5000e-004	0.0000	1.6809	1.6809	1.3000e-004	0.0000	1.6842
Worker	5.3600e-003	4.2000e-003	0.0401	1.3000e-004	0.0129	9.0000e-005	0.0130	3.4300e-003	8.0000e-005	3.5100e-003	0.0000	11.5522	11.5522	3.4000e-004	0.0000	11.5606
Total	**5.6100e-003**	**0.0117**	**0.0421**	**1.5000e-004**	**0.0133**	**1.2000e-004**	**0.0134**	**3.5500e-003**	**1.1000e-004**	**3.6600e-003**	**0.0000**	**13.2331**	**13.2331**	**4.7000e-004**	**0.0000**	**13.2448**

3.8 Site Piping Electrical - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3700e-003	0.0240	0.0286	4.0000e-005		1.4200e-003	1.4200e-003		1.3000e-003	1.3000e-003	0.0000	3.4579	3.4579	1.1200e-003	0.0000	3.4858
Total	**2.3700e-003**	**0.0240**	**0.0286**	**4.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**3.4579**	**3.4579**	**1.1200e-003**	**0.0000**	**3.4858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-004	6.2100e-003	1.6500e-003	2.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.5207	1.5207	1.2000e-004	0.0000	1.5236
Worker	4.6300e-003	3.4900e-003	0.0343	1.1000e-004	0.0118	8.0000e-005	0.0119	3.1300e-003	7.0000e-005	3.2000e-003	0.0000	10.1930	10.1930	2.8000e-004	0.0000	10.2001
Total	**4.8100e-003**	**9.7000e-003**	**0.0359**	**1.3000e-004**	**0.0122**	**9.0000e-005**	**0.0123**	**3.2400e-003**	**8.0000e-005**	**3.3200e-003**	**0.0000**	**11.7137**	**11.7137**	**4.0000e-004**	**0.0000**	**11.7237**

3.8 Site Piping Electrical - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3700e-003	0.0240	0.0286	4.0000e-005		1.4200e-003	1.4200e-003		1.3000e-003	1.3000e-003	0.0000	3.4579	3.4579	1.1200e-003	0.0000	3.4858
Total	**2.3700e-003**	**0.0240**	**0.0286**	**4.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**3.4579**	**3.4579**	**1.1200e-003**	**0.0000**	**3.4858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-004	6.2100e-003	1.6500e-003	2.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.5207	1.5207	1.2000e-004	0.0000	1.5236
Worker	4.6300e-003	3.4900e-003	0.0343	1.1000e-004	0.0118	8.0000e-005	0.0119	3.1300e-003	7.0000e-005	3.2000e-003	0.0000	10.1930	10.1930	2.8000e-004	0.0000	10.2001
Total	**4.8100e-003**	**9.7000e-003**	**0.0359**	**1.3000e-004**	**0.0122**	**9.0000e-005**	**0.0123**	**3.2400e-003**	**8.0000e-005**	**3.3200e-003**	**0.0000**	**11.7137**	**11.7137**	**4.0000e-004**	**0.0000**	**11.7237**

3.9 Final Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.8900e-003	8.2100e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.7000e-004	3.7000e-004	0.0000	0.9920	0.9920	3.2000e-004	0.0000	1.0000
Total	**6.8000e-004**	**6.8900e-003**	**8.2100e-003**	**1.0000e-005**	**0.0000**	**4.1000e-004**	**4.1000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.9920**	**0.9920**	**3.2000e-004**	**0.0000**	**1.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.9000e-004	0.0234	6.2000e-003	6.0000e-005	1.4200e-003	5.0000e-005	1.4700e-003	4.1000e-004	5.0000e-005	4.6000e-004	0.0000	5.7205	5.7205	4.4000e-004	0.0000	5.7315
Worker	1.3200e-003	1.0000e-003	9.7900e-003	3.0000e-005	3.3700e-003	2.0000e-005	3.3900e-003	8.9000e-004	2.0000e-005	9.2000e-004	0.0000	2.9123	2.9123	8.0000e-005	0.0000	2.9143
Total	**2.0100e-003**	**0.0244**	**0.0160**	**9.0000e-005**	**4.7900e-003**	**7.0000e-005**	**4.8600e-003**	**1.3000e-003**	**7.0000e-005**	**1.3800e-003**	**0.0000**	**8.6328**	**8.6328**	**5.2000e-004**	**0.0000**	**8.6458**

3.9 Final Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.8900e-003	8.2100e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.7000e-004	3.7000e-004	0.0000	0.9920	0.9920	3.2000e-004	0.0000	1.0000
Total	**6.8000e-004**	**6.8900e-003**	**8.2100e-003**	**1.0000e-005**	**0.0000**	**4.1000e-004**	**4.1000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.9920**	**0.9920**	**3.2000e-004**	**0.0000**	**1.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.9000e-004	0.0234	6.2000e-003	6.0000e-005	1.4200e-003	5.0000e-005	1.4700e-003	4.1000e-004	5.0000e-005	4.6000e-004	0.0000	5.7205	5.7205	4.4000e-004	0.0000	5.7315
Worker	1.3200e-003	1.0000e-003	9.7900e-003	3.0000e-005	3.3700e-003	2.0000e-005	3.3900e-003	8.9000e-004	2.0000e-005	9.2000e-004	0.0000	2.9123	2.9123	8.0000e-005	0.0000	2.9143
Total	**2.0100e-003**	**0.0244**	**0.0160**	**9.0000e-005**	**4.7900e-003**	**7.0000e-005**	**4.8600e-003**	**1.3000e-003**	**7.0000e-005**	**1.3800e-003**	**0.0000**	**8.6328**	**8.6328**	**5.2000e-004**	**0.0000**	**8.6458**

3.10 Start Up and Testing - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9900e-003	0.0505	0.0602	8.0000e-005		2.9800e-003	2.9800e-003		2.7400e-003	2.7400e-003	0.0000	7.2746	7.2746	2.3500e-003	0.0000	7.3334
Total	**4.9900e-003**	**0.0505**	**0.0602**	**8.0000e-005**	**0.0000**	**2.9800e-003**	**2.9800e-003**	**0.0000**	**2.7400e-003**	**2.7400e-003**	**0.0000**	**7.2746**	**7.2746**	**2.3500e-003**	**0.0000**	**7.3334**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.2000e-004	3.1900e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9492	0.9492	3.0000e-005	0.0000	0.9499
Total	**4.3000e-004**	**3.2000e-004**	**3.1900e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1000e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9492**	**0.9492**	**3.0000e-005**	**0.0000**	**0.9499**

3.10 Start Up and Testing - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9900e-003	0.0505	0.0602	8.0000e-005		2.9800e-003	2.9800e-003		2.7400e-003	2.7400e-003	0.0000	7.2746	7.2746	2.3500e-003	0.0000	7.3334
Total	**4.9900e-003**	**0.0505**	**0.0602**	**8.0000e-005**	**0.0000**	**2.9800e-003**	**2.9800e-003**	**0.0000**	**2.7400e-003**	**2.7400e-003**	**0.0000**	**7.2746**	**7.2746**	**2.3500e-003**	**0.0000**	**7.3334**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.2000e-004	3.1900e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9492	0.9492	3.0000e-005	0.0000	0.9499
Total	**4.3000e-004**	**3.2000e-004**	**3.1900e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1000e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9492**	**0.9492**	**3.0000e-005**	**0.0000**	**0.9499**

3.11 Demobilize and Restore Site - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6000e-004	8.6800e-003	2.3000e-003	2.0000e-005	5.3000e-004	2.0000e-005	5.5000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.1241	2.1241	1.6000e-004	0.0000	2.1281
Worker	4.3000e-004	3.2000e-004	3.1900e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9492	0.9492	3.0000e-005	0.0000	0.9499
Total	**6.9000e-004**	**9.0000e-003**	**5.4900e-003**	**3.0000e-005**	**1.6300e-003**	**3.0000e-005**	**1.6500e-003**	**4.4000e-004**	**3.0000e-005**	**4.7000e-004**	**0.0000**	**3.0733**	**3.0733**	**1.9000e-004**	**0.0000**	**3.0780**

3.11 Demobilize and Restore Site - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6000e-004	8.6800e-003	2.3000e-003	2.0000e-005	5.3000e-004	2.0000e-005	5.5000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.1241	2.1241	1.6000e-004	0.0000	2.1281
Worker	4.3000e-004	3.2000e-004	3.1900e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9492	0.9492	3.0000e-005	0.0000	0.9499
Total	**6.9000e-004**	**9.0000e-003**	**5.4900e-003**	**3.0000e-005**	**1.6300e-003**	**3.0000e-005**	**1.6500e-003**	**4.4000e-004**	**3.0000e-005**	**4.7000e-004**	**0.0000**	**3.0733**	**3.0733**	**1.9000e-004**	**0.0000**	**3.0780**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phase 2: Flow Control Facility

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.31	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on acreage for the FCF phase.

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Off-road Equipment - Project specific equipment based on a 10 hour workday

Off-road Equipment - Project specific construction equipment based on a 10 hour workday.

Trips and VMT - Based on approximately 15 workers. Delivery and truck trips modeled as vendor trips. Haul truck trip length conservatively assumes distances to HA at Carroll Canyon Plant.

Grading - Approximately 1,269 cubic yards off-hauled.

Construction Off-road Equipment Mitigation - SDAPCD Rule 55.

Phase 2: Flow Control Facility - San Diego County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	21.00
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	PhaseEndDate	6/16/2021	7/9/2021
tblConstructionPhase	PhaseEndDate	6/30/2021	9/10/2021
tblConstructionPhase	PhaseEndDate	6/16/2021	12/10/2021
tblConstructionPhase	PhaseStartDate	6/17/2021	7/10/2021
tblConstructionPhase	PhaseStartDate	6/17/2021	9/11/2021
tblGrading	MaterialExported	0.00	1,269.00
tblLandUse	LotAcreage	0.00	1.31
tblOffRoadEquipment	HorsePower	97.00	410.00
tblOffRoadEquipment	HorsePower	97.00	850.00
tblOffRoadEquipment	HorsePower	97.00	94.00
tblOffRoadEquipment	HorsePower	97.00	242.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	158.00	173.00
tblOffRoadEquipment	HorsePower	402.00	370.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

Phase 2: Flow Control Facility - San Diego County, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Concrete Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	PhaseName		Mechanical Electrical Work
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripNumber	159.00	0.00

tblTripsAndVMT	HaulingTripNumber	0.00	260.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	7.00
tblTripsAndVMT	WorkerTripNumber	10.00	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	30.00
tblTripsAndVMT	WorkerTripNumber	20.00	30.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1486	1.3984	1.3615	2.8900e-003	0.0298	0.0647	0.0945	8.0100e-003	0.0610	0.0691	0.0000	255.3511	255.3511	0.0554	0.0000	256.7371
Maximum	**0.1486**	**1.3984**	**1.3615**	**2.8900e-003**	**0.0298**	**0.0647**	**0.0945**	**8.0100e-003**	**0.0610**	**0.0691**	**0.0000**	**255.3511**	**255.3511**	**0.0554**	**0.0000**	**256.7371**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1486	1.3984	1.3615	2.8900e-003	0.0298	0.0647	0.0944	8.0000e-003	0.0610	0.0690	0.0000	255.3509	255.3509	0.0554	0.0000	256.7369
Maximum	**0.1486**	**1.3984**	**1.3615**	**2.8900e-003**	**0.0298**	**0.0647**	**0.0944**	**8.0000e-003**	**0.0610**	**0.0690**	**0.0000**	**255.3509**	**255.3509**	**0.0554**	**0.0000**	**256.7369**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.17**	**0.00**	**0.05**	**0.12**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Phase 2: Flow Control Facility - San Diego County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-11-2021**	**9-10-2021**	0.4917	0.4917
2	**9-11-2021**	**9-30-2021**	0.2310	0.2310
		Highest	0.4917	0.4917

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Excavation	Grading	6/11/2021	7/9/2021	5	21	
2	Concrete Work	Paving	7/10/2021	9/10/2021	5	45	
3	Mechanical Electrical Work	Trenching	9/11/2021	12/10/2021	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase 2: Flow Control Facility - San Diego County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Excavation	Excavators	1	10.00	173	0.38
Excavation	Graders	0	0.00	187	0.41
Excavation	Off-Highway Trucks	1	10.00	370	0.38
Excavation	Rubber Tired Dozers	0	0.00	247	0.40
Excavation	Tractors/Loaders/Backhoes	1	10.00	410	0.37
Excavation	Tractors/Loaders/Backhoes	1	10.00	850	0.37
Concrete Work	Cement and Mortar Mixers	0	0.00	9	0.56
Concrete Work	Excavators	1	10.00	173	0.38
Concrete Work	Pavers	0	0.00	130	0.42
Concrete Work	Paving Equipment	0	0.00	132	0.36
Concrete Work	Rollers	0	0.00	80	0.38
Concrete Work	Tractors/Loaders/Backhoes	1	10.00	94	0.37
Concrete Work	Tractors/Loaders/Backhoes	1	10.00	242	0.37
Mechanical Electrical Work	Air Compressors	1	10.00	78	0.48
Mechanical Electrical Work	Concrete/Industrial Saws	1	10.00	81	0.73
Mechanical Electrical Work	Cranes	1	10.00	231	0.29
Mechanical Electrical Work	Excavators	1	10.00	158	0.38
Mechanical Electrical Work	Forklifts	1	10.00	89	0.20
Mechanical Electrical Work	Generator Sets	1	10.00	84	0.74
Mechanical Electrical Work	Other Construction Equipment	1	10.00	172	0.42
Mechanical Electrical Work	Tractors/Loaders/Backhoes	1	10.00	97	0.37

Trips and VMT

Phase 2: Flow Control Facility - San Diego County, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Excavation	4	30.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	30.00	14.00	260.00	16.80	6.60	11.90	LD_Mix	HDT_Mix	HHDT
Mechanical Electrical Work	8	30.00	7.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Excavation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.0000e-005	0.0000	9.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1569	0.1377	4.0000e-004		6.0800e-003	6.0800e-003		5.5900e-003	5.5900e-003	0.0000	35.4830	35.4830	0.0115	0.0000	35.7699
Total	**0.0169**	**0.1569**	**0.1377**	**4.0000e-004**	**9.0000e-005**	**6.0800e-003**	**6.1700e-003**	**1.0000e-005**	**5.5900e-003**	**5.6000e-003**	**0.0000**	**35.4830**	**35.4830**	**0.0115**	**0.0000**	**35.7699**

3.2 Excavation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1000e-004	0.0104	2.7500e-003	3.0000e-005	6.3000e-004	2.0000e-005	6.5000e-004	1.8000e-004	2.0000e-005	2.0000e-004	0.0000	2.5344	2.5344	1.9000e-004	0.0000	2.5393
Worker	1.5400e-003	1.1600e-003	0.0114	4.0000e-005	3.9300e-003	3.0000e-005	3.9500e-003	1.0400e-003	2.0000e-005	1.0700e-003	0.0000	3.3977	3.3977	9.0000e-005	0.0000	3.4000
Total	**1.8500e-003**	**0.0115**	**0.0142**	**7.0000e-005**	**4.5600e-003**	**5.0000e-005**	**4.6000e-003**	**1.2200e-003**	**4.0000e-005**	**1.2700e-003**	**0.0000**	**5.9321**	**5.9321**	**2.8000e-004**	**0.0000**	**5.9393**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1569	0.1377	4.0000e-004		6.0800e-003	6.0800e-003		5.5900e-003	5.5900e-003	0.0000	35.4830	35.4830	0.0115	0.0000	35.7699
Total	**0.0169**	**0.1569**	**0.1377**	**4.0000e-004**	**4.0000e-005**	**6.0800e-003**	**6.1200e-003**	**1.0000e-005**	**5.5900e-003**	**5.6000e-003**	**0.0000**	**35.4830**	**35.4830**	**0.0115**	**0.0000**	**35.7699**

3.2 Excavation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1000e-004	0.0104	2.7500e-003	3.0000e-005	6.3000e-004	2.0000e-005	6.5000e-004	1.8000e-004	2.0000e-005	2.0000e-004	0.0000	2.5344	2.5344	1.9000e-004	0.0000	2.5393
Worker	1.5400e-003	1.1600e-003	0.0114	4.0000e-005	3.9300e-003	3.0000e-005	3.9500e-003	1.0400e-003	2.0000e-005	1.0700e-003	0.0000	3.3977	3.3977	9.0000e-005	0.0000	3.4000
Total	**1.8500e-003**	**0.0115**	**0.0142**	**7.0000e-005**	**4.5600e-003**	**5.0000e-005**	**4.6000e-003**	**1.2200e-003**	**4.0000e-005**	**1.2700e-003**	**0.0000**	**5.9321**	**5.9321**	**2.8000e-004**	**0.0000**	**5.9393**

3.3 Concrete Work - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0215	0.2232	0.2150	4.6000e-004		9.8200e-003	9.8200e-003		9.0300e-003	9.0300e-003	0.0000	40.3744	40.3744	0.0131	0.0000	40.7009
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0215**	**0.2232**	**0.2150**	**4.6000e-004**		**9.8200e-003**	**9.8200e-003**		**9.0300e-003**	**9.0300e-003**	**0.0000**	**40.3744**	**40.3744**	**0.0131**	**0.0000**	**40.7009**

3.3 Concrete Work - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.7000e-004	0.0251	5.7000e-003	6.0000e-005	1.3200e-003	6.0000e-005	1.3900e-003	3.6000e-004	6.0000e-005	4.2000e-004	0.0000	6.4063	6.4063	6.3000e-004	0.0000	6.4219
Vendor	9.2000e-004	0.0311	8.2400e-003	8.0000e-005	1.8900e-003	6.0000e-005	1.9500e-003	5.5000e-004	6.0000e-005	6.1000e-004	0.0000	7.6032	7.6032	5.8000e-004	0.0000	7.6178
Worker	3.3000e-003	2.4900e-003	0.0245	8.0000e-005	8.4200e-003	6.0000e-005	8.4700e-003	2.2400e-003	5.0000e-005	2.2900e-003	0.0000	7.2807	7.2807	2.0000e-004	0.0000	7.2858
Total	**4.8900e-003**	**0.0586**	**0.0384**	**2.2000e-004**	**0.0116**	**1.8000e-004**	**0.0118**	**3.1500e-003**	**1.7000e-004**	**3.3200e-003**	**0.0000**	**21.2902**	**21.2902**	**1.4100e-003**	**0.0000**	**21.3255**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0215	0.2232	0.2150	4.6000e-004		9.8200e-003	9.8200e-003		9.0300e-003	9.0300e-003	0.0000	40.3744	40.3744	0.0131	0.0000	40.7008
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0215**	**0.2232**	**0.2150**	**4.6000e-004**		**9.8200e-003**	**9.8200e-003**		**9.0300e-003**	**9.0300e-003**	**0.0000**	**40.3744**	**40.3744**	**0.0131**	**0.0000**	**40.7008**

3.3 Concrete Work - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.7000e-004	0.0251	5.7000e-003	6.0000e-005	1.3200e-003	6.0000e-005	1.3900e-003	3.6000e-004	6.0000e-005	4.2000e-004	0.0000	6.4063	6.4063	6.3000e-004	0.0000	6.4219
Vendor	9.2000e-004	0.0311	8.2400e-003	8.0000e-005	1.8900e-003	6.0000e-005	1.9500e-003	5.5000e-004	6.0000e-005	6.1000e-004	0.0000	7.6032	7.6032	5.8000e-004	0.0000	7.6178
Worker	3.3000e-003	2.4900e-003	0.0245	8.0000e-005	8.4200e-003	6.0000e-005	8.4700e-003	2.2400e-003	5.0000e-005	2.2900e-003	0.0000	7.2807	7.2807	2.0000e-004	0.0000	7.2858
Total	**4.8900e-003**	**0.0586**	**0.0384**	**2.2000e-004**	**0.0116**	**1.8000e-004**	**0.0118**	**3.1500e-003**	**1.7000e-004**	**3.3200e-003**	**0.0000**	**21.2902**	**21.2902**	**1.4100e-003**	**0.0000**	**21.3255**

3.4 Mechanical Electrical Work - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0980	0.9221	0.9149	1.5700e-003		0.0484	0.0484		0.0461	0.0461	0.0000	136.2635	136.2635	0.0285	0.0000	136.9759
Total	**0.0980**	**0.9221**	**0.9149**	**1.5700e-003**		**0.0484**	**0.0484**		**0.0461**	**0.0461**	**0.0000**	**136.2635**	**136.2635**	**0.0285**	**0.0000**	**136.9759**

3.4 Mechanical Electrical Work - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7000e-004	0.0224	5.9500e-003	6.0000e-005	1.3700e-003	5.0000e-005	1.4100e-003	3.9000e-004	4.0000e-005	4.4000e-004	0.0000	5.4912	5.4912	4.2000e-004	0.0000	5.5017
Worker	4.7700e-003	3.6000e-003	0.0354	1.2000e-004	0.0122	8.0000e-005	0.0122	3.2300e-003	8.0000e-005	3.3100e-003	0.0000	10.5166	10.5166	2.9000e-004	0.0000	10.5239
Total	**5.4400e-003**	**0.0260**	**0.0413**	**1.8000e-004**	**0.0135**	**1.3000e-004**	**0.0137**	**3.6200e-003**	**1.2000e-004**	**3.7500e-003**	**0.0000**	**16.0079**	**16.0079**	**7.1000e-004**	**0.0000**	**16.0257**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0980	0.9221	0.9149	1.5700e-003		0.0484	0.0484		0.0461	0.0461	0.0000	136.2634	136.2634	0.0285	0.0000	136.9758
Total	**0.0980**	**0.9221**	**0.9149**	**1.5700e-003**		**0.0484**	**0.0484**		**0.0461**	**0.0461**	**0.0000**	**136.2634**	**136.2634**	**0.0285**	**0.0000**	**136.9758**

3.4 Mechanical Electrical Work - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7000e-004	0.0224	5.9500e-003	6.0000e-005	1.3700e-003	5.0000e-005	1.4100e-003	3.9000e-004	4.0000e-005	4.4000e-004	0.0000	5.4912	5.4912	4.2000e-004	0.0000	5.5017
Worker	4.7700e-003	3.6000e-003	0.0354	1.2000e-004	0.0122	8.0000e-005	0.0122	3.2300e-003	8.0000e-005	3.3100e-003	0.0000	10.5166	10.5166	2.9000e-004	0.0000	10.5239
Total	**5.4400e-003**	**0.0260**	**0.0413**	**1.8000e-004**	**0.0135**	**1.3000e-004**	**0.0137**	**3.6200e-003**	**1.2000e-004**	**3.7500e-003**	**0.0000**	**16.0079**	**16.0079**	**7.1000e-004**	**0.0000**	**16.0257**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phase 3: Tunnel Connections and Vent Removal

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	2.88	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Annual

Project Characteristics -

Land Use - Based on acreage for the tunnel connections and vent removal phase.

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific construction schedule based on a 10 hour workday.

Off-road Equipment - No off-road equipment.

Off-road Equipment - Project specific equipment based on a 10 hr workday. Muck skip modeled as other material handling equipment.

Off-road Equipment - No off-road equipment.

Off-road Equipment - Project specific equipment based on 10 hour workday. Cellular concrete plant modeled as other construction equipment.

Grading - Assumes 1,300 cubic yards off-hauled.

Demolition - No on-site demolition. Aboveground portion of the vents removed via crane. Below-ground portion filled with concrete. Demolition square footage based on google earth square footage for 5 vents.

Trips and VMT - Assumes 15 workers per day. Delivery and truck trips modeled as vendor trips. Assumes 10 cy haul truck capacity to offhaul 1,300 cy. Haul truck trip length conservatively assumes distances to HA at Carroll Canyon Plant.

Construction Off-road Equipment Mitigation - SDAPCD Rule 55

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	22.00
tblConstructionPhase	NumDays	3.00	23.00
tblConstructionPhase	NumDays	20.00	44.00
tblGrading	MaterialExported	0.00	650.00
tblGrading	MaterialExported	0.00	650.00
tblLandUse	LotAcreage	0.00	2.88
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38

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tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripLength	20.00	11.90
tblTripsAndVMT	HaulingTripNumber	2.00	0.00
tblTripsAndVMT	HaulingTripNumber	81.00	0.00
tblTripsAndVMT	HaulingTripNumber	81.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	130.00
tblTripsAndVMT	HaulingTripNumber	0.00	130.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00

tblTripsAndVMT	WorkerTripNumber	10.00	30.00
tblTripsAndVMT	WorkerTripNumber	0.00	30.00
tblTripsAndVMT	WorkerTripNumber	0.00	30.00
tblTripsAndVMT	WorkerTripNumber	20.00	30.00
tblTripsAndVMT	WorkerTripNumber	23.00	30.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0237	0.2267	0.2198	4.1000e-004	2.8000e-003	0.0112	0.0140	7.5000e-004	0.0107	0.0114	0.0000	36.5225	36.5225	6.9100e-003	0.0000	36.6953
2022	0.0895	0.8026	0.8494	1.6600e-003	0.0178	0.0383	0.0561	4.7500e-003	0.0364	0.0412	0.0000	146.4522	146.4522	0.0272	0.0000	147.1323
Maximum	**0.0895**	**0.8026**	**0.8494**	**1.6600e-003**	**0.0178**	**0.0383**	**0.0561**	**4.7500e-003**	**0.0364**	**0.0412**	**0.0000**	**146.4522**	**146.4522**	**0.0272**	**0.0000**	**147.1323**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0237	0.2267	0.2198	4.1000e-004	2.8000e-003	0.0112	0.0140	7.5000e-004	0.0107	0.0114	0.0000	36.5225	36.5225	6.9100e-003	0.0000	36.6952
2022	0.0895	0.8026	0.8494	1.6600e-003	0.0177	0.0383	0.0560	4.7200e-003	0.0364	0.0412	0.0000	146.4520	146.4520	0.0272	0.0000	147.1321
Maximum	**0.0895**	**0.8026**	**0.8494**	**1.6600e-003**	**0.0177**	**0.0383**	**0.0560**	**4.7200e-003**	**0.0364**	**0.0412**	**0.0000**	**146.4520**	**146.4520**	**0.0272**	**0.0000**	**147.1321**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.24**	**0.55**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-13-2021**	**3-12-2022**	0.6805	0.6805
2	**3-13-2022**	**6-12-2022**	0.4143	0.4143
3	**6-13-2022**	**9-12-2022**	0.0256	0.0256
		Highest	0.6805	0.6805

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase 3: Tunnel Connections and Vent Removal - San Diego County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	North Half Connections	Trenching	12/13/2021	1/13/2022	5	24	
2	Demobilization North Portal	Site Preparation	1/14/2022	2/14/2022	5	22	
3	South Half Connections	Trenching	2/15/2022	3/15/2022	5	21	
4	Demobilization South Portal	Site Preparation	3/16/2022	4/15/2022	5	23	
5	Vent Removal	Demolition	4/16/2022	6/16/2022	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vent Removal	Concrete/Industrial Saws	1	10.00	81	0.73
Demobilization North Portal	Graders	0	0.00	187	0.41
Demobilization South Portal	Graders	0	0.00	187	0.41
Vent Removal	Rubber Tired Dozers	0	0.00	247	0.40
Demobilization North Portal	Scrapers	0	0.00	367	0.48
Demobilization South Portal	Scrapers	0	0.00	367	0.48
Vent Removal	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Demobilization North Portal	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Demobilization South Portal	Tractors/Loaders/Backhoes	0	0.00	97	0.37
North Half Connections	Concrete/Industrial Saws	1	10.00	81	0.73
North Half Connections	Air Compressors	1	10.00	78	0.48

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North Half Connections	Excavators	1	10.00	158	0.38
North Half Connections	Generator Sets	1	10.00	84	0.74
North Half Connections	Cranes	1	10.00	231	0.29
North Half Connections	Other Construction Equipment	1	10.00	172	0.42
North Half Connections	Forklifts	1	10.00	89	0.20
North Half Connections	Tractors/Loaders/Backhoes	1	10.00	97	0.37
South Half Connections	Concrete/Industrial Saws	1	10.00	81	0.73
South Half Connections	Air Compressors	1	10.00	78	0.48
South Half Connections	Excavators	1	10.00	158	0.38
South Half Connections	Generator Sets	1	10.00	84	0.74
South Half Connections	Cranes	1	10.00	231	0.29
South Half Connections	Other Construction Equipment	1	10.00	172	0.42
South Half Connections	Other Material Handling Equipment	1	10.00	168	0.40
South Half Connections	Forklifts	1	10.00	89	0.20
South Half Connections	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Vent Removal	Other Construction Equipment	1	10.00	172	0.42
Vent Removal	Air Compressors	1	10.00	78	0.48
Vent Removal	Cranes	1	10.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Vent Removal	4	30.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization North Portal	0	30.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization South Portal	0	30.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
North Half Connections	8	30.00	8.00	130.00	10.80	7.30	11.90	LD_Mix	HDT_Mix	HHDT
South Half Connections	9	30.00	10.00	130.00	10.80	7.30	11.90	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 North Half Connections - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2121	0.2107	3.6000e-004		0.0112	0.0112		0.0106	0.0106	0.0000	31.3757	31.3757	6.5500e-003	0.0000	31.5396
Total	**0.0226**	**0.2121**	**0.2107**	**3.6000e-004**		**0.0112**	**0.0112**		**0.0106**	**0.0106**	**0.0000**	**31.3757**	**31.3757**	**6.5500e-003**	**0.0000**	**31.5396**

3.2 North Half Connections - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	7.8300e-003	1.7800e-003	2.0000e-005	6.0000e-004	2.0000e-005	6.2000e-004	1.6000e-004	2.0000e-005	1.8000e-004	0.0000	2.0020	2.0020	2.0000e-004	0.0000	2.0068
Vendor	1.9000e-004	6.1700e-003	1.6400e-003	2.0000e-005	4.0000e-004	1.0000e-005	4.1000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.5686	1.5686	1.2000e-004	0.0000	1.5716
Worker	7.8000e-004	5.6000e-004	5.6200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5762	1.5762	5.0000e-005	0.0000	1.5773
Total	**1.1800e-003**	**0.0146**	**9.0400e-003**	**6.0000e-005**	**2.8000e-003**	**4.0000e-005**	**2.8500e-003**	**7.5000e-004**	**4.0000e-005**	**8.0000e-004**	**0.0000**	**5.1468**	**5.1468**	**3.7000e-004**	**0.0000**	**5.1557**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2121	0.2107	3.6000e-004		0.0112	0.0112		0.0106	0.0106	0.0000	31.3757	31.3757	6.5500e-003	0.0000	31.5395
Total	**0.0226**	**0.2121**	**0.2107**	**3.6000e-004**		**0.0112**	**0.0112**		**0.0106**	**0.0106**	**0.0000**	**31.3757**	**31.3757**	**6.5500e-003**	**0.0000**	**31.5395**

3.2 North Half Connections - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	7.8300e-003	1.7800e-003	2.0000e-005	6.0000e-004	2.0000e-005	6.2000e-004	1.6000e-004	2.0000e-005	1.8000e-004	0.0000	2.0020	2.0020	2.0000e-004	0.0000	2.0068
Vendor	1.9000e-004	6.1700e-003	1.6400e-003	2.0000e-005	4.0000e-004	1.0000e-005	4.1000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.5686	1.5686	1.2000e-004	0.0000	1.5716
Worker	7.8000e-004	5.6000e-004	5.6200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5762	1.5762	5.0000e-005	0.0000	1.5773
Total	**1.1800e-003**	**0.0146**	**9.0400e-003**	**6.0000e-005**	**2.8000e-003**	**4.0000e-005**	**2.8500e-003**	**7.5000e-004**	**4.0000e-005**	**8.0000e-004**	**0.0000**	**5.1468**	**5.1468**	**3.7000e-004**	**0.0000**	**5.1557**

3.2 North Half Connections - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1128	0.1253	2.2000e-004		5.7500e-003	5.7500e-003		5.4700e-003	5.4700e-003	0.0000	18.8257	18.8257	3.9000e-003	0.0000	18.9233
Total	**0.0123**	**0.1128**	**0.1253**	**2.2000e-004**		**5.7500e-003**	**5.7500e-003**		**5.4700e-003**	**5.4700e-003**	**0.0000**	**18.8257**	**18.8257**	**3.9000e-003**	**0.0000**	**18.9233**

3.2 North Half Connections - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.3400e-003	1.0600e-003	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	1.1858	1.1858	1.2000e-004	0.0000	1.1887
Vendor	1.0000e-004	3.4900e-003	9.3000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9323	0.9323	7.0000e-005	0.0000	0.9340
Worker	4.4000e-004	3.1000e-004	3.1300e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9110	0.9110	2.0000e-005	0.0000	0.9117
Total	**6.6000e-004**	**8.1400e-003**	**5.1200e-003**	**3.0000e-005**	**1.8800e-003**	**3.0000e-005**	**1.9100e-003**	**5.0000e-004**	**3.0000e-005**	**5.2000e-004**	**0.0000**	**3.0291**	**3.0291**	**2.1000e-004**	**0.0000**	**3.0343**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1128	0.1253	2.2000e-004		5.7500e-003	5.7500e-003		5.4700e-003	5.4700e-003	0.0000	18.8257	18.8257	3.9000e-003	0.0000	18.9233
Total	**0.0123**	**0.1128**	**0.1253**	**2.2000e-004**		**5.7500e-003**	**5.7500e-003**		**5.4700e-003**	**5.4700e-003**	**0.0000**	**18.8257**	**18.8257**	**3.9000e-003**	**0.0000**	**18.9233**

3.2 North Half Connections - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.3400e-003	1.0600e-003	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	1.1858	1.1858	1.2000e-004	0.0000	1.1887
Vendor	1.0000e-004	3.4900e-003	9.3000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9323	0.9323	7.0000e-005	0.0000	0.9340
Worker	4.4000e-004	3.1000e-004	3.1300e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9110	0.9110	2.0000e-005	0.0000	0.9117
Total	**6.6000e-004**	**8.1400e-003**	**5.1200e-003**	**3.0000e-005**	**1.8800e-003**	**3.0000e-005**	**1.9100e-003**	**5.0000e-004**	**3.0000e-005**	**5.2000e-004**	**0.0000**	**3.0291**	**3.0291**	**2.1000e-004**	**0.0000**	**3.0343**

3.3 Demobilization North Portal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Demobilization North Portal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.3400e-003	1.4300e-003	1.0000e-005	3.7000e-004	1.0000e-005	3.8000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.4243	1.4243	1.0000e-004	0.0000	1.4269
Worker	1.0900e-003	7.5000e-004	7.6500e-003	2.0000e-005	2.6500e-003	2.0000e-005	2.6600e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2270	2.2270	6.0000e-005	0.0000	2.2285
Total	**1.2500e-003**	**6.0900e-003**	**9.0800e-003**	**3.0000e-005**	**3.0200e-003**	**3.0000e-005**	**3.0400e-003**	**8.1000e-004**	**3.0000e-005**	**8.4000e-004**	**0.0000**	**3.6513**	**3.6513**	**1.6000e-004**	**0.0000**	**3.6554**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Demobilization North Portal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.3400e-003	1.4300e-003	1.0000e-005	3.7000e-004	1.0000e-005	3.8000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.4243	1.4243	1.0000e-004	0.0000	1.4269
Worker	1.0900e-003	7.5000e-004	7.6500e-003	2.0000e-005	2.6500e-003	2.0000e-005	2.6600e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2270	2.2270	6.0000e-005	0.0000	2.2285
Total	**1.2500e-003**	**6.0900e-003**	**9.0800e-003**	**3.0000e-005**	**3.0200e-003**	**3.0000e-005**	**3.0400e-003**	**8.1000e-004**	**3.0000e-005**	**8.4000e-004**	**0.0000**	**3.6513**	**3.6513**	**1.6000e-004**	**0.0000**	**3.6554**

3.4 South Half Connections - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2923	0.3412	5.8000e-004		0.0150	0.0150		0.0142	0.0142	0.0000	50.5124	50.5124	0.0112	0.0000	50.7934
Total	**0.0321**	**0.2923**	**0.3412**	**5.8000e-004**		**0.0150**	**0.0150**		**0.0142**	**0.0142**	**0.0000**	**50.5124**	**50.5124**	**0.0112**	**0.0000**	**50.7934**

3.4 South Half Connections - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0116	2.8200e-003	3.0000e-005	6.6000e-004	3.0000e-005	6.9000e-004	1.8000e-004	3.0000e-005	2.1000e-004	0.0000	3.1622	3.1622	3.1000e-004	0.0000	3.1699
Vendor	3.0000e-004	0.0102	2.7200e-003	3.0000e-005	7.0000e-004	2.0000e-005	7.2000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.7191	2.7191	2.0000e-004	0.0000	2.7241
Worker	1.0400e-003	7.1000e-004	7.3100e-003	2.0000e-005	2.5300e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1258	2.1258	6.0000e-005	0.0000	2.1272
Total	**1.6500e-003**	**0.0225**	**0.0129**	**8.0000e-005**	**3.8900e-003**	**7.0000e-005**	**3.9500e-003**	**1.0500e-003**	**7.0000e-005**	**1.1200e-003**	**0.0000**	**8.0071**	**8.0071**	**5.7000e-004**	**0.0000**	**8.0211**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2923	0.3412	5.8000e-004		0.0150	0.0150		0.0142	0.0142	0.0000	50.5123	50.5123	0.0112	0.0000	50.7933
Total	**0.0321**	**0.2923**	**0.3412**	**5.8000e-004**		**0.0150**	**0.0150**		**0.0142**	**0.0142**	**0.0000**	**50.5123**	**50.5123**	**0.0112**	**0.0000**	**50.7933**

3.4 South Half Connections - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0116	2.8200e-003	3.0000e-005	6.6000e-004	3.0000e-005	6.9000e-004	1.8000e-004	3.0000e-005	2.1000e-004	0.0000	3.1622	3.1622	3.1000e-004	0.0000	3.1699
Vendor	3.0000e-004	0.0102	2.7200e-003	3.0000e-005	7.0000e-004	2.0000e-005	7.2000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.7191	2.7191	2.0000e-004	0.0000	2.7241
Worker	1.0400e-003	7.1000e-004	7.3100e-003	2.0000e-005	2.5300e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1258	2.1258	6.0000e-005	0.0000	2.1272
Total	**1.6500e-003**	**0.0225**	**0.0129**	**8.0000e-005**	**3.8900e-003**	**7.0000e-005**	**3.9500e-003**	**1.0500e-003**	**7.0000e-005**	**1.1200e-003**	**0.0000**	**8.0071**	**8.0071**	**5.7000e-004**	**0.0000**	**8.0211**

3.5 Demobilization South Portal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Demobilization South Portal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	5.5800e-003	1.4900e-003	2.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.4890	1.4890	1.1000e-004	0.0000	1.4918
Worker	1.1300e-003	7.8000e-004	8.0000e-003	3.0000e-005	2.7700e-003	2.0000e-005	2.7900e-003	7.4000e-004	2.0000e-005	7.5000e-004	0.0000	2.3282	2.3282	6.0000e-005	0.0000	2.3298
Total	**1.3000e-003**	**6.3600e-003**	**9.4900e-003**	**5.0000e-005**	**3.1500e-003**	**3.0000e-005**	**3.1800e-003**	**8.5000e-004**	**3.0000e-005**	**8.7000e-004**	**0.0000**	**3.8173**	**3.8173**	**1.7000e-004**	**0.0000**	**3.8215**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Demobilization South Portal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	5.5800e-003	1.4900e-003	2.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.4890	1.4890	1.1000e-004	0.0000	1.4918
Worker	1.1300e-003	7.8000e-004	8.0000e-003	3.0000e-005	2.7700e-003	2.0000e-005	2.7900e-003	7.4000e-004	2.0000e-005	7.5000e-004	0.0000	2.3282	2.3282	6.0000e-005	0.0000	2.3298
Total	**1.3000e-003**	**6.3600e-003**	**9.4900e-003**	**5.0000e-005**	**3.1500e-003**	**3.0000e-005**	**3.1800e-003**	**8.5000e-004**	**3.0000e-005**	**8.7000e-004**	**0.0000**	**3.8173**	**3.8173**	**1.7000e-004**	**0.0000**	**3.8215**

3.6 Vent Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2000e-004	0.0000	2.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0379	0.3487	0.3299	6.1000e-004		0.0174	0.0174		0.0166	0.0166	0.0000	53.0159	53.0159	0.0108	0.0000	53.2847
Total	**0.0379**	**0.3487**	**0.3299**	**6.1000e-004**	**2.2000e-004**	**0.0174**	**0.0176**	**3.0000e-005**	**0.0166**	**0.0166**	**0.0000**	**53.0159**	**53.0159**	**0.0108**	**0.0000**	**53.2847**

3.6 Vent Removal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	4.2700e-003	1.1400e-003	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.1394	1.1394	8.0000e-005	0.0000	1.1415
Worker	2.1700e-003	1.4900e-003	0.0153	5.0000e-005	5.2900e-003	4.0000e-005	5.3300e-003	1.4100e-003	3.0000e-005	1.4400e-003	0.0000	4.4540	4.4540	1.2000e-004	0.0000	4.4570
Total	**2.3000e-003**	**5.7600e-003**	**0.0165**	**6.0000e-005**	**5.5800e-003**	**5.0000e-005**	**5.6300e-003**	**1.4900e-003**	**4.0000e-005**	**1.5300e-003**	**0.0000**	**5.5934**	**5.5934**	**2.0000e-004**	**0.0000**	**5.5985**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-004	0.0000	1.0000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0379	0.3487	0.3299	6.1000e-004		0.0174	0.0174		0.0166	0.0166	0.0000	53.0158	53.0158	0.0108	0.0000	53.2846
Total	**0.0379**	**0.3487**	**0.3299**	**6.1000e-004**	**1.0000e-004**	**0.0174**	**0.0175**	**2.0000e-005**	**0.0166**	**0.0166**	**0.0000**	**53.0158**	**53.0158**	**0.0108**	**0.0000**	**53.2846**

3.6 Vent Removal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	4.2700e-003	1.1400e-003	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.1394	1.1394	8.0000e-005	0.0000	1.1415
Worker	2.1700e-003	1.4900e-003	0.0153	5.0000e-005	5.2900e-003	4.0000e-005	5.3300e-003	1.4100e-003	3.0000e-005	1.4400e-003	0.0000	4.4540	4.4540	1.2000e-004	0.0000	4.4570
Total	**2.3000e-003**	**5.7600e-003**	**0.0165**	**6.0000e-005**	**5.5800e-003**	**5.0000e-005**	**5.6300e-003**	**1.4900e-003**	**4.0000e-005**	**1.5300e-003**	**0.0000**	**5.5934**	**5.5934**	**2.0000e-004**	**0.0000**	**5.5985**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX E

BIOLOGICAL RESOURCES TECHNICAL REPORT

BIOLOGICAL RESOURCES ASSESSMENT FOR THE SAN DIEGO COUNTY WATER AUTHORITY MISSION TRAILS FLOW REGULATORY STRUCTURE II AND FLOW CONTROL FACILITY PROJECT

Prepared for:

San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123

Prepared by:

AECOM
401 West A. Street, Suite 1200
San Diego, CA 92123
Contact: Michael Anguiano
(619) 610-7654

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SECTION 1.0
INTRODUCTION

The San Diego County Water Authority (Water Authority) is planning to construct the Mission Trails Flow Regulatory Structure II (FRS II) and Mission Trails Flow Control Facility Project (proposed project) along the Second San Diego Aqueduct (Second Aqueduct) in the northwestern portion of Mission Trails Regional Park (MTRP). This report has been prepared to examine the project's impacts on biological resources, in support of the Water Authority's California Environmental Quality Act (CEQA) compliance process, and in compliance with the Water Authority's Subregional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP; Water Authority 2010).

1.1 PROJECT BACKGROUND

FRS II was a primary component of the proposed project subject to CEQA review in the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project Environmental Impact Report (EIR; Tierra Environmental Services 2006a), which was certified by the Water Authority Board of Directors in 2006. The EIR addressed construction and operation of FRS II—an underground reservoir to store imported water along the Water Authority's Second San Diego Aqueduct—as well as a pipeline tunnel into and out of the reservoir, demolition of a series of aboveground vents and blow-off valve structures, which are generally referred to as "appurtenances" that will become obsolete once the tunnel replaces sections of existing aqueduct pipelines, and an improved crossing of the San Diego River. With respect to biological resources impact permitting, the initial project obtained a Biological Opinion (BO) from the U.S. Fish and Wildlife Service (USFWS) in 2007 (2007 BO; USFWS 2007), which was associated with the proposed project's Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers (Army Corps) for impacts on jurisdictional waters (Army Corps 2008a).[1]

After EIR certification, the Water Authority constructed the tunnel-based pipeline, referred to as the pipeline tunnel, but deferred construction of FRS II and the remaining project components to conduct additional demand planning and ensure the reservoir would be built at the appropriate capacity. The Water Authority prepared an addendum to the EIR to address splitting up

[1] Original project impact analysis and permitting, and construction of the pipeline tunnel component, pre-dated finalization of the Water Authority's Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), so the project was not governed by that plan. The FRS II project is an "Existing Project," as defined in Section 1.1.2.2.1 of the NCCP/HCP, which acknowledges preexisting agreements with U.S. Fish and Wildlife Service and California Department of Fish and Wildlife relative to the project and the Water Authority's prior intent that the NCCP/HCP was not likely needed for coverage of species and habitat impacts. However, the NCCP/HCP allows flexibility for the Water Authority to cover such projects if needed due to unanticipated species impacts that were not covered in the Biological Opinion.

implementation of the proposed project, with construction of the pipeline tunnel and river crossing improvement to proceed first. The pipeline tunnel, associated infrastructure, and the river crossing portion of the original project were constructed between 2008 and 2010. The Water Authority is now planning to implement the remaining portion of the proposed project, including FRS II and its connections to the tunnel, the tunnel connections to the existing aqueduct pipes, and the vent demolition. FRS II is now planned as a 5-million-gallon reservoir, substantially smaller than the 18-million-gallon facility addressed in the 2006 EIR. The Water Authority has also identified the need to construct a new flow control facility (FCF) (and underground vault with valves and a flow meter) near the tunnel's southern connection to the existing aqueduct, to control deliveries to its member agencies from the reservoir.

1.2 PURPOSE OF REPORT

This report has been prepared to identify the potential impacts on biological resources due to implementing the proposed project. The report is part of the Water Authority's updated CEQA review of the FRS II, Pipeline Tunnel, and Vent Demolition Project, and is intended, in part, to demonstrate there would be no new significant impacts that were not identified in the original EIR, or a substantial increase in the severity of a significant impact beyond that identified in the original EIR. This report also verifies the proposed project's mitigation obligations, including an update to the project's off-site mitigation acreages for permanent impacts on native habitat.

In addition to CEQA compliance, this report also discusses obligations for project compliance with the Water Authority's NCCP/HCP. The project addressed in this report was covered by the 2007 BO, but, as described later in this report, the project has been deemed to have the potential to affect two species listed pursuant to the federal Endangered Species Act (ESA) that were not provided coverage by USFWS in the 2007 BO. These species, the Quino checkerspot butterfly (*Euphydryas editha quino*, endangered pursuant to the ESA) and the coastal California gnatcatcher (*Polioptila californica californica*, threatened pursuant to the ESA), were not covered by the 2007 BO because, at the time, on-site habitat was recovering from the 2003 Cedar Fire and was determined by USFWS to be unsuitable for these species such that the project construction would not have an impact on the species. However, the 2007 BO acknowledged past occupation of the site by these species and noted that the recovering habitat could eventually support these species again in the future; therefore, future project implementation would need to consider these species if conditions changed compared to those described in the 2007 BO. Quino checkerspot butterfly and coastal California gnatcatcher are Covered Species under the NCCP/HCP so instead of the Water Authority requesting Army Corps reinitiation of the 2007 BO with USFWS, the Water Authority is electing to cover the project and its impacts on sensitive species under their NCCP/HCP. Accordingly, this report identifies NCCP/HCP conditions for coverage that will be implemented as part of project coverage.

1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The proposed project is located in the northwestern portion of MTRP, east of Tierrasanta and north of Navajo, two communities of the City of San Diego (Figures 1 and 2). The proposed project area can be described as a northwest-to-southeast–trending construction corridor, bound to the north by State Route 52 (SR-52) and to the south by an extension of Colina Dorada Drive in the hills north of the San Diego River. Access points from public roads to the construction area within MTRP are located at Portobelo Drive, Clairemont Mesa Boulevard, and Calle de Vida. The project-related portion of MTRP consists of open space featuring native vegetation, traversed by publicly accessible trails, and is in part underlain by existing Water Authority infrastructure. Ground elevations on the project site range from 760 feet above mean sea level (AMSL) in the northwest to 820 feet AMSL in the southeast. Single-family residences of the City of San Diego's Tierrasanta neighborhood are present west of the project site.

Source: ESRI 2014; SDCWA 2011, 2019

10 5 0 10 Miles

Scale: 1:633,600 ; 1 inch = 10 Miles

Figure 1
Regional Location

AECOM

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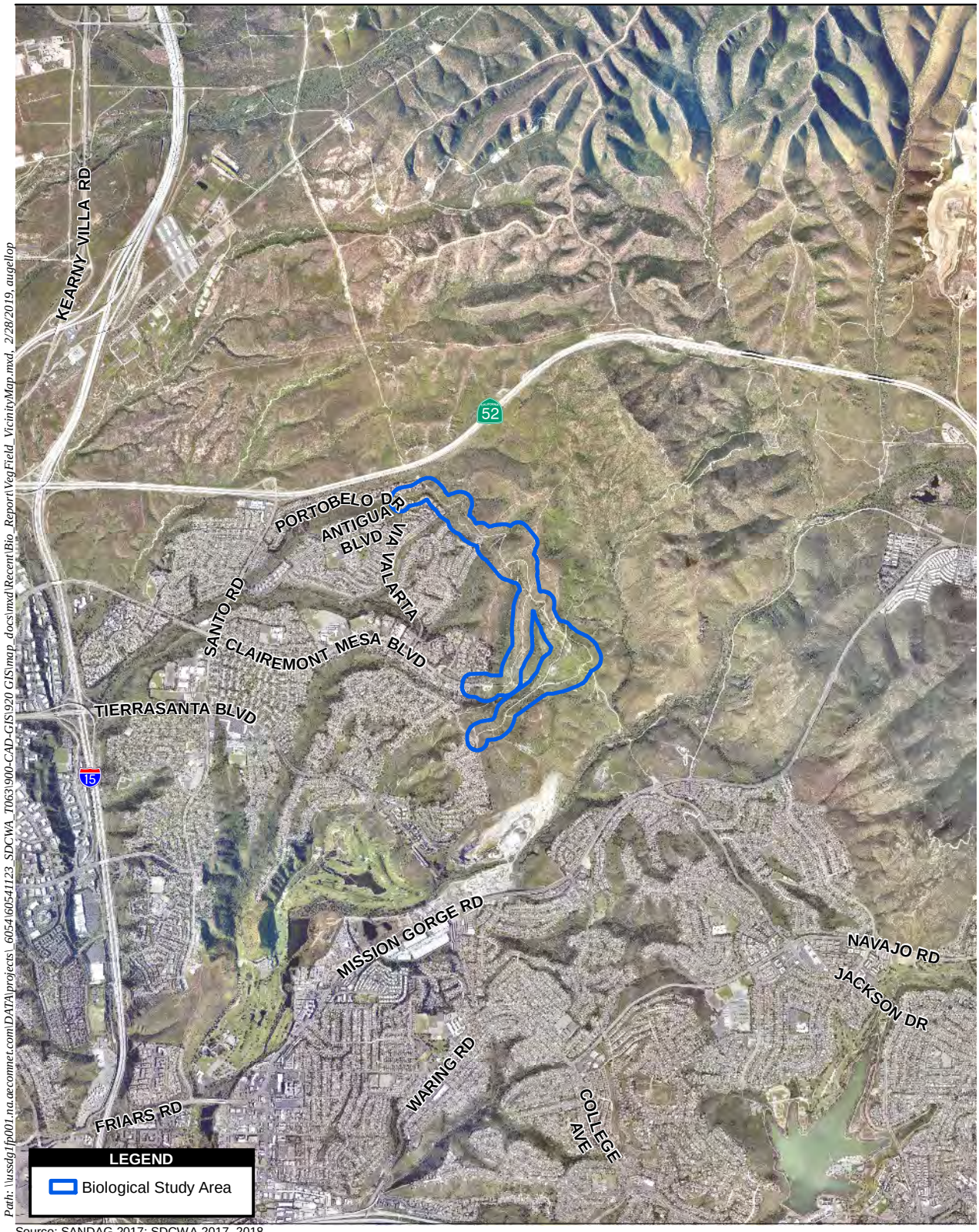

Source: SANDAG 2017; SDCWA 2017, 2018

4,500 2,250 0 4,500 Feet

Scale: 1:54,000 ; 1 inch = 4,500 Feet

Figure 2
Vicinity Map

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SECTION 2.0
PROJECT DESCRIPTION

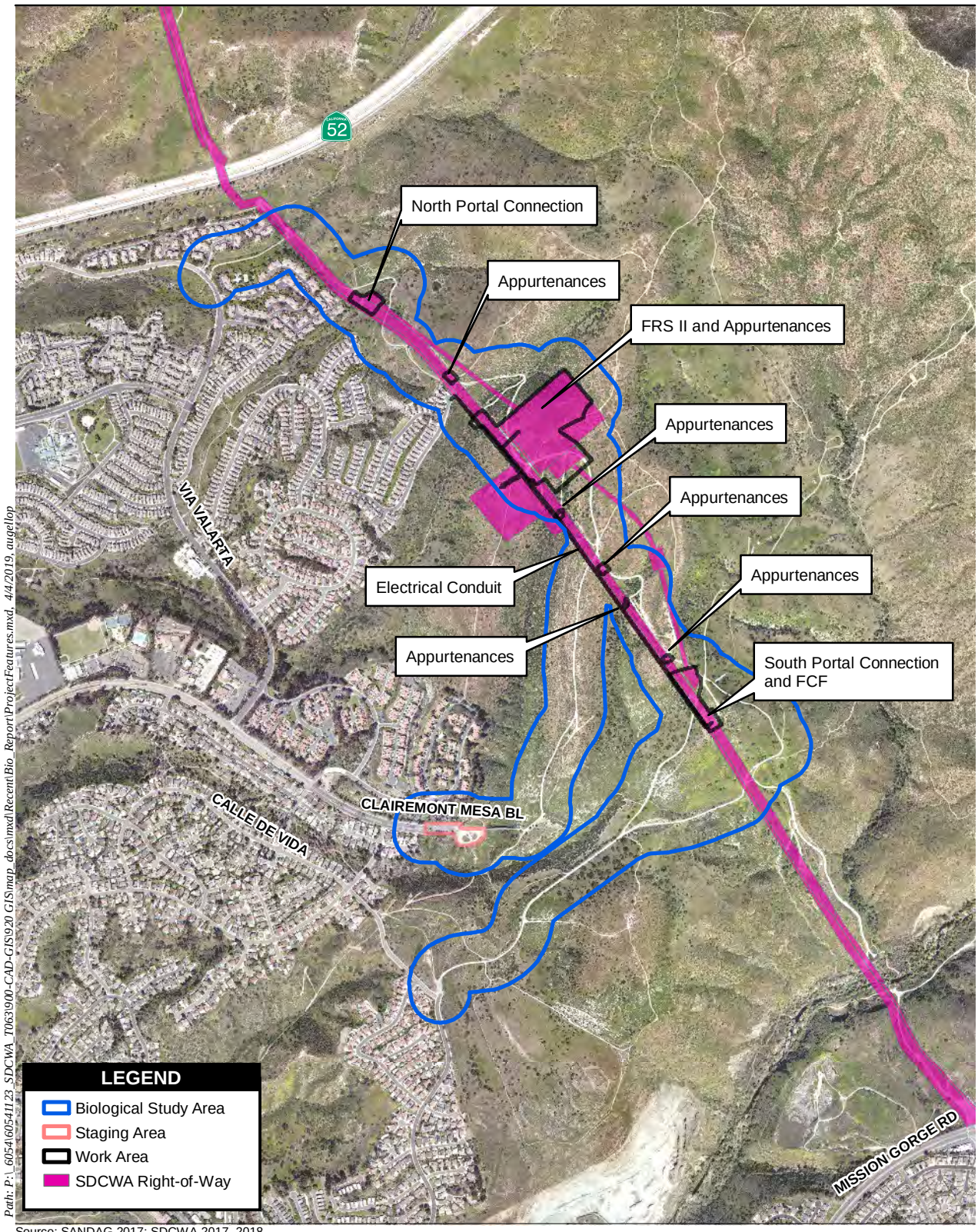
The proposed project addressed in this report entails work at several locations along and adjacent to the Second Aqueduct alignment in MTRP. Project features include, the FRS II, tunnel portal connections, removal of existing appurtenances located along the affected reach of Pipelines 3 and 4 and replacement of some of the vents with smaller structures, and a new FCF. New electrical conduits would be installed to provide power to the proposed facilities. These project features are shown in Figure 3 and further described below. With the exception of the FCF, these features are part of the project addressed in the EIR.

2.1 PROJECT FEATURES

2.1.1 Flow Regulatory Structure II

The primary component of the project addressed in this report is the proposed FRS II, which consists of a 5-million-gallon buried concrete reservoir, inlet and outlet piping, emergency overflow pipe and outfall, and appurtenant facilities for system operation. FRS II would be constructed on a 12.78-acre parcel that the Water Authority acquired from the San Diego Unified School District (SDUSD) for this project, located northeast of the Water Authority's existing Flow Regulatory Structure I (FRS I), and adjacent to the east side of the 130-foot-wide Water Authority's Second Aqueduct (Figure 3). In the EIR, the Water Authority analyzed the impacts of a much larger FRS tank, up to 18 million gallon in capacity and potentially made up of two separate reservoir tanks. The Water Authority now plans to construct a much smaller facility at the same location examined in the EIR.

The reservoir would consist of a cast-in-place concrete tank, connected to the previously completed pipeline tunnel. A layer of 3 to 5 feet of soil would be placed on top of the buried reservoir structure, with a gently undulating final grade to better blend in with surrounding land of the park and reduce the facility's visual impact to trail users. This layer would be vegetated with a native plant mix. If necessary, temporary irrigation would be provided during the first year to sufficiently establish the vegetative cover. A gravel maintenance apron would be constructed around the perimeter of the reservoir's roof, connecting to two roof hatches provided for equipment access to the interior of the structure. Portions of the FRS II site were disturbed during construction of the pipeline tunnel, but much of the impact area will represent new disturbance.



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Source: SANDAG 2017; SDCWA 2017, 2018

1,500 750 0 1,500 Feet

Scale: 1:18,000 ; 1 inch = 1,500 Feet

Figure 3
Project Features

FRS II construction would also include installation of outlet and inlet pipes to connect FRS II to the existing pipeline tunnel. The inlet pipe would be a short (approximately 15 feet long) segment of 96-inch welded steel pipe extending north of the reservoir, and a new inlet shaft for worker access would be built within the paved access area north of the reservoir's surface. The outlet pipe would be approximately 400 feet of 96-inch welded steel pipe extending south from the reservoir to the existing southern tunnel. Another access shaft would be constructed at this connection, along with a gravel road providing worker access to the shaft, which is a minor realignment of an existing road used by the Water Authority to access its aqueduct appurtenances. The access shafts would be located in areas previously disturbed by portal development for the pipeline tunnel.

A 63-inch-diameter emergency overflow pipe for FRS II would also be installed via trench, extending underground approximately 500 feet northwest of the reservoir and discharging into a proposed rip rap energy dissipater that would be built near the bottom of a dry channel, with a concrete headwall at the end of the pipe. The overflow pipe is a code-mandated safety feature of the FRS, intended to convey overflow water from the FRS reservoir during unanticipated emergency situations. The rip rap energy dissipater has been designed to reduce the velocity of flow, which would protect the potential overflow area from erosion. Reservoir overflow is not an intentional operational feature of the FRS; overflow conveyance would only occur under the very unlikely scenario in which multiple levels of operational controls and alerts failed to result in shutoff of water inflow to the tank. Therefore, substantial flows into and downstream of the proposed rip rap basin are not anticipated as a result of this project.

2.1.2 Portal Connections

The north portal connection and the south portal connection consist of constructing sections of underground pipe and joints to connect the previously built pipeline tunnel to the Second Aqueduct pipes. This would be accomplished by excavating large pits to expose the existing pipes and proposed pipe installation areas. No aboveground features are proposed at these connection points, and the sites would be restored to existing grade and revegetated after completion. The north portal connection work area is approximately 0.3 mile northwest of the FRS II site, and the south portal is approximately 0.5 mile southwest of the FRS II site.

2.1.3 Flow Control Facility

South of the south portal connection, the proposed project entails construction of a new FCF, which is an underground valve vault that meters flows of water deliveries to the Water Authority's member agencies. The facility would be belowground and the area would mostly be revegetated, but a small aboveground entrance with stairs leading down into the FCF, an air vent,

and a paved pad for vehicle and equipment parking would be provided, connecting to an existing access road. This is a new feature of the project and is the only primary feature that was not anticipated as part of the project addressed in the EIR.

2.1.4 Vent and Blow-Off Structure Abandonment

As planned in the original project, eight existing vent structures and nine blow off structures along Pipeline 3 and Pipeline 4 would be demolished after the remaining portion of the project is complete, and the pipeline tunnel is placed into service and the existing pipelines are made obsolete. The aboveground portions of these appurtenant structures would be removed, and the belowground portions would be capped and sealed.

2.1.5 Electrical Conduit Installation

The proposed project entails installation of underground electrical conduit to provide power to the Water Authority's existing and proposed facilities in MTRP. Conduit would run from (1) an existing transformer at the end of Corte Playa Catalina in the north to the existing FRS I in the south, (2) the existing FRS I northeast to the proposed FRS II, and (3) the existing FRS I south to the proposed FCF. All conduit would be installed via trench, assumed as a maximum of 16 inches wide and 30 inches deep, and would be back-filled in place and revegetated once the conduit is installed. A maximum 5-foot-wide work corridor would be cleared along the proposed conduit alignments to provide equipment and worker access for the trenching and installation.

2.2 PROJECT CONSTRUCTION, STAGING, AND ACCESS

Overall, construction is expected to last approximately 18 months, with the level of intensity varying from high intensity for the first 6 months during excavation in the FRS II area; to moderate intensity for the remaining months during FRS II construction; to low intensity at the end of the project during appurtenance demolition and pipeline connections. The general working time would be 7:00 a.m. to 7:00 p.m., Monday through Friday. Some 24-hour work would be conducted at the portal connections during the shutdown of the existing pipelines for the final connection work.

The entire Clairemont Mesa Boulevard park entrance area may be used for staging for the duration of construction (Figure 3). Construction trailers and other support facilities that would not have to be on the portal or FRS II sites would be located in this staging area. Parking for crew/engineering vehicles would be allotted in this space as well, to minimize individual vehicles on park roads. An additional staging area would be graded on the FRS II site for stockpiling of excavated soil, and other equipment and materials.

The following routes to/from Interstate 15 (I-15) and SR-52 have been proposed for construction equipment and hauling of excavated material via trucks:

- North Portal Construction Activities Ingress and Egress – East/West on Clairemont Mesa Boulevard from I-15 to Via Valarta to Portobelo Drive to MTRP access point or north/south on Santo Road from SR-52 to Antigua Boulevard to Portobelo Drive, to MTRP access point.
- South Portal and FRS II Construction Activities Ingress and Egress – East/West on Clairemont Mesa Boulevard to MTRP access point at the end of the street, over the park bridge to South Portal and FRS II sites via MTRP roads or north/south on Santo Road from SR-52 to Clairemont Mesa Boulevard to MTRP access point at the end of the street, over the park bridge to South Portal and FRS II sites via MTRP roads.
- South Portal and FRS II Oversize Load Construction Activities Ingress/Egress – South and west on MTRP trails to Calle de Vida access point, Calle de Vida to Clairemont Mesa Boulevard.

Large equipment (weighing in excess of 30 tons), such as track-type tractors, track loaders, excavators, dozers, scrapper, cranes, and end dump trucks, would be brought into and out of the MTRP South Portal and FRS II sites via Clairemont Mesa Boulevard and Calle de Vida. These types of equipment would generally be brought to the site for the duration of their use during construction, and then be removed and would not enter and leave the sites on a frequent basis.

Park roads used for access were widened during the construction of the pipeline and no new road enhancements would be required for the proposed project. Crushed rock may be placed on park access roads to minimize erosion damage and stabilize the surface for heavy trucks.

Based on the current design, up to approximately 111,100 cubic yards of soil and rock would be removed from the FRS II site during excavation for the buried reservoir. Approximately 11 percent of the excavated material would be hauled off-site in dump trucks for disposal at an approved landfill, while the remaining quantity of material would be placed as fill in the work area adjacent to FRS II, including in areas surrounding the roof to establish berms as visual barriers, further limiting the view of the reservoir area to park users. The berm heights would reach 15 to 25 feet above the finished grade of the reservoir roof and would be contoured to approximate natural grades to the extent practicable.

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SECTION 3.0
METHODS AND SURVEY LIMITATIONS

The biological study area (BSA) for the proposed project includes the proposed work areas, plus a 300-foot-wide buffer extending out from the edge of the work area boundaries and a 300-foot-wide buffer along both sides of the proposed travel roads (Figure 3). This BSA enables consideration of both direct and indirect impacts on biological resources from construction of the proposed project.

Prior to conducting biological field surveys, AECOM searched the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2018a) and the USFWS species occurrence and critical habitat database (USFWS 2018a), plus an adjacent 5-mile-wide buffer around the proposed project for historical locations of sensitive species. The 5-mile buffer was used to consider the potential for sensitive species that have been historically detected to occur in the nearby vicinity or adjacent habitats. Biologists used this information in combination with the habitat present to determine the potential for sensitive species to occur within the BSA.

Both vegetation mapping and a general biological survey (which included a habitat assessment for sensitive species) were conducted to evaluate the presence of biological resources or their potential to occur within the BSA, identify potentially jurisdictional waters, and assess habitat suitability for sensitive plants and wildlife. Areas of native vegetation within the boundary of the proposed project were surveyed with additional scrutiny for potential sensitive plant and wildlife species. Areas of vegetation and land cover types within the 300-foot-wide buffer surrounding the proposed project boundary and along the roads were visually scanned for potential sensitive resources from accessible openings (e.g., roads and disturbed areas) within the BSA.

Vegetation community mapping and a general botanical survey were conducted by AECOM biologist Thomas Oberbauer within the BSA on August 21, 2018. Information on sensitive species observed during the 2005 surveys (Tierra Environmental Services 2006b) was also reviewed. The annual and herbaceous perennial plants were not visible at this time of the year; however, their habitat was examined to determine potential for species occurrence. Special attention was given to reviewing areas where sensitive species were previously identified. Botanical surveys were conducted by meandering throughout the BSA and mapping from selected vantage points that allowed an expansive view of the BSA. Access roads and their buffers as well as the proposed work areas and staging areas were traversed with special emphasis on the reservoir site. For vegetation mapping, photographs taken in the field and Google Earth aerial images of the site were used for reference. Vegetation communities were

classified in accordance with the Water Authority NCCP/HCP, which followed a modified version of the Holland (1986) classification system.

A jurisdictional waters delineation was conducted within the proposed project boundaries and an approximately 150-foot-wide buffer around those project boundaries where they cross potentially jurisdictional aquatic features. Prior to conducting the field investigation, a desktop review was conducted to determine the existing conditions and historical uses of the project site utilizing the following resources:

- Natural Resources Conservation Service Soil Survey Mapping (USDA-NRCS 2016)
- Hydric soils: Hydric Soils – Criteria and 2014 State List for California (USDA-NRCS 2014a); Field Indicators of Hydric Soils in the United States, version 7.0 (USDA-NRCS 2014b)
- National Wetlands Inventory (NWI) (USFWS 2018b)
- Watershed Boundary Dataset accessed via WATERS GeoViewer (USGS 2018)
- National Hydrography Dataset (NHD) accessed via WATERS GeoViewer (USGS 2018)
- Historical Aerial Imagery (1994 – 2015) (Google Earth 2018)
- Wetland (WETS) Climate Tables (NOAA 2018)
- City of San Diego Jurisdictional Runoff Management Plan (DMax 2018)
- Water Quality Control Plan for the San Diego Basin (9) (CRWQCB 1994).

On October 12 and December 7, 2018, AECOM biologists Keely Craig, Jenna Hartsook, and Bonnie Hendricks conducted a jurisdictional delineation within the study area. Aquatic features were assessed within the study area to determine whether they meet the definition of "waters of the U.S." in 33 Code of Federal Regulations 328. Width of the ordinary high water mark (OHWM) was recorded based upon indicators present within the study area. All waters meeting the physical definitions of waters of the U.S. were treated as jurisdictional for purposes of this memorandum; a formal significant nexus test [2] was not applied. The limits of CDFW jurisdictional streambed were delineated based upon the presence of bed and bank and the presence of riparian associated canopy. The delineation and vegetation classification were conducted in accordance with the guidance and reference documents listed below:

[2] Significant nexus is described in the U.S. Environmental Protection Agency's 2008 Guidance Clean Water Act Jurisdiction Following the Supreme Court Decision in Rapanos v. U.S. and Carabell v. U.S. (USEPA 2008).

- A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008)
- Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Curtis and Lichvar 2010)
- Clean Water Act Jurisdiction Following the Supreme Court Decision in Rapanos v. U.S. and Carabell v. U.S. (USEPA 2008)
- Clean Water Act Jurisdiction Following the 2015 Clean Water Rule (Army Corps 2015)
- Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987)
- Field Indicators of Hydric Soils in the United States, version 7.0 (USDA-NRCS 2014b).National Wetland Plant List: 2012 (Lichvar 2012)
- National Wetland Plant List Indicator Rating Definitions. 2016. (Lichvar 2016).
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (Army Corps 2008b)
- Draft Vegetation Communities of San Diego County (Oberbauer 2008).

A general wildlife survey (including a habitat assessment) was conducted for the BSA by AECOM wildlife biologist James McMorran at the same time as the botanical survey and vegetation mapping on August 21, 2018. It was also conducted by meandering throughout the BSA and searching for wildlife species and their sign. A follow-up assessment was conducted by AECOM wildlife biologist Michael Anguiano on March 2, 2019, to observe actively ponded areas within the buffer and consider their potential to support breeding habitat for wildlife species covered by the NCCP/HCP.

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SECTION 4.0
PHYSICAL SETTING

The BSA is located east of Tierrasanta and north of Navajo, two communities of the City of San Diego. The BSA occurs within the boundaries of MTRP and can be described as a northwest-to-southeast corridor occurring along an existing Water Authority right-of-way (ROW).

The BSA can be described as topographically diverse consisting of a hill and ridge tops, relatively flat mesa areas, several drainages, and steep slopes. The elevation of the proposed project area ranges between 460 and 800 feet AMSL.

An unpaved access road traverses the BSA beginning at the east end of Colina Dorada Drive and ending at a west-directed access road south of SR-52. In addition, three unpaved maintenance roads are included in the proposed project area. These roads serve as hiking/biking trails for park visitors and can be accessed from Clairemont Mesa Boulevard, the Calle de Vida and Colina Dorada intersection, and Portobelo Drive.

Nearly the entire BSA burned during the 2003 Cedar Fire. Consequently, vegetation in the area was more open and supported an abundance of non-native and native annual plant species at the time of the initial assessment in 2005 (Tierra Environmental Services 2006b). The vegetation has recovered extensively since that time and shrub-based vegetation has respread into areas that were considered disturbed in 2005.

Four soil series are reported as occurring on-site: Diablo, Linne, Olivenhain, and Redding series (Bowman 1973). They are described in detail in the 2006 biological assessment report (Tierra Environmental Services 2006b).

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SECTION 5.0
RESULTS

5.1 BOTANY

Vegetation communities as described in this report generally follow classifications provided in Holland (1986), as presented in the Water Authority NCCP/HCP. Vegetation communities occurring inside of the survey corridor are illustrated in Figures 4 and 4a through 4f. At the time of the original biological surveys in 2005 (Tierra Environmental 2006b), much of the area of the proposed project supported open communities consisting of burned shrub stumps and native and non-native annual plant species because of the Cedar Fire in 2003. However, the vegetation has had 15 years of post-fire recovery so that shrubs have regrown into areas that were previously noted as featuring sparse vegetation. Furthermore, there are parts of the BSA where soil crusts are extensive in natural openings between the shrubs creating a lower-density vegetation community. As a result of the natural regrowth of the vegetation, none of the vegetation is now mapped as disturbed. Much of the project impact area was disturbed by construction of the pipeline tunnel and then revegetated after project completion in 2010 pursuant to the Water Authority's *Final San Diego County Water Authority Master Restoration Plan for Work within Mission Trails Regional Park* (MTRP Restoration Plan, Water Authority 2009).

Eleven vegetation communities and land cover types were observed in the vicinity of the proposed project: non-native grassland, native grassland (valley and foothill needle grassland), coastal sage scrub (Diegan), coastal sage-chaparral scrub, chamise chaparral (granitic), southern mixed chaparral, mule-fat scrub, southern willow scrub, eucalyptus/non-native woodland, ornamental, and urban/developed land (Table 5-1, and Figures 4 and 4a through 4f). A complete list of all plant species observed during the field survey is presented in Attachment 1.

Vernal pools were previously noted in the planned impact area for the FRS II reservoir and were addressed in the 2007 BO (USFWS 2007). These pools were impacted during the previous phases of the proposed project, and were mitigated for by creating new vernal pools adjacent to the planned impact area, in the southeast corner of the former SDUSD property (Dudek 2008; RECON 2010). These vernal pools are located in the work area buffers in the BSA, but there are no vernal pools in the impact area addressed in this report.

Table 5-1
Vegetation Communities and Other Cover Types within the BSA (acres)

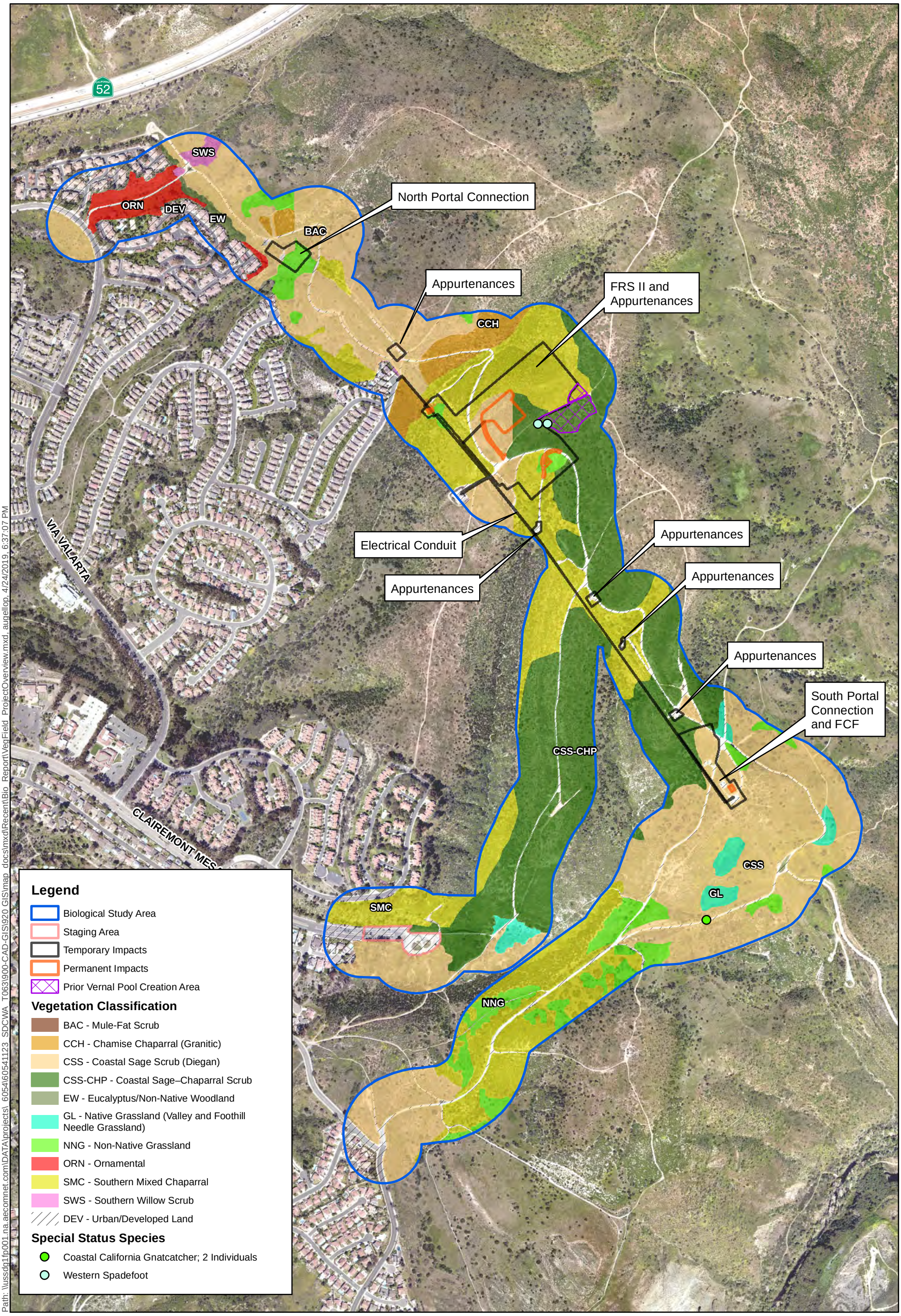
Vegetation Community	Work Area	Staging Area	Buffer	Total (BSA)[1]
Uplands				
Non-Native Grassland	1.57	--	14.79	16.36
Native Grassland (Valley and Foothill Needle Grassland)		--	4.81	4.81
Coastal Sage Scrub (Diegan)	6.01	--	95.20	101.21
Coastal Sage-Chaparral Scrub	3.69	--	62.34	66.03
Chamise Chaparral (Granitic)	0.12	--	7.06	7.18
Southern Mixed Chaparral	8.19	--	59.03	67.21
Riparian and Wetlands				
Mule-Fat Scrub	--	--	0.10	0.10
Southern Willow Scrub	--	--	1.15	1.15
Other Cover Types				
Eucalyptus/Non-Native Woodland	--	--	1.24	1.24
Ornamental	--	--	4.79	4.79
Urban/Developed Land	1.78	1.85	30.04	33.72
Total[1]	**21.36**	**1.85**	**280.54**	**303.80**

[1] Values may not sum due to rounding after summation.

The non-native grassland, coastal sage scrub (Diegan), coastal sage-chaparral scrub, chamise chaparral (granitic), mule-fat scrub, southern willow scrub, eucalyptus/non-native woodland, and urban/developed land vegetation classifications were previously described in the 2006 biological assessment report (Tierra Environmental Services 2006b) and are not further described herein.

Native Grassland (Valley and Foothill Needle Grassland) was also described in the 2006 report. However, in the 2006 report, the native annuals vegetation community was included as a modified Holland category present within the BSA. This involves a community dominated by fascicled tarplant (*Deinandra fasciculata*) and other native annuals but does not fit the wildflower field category in the Holland system. This area of native annuals was identified in the BSA in the 2018 surveys as well; however, the native annual category does not exist in the County Water Authority NCCP/HCP. Because it most closely follows the native grassland category, it was included in the native grassland category for the purposes of this report.

Chamise chaparral (granitic) was also not included in the 2006 report but now occurs in a portion of the BSA. In this vegetation community, chamise is the dominant species with other chaparral species, including mission manzanita (*Xylococcus bicolor*). It typically occurs on gentle slopes with uniform soil types.



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Source: SANDAG 2017; SDCWA 2017, 2018

Figure 4
Vegetation Community and Special Status Species Overview

700 0 700 Feet

Scale: 1:8,400 1 in = 700 feet

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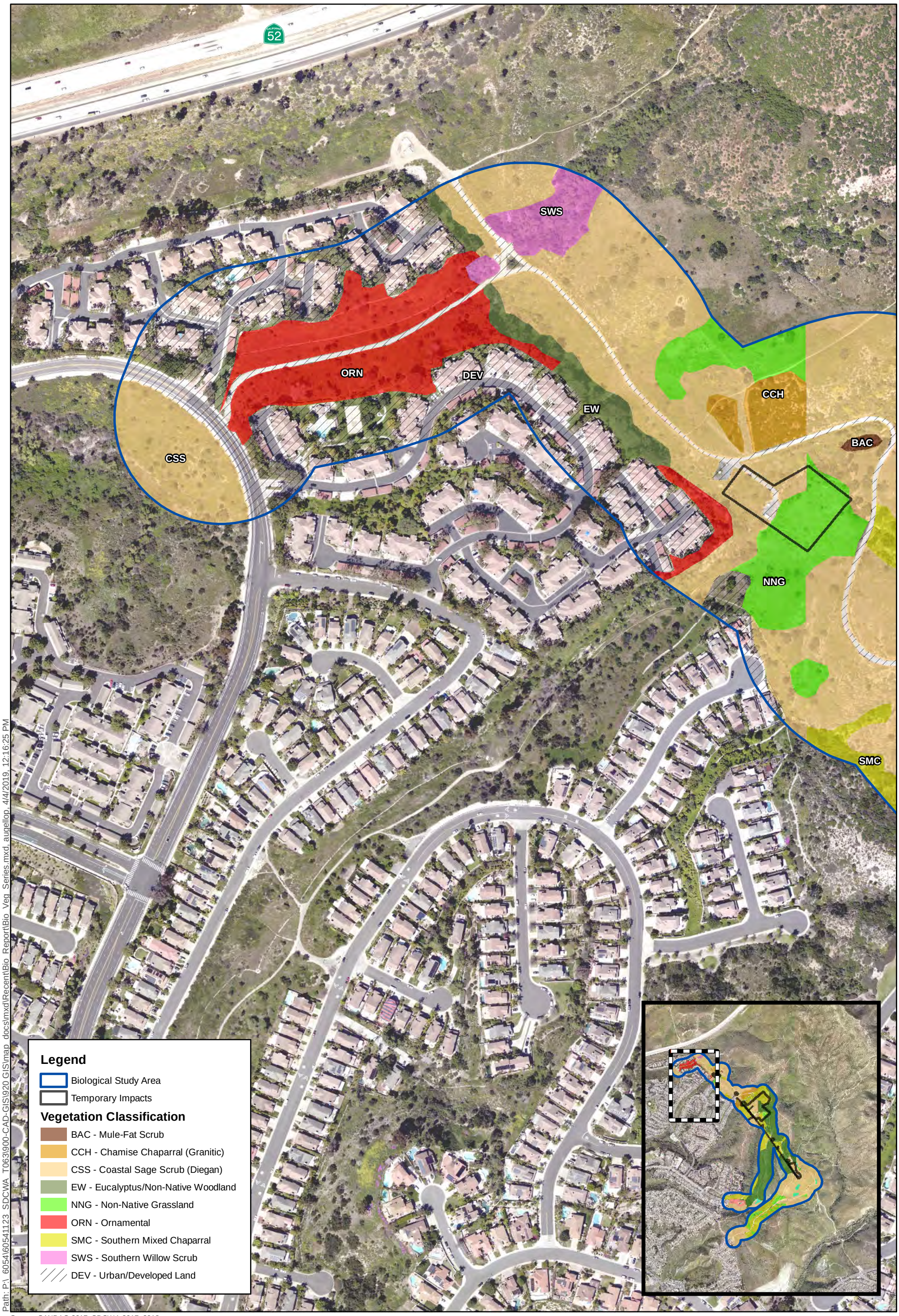

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Source: SANDAG 2017; SDCWA 2017, 2018

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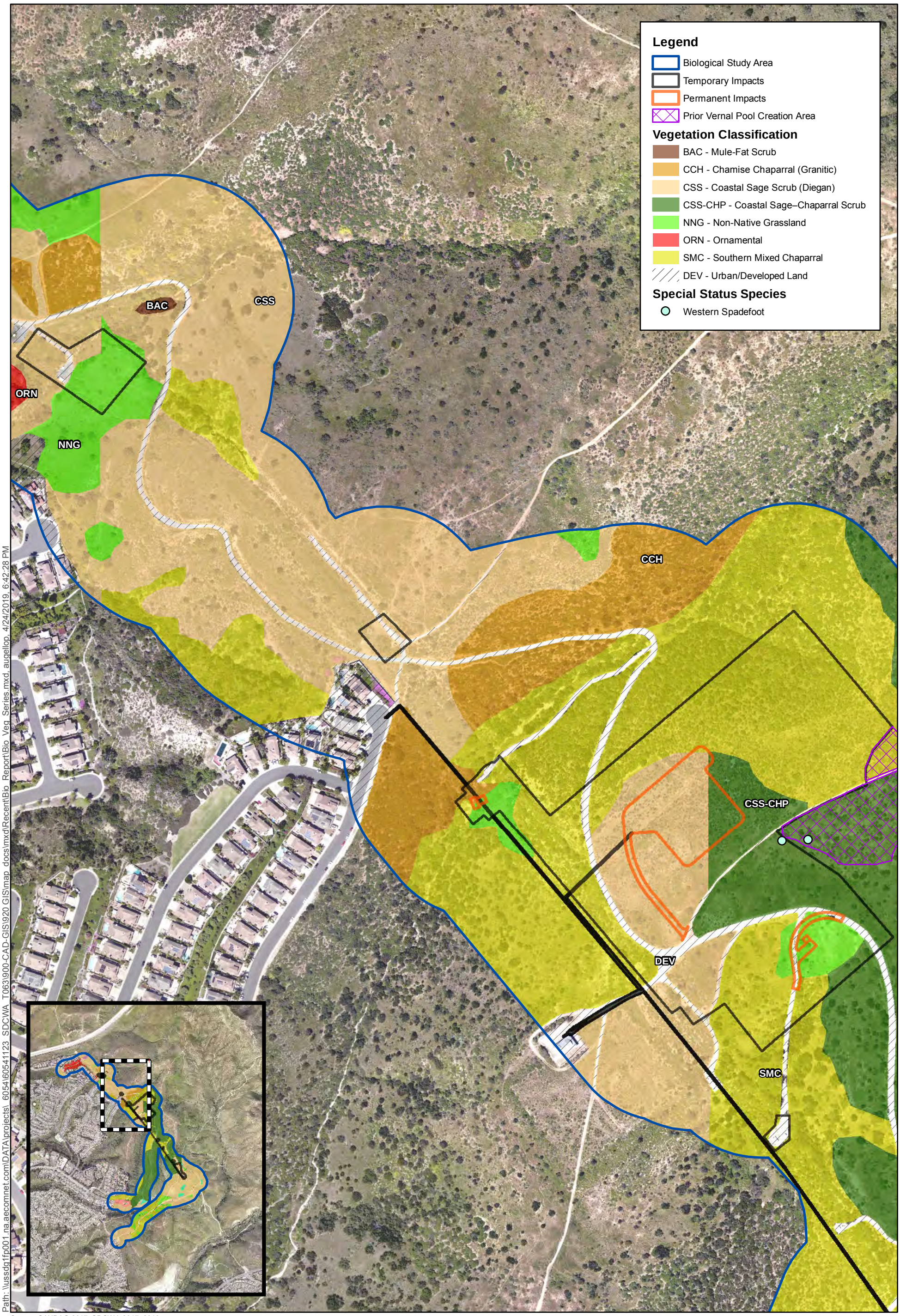
Scale: 1:3,000 1 in = 250 feet

Figure 4a
Vegetation Community and Special Status Species



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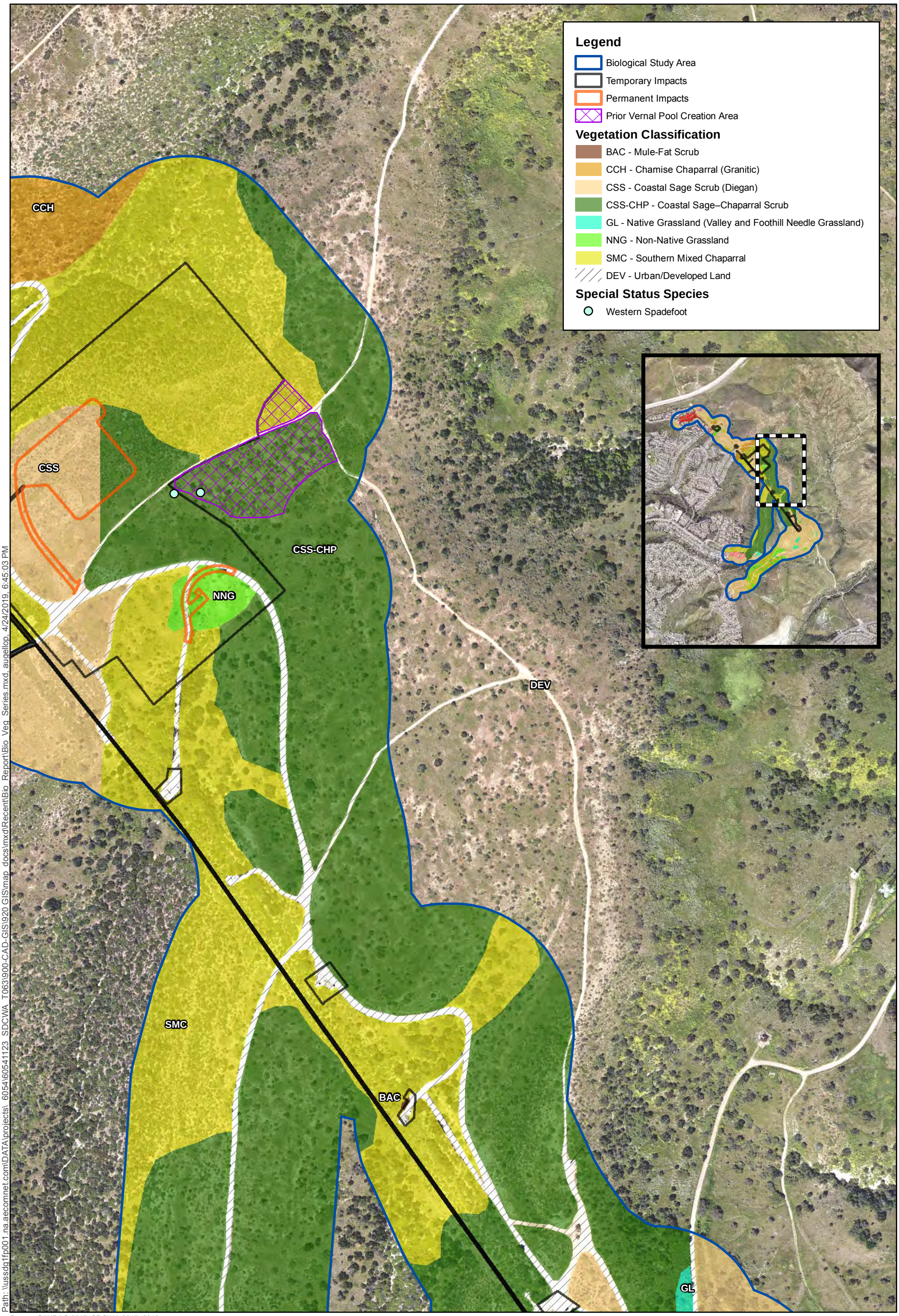
Source: SANDAG 2017; SDCWA 2017, 2018

Figure 4b
Vegetation Community and Special Status Species

250 0 250 Feet

Scale: 1:3,000 1 in = 250 feet



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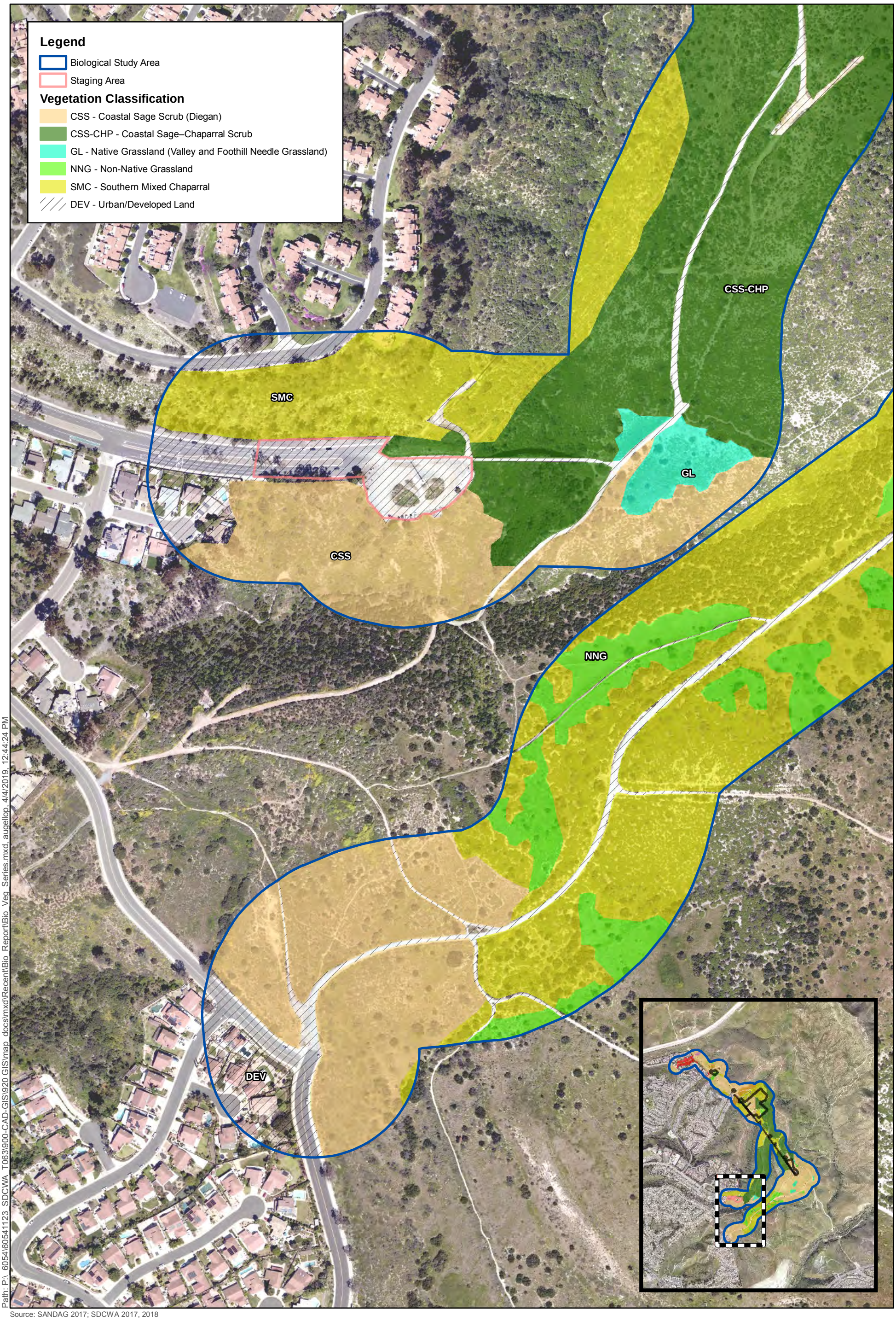
Source: SANDAG 2017; SDCWA 2017, 2018

Figure 4c
Vegetation Community and Special Status Species

250 0 250 Feet

Scale: 1:3,000 1 in = 250 feet



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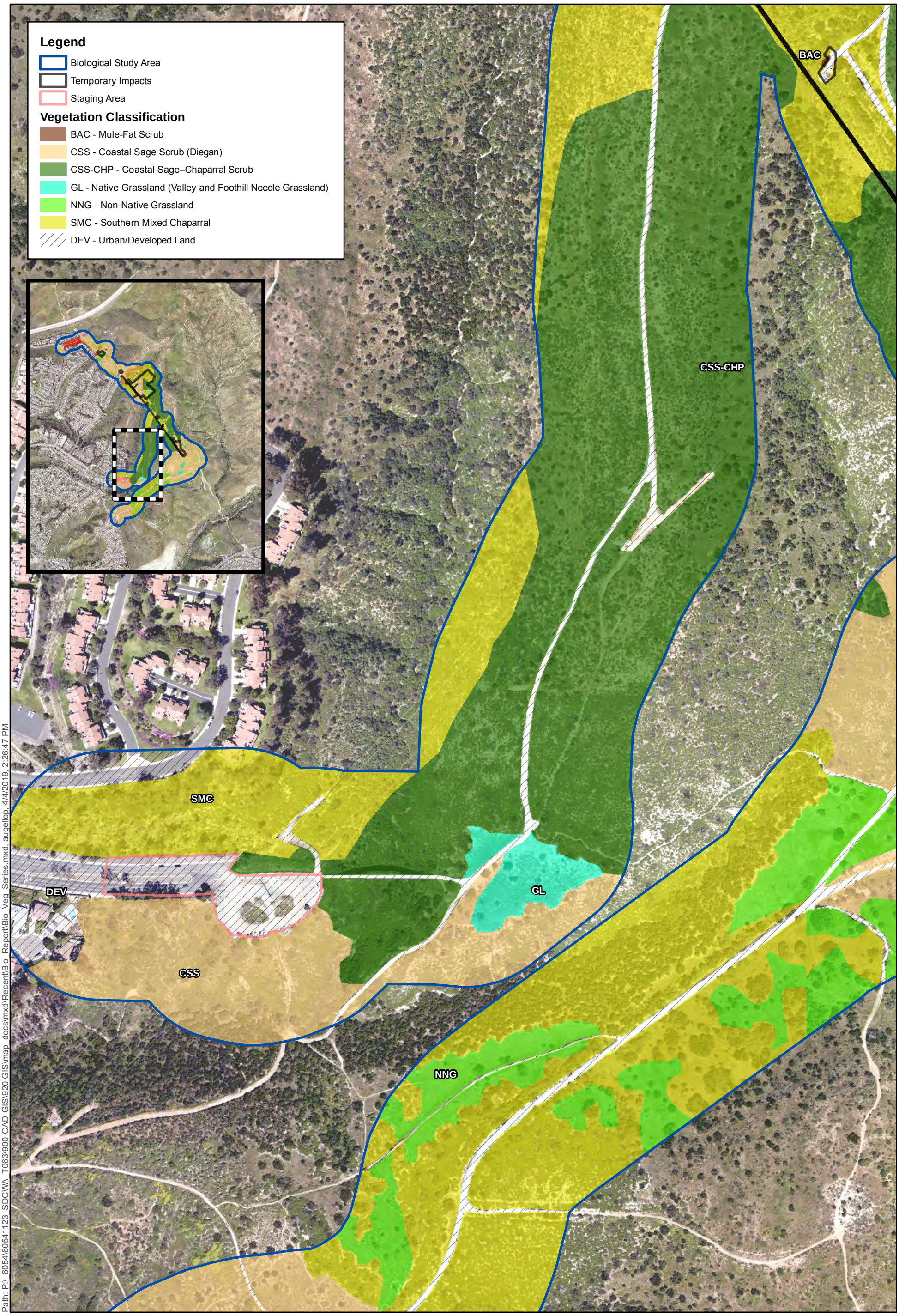
Source: SANDAG 2017; SDCWA 2017, 2018

Figure 4d
Vegetation Community and Special Status Species

250 0 250 Feet

Scale: 1:3,000 1 in = 250 feet



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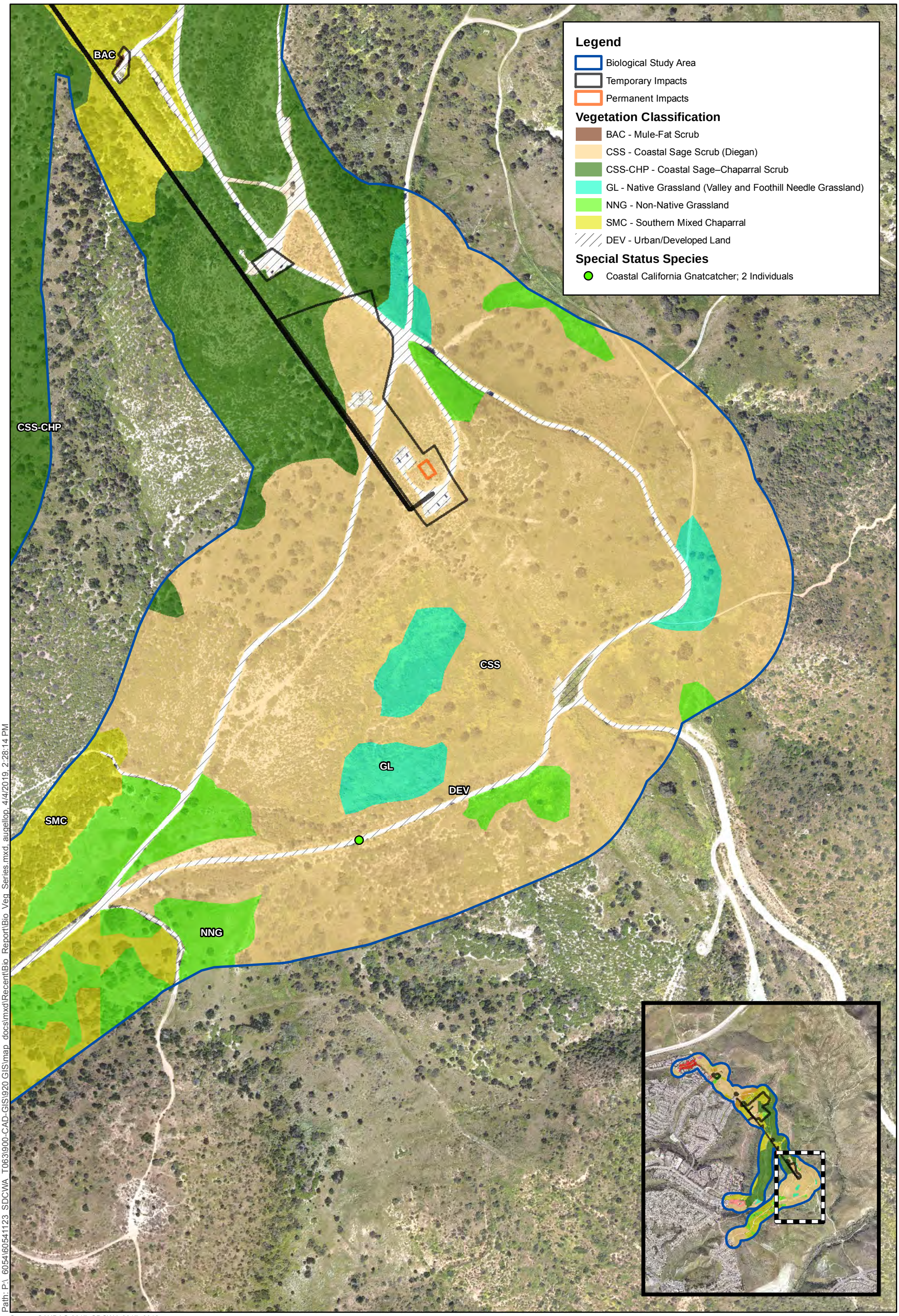
Source: SANDAG 2017; SDCWA 2017, 2018

Figure 4e
Vegetation Community and Special Status Species

250 0 250 Feet

Scale: 1:3,000 1 in = 250 feet



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Source: SANDAG 2017; SDCWA 2017, 2018

Figure 4f
Vegetation Community and Special Status Species

250 0 250 Feet

Scale: 1:3,000 1 in = 250 feet

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The last category added since the 2006 report is ornamental, which refers to an area near Portobelo Drive where a gated access road connects with the interior aqueduct road. The area is landscaped with a combination of native and ornamental plants and trees.

5.2 WILDLIFE

During the general wildlife survey and habitat assessment conducted on August 21, 2018, a total of 19 bird species were observed in the project area. However, due to the late summer survey period, this is not representative of the bird species that use the proposed project area to breed and winter, or use as stop-over habitat during migration. One federally threatened species, coastal California gnatcatcher, was detected during the 2018 surveys. Coastal California gnatcatcher is also an NCCP/HCP Covered Species. Another NCCP/HCP covered bird species observed during the 2018 surveys was Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*). Although the site undoubtedly supports a variety of mammals, no mammal species were observed during this visit. However, sign such as tracks and scat were used to determine the presence of mammalian species such as coyote (*Canis latrans*). A southern mule deer (*Odocoileus hemionus*) skeleton was observed along one of the drainages in the northern portion of the BSA. Like mammal species, the site undoubtedly supports a variety of reptile species; however, none were observed during this visit in August. An additional wildlife survey was conducted in the evening on March 2, 2019 to look for ponded areas that might provide suitable habitat for breeding reptiles and amphibians. Two amphibian species and one small mammal species were detected in the BSA. A complete list of wildlife species observed or detected during the field survey is presented in Attachment 2.

5.3 RARE AND/OR ENDANGERED OR SENSITIVE SPECIES

For the purpose of CEQA analysis, sensitive plant and wildlife species are identified as those listed as endangered, rare, or threatened by the California ESA or federal ESA; or those classified as species of special concern or fully protected species by CDFW (CDFW 2018a). Sensitive plant species also include those with a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) of 1A, 1B, 2A, or 2B (CNPS 2018), and those that are Covered Species under the Water Authority NCCP/HCP.

5.3.1 Sensitive Plant Species

The Water Authority's NCCP/HCP provides coverage for 26 plant species, which include federally listed and/or state-listed as rare, threatened, or endangered, or are likely candidates for future listing as rare, threatened, or endangered based on present population declines, diminishing habitat, or existing levels of sensitivity. Two additional plant species are addressed

in the NCCP/HCP as "major amendment species," meaning they are known to occur in the plan's Major Amendment Area, in Riverside County. Based on a review of existing databases, including the CNDDB (CDFW 2018a), review of the 2005 survey results, and the habitat assessment, seven sensitive plant species have a potential to occur within the BSA, and these are listed in Table 5-2 along with details of their habitat and their potential presence in the project work areas or the project buffer areas. All but two of the species were previously described in the 2006 biological assessment report. Sensitive species that have been detected in the project work area or that have potential to occur on-site include San Diego thornmint (*Acanthomintha ilicifolia*), San Diego goldenstar (*Bloomeria clevelandii*), variegated dudleya (*Dudleya variegata*), coast barrel cactus (*Ferocactus viridescens*), and Munz's sage (*Salvia munzii*). All of these species are Water Authority NCCP/HCP Covered Species. No USFWS critical plant habitat occurs within the BSA. Critical habitat has been designated for San Diego thornmint (*Acanthomintha ilicifolia*) but does not occur in the vicinity of the proposed project (USFWS 2008).

With the exception of summer holly (*Comarostaphylos diversifolia* ssp. *diversifolia*), all species discussed in Table 5-2 were also addressed in the 2006 report. Summer holly is a CRPR 1B species and NCCP/HCP Covered Species. This species was detected within the buffer area near a road in the central portion of the BSA, but appropriate habitat does not occur in any work areas.

5.3.2 Sensitive Wildlife Species

The Water Authority's NCCP/HCP provides coverage for 37 wildlife species, which include species that are federally listed and/or state-listed as rare, threatened, or endangered or are likely candidates for future listing as rare, threatened, or endangered based on present population declines, diminishing habitat, or existing levels of sensitivity. NCCP/HCP covered wildlife species and other sensitive wildlife species were evaluated for potential to occur within the BSA based on presence of suitable habitat, previous studies conducted in 2005 (Tierra Environmental 2006b), and occurrences within a 5-mile-wide buffer of the proposed project per review of the CNDDB (CDFW 2018a). Thirty species were determined to have potential to occur within the BSA, and 25 of these are covered by the Water Authority's NCCP/HCP. The other five include three reptile species that are California species of special concern, one bird species that is a California fully protected species, and one bird species that is a California species of special concern. Sensitive wildlife species potentially occurring in the BSA are described in Table 5-3. While all 30 species identified in Table 5-3 have some potential to occur, 19 species that are covered by the NCCP/HCP have a potential to occur high enough that they are likely to be encountered in the BSA and could be affected by project construction. Some of the species have been detected within the BSA, with a differentiation between those detected in 2006 and

Table 5-2
Sensitive Plant Species Potentially Occurring in the BSA

Species	Status	Habitat	2006 Report Results	2018 Assessment
Spineshrub (*Adolphia californica*)[1]	No federal or state status; CRPR 2B.1; NCCP/HCP Covered Species	Coastal sage scrub (Diegan) particularly adjacent to grassland.	N/A*	Moderate Potential. Not detected; appropriate habitat occurs in the buffer, but not in the work areas.
San Diego thornmint (*Acanthomintha ilicifolia*)	Federally threatened; state endangered; CRPR 1B; NCCP/HCP Covered Species; NCCP/HCP narrow endemic species	Grassy openings in coastal sage scrub or chaparral; and associated clay depressions on mesas.	Detected within proposed project survey area; appropriate habitat occurs on-site.	Moderate Potential. Not detected in late summer but potential habitat is present in buffer areas. No habitat occurs in work areas.
Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)	No federal or state status; CRPR 1B	Chaparral; elevation 100 to 1,800 feet.	Not detected; appropriate habitat occurs on-site.	Detected in upper drainage adjacent to a road within buffer areas only.
San Diego goldenstar (*Bloomeria clevelandii*)	No federal or state status; CRPR 1B; NCCP/HCP Covered Species	Chaparral, coastal scrub, native grassland (valley and foothill needle grassland), vernal pools/clay, elevation 150 to 1,525 feet.	Not detected; appropriate habitat occurs on-site.	High Potential. Not detected but appropriate habitat exists on-site in work areas and buffer areas.
Variegated dudleya (*Dudleya variegata*)	No federal or state status; CRPR 1B;NCCP/HCP Covered Species; NCCP/HCP narrow endemic species	Clay in chaparral, cismontane woodland, coastal scrub, native grassland (valley and foothill grassland), and vernal pools; elevation 9 to 1,918 feet.	Detected within proposed project area; appropriate habitat occurs on-site.	High Potential. Not detected but habitat is present in work and buffer areas.
Coast barrel cactus (*Ferocactus viridescens*)	No federal or state status; CRPR 2B; NCCP/HCP Covered Species	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; elevation 10 to 1,475 feet.	Detected within the proposed project area; appropriate habitat occurs on-site.	Detected within buffer areas only, along access roads.
Munz's sage (*Salvia munzii*)	No federal or state status; CRPR 2B; NCCP/HCP Covered Species	Coastal sage scrub (Diegan) especially on south-facing slopes.	N/A*	Low Potential. Not detected; appropriate habitat occurs within buffer areas only.

*Not applicable; these species were not evaluated in the 2006 report (Tierra Environmental 2006b).
[1]Nomenclature for species listed in the table follows Rebman and Simpson (2016).

Table 5-3
Sensitive Wildlife Species Potentially Occurring in the BSA

Species	Status[1]	Habitat	2006 Report Results[2]	2018/2019 Assessment
Invertebrates				
Quino checkerspot butterfly (*Euphydryas editha quino*)	Federally endangered; no state status; NCCP/HCP Covered Species	Foothills and coastal mesas; associated with larval host plants dot-seeded plantain (*Plantago erecta*) and Chinese houses (*Collinsia* sp.)	Detected within proposed project area; appropriate habitat occurs on-site.	High potential. Appropriate suitable habitat occurs throughout the BSA. Habitat assessment in 2018 documented suitable habitat and surveys are being conducted in spring 2019.
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	Federally endangered; no state status; NCCP/HCP Covered Species; NCCP/HCP narrow endemic and vernal pool policy	Vernal pools.	Not detected; marginally appropriate habitat occurs on-site.	High potential to occur in buffer. No habitat exists within the work areas. Per the 2007 BO (USFWS 2007), habitat was created outside but adjacent to project work areas.
Reptiles and Amphibians				
Western spadefoot (*Spea hammondii*)	State species of special concern; NCCP/HCP Covered Species; NCCP/HCP narrow endemic species; NCCP/HCP vernal pool policy	Open areas with sandy or gravelly soils within mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains.	N/A	Detected. Species detected in work areas and adjacent suitable vernal pool breeding habitat. Appropriate aestivation and foraging habitat occurs throughout chaparral and sage scrub communities in the BSA. Suitable breeding habitat is present in nearby vernal pools.
Coastal (western) whiptail (*Aspidoscelis tigris stejnegeri*)	State species of special concern; NCCP/HCP Covered Species	Primarily hot and dry open areas with sparse foliage – chaparral, woodland, and riparian areas.	N/A	High potential. Appropriate habitat exists throughout the BSA.

Table 5-3
Sensitive Wildlife Species Potentially Occurring in the BSA

Species	Status[1]	Habitat	2006 Report Results[2]	2018/2019 Assessment
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	NCCP/HCP Covered Species	Chaparral or arid environments; in sandy, rocky areas with loose soil.	Detected; appropriate habitat occurs on-site.	High potential. Appropriate habitat occurs throughout the BSA.
Coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillei*)	State species of special concern; NCCP/HCP Covered Species	Scrubland, grassland, coniferous forest, and broadleaf woodland.	Detected; appropriate habitat occurs on-site.	High potential. Appropriate habitat exists throughout the BSA.
(Northern) red diamond rattlesnake (*Crotalus ruber ruber*)	State species of special concern; NCCP/HCP Covered Species	Dense chaparral or coastal sage scrub, often near large rocks or boulders.	Detected; appropriate habitat occurs on-site.	High potential. Appropriate habitat exists throughout the BSA.
Coronado skink (*Plestiodon skiltonianus interparietalis*)	NCCP/HCP Covered Species	Grassland, woodlands, pine forests, and chaparral.	N/A	High potential. Appropriate habitat occurs throughout the BSA.
Coastal rosy boa (*Lichanura trivirgata roseofusca*)	NCCP/HCP Covered Species	Rocky shrublands and desert habitats.	Detected; appropriate habitat occurs on-site.	High potential. Appropriate habitat occurs throughout the BSA.
San Diego ringneck snake (*Diadophis punctatus similis*)	NCCP/HCP Covered Species	Wet meadows, rocky hillsides, gardens, farmland, grassland, oak woodlands, and chaparral.	N/A	High potential. Appropriate habitat occurs throughout the BSA.
California glossy snake (*Arizona elegans occidentalis*)	State species of special concern	Arid scrub, rocky washes, grasslands, and chaparral.	N/A	Low potential. Marginally habitat exists throughout the BSA.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	State species of special concern	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	N/A	High potential. Appropriate habitat exists throughout the BSA.
Two-striped garter snake (*Thamnophis hammondii*)	State species of special concern	Near permanent fresh water, along streams with rocky beds.	Detected; appropriate habitat occurs on-site.	High potential. Appropriate habitat exists throughout the BSA, especially near vernal pool areas.

Table 5-3
Sensitive Wildlife Species Potentially Occurring in the BSA

Species	Status[1]	Habitat	2006 Report Results[2]	2018/2019 Assessment
Birds				
Least Bell's vireo (*Vireo bellii pusillus*)	Federally endangered; state endangered; NCCP/HCP Covered Species	Southern willow woodland/scrub.	Detected; appropriate breeding habitat occurs on-site.	Low potential for this species to occur in the small patch of southern willow scrub in the northern part of the BSA.
Coastal California gnatcatcher (*Polioptila californica californica*)	Federally threatened; state species of special concern; NCCP/HCP Covered Species	Coastal sage scrub and coastal sage-chaparral scrub.	Detected within survey area; appropriate breeding habitat occurs on-site.	Detected. Appropriate habitat occurs within coastal sage scrub in the BSA. All suitable habitat for the species is considered occupied.
Loggerhead shrike (*Lanius ludovicianus*)	State species of special concern; NCCP/HCP Covered Species	Agricultural land, grassland with scattered bushes or broken chaparral.	Detected; appropriate breeding habitat occurs on-site.	High potential. Appropriate habitat occurs throughout the BSA.
California horned lark (*Eremophila alpestris actia*)	NCCP/HCP Covered Species	Bare, dry ground and areas of short, sparse vegetation.	N/A	High potential. Appropriate habitat occurs in open habitats throughout the BSA.
White-tailed kite (*Elanus leucurus*)	State fully protected species	Riparian woodland, marsh habitat, partially cleared or cultivated fields and grassy foothills.	Detected; appropriate breeding habitat occurs on-site.	High potential. Appropriate foraging habitat occurs throughout the BSA. No nesting habitat is present within the BSA.
Yellow warbler (*Dendroica petechia*)	State species of special concern; NCCP/HCP Covered Species	Breeding habitat is restricted to riparian woodland.	Detected; appropriate breeding habitat occurs on-site.	Low potential for this species to occur in the small patch of southern willow scrub in the northern part of the BSA.
Vaux's swift (*Chaetura vauxi*)	State species of special concern	Migrants observed in all habitat types.	Detected; appropriate foraging habitat occurs on-site.	Moderate potential. Appropriate foraging habitat. No suitable nesting habitat is present.

Table 5-3
Sensitive Wildlife Species Potentially Occurring in the BSA

Species	Status[1]	Habitat	2006 Report Results[2]	2018/2019 Assessment
Yellow breasted chat (*Icteria virens*)	State species of special concern; NCCP/HCP Covered Species	Breeds in dense brush or scrub especially along streams and at swamp margins.	Detected; appropriate breeding habitat occurs on-site.	Low potential for this species to occur in the small patch of southern willow scrub in the northern part of the BSA.
Western burrowing owl (*Athene cunicularia hypugaea*)	State species of special concern NCCP/HCP Covered Species	Grasslands, rangelands, agricultural areas, deserts, or any other open dry area with low vegetation.	N/A	Low potential. Appropriate habitat exists in the BSA. However, this part of San Diego County is not identified as an area currently inhabited by western burrowing owl in the San Diego Bird Atlas (Unitt 2004) and it is not likely to occur.
Grasshopper sparrow (*Ammodramus savannarum*)	State species of special concern; NCCP/HCP Covered Species	Breeds in grassland, upland meadows, pastures, hayfields, and old field habitats, favoring open areas of over 100 acres in size.	N/A	High potential. Appropriate habitat exists within grasslands in the BSA.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	NCCP/HCP Covered Species	Dry, rocky slopes with scattered scrub and patches of grass and forbs. Occurs year-round in chaparral and sage scrub communities.	Detected; appropriate breeding habitat occurs on-site.	High potential. Appropriate habitat occurs throughout the BSA.
Mammals				
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	State species of special concern; NCCP/HCP Covered Species	Open plains, foothills.	Appropriate habitat occurs on-site.	High potential. Appropriate habitat exists throughout the BSA.
Dulzura pocket mouse (*Perognathus californicus femoralis*)	State species of special concern; NCCP/HCP Covered Species	Dense chaparral, and uncommon in arid grassland, desert, and coastal scrub habitats.	N/A	High potential. Appropriate habitat exists throughout the BSA.

Table 5-3
Sensitive Wildlife Species Potentially Occurring in the BSA

Species	Status[1]	Habitat	2006 Report Results[2]	2018/2019 Assessment
Northwestern San Diego pocket mouse (*Perognathus fallax fallax*)	State species of special concern; NCCP/HCP Covered Species	Rocky habitat near shrubs in loose to sandy soils, to gravel to mixed rock on moderate to steep slopes.	N/A	High potential. Appropriate habitat exists throughout the BSA.
San Diego desert woodrat (*Neotoma lepida intermedia*)	State species of special concern; NCCP/HCP Covered Species	Sagebrush scrub; chaparral, often in rocky areas with yuccas.	N/A	High potential. Appropriate habitat exists throughout the BSA.
Southern grasshopper mouse (*Onychomys torridus ramona*)	State species of special concern NCCP/HCP Covered Species	Open habitats with grasslands and coastal sage scrub	N/A	Low potential. Marginally suitable habitat exists throughout the BSA. The species is unlikely to occur because it prefers more desert habitat types.
Mountain lion (*Puma concolor*)	NCCP/HCP Covered Species	Remote, hilly or mountainous areas.	N/A	Moderate potential. Suitable foraging habitat occurs throughout the BSA, but proximity to urban areas may deter species from foraging in the BSA.

[1] Status from CDFW 2018b.

[2] N/A = not applicable; these species were not evaluated in the 2006 report (Tierra Environmental 2006b).

2018/2019. Three other sensitive species not covered by the NCCP/HCP also have a potential to occur high enough that they are likely occur within the BSA. The other species have marginally suitable habitat and are less likely to be encountered in the BSA.

5.4 SENSITIVE NATURAL COMMUNITIES

As described in the original EIR, sensitive habitats include those communities considered unique because they host many species of plants and animals that are rare or substantially depleted. The Water Authority's NCCP/HCP groups vegetation communities into tiers (see Section 6.5.1.3 and Table 6-5 of the Water Authority's NCCP/HCP) deemed to have similar ecological values based on rarity, Covered Species diversity, and environmental sensitivity. The vegetation and land cover categories and tiers into which vegetation communities are assigned are comparable to those used in other conservation plans within San Diego County (see Tables 4-2 and 6-5 of the Water Authority's NCCP/HCP). Tier I, II, and III vegetation communities are considered sensitive and declining habitats. Tier IV includes land cover types (eucalyptus/non-native woodland, agriculture, disturbed habitat, and urban/developed land) that are not considered sensitive and do not require mitigation.

In the BSA, sensitive upland communities include the NCCP/HCP Tier I community native grassland (valley and foothill needle grassland), the Tier II communities coastal sage scrub (Diegan) and coastal sage-chaparral scrub, and the Tier III communities southern mixed chaparral, chamise chaparral (granitic), and non-native grassland. Sensitive wetland communities occurring in the BSA include the Tier I community San Diego mesa claypan vernal pool, and the Tier II communities composed of mule-fat scrub and southern willow scrub. Project impacts on these communities would require mitigation in accordance with the Water Authority's NCCP/HCP, which is discussed in detail in Chapter 7 of this report.

5.5 WETLANDS AND JURISDICTIONAL WATERS

Wetlands and jurisdictional waters generally include those resources regulated by the Army Corps pursuant to Section 404 of the federal CWA, Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA and State Porter-Cologne Water Quality Control Act, and CDFW pursuant to Sections 1600 et seq. of the California Fish and Game Code.

A wetland delineation report was prepared for the original project in 2007 by Tierra Environmental Services, which addressed the project's San Diego River crossing and five small drainages that generally run northeast to southwest within the BSA. The Water Authority obtained permits for previously anticipated impacts on these locations, including for improvement of the Arizona crossing of the San Diego River and minor road widening for access

roads crossing the smaller drainages, and all previously permitted activities were completed as part of the original project's first phase.

AECOM performed an updated delineation for the remaining project components in 2018 and prepared a jurisdictional delineation report in 2019 (AECOM 2019). The delineation identified project work areas overlapping four of the drainages delineated in 2007, including one drainage at the FRS II overflow pipe outfall and three drainages crossed by the electrical conduit alignment and/or blow-off structure removal areas. The delineation results are shown in Figure 5 of the 2019 jurisdictional delineation report, included as Attachment 3.

Approximately 0.202 acre of waters of the U.S. subject to Army Corps and RWQCB jurisdiction occur within the project study area. Approximately 1.526 acres of CDFW jurisdictional aquatic resources was also delineated within the study area, which includes the waters of the U.S., plus the banks of the drainage and associated riparian vegetation exclusively under CDFW jurisdiction. Table 5-4 presents the total jurisdictional resources present within the study area broken down by jurisdictional feature and vegetation community type present.

Table 5-4
Jurisdictional Aquatic Resources within the Study Area

Drainage No.	RWQCB/Army Corps Jurisdictional Waters of the U.S. (acres/linear feet)	CDFW Jurisdiction (acres)
1	0.066 ac/915.2 ft	0.588
2	0.063 ac/667.7 ft	0.443
3	0.024 ac/239.9 ft	0.171
4	0.049 ac/424.9 ft	0.324
TOTAL	**0.202 ac/2247.7 ft**	**1.526**

SECTION 6.0
REGULATORY CONTEXT

The Water Authority prepared its NCCP/HCP pursuant to Section 2800 et seq. of the California Fish and Game Code and Section 10(a) of the federal ESA of 1973, as amended. The purpose of the NCCP/HCP is to fulfill the requirements for issuance of incidental take authorization under Section 2835 of the Natural Community Conservation Planning Act (NCCP Act) and an incidental take permit under Section 10 of the ESA. The NCCP/HCP identifies the types of activities proposed for coverage and an assessment of expected impacts. The NCCP/HCP would not preclude the Water Authority from processing federal permits and state permits with USFWS and CDFW, respectively (collectively, the Wildlife Agencies), if required for individual future projects that are not covered by the NCCP/HCP. For the project, the entire study area is within the Water Authority's Probable Impact Zone (PIZ) covered by the NCCP/HCP.

6.1 WATER AUTHORITY NCCP/HCP EVALUATION GUIDELINES

The Water Authority's NCCP/HCP provides the mechanism for take authority of Covered Species consistent with the NCCP Act and federal and state ESAs. The proposed project is considered an "Existing Project," as defined in Section 1.1.2.2.1 of the NCCP/HCP, which acknowledges preexisting agreements with USFWS and CDFW relative to the project. Section 1.1.2.2.1 also explains that, if the Water Authority proposes project changes that could result in new or previously unidentified impacts, or if Covered Species not observed during the original permit process are observed at an Existing Project site, the existing approvals would be subject to review and impacts to Covered Species can be addressed consistent with this Plan. In implementing the remaining components of this Existing Project, the Water Authority is not proposing project changes that would result in new impacts, but, as discussed above in Section 1.2, the project's previous agreements did not authorize take for the NCCP/HCP Covered Species Quino checkerspot butterfly and coastal California gnatcatcher. The project's potential impacts on those species, as discussed in this report, have led the Water Authority to address the project under the NCCP/HCP, rather than the pre-existing agreements with USFWS and CDFW.

6.1.1 Covered Species General Conditions for Coverage

Section 2.1 of Appendix B of the Water Authority's NCCP/HCP discusses conservation policies for sensitive species. Specifically, Section 2.1 contains 18 conditions for coverage that each project needs to demonstrate that it complies with or that the conditions are not applicable. These 18 conditions for coverage, which are included in Attachment 4 of this document, will be implemented for this proposed project, as applicable. A final determination on the applicability

of General Conditions for Coverage will come after preparation of the pre-activity survey prior to construction.

6.1.2 Special Conditions for Covered Species

In addition to the General Conditions for Coverage (Section 6.1.1 above), the Water Authority's NCCP/HCP identifies species-specific special conditions for some Covered Species that may be impacted by a proposed project. These species-specific special conditions are addressed in NCCP/HCP Appendix B, Sections 5.0 through 9.0. Analysis of the project's Covered Species impacts is provided below in Sections 7.1.3 and 7.1.4. Based on these species-specific conditions, project-specific special conditions for Covered Species are discussed in Section 8.3 below.

6.1.3 NCCP/HCP Minimization Measures

Section 6.4 of the NCCP/HCP presents the minimization measures that the Water Authority has committed to implementing during the planning, design, and construction of new facilities, and for operations and maintenance of existing facilities. NCCP/HCP measures that will be required before and during project construction are listed in Attachment 4. The Water Authority will conduct a pre-activity survey and prepare a survey report prior to construction as a design measure for this proposed project, which will review habitat conditions and potential species presence to ensure no significant changes in existing conditions compared to those documented in this biological resources assessment report. The pre-activity survey report will identify any additional NCCP/HCP measures that must be implemented during project construction, if any are needed beyond those listed in this report. By implementing the appropriate minimization measures stated in Section 6.4 of the NCCP/HCP, the project will comply with this aspect of the NCCP/HCP.

6.1.4 Narrow Endemic Policy

Section 6.5.1.6 of the NCCP/HCP establishes the plan's narrow endemic policy, stating that unavoidable impacts to a narrow endemic population and occupied acreage will be minimized to the maximum extent practicable, and associated mitigation will be designed to meet a minimum 1:1 conservation ratio. For new projects, the policy requires 80 percent avoidance, excluding existing Water Authority ROW (including easements and fee-owned parcels). For plant species, this means 80 percent of the species' mapped distribution area will be avoided; for animal species, 80 percent of the occupied habitat and suitable habitat will be avoided. Covered projects that cannot meet the 80 percent avoidance policy due to additional site and planning constraints will implement a Wildlife Agency-approved biologically equivalent or superior alternative.

Two NCCP/HCP narrow endemic plant species, San Diego thornmint and variegated dudleya, were observed during the 2006 surveys. These observations were outside the impact areas of the project addressed in this report. The species were not observed during the updated 2018 surveys, but surveys were conducted outside of the herbaceous plants' flowering season. If they were present on-site, their presence would not have been easily evident. Because suitable habitat for these plants exists in the work areas, the Water Authority will conduct surveys during the spring blooming season for these species. If they are present on-site, then the Water Authority would apply the 80 percent avoidance policy noted above, or contact the Wildlife Agencies to coordinate appropriate mitigation if 80 percent avoidance is not feasible. In accordance with the NCCP/HCP narrow endemic policy, mitigation for unavoidable impacts will be designed to minimize adverse effects to species viability and to contribute to the NCCP/HCP's biological objectives.

The BSA also includes suitable habitat for two narrow endemic wildlife species, western spadefoot (*Spea hammondi*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*). Two western spadefoot individuals were detected on March 2, 2019, during a habitat assessment to look at ponded areas following recent rain events, as shown on Figure 4. One western spadefoot was detected within the work area for FRS II, west of the vernal pool creation area associated with the project's first phase. One western spadefoot was detected in one of the created vernal pools in this area, outside the project impact area. Since suitable breeding habitat is present in the buffer, and a western spadefoot was detected within a pool, the species is likely breeding in the area. San Diego fairy shrimp may occur in the created vernal pools, but a focused survey for this species was not conducted because the project does not propose any direct impacts on vernal pools.

6.1.5 Vernal Pool Protection Policy

The NCCP/HCP's Vernal Pool Protection Policy prohibits permanent impacts on vernal pools, requiring in-kind restoration of pools that are directly affected by project construction. The policy requires identification of pools and their watersheds in a project's impact area and for unavoidable temporary impacts to vernal pools and watersheds, restoration of hydrological conditions and vegetation at the impacted location.

Vernal pools created as mitigation for the original project's impacts are located adjacent to the FRS II work area. The vernal pools were placed in this location and designed with the understanding that the Water Authority would eventually construct the FRS II reservoir nearby. Most of the pools are in an area separated from the FRS II work area by a road, which features a small berm on the south side to prevent road runoff from entering the pools. One pool is located north of the road, but this pool is approximately 175 feet east of the FRS II work area and

separated from the work area by topography. This separation between all vernal pools and the project impact area means work will not occur within the vernal pools' watersheds, so there would be no impacts relative to the Vernal Pool Protection Policy. In addition, the vernal pool creation area will be identified on project plans as an environmentally sensitive area and the Water Authority will emphasize measures to prevent runoff and dust from affecting the pools.

6.1.6 Biologically Significant Resource Area

The City of San Diego's Multi- Habitat Planning Area (MHPA) and lands within it have been designated for conservation pursuant to the Multiple Species Conservation Program (City of San Diego 1997). The MHPA was designed to conserve biological resources considered sensitive by the resource agencies and by the City. MTRP is within the MHPA, so these lands would be considered biologically significant resource areas (BSRAs), as defined in the Section 6.5.1.4.1 of the NCCP/HCP. The NCCP/HCP also clarifies that existing Water Authority ROW is excluded from the BSRA designation because the ROW has been, and will continue to be, impacted by operations and maintenance activities. For consideration of the proposed project's impacts, land inside the Second Aqueduct's linear pipeline ROW would be exempt from BSRA consideration. However, property acquired for project construction, including temporary construction easements and new ROW associated with the FRS II reservoir and pipeline tunnel, would not be exempt, because it was not part of the ROW considered in the NCCP/HCP, and would be considered BSRA.

SECTION 7.0
ANTICIPATED PROJECT IMPACTS

The proposed project consists of three major components: the FRS II and associated conduit, the north and south portal connections, and removal/replacement of most or all of the highly visible vents and blow-off valve structures within the affected reach of Pipelines 3 and 4. In addition, temporary construction and staging areas are also associated with the project. The remaining project components do not entail impacts beyond those areas originally anticipated in the 2006 report; furthermore, many of the proposed impacts will occur in areas disturbed by previous construction of the pipeline tunnel. Tables 7-1 and 7-2 below show permanent and temporary impacts resulting from the proposed project work areas associated with the project components. Permanent impact refers to the loss of a given habitat due to the construction of permanent structures. Temporary impact refers to areas that would be affected by the proposed project and would be revegetated upon project completion. The habitat that would be impacted and restored includes some habitat that was previously restored from earlier projects within the Second Aqueduct ROW, and from construction of the pipeline tunnel.

7.1 DIRECT IMPACTS

7.1.1 Sensitive Natural Communities

Construction of the proposed project would result in impacts to sensitive upland habitats (Tables 7-1 and 7-2). As stated in the 2006 report, sensitive habitats occurring within the footprint of the proposed project include coastal sage scrub (Diegan) and coastal sage-chaparral scrub. Southern mixed chaparral, chamise chaparral (granitic), and non-native grassland are not considered sensitive pursuant to CEQA.

Table 7-1
Permanent Impacts to Sensitive Vegetation Communities

Vegetation Communities and Land Cover Types	NCCP/HCP Tier	Work Areas outside ROW (acres)	Work Areas within ROW (acres)	Total Permanent Impacts (acres)
Diegan Coastal Sage Scrub	II	1.20	0.03	1.23
Coastal Sage-Chaparral Scrub	II	0.28	–	0.28
Chamise Chaparral (Granitic)	III	0.01	<0.01	0.01
Southern Mixed Chaparral	III	0.02	-	0.02
Non-native Grassland	III	0.10	0.01	0.11
Total		**1.61**	**0.04**	**1.65**

Table 7-2
One-Time Temporary Impacts to Sensitive Vegetation Communities

Vegetation Communities and Land Cover Types	NCCP/HCP Tier	Work Area outside ROW (acres)	Work Areas within ROW (acres)	Total Temporary Impacts (acres)
Diegan Coastal Sage Scrub	II	2.98	1.79	4.77
Coastal Sage-Chaparral Scrub	II	2.87	0.55	3.41
Mule-Fat Scrub	II	--	0.01	0.01
Chamise Chaparral (Granitic)	III	0.02	0.09	0.11
Southern Mixed Chaparral	III	6.59	1.62	8.21
Non-Native Grassland	III	0.93	0.53	1.46
Total		**13.40**	**4.58**	**17.98**

Impacts to vernal pool habitat that was identified in the 2006 report have already occurred and have been mitigated through restoration of vernal pools in the southeast corner of the parcel acquired from SDUSD for the project. No additional vernal pool impacts are anticipated as a result of constructing the features addressed in this report.

7.1.2 Jurisdictional Waters and Wetlands

Table 7-3 presents the temporary and permanent impacts to waters of the U.S. and CDFW jurisdictional streambed and associated riparian canopy that would result from construction of the project. The project would have an impact on four small drainages, including permanent and temporary impacts associated with construction of the FRS II overflow pipe outfall, temporary impacts at the work areas for the north tunnel connection and blow-off structure removal, and temporary impacts associated with trench installation of the electrical conduit. Project construction is estimated to result in temporary impacts to 0.033 acre of waters of the U.S. There would be no permanent impacts to waters of the U.S. Construction of the project will result in temporarily impacts to 0.134 acre and permanent impacts to less than 0.001 acre (0.0006) acre of CDFW jurisdictional streambed and associated riparian canopy.

These temporary and permanent impacts on jurisdictional resources would require permits. The proposed project is expected to qualify for coverage as a Category 2 eligible activity under the Water Authority's Programmatic Master Plan Permit (PMPP) issued by Army Corps on May 8, 2015, as a programmatic permit for coverage under Section 404 of the Clean Water Act. Among the activities eligible for coverage under the PMPP is New Construction Activity No. 13 for the construction of new minor support facilities in waterways. Under Activity No. 13, impacts to waters of the U.S. may occur as a result of protection of underground facilities that may occur

wherever facilities cross a waterway in a project area.[3] Impacts to CDFW jurisdictional streambed and associated riparian habitat in the project area are expected to require a Lake and Streambed Alteration Agreement (LSAA) with CDFW. As a covered activity under the NCCP/HCP, the project qualifies for a streamlined permitting process with CDFW, as set forth in Section 6.7.2 of the NCCP/HCP.

Table 7-3
Proposed Impacts to Jurisdictional Aquatic Resources

Project Component	RWQCB/Army Corps Jurisdiction Waters of the U.S. (acres)		RWQCB/Army Corps Jurisdiction Waters of the U.S. (linear feet)	CDFW Jurisdiction (acres)		CDFW Jurisdiction (linear feet)
	Temp	Perm		Temp	Perm	
Outfall	0	0	0	0[1]	<0.001	11.4
Trenching	0	0	5.0	0.003	0	5.0
Temporary Work Area	0.033	0	454.3	0.131[1]	0	870.1
TOTAL	0.033	0	459.3	0.134	<0.001	886.5

[1] Temporary work area associated with the overflow pipe outfall, north tunnel connection, and blow-off structure removal is included in the temporary work area project component.

7.1.3 Sensitive Plant Species

The staging area is located in developed habitat and would not result in direct impacts to sensitive plant species. In addition, access roads to the work areas are developed roads that are regularly used by the Water Authority for routine maintenance of their infrastructure. These access roads are also regularly used by the public for biking and hiking. Direct impacts to sensitive plant species are not expected to occur as a result of use of the access roads. Indirect impacts such as dust and erosion would be avoided with implementation of the Standard Conditions for Biological Resources presented in Section 2.6 of the EIR, Project Design Features (Tierra Environmental Services 2006a). Impacts associated with these features of the proposed project would be less than significant and are not discussed further.

The federally endangered San Diego thornmint was observed in the BSA near the eastern terminus of Clairemont Mesa Drive and documented in the 2006 report (Tierra Environmental 2006b) and is not adjacent to the proposed project work areas or within 100 feet of work areas, as

[3] The Army Corps has determined that the Regional Water Quality Control Board, San Diego Region, waived the water quality certification for the PMPP; therefore, the Water Authority will not be required to obtain a Clean Water Act Section 401 permit.

mentioned in the conditions of coverage in the CWA NCCP/HCP (2010). While the plant was not found during the habitat assessment, its on-site habitat remains in an intact condition and the plant may be present, but it was not detectable due to the lateness in the season. Habitat supporting this plant species occurs outside the work areas and would not be directly or indirectly impacted by the proposed project. Therefore, impacts to San Diego thornmint are not anticipated. Spring rare plant surveys will be conducted in 2019 to confirm presence/absence within the project work areas.

A small patch of CRPR 1B variegated dudleya was observed in the 2005 surveys as occurring within southern mixed chaparral in the FRS II footprint (Tierra Environmental 2006b). It occurred in the area where the vernal pools were impacted and mitigated in accord with the 2007 BO (USFWS 2007) so its loss is not considered an impact at this time. As documented in the 2006 biological assessment report, other locations existed for the variegated dudleya in the vicinity of the currently proposed project. Historic variegated dudleya locations are in buffer areas for the roads or nearby and would not be affected by any work area activities. Existing access roads may exist within the 100-foot buffer around the plant habitat as indicated as an issue in the conditions for coverage in the CWA NCCP/HCP (2010) but that is the pre-existing situation. While the plant was not found during the habitat assessment, its on-site habitat remains in an intact condition and the plant may be present, but it was not detectable due to the lateness in the season. Spring rare plant surveys will be conducted in 2019 to confirm presence/absence within the project work areas.

Other sensitive plant species observed or with high potential to occur within the BSA include coast barrel cactus, summer holly, and San Diego goldenstar. Coast barrel cactus (NCCP/HCP Covered Species) was observed in coastal sage scrub (Diegan) and coastal sage-chaparral scrub. Summer holly and coast barrel cactus occur outside areas of impacts and would not be adversely affected by the construction of the proposed project. San Diego goldenstar (NCCP/HCP Covered Species) was not found during the habitat assessment, but it was not detectable due to the lateness in the season. Spring rare plant surveys will be conducted in 2019 to confirm presence/absence of San Diego goldenstar within the project work areas.

7.1.4 Sensitive Wildlife

The project features addressed in this report would entail temporary and permanent impacts on habitat that supports sensitive wildlife species. Impacts would occur at construction locations for FRS II, the portal connections, and the FCF. The staging area is located in developed habitat and would not result in direct impacts to sensitive wildlife species. In addition, access roads to the work areas are developed roads that are regularly used by the Water Authority for routine maintenance of their infrastructure. These access roads are also regularly used by the public for

biking and hiking. Direct impacts to sensitive wildlife species are not expected to occur as a result of use of the access roads. The following 20 sensitive wildlife species have high potential to occur in work areas based on known occurrences and suitable habitat present:

- Quino checkerspot butterfly
- coastal (western) whiptail (*Aspidoscelis tigris stejnegeri*)
- Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)
- coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillei*)
- (northern) red diamond rattlesnake (*Crotalus ruber ruber*)
- Coronado skink (*Plestiodon skiltonianus interparietalis*)
- coastal rosy boa (*Lichanura trivirgata roseofusca*)
- San Diego ringneck snake (*Diadophis punctatus similis*)
- coast patch-nosed snake (*Salvadora hexalepis virgultea*)
- two-striped garter snake (*Thamnophis hammondii*)
- coastal California gnatcatcher
- loggerhead shrike (*Lanius ludovicianus*)
- California horned lark (*Eremophila alpestris actia*)
- white-tailed kite (*Elanus leucurus*)
- grasshopper sparrow (*Ammodramus savannarum*)
- Southern California rufous-crowned sparrow
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
- Dulzura pocket mouse (*Perognathus californicus femoralis*)
- northwestern San Diego pocket mouse (*Perognathus fallax fallax*)
- San Diego desert woodrat (*Neotoma lepida intermedia*)

Two of these species identified as having high potential for occurrence, coast patch-nosed snake [*Salvadora hexalepis virgultea*]) and two-striped garter snake [*Thamnophis hammondii*]) are California species of special concern that are not covered by the NCCP/HCP.

One additional species, western spadefoot, was documented within the FRS II work area on March 2, 2019. Therefore western spadefoot is considered present within the work area. Of these 21 species, 18 are covered NCCP/HCP species. Only coast patch-nose snake, two-striped garter snake, and white-tailed kite are not covered by the NCCP/HCP. Tables 7-1 and 7-2 identify impacts to these species' habitats. Impacts would result in permanent impacts to 0.91 acre and one-time temporary impacts to 18.66 acres of habitat for most species. Grasshopper sparrow habitat impacts would be limited to permanent and temporary impacts to grassland habitat, and San Diego desert woodrat habitat impacts would be limited to permanent and temporary impacts to chaparral and scrub habitats. If additional sensitive species are identified during the project's

pre-activity survey, which is required by the NCCP/HCP, then additional conditions of coverage for those species would be identified prior to the start of construction.

Western spadefoots and other sensitive reptile and amphibian species have a potential to be crushed during site grading and excavation. Since one western spadefoot was detected in the work area of FRS II in close proximity to the project's vernal pool creation area located in the buffer, there is a high potential that this species is moving through, foraging within, and possibly aestivating within coastal sage scrub (Diegan), chaparral, and grassland habitat types within the FRS II work area. Therefore, this species may suffer injury and mortality during site preparation and excavation of the underground water storage facility. Measures in the NCCP/HCP would be implemented to reduce impacts to the species, however, some western spadefoot may still be impacted if not detected and removed from work areas prior to construction.

Dulzura pocket mouse, northwestern San Diego pocket mouse, and San Diego desert woodrat have a high potential for presence. The Water Authority may elect to conduct small-mammal trapping as project planning and design continue in order to verify the presence/absence of these species or assume species presence. If these species are identified or assumed present, the NCCP/HCP conditions of coverage for these species require pre-construction trapping and relocation.

7.2 INDIRECT IMPACTS

Grading and other activities associated with construction also have the potential to create airborne dust, sedimentation, and erosion as well as introduce invasive species that could degrade habitat for the aforementioned species habitat. Applicable NCCP/HCP minimization measures for these impacts that will be incorporated as project design features are listed in Attachment 4 of this report.

Coastal California gnatcatcher and other sensitive bird species may be impacted by increased noise levels and human activity during construction. These indirect impacts have the potential to degrade habitat and alter species behavior. If construction activities must commence during the avian breeding season (as defined in the NCCP/HCP Section 2.3 Avian Breeding Season Policy), impacts would be minimized by conducting nest surveys within 300 feet of proposed activities and providing buffers for species as determined by the environmental surveyor (see Attachment 4).

San Diego fairy shrimp have potential to occur in the vernal pools created as mitigation for the original project's impacts are located adjacent to the FRS II work area. As discussed above in Section 6.1.5, the project would not entail any impacts on these pools or their watersheds, so there would be no impacts from sedimentation and erosion. Invasive species have potential to impact the pools; however, the Water Authority will implement the NCCP/HCP weed control requirements to avoid these impacts.

SECTION 8.0
MITIGATION FOR PROPOSED PROJECT IMPACTS

8.1 SENSITIVE NATURAL COMMUNITIES

According to the NCCP/HCP, for projects or portions of projects with one-time temporary impacts, restoration and revegetation of the impacted area will be implemented on-site at a 1:1 ratio, pursuant to the Water Authority's MTRP Restoration Plan (Water Authority 2009). The specific habitat enhancement (restoration and revegetation) measures will be selected to address site-specific needs. Performance (success) criteria will be defined for each project and will generally conform to the Water Authority's revegetation guidelines. Restoration measures will be developed to restore the site's previous biological resources and minimize establishment of invasive non-native plant species. Habitat enhancement and restoration activities will occur under the supervision and direction of an environmental surveyor who has experience developing and implementing native restoration plans in Southern California. Within a project site, any disturbed areas that do not require regular maintenance or future disturbance, whether inside or outside of preserves, will be improved through enhancement, restoration, or a combination of the two. No off-site mitigation will be required for one-time temporary impacts unless the restoration is determined unsuccessful.

As part of a previous Water Authority project, installation of Pipeline 4B2, coastal sage scrub (Diegan) and coastal sage-chaparral scrub occurring within the 130-foot Second Aqueduct ROW were mitigated for off-site at the Water Authority's Crestridge Habitat Management Area (HMA). Therefore, permanent impacts to these vegetation communities resulting from the proposed project that occur within the Second Aqueduct ROW corridor would not require mitigation. These include permanent impacts at the proposed FCF and a portion of the overflow pipe outfall. Permanent impacts that occur outside the Second Aqueduct ROW corridor include the access area surrounding the roof of the FRS II, and the southern access shaft and surrounding access area, which would occur on property adjacent to the Second Aqueduct ROW corridor purchased by the Water Authority from SDUSD. In addition, a portion of the overflow pipe rip rap basin is located just beyond the aqueduct corridor.

Estimated mitigation acreages for the project's temporary and permanent impacts to sensitive vegetation communities are presented in Tables 7-1 and 7-2. Mitigation for temporary impacts is anticipated to be accomplished through habitat restoration of disturbed areas following construction. Mitigation for the modified project's permanent impacts on Tier II and Tier III habitat, including the FRS II access road and adjacent hatches, the tunnel outlet shaft and associated access, the overflow pipe outfall structure, and the FCF hatch, is anticipated to be

accomplished through use of credits by debiting credits from an existing Water Authority HMA, as identified in the NCCP/HCP. Impacts to Tier IV communities (i.e., urban/developed land) do not require on-site habitat restoration, as these communities are not sensitive. Impacted developed areas that are currently paved would be repaved, and unpaved access roads and Water Authority maintenance areas would be returned to their prior condition and use; other disturbed areas would be stabilized for erosion-control purposes after construction is complete.

The City of San Diego's MHPA and lands within it have been designated for conservation pursuant to the Multiple Species Conservation Program (City of San Diego 1997). MTRP is within the MHPA, so these lands would be considered BRSAs, as defined in Section 6.5.1.4.1 of the NCCP/HCP. The NCCP/HCP also clarifies that existing Water Authority ROW is excluded from the BSRA designation because the ROW has been, and will continue to be, impacted by operations and maintenance activities. For consideration of the proposed project's impacts, land inside the Second Aqueduct ROW would be exempt from BSRA consideration. However, property acquired for project construction, including temporary construction easements and new ROW associated with the FRS II reservoir and pipeline tunnel, would not be exempt, and would be considered BSRA.

Permanent impacts to the various vegetation communities require off-site mitigation at the ratios dictated in the NCCP/HCP, as shown below in Table 8-1. All mitigation would occur inside a BSRA, as reflected in the respective mitigation ratios listed in Table 6-6 of the Water Authority's NCCP/HCP.

Table 8-1
Off-Site Mitigation Summary

Vegetation Communities and Land Cover Types	NCCP/HCP Tier	Impacts Requiring Off-Site Mitigation (in BSRA)	Off-Site Mitigation Ratio[1]	Required Off-Site Mitigation (acres)
Diegan Coastal Sage Scrub	II	1.20[2]	2:1	2.40
Coastal Sage-Chaparral Scrub	II	0.28	2:1	0.56
Chamise Chaparral (Granitic)	III	0.01	1:1	0.01
Southern Mixed Chaparral	III	0.02	1:1	0.02
Non-Native Grassland	III	0.11	1:1	0.11
Total		**1.61**	**-**	**3.09**

[1] Mitigation ratios for Diegan coastal sage scrub and coastal sage-chaparral scrub are based on the ratios identified for these communities in the project's EIR, which is higher than would be required under the NCCP/HCP. Mitigation ratios for other communities in this table were not provided in the EIR, so the ratios are based on Table 6-6 of the Water Authority's NCCP/HCP, assuming the impacts and mitigation both occur inside BSRA.

[2] Does not include 0.03 acre within the Second Aqueduct ROW, which has already been mitigated.

8.2 JURISDICTIONAL WATERS AND WETLANDS

The Water Authority plans to obtain permits from the Army Corps and CDFW for temporary and permanent impacts in jurisdictional waters. Mitigation for these impacts is anticipated to entail on-site restoration of temporary impacts, similar to the requirement in the NCCP/HCP, and acquisition of credits form an off-site bank for the very small amount of permanent impacts. Off-site mitigation requirements will be subject to discussion with CDFW as part of the proposed project's permitting process.

8.3 SENSITIVE SPECIES

Two plant Covered Species have a high potential to occur based on historical and CNDDB data, and professional knowledge of species preferences in the region. Spring rare plant surveys will be conducted in 2019 to confirm presence/absence of these species within the project work areas. Should Covered Species be detected, NCCP/HCP conditions of coverage relevant to these species would be implemented by the Water Authority. These species-specific conditions of coverage, as defined in NCCP/HCP Appendix B, are included in Attachment 4 of this report. One other non-NCCP/HCP Covered Plant Species was detected in the buffer for the work areas. Applicable NCCP/HCP minimization measures for indirect impacts will be incorporated as project design features.

Eighteen Covered Wildlife Species are known to occur or have a high potential to occur within the project work areas based on historical and CNDDB data, and professional knowledge of species preferences in the region. Western spadefoot was detected within one of the work areas and has a high potential to occur in the other work areas as well. NCCP/HCP conditions of coverage relevant to these species would be implemented by the Water Authority. These species-specific conditions of coverage, as defined in NCCP/HCP Appendix B, are included in Attachment 4 of this report. One other NCCP/HCP Covered Species has potential to occur in the buffer, but applicable NCCP/HCP minimization measures for indirect impacts will be incorporated as project design features. Two sensitive wildlife species not covered by the NCCP/HCP have a high potential to occur within the project site. Implementation of the NCCP/HCP General Conditions of Coverage and measures for Covered Species would serve to reduce the proposed project's impacts on these non-Covered Species, and no additional mitigation is needed.

As required by the NCCP/HCP, a pre-activity survey will be performed prior to project-related ground disturbance to verify there are no substantial changes to the biological baseline conditions established by this report. If a sensitive/Covered Species is detected during the pre-activity survey and could be impacted by the project, then applicable species-specific

mitigation measures listed in NCCP/HCP Appendix B will be identified in the pre-activity survey report for implementation on the project. With implementation of the relevant NCCP/HCP conditions of coverage for Covered Species, as listed in Attachment 4 to this report, the proposed project is anticipated to have minimal impacts on sensitive species.

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ATTACHMENT 1

PLANT SPECIES DETECTED WITHIN THE BIOLOGICAL STUDY AREA IN 2018

Attachment 1
Plant Species Detected within the Biological Study Area in 2018

Scientific Name[1]	Common Name	California Invasive Plant Council (Cal-IPC) Ranking for Invasive Species
Acacia longifolia	Sydney golden wattle	
Acourtia microcephala	Sacapellote	
Acmispon glaber	Deerweed	
Adenostoma fasciculatum	Chamise	
Ambrosia psylostachya	Western wragweed	
Artemisia californica	California sage brush	
Artemisia dracunculus	Tarragon	
Astragalus trichopodus var. *lonchus*	Ocean locoweed	
*Avena barbata**	Slender wild oat	Moderately Invasive
*Avena fatua**	Wild oat	Moderately Invasive
Baccharis salicifolia	Mule fat	
Baccharis sarothroides	Chaparral broom	
Bahiopsis laciniata	San Diego sunflower	
*Brachypodium distachyon**	Purple false brome	Moderately Invasive
*Brassica nigra**	Black mustard	Moderately Invasive
*Bromus diandrus**	Ripgut brome	Moderately Invasive
*Bromus hordeaceous**	Soft chess	Limited Invasive
Bromus madritensis ssp. *rubens**	Red brome	Highly Invasive
Calochortus splendens	Splendid mariposa lily	
Calystegia macrostegia ssp. *intermedia*	South coast morning-glory	
*Centaurea melitensis**	Tocalote	Moderately Invasive
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly	
Corethrogyne filaginifolia var. *filaginifolia*	Sand aster	
Croton setiger	Doveweed	
Cryptantha intermedia	Common cryptantha	
Cylindropuntia prolifera	Coast cholla	
Datura wrightii	Western jimson weed	
Deinandra fasciculata	Fascicled tarplant	
Dichelostemma capitatum ssp.*capitatum*	Blue bells	
Diplacus puniceus	Coast monkey flower	
Encelia california	California encelia	
Erigeron canadensis	Horseweed	
**Erigeron bonariensis*	Flax-leaf fleabane	
Eriodictyon crassifolium var. *crassifolium*	Felt-leaf yerba santa	
Eriogonum fasciculatum	California buckwheat	

Scientific Name[1]	Common Name	California Invasive Plant Council (Cal-IPC) Ranking for Invasive Species
Eriophyllum confertiflorum var. *confertiflorum*	Long-stem golden yarrow	
*Erodium botrys**	Long-beak filaree	Not on list
*Erodium cicutarium**	Red-stem filaree	Limited Invasive
*Eucalyptus camaldulensis**	River red gum	Limited Invasive
Euphorbia polycarpa	Small-seed sandmat	
Ferocactus viridescens	Coast barrel cactus	
*Festuca myuros**	Rat-tail fescue	Moderately Invasive
*Foeniculum vulgare**	Fennel	Moderately Invasive
Galium nuttallii ssp. *nuttallii*	San Diego bedstraw	
Guttierezia sarothrae	Broom matchweed	
Hazardia squarrosa var. *grindelioides*	Southern sawtooth goldenbush	
*Helminthotheca echioides**	Bristly ox-tongue	Limited Invasive
Hesperoyucca whipplei	Chaparral candle	
Heteromeles arbutifolia	Toyon	
Heliotropium curassavicum	Salt heliotrope	
Heterotheca grandiflora	Telegraph weed	
*Hirschfeldia incana**	Short-pod mustard	Moderately Invasive
*Hordeum murinum**	Wild barley	Moderately Invasive
*Hypochaeris glabra**	Smooth cat's ear	Limited Invasive
Isocoma menziesii	Spreading goldenbush	
*Lactuca serriola**	Prickly lettuce	Not on list
Logfia filaginoides	California cottonrose	
*Logfia gallica**	Narrow-leaf cottonrose	Not on list
Lonicera subspicata var. *denudata*	Johnston's honeysuckle	
Malocothamnus fasciculata	Chaparral bushmallow	
Malosma laurina	Laurel sumac	
*Marrubium vulgare**	Horehound	Limited Invasive
*Nicotiana glauca**	Tree tobacco	Moderately Invasive
Opuntia littoralis	Coast prickly pear	
Peritoma arborea var. *arborea*	Coast bladderpod	
Pluchea sericea	Arrow weed	
Populus fremontii	Freemont cottonwood	
Pseudognaphalium beneolens	Fragrant everlasting	
Quercus agrifolia	Coast live oak	
Quercus berberidifolia	Scrub oak	
Rhamnus crocea	Spiny redberry	

Scientific Name[1]	Common Name	California Invasive Plant Council (Cal-IPC) Ranking for Invasive Species
Rhus integrifolia	Lemonade berry	
Salix goodingii	Black willow	
Salix lasiolepis	Arroyo willow	
Sambucus nigra ssp. *caerulea*	Blue elderberry	
*Salsola tragus**	Russian thistle	Limited Invasive
Salvia apiana	White sage	
Salvia mellifera	Black sage	
Sambucus nigra ssp. *caerulea*	Blue elderberry	
Selaginella cinerascens	Mesa spike-moss	
Stephanomeria diegensis	San Diego wreath-plant	
*Stipa miliacea var. miliacea**	Smilo grass	Limited Invasive
Stipa pulchra	Purple needle grass	
Xanthium strumarium	Cocklebur	
Xylococcus bicolor	Mission manzanita	
Yucca schidigera	Mojave yucca	

[1]Species marked with an asterisk are not native.
List derived from the Cal-IPC Inventory accessed at: https://www.cal-ipc.org/plants/inventory/7/

ATTACHMENT 2

WILDLIFE SPECIES DETECTED WITHIN THE BIOLOGICAL STUDY AREA IN 2018/2019

Attachment 2
Wildlife Species Detected within the Biological Study Area in 2018/2019

Common Name	Scientific Name	Order	Family
Reptiles and Amphibians			
Baja California Treefrog	*Pseudacris hypochondriaca*	Anura	Hylidae
Western Spadefoot[1]	*Spea hammondii*	Anura	Scaphiopodidae
Birds			
White-throated Swift	*Aeronautes saxatalis*	Apodiformes	Apodidae
Anna's Hummingbird	*Calypte anna*	Apodiformes	Trochilidae
Costa's Hummingbird	*Calypte costae*	Apodiformes	Trochilidae
Mourning Dove	*Zenaida macroura*	Columbiformes	Columbidae
Greater Roadrunner	*Geococcyx californianus*	Cuculiformes	Cuculidae
California Scrub-Jay	*Aphelocoma californica*	Passeriformes	Corvidae
American Crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae
Common Raven	*Corvus corax*	Passeriformes	Corvidae
Southern California Rufous-crowned Sparrow[1]	*Aimophila ruficeps canescens*	Passeriformes	Emberizidae
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae
House Finch	*Haemorhous mexicanus*	Passeriformes	Fringillidae
Lesser Goldfinch	*Spinus psaltria*	Passeriformes	Fringillidae
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae
Northern Mockingbird	*Mimus polyglottos*	Passeriformes	Mimidae
California Thrasher	*Toxostoma redivivum*	Passeriformes	Mimidae
Blue-gray Gnatcatcher	*Polioptila caerulea*	Passeriformes	Polioptilidae
Coastal California Gnatcatcher[1,2]	*Polioptila californica californica*	Passeriformes	Polioptilidae
Wrentit	*Chamaea fasciata*	Passeriformes	Sylviidae
Bewick's Wren	*Thryomanes bewickii*	Passeriformes	Troglodytidae
Mammals			
Dulzura Kangaroo Rat	*Dipodomys simulans*	Rodentia	Heteromyidae
Coyote	*Canis latrans*	Carnivora	Canidae
Southern Mule Deer	*Odocoileus hemionus*	Artiodactyla	Cervidae

[1] NCCP/HCP Covered Species
[2] Federally threatened species

ATTACHMENT 3

JURISDICTIONAL DELINEATION REPORT

AECOM Imagine it. Delivered.

Mission Trails Flow Regulatory Structure II and Flow Control Facility Project Jurisdictional Delineation Report

Prepared for:

San Diego County Water Authority,
4677 Overland Avenue
San Diego, CA 92123

Prepared by:

AECOM
401 West A Street, Suite 1200
San Diego, CA 92101
T: 619.610.7600
aecom.com

April 2019

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SUMMARY/PURPOSE

The San Diego County Water Authority (Water Authority) is planning to construct the Mission Trails Flow Regulatory Structure II (FRS II) and Flow Control Facility Project (project). FRS II is an underground water storage reservoir that would provide operational flexibility along the southern reaches of the Water Authority's Second San Diego Aqueduct. The project requires the north tunnel connection to the Second Aqueduct, installation of an emergency overflow pipe with an outfall in an unnamed channel northwest of the FRS II structure, installation of underground electrical conduit, and removal of existing aboveground blow-off valve structures within three of the drainages addressed by this memorandum. As a result, a delineation of aquatic water resources was needed to assess the extent of jurisdictional resources present on the project site. The purpose of this memorandum is to present the results of this delineation.

FRS II was a primary component of a Water Authority project subject to California Environmental Quality Act (CEQA) review in the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project Environmental Impact Report (EIR), which was certified by the Water Authority Board of Directors in 2006. After EIR certification, the Water Authority constructed the Mission Trails Pipeline Tunnel portion of that project examined in the EIR, completed in 2010, but deferred construction of FRS II and the other remaining project components to conduct additional demand planning, for appropriate sizing of FRS II. The Water Authority is now conducting CEQA environmental review of the remaining project components for an addendum to the EIR.

A wetland delineation report was prepared for the original project in 2007 by Tierra Environmental Services, and a Regional Water Quality Control Board (RWQCB) Clean Water Act (CWA) Section 401 Water Quality Certification (Permit Reference No. 06C-112), California Department of Fish and Wildlife (CDFW) Section 1602 authorization through an Operation by law letter (Permit Reference No. 1600-2006-0437-R5), and a U.S. Army Corp of Engineers (USACE) CWA Section 404 permit (Permit Reference No. 2006-2097-RRS) were obtained for impacts to jurisdictional aquatic resources. The previously permitted impacts have all been completed as part of the Mission Trails Pipeline Tunnel construction. The prior delineation report and permits did not anticipate project-related impacts in the drainages addressed by this memorandum.

Project Description

The primary component of the Water Authority's current project is the proposed FRS II, which consists of a 5-million-gallon buried concrete reservoir, inlet and outlet piping connecting to the Mission Trails Pipeline Tunnel, emergency overflow pipe and outfall, and appurtenant facilities for system operation. Most project impacts occur in uplands, with the exception the northern tunnel connection, the construction of the emergency overflow pipe's outfall, trench-based installation of underground electrical conduit, and the demolition and removal of three pairs of two blow-off structures.

Construction of the pipeline tunnel was completed in 2010 and included nearly 1 mile of 92-inch-diameter welded steel pipe contained in two 10-foot-wide horseshoe tunnels, and two vertical shafts up to 150 feet deep. The tunnel is currently still disconnected from the Second Aqueduct. The project will connect these tunnels to the Second Aqueduct. The two vertical

shafts associated with the tunnels daylight above ground directly adjacent on either side of the unnamed ephemeral drainage 1. Excavation of 53 cubic yards (CY) of native soils will be required within approximately 40 linear feet (LF) of California Department of Fish and Wildlife (CDFW) jurisdictional unnamed ephemeral drainage 1 as part of this tunnel connection. All soil will be backfilled or removed from the site. Unnamed ephemeral drainage 1 will be returned to preexisting contours upon completion. Other temporary activities that may occur within unnamed ephemeral drainage 1 are grading, and material and equipment storage.

The overflow pipe would be a 63-inch-diameter underground pipeline installed via trench, extending approximately 500 feet northwest of the reservoir and discharging into a proposed rip rap energy dissipater that would be built into the bank of a drainage, with a concrete headwall at the end of the pipe. The overflow pipe is a code-mandated safety feature of the FRS, intended to convey overflow water from the FRS reservoir during unanticipated emergency situations.

Underground electrical conduit would run from 1) an existing transformer at the end of Corte Playa Catalina in the north to the existing Flow Regulatory Structure I (FRS I) in the south, 2) the existing FRS I northeast to the proposed FRS II, and 3) the existing FRS I south to the proposed Flow Control Facility. All conduit will be installed via trench that will cross the drainages addressed by this memorandum. Each trench will be a maximum of 16 inches wide and 30 inches deep, and will be back-filled in place once the conduit is installed. A maximum 5-foot-wide corridor would be required in each drainage for work space.

A total of six blow-off structures (three pairs of two) located within three of the drainages addressed by this memorandum would be demolished. The aboveground portions of the structures would be removed, and the belowground portions would be capped and sealed. Demolition and removal would require excavating approximately 2 feet down at each structure. Temporary work space at each pair of structures would be required.

Project Setting/Location

The project is located within Mission Trails Regional Park in San Diego County, California (Figures 1 and 2). To access the project site, take HWY 52 and exit right onto Santo Rd. Turn left onto Portobello Dr., left onto Via Playa De Cortes, left onto Camino Playa Catalina, and then left onto Corte Playa Catalina. All project sites can be accessed by parking at the end of Corte Playa Catalina and following the existing access road a quarter-mile to the left or the right to the project sites. The center point of the project is located at Latitude 32.836503° and Longitude -117.074728°.The Elevations at the project site are 520–750 feet.

REGULATORY SETTING

Wetland and non-wetland waters (e.g., streams, rivers, ephemeral drainages) and associated riparian corridors occurring within California may be regulated under federal and state laws. The following section summarizes the federal and state statutes and regulations pertaining to the jurisdictional delineation conducted for the project.

Federal Regulations

Under CWA Section 404, the USACE regulates the discharge of dredged or fill material into any aquatic feature that meets the definition of "waters of the U.S." as defined in 33 Code of Federal Regulations (CFR), Part 328. In 2015, the USACE sought to provide clarification on the definition of a waters of the U.S.by releasing the, "Clean Water Rule". The rule provided an update to 33 CFR 328 that more precisely defined "tributaries" as waters that are characterized by the presence of physical indicators of flow, and defined "adjacent waters" as those waters that possess the requisite connection to downstream waters and function as a system. For the purposes of this analysis, the 2015 Clean Water Rule was used. AECOM has used best available knowledge and guidance for the Los Angeles District to provide the following analysis.

State Regulations

Under California Fish and Game Code Sections 1600–1616, CDFW regulates activities that would result in (1) any potential detrimental impacts associated with the substantial diversion or the obstruction of the natural flow of a stream; (2) substantial changes to the bed, channel, or banks of a stream, or the use of any material from the bed, channel, or banks; and (3) the disposal of debris or waste materials that may pass into a stream.

Under Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB) regulates the discharge of dredged or fill material into any aquatic feature that meets the definition of "waters of the U.S." as defined in 33 CFR 328. The extent of waters of the state subject to the authority of the RWQCB was considered to include all "waters of the U.S", as discussed above. Section 13263 of the 1969 Porter-Cologne Water Quality Act authorizes the RWQCB to regulate discharges of waste and fill material to waters of the state, including "isolated" waters and wetlands that may not be considered "waters of the U.S.".

METHODOLOGY

The jurisdictional waters delineation included two components: desktop review and field assessment. The study area includes areas within the project boundaries and an approximately 150-foot buffer around those project boundaries where they cross the potentially jurisdictional aquatic features. Four locations associated with this project were provided for delineation by the Water Authority. These locations encompass areas both upstream and downstream of the project.

Desktop Methods

Prior to conducting the field investigation, a desktop review was conducted to determine the existing conditions and historical uses of the project site utilizing the following resources:

- Natural Resources Conservation Service Soil Survey Mapping (USDA-NRCS 2016)
- Hydric soils: Hydric Soils – Criteria and 2014 State List for California (USDA-NRCS 2014a); Field Indicators of Hydric Soils in the United States, version 7.0 (USDA-NRCS 2014b)

- National Wetlands Inventory (NWI) (USFWS 2018b)
- Watershed Boundary Dataset accessed via WATERS GeoViewer (USGS 2018)
- National Hydrography Dataset (NHD) accessed via WATERS GeoViewer (USGS 2018)
- Historical Aerial Imagery (1994 – 2015) (Google 2016)
- Wetland (WETS) Climate Tables (NOAA 2018)
- City of San Diego Jurisdictional Runoff Management Plan (DMax 2018)
- Water Quality Control Plan for the San Diego Basin (9). (CRWQCB 1994)

Field Assessment Methods

On October 12 and December 7, 2018, AECOM biologists Keely Craig, Jenna Hartsook, and Bonnie Hendricks conducted a jurisdictional delineation within the study area. Aquatic features were assessed within the study area to determine whether they meet the definition of "waters of the U.S." in 33 CFR 328. Width of the ordinary high water mark (OHWM) was recorded based upon indicators present within the study area. All waters meeting the physical definitions of waters of the U.S. were treated as jurisdictional for purposes of this memorandum; a formal significant nexus test[1] was not applied. The limits of CDFW jurisdictional streambed were delineated based upon the presence of bed and bank and the presence of riparian associated canopy. The delineation and vegetation classification were conducted in accordance with the guidance and reference documents listed below:

- A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008)
- Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Curtis and Lichvar 2010)
- Clean Water Act Jurisdiction Following the Supreme Court Decision in Rapanos v. U.S. and Carabell v. U.S. (USEPA 2008)
- Clean Water Act Jurisdiction Following the 2015 Clean Water Rule (USACE 2015)
- Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987)
- Field Indicators of Hydric Soils in the United States, version 7.0 (USDA-NRCS 2014b).National Wetland Plant List: 2012 (Lichvar 2012)
- National Wetland Plant List Indicator Rating Definitions. 2016. (Lichvar 2016).
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008)
- Draft Vegetation Communities of San Diego County (Oberbauer 2008).

An Apple IPAD, Bad Elf GNSS Surveyor (<3 meter accuracy), and the GIS Kit application (Garafa, LLC 2018) were used to collect data to map the boundaries of the aquatic resources present. In

[1] Significant nexus is described in the U.S. Environmental Protection Agency's 2008 Guidance Clean Water Act Jurisdiction Following the Supreme Court Decision in Rapanos v. U.S. and Carabell v. U.S. (USEPA 2008).

locations where the slope was too steep or densely vegetated to walk the delineation boundary, representative center points and widths were noted in the field and then an image was created in the office using ArcGIS. Additionally, mapped polygons were visually adjusted, as needed, to match the resources as seen on the aerial imagery and in the field.

Results

Existing Conditions

The project is located within the Mission Valley-San Diego River watershed (HUC 12 = 180703040705). Further, it is located within the San Diego Hydrologic Unit and Lower San Diego Hydrologic Area (Figure 3). The unnamed ephemeral drainages associated with the project begin either directly upstream or directly downstream of the project locations. These ephemeral features drain to the City of San Diego's MS4 (DMax 2018) and eventually the San Diego River, a traditionally navigable water (TNW) (USACE 2019). The beneficial uses for the San Diego River include municipal and domestic water supply (MUN), agriculture supply (AGR), industrial service supply (IND), industrial process supply (PROC), water contact recreation (REC1), noncontact water recreation (REC2), warm freshwater habitat (WARM), cold freshwater habitat (COLD), and wildlife habitat (WILD) (CRWQCB 2016). Figure 3 shows the location of the project within the watershed.

Based on weather data collected at San Diego Montgomery Field (closest weather station to project) between 1998 and 2018, the average temperature at the project site is 63.9 degrees Fahrenheit (°F) with a mean low of 54.9°F and a mean high of 72.9°F. Average precipitation within the study area over the past 20 years is 9.64 inches (NOAA 2018). The majority of rain at the project site occurs between the months of October through April. The Wetlands (WETS) Climate Table for the nearest weather station to the project is presented below as Table 1

Soil survey mapping shows the soils within the study area as primarily Diablo-Olivenhain complex (DoE) and Redding cobbly loam (ReE) (Figure 4). The soils are predominantly light olive-gray, soft and friable, fine- to medium-grained marine and nonmarine sandstone containing cobble conglomerate tongues (USDA-NRCS 2016). The ReE soil type is classified as a hydric soil on the National Hydric Soils List (USDA-NRCS 2014a); however, the soils within each drainage feature were sandy and porous.

Historical Google earth aerial photography shows continual disturbance along the existing access route to the project as this is utilized by hikers within the Mission Trails Regional Park and for access to existing facilities (both Water Authority and storm drain facilities). The aerial photography shows the drainage alignments and associated riparian canopies as present and relatively stable over the past 20 years; however, construction disturbance is clearly visible in this area on aerials as well.

Table 1. WETS Table for WETS Station-San Diego Montgomery Field, CA.
Data are representative of years 1998 through 2018.

Month	Avg Max Temp (F)	Avg Min Temp (F)	Avg Mean Temp (F)	Avg Precip (in)	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more
Jan	67.5	45.8	56.7	1.74	0.43	2.01	3
Feb	66.8	46.7	56.8	2.27	0.94	2.66	4
Mar	68.1	49.7	58.9	0.97	0.47	1.18	3
Apr	69.6	52.2	60.9	0.74	0.23	0.88	2
May	71	56.7	63.9	0.31	0.07	0.26	1
Jun	74.2	60.2	67.2	0.03	0	0.04	0
Jul	79.4	64.6	72	0.14	0	0	0
Aug	81.4	65.6	73.5	0.01	0	0.01	0
Sep	80.7	63.6	72.2	0.18	0	0.15	0
Oct	76.9	58.1	67.5	0.65	0.11	0.62	1
Nov	71.9	50.7	61.3	0.86	0.33	1.04	2
Dec	66.7	45.3	56	1.76	0.56	2.09	3
Annual:					-	-	
Average	72.9	54.9	63.9	-	-	-	-
Total	-	-	-	9.64			19

Source: NOAA 2018

Jurisdictional Resource Delineation Results

AECOM delineated 0.202 acre of waters of the U.S. subject to USACE and RWQCB jurisdiction within the project study area. A total of 1.526 acres of CDFW jurisdictional aquatic resources were also delineated within the study area, which includes the waters of the U.S., plus the banks of the drainage and associated riparian vegetation exclusively under CDFW jurisdiction. Table 2 below presents the total jurisdictional resources present within the study area broken down by jurisdictional feature and vegetation community type present. Jurisdictional resources delineated within the study area are also shown in Figure 5 and Figures 5A through 5D. Although the hydrophytic plant species mulefat (*Baccharis salicifolia*) is present in the project areas, no wetland resources were identified because none of the vegetation communities present are dominated by hydrophytic species. The sites, therefore, fail to meet one of the three parameters required by USACE to be considered a wetland. It also fails to meet the hydrology parameter required by USACE to be considered a wetland. No soil sample pits were dug as a result (USACE 2008). Four unnamed ephemeral drainages run through the study area. The extent of CDFW jurisdiction for each feature was mapped either by presence of physical bed and bank or the presence of a riparian dominated vegetation within or adjacent to the channel bed. Each feature is described below.

Table 2
Jurisdictional Aquatic Resources Within the Study Area

Drainage (Vegetation Community)	RWQCB/USACE Jurisdiction Waters of the U.S. (acres/linear feet)	CDFW Jurisdiction (acres)
1 (Mulefat Scrub/ Diegan coastal sage scrub)	0.066 ac/915.2 ft	0.588
2 (Mulefat Scrub/ Diegan coastal sage scrub)	0.063 ac/667.7 ft	0.443
3 (Diegan coastal sage scrub)	0.024 ac/239.9 ft	0.171
4 (Mulefat Scrub/ Diegan coastal sage scrub)	0.049 ac/424.9 ft	0.324
TOTAL	0.202 ac/2,247.7 ft	1.526

Drainage 1

This feature has a defined bed and bank both upstream and downstream of the project. Two drainages meet on the project site- one approaching from the eastern side and one from the north. They form a narrow braided channel through the previously disturbed project site. The OHWM of this drainage was mapped based on changes in average sediment textures, changes in vegetation cover or lack of cover, and break in bank slope. The width of this drainage ranges from 1 foot to 11 feet. The OHWM datasheet is provided in Attachment B for reference. Photos of this drainage are also provided in Attachment B (see Photos 1 through 21).

The vegetation associated with the upper portion of the drainage coming from the north is mulefat scrub with patchy inclusions of Diegan coastal sage scrub dominated by mulefat, desert broom (*Baccharis sarothroides*), laurel sumac (*Malosma laurina*), chaparral bush mallow (*Malacothamnus fasciculatus*), and nonnative grasses (*Bromus* spp.), with individuals of California sagebrush (*Artemisia californica*) and lemonade berry (*Rhus integrifolia*). Diegan coastal sage scrub becomes increasingly dominant as the two drainages meet to form Drainage 1. Vegetation associated with the east to west tributary is Diegan coastal sage scrub dominated by lemonade berry and laurel sumac, with individuals of black sage (*Salvia mellifera*), California sagebrush, desert broom, and sticky monkeyflower (*Diplacus puniceus*). Vegetation associated with the lower portion of Drainage 1, beyond the dirt access road adjacent to the facilities, is mulefat scrub dominated by mulefat, with inclusions of desert broom. Vegetation within the study area but outside of the unnamed ephemeral drainage is a mix of Diegan coastal sage scrub and nonnative grassland. The extent of CDFW jurisdiction was mapped for this drainage either by presence of physical bed and bank or the presence of riparian dominated vegetation within or adjacent to the channel bed.

Drainage 2

The feature has a defined bed and bank both upstream and downstream of the project. At the point where the drainage (Drainage 2) intersects the existing access road, rip rap has been placed in a manner to narrow the flows and direct them along the road berm down to the lower portion of the drainage. Rip rap is also present at the downstream side of the access road to slow the water prior to its re-entrance to the natural feature.

The OHWM of this drainage was mapped based upon changes in average sediment textures, change in vegetation cover or lack of cover, and breaks in bank slope on both the northern (upper drainage segment) and southern (lower drainage segment) portions of the drainage. The width of this drainage ranges from 1 foot to 12 feet. The trees and vegetation in the upper and lower drainage sections overhang the OHWM but the channel itself is mostly unvegetated.

The OHWM datasheet is provided in Attachment B for reference. Photos of this drainage are also provided in Attachment B (see Photos 22 through 40).

The vegetation associated with the upper segment of Drainage 2 is predominantly Diegan coastal sage scrub dominated by laurel sumac, lemonade sumac, mission manzanita (*Xylococcus bicolor*), desert broom, and Torrey's hybrid oak (*Quercus acutidens*). Some of the lemonade sumac and manzanita are nearing tree height. Vegetation associated with the lower drainage segment is mulefat scrub dominated by mulefat and desert broom with a sparse understory of nonnative grasses. The lower segment of Drainage 2 also has remnant concrete and trash scattered within the OHWM. Vegetation within the study area but outside of the unnamed ephemeral drainage is Diegan coastal sage scrub. The extent of CDFW jurisdiction was mapped for this drainage either by presence of physical bed and bank or the presence of riparian dominated vegetation within or adjacent to the channel bed.

The middle segment of Drainage 2 (i.e., the portion that runs along the access road berm) was delineated based on changes in average sediment textures and the presence of a subtle but visible low flow channel. This portion of the unnamed drainage is unvegetated, disturbed, and lacks an associated riparian canopy; therefore, the limits of CDFW jurisdictional resources are mapped the same as the waters of the U.S.

Drainage 3

This feature begins as an erosional swale (Figure 5C) along existing dirt access road. The feature begins as rilling down and along the swale of the road. Surrounding vegetation includes Diegan coastal sage scrub dominated by desert broom, California sagebrush, and laurel sumac. This area has experienced a significant amount of disturbance as restoration was occurring on the slopes directly upstream of this drainage. The erosional drainage runs adjacent to facilities into a constructed rip-rap channel to the point where it hits a concrete culvert.

At this point, the lower portion of the drainage, south of the concrete culvert, consists of Diegan coastal sage scrub habitat dominated by laurel sumac. Tall, tree-height individuals of tamarisk (*Tamarix* sp.), toyon (*Heteromeles arbutifolia*), and lemonade berry also occur within this portion of the drainage. Vegetation within the study area but outside of the unnamed ephemeral drainage is a mix of Diegan coastal sage scrub and southern mixed chaparral. Ponding occurs at the base of the culvert facilities, as was evident by the water present on-site as a result of the recent rain event

The OHWM of this drainage was mapped based upon changes in average sediment textures, change in vegetation cover or lack of cover, and breaks in bank slope in the southern section of this drainage below the concrete facility. The width of this drainage ranges from 3 feet to 8 feet. The trees and vegetation in drainage overhang the OHWM but the channel itself is mostly

unvegetated. The extent of CDFW jurisdiction was mapped for this drainage either by presence of physical bed and bank or the presence of riparian dominated vegetation within or adjacent to the channel bed. The OHWM datasheet is provided in Attachment B for reference. Photos of this drainage are also provided in Attachment B (see Photos 41 through 49).

Drainage 4

The feature has a defined bed and bank both upstream and downstream of the project. The OHWM of this drainage was mapped based on changes in average sediment textures, changes in vegetation cover or lack of cover, and break in bank slope. The width of this drainage ranges from 2 feet to 10 feet. This low flow channel runs directly adjacent to the project access road and existing Water Authority facilities. The OHWM datasheet is provided in Attachment B for reference.

The vegetation associated with the upper portion of the drainage is mulefat scrub with patchy inclusions of Diegan coastal sage scrub dominated by mulefat, desert broom, laurel sumac, chaparral bush mallow, and nonnative grasses, with individuals of California sagebrush and lemonade berry. Diegan coastal sage scrub becomes increasingly dominant closer to and past the tributary. Vegetation associated with the east-to-west tributary is Diegan coastal sage scrub dominated by lemonade berry and laurel sumac, with individuals of black sage, California sagebrush, desert broom, and sticky monkeyflower. Vegetation associated with the lower portion of the drainage, beyond the dirt access road adjacent to the facilities, is mulefat scrub dominated by mulefat, with inclusions of desert broom. Vegetation within the study area but outside of the unnamed ephemeral drainage is a mix of Diegan coastal sage scrub and nonnative grassland. The extent of CDFW jurisdiction was mapped for this drainage either by presence of physical bed and bank or the presence of riparian dominated vegetation within or adjacent to the channel bed.

IMPACT ANALYSIS

Construction of the proposed project will result in temporary impacts to 0.033 acre of waters of the U.S. There would be no permanent impacts to waters of the U.S. Construction of the project will result in temporary impacts to 0.134 acre and permanent impacts to 0.0006 acre of CDFW jurisdictional streambed and associated riparian canopy. Where feasible, project engineering clipped the temporary work areas to avoid impacts to the four drainages.

The permanent impacts to CDFW riparian extent proposed are associated with a permanent outfall structure. The rip rap energy dissipater associated with the permanent outfall structure has been designed to reduce the velocity of flow, which would protect the potential overflow area from erosion. Reservoir overflow is not an intentional operational feature of the FRS; overflow conveyance would only occur under the very unlikely scenario in which multiple levels of operational controls and alerts failed to result in shutoff of water inflow to the tank. Therefore, substantial flows into and downstream of the proposed rip rap basin are not anticipated as a result of this project. Installation of the energy dissipater will entail a small amount of over-excavation of a drainage bank to establish a suitable area for installation of the headwall and placement of the rip rap. Within the drainage, approximately 12 cubic yards of material will be

excavated to construct the permanent outfall. Once the outfall is installed, the area would be backfilled and restored to the pre-existing contours.

The removal and/or trimming of a small number of lemonade sumac, laurel sumac, mission manzanita, and Torrey's hybrid oak may be necessary to complete the proposed project; however, no trees over 8 inches diameter at breast height are present within the proposed impact area. Table 3 presents the temporary and permanent impacts to waters of the U.S. and CDFW jurisdictional streambed and associated riparian canopy that would result from construction of the project.

Table 3
Proposed Impacts to Jurisdictional Aquatic Resources

Project Component	RWQCB/USACE Jurisdiction Waters of the U.S. (acres)		RWQCB/USACE Jurisdiction Waters of the U.S. (linear feet)	CDFW Jurisdiction (acres)		CDFW Jurisdiction (linear feet)
	Temp	Perm		Temp	Perm	
Outfall	0	0	0	0	0.0006	11.4
Trenching	0	0	5.0	0.003	0	5.0
Temporary Work Area[1]	0.033	0	454.3	0.131	0	870.1
TOTAL	0.033	0	459.3	0.134	0.0006	886.5

[1] Temporary work area associated with the permanent outfall and blow-off structure removal is included in the temporary work area project component.

DISCUSSION

USACE Permitting Recommendations

This project is expected to qualify for coverage as a Category 2 eligible activity under the Water Authority's Programmatic Master Plan Permit (PMPP) that was issued by USACE on May 8, 2015. Among the activities eligible for coverage under the PMPP is New Construction Activity No. 13 for the construction of new minor support facilities in waterways. Under Activity No. 13, impacts to waters of the U.S. may occur as a result of protection of underground facilities that may occur wherever facilities cross a waterway in a project area.

To obtain coverage under the PMPP, the Water Authority must submit prequalifying documents, including a complete USACE Regulatory Division application form, a Memorandum for the Record, vicinity figure, location figure, eligible activity figure showing permanent and temporary impacts in waters of the U.S., and engineering design overlaid on an aerial showing waters of the U.S. Additional prequalifying documents include Section 106 forms, an Avoidance and Minimization Measure Form, a Temporary Impact Re-Establishment Plan, a Mitigation Checklist, and an annual impact ledger.

RWQCB Permitting Recommendations

The Water Authority's application (#12C-087) for a CWA Section 401 Water Quality Certification for the PMPP was deemed complete by the RWQCB on December 2, 2012. Because the RWQCB failed to act on the request for certification, USACE considers the requirement for a Water Quality Certification waived by default. The California State Water Resources Control Board (SWRCB) provides the following guidance (SWRCB 2013) regarding the processing of applications under the Permit Streamlining Act:

> A project is "deemed approved" if the lead agency or a responsible agency fails to act to approve or disapprove the project within the statutory time limits set forth in the Act. A project which is deemed approved is approved by operation of law, rather than by any affirmative action by the lead agency or responsible agency.

As a result of the above, the proposed project does not require a CWA Section 401 permit as long as the PMPP process is followed for authorizing project activities prior to project construction.

California Department of Fish and Wildlife Permitting Recommendations

Impacts to CDFW jurisdictional streambed and associated riparian habitat in the project area are expected to require a Lake and Streambed Alteration Agreement (LSAA) with CDFW. The Water Authority's Subregional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) covers eligible operations and maintenance activities for existing Water Authority facilities, and the proposed project would be considered a Covered Activity under the NCCP/HCP. By implementing the NCCP/HCP, including the conservation policies; general Conditions of Coverage; numerous resource- and species-specific measures; and the lake, stream, and river work conditions (see Appendix I of the NCCP/HCP) therein, the purpose of a project-specific LSAA is effectively fulfilled. Therefore, it is anticipated that potential impacts to riparian habitat from the project would be mitigated through the NCCP/HCP, enabling streamlining of the CDFW permitting process pursuant to NCCP/HCP Section 6.7.2.

CONCLUSION

As discussed above, the Water Authority will need to obtain coverage for the project's impacts to jurisdictional resources under the PMPP and a CDFW LSAA. Minimization measures for the project will be consistent with measures established in the project permits, the final measures determined during the CEQA review currently ongoing for FRS II, and the measures included in the NCCP/HCP.

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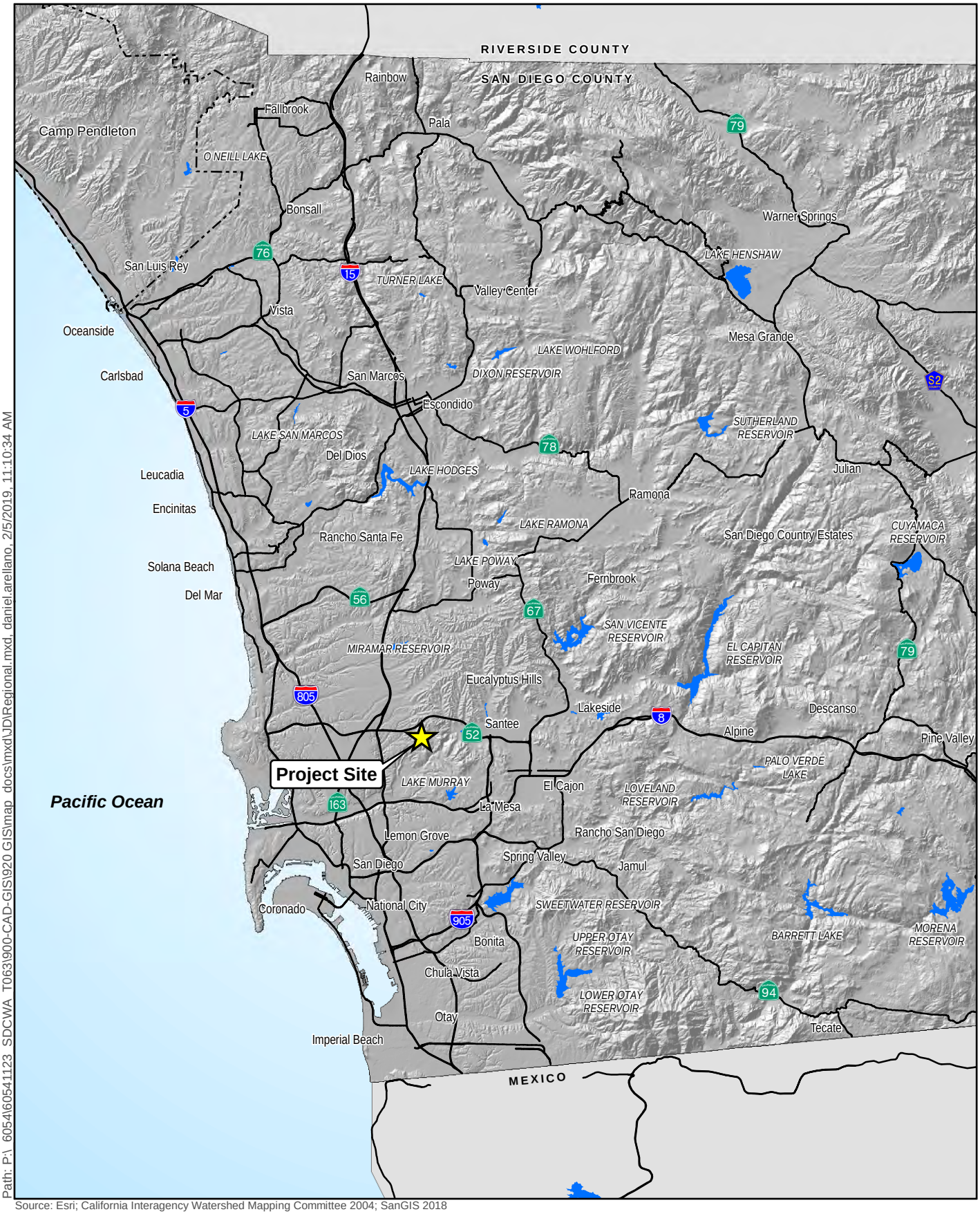
Appendix A

Figures



Source: Esri; California Interagency Watershed Mapping Committee 2004; SanGIS 2018

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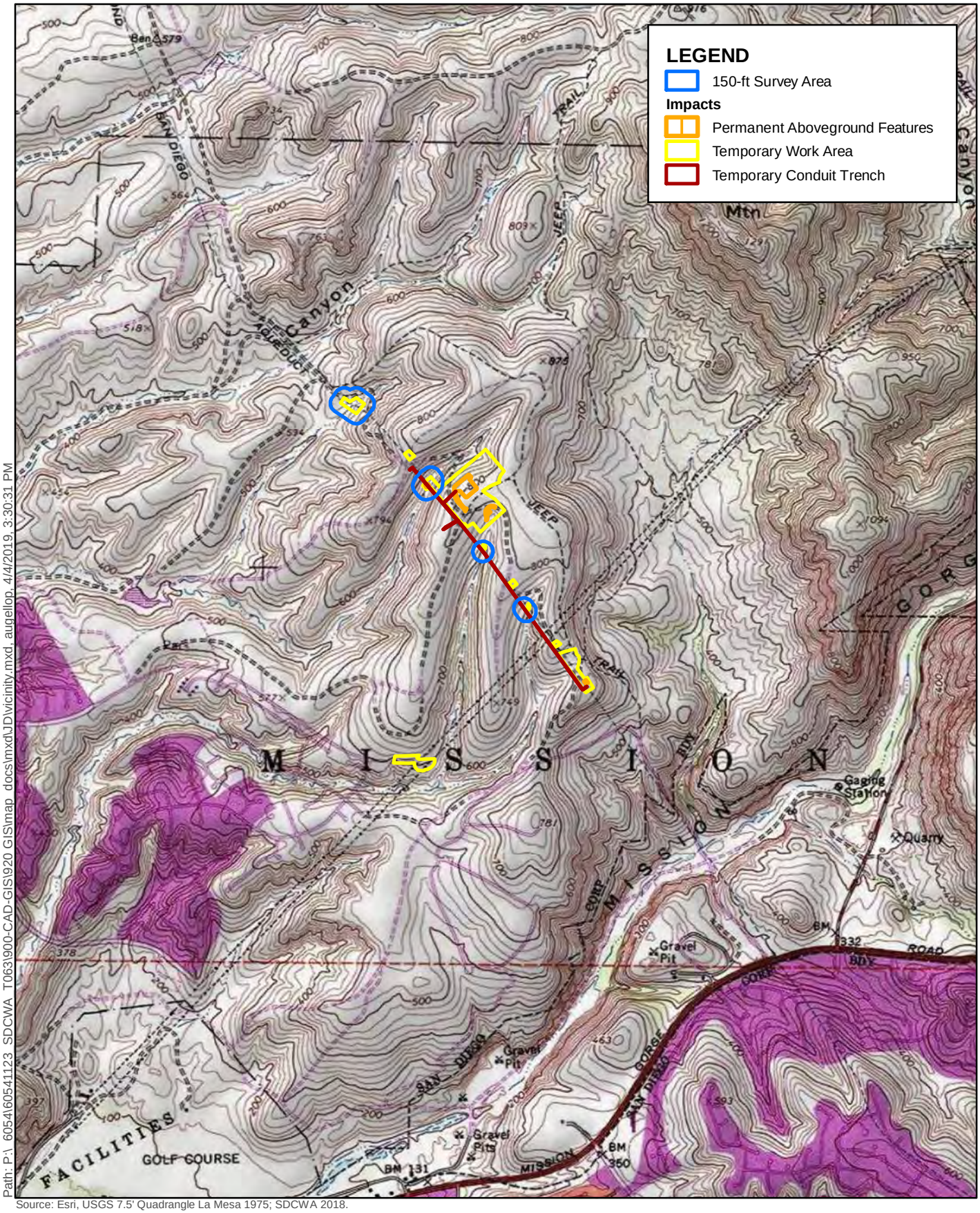
FIGURE 1
REGIONAL MAP

8 0 8 Miles

Scale: 1:506,880 1 in = 8 miles

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, USGS 7.5' Quadrangle La Mesa 1975; SDCWA 2018.

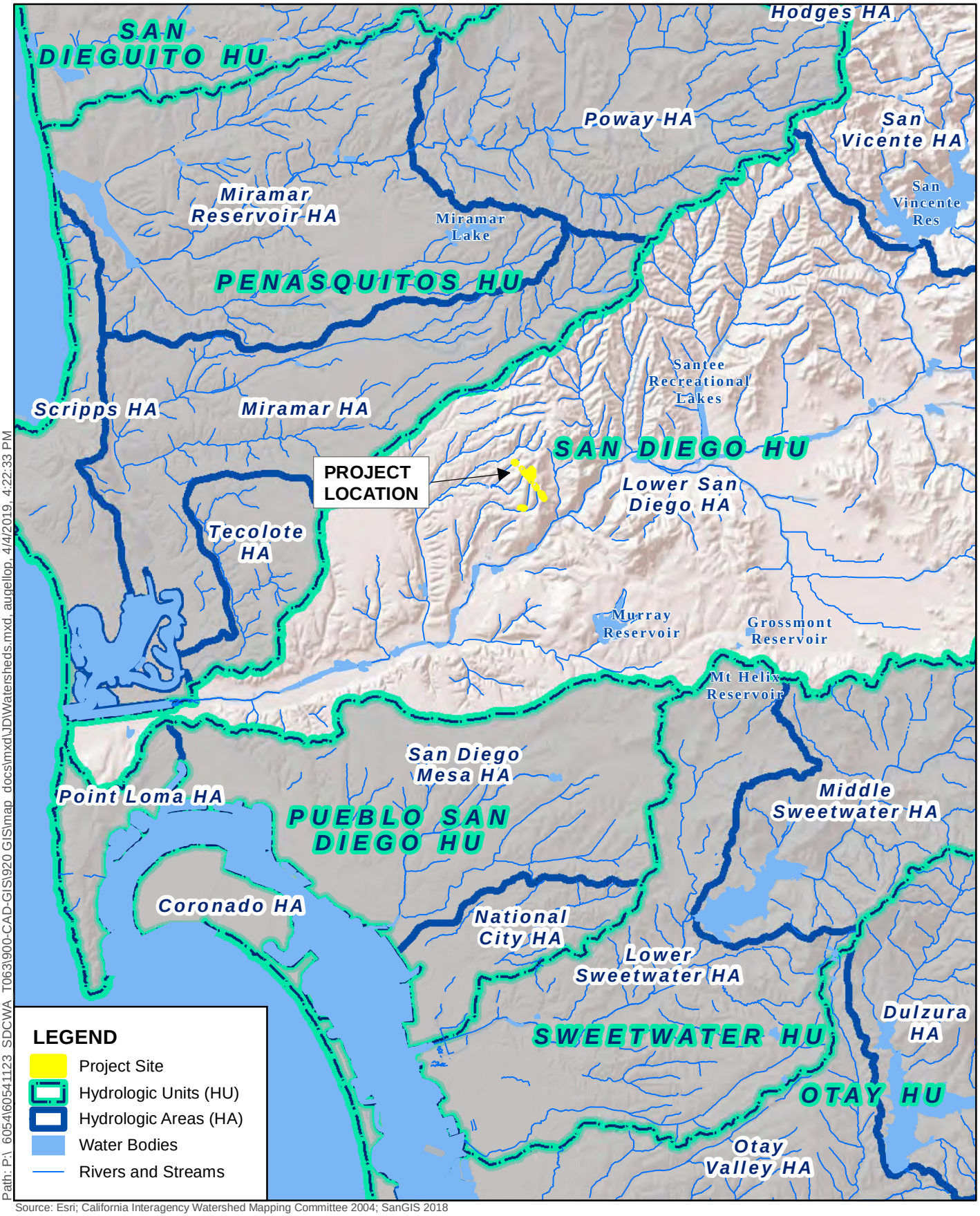
FIGURE 2
VICINITY MAP

2,000 0 2,000 Feet

Scale: 1:24,0001 in = 2,000 feet

AECOM

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION



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Source: Esri; California Interagency Watershed Mapping Committee 2004; SanGIS 2018

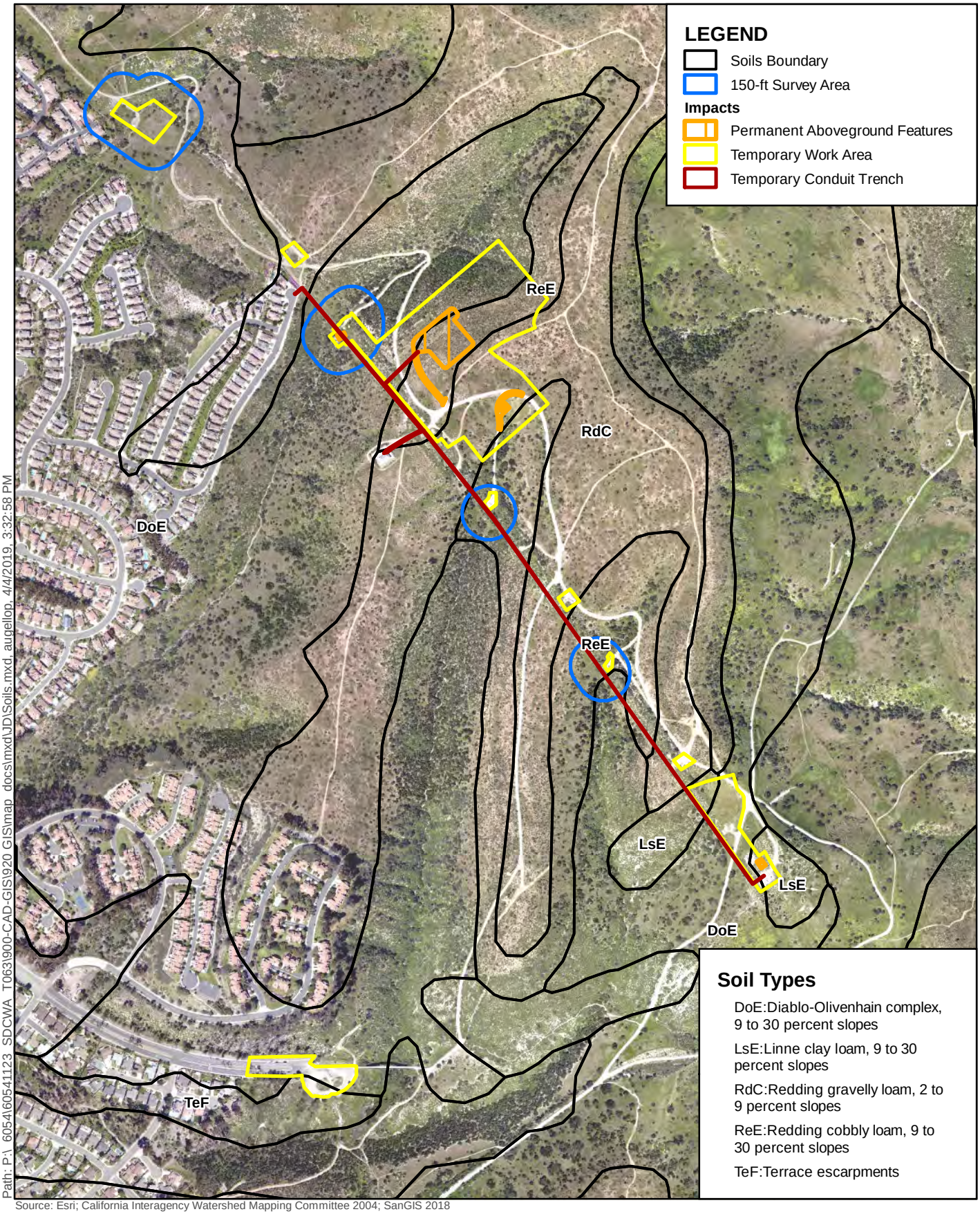
FIGURE 3
WATERSHEDS MAP

3 0 3 Miles

Scale: 1:190,080 1 in = 3 miles

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri; California Interagency Watershed Mapping Committee 2004; SanGIS 2018

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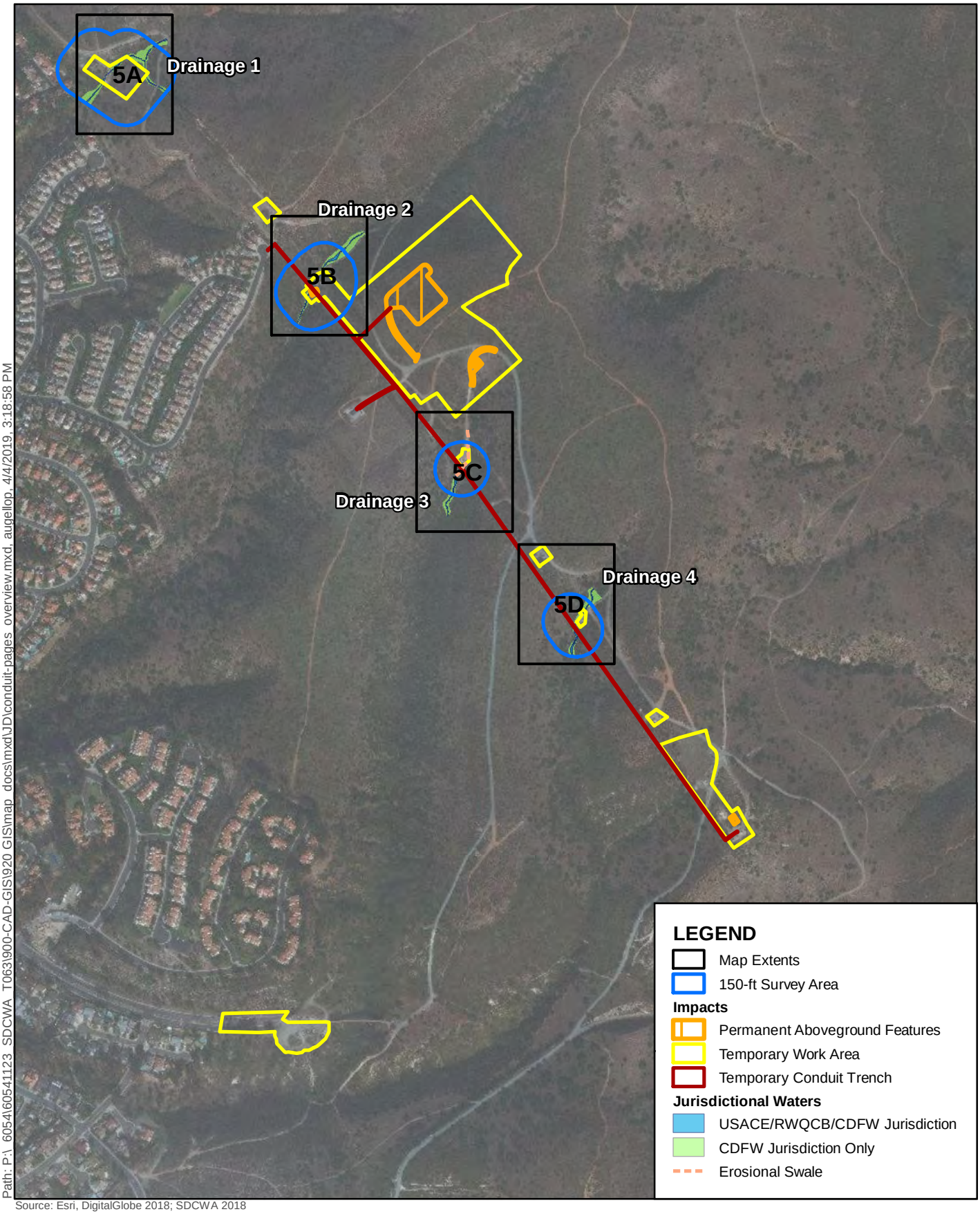
Scale: 1:9,000 1 in = 750 feet

AECOM

FIGURE 4
SOILS MAP

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

FIGURE 5
JURISDICTIONAL WATERS

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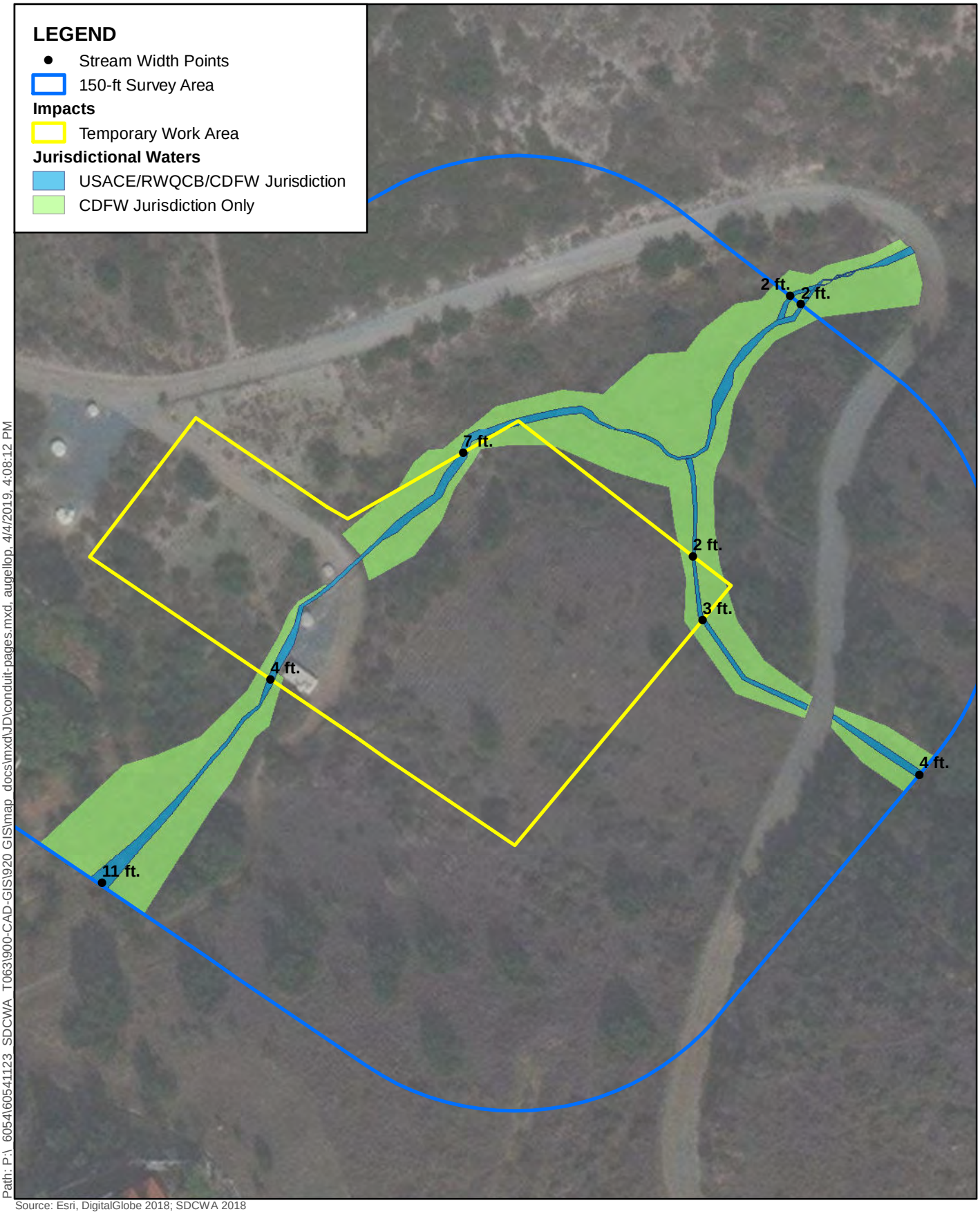
Scale: 1:9,000 1 in = 750 feet

AECOM

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

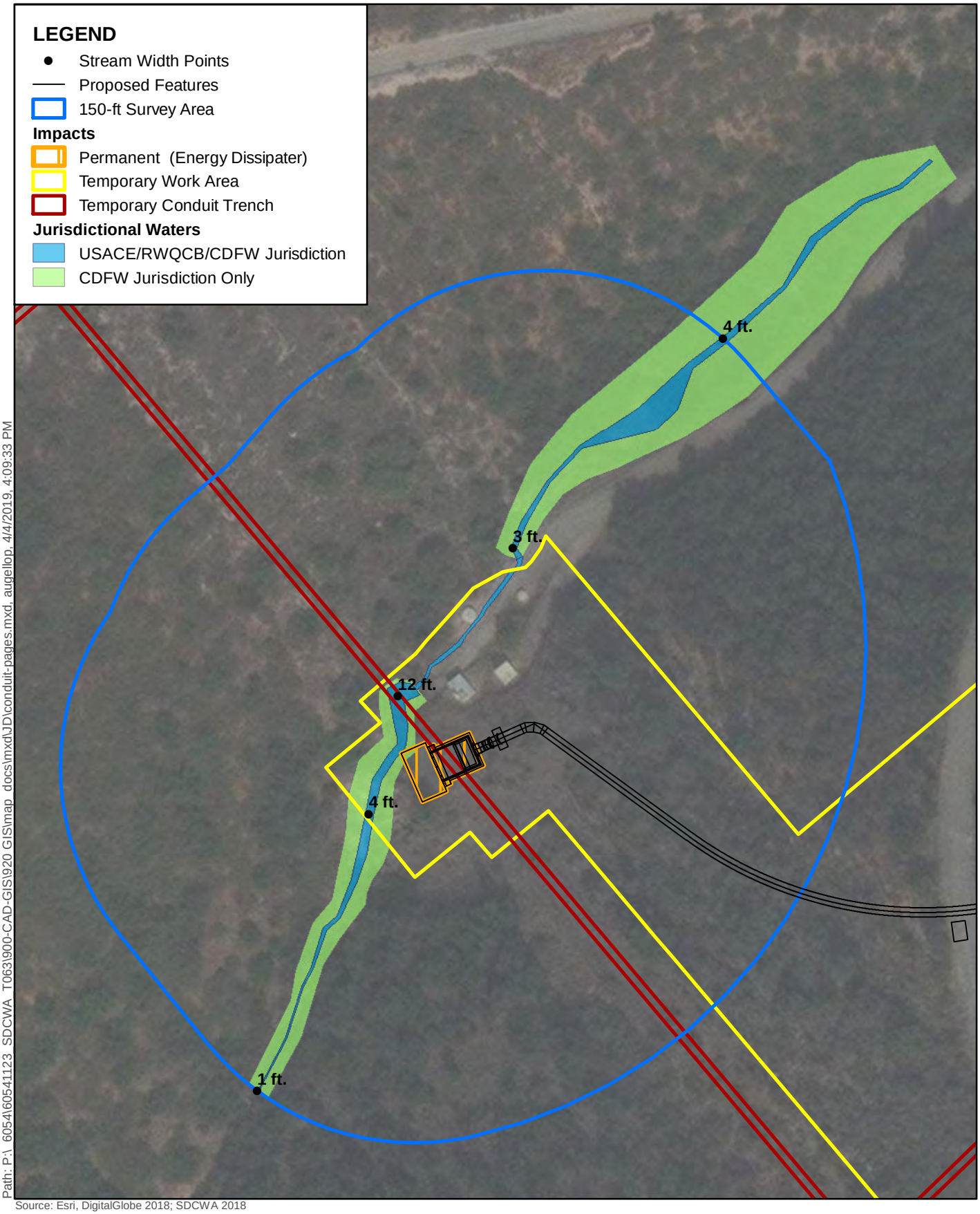
FIGURE 5A
JURISDICTIONAL WATERS - DRAINAGE 1

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

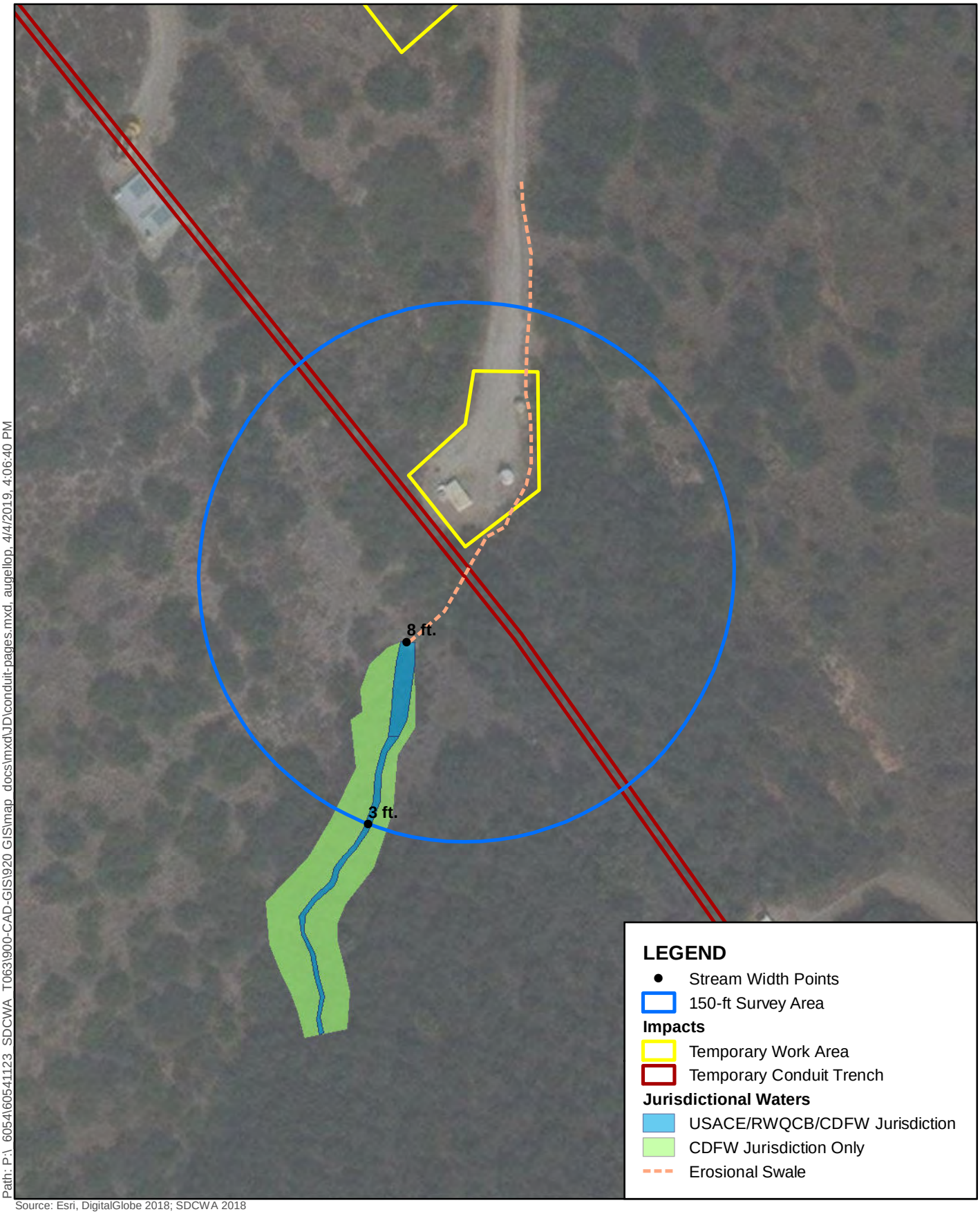
FIGURE 5B
JURISDICTIONAL WATERS - DRAINAGE 2

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

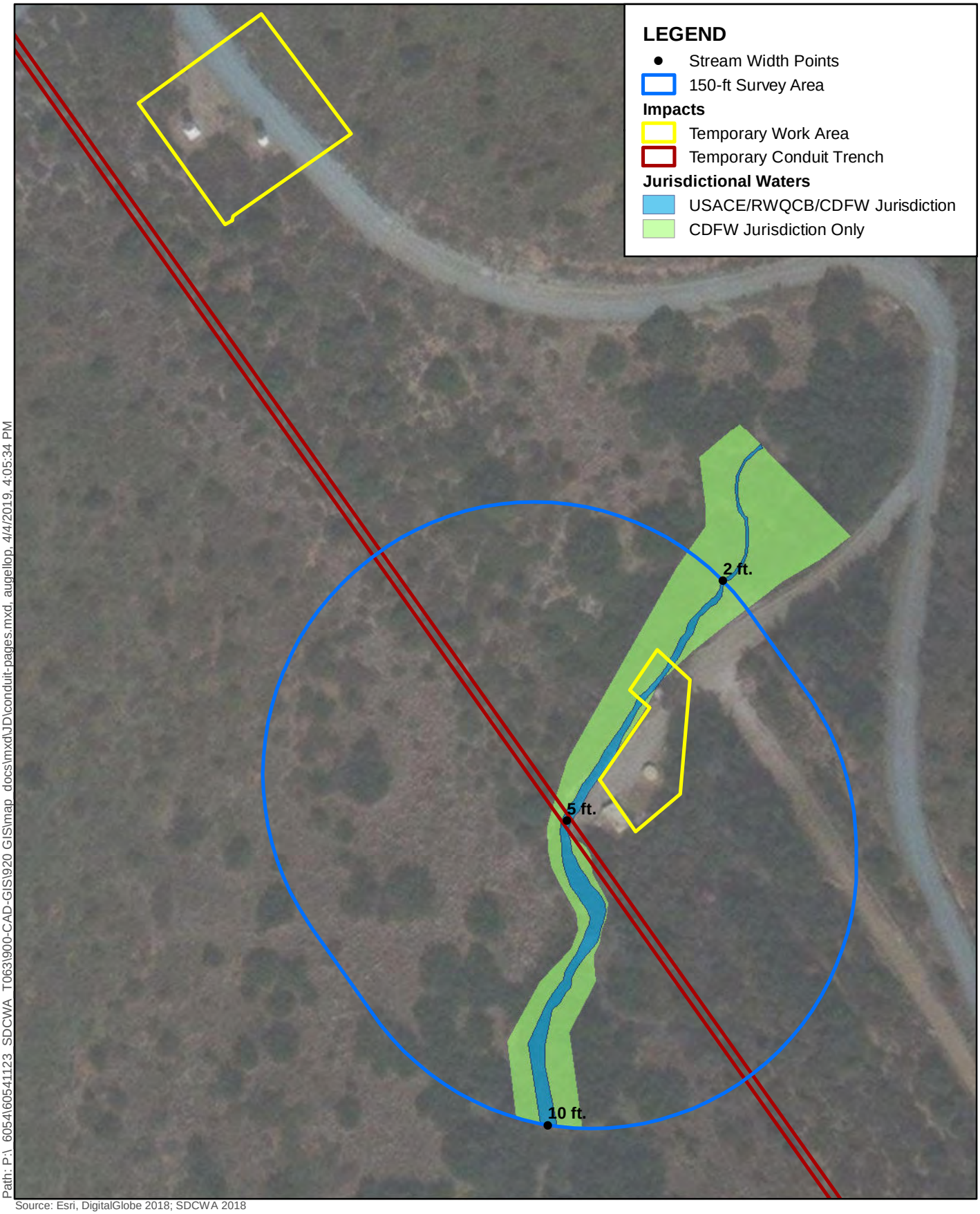
FIGURE 5C
JURISDICTIONAL WATERS - DRAINAGE 3

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

FIGURE 5D
JURISDICTIONAL WATERS - DRAINAGE 4

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM

Appendix B

Photolog and Datasheets

FRSII Jurisdictional Delineation Photo log

	
Photo 1 – (facing northeast) – Looking upstream of unnamed ephemeral drainage 1 taken from the road.	Photo 2 — (facing southwest) – Looking downstream at the unnamed ephemeral drainage 1.
	
Photo 3 – (facing northeast) – Looking upstream at culvert under road within the unnamed ephemeral drainage 1.	Photo 4 – (facing south) – Looking downstream at the unnamed ephemeral drainage 1 from adjacent road.

Photo 5 – (facing south) –Looking downstream at the unnamed ephemeral drainage 1 from adjacent road.

Photo 6 – (facing south) – Looking where the two tributaries meet to form the unnamed ephemeral drainage 1.

Photo 7 – (facing south) – Looking downstream at the unnamed ephemeral drainage 1 from adjacent road.

Photo 8 – (facing east) – Looking upstream at the location where the unnamed ephemeral drainage 1 enters the culvert under the road.

	
Photo 9 – (facing northeast) – Looking upstream at the culvert where the unnamed ephemeral drainage 1 crosses the road.	Photo 10 – (facing north) – Looking downstream at point where the tributaries to the ephemeral drainage 1 meet.
	
Photo 11 – (facing east) – Looking at OHWM of eastern tributary of the unnamed ephemeral drainage 1.	Photo 12 – (facing west) – – Looking at OHWM of eastern tributary of the unnamed ephemeral drainage 1.

	
Photo 13 – (facing southwest) – Looking downstream from within the unnamed ephemeral drainage 1.	Photo 14 – (facing northeast) – Looking upstream at the unnamed ephemeral drainage 1 OHWM.
	
Photo 15 – (facing north) – Looking upstream at unnamed ephemeral drainage 1.	Photo 16 – (facing northeast) – Looking upstream at OHWM within unnamed ephemeral drainage 1 when it meets the dirt access road.

	
Photo 17 – (facing southwest) – Looking upstream at the OHWM of the unnamed ephemeral drainage 1 where it goes around existing facilities along access road.	Photo 18 – (facing southwest) – Looking downstream at the OHWM of the unnamed ephemeral drainage 1 where crosses the existing access road.

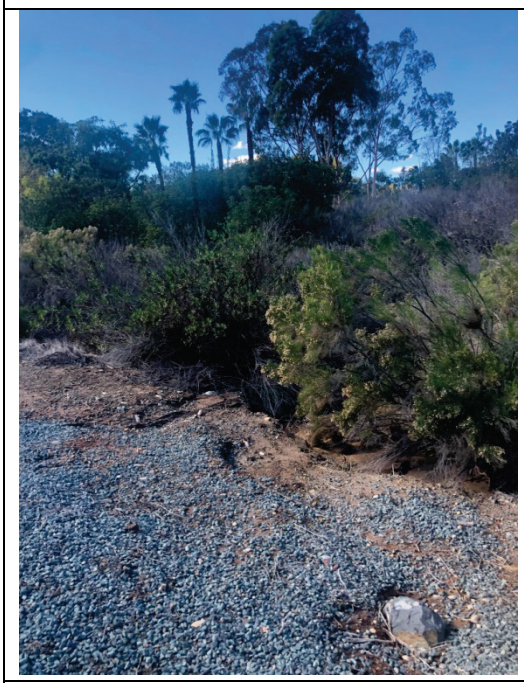



Photo 19 – (facing southwest) – Looking downstream at the OHWM of the unnamed ephemeral drainage 1.	Photo 20 – (facing southwest) – Looking downstream at the OHWM of the unnamed ephemeral drainage 1.

	
Photo 21 – (facing south) – Looking downstream at location where residential run off enters ephemeral drainage 1 south of the project site.	Photo 22 – (facing southwest) – View looking downstream of the unnamed ephemeral drainage 2 taken from the road near top of bank.
	
Photo 23 — (facing north) – Looking upstream at the unnamed ephemeral drainage 2.	Photo 24 – (facing southwest) – Looking downstream within the unnamed ephemeral drainage 2.

	
Photo 25 – (facing north) – Looking at point where the unnamed ephemeral drainage intersects with access road.	Photo 26 – (facing southwest) – View looking downstream of the unnamed ephemeral drainage 2 taken from the road near top of bank.

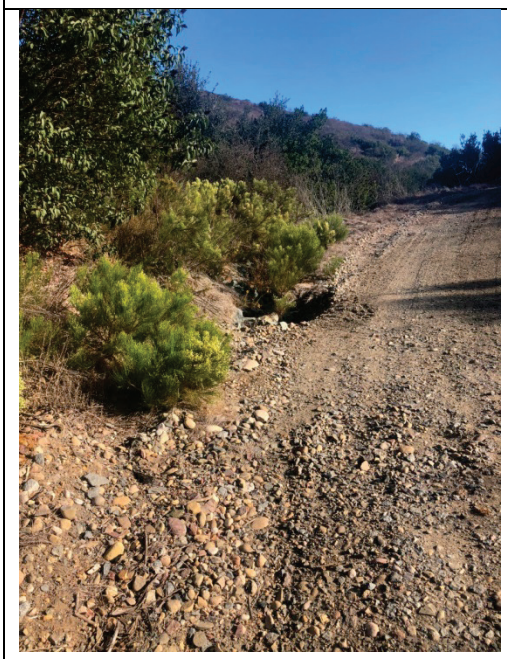



Photo 27 – (facing north) – Looking upstream at the point where the unnamed ephemeral drainage 2 begins flowing along the road.	Photo 28 – (facing southwest) – Looking downstream at the location where the unnamed ephemeral drainage 2 flows along the road.

	
Photo 29 – (facing southwest) – Looking upstream at the location where the unnamed ephemeral drainage 2 flows along the road.	Photo 30 – (facing southwest) – Looking downstream at point where the unnamed ephemeral drainage 2 flowing along the road meets back up with natural drainage.
	
Photo 31 – (facing northwest) – Photo of one culvert that outlets into the unnamed ephemeral drainage.	Photo 32 – (facing northeast) – Photo of one culvert that outlets into the unnamed ephemeral drainage.

	
Photo 33 – (facing south) – Looking upstream from within the unnamed ephemeral drainage 2.	Photo 34 – (facing southwest) – Looking downstream at the unnamed ephemeral drainage 2.
	
Photo 35 – (facing northwest) – Looking upstream at OHWM within the unnamed ephemeral drainage 2.	Photo 36 – (facing north) – Looking upstream at OHWM within unnamed ephemeral drainage.

	
Photo 37 – (facing south) – Looking downstream at the OHWM of the unnamed ephemeral drainage 2.	Photo 38 – (facing north) – Looking upstream at the OHWM of the unnamed ephemeral drainage 2.
	
Photo 39 – (facing south) – Looking downstream at the OHWM of the unnamed ephemeral drainage 2.	Photo 40 – (facing south) – Looking downstream at the OHWM of the unnamed ephemeral drainage 2.

	
Photo 41 – (facing south) – Looking down towards the unnamed ephemeral drainage 3 from the existing road located uphill.	Photo 42 – (facing north) – Looking up the existing dirt access road at the erosion occurring along the road creating an erosional swale.

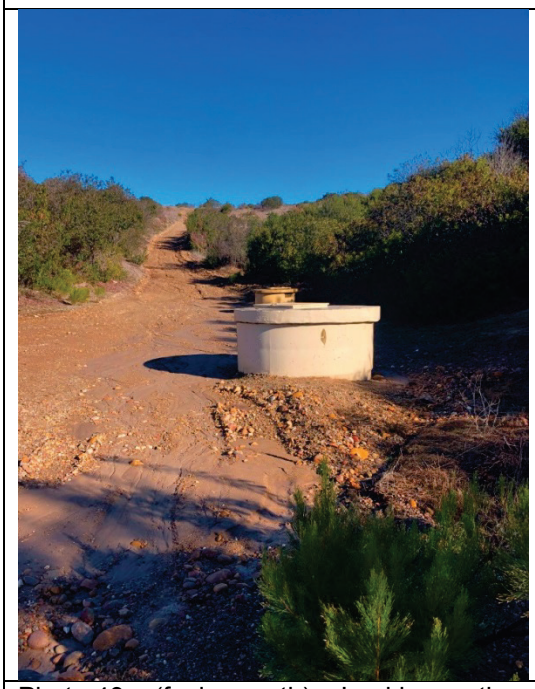



Photo 43 – (facing north) – Looking up the existing dirt access road at the erosion occurring along the road creating an erosional swale.	Photo 44 – (facing north) – Looking down at the erosion where the erosional swale enters the human-made rip-rap swale through the vegetation.

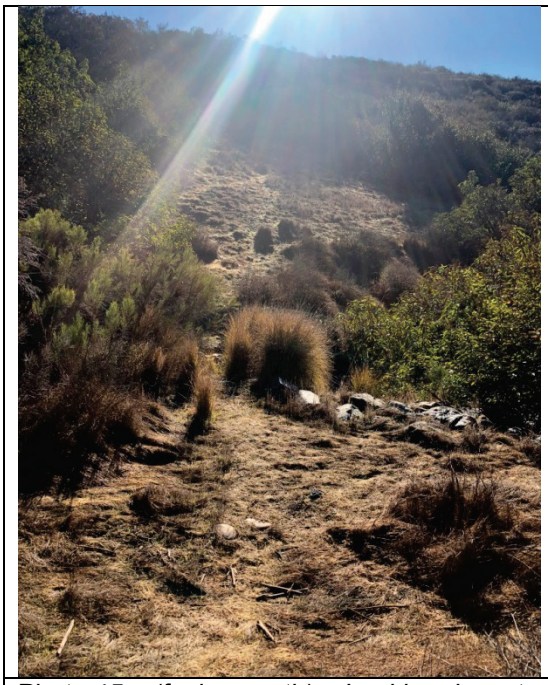
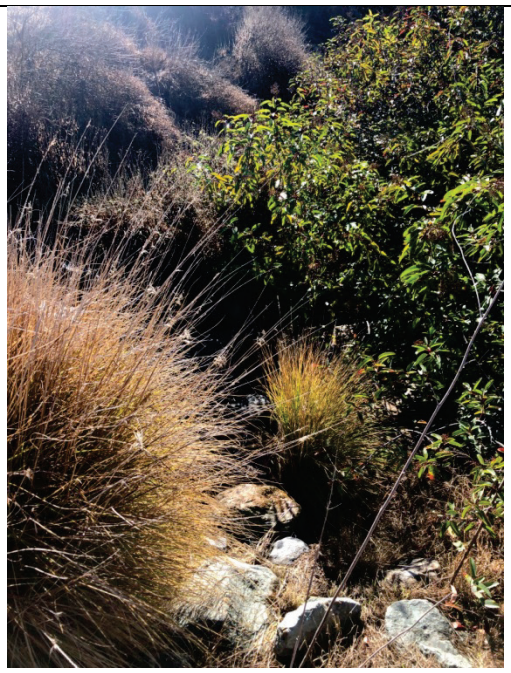
	

Photo 45 – (facing south) – Looking down towards the unnamed ephemeral drainage 3 from the existing road located uphill.	Photo 46 – (facing east) – Looking down at point where the rip-rap swale meets the concrete culvert facility and ephemeral drainage 3 begins.
	
Photo 47 – (facing south) – Looking downstream at the concrete headwall that delineates the beginning of the unnamed ephemeral drainage 3.	Photo 48 – (facing south) – Looking downstream at the ephemeral drainage 3.

	
Photo 49 – (facing north) – Looking at the OHWM of the unnamed ephemeral drainage 4 from the existing road located uphill.	Photo 50 – (facing southeast) – Looking at the existing access road that is eroding adjacent to the unnamed ephemeral drainage 4.
	
Photo 51 – (facing northeast) – Looking upstream at the unnamed ephemeral drainage 4 that runs along the existing access road.	Photo 52 – (facing south) – Looking upstream where the erosion from the access road meets the unnamed ephemeral drainage 4 as it runs along existing facilities.

	
Photo 53 – (facing south) – Looking at the unnamed ephemeral drainage 4 from the existing road located uphill.	Photo 54– (facing southeast) – Looking at the existing access road that is eroding adjacent to the unnamed ephemeral drainage 4.

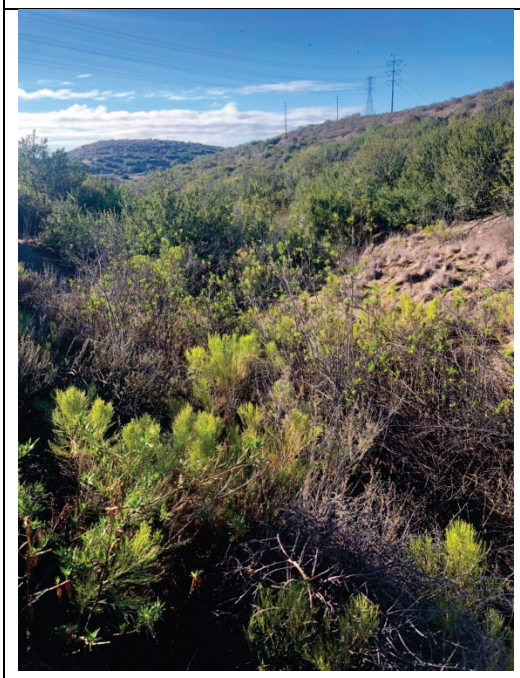
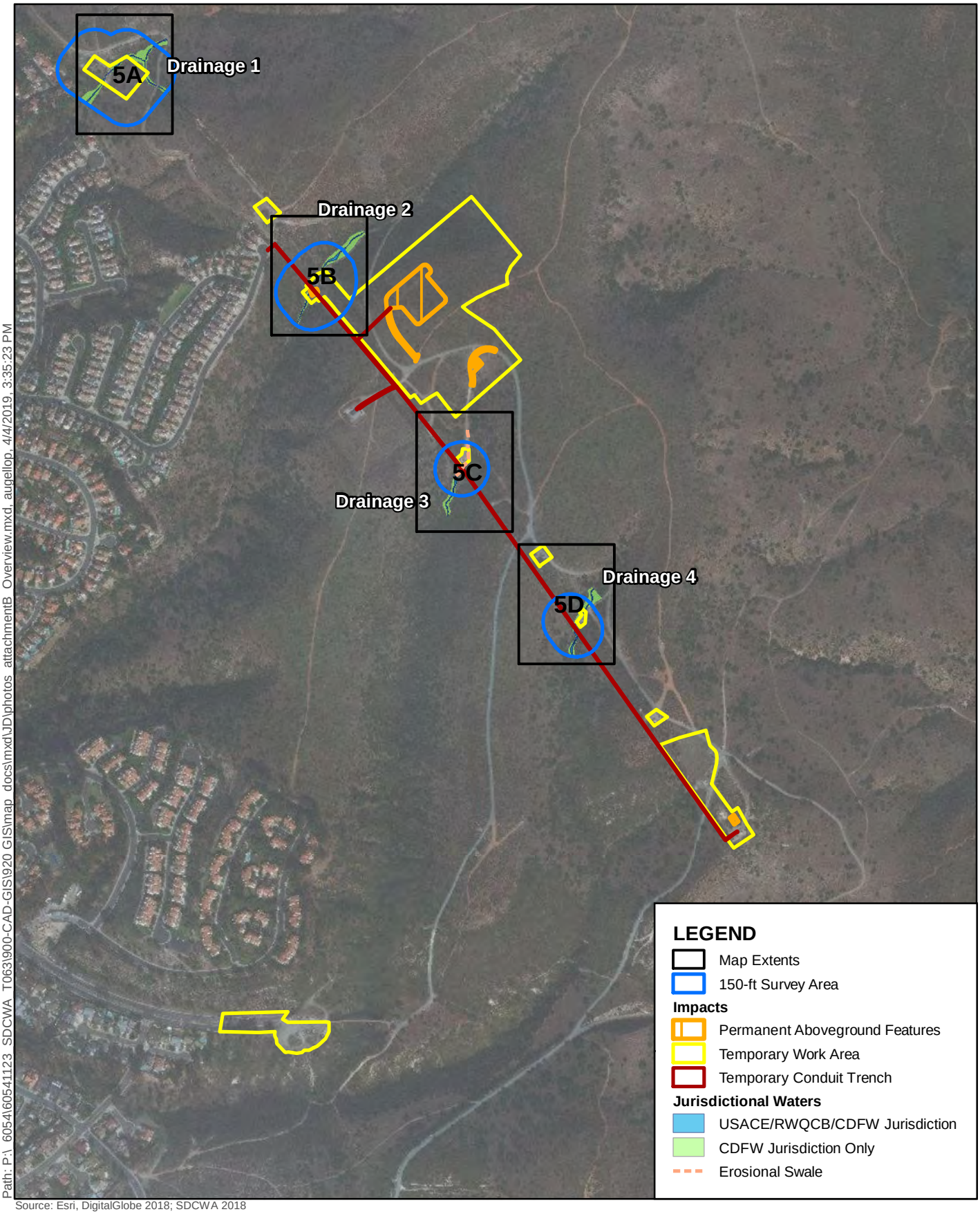



Photo 55 – (facing south) – Looking downstream at the unnamed ephemeral drainage 4 south of the project site.	Photo 56 – (facing north) – Looking upstream at the OHWM of the unnamed ephemeral drainage 4.



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

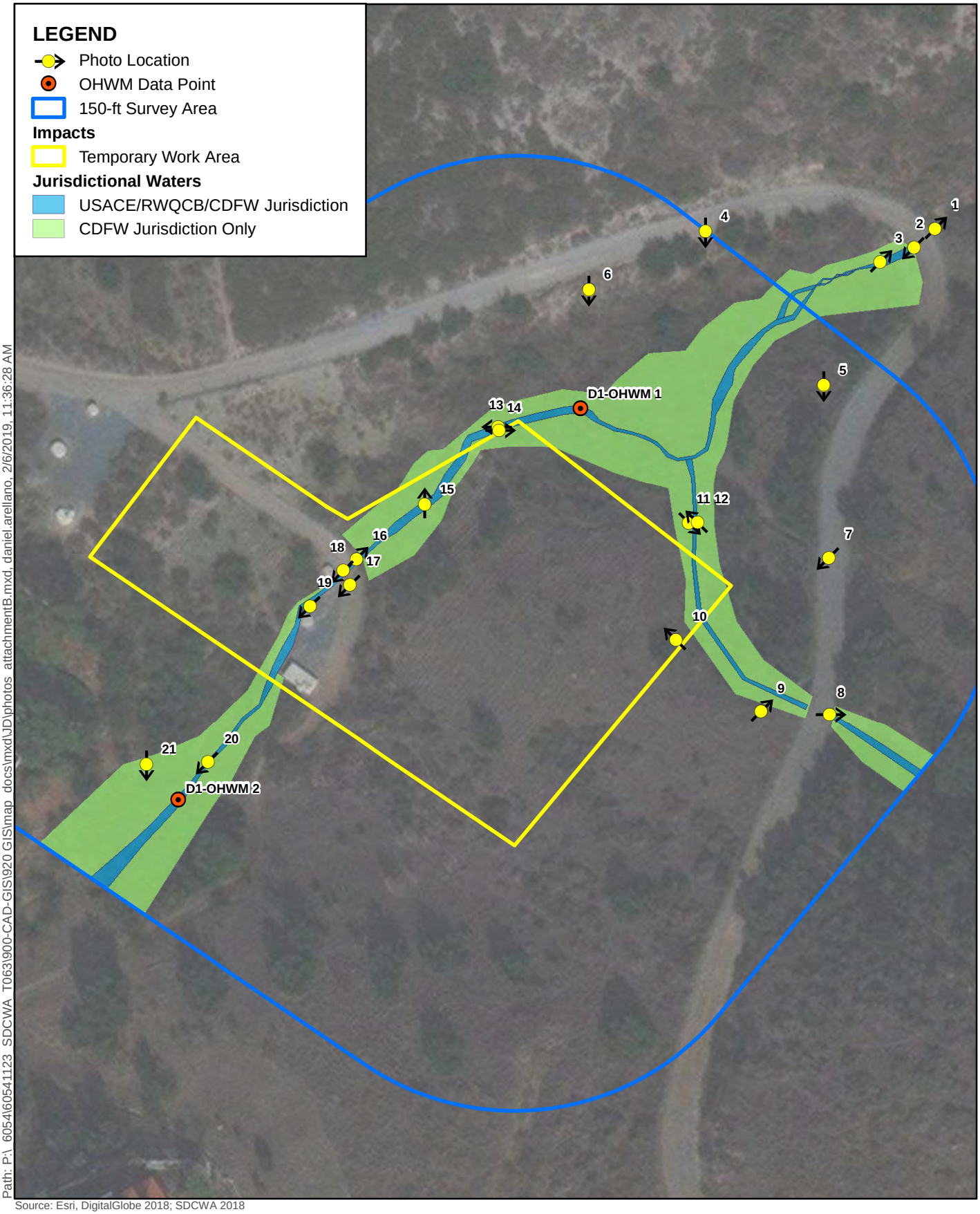
ATTACHMENT B OVERVIEW
JURISDICTIONAL WATERS

750 0 750 Feet

Scale: 1:9,000 1 in = 750 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

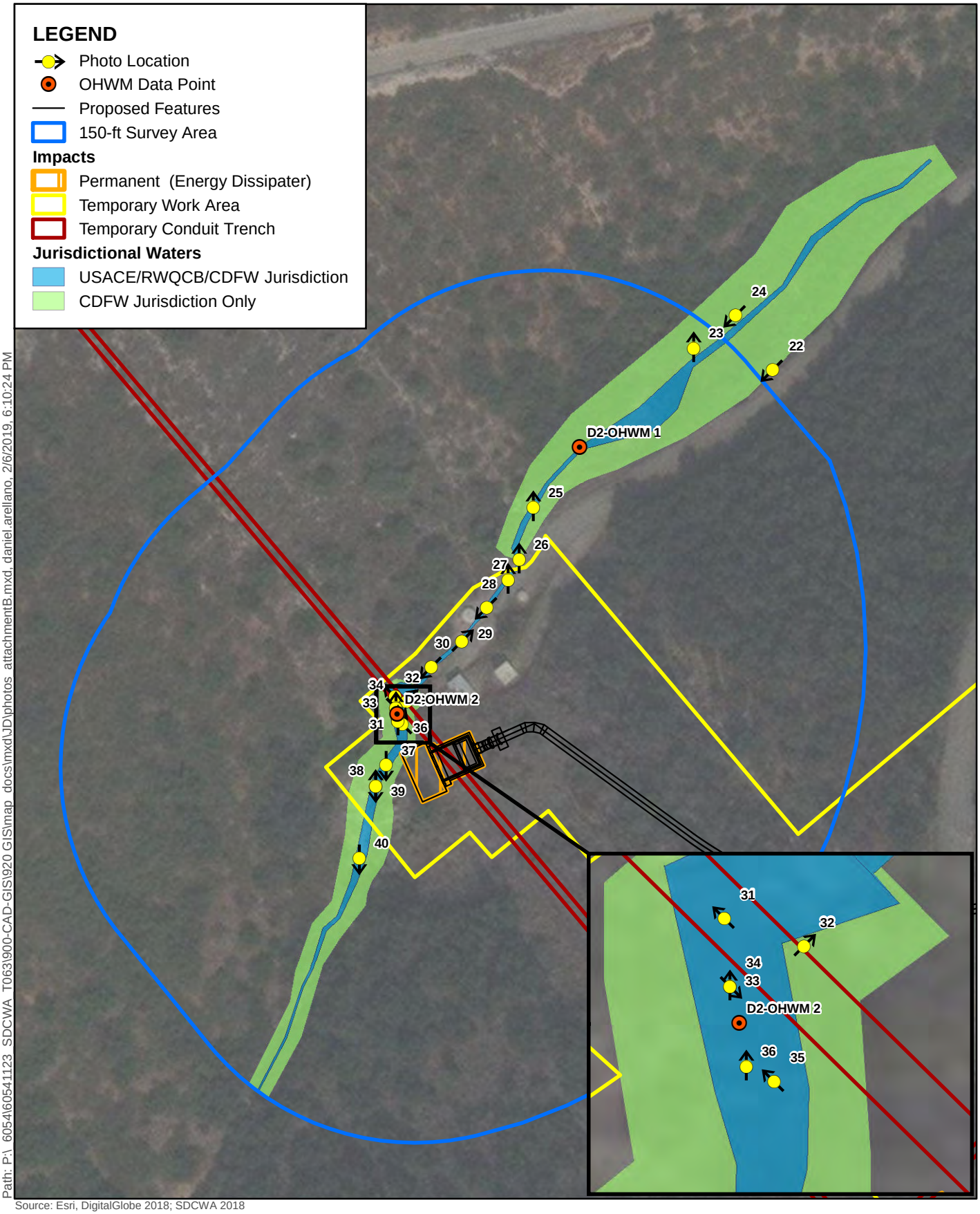
ATTACHMENT B
JURISDICTIONAL WATERS - DRAINAGE 1

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

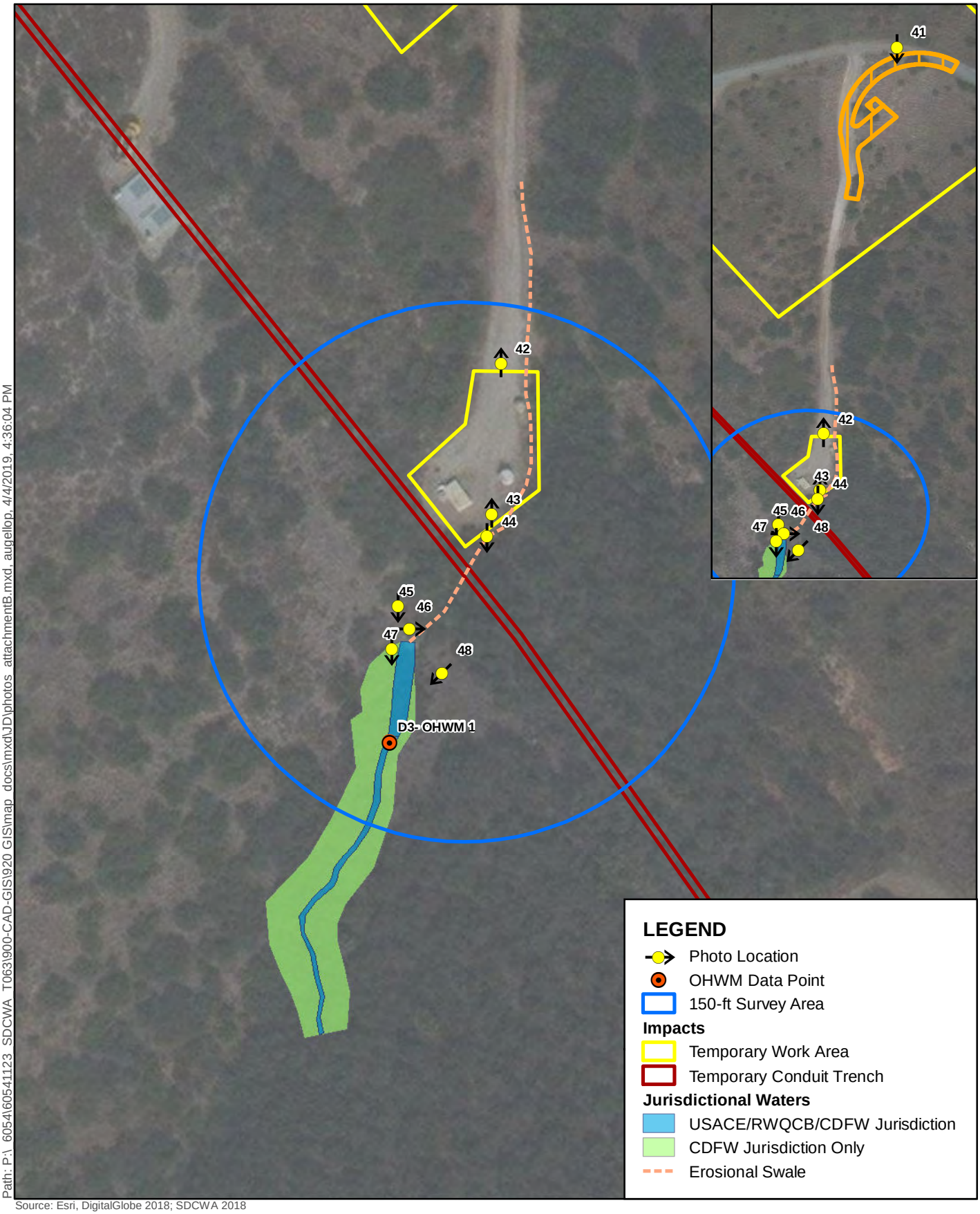
ATTACHMENT B
JURISDICTIONAL WATERS - DRAINAGE 2

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

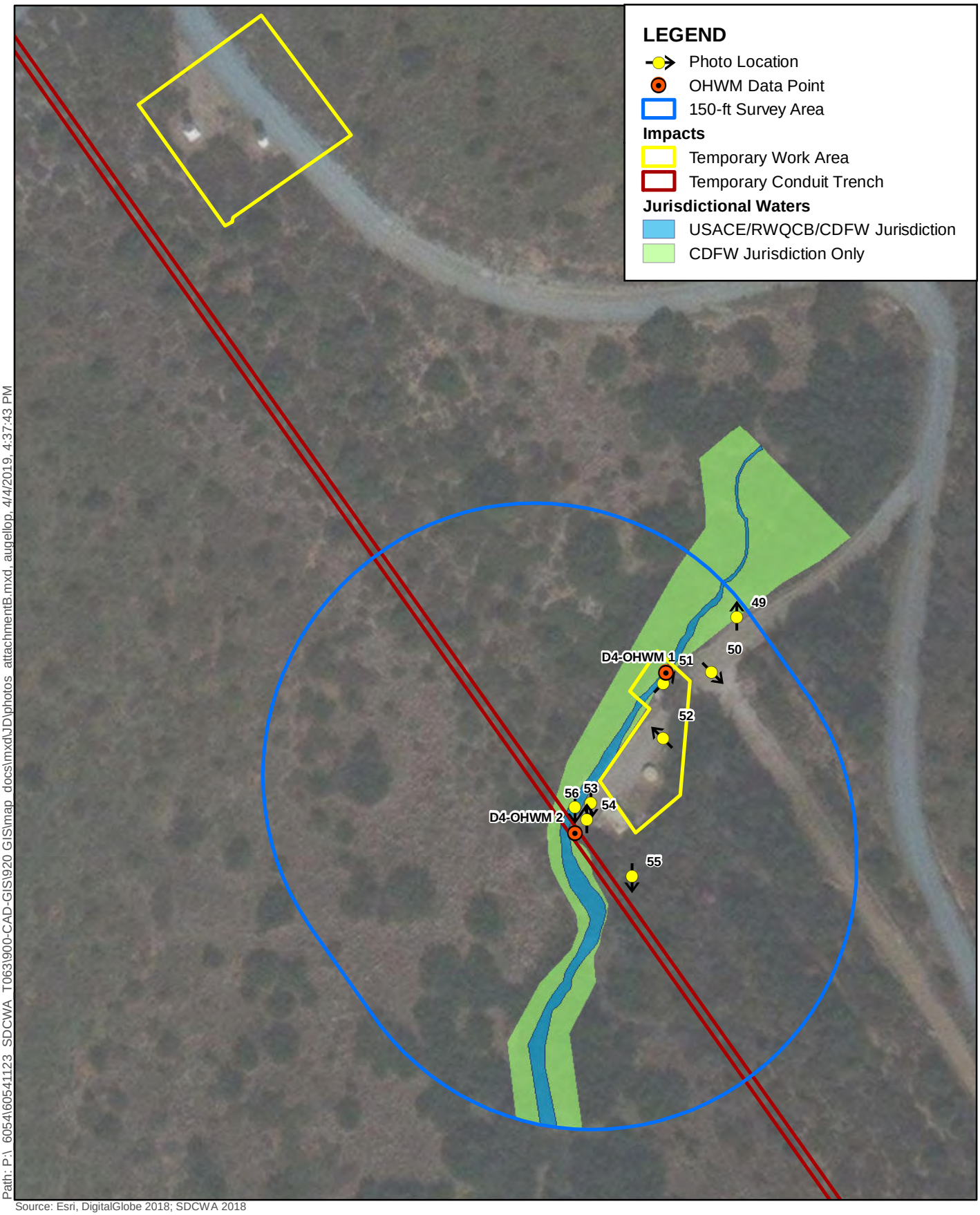
ATTACHMENT B
JURISDICTIONAL WATERS - DRAINAGE 3

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM



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Source: Esri, DigitalGlobe 2018; SDCWA 2018

ATTACHMENT B
JURISDICTIONAL WATERS - DRAINAGE 4

75 0 75 Feet

Scale: 1:900 1 in = 75 feet

MISSION TRAILS FRS II
JURISDICTIONAL DELINEATION

AECOM

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: SDCWA FRS II
Project Number:
Stream: Unnamed ephemeral drainage 1
Investigator(s): Keely Craig, Jenna Hartsook

Date: 12/7/18 **Time:** 1:00
Town: San Diego **State:** CA
Photo begin file#: 1 **Photo end file#:** 20

Y ☐ / N ☑ Do normal circumstances exist on the site?
Rain event ~ 1 inch in past 24 hours

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details:
Within Mission Trails Regional Park

Projection: 32.836503° **Datum:**
Coordinates: -117.074728°

Potential anthropogenic influences on the channel system:
The study area has been largely disturbed when the original project construction occurred. Imprinting and seeding has occurred along slopes surrounding drainage through the study area. The southern portion of the drainage fans out to a floodplain south of study area that has been planted with mule fat.

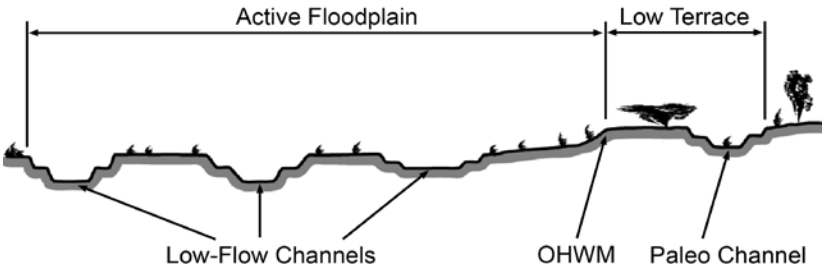
Brief site description:
Unnamed ephemeral drainage within Mission Trails Regional Park. In the northern portion of drainage, there are two tributary drainage features that meet to form unnamed ephemeral drainage 1.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☑ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

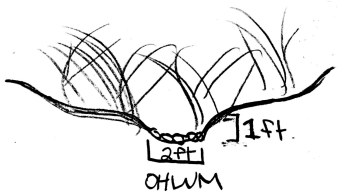


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: FRS II **Cross section ID:** D1-OHWM 1 **Date:** 12/7/18 **Time:** 1:00 PM

Cross section drawing:



OHWM

GPS point: 32.840388°, -117.079485°

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Vegetation overhangs the OHWM. Clear change in sediment size showing the OHWM to pebble low flow channel.

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.840388°, -117.079485°

Characteristics of the floodplain unit:

Average sediment texture: pebbles

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

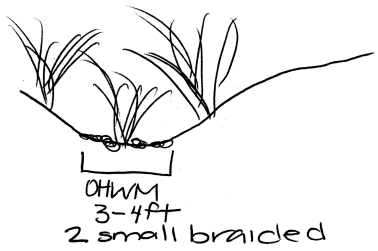
- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Dense vegetation surrounding and overhanging the low flow channel. Shrubs are starting to reach tree height in some areas.

Project ID: FRS II **Cross section ID:** D1-OHWM 2 **Date:** 12/7/18 **Time:** 1:00 PM

Cross section drawing:



OHWM

GPS point: 32.839818°, -117.080198°

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:
Vegetated channel. There is a clear change in sediment texture/size in the low flow channel. This area appears to have been seeded and vegetation is fairly dense.

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.839818°, -117.080198°

Characteristics of the floodplain unit:
Average sediment texture: pebbles
Total veg cover: 85 % Tree: 40 % Shrub: 40 % Herb: 5 %
Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:
Shrubs are nearing tree height in this area. Many appear to be planted units that were likely part of the restoration efforts for the residential development and/or the previous construction in the area.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: SDCWA FRS II
Project Number:
Stream: Un-named ephemeral drainage 2
Investigator(s): Keely Craig & Bonnie Hendricks

Date: 10/12/2018 **Time:** 08:30 AM
Town: San Diego **State:** California
Photo begin file#: 22 **Photo end file#:** 40

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details:
Within Mission Trails Regional Park

Projection: 32.836503° **Datum:**
Coordinates: -117.074728°

Potential anthropogenic influences on the channel system:
Two storm drain culverts discharge to this drainage within the project area. The drainage appears to havebeen modified by the installation of these culverts and the placement of old concrete and rip-rap within the feature. Based on site conditions, appears to receive heavy flow during storm events.

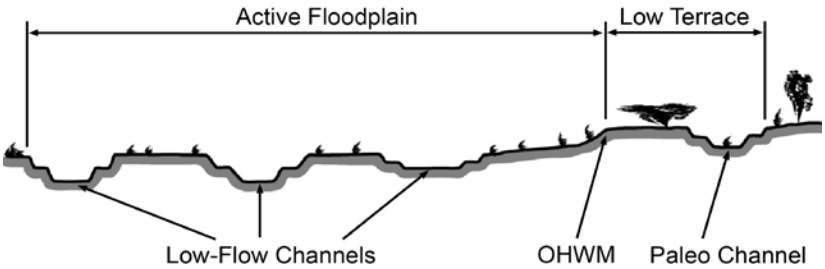
Brief site description:
Un-named ephemeral drainage within Mission Trails Regional Park and located downslope of housing development. The streambed is unvegetated with an associated riparian canopy.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: GE 1994-2018
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☑ Rainfall/precipitation maps
- ☑ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

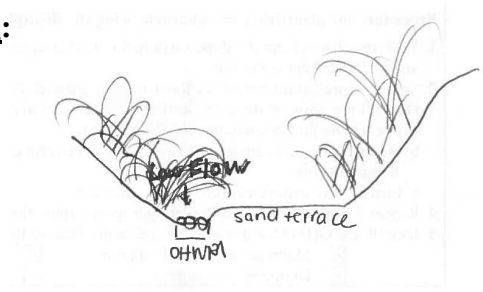


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: FRS II **Cross section ID:** D2- OHWM 1 **Date:** 10/12/2018 **Time:** 08:30 AM

Cross section drawing:



OHWM

GPS point: 32.837236°, -117.075854°

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:
The trees and vegetation overhang the OHWM but within the OHWM the streambed is unvegetated. Sediment within OHWM is cobbley and sandy. The streambed downstream of this location has been modified with rip-rap.

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.837236°, -117.075854°

Characteristics of the floodplain unit:

Average sediment texture: Cobbles, pebbles, and sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

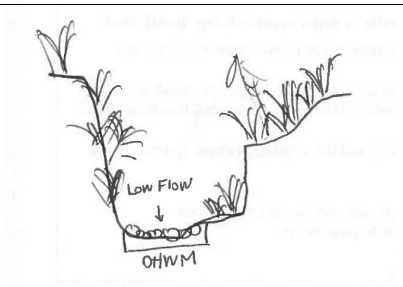
- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Bed and bank are fairly gradual at this location with a low terrace adjacent to the OHWM.

Project ID: FRS II **Cross section ID:** D2- OHWM 2 **Date:** 10/12/2018 **Time:** 09:00 AM

Cross section drawing:



OHWM

GPS point: 32.836843°, -117.076195°

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:
The trees and vegetation overhang the OHWM but within the OHWM is unvegetated.

Floodplain unit:

☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.836843°, -117.076195°

Characteristics of the floodplain unit:

Average sediment texture: Boulders, cobbles, and pebbles

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☑ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Sediment within OHWM consists of boulders, broken concrete chucks (boulder size), cobble, pebbles, and sandy. The drainage must receive large volumes of water during storm events as the banks are steep and eroded indicating high velocity flows.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: SDCWA FRS II
Project Number:
Stream: Unnamed ephemeral drainage 4
Investigator(s): Keely Craig, Jenna Hartsook

Date: 12/7/18 **Time:** 10:00
Town: San Diego **State:** CA
Photo begin file#: 50 **Photo end file#:** 56

Y ☐ / N ☑ Do normal circumstances exist on the site?
Rain event ~ 1 inch in past 24 hours

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details:
Within Mission Trails Regional Park

Projection: 32.836503° **Datum:**
Coordinates: -117.074728°

Potential anthropogenic influences on the channel system:
The study area has been largely disturbed when the original project construction occurred. Restoration has occurred in previously disturbed areas. There is erosion occurring along the existing access roads to the site.

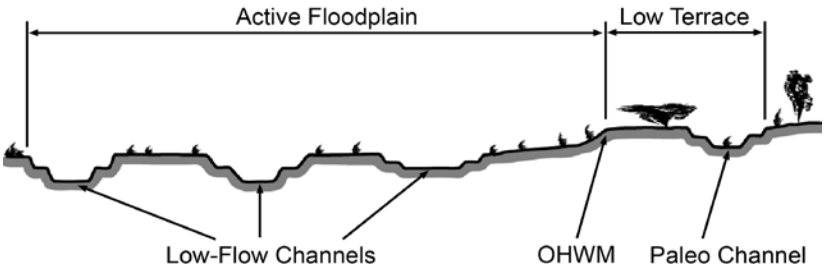
Brief site description:
Unnamed ephemeral drainage within Mission Trails Regional Park. The drainage runs along the side of the existing access road.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☑ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

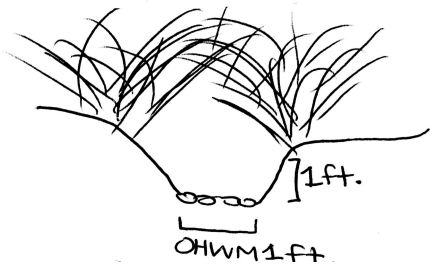


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: FRS II **Cross section ID:** D4-OHWM 1 **Date:** 12/7/18 **Time:** 10:00 AM

Cross section drawing:



OHWM

GPS point: 32.831898°, -117.071099°

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:
In-sized channel that is unvegetated. The riparian associated vegetation overhangs the clear OHWM. The OHWM is indicated by a clear change in sediment size/texture, consisting of mostly cobbles and sand.

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.831898°, -117.071099°

Characteristics of the floodplain unit:

Average sediment texture: cobbles

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

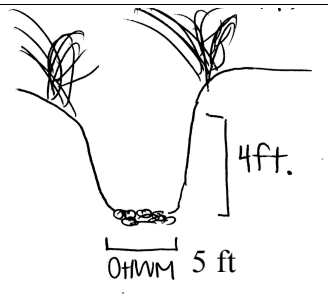
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:
Clear bed and banks to feature & clear OHWM.

Project ID: FRS II **Cross section ID:** D4-OHWM 2 **Date:** 12/7/18 **Time:** 10:00 AM

Cross section drawing:



OHWM

GPS point: 32.831606°, -117.071294°

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:
In-sized channel. OHWM sediment texture is cobble and sand. Vegetation does not overhang feature in this but does downstream. It was extremely dense.

Floodplain unit:

☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.831606°, -117.071294°

Characteristics of the floodplain unit:

Average sediment texture: cobbles

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:
Dead vegetation was found as debris in some areas of low flow channel.

ATTACHMENT 4

NCCP/HCP CONDITIONS FOR COVERAGE AND MINIMIZATION MEASURES

Attachment 4
NCCP/HCP Conditions for Coverage and Minimization Measures

E-1: General Conditions for Coverage

The following general measures apply to all Covered Species, as listed in Section 2.1 of Appendix B of the NCCP/HCP, and will be implemented on the project:

1. Conduct pre-activity surveys within suitable habitat to ensure that Covered Species are adequately addressed by impact avoidance, minimization, and mitigation. Surveys must be conducted by an Environmental Surveyor during the appropriate field conditions for detection prior to any proposed impacts in the Plan Area.

2. Avoid and minimize impacts to occupied Covered Species habitat or potential migration and/or dispersal corridors for all new facilities and O&M Activities of existing facilities through project design considerations.

3. Establish a habitat buffer when appropriate and feasible around covered plant species populations to support the natural suite of pollinators unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

4. Fence and/or flag Covered Species populations and sensitive habitat in or adjacent to work areas. Where necessary, install signage to prohibit access and/or flag areas being restored or protected for their biological value.

5. Avoid driving or parking on sensitive and/or occupied habitat by keeping vehicles on roads and in designated staging areas.

6. Deter unauthorized activities (such as trampling and off-road vehicle use) and perform litter abatement, including proper disposal of illegally dumped materials, as part of routine patrol of access roads.

7. Monitor encroachment of non-native and invasive species into Covered Species populations and perform weed abatement as needed to improve the habitat.

8. Stabilize work areas to control erosion or sedimentation problems when working near Covered Species populations within the Plan Area. Populations within or adjacent to work areas would be protected from vehicular traffic, excessive foot traffic, or other activities that result in soil surface disturbance.

9. Control dust when working near Covered Species populations and/or habitat in accordance with applicable regulations.

10. All identified populations of Covered Species within rights-of-ways must be managed to control edge effects to the maximum extent possible.

11. Any restoration and monitoring program prepared as a component of the mitigation plan for impacts to a Covered Species shall include, but not be limited to, species propagation ratios, restoration site selection and assessment, site preparation, implementation strategies, weed control procedures, required management and

monitoring in perpetuity, funding commitment, and reporting procedures. The program would be prepared in advance of project impacts and approved by the Wildlife Agencies.

12. Any planting stock used shall be inspected by an Environmental Surveyor to ensure that it is free of pest species that may invade natural areas, including, but not limited to, Argentine ants (*Iridomyrmex humii*), fire ants (*Solenopsis invicta*), and other pests. Any planting stock that is infested would not be allowed within restoration areas or within 300 feet of native areas unless documentation is provided to the Wildlife Agencies that these pests already occur in the native areas around the project site. The stock would be quarantined, treated, or disposed of according to best management principles by qualified experts in a manner that precludes invasions into native habitat. Runoff from mitigation sites into native habitat would be minimized and managed.

13. To the maximum extent possible, conduct Covered Activities occurring within wetland habitats during the dry season when flows are at their lowest or nonexistent to minimize impacts to aquatic species and/or habitats.

14. Reseed temporary impact areas with an appropriate native seed mix and allow for natural recolonization of the area by adjacent populations.

15. For new facilities adjacent to native habitat, minimize ornamental landscaping or irrigation not associated with native habitat restoration.

16. Collection of covered plant and wildlife species by Water Authority personnel and contractors is prohibited.

17. Maintain and manage dispersal/movement corridors within the Plan Area that contribute to long-term population viability.

18. The use of outdoor lighting within or adjacent to potential Covered Species habitat will be discouraged. If lighting must be used for reasons of safety and security, light sources would be shielded away from habitat and only low pressure sodium lighting would be used.

E-2: NCCP/HCP Minimization Measures

The following minimization measures listed in Section 6.4 of the NCCP/HCP will be incorporated as design features on the project:

Environmental Surveyor (Section 6.4.1.1)

1. The Water Authority will identify an Environmental Surveyor for the project to oversee pre-project evaluations/needs of Covered Activities and work with the project engineer and contractors to ensure implementation compliance of Covered Activities with Plan commitments.

2. If the Environmental Surveyor discovers that the Water Authority is out of compliance with the permits associated with this Plan, he/she will report the noncompliance to the Water Authority within one working day and to the Wildlife Agencies within five working days so that the Water Authority and Wildlife Agencies can determine how to put the Plan back into compliance.

3. Before any clearing and/or construction activities are performed in habitat areas that may support Covered Species, the Environmental Surveyor will review the site, identify any sensitive plant and animal species, and identify requirements pursuant to the Plan for impact avoidance and minimization. A standard PSF will be prepared for each project and submitted to the Water Authority for review and tracking purposes.

4. The Environmental Surveyor will determine the extent of potential Covered Species habitat and will flag the sensitive resources to be avoided. If a Covered Species is present, the Environmental Surveyor will refer to Appendix B of the NCCP/HCP for species-specific conservation measures. In the case of unavoidable impacts to a Covered Species, the Environmental Surveyor will determine the extent of impact, the appropriate mitigation measures, and recommend to the project engineer additional measures to minimize impacts in accordance with Appendix B of the NCCP/HCP.

5. The Environmental Surveyor will work with the project engineer to identify and mark areas appropriate for staging and temporary equipment storage, placement of heavy machinery, as well as vehicle turn around and access, that will result in the least amount of impact to sensitive vegetation and/or Covered Species. The Environmental Surveyor will verify that all areas specified on the plans to be avoided are marked with flagging in the field prior to construction start.

6. The Environmental Surveyor will attend pre-construction meetings for projects in sensitive areas. The Environmental Surveyor will provide brief presentations to field staff, as needed, to familiarize field personnel with the natural resources to be protected and avoid on project sites and outline environmental expectations. The Environmental Surveyor will also be available to answer questions and address any last-minute construction changes.

7. The Environmental Surveyor will be present during clearing, topsoil salvage, and construction activities located within sensitive habitat. The frequency and duration of required monitoring will be specified in the PSF that is completed by the Environmental Surveyor and submitted to the Water Authority on a project-by-project basis prior to the start of construction.

8. The Environmental Surveyor will advise the construction manager during construction to ensure compliance with all avoidance, minimization, and mitigation measures.

9. The Environmental Surveyor will conduct (and document) monitoring as required by the PSF. At the completion of the Covered Activity, the Environmental Surveyor will prepare a brief report to verify compliance with the avoidance and minimization recommendations in the PSF. This report will include documentation that the flagged areas were avoided and that minimization measures were properly implemented. The Environmental Surveyor will be responsible for the identification and monitoring of any Covered Species that are found on the project site prior to and during construction activities. Monitoring activities will be in accordance with the species-specific measures (see Appendix B of the NCCP/HCP).

10. If any previously unidentified Covered Species or otherwise sensitive species, nests, dens, or burrows are located on a project site during construction activities, the Environmental Surveyor will provide guidance, through the construction manager, as to how best to minimize or avoid impacting the resource(s).

11. The Environmental Surveyor will be on-call (via phone) to respond within 24 hours for potential emergency deployment to assess and monitor potentially critical biological issues.

12. If the Environmental Surveyor determines that the Covered Activity is out of compliance with the requirements of the Plan, the Environmental Surveyor will report it to the Water Authority. The Water Authority will be responsible for bringing the project back into compliance and determine the appropriate remedial action, if necessary, through coordination with the Wildlife Agencies.

13. The Environmental Surveyor or construction manager will be responsible for ensuring the removal of all habitat flagging from the construction site at completion of work.

14. If included in the PSF, the Environmental Surveyor will direct the relocation of Covered Species that can be moved from harm's way in coordination with the species-specific Conditions of Coverage in Appendix B of the NCCP/HCP (in non-emergency situations) with notification to the Wildlife Agencies.

Pre-Activity Survey Form (Section 6.4.1.2)

1. The PSF will include avoidance, minimization, and mitigation requirements based on the general measures outlined in this section and the species-specific conditions in Appendix B of the NCCP/HCP. USFWS biological survey protocols performed by qualified and appropriately authorized personnel will be conducted where appropriate and required.

2. The pre-activity survey will be valid for 30 days unless the project is scheduled to begin during the avian breeding season, in which case the nesting bird clearance must be conducted within five days of project implementation. If ground disturbance activities have not commenced within 30 days after the survey is completed, the Environmental Surveyor will conduct a verification survey to confirm that biological conditions have not significantly changed that would alter the specified avoidance, minimization and mitigation commitments prior to construction.

Field Personnel Education Training (Section 6.4.1.3)

1. Field personnel working within sensitive habitat areas, including both Water Authority employees and contractors, will participate in an education training program at the start of each project. The program will be conducted on-site by an Environmental Surveyor under the direction of the Water Authority. The training will include: an overview of Covered Species identification and the legal protections afforded to each species; a brief discussion of their biology; habitat requirements; status under ESA and CESA; conservation measures being taken by the project for the protection of the Covered Species and their habitats under this Plan; and penalties for non-compliance. The training program will also educate field personnel in the identification of invasive species that may be removed, as well as desirable seeded and planted species, to ensure that native species are not affected by invasive species control. A fact sheet conveying this information will also be available to all personnel working in the project area. The Water Authority, either directly or through the services of the Environmental Surveyor, will be responsible for the education and training for new field personnel coming on-site after the start of a project.

Field Personnel (and Contractor) Responsibilities (Section 6.4.1.4)

1. Contractors or other project personnel will not collect plants or wildlife, unless specifically authorized and directed by the Environmental Surveyor. Only qualified and appropriately authorized personnel will handle or collect plants or wildlife as required by species-specific measures.

2. Field personnel will not intentionally harm or harass wildlife or damage nests, burrows, rock outcrops, or other habitat components.

3. Drivers on unpaved roads in native habitats will not exceed a speed of 20 miles per hour in order to avoid injury to animals and minimize dust generation.

4. Impacts to adjacent native vegetation that would be significantly affected by excessive fugitive dust will be avoided and minimized through watering of access roads (except in areas with vernal pools) or other appropriate measures, such as reducing the number or speed of vehicles or adding inert materials that reduce dust. Projects with the potential for excessive dust generation include those that involve more than occasional use of roads in dust-prone soils (i.e., more than three to five vehicle roundtrips per day) or require multiple vehicles to transport heavy equipment and supplies.

5. Vehicles will not park in areas where catalytic converters may ignite vegetation. Construction vehicles will be equipped with shovels and fire extinguishers in order to reduce the risk of wildfires.

6. Littering will be strictly prohibited. All trash will be deposited in secured, closed containers or hauled out daily by field personnel.

7. No pets will be allowed on any construction site.

8. No firearms or other weapons will be allowed on any construction site except as carried by governmental law enforcement, or as authorized in writing by Water Authority staff.

9. Field personnel will be prohibited from pushing or dumping soil and brush into sensitive habitats.

10. All vehicles, tools, and machinery will be restricted to access roads, approved staging areas, or within designated construction zones.

11. If any field personnel identify a previously unnoticed Covered Species on a construction site, work activities will cease in order to immediately notify the Water Authority's construction manager, project engineer, and the Environmental Surveyor. In conjunction with Water Authority environmental staff, the Environmental Surveyor will determine what actions would be taken to avoid or minimize impacts to the species according to the species-specific conditions outlined in Appendix B of the NCCP/HCP.

12. Field personnel will notify the project engineer/environmental staff of any sick, injured, or dead wildlife found on site.

13. Parking or driving underneath oak trees, except in established traffic areas, will not be allowed in order to protect root structures.

Stormwater Best Management Practices (Section 6.4.2.6)

1. Prior to the start of ground disturbing activities, the Water Authority or their consultants will prepare a Storm Water Pollution Prevention Plan (SWPPP) to reduce or eliminate pollutants during and after construction. The most current and applicable Best Management Practices (BMPs) will be implemented at all construction sites in or adjacent to native habitat in accordance with the project specifications. In addition to the approved manual, BMPs listed in the most recent National Pollutant Discharge Elimination System (NPDES) General Permit and the BMP Fact Sheet located in State Water Resources Control Board (SWRCB) General Permit for Small Linear Underground/Overhead Projects will apply. The fact sheet is attached as an Appendix G and the SWRCB or RWQCB will be contacted for the latest requirements.

Cleanup (Section 6.2.4.8)

1. Refuse and trash will be regularly removed from activity sites and disposed of in a lawful manner. Timing of refuse and trash removal will be determined by the Environmental Surveyor and comply with the project specifications that require debris to be removed as work is completed. Petroleum products, including gasoline, diesel, and hydraulic fluid, will be used during construction in accordance with all federal, state, and local laws, regulations, and permitting requirements. In the event that hazardous materials are encountered or generated during construction, contractors certified by the responsible regulatory agency will conduct all recovery operations and dispose of hazardous waste in accordance with existing regulations and required permits. As required, petroleum products, trash, and other materials will be taken to a disposal facility authorized to accept such materials.

E-3: Plant Species Conditions for Coverage

The following conditions for coverage for plant species that were considered to have a high potential or are known to occur within the project work areas (species known to occur or with a high potential in the buffer only are not included below), as listed in Section 3 of NCCP/HCP Appendix B, will be incorporated into the project.

San Diego Thorn-Mint (Section 3.1.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement the Narrow Endemic Policy (see Section E-5).

3. Encroachment of non-native species will be minimized by limiting soil disturbance within 50 feet of San Diego thorn-mint populations.

4. Establish a minimum habitat buffer of 100 feet when feasible around populations to support the natural suite of pollinators, unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

5. [not applicable, related to preserve management]

6. Focused surveys for this species are conducted by the Environmental Surveyor for detection prior to any proposed impacts (e.g., during CEQA review). As this species is an

herbaceous annual, surveys for San Diego thorn-mint shall be conducted during its blooming period (April-June) to ensure proper identification.

Variegated Dudleya (Section 3.13.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement the Narrow Endemic Policy (see Section E-5).

3. Establish a minimum habitat buffer of 100 feet when feasible around populations to support the natural suite of pollinators, unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

4. For unavoidable impacts, prepare a mitigation plan to re-establish populations at a final mitigation ratio that results in a no-net-loss of species population. The plan shall include, but not limited to, species propagation ratios, restoration site selection and assessment, site preparation, implementation strategies, weed control procedures, required management and monitoring in perpetuity, funding commitment, and reporting procedures. This plan would be prepared in advance of project impacts and approved by the Wildlife Agencies.

San Diego Barrel Cactus (Section 3.16.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, related to preserve management]

San Diego Goldenstar (Section 3.20.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, no impacts warranting implementation of Vernal Pool Protection Policy]

3. Establish a minimum habitat buffer of 100 feet when feasible around vernal pool watersheds to support the natural suite of pollinators, unless a biologically appropriate mitigation approach is agreed to with the Wildlife Agencies at the time of project-specific environmental review.

4. [not applicable, project has no vernal pool impacts]

5. Prescribed burning or mechanical thatch reduction can be effectively used to encourage San Diego goldenstar populations.

6. Encroachment of non-native species will be minimized by limiting soil disturbance when feasible within 50 feet of San Diego goldenstar populations.

7. Focused surveys for this species are conducted by the Environmental Surveyor for detection prior to any proposed impacts (e.g., during CEQA review). As this species is a bulbiferous perennial herb, surveys for San Diego goldenstar shall be conducted during its blooming period (April-May) to ensure proper identification.

E-4: Wildlife Species Conditions for Coverage

The following conditions for coverage for wildlife species that were considered to have a high potential or are known to occur within the project work areas (species known to occur or with a high potential in the buffer only are not included below), as listed in Sections 5, 6, 7, and 8 of NCCP/HCP Appendix B, will be incorporated into the project.

Quino Checkerspot Butterfly (Section 4.6.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Conduct a habitat assessment per USFWS protocol as part of the pre-activity survey to identify if suitable Quino checkerspot butterfly habitat (as defined by USFWS 2002) is present within the project area. The pre-activity survey may be conducted year-round, regardless of the butterfly flight season.

3. Where no suitable habitat for Quino checkerspot butterfly is present, construction may occur in accordance with the Plan general Conditions for Coverage (see Section E-1).

4. If suitable Quino checkerspot butterfly habitat is present, the project will avoid impacts to the habitat through project design considerations, to the extent feasible. If impacts are avoided, no species-specific mitigation is required.

5. If impacts to suitable Quino checkerspot butterfly habitat cannot be avoided and project timing allows, conduct USFWS protocol adult flight season surveys by a permitted Environmental Survey under favorable conditions in areas of suitable habitat for all Covered Activities.

6. If project timing does not allow adult flight season surveys in suitable Quino checkerspot butterfly habitat, it will be assumed that the habitat is occupied. Unavoidable impacts to suitable but unoccupied habitat (as determined by protocol adult flight season surveys) will be mitigated in accordance with Tables 6-6 and 6-7 in the Plan. Unavoidable impacts to occupied Quino checkerspot butterfly habitat will be mitigated at a 2:1 ratio with occupied habitat.

7. If proposed impacts to occupied Quino checkerspot butterfly habitat, as determined by surveys or assumed, are greater than 1 acre, the Water Authority will consult with the Wildlife Agencies to ensure that project implementation will not cause the extirpation of a Quino checkerspot butterfly population.

8. Projects having direct or indirect impacts to occupied Quino checkerspot butterfly habitat shall establish biological buffers of at least 100 feet that shall be maintained adjacent to occupied Quino checkerspot butterfly habitat, measured from the outer edge of the habitat patch.

9. Reseed temporarily disturbed areas with appropriate native seed mix including Quino checkerspot butterfly nectar sources and dot-seed plantain in appropriate habitat to regionally enhance re-colonization efforts.

10. Participate in regional Quino checkerspot butterfly recovery efforts and implementation of recovery actions as specified in the recovery plan and by actively coordinating with the Wildlife Agencies and other Quino conservation entities.

Western Spadefoot (Section 5.2.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, no impacts warranting implementation of Vernal Pool Protection Policy]

3. Avoid or minimize impacts to western spadefoot toad habitat through project design and placement.

4. Conduct pre-activity surveys under favorable conditions for the western spadefoot in areas of potential habitat (including both potential breeding habitat and adjacent upland aestivation habitat) for all new facilities and O&M Activities conducted during the breeding and active foraging season of January 1 through June 30. Surveys must be performed for this species during appropriate field conditions (e.g., following adequate rainfall that would trigger breeding activity) in all vernal pools, seasonal depressions, or other areas that show evidence of standing water, prior to any proposed impact as part of the project review process (e.g., CEQA process). Surveys shall be conducted for potential spadefoot habitat within the project impact area and within a 1,500 foot buffer around the impact area.

5. If work must be done in occupied breeding habitat during the breeding season, the following measures would be used to avoid or reduce impacts:

    a. If an Environmental Surveyor determines a need for fencing, exclusionary toad fences would be used to keep toads out of construction areas. These fences would be placed and monitored daily by an Environmental Surveyor familiar with western spadefoot ecology.

    b. Silt fence/drift fence and pitfall traps would be installed around the impact area adjacent to occupied breeding habitat at least 21 days prior to impact to minimize access by spadefoots and to allow for removal of spadefoots from the impact area to an adjacent protected area. An Environmental Surveyor experienced with the identification, handling, and ecology of the spadefoot shall implement and oversee proper installation of the toad exclusion fencing, relocation efforts, and monitoring. The exclusion fencing would be maintained until the completion of all construction activities within or adjacent to occupied spadefoot habitat. For the duration of construction, the enclosure would be surveyed on a daily basis early in the morning, and any spadefoots that may have breached the fencing would be relocated.

6. Any wetlands created for mitigation for impacts to wetlands occupied by western spadefoot toads must be demonstrated to be capable of supporting the species prior to impacts, to ensure no–net-loss of occupied breeding habitat.

7. To ensure that diseases are not conveyed between work sites by the authorized biologist or assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF) will be followed at all times. The DAPTF fieldwork code of practice is contained in Attachment B-2 at the end of this Appendix.

8. When available, maintain and manage a 100-foot buffer area as foraging and burrowing habitat around known and newly discovered locations of this species.

9. When possible, enhance populations that are declining and restore damaged habitat based on information obtained through monitoring or research of this species.

Enhancement may include reduction of non-native species and other site-specific habitat improvement activities.

10. Bullfrogs and other exotic species that prey upon or displace spadefoots would be removed from occupied habitat areas during restoration efforts.

11. [not applicable, related to preserve management]

Coronado Skink (Section 6.2.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to Coronado skink habitat through project design and placement.

Belding's Orange-throated Whiptail (Section 6.3.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to Belding's orange-throated whiptail habitat through project design and placement.

3. Minimize and manage effects from introduced ant species that may exclude the termite prey base during restoration efforts. All nursery stock plants will be checked for non-native ants before installation at restoration sites. Non-native ants that penetrate native habitats appear to be partially supported by artificial irrigation associated with landscaping (Suarez et al. 1998). Therefore, runoff from mitigation sites in native habitat would be minimized and managed.

Coastal (Western) Whiptail (Section 6.4.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to coastal whiptail habitat through project design and placement.

Coast (San Diego) Horned Lizard (Section 6.6.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to coast horned lizard habitat through project design and placement.

3. Minimize and manage effects from introduced ant species that may exclude the horned lizard's termite prey base during restoration efforts. All nursery stock plants will be checked for non-native ants before installation at restoration sites. Non-native ants that penetrate native habitats appear to be partially supported by artificial irrigation associated with landscaping (Suarez et al. 1998). Therefore, runoff from mitigation sites in native habitat would be minimized and managed.

Coastal Rosy Boa (Section 6.7.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Maintain adequate rocky, downed woody, and other organic debris.

3. Avoid or minimize impacts to coastal rosy boa habitat through project design and placement.

San Diego Ringneck Snake (Section 6.8.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Avoid or minimize impacts to rocky outcrop and/or boulder-dominated microhabitats through project design and placement.

(Northern) Red Diamond Rattlesnake (Section 6.9.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. If a northern red diamond rattlesnake is observed in the construction area, the snake should be moved by an Environmental Surveyor to the closest safe, suitable habitat in the area. Exclusionary fences may be used to keep snakes out of construction areas. These fences would be placed and monitored daily.

3. Avoid or minimize impacts to red diamond rattlesnake habitat through project design and placement.

Loggerhead Shrike (Section 7.3.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in suitable habitat to avoid the nesting season whenever possible, or ensure that habitat is removed prior to the initiation of the breeding season. If construction activities must commence during the breeding season, minimize impacts through conducting nest surveys within 300 feet of all proposed activities should be conducted during the breeding season (see Section 2.3 for the Avian Breeding Season Policy). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4, Buffers). Direct take of individuals and destruction of nests within an active territory is not allowed.

3. [not applicable, related to preserve management]

California Horned Lark (Section 7.5.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in grassland habitat to avoid the breeding season for upland avian species whenever possible, or ensure that habitat is removed prior to the initiation of the breeding season. If construction activities must commence during the upland avian breeding season, develop a Wildlife Agency approved survey protocol to improve the detectability of horned lark nests (see Section 2.3 of the NCCP/HCP for the Avian Breeding Season Policy). Minimize impacts through conducting nest surveys within 300 feet of all proposed activities. If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of

100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4, Buffers). Take of active nests is not authorized.

Coastal California Gnatcatcher (Section 7.7.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Conduct USFWS protocol surveys for the California gnatcatcher under favorable conditions in areas of potential foraging or breeding habitat for all new facilities and O&M Activities, or assume occupancy of potential habitat, to ensure that this species is adequately addressed by impact avoidance, minimization, and mitigation. A permitted Environmental Surveyor would conduct surveys.

3. Minimize impacts through timing of work in suitable California gnatcatcher habitat to avoid the nesting season for upland avian species whenever possible, or ensure that habitat is removed prior to the initiation of the breeding season. If construction activities must commence during the upland avian breeding season, minimize impacts through conducting nest surveys within 300 feet of all proposed activities (see Section 2.3 of the NCCP/HCP for the Avian Breeding Season Policy). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4 of the NCCP/HCP).

4. Direct take of individuals and destruction of nests within an active territory are not allowed.

5. For temporary impacts to occupied California gnatcatcher habitat, the work site would be returned to preexisting contours, where feasible, and revegetation with appropriate locally native species. All revegetation plans would require written concurrence of the Wildlife Agencies. Also, see Section 6.4, Plan Minimization Measures, of the NCCP/HCP.

Southern California Rufous-crowned Sparrow (Section 7.11.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in suitable habitat to avoid the nesting season for upland avian species whenever possible, or ensure that habitat is removed prior to the initiation of the upland avian breeding season. If construction activities must commence during the upland avian breeding season, minimize impacts through conducting nest surveys within 300 feet of all proposed activities (see Section 2.3 of the NCCP/HCP). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4 of the NCCP/HCP). Direct take of individuals and destruction of nests within an active territory is not allowed.

Grasshopper Sparrow (Section 7.12.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Minimize impacts through timing of work in suitable habitat to avoid the nesting season for this species whenever possible. Clearing of occupied grasshopper sparrow habitat shall be avoided during the upland avian breeding season unless a Wildlife Agency approved nest detection protocol is developed, or ensure that habitat is removed prior to the initiation of the upland avian breeding season. If a nest is detected, minimize impacts through conducting nest surveys within 300 feet of all proposed activities (see Section 2.3 for the Avian Breeding Season Policy). If active nests are encountered, no Covered Activities shall be implemented within a minimum distance of 100 feet of the nest. A greater setback (up to 300 feet) may be required, as determined by the Environmental Surveyor, based on the site specific considerations, phase of the nesting cycle, and species or other biological considerations (see Section 2.4, Buffers).

3. Direct take of individuals and destruction of nests within an active territory is not allowed.

4. [not applicable, related to preserve management]

San Diego Black-tailed Jackrabbit (Section 8.1.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. [not applicable, related to preserve management]

Dulzura (California) Pocket Mouse (Section 8.4.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement a small-mammal live trapping and identification program in suitable habitat to determine the presence or absence of Dulzura pocket mouse. Alternatively, assume presence of this species and implement condition 3, as listed below.

3. If the species is observed and burrows will be affected by project-related disturbance, a pre-construction live trapping and relocation program will be implemented by the Environmental Surveyor at the impact areas in which this species was observed. Individuals will be relocated into adjacent suitable habitat areas or preserves, and/or the Environmental Surveyor will provide measures to ensure exclusion during construction activities. Relocation would be determined and conducted by an Environmental Surveyor in consultation with the Wildlife Agencies.

4. [not applicable, related to preserve management]

Northwestern San Diego Pocket Mouse (Section 8.5.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement a small-mammal live trapping and identification program in suitable habitat to determine the presence or absence of northwestern San Diego pocket mouse. Alternatively, assume presence of this species and implement condition 3, as listed below.

3. If the species is observed and burrows will be affected by project-related disturbance, a pre-construction live trapping and relocation program will be implemented by the Environmental Surveyor at the impact areas in which this species was observed. Individuals will be relocated into adjacent suitable habitat areas or preserves, and/or the Environmental Surveyor will provide measures to ensure exclusion during construction activities. Relocation would be determined and conducted by an Environmental Surveyor in consultation with the Wildlife Agencies.

San Diego Desert Woodrat (Section 8.7.3)

1. Implement general Conditions for Coverage (see Section E-1).

2. Implement a small-mammal live trapping and identification program in suitable habitat to determine the presence or absence of northwestern San Diego desert woodrat. Alternatively, assume presence of this species and implement condition 3, as listed below.

3. If the species is observed and nests would be affected by project-related disturbance, a pre-construction live trapping and relocation program will be implemented by the Environmental Surveyor at the impact areas in which this species was observed. Individuals will be relocated into adjacent suitable habitat areas or preserves, and/or the Environmental Surveyor will provide measures to ensure exclusion during construction activities. Relocation would be determined and conducted by an Environmental Surveyor in consultation with the Wildlife Agencies.

4. Avoid to the maximum extent possible impacts to San Diego desert woodrat sticknests.

5. For temporary impacts to occupied desert woodrat habitat, incorporate suitable habitat elements, such as rock and brush piles, into the habitat restoration plan.

E-5: Narrow Endemic Policy (Section 6.5.1.6)

1. Narrow endemic species populations will always be avoided to the maximum extent practicable.

2. For new projects, an 80 percent avoidance policy will apply, excluding existing Water Authority rights-of-way (including easements and fee-owned parcels). For plant species, 80 percent of the species' mapped distribution area will be avoided; for animal species, 80 percent of the occupied habitat and suitable habitat will be avoided. Covered Projects that cannot meet the 80 percent avoidance policy due to additional site and planning constraints will implement a Wildlife Agency-approved biologically equivalent or superior alternative.

3. Pre-activity surveys will be used to identify the location of narrow endemic populations to ensure that they are avoided and protected in accordance with this policy (see Appendix F of the Plan).

4. Mitigation for unavoidable impacts will be designed to minimize adverse effects to species viability and to contribute to the biological objectives of the Plan.