Appendix B: Project Description

1.1 Project Description

The project involves wood-to-steel pole replacement activities and the associated transferring or replacing of existing conductors and ancillary facilities to new poles. Primary project components involve the removal of existing wood power and distribution line poles, installation of galvanized steel poles, transfer of existing power line conductors onto new poles, either transfer of existing or installation of new distribution conductors on new poles, interception and transfer of underground power lines to new pole locations, conversion of existing underground power lines to an overhead configuration, transfer of existing telecommunication cables onto the new poles, and modifications and improvements of existing access roads where undersized.

Details regarding the construction processes involved with these components, including work/staging areas, construction workforce, and construction schedule, are provided below. The descriptions below are consistent with information provided in the Final Initial Study/Mitigated Negative Declaration (IS/MND); refer to the Final IS/MND for additional information.

1.1.1 Pole Installation and Removal

Approximately 132 existing wood poles will be replaced with approximately 117 galvanized steel poles. **Table 1**, Proposed Pole Installation Approximations, summarizes the quantity and the approximate dimensions of the replacement steel poles. New poles will typically be placed in line with existing conductor and within 10 feet of existing poles, except in a few locations where design requirements or site conditions present physical restrictions, as noted below:

Pole No. 18 will be relocated approximately 30 feet from the existing pole location in order to place it into alignment with the existing distribution line and pick up the distribution line at this pole. As a result, the alignment is slightly modified, but is located within the existing easements.

Pole No. 25 will be relocated approximately 50 feet from the existing pole location due to the removal of the overhead distribution transformers from Pole No. 26 and realignment of distribution Pole No. 25 with distribution Pole No. 25.1.

Pole No. 73.1 will be relocated approximately 140 feet from the existing pole location because Pole No. 74 is being removed due to soil erosion at the current location.

Poles will be installed to support an average conductor span length of approximately 400 feet. Three different pole installation methods (direct bury, pier foundation, and micro-pile foundation) will be used to install new poles, as discussed below. Galvanized steps will be installed on the new poles for maintenance access.

See **Appendix A**, Detailed Route Mapset, for proposed steel pole installation and wood pole removal locations. Work areas for each pole will be centered around the existing pole

location, where feasible, but may vary in shape and size to accommodate the type of pole foundation to be installed and to avoid and minimize impacts to sensitive resources.

Table 1. Proposed Pole Installation Approximations

Pole Installation Method	Approximate Pole Quantity	Approximate Maximum Pole Length (Feet)	Approximate Maximum Height Above Ground (Feet)	Average Base Diameter at Grade (Feet)
Direct Bury	89	100	84	2.5
Pier Foundation	21	83	85	7
Micro-pile Foundation	7	88	90	7
Total	**117**	—	—	—

Direct-Bury Steel Pole Installation

Direct-bury steel poles will extend no more than 84 feet above the ground surface and are proposed at approximately 89 locations. A truck-mounted auger, track-mounted drill rig, hand tools, or similar methods will be used to excavate approximately 4.5-foot-diameter holes to a depth of 6 to 16 feet below ground surface (bgs). New poles will be delivered to the site and placed using a line truck, crane, bucket truck, or helicopter. The hole will be backfilled with concrete, 1 foot of crushed rock will be placed below the bearing plate. Hole drilling will generate approximately 3.5 to 9.5 cubic yards (cy) of excess material, per pole, that will be reused on site, to the extent feasible, or disposed offsite. Each direct-bury steel pole replacement will have a temporary impact area of approximately 1,240 square feet and result in a permanent footprint of approximately 16 square feet. SDG&E has conservatively assumed approximately 1,240 square feet of temporary ground disturbance per pole as a result of pole replacement, removal activities, and minor modifications made in the field during construction.

Pier Foundation Steel Pole Installation

Pier foundation steel poles will extend no more than 85 feet above the ground surface and are proposed at approximately 21 locations. A truck-mounted auger, track-mounted drill rig, hand tools, or similar methods will be used to excavate approximately 7-foot-diameter holes to a depth of approximately 30 feet bgs. New poles will be delivered to the site and placed using a line truck, crane, bucket truck, or helicopter. The pole will be secured within a steel-reinforced concrete foundation, with the finished foundation extending approximately 2 feet above the ground surface. Hole drilling will generate approximately 42.8 cy of excess material, per pole, that will be reused on site, to the extent feasible, or disposed offsite. Each pier foundation steel pole replacement will have a temporary impact area of approximately 5,625 square feet and result in a permanent footprint of approximately 39 square feet.

Micro-Pile Foundation Steel Pole Installation

Micro-pile foundation steel poles will extend no more than 90 feet above the ground surface and are proposed at approximately seven locations. Four to sixteen holes, approximately 6 to 9 inches in diameter, will be excavated approximately 30 feet bgs in a circular pattern around each new pole location. Holes for micro-pile foundations will be drilled using a small drill rig or similar equipment operated from the top of an elevated platform. The platform will be approximately 8 feet by 8 feet, placed on 4 to 6 legs, and approximately six feet above grade. Steel rods will be inserted into the holes, centered, and backfilled with a mixture of water, Portland cement, and sand. Steel rods will protrude above grade and connect to a steel cap/transition plate supporting the structure above grade. New poles will be delivered to the location and placed on the steel cap/transition plate using a line truck, crane, bucket truck, or helicopter. Hole drilling will generate approximately 0.9 to 7.9 cy of excess material, per pole, which will be reused on site, to the extent feasible, or disposed offsite. Each micro-pile foundation steel pole replacement will have a temporary impact area of approximately 1,260 square feet and result in a permanent footprint of approximately 39 square feet.

Existing Wood Pole Removal

Following relocation of all conductors and telecommunication cables from wooden poles to steel poles, existing wood poles will be removed from the project area. The entire pole will be removed unless a sensitive resource would be impacted by the pole butt removal or site-specific ground conditions (e.g., nearness to cultural resources, nearness to hazardous materials sites, or instability of soils) suggest leaving the pole base will be less impactful. In these cases, the pole will be cut at the base or six to 12 inches bgs and covered with native material (otherwise referred to as the "flush-cut" method.) Similarly, anchors and stub poles will also be removed where feasible, or left in place if existing site-specific ground conditions (e.g., nearness to cultural resources, nearness to hazardous materials sites, or instability of soils) suggest removal would cause impacts to surrounding sensitive resources.

A typical removal operation using the flush-cut method consists of cutting the pole at the base level with the ground using a chainsaw, then removing the cut section of the pole for proper disposal. Pole topping may occur in the event that collocated telecommunication utilities and/or distribution electric cabling is not able to be transferred to the new poles immediately. In such a scenario, SDG&E crew and/or contractor will transfer or install conductor on the new poles and leave the telecommunication or distribution cabling in place on the old poles. The old pole will then be cut off at a predetermined height above the telecom or distribution cables in order to allow for sufficient clearances between the old pole and conductor on the new poles. Once the telecommunication and/or distribution cabling is moved to the new poles, the old poles will be completely removed or "flush cut," as described above. Cutting a pole with a chainsaw for either removal or topping takes approximately one minute per pole and the number of poles cut during a day varies depending on the contractor and crew construction methods and strategy.

Cross arms, distribution conductors, and poles will be removed with the use of boom and bucket trucks. Anchor rods will be unscrewed or cut off approximately 18 inches bgs. Holes remaining from the wood poles will be backfilled with native soils, excavated soil from the

new pole locations, or imported materials similar to the surrounding area. The project site will be restored to approximate pre-construction conditions. Existing poles, associated hardware, and any other debris generated from project activities will be recycled or disposed of at an approved facility. Existing poles range in height from approximately 24 to 70 feet tall. SDG&E has assumed approximately 1,256 square feet of temporary ground disturbance per pole for existing wood poles removal-only, or poles with overhead work only, accounting for minor modifications made in the field during construction.

Guys, Anchorage, and Grounding Rods

Anchors, approximately 4 inches in diameter (0.09 square foot), will be installed at select steel pole locations. Holes for anchors will be excavated with the use of a drilling rig, backhoe, and either an air compressor with a jack hammer or hand dug with shovels. Following placement of plate anchors at the bottom of each hole, holes will be backfilled with native soil. A bucket truck will be used for the installation of tensioned cable lines, known as guys, between poles, or between poles and anchors.

In addition, steel poles will require the installation of two 8-foot-long and 1-inch-wide grounding rods, approximately 6 feet apart and buried 8 to 18 inches bgs within the established work area of each pole. Grounding rods will be installed by driving the rods into the earth using a sledgehammer or jack hammer. Each grounding rod will have a permanent footprint area of less than 0.01 square foot.

1.1.2 Conductor Installation

Following installation of new steel poles, three existing 69 kV conductors will be transferred from the existing wood poles to one or both sides of the steel poles. Where existing distribution lines are collocated underneath the three 69 kV conductors, SDG&E will either transfer existing conductors or install three new 12 kV specular conductors to the new steel poles. Conductor installation and tensioning will require approximately 28 stringing sites, each approximately 30 feet wide by 150 feet long (4,500 square feet), located throughout the project alignment depending on site conditions and sensitive environmental areas present (see Appendix A, Detailed Route Mapset). Stringing sites will be spaced approximately 3,000 feet apart and will generally be located at the end of a straight power line segment where the line changes direction. Tractor-trailer pulling equipment will be staged at stringing sites to assist with tensioning the conductor to a pre-calculated level. Conductor may also be installed by helicopter Stringing sites will also be used for conductor installation and loading tractor-trailers with reels of conductor and trucks with tensioning equipment.

During the initial installation of replacement steel poles, insulators and stringing sheaves will be installed for distribution conductor. Stringing sheaves are rollers that are attached to the cross arm of a supporting structure. The sheaves allow the conductor to be pulled through each pole until it is ready to be pulled up to its final tension position. A rope will be pulled through the rollers from structure to structure using traditional tractor-trailer pulling equipment. Once the rope is in place, it will be attached to a steel or synthetic cable and pulled back through the sheaves. After the conductor is pulled into place, the sag between the structures will be adjusted to a pre-calculated level. Depending on electrical capacity of the conductors (i.e., 69 kV or 12 kV), installation will occur at a minimum of 25

to 30 feet above the ground. The conductor will then be attached to the end of each insulator, the sheaves will be removed, and the vibration dampers and other hardware accessories will be installed. At each pole replacement site, bucket trucks will be used to unclip the power line conductor from the existing wood pole, attach the conductor to an insulator on the new steel pole, and install vibration damper and other auxiliary equipment.

SDG&E will remove existing conductors in a method similar to the reverse of the conductor installation process. The old conductors will be recycled at an approved facility.

In some cases, sleeves or splices may be installed on the conductors. This might occur when stringing operations slightly damage the conductor or if the conductor is not long enough and needs to be joined to another segment. If the conductor is damaged, a section of the conductor may be replaced or a repair sleeve may be wrapped around the outside of the conductor and pressed into place to protect the conductor.

Distribution Line Removal

An underbuilt distribution line on TL 649 connects to an existing distribution line at Pole No. 19. The project will require the relocation of the existing overhead distribution line connection to Pole 18, resulting in the removal of an approximately 400-foot-long section of overhead between Pole Nos 18.3 and 19 and the removal of Pole Nos 19 and 19.1.

Guard Structures

Prior to transferring power line conductors and stringing the new distribution conductors, one to two temporary guard structures (which typically consist of vertical wood poles with cross arms) or bucket trucks may be set up near the alignment crossing at Heritage Road. Guard structures are intended to prevent conductors from sagging onto adjacent roadways while being transferred from the existing poles to the new poles. Guard structure installation will require a temporary work area of approximately 72 to 144 square feet. Alternatively, SDG&E may use flaggers to halt traffic for brief periods while overhead conductors are installed at the Heritage Road crossing.

See Appendix A, Detailed Route Mapset, for locations of distribution line removal and guard structures.

1.1.3 Underground Distribution Line Intercepts

The project will require rerouting existing underground distribution lines from existing poles to the new, replacement poles at two locations (refer to Appendix A, Detailed Route Mapset). The first pole location (Pole No. 18.5) will extend the existing underground distribution line via three 1-inch-diameter (1,000 circular mil) copper wires to the new pole 18.5 location. The three copper wires will travel through conduit placed in a 2-foot-wide by 20-foot-long by 5-foot-deep trench (linking the existing underground distribution line to the new pole location.) A 4-foot-wide by 4-foot-long by 5-foot-deep access hole will be excavated for workers to tie into the existing underground distribution line.

The second underground distribution line intercept will occur at Pole 25. A conduit housing three cables will be placed in a 1-foot-wide by 80- to 100-foot-long by 3-foot-deep trench linking the existing underground distribution line to the new pole location. A 3-foot-wide by

3-foot-long by 3-foot-deep access hole will be excavated for workers to tie into the existing underground distribution line.

Trenching activities will require an approximately 10-foot-wide work area parallel to the two trench areas. Trenches and access holes will be excavated using a backhoe and other trenching equipment as warranted by site conditions. Polyvinyl chloride cable conduits will be installed, and concrete will be poured around the conduits to form the duct banks. The trenches and access holes will be backfilled with excavated native materials, and cables will be installed in the duct banks upon completion. Each cable segment will be pulled into the duct bank and terminated at the cable pole where the line converts to an overhead configuration. A cable reel will be placed at one end of the section and a pulling rig will be placed at the other end to pull the cable through the ducts. By using a fish line, a larger rope will then be pulled into the duct and attached to the cable puller, which pulls the cable through the duct. To decrease friction during pulling, lubricant will be applied to the cable as it enters the duct.

See Appendix A, Detailed Route Mapset, for pole locations of underground distribution line intercepts.

1.1.4 Conversion of Underground Lines to Overhead

TL 649 currently crosses beneath State Route (SR)-125 in an underground configuration. The project will convert the existing underground power lines to an overhead configuration, located beneath the SR 125 elevated structure. New steel poles (Poles 50 and 51) will be installed on either side of SR-125 (refer to Figure 1, Project Overview). Following installation of the new poles, new conductors will connect to the existing power line conductors using sleeves or splices. The existing cables will be recycled at an approved facility, and the existing underground duct bank abandoned in place. Construction methods for the conversion of underground power lines to an overhead configuration will be similar to those described for steel pole and conductor installation. Conversion from an underground to overhead configuration may require a temporary work area and pulling site approximately 25 feet by 75 feet (1,875 square feet); location identified in Appendix A, Detailed Route Mapset.

1.1.5 Transfer of Telecommunication Lines

AT&T currently has telecommunication lines co-located on a portion of TL 649 (Poles 108 through 117). After SDG&E power lines have been transferred to the new poles, AT&T will relocate their existing telecommunication lines below the power lines. Upon completion of AT&T line relocation, SDG&E will return to remove the existing wood poles. For these specific poles, AT&T is obligated to relocate their lines but not within a specified timeframe. However, SDG&E will request that it be completed within 30 to 60 days from completion of the new steel pole installation (or sooner if feasible), barring any unforeseen complications.

1.1.6 Access Road Modifications and Improvements

Site access for the project will use a network of existing dirt and gravel access roads, as identified in Appendix A, Detailed Route Mapset. Most existing access roads are a minimum of 12 feet wide with an additional 2 feet of windrows on each side (approximate). Use of

additional existing roads beyond those that have been identified may be required during construction. Other improvements to access roads may be necessary, such as minor grading, importing and compacting more stable materials (e.g., 0.75-inch to 1-inch gravel or Class II base rock) in unstable areas, or applying additional surface materials to improve access conditions. Where existing access roads need repair, a grader will be used to blade and smooth the road. The extent and location of road repairs will be evaluated prior to and throughout construction and will be contingent upon site-specific road conditions. Should additional materials and/or fill be required for road improvements, these materials may be imported at the start of construction and at the end of construction.

SDG&E vehicles may use overland travel routes, which are depicted in Appendix A, Detailed Route Mapset, to access pole locations and traverse around stringing sites that block use of existing access roads. No improvements will be required for overland travel routes; however, vegetation management, such as vegetation removal and tree trimming, may be required to reduce the risk of fire. The overland travel routes are approximate locations and may be shifted based on site conditions, sensitive environmental resources, and access requirements at the time of construction. Additional overland travel routes to work areas may be required during construction.

In addition, SDG&E has identified approximately 10 locations where turnarounds will be required (see Appendix A, Detailed Route Mapset). The number of turnarounds and locations are estimates and subject to change based on site conditions and access requirements at the time of construction. Turnaround areas may also be used for staging and parking during construction.

Table 2 provides a general estimation of necessary access road modifications and turnarounds.

Table 2. Approximate Areas of Impact Required for Access Road Improvements and Turnarounds

Impact Type	Approximate Pole Location	Length (Feet)	Width (Feet)	Total Area (Square Feet)
Access Road Improvement	34	50	5	250
Access Road Improvement	35	50	5	250
Access Road Improvement	36	50	5	250
Access Road Improvement	75	50	5	250
Turnaround	3	53	31	1,118
Turnaround	4	40	28	1,101
Turnaround	17	50	41	2,064
Turnaround	26	80	50	3,132
Turnaround	51	128	73	4,312
Turnaround	35	82	46	3,686
Turnaround	58	77	48	1,759
Turnaround	77	40	28	833
Turnaround	78	66	40	2,185

Impact Type	Approximate Pole Location	Length (Feet)	Width (Feet)	Total Area (Square Feet)
Turnaround	79	42	28	862
Total		**858**	**—**	**22,052**

1.2 Right-of-Way Requirements

SDG&E currently has an approximately 20-foot-wide right of way (ROW) on City of Chula Vista, City of San Diego, San Diego County, state, and private property along the entire length of the power line between Pole Nos. 1 through 117. SDG&E also has a 12-foot-wide (approximate) ROW on private property along the entire length of the distribution line between Pole Nos. 18.1 through 18.5. An encroachment permit is anticipated to be required from the City of Chula Vista for the proposed activities at Heritage Road, described in Section 1.2.2, Conductor Installation. An encroachment permit is anticipated to be required from the California Department of Transportation for activities at SR-125, described in Section 1.2.4, Conversion of Underground Lines to Overhead. An encroachment permit from the City of San Diego is anticipated to be required for the use of a portion of Sea Lavender Way as a stringing site. In addition, SDG&E will need to obtain landowner approval for use of the Main Street Staging Yard and Otay Staging Yard located outside of SDG&E's existing ROWs.

1.3 Construction Elements

1.3.1 Site Preparation and Earthwork

Site preparation will include limited clearing and grubbing, grading, import and placement of fill, and compaction along access routes and at pole installation and removal sites. Grading and earthwork activities at temporary construction work areas will occur on slopes up to 46 percent. Clearing and grubbing will be conducted using handheld gas-powered equipment and other hand tools. All demolished material and debris from the site preparation or trenching phases will be reused on site to the extent feasible or disposed offsite at an appropriate location selected by the construction contractor.

Tree removal is anticipated to be minimal with a single non-native Peruvian pepper tree (*Schinus molle*) identified for removal near Pole 26. This tree will be removed with the use of a bucket truck and chainsaw. Limbs will be chipped up and hauled away to a green recycling center. Logs will be left on site for the landowner or hauled away to a green recycling center.

To the extent feasible, excavated soil will be reused on site. Excavated soil will be temporarily stockpiled adjacent to an excavated hole or trench and later used for backfill (e.g., holes resulting from pole installation/removal, underground trenching excavations). Soil stock piles sitting for 14 days or more will be managed with erosion and sediment controls, such as straw wattles, visqueen covering, or silt fencing.

Imported fill, required for pole replacements, site restoration, and/or road repair, will be delivered to construction sites by conventional haul trucks (approximately 10 cy per load). Fill material will be placed with an excavator and compacted with a compactor or roller. It is

anticipated that approximately one to two equipment delivery trips will occur for each project site.

1.3.2 Rock-Splitting

In areas where rock is encountered during excavation activities, a hydraulic rock drilling and splitting procedure (known as rock-splitting) may be used, depending on site-specific conditions. The procedure involves drilling a hole in the rock and inserting a non-blasting cartridge of propellant. The cartridge is mechanically initiated by an impact generation device and results in controlled tensile crack propagation in the rock. In excavation locations where rock-splitting proves ineffective, alternative methods, as discussed in Section 1.4.3, Alternative Methods, may be used.

1.3.3 Alternative Methods

In locations where rock is encountered during excavation activities, but where rock-splitting proves ineffective, alternative methods may be used. Alternative methods include installation of additional micro-pile foundation steel poles, jackhammering, and/or use of different sized drill rigs, as described below. Due to the proximity of sensitive resources, including cultural structures and biological receptors, to the project, as well as noise limitations, blasting will not occur during construction.

Additional Micro-Pile Foundation Steel Poles

SDG&E contractors may install additional micro-pile foundation poles as an alternative to pier foundations or direct-bury poles, previously proposed. Micro-pile foundations require drilling of numerous small holes for the foundation, which typically negates the need for rock-splitting or blasting. Micro-pile foundation steel pole installation methods are described in Section 1.2.1, Pole Installation and Removal.

Jackhammering

Jackhammering requires the use of jack hammers, drill rigs, rock drills, and air compressors. Jackhammers will be powered by an air compressor that has a large bit on the end to break up rock. Rock will then be removed from the pole hole using an auger or scooped into a bucket and pulled out of the hole.

Drill Rigs

Different-sized drill rigs may be used, depending on the amount of torque and/or weight deemed necessary and the amount of room available for larger-sized drill rigs at any given work location. A down-the-hole hammer rock drill will sometimes be used, drilling several 2- to 3-inch-diameter sized holes to various depths throughout the entire drilled shaft (also known as the Swiss cheese method). Once this has been accomplished, the contractor will then proceed to drill and extract the rock using various types of tooling, such as rock augers and core barrels. The equipment required for this alternative includes drilling rigs, rock augers, and rock drills.

1.3.4 Staging Areas

Staging areas will be needed to assemble and store replacement poles; store conductors, construction equipment, other construction-related materials; and park vehicles. Two staging areas will be utilized for the project: the 6-acre Main Street Staging Yard, located northwest of the project at 750 Main Street; and a 1-acre portion of the Otay Staging Yard, located southeast of the project at 7144 Otay Mesa Road. A total of three temporary mobile trailers will be placed at either one of the staging areas and used for construction management activities throughout the duration of construction. Temporary electrical service will be provided through the installation of a temporary tap from an existing distribution line or a gasoline or diesel 25-kilowatt generator, supplying power for approximately 10 hours per day. The temporary power will be used for the operation of the construction trailers, construction lighting, and small hand tools. A temporary 6- to 8-foot-tall chain-link fence with locked gate may be necessary around the perimeter of the Main Street Staging Yard.

In addition to the Main Street Staging Yard and Otay Staging Yard, access road turnarounds, as depicted in Table 2, may also be used for temporary staging and parking during construction. SDG&E has identified approximately 10 turnaround locations; however, the number of turnarounds and locations are estimates and subject to change based on site conditions and access requirements at the time of construction.

Staging areas will be accessed using public roadways and existing access roads.

1.3.5 Dewatering

No dewatering of surface waters is anticipated for construction of the project. However, groundwater may be present during excavation activities for pole installation or during trenching for underground distribution lines. If groundwater is encountered, the following general construction procedures will be implemented:

- A submersible pump will be installed.
- If the groundwater is to be discharged to an upland area, it will be pumped to a desiltation tank (i.e., baker tank) for sediment filtering. If the groundwater is pumped to a baker tank, baffles will be installed in the tank to increase sedimentation, and the water in the tank will be tested in accordance with any applicable permit or other requirement.
- If the groundwater is pumped to a baker tank for discharge to surface waters, the water will be tested to ensure compliance with the applicable Regional Water Quality Control Board or State Water Resource Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) permit requirements. If the water quality does not meet permit requirements, additional baker tanks will be used and/or additional treatment or filtering will be performed until the applicable requirements are met.

- If the groundwater is not discharged to an upland area or surface waters in the area, or if the water quality does not meet permit requirements, the water will be disposed of at an approved disposal site that is licensed to handle wastewater.

1.3.6 Construction in Vernal Pool Areas

Although vernal pools and other water features (e.g., road ruts, basins) have been identified within and adjacent-to the project area, the project has been designed to avoid vernal pools and other water features, including those containing listed fairy shrimp. Pole installation, anchorage, guard structure installation and removal, excavation, grading, grubbing or filling, will not occur within vernal pools. Additionally, no staging or laydown areas are located within vernal pools or water features.

Existing access roads will be used to the greatest extent feasible. Vehicular travel on existing dirt access roads with road ruts/vernal basins/pools and/or watersheds, will not occur when ponded water is present or soil is wet. Vehicular travel on existing access roads that will be utilized by the project occurs year-round from non-SDG&E uses. Existing dirt access roads are heavily utilized and maintained by different agencies, including the County of San Diego, United States Department of Homeland Security, sewer and water line maintenance and access, and Donovan State Prison Vehicles. Construction activities in vernal pool areas will occur only under dry conditions. A qualified biologist will determine dry conditions and monitor construction activities within the vicinity of vernal pools.

Vernal pools adjacent to the approved project area will be fenced for avoidance and storm water BMPs (such as silt fencing and gravel bags) will be installed around areas of ground disturbance to prevent sedimentation. No construction equipment will be fueled or maintained within 100 feet of vernal pools. Therefore, proposed construction activities are not expected to impact vernal pools.

1.3.7 Site Restoration

Site restoration will generally involve removal of all construction materials and debris, regrading disturbed areas to their pre-construction contours, installing erosion controls, and reseeding disturbed areas, as necessary. Temporarily impacted project areas will be reseeded with native plants, with the exception of pole locations that require mandated fire break safety clearances or in locations where property owners have requested otherwise. Any excess excavation material will be reused on site, spread onto access roads, or properly disposed of at an appropriate offsite facility.

1.3.8 Typical Equipment

The main pieces of construction equipment that may be used are as follows:

- grader
- loader
- water truck
- mower
- dump truck
- tractor trailer unit
- drilling rig
- forklift
- chainsaw
- rock auger
- crew truck
- bucket truck
- backhoe
- boom truck
- concrete truck
- wire truck
- pulling rig
- spray truck
- hydraulic pole puller
- submersible pump
- rock drill
- crane
- compactor/roller
- pickup truck
- generator
- air compressor
- gas-powered weed abatement tools
- hand tools
- skid steer
- Jackhammer

Helicopters are not anticipated to be used for project construction (refer to Section 1.4.13, Aerial Access, for discussion of helicopter usage for operation and maintenance purposes).

1.3.9 Water Utilities

Approximately 4.5 million gallons of water will be required for dust control, compaction, and fire protection. This water will be obtained from a local water purveyor. The Otay Water District provided a Will-Serve Letter on April 4, 2016 (see **Appendix B**), stating that they have adequate capacity to provide water required for construction of the project. Recycled water will be used to the extent feasible and where applicable regulations permit its use.

1.3.10 Personnel

Up to 36 construction personnel will be used during the various construction phases. Typically, four or five crews of five workers will work concurrently along the alignment. In addition, approximately five crews of two workers will work concurrently along the alignment where hand digging of pole holes is needed. In addition, one general foreman will work on site during the duration of project construction.

1.3.11 Schedule

Construction of the project will commence after securing all required approvals and permits. Construction of the project is anticipated to last for approximately 9 to 10 months, beginning in July 2019 and ending in April 2020. Construction activities will generally occur up to 6 days per week, Monday through Saturday, and be limited to 12 hours per day or less. **Table 3**, Proposed Construction Schedule, provides SDG&E's proposed schedule for construction of the project.

Table 3. Proposed Construction Schedule

Activity	Approximate Duration (Days)	Approximate Start Date
Staging Yard Set-up/Road Refreshing/Vegetation Trimming	6	July 2019
Micro-pile Foundation Construction	40	September 2019
Pier Foundation Construction	63	September 2019

Activity	Approximate Duration (Days)	Approximate Start Date
Direct Buried Construction and Pole Installation	90	September 2019
Trenching for Installation of Underground Cables	3	January 2020
Stringing Activities/Transfer Conductor/Staging Activities/Pole Removal	60	January 2020
Demobilization/Clean-up/Road Refreshing	26	April 2020

Notes: Some construction activities will occur concurrently. The actual construction schedule may vary based upon many factors, including the timeline for additional municipal or agency approvals, environmental conditions, and any necessary changes to the project design due to unexpected physical conditions.

Nighttime Work

On occasion, construction activities may be required at night to minimize impacts to schedules, facilitate cutover work, and as required by other property owners or agencies, such as the California Independent Service Operator, which may require outages of certain portions of the electric system. If nighttime lighting is required, it could extend up to 12 hours within a 24-hour work day, for up to five pole locations at any given time. Each pole location will require one portable generated light tower.

1.3.12 Operation and Maintenance

Operation and maintenance of the project will primarily involve the inspection and maintenance of facilities and will be consistent with existing SDG&E operational protocols and procedures, including SDG&E's Subregional Natural Community Conservation Plan. Maintenance activities will include routine inspections, maintenance, and repair to TL 649 pole structures, and associated equipment. Routine maintenance activities involve both preventative maintenance and emergency repairs to provide service continuity. SDG&E may be required to add, repair, or replace equipment or an existing structure with a larger and/or stronger structure at the same or nearby location due to damage or changes in conductor size in order to maintain uniform, adequate, safe, and reliable service. SDG&E will continue to perform annual aerial and/or ground inspections of project facilities, consistent with the existing operations and maintenance of TL 649. Aerial inspections require the use of an existing helicopter landing zone (approximately 100 feet by 100 feet) and take approximately one day (between the hours of 7:00 am and 4:00 p.m.). Typical operations and maintenance will require four to ten operations/maintenance personnel, two helicopter staff, and a water truck.

Inspection for corrosion, equipment misalignment, loose fittings, and other common mechanical problems will be performed at least every 3 years (per California Public Utility Commission [CPUC] General Order [GO] 165) for power lines. Additional operations and maintenance activities will include herbicide application, vegetation clearing, pole brushing, insulator washing, tree trimming, and ROW access and repairs, which will be performed on an as-needed basis. No change in SDG&E's operation and maintenance protocols and procedures is anticipated or included as part of the project.

1.3.13 Aerial Access

Additional use of helicopters for construction work (e.g., replacement of facility components) is not anticipated; however, in the event aerial access is required, usage will be in accordance with SDG&E's general operation and maintenance guidelines, or as allowed according to biological resource or noise constraints. Typical usage will be to deliver materials (including poles) and/or personnel to a job site. In some instances, SDG&E may need to fly helicopters from their respective home airfields to the project staging areas or landing zones prior to 7:00 a.m. to pick up workers or construction materials in order to meet a 7:00 a.m. start time at the site. Where appropriate, SDG&E will coordinate with San Diego County and the City of Chula Vista regarding helicopter flights to avoid any conflicts with the noise ordinances. Flight paths will follow the right-of-way to the extent practicable and will be coordinated with the Federal Aviation Administration (FAA), where required.

1.3.14 Road Maintenance

Road maintenance includes grading of existing access roads, installation of best management practices (BMPs), spot-repair of erosion sites, and vegetation trimming, as needed. SDG&E performs road maintenance as necessary. Road maintenance may require the use of a motor grader, bulldozer, mini-excavator, skid steer, water truck, and pickup trucks.

1.3.15 Pole Brushing and Vegetation Maintenance

In accordance with fire break clearance requirements in Public Resources Code (PRC) 4292 and Title 14, Section 1254 of the California Code of Regulations (CCR), SDG&E removes flammable vegetation in the area surrounding power line poles to reduce potential fire and other safety hazards. One-person crews typically conduct this work using mechanical equipment consisting of chain saws, weed trimmers, rakes, shovels, and leaf blowers. SDG&E typically inspects poles on an annual basis to determine if brush removal (brushing) is required. Application of SDG&E-approved herbicides may follow the mechanical trimming of vegetation to prevent vegetation from recurring. This activity generally requires one person in a pickup truck and takes only minutes to spray around the base of the pole within a radius of approximately 10 feet. The employee either walks from the nearest access road to apply the herbicide or drives a pickup truck directly to each pole location as access permits.

In accordance with tree and power line clearance requirements in PRC 4293, Title 14, Section 1256 of the CCR and CPUC GO 95, SDG&E trims trees and vegetation to manage fire, electrical reliability, and safety hazards. Regular inspection, regardless of habitat type, is necessary to maintain proper line clearances. SDG&E conducts tree-trimming activities with a two-person crew in an aerial lift truck and a chipper trailer. SDG&E typically inspects trees in its service area for trimming needs on an annual basis.