

ATTACHMENT A: SUPPLEMENTAL INFORMATION

BOX 2B: PROJECT DESCRIPTION, PURPOSE/GOAL

The Mesa 500 kilovolt (kV) Substation Project (Project) will address reliability concerns resulting from the pending shutdown of certain generation facilities that rely on Once Through Cooling (OTC) technology, as well as the recent retirement of the San Onofre Nuclear Generating Station (SONGS). The Project will address these concerns by providing additional transmission import capability, allowing greater flexibility in the siting of new generation facilities, and reducing the total amount of new generation required to meet local reliability needs in the Western Los Angeles Basin area. The Project is being proposed to meet the following fundamental objectives:

- Provide safe and reliable electrical service
- Address reliability concerns resulting from the recent retirement of SONGS and from OTC shutdowns expected by December 31, 2020
- Allow greater flexibility in the siting of future generation projects to meet local reliability needs in the Western Los Angeles Basin while reducing the total amount of new generation required by providing additional transmission import capability
- Maintain or improve system reliability within the Electrical Needs Area
- Comply with all applicable reliability planning criteria required by the North American Electric Reliability Corporation, the Western Electricity Coordinating Council, and the California Independent System Operator
- Meet Project needs while minimizing environmental impacts
- Design and construct the Project in conformance with Southern California Edison Company's (SCE's) approved engineering, design, and construction standards for substation, transmission, subtransmission, distribution, and telecommunications system projects

BOX 2C: PROJECT DESCRIPTION, PROJECT ACTIVITIES

The main activity associated with the Project involves the construction of an approximately 69.4-acre, 500/220/66/16 kV substation (i.e., Mesa Substation) in place of the existing, approximately 21.6-acre, 220/66/16 kV Mesa Substation. The Project is located primarily on approximately 86.2 acres of SCE fee-owned property. Construction of the proposed Mesa Substation will be conducted in phases, and the power lines from the existing Mesa Substation will be relocated to the new switchracks as they are constructed. All of the existing Mesa Substation structures and equipment will be removed.

SCE currently operates various 220 kV transmission lines, 66 kV subtransmission lines, 16 kV distribution lines, and telecommunications lines that connect to the existing Mesa Substation. As part of the Project, SCE will replace existing structures and lines, as necessary, to allow these

existing circuits to connect to the proposed Mesa Substation configuration. In addition, the Project involves the loop-in of one existing 500 kV circuit and two existing 220 kV circuits that currently pass through the existing Mesa Substation property. The Project includes the following elements:

- Construct the 500/220/66/16 kV Mesa Substation. This substation will be constructed on the existing 220/66/16 kV Mesa Substation site. Mesa Substation will be a staffed, automated substation operation at 3,360 megavolt-ampere (MVA) at 500/220 kV, 840 MVA at 220/66 kV, and 56 MVA at 66/16 kV, with a potential capacity of 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV at ultimate build-out
- Remove, relocate, and construct new transmission, subtransmission, and distribution structures within existing SCE transmission and substation fee-owned properties, rights-of-way (ROWs), and franchise areas to accommodate the new Mesa Substation configuration
- Install new telecommunications lines and remove old telecommunications lines on existing subtransmission and distribution structures
- Install temporary steel pole structures and conductor to temporarily connect the Eagle Rock-Mesa 220 kV Transmission Line to Goodrich Substation and provide a second line of service to the City of Pasadena during the line outage required to loop-in the existing Goodrich-Laguna Bell 220 kV Transmission Line to Mesa Substation
- Perform minor internal modifications within the existing fenced perimeter of multiple existing substations
- Convert three spans of existing streetlight source lines from overhead to underground below one span of the Lighthipe-Mesa 220 kV Transmission Line

The Project components are described in more detail in the following subsections, and are shown in Figure 1: Project Components Overview Map in Attachment B: Figures.

The proposed Mesa Substation will be constructed on approximately 69.4 acres within 86.2 acres of SCE fee-owned property located in the City of Monterey Park, in Los Angeles County. The existing Mesa Substation occupies approximately 21.6 acres within the same approximately 69.4-acre area that the proposed Mesa Substation will be constructed. Figure 2: Proposed Substation Layout in Attachment B: Figures shows the dimensions of the substation parcel and the placement and orientation of the major components that will be included in the construction of Mesa Substation. Construction of Mesa Substation includes the following main components:

- Construct a new 500 kV switchrack with three 500/220 kV transformer banks
- Loop-in the existing Mira Loma-Vincent 500 kV Transmission Line (which currently passes through the substation without landing on a rack position) to the new 500 kV switchrack with new overhead getaways

- Replace existing 220/66/16 kV switchracks, three 220/66 kV transformer banks, and two 66/16 kV transformer banks
- Relocate eight existing 220 kV transmission lines to the new 220 kV switchrack with new overhead getaways
- Loop-in the existing Goodrich-Laguna Bell 220 kV and Laguna Bell-Rio Hondo 220 kV transmission lines (which both currently pass through the existing substation without landing on a rack position) to the new 220 kV switchrack with new overhead getaways
- Relocate 16 existing 66 kV subtransmission lines to the new 66 kV switchrack with new underground getaways
- Relocate five existing 16 kV distribution lines to the new 16 kV switchrack with new underground getaways
- Construct two new Mechanical Electrical Equipment Rooms (MEERs), a Test and Maintenance Building, and an Operations Building
- Relocate various telecommunications cables
- Remove a Metropolitan Water District of Southern California 72-inch-diameter waterline that currently runs through the middle of the proposed Mesa Substation property and replace it with an 84-inch-diameter waterline to a westerly location on the substation site
- Relocate two sets of third-party cellular telephone buildings, towers, and antennas to the northeast corner of the property
- Install new 16 kV distribution Station Light and Power supplies from the existing franchise areas adjacent to Mesa Substation to replace the existing supplies

Development of the substation site includes a storm water system. A detention pond will be developed in the southwest corner of the substation site, as depicted in Figure 2: Proposed Substation Layout in Attachment B: Figures. The detention pond will be approximately 1 acre with a capacity of approximately 455,000 gallons, and will be constructed from mulch, gravel, soil, and geotextile membrane layers. Water runoff around the transformer banks will flow into a catch basin system installed around each transformer, which connects to a drainage pipe that flows into a concrete-lined detention basin that measures approximately 100 feet long, 50 feet wide, and 20 feet deep. Drainage systems will be constructed along the perimeter of the substation to direct interior surface runoff to the detention pond.

Primary access to the proposed Mesa Substation will be provided from Potrero Grande Drive via a new asphalt and/or concrete access driveway. Secondary access will be provided via a new access driveway off of East Markland Drive. The entrance at Potrero Grande Drive will be approximately 150 feet wide, and the entrance at East Markland Drive will be approximately 25 feet wide. Gates will be installed at both driveway entrances. SCE will construct a sidewalk

along Potrero Grande Drive outside of the substation and will provide landscaping around the entire perimeter.

The proposed substation will be enclosed on all sides by a perimeter wall measuring at least 10 feet high, which will satisfy the City of Monterey Park's requirements for materials and aesthetics. Barbed wire and/or razor wire will be affixed near the top of the perimeter enclosure inside of the substation and will not be visible from the outside.

Construction

Staging Areas

Construction of the Project will require the establishment of temporary staging yards. Two types of staging yards will be used during construction—substation construction staging yards and transmission, subtransmission, distribution, and/or telecommunications construction staging yards. Staging yards will be used as a reporting location for workers, vehicle and equipment parking, and material storage. The yards may have construction trailers for supervisory and clerical personnel to serve as office and meeting locations. Staging yards may be lit for security purposes. Normal maintenance and refueling of construction equipment will also be conducted at these yards. All refueling and storage of fuels will be in accordance with the Project's Storm Water Pollution Prevention Plan (SWPPP).

All proposed staging yards will be located within SCE fee-owned property. The preferred acreage for each yard will be 5 to 25 acres in size, depending on land availability and the intended use. Preparation of the staging yards will include temporary perimeter fencing and—depending on existing ground conditions at the site—clearing, grubbing, and/or grading may be required to provide a plane and dense surface for the application of gravel or crushed rock in some locations. Land disturbed at the staging yards will either be returned to pre-construction conditions or left in its modified condition.

Work Areas

Transmission and subtransmission construction work areas serve as working areas for crews and where Project-related equipment and/or materials are placed at or near each structure location, within SCE property, existing public ROWs, or franchise areas.

The new structure pad locations and laydown/work areas will first be cleared of vegetation and/or graded as required to provide a reasonably vegetation-free and level surface for structure installation. Sites requiring grading will be graded such that water will run toward the direction of the natural drainage. In addition, the drainage will be designed to prevent ponding and erosive water flows that could cause damage to the structure footings. The graded area will be compacted to at least 90-percent relative density, and will be capable of supporting heavy vehicular traffic.

Erection of the structures may also require the establishment of temporary crane pads. Crane pads will occupy an area of approximately 50 feet by 50 feet and will be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pads may be cleared of vegetation and/or graded as necessary to provide a level surface for crane operation. The decision to use a separate crane pad will be determined during final engineering for the

Project and the selection of the appropriate construction methods to be used by SCE or its Contractor.

Access Roads and/or Spur Roads

Where required, a network of existing access roads could be improved and new roads will be constructed to current SCE road specifications to support the construction and Operation and Maintenance (O&M) of the Project.

Typical transmission access consists of a network of unpaved and paved roads accessed from public and private roads. These access roads include a network of through roads and spur roads that are used to access transmission facilities. This network of access roads will provide access to the transmission line ROW for construction activities and future O&M activities associated with the Project.

During construction of the Project, crews will utilize existing public roads and existing transmission access roads to the maximum extent feasible. New access roads will be constructed in accordance with current SCE practices for safety during construction and O&M.

Rehabilitation, road widening, and/or upgrades to existing access roads may also be required to facilitate construction access and to support O&M activities. Typical construction activities associated with the rehabilitation of existing unpaved access roads include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting to remove potholes, ruts, and other surface irregularities in order to provide a surface that is capable of supporting heavy construction and maintenance equipment. Existing unpaved roads may also require additional upgrades, such as protection (e.g., soil cover and steel plates) for existing underground utilities.

Typical construction activities associated with new roads generally include similar activities as those described for the rehabilitation of existing unpaved roads, but may also include the following additional construction requirements that depend upon the existing land terrain:

- **Existing relatively flat terrain with grades up to 4 percent:** Construction activities are generally similar to rehabilitation activities on existing unpaved roads and may also require activities such as clearing and grubbing, as well as constructing drainage improvements (e.g., wet crossings, water bars, and culverts). Detailed information on locations requiring drainage improvements will be provided during final engineering.
- **Existing rolling terrain with grades of 5 to 12 percent:** Construction activities generally include typical to flat terrain activities and may also require cut and fill in excess of 2 feet in depth, benched grading, drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters), retaining walls, and slope stability improvements (e.g., geogrid reinforcement). The extent of retaining walls and slope stability improvements will be determined during final engineering, as will detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements.
- **Existing mountainous terrain with grades over 12 percent:** Construction activities will include rolling terrain construction activities and will also likely require significant cut and fill depths, benched grading, drainage improvements, and slope stability

improvements. Detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements will be provided during final engineering.

Typical construction activities associated with temporary access could include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting.

In addition, other slope stability systems considered include mechanically stabilized systems, along with drainage improvements (i.e., v-ditches, downdrains, and energy dissipaters). The extent of slope stability improvements and earth-retaining structures will be determined during final engineering.

Generally, access roads will have a minimum drivable width of 14 feet with 2 feet of shoulder on each side, as determined by the existing land terrain to accommodate required drainage features. Typically, the drivable road width will be widened up to an additional 8 feet along curved sections of the access road, creating up to 22 feet of drivable surface for the access road. Access road gradients will be leveled so that sustained grades generally do not exceed 14 percent. Curves will typically have a minimum radius of curvature of 50 feet measured from the center line of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where a minimum radius of 50 feet cannot be achieved.

Access roads will typically have turnaround areas around the structure location. In some cases where a turnaround is not practical, an alternative configuration will be constructed to provide safe ingress/egress of vehicles to access the structure location. It is common to use access road turnaround areas for the dual purpose of structure access and as a construction pad for construction activities. If a construction pad is built, it will remain a permanent feature for O&M.

The Project access roads generally follow the proposed transmission line route. Transmission line roads are classified into two groups—access roads and spur roads. Access roads are through roads that run between tower sites along a ROW and serve as the main transportation route along line ROWs. Spur roads are roads that lead from access roads and terminate at one or more structure sites due to terrain considerations and topographic constraints.

Approximately 5.6 miles of existing dirt access roads on SCE property and existing ROWs will be used to access the Project work areas. If improvements are required, they will be conducted in accordance with existing O&M practices.

Transmission Line Construction

Trenching

Construction activities will begin with the survey of existing underground utilities along the proposed underground subtransmission source line route.

The Project includes a total of approximately 5.5 miles of new underground 66 kV subtransmission lines and associated transition and support structures. A trench measuring approximately 2 feet wide and 2.5 feet deep will be required to place the 66 kV subtransmission line underground. Trenching may be performed by using the following general steps, including but not limited to:

- mark the location and applicable underground utilities,
- lay out trench line,
- saw cut asphalt or concrete pavement as necessary,
- dig to appropriate depth with a backhoe or similar equipment, and
- install the new duct bank.

Once the duct bank has been installed, the trench will typically be backfilled with a sand slurry mix. Excavated materials will be reused as fill for the Project and/or will be disposed of at an off-site disposal facility in accordance with applicable laws if necessary. Should groundwater be encountered, it will be pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

The trench for underground construction will be widened and/or shored where appropriate to meet California's Division of Occupational Safety and Health requirements. Trenching will be staged so that open trench lengths will not exceed that which is required to install the duct banks. Where needed, open trench sections will have steel plates placed over them to maintain vehicular and pedestrian traffic. Provisions for emergency vehicle access will be arranged with local agencies in advance of construction activities.

Subtransmission Vault Installation

Installation of each vault will typically take place over a one-week period, depending on soil conditions. First, the vault pit will be excavated and shored; a minimum of 6 inches of mechanically compacted aggregate base will be placed to cover the entire bottom of the pit, followed by delivery and installation of the vault. Once the vault is set, grade rings and the vault casting will be added and set to match the existing grade. The excavated area will be backfilled with a sand slurry mix to a point just below the top of the vault roof. Excavated materials, if suitable, will be used to backfill the remainder of the excavation, and any excess spoils will be disposed of at an off-site disposal facility in accordance with all applicable laws. Finally, the excavated area will be restored as required.

Fiber Optic Installation

New underground conduit and structures will typically be installed with a backhoe. The trench will be excavated to approximately 24 inches wide and a minimum of 36 inches deep. Polyvinyl chloride conduit will be placed in the trench and covered with approximately 30 inches of concrete slurry, then it will be backfilled and compacted. For manholes and pull boxes, a hole will be excavated between 6 and 9 feet deep, 7 and 8 feet long, and 6 and 7 feet wide. The manhole or pull box will be lowered into place and connected to the conduits, and the hole will be backfilled with concrete slurry.

Metropolitan Water District Water line Relocation

Initial construction activities associated with the Project include the relocation of an approximately 2,700 foot portion of the existing 72-inch Metropolitan Water District (MWD) water line. The MWD water line traverses the Mesa Substation site in a north-south direction and crosses Potrero Grande Drive. The line will be replaced with an approximately 3,800 foot long 84-inch waterline and relocated to the west of its existing configuration. The existing water line

must be relocated to accommodate construction of the proposed Mesa Substation. Both the existing and proposed water lines have, and will continue to have, approximately 10 feet of cover.

Standard trenching methods will be used to install the proposed water line pipe on the north side of Potrero Grande Drive from the interception with the existing water line to the edge of the paved road, approximately 1,400 feet. South of Potrero Grande Drive, on the Mesa Substation property, trenching will be used from the south side of the road, to where the new pipe intercepts the existing pipe, approximately 1,600 feet.

SCE will use the horizontal jack-and-bore construction technique to install the water line underneath Potrero Grande Drive, approximately 500 feet. Jack-and-bore is an augering operation that simultaneously pushes a casing under an obstacle and removes the spoil inside the casing with a rotating auger. Boring operations will begin with excavating bore pits at the sending and receiving ends of the bore. Boring and receiving pits will typically measure approximately 20 feet by 40 feet. The depth of the proposed bore pits will be between 10 and 20 feet. It is anticipated that between 590 and 1,180 cubic yards (CY) of material will be excavated to facilitate each jack-and-bore installation required for the Project. Following the duct bank installation, the bore pits will be backfilled using native material, and the duct bank will be covered with at least 36 inches of engineered or native fill, as appropriate. Soil not used for backfill will be hauled off site and disposed of at an approved facility.

Horizontal directional drilling

SCE will use horizontal directional drilling (HDD) to install several of the new subtransmission duct banks from the interior of the substation to the north side of Potrero Grande Drive, in order to resolve the change in grade between those areas and to help avoid impacts to other existing underground utilities typically found in the street. HDD technology is an underground boring technique that uses hydraulically powered, horizontal drilling equipment. It involves drilling along a vertical arc that passes beneath the intended feature. HDD technology utilizes lubrication containing water and bentonite clay (referred to as drilling mud) to aid the drilling, coat the walls of the bore hole, and maintain the open hole. The HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit would initially be adjusted to the proper design angle for the particular drill. A 6- to 8-inch-diameter drill would typically be used.

The first step would be to drill a fluid-filled pilot bore. The first and smallest of the cutting heads would begin the pilot hole at the surveyed entry point. The first section of the drill stem has an articulating joint near the drill-cutting head that the HDD operator can control. Successive drill stem sections would be added as the drill head bores under the crossing. The drill head would then be articulated slightly by the operator to follow a designed path under the crossing and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger cutting heads and reamers would be pulled and pushed through the bore hole until it is the appropriate size for the steel casing. Once the steel casing is in place, ducts would be installed within the steel casing using spacers to maintain the needed separation, and then the remaining space would be backfilled with a slurry mix.

During the HDD process, the underground cable to be pulled through the crossing would be strung on cable supports down the ROW or within temporary extra workspace areas.

As part of the drilling design process, geotechnical surveys of subsurface conditions would be conducted to determine the underlying geologic strata along the bore path. Infrequently, the geologic strata above the bore may be weaker than anticipated and/or unconsolidated. As the HDD passes under these locations, the high pressure of the drilling mud may result in a fracture of these strata, allowing drilling mud to rise to the surface. This situation is termed a “frac-out” and is usually resolved by reducing the mud system pressure or increasing the mud viscosity. If a frac-out occurs, the boring operation would be stopped immediately, and a frac-out contingency plan would be implemented to contain and remove the drilling mud.

Mesa Substation Construction

Prior to construction, the Mesa Substation site will be cleared and graded to prepare the site for construction. Approximately 83.3 acres of the site will be graded. Approximately 20 acres of on-site vegetation will be removed during the clearing, grubbing, and grading for the construction of the proposed Mesa Substation, including trees along the frontage and within the fence line of the existing Mesa Substation site. Mowers, excavators, front-end loaders, and/or D-9 bulldozers will be utilized to conduct the clearing and vegetation removal activities.

Construction of the proposed Mesa Substation will occur in phases, as shown in Figure 3: Grading Phase Areas in Attachment B: Figures. Phase 1 involves preliminary activities, such as relocation of the Metropolitan Water District of Southern California water pipeline, vegetation removal, removal of some equipment stored on site, and installation of temporary fencing. This phase includes all construction associated with the following:

- the first eight 220 kV switchrack positions,
- the entire 66 kV and 16 kV switchracks,
- two 220/66 kV transformer banks,
- two 66/16 kV transformer banks,
- two 66 kV capacitor banks,
- two 16 kV capacitor banks, and
- the necessary underground and overhead facilities to connect the relocated circuits (of all three voltage levels).

This phase also includes, but is not limited to, activities such as mass grading; access road construction, including retaining walls; construction of the senior and junior MEERs; assembly and erection of various transmission and subtransmission overhead structures; and possibly the construction of the Operations Building and the Test and Maintenance Building. This phase involves the import of approximately 100,000 CY of fill to develop the western portion of the proposed Mesa Substation site. Phase 1 will generally occur between the second quarter of 2016 and the fourth quarter of 2018.

Phase 2 involves the extension of the new 220 kV switchrack, one 220/66 kV transformer bank, one 66 kV capacitor bank, and the necessary underground and overhead facilities to connect the relocated circuits (of both voltage levels). This will include, but is not limited to, activities such

as decommissioning and removal of the western portion of the existing 220 kV switchrack; grading and civil improvements, including the detention basin and other drainage improvements; construction of the southern portion of the new 220 kV switchrack; and assembly and erection of various transmission and subtransmission overhead structures. This phase will generally occur between the second quarter of 2018 and the first quarter of 2019.

Phase 3 includes decommissioning and demolition of the balance of the existing substation, construction of the new 500 kV switchrack on the eastern portion of the site, and connecting the transmission lines. This phase will include, but is not limited to, activities such as structural and civil demolition and access road construction, including retaining walls; installation of foundations and piping for three 500/220 kV transformer banks, including Spill Prevention Control and Countermeasure Plan facilities; and assembly and erection of various transmission overhead switchracks and transmission towers. This phase will generally take place between the first quarter of 2019 and the fourth quarter of 2020. However, post-construction testing after the substation is operational will occur through the second quarter of 2021.

Site grading will be accomplished primarily with bulldozers and backhoes, which will condition, cut and fill, and blend the native soil and imported material to the desired pad elevations. A summary of the anticipated grading quantities for Mesa Substation is provided in Table 1: Grading Quantities Summary. Phase 1 construction of Mesa Substation will require approximately 100,000 CY—or approximately 10,000 haul truckloads—of imported fill to develop the substation site. Phase 3 will require approximately 50,000 CY—or approximately 5,000 haul truckloads—of import material to be hauled to the substation site. Haul trucks will operate periodically and as needed during the grading phase of construction. In general, no more than 100 haul truck trips per day will be required for the import/export activities.

Vegetation Clearance

The proposed Mesa Substation site will require vegetation clearing (i.e., tree and brush removal) within its boundaries to prepare the approximately 69.4-acre site for the installation of the substation equipment.

Vegetation clearing (i.e., tree and brush removal and tree trimming) may also be required in the proposed transmission ROWs to accommodate construction work areas, and to reduce the potential for fire during construction activities.

Cleanup and Post-Construction Restoration

SCE will clean up all areas that will be temporarily disturbed by construction of the Project (which may include the material staging yards, stringing sites, and splicing sites) to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of construction of the Project.

If restoration and/or revegetation occurs within sensitive habitats, a Revegetation Plan will be developed by SCE with the appropriate resource agencies and implemented after construction is complete.

Table 1: Grading Quantities Summary

Phase	Approximate Fill Quantity (CY)	Approximate Cut Quantity (CY)	Approximate Import/Export Quantity (CY)	Source/ Destination
1	250,000	150,000	100,000	Quarry within 45 miles of the site
2	5,000	70,000	(65,000)	Stockpile for Phase 3
3	325,000	375,000	(50,000)	Landfill within 45 miles of the site
Total	580,000	595,000	--	--

Notes: Export values in Phase 2 are included in the cut values in Phase 3. The Phase 3 raw cut volume is 310,000 CY.

“--” indicates “not applicable.”

Construction Workforce and Equipment

Construction will be performed by either SCE construction crews, contractors, or a combination of both. If SCE construction crews are used, they typically will be based at SCE’s local facilities (e.g., service centers and substations) or a temporary material staging yard set up for the Project. Contractor construction personnel will be managed by SCE construction management personnel and based out of the Contractor’s existing yard (if they have one in the area) or a temporary material staging yard set up for the Project. SCE anticipates a total of 84 to 242 construction personnel will be working on any given day. SCE anticipates that crews will work concurrently whenever possible; however, the estimated deployment and number of crew members will vary depending on factors such as material availability, resource availability, and construction scheduling.

In general, construction efforts will occur in accordance with accepted construction industry standards. If feasible, SCE will comply with local ordinances for construction activities.

Avoidance and Minimization Measures

Prior to construction, SCE will conduct a risk assessment to address the potential for erosion and sedimentation. In addition, SCE will prepare a SWPPP in accordance with the National Pollutant Discharge Elimination System Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit). The risk assessment will take into consideration the receiving waters, soil type, slopes, construction duration, and rainfall to determine the potential erosion and estimate the volume of sediment that could leave disturbed areas during the Project. From the risk assessment, Project- and site specific best management practices (BMPs) will be identified in the SWPPP that will ensure water quality standards are met. BMPs to be implemented will include erosion control and stabilization, sediment controls, good housekeeping, waste management and hazardous materials controls, and guidelines for working around waterbodies.

Indirect impacts to other wetlands and waters could also result from spillage of construction materials, as well as from erosion and sedimentation. These potential impacts will be avoided and minimized through implementation of the Project's SWPPP, which is required by law. The Project SWPPP will require that vehicles be checked daily and maintained in accordance with the manufacturer's specifications to minimize the potential for leaks, and refueling and maintenance of vehicles will occur at least 50 feet from the edge of any aquatic feature. With implementation of applicant-proposed measures (APMs) and with adherence to applicable regulations, impacts to waterbodies and water quality will be minimized. A discussion of APMs that will be implemented to avoid and/or minimize impacts to waters of the U.S. is provided in response to Question 9 – Other Actions/Best Management Practices.

Project Alternatives

The existing Mesa Substation is situated at the junction of four transmission ROW corridors owned by SCE. The Project site is proposed on the existing Mesa Substation site for the following reasons:

- The existing approximately 86.2-acre substation site is located at the intersection of the 500/220/66 kV ROW corridors; therefore, no new ROW corridors will be needed
- No additional property acquisitions are required to build the new substation because the proposed substation can be built on the existing SCE fee-owned, approximately 86.2-acre site, with the exception of two vacant remnant parcels adjacent to the existing substation site that total approximately 1.2 acres, which are required for relocation of the Metropolitan Water District waterline and the installation and drainage
- The proposed site is optimally located within the Electric Needs Area (ENA)¹
- Construction of the substation at this location is the option that will most likely meet the need date of December 31, 2020 and is also approved by the CAISO

The existing Mesa Substation site is located immediately adjacent to the existing 220/66/16 kV lines; therefore, looping the 500 kV line into the proposed Mesa Substation will require construction of the least amount of linear feet of line within existing SCE ROW and will not require property acquisition. In contrast, if the Project were to be constructed at another location, a new site large enough for the proposed substation would need to be procured, and looping in a 500 kV transmission line would require potentially longer lines if the new location were not immediately adjacent to an existing 500 kV transmission line. Additionally, consideration of the need for additional 220/66/16 kV lines would have to be provided at a new substation site other than at Mesa Substation. Any alternative site would necessitate substantial acquisition of new

¹ The ENA is defined as the Western Los Angeles Basin. The California Independent System Operator (CAISO) defines the Western Los Angeles Basin area as follows: Northwest Los Angeles Basin sub-area (El Segundo, Chevmain, El Nido, La Cienega, La Fresa, Redondo, Hinson, Arcogen, Harborgen, Long Beach, Lighthipe, and Laguna Bell substation), Western Central Los Angeles Basin sub-area (Center, Del Amo, Mesa, Rio Hondo, Walnut, Olinda substation), and Southwest Los Angeles Basin sub-area (Alamitos, Barre, Lewis, Villa Park, Ellis, Huntington Beach, Johanna, Santiago, and Viejo substations).

and/or expanded ROWs and a substation site large enough to accommodate the Project, and would consequently produce increased environmental impacts compared to the current location.

Further, because SCE owns the property on which the expanded Mesa Substation will be constructed, and because all transmission components will take place on existing fee-owned ROWs and franchise areas, construction of the Project on the existing SCE fee-owned property is more feasible from an economic perspective than would construction of the Project at an alternative location. For example, acquisition of a new location large enough to house the proposed Mesa Substation and the ROWs would require a substantial capital outlay and a potential condemnation action. In contrast, because SCE already owns the location on which the current Project will be constructed, the Project is considered to be more feasible at the current location.

As such, no alternative substation locations were considered because no alternative locations could reasonably be expected to allow for the proposed Mesa Substation as feasibly as the proposed location, which does not require condemnation or substantial property acquisition, meets the Project objectives and timelines, and minimizes environmental impacts.

BOX 4: OTHER LICENSES/PERMITS/AGREEMENTS

Table 2: Other Agency Certifications or Approvals below, provides the permits and authorizations required for the Project, as well as the applicable jurisdictional agency, the date applied or anticipated submittal date, and the anticipated approval date.

BOX 6A: PROJECT SITE DESCRIPTION, PROJECT LOCATION

The Project is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County. The vast majority of Project activities will be located in the City of Monterey Park and will consist of the construction of the 500/220/66/16 kV Mesa Substation and associated transmission, subtransmission, distribution, and telecommunications lines. The Mesa Substation site is located south of Potrero Grande Drive, west of Greenwood Avenue, east of Markland Drive, and north of State Route 60. Figure 1: Project Components Overview Map in Attachment B: Figures depicts the location of the Project.

BOX 6B: PROJECT SITE DESCRIPTION, LONGITUDE/LATITUDE

Table 3: Project Location Information below, summarizes the Project location information for the eight Regional Water Quality Control Board- (RWQCB-) jurisdictional waters, including the Assessor Parcel Numbers (APNs), and United States (U.S.) Geologic Survey (USGS) Quadrangle map name.

Table 2: Other Agency Certifications or Approvals

Permit/Approval/Consultation	Agency	Identification Number	Date Applied	Anticipated Submittal Date	Date Approved/Denied
Federal Agencies					
Section 404 Clean Water Act	USACE	SPL-2014-00375-SLP	June 30, 2015	--	--
Section 408 Permit	USACE	--	August 28, 2015	--	--
Section 7 Consultation	U.S. Fish and Wildlife Service	--	--	Pending	--
State Agencies					
Permit to Construct	California Public Utilities Commission	A. 15-03-003	March 13, 2015	--	--
Section 1602 Lake or Streambed Alteration Agreement	California Department of Fish and Wildlife (CDFW)	--	--	January 2016	--
National Pollutant Discharge Elimination System General Construction Permit	State Water Resources Control Board (SWRCB)	--	--	June 2016	--
Encroachment Permit	California Department of Transportation	--	--	April 2016	--
Local Agencies					
Encroachment Permit	Cities of Monterey Park, Montebello, and Bell Gardens	--	--	July 2016	--
Grading Permit	City of Monterey Park	--	--	December 2015	--

Table 3: Project Location Information

Feature Number²	APN	USGS Quadrangle Map Name
7-39-S-5	5295-001-021 5295-002-801 5295-002-802	El Monte
11-94-S-5	5275-001-018 5275-002-803 5275-002-810 5275-002-812 5275-002-814	
7-38-S-1	5275-003-805	
7-39-S-1	5275-002-810	
11-138-S-100	5275-003-805	
	5275-002-810	
7-39-S-6	5275-002-810	
7-39-S-2	5275-002-808 5275-002-809 5275-002-810	
7-39-S-3	5275-003-002 5275-003-800 5275-003-805	
11-136-S-100	5265-001-809 5265-001-810 5265-001-813 5276-013-008	
11-136-S-101	5265-001-803 5265-001-810 5265-001-812	
7-39-S-11 (Rio Hondo)	5271-009-902 5271-010-904	

² For the sake of consistency, nomenclature from the Tehachapi Renewable Transmission Project delineation reports was used to identify the mapped features.

BOX 7B: IMPACTED WATER BODIES

Information for each water feature located on the Project site—including the area of each RWQCB-jurisdictional feature, the amount of permanent and temporary impacts, and the Project activities resulting in impacts to these features—is provided in Table 4: RWQCB-Jurisdictional Resources and Impacts within the Project Site. As shown in Table 4: RWQCB-Jurisdictional Resources and Impacts within the Project Site, a total of approximately 0.37 acre of waters of the U.S. will be permanently impacted, and approximately 0.09 acre of waters of the U.S. will be temporarily impacted by construction of the Project. Figure 4: Impacts to Waters of the U.S. in Attachment B: Figures depicts the location of the Project components in relation to each of the U.S. Army Corps of Engineers- (USACE-) jurisdictional features and identifies which of the features are anticipated to be impacted. Figure 5: Impacts to Waters of the U.S. – Typical Plan and Cross-Section Drawing in Attachment B: Figures depicts how drainages will be permanently filled to allow for construction of the substation. Attachment C: Photographs of Impacted Water provides photographs of the RWQCB-jurisdictional features located on site that will be impacted by construction of the Project.

BOX 7C/D: IMPACTED WATER BODIES, DREDGED MATERIAL TO BE DISCHARGED

Due to timing and site limitations, on-site materials cannot necessarily be utilized for the Project. As provided in Table 1: Grading Quantities Summary above, approximately 100,000 CY of imported fill will be required during Phase 1. An additional 50,000 CY of imported fill will be required during Phase 3. Approximately 122.49 CY of fill—consisting of native and imported soil—will be discharged into waters of the U.S. The fill and base materials are anticipated to be obtained from a quarry within 45 miles of the site. On-site material will be reused to the extent possible, as recommended by the Geotechnical Engineer. Site grading will be accomplished primarily with bulldozers and backhoes, which will condition, cut and fill, and blend the native soil and imported material to the desired pad elevations.

BOX 10: PAST/FUTURE PROPOSALS BY THE APPLICANT

Table 5: Past and Future Projects summarizes past and future SCE projects that will impact or have impacted the same waterbody.

Table 4: RWQCB-Jurisdictional Resources and Impacts within the Project Site

Feature Number	Feature Type	Approximate RWQCB-jurisdictional Area (acres/linear feet)	Approximate Impact to RWQCB-Jurisdictional Feature (acres/linear feet)		Approximate Fill Volume to be Discharged (CY)	Impact Description
			Permanent	Temporary		
7-39-S-5	Ephemeral drainage	0.04/ 715.81	--	0.04/ 715.81	--	This feature will be temporarily impacted by a transmission tower disturbance area.
11-94-S-5	Ephemeral drainage	0.11/ 1,987.41	0.11/ 1,987.41	--	28.91	This feature will be permanently impacted by the construction of the Mesa Substation.
7-38-S-1 7-39-S-1 11-138-S-100	Ephemeral drainage	0.01/ 363.85	0.01/ 363.85	--	1.62	This feature will be permanently impacted by the construction of Mesa Substation.
		0.08/ 2,179.78	0.08/ 2,179.78	--	68.78	This feature will be permanently impacted by construction of Mesa Substation.
		0.07/ 458.41	0.07/ 458.41	--	8.06	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-6	Ephemeral drainage	0.03/ 441.81	0.03/ 441.81	--	3.27	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-2	Ephemeral drainage	0.03/ 423.04	0.03/ 423.04	--	7.61	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-3	Ephemeral drainage	0.04/ 440.19	0.04/ 440.19	--	1.45	This feature will be permanently impacted by construction of Mesa Substation.
11-136-S-100 11-136-S-101	Ephemeral drainage	0.03/ 376.54	--	0.03/ 376.54	--	This feature will be temporarily impacted as a result of a subtransmission tower disturbance area.
		0.02/ 260.17	--	0.02/ 260.17	--	This feature will be temporarily impacted as a result of a subtransmission tower disturbance area.

Feature Number	Feature Type	Approximate RWQCB-jurisdictional Area (acres/linear feet)	Approximate Impact to RWQCB-Jurisdictional Feature (acres/linear feet)		Approximate Fill Volume to be Discharged (CY)	Impact Description
			Permanent	Temporary		
7-39-S-11 (Rio Hondo)	Intermittent Drainage	0.15/200.00	--	--	--	There will be no impacts to this feature.
TOTAL	--	0.61/7,847.01	0.37/6,294.49	0.09/1,352.52	122.49	--

Table 5: Past and Future Projects

Project Description	Status	Impacts to Water
Tehachapi Renewable Transmission Project (TRTP): Construction of Segments 7, 8, and 11 of approximately 173 miles of transmission line with upgrades to several substations	Under construction	The SWRCB issued a Section 401 Water Quality Certification for Segments 7 and 8 of the TRTP on December 10, 2010. Subsequently, SCE filed an amendment request on October 12, 2011. Total project impacts include approximately 0.104 acre and 920 linear feet of permanent impacts and approximately 1.03 acres and 5,934 linear feet of temporary impacts to jurisdictional waters. On October 17, 2013, the SWRCB issued a Section 401 Water Quality Certification for Segment 11 of the TRTP. Activities associated with the project resulted in fill of waters of the U.S., including culvert installation, replacement, and removal; installation of concrete wet crossings; road widening; drain installation and replacement; temporary wire setup sites; structure work areas; helicopter assembly yards and support yards; vegetation removal; guard poles; temporary water diversions; and temporary steel plates at water crossings. Impacts include approximately 0.14 acre and 3,611 linear feet of permanent impacts and approximately 1.18 acres and 12,511 linear feet of temporary impacts to waters of the U.S.