E.4.12 Water Resources

The Modified Route D Alternative route is described in Section E.4.1. It includes three main segments: a southwesterly segment that crosses BLM, CNF and private lands before reaching the Cameron Substation, a westerly segment that follows the southern boundary of the CNF, and a northerly segment that is primarily on CNF land and includes the Modified Route D Substation.

E.4.12.1 Environmental Setting

The Modified Route D Alternative traverses a mountainous area similar in climate and terrain to the Central Link. Much of this area is entirely natural and in the Cleveland National Forest. Water resources consist of watercourse crossings listed in E.4.12-1. There are 51 identified water crossings, most of which are minor local canyon drainages not subject to flow except in response to rainfall. Main watercourses crossed include Cottonwood Creek, Potrero Creek, Wilson Creek, Taylor Creek, and the Sweetwater River. This alternative route crosses ~~no designated groundwater basin~~the Campo Valley Groundwater Basin and the Potrero Valley Groundwater Basin. These groundwater basins are within the EPA-designated Campo-Cottonwood Sole Source Aquifer recharge area. This means the aquifer supplies more than 50 percent of a community's drinking water. Any project which is financially assisted by federal grants or federal loan guarantees, and which has the potential to contaminate a sole source aquifer, should be modified to reduce or eliminate the risk (USEPA, 2007; http://epa.gov/region09/water/groundwater/ssa-pdfs/ssafact.pdf).

Some of the watercourses that are crossed by this alternative drain to reservoirs in the area. La Posada Creek drains to Morena Reservoir. Hauser Creek and Wilson Creek drain to Barrett Lake. Taylor Creek and the Sweetwater River drain to Loveland Reservoir through Palo Verde Lake.

Table E.4.12-1. Modified Route D Alternative Watercourse Crossings

Watercourse	Milepost	Watercourse	Milepost	Watercourse	Milepost
Unnamed	1.62	Unnamed	17.53	Unnamed	26.86
Unnamed	2.26	Unnamed	18.75	Unnamed	27.34
Unnamed	2.29	Unnamed	19.24	Unnamed	30.08
Unnamed	3.22	Unnamed	19.49	Unnamed	30.12
Unnamed	3.48	Unnamed	19.65	Unnamed	30.78
Unnamed	3.9	Unnamed	20.11	Unnamed	31.09
Unnamed	5.92	Cottonwood Creek	20.62	Unnamed	31.23
Unnamed	6.84	Unnamed	21.03	Unnamed (3 crossings)	31.36
Unnamed	9.42	Unnamed	21.09	Unnamed	31.95
Unnamed	10.03	Unnamed	23.06	Unnamed	32.13
Hauser Creek	11.49	Unnamed	24.67	Taylor Creek	34.54
Unnamed	11.85	Wilson Creek	24.90	Unnamed	33.21
Unnamed	12.78	Unnamed	25.74	Sweetwater River	34.70
Unnamed	13.17	Unnamed	25.77	Unnamed	35.23
Potrero Creek	14.31	Unnamed	25.85	Unnamed	36.03
Unnamed	15.07	Unnamed	25.95		
Unnamed	16.27	Unnamed	26.08		

Barrett Lake (also referred to as Barrett Reservoir) is operated by the City of San Diego as a water-supply reservoir. Loveland Reservoir is a water supply reservoir operated by the South Bay Irrigation

District, which serves National City, Bonita and parts of Chula Vista. Based on USGS stream flow records, the Sweetwater River can have flow in any month of the year, although summer discharges are very low (less than one cubic foot per second), and periods of summer zero flow are common. Average discharge in winter is as high as 34 cubic feet per second. Water quality concerns in the Sweetwater watershed include coliform bacteria, trace metals and other toxics (Project Clean Water, 2007).

Beneficial uses as designated by the Regional Water Quality Control Board for Surface water are listed in Table E.4.12-1. Beneficial uses for Loveland Reservoir include MUN, AGR, IND, PROC, REC1, REC2, WARM, COLD, and WILD. Beneficial uses for Barrett Reservoir include the same as for Loveland Reservoir plus FRSH and RARE.

The Modified Route D Alternative crosses no designated groundwater basin.

E.4.12.2 Environmental Impacts and Mitigation Measures

Table E.4.12-2 summarizes the impacts of the Modified Route D Alternative on Water Resources

Table E.4.12-2. Impacts Identified – Modified Route D Alternative – Water Resources

Impact No.	Description	Impact Significance
Modified Route D Alternative and Star Valley Option and PCT Reroute Option C/D		
H-1	Construction activity could degrade water quality due to erosion and sedimentation	Class II
H-2	Construction activity could degrade water quality through spills of potentially harmful materials	Class II
H-3	Excavation could degrade groundwater quality in areas of shallow groundwater	Class III
H-4	Groundwater dewatering for project construction could deplete local water supplies	Class II
H-5	Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream	Class III
H-6	Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion	Class II
Modified Route D Alternative Substation		
H-1	Construction activity could degrade water quality due to erosion and sedimentation	Class II
H-2	Construction activity could degrade water quality through spills of potentially harmful materials	Class II
H-5	Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream	Class III
H-7	Accidental releases of contaminants from project facilities could degrade water quality	Class II

Construction Impacts

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class II)

Beneficial uses for surface water could be adversely affected through violation of RWQCB water quality objectives for sediment, suspended solids, total dissolved solids, and turbidity.

Table D.12-21 lists the streams that are at risk of water quality degradation due to construction-induced erosion and sedimentation in the Modified Route D Alternative. Similar to the Route D Alternative and the BCD Alternative, contamination from soil disturbance is significant without mitigation along this alternative because of the steep terrain, natural condition of the vegetation, and possible presence of surface waters during the dry season. Sediment produced from access road construction and for tower

pads could be substantial, especially within the Cleveland National Forest where the impact of sedimentation would be greatest. Affected water resources within the Forest include Hauser Creek (forest is just downstream of the Hauser Creek Crossing), Taylor Creek, and Sweetwater River. Special conditions (Mitigation Measure H-1k) are required within the forest.

With the implementation of Mitigation Measures H-1k and H-1l Impact H-1 is less than significant (Class II). The full text of the mitigation measures appears in Appendix 12.

Mitigation Measures for Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation

H-1k **Comply with Forest Service Conditions.**

H-1l **Construction on Forest Service land to be subject to an approved, site-specific SWPPP and Sediment Control Plan.**

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class II)

Beneficial uses for surface water and groundwater could be adversely affected through violation of RWQCB water quality objectives for inorganic chemicals, oil and grease, toxicity, and toxic pollutants.

Watercourses listed in Table E.4.12-1, as well as the downstream water supply reservoirs (Barrett and Loveland) could be affected by accidental contaminant spills during construction. Contaminating materials could include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. With the implementation of APMs WQ-APM-9 and WQ-APM-13, the SWPPP, and Mitigation Measures H-1k, H-1l, and H-2d Impact H-2 is less than significant (Class II).

Mitigation Measures for Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials

H-1k **Comply with Forest Service Conditions.**

H-1l **Construction on Forest Service land to be subject to an approved, site-specific SWPPP and Sediment Control Plan.**

H-2d **Maintain vehicles and equipment.**

Impact H-3: Excavation could degrade groundwater quality in areas of shallow groundwater (Class III)

Excavation for tower foundations in shallow groundwater could contaminate groundwater through accidental material spills. Groundwater beneficial uses could be adversely affected through violation of RWQCB water quality objectives for inorganic chemicals, oil and grease, toxicity, and toxic pollutants.

This impact is unlikely to occur primarily for the reason that groundwater along the Modified Route D Alternative is typically deeper than the expected depth of excavation, resulting in little chance for direct contamination. APMs WQ-APM-8, WQ-APM-9, and WQ-APM-11 address this issue as follows: (1) WQ-APM-8 requires proper disposal of excavated groundwater contaminated by construction (water will be treated or disposed away from the natural groundwater or surface water); (2) WQ-APM-9 ensures that materials that could contaminate groundwater are kept at least 200 feet from wells; and (3) WQ-APM-11 calls for determining the depth of groundwater prior to construction, avoiding shallow ground-

water where possible, and developing methods for avoiding impacts where shallow groundwater cannot be avoided. Impact H-3 is classified as less than significant (Class III) and no mitigation is required.

Impact H-4: Groundwater dewatering for project construction could deplete local water supplies (Class II)

Dewatering could result in a local and temporary drawdown of groundwater levels, temporarily reducing the yield of nearby water supply wells. In addition, blasting or drilling for tower foundations could reduce flows in wells and springs. Water supply wells are typically deeper than the proposed maximum excavation depth of 40 feet, so a temporary drawdown limited to that depth likely will not affect water yield. APM WQ-APM-6 requires identification of these wells and provision of alternate water supplies during the period of depletion. Nonetheless, reduced water flows in wells and springs would be significant should it occur. This impact would be significant (Class II), but it could be mitigated to a less-than-significant level through implementation of Mitigation Measures H-4b, which would restrict blasting where wells would be affected and would ensure timely drinking water replacement.

Mitigation Measure for Impact H-4: Groundwater dewatering for project construction could deplete local water supplies

H-4b Avoid blasting where damage to groundwater wells or springs could occur.

Operational Impacts

There are no contaminants associated with the project facilities. Therefore, Impact H-7 (Accidental releases of contaminants from project facilities would degrade water quality) would not occur. There are no underground portions except as otherwise described under Impact H-6. Therefore, Impact H-8 (Underground portions of the power line could be exposed during flow events causing damage to the line or to adjacent property) does not apply.

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III)

Impact H-5, Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream, is less than significant (Class III). The impervious area created by the new towers and foundations is minimal.

Impact H-6: Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion (Class II)

The risk of Impact H-6 is low. Most towers will be placed on high ground and the watercourses spanned. The towers at MPs MRD 6.84, 9.42, and 25.95 (Table E.4.12-1) have a slight potential for inducing erosion by being near small watercourses. With Mitigation Measure H-6a in place, Impact H-6 is less than significant (Class II).

Mitigation Measure for Impact H-6: Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion

H-6a Scour protection to include bank erosion and effects to adjacent property.

E.4.12.3 Modified Route D Substation

Environmental Setting

The Modified Route D Substation would be located atop a hilly area adjacent to Bell Bluff. Aside from minor local drainage generated on the site, there are no watercourses, and there are no designated groundwater basins. Site drainage goes to the downstream Sweetwater River and Loveland Reservoir. Loveland Reservoir is a water supply reservoir operated by the South Bay Irrigation District, which serves National City, Bonita and parts of Chula Vista.

Environmental Impacts and Mitigation Measures

Impact H-3 (Excavation could degrade groundwater quality in areas of shallow groundwater) and Impact H-4 (groundwater dewatering for project construction could deplete local water supplies) do not apply. There is no groundwater basin at the site.

Construction Impacts

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class II)

The Modified Route D Substation would require a substantial amount of local grading (approximately 35 acres). The potential for erosion of cut and fill slopes would be substantial during a rainfall event. Although this area is in a drainage headwater, there is a potential for disturbed sediment to be transported to the Sweetwater River and Loveland Reservoir. Beneficial uses for surface water could be adversely affected through violation of RWQCB water quality objectives for sediment, suspended solids, total dissolved solids, and turbidity.

WQ-APM-14 requires development of a SWPPP which would include erosion-control measures such as soil binders, hydroseeding, siltation control structures such as geotextiles and mats, and streambank stabilization. Compliance and best management practices would be according to RWQCB guidelines in compliance with General Permit for Storm Water Discharges Associated With Construction Activity (NPDES permit).

Development of and compliance with a SWPPP is normally sufficient to reduce construction effects to a less than significant level. However, due to the extensive grading and earthwork involved in this natural area, standard BMPs may not be sufficient to prevent significant local erosion and downstream watercourse siltation if heavy rains occur during construction. Therefore, Impact H-1 would be significant without mitigation. Mitigation Measure H-1a is required to ensure these impacts are less than significant. Mitigation Measure H-1a requires grading to occur during the dry season to avoid water quality impacts, and erosion and sediment control BMPs to be in place prior to the onset of seasonal rains. With implementation of Mitigation Measure H-1a, Impact H-1 would be less than significant (Class II).

Mitigation Measure for Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation

H-1a Prepare substation grading and drainage plan; construct during the dry season.

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class II)

Accidental spills or disposal of potentially harmful materials such as diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids, could occur during construction. Beneficial uses for surface water and groundwater could be adversely affected through violation of RWQCB water quality objectives for inorganic chemicals, oil and grease, toxicity, and toxic pollutants. Although it is likely that some spills will occur in this large construction area, surface water resources in the area are limited and there are no groundwater resources. WQ-APM-13 requires proper disposal of hazardous materials and trash, as well as prompt clean-up of spills. However, during large rainfall events, contaminant materials could be washed to the Sweetwater River and eventually to the Loveland water supply reservoir. Without mitigation, this would be a significant impact. Mitigation Measure H-1a would be required to ensure these impacts are less than significant. Mitigation Measure H-1a, which requires grading to occur during the dry season to avoid water quality impacts, and erosion and sediment control BMPs to be in place prior to the onset of seasonal rains, would also mitigate impacts from material spills. With implementation of Mitigation Measures H-1a and H-2d, Impact H-2 would be less than significant (Class II). (See Appendix 12 for the full text of the mitigation measures.)

Mitigation Measure for Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials

H-1a Prepare substation grading and drainage plan; construct during the dry season.

H-2d Maintain vehicles and equipment.

Operational Impacts

Impact H-6 (Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion) does not apply. There are no transmission towers at the substation. There are no underground portions of the Modified Route D Substation. Therefore, Impact H-8 (Underground portions of the power line could be exposed during flow events causing damage to the line or to adjacent property) does not apply.

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class II~~I~~)

The proposed substation would have a building pad of approximately 35 acres which would have a higher runoff coefficient than the existing ground, resulting in increased local peak flow rates, volumes and runoff frequency. This impact would be local to the drainageways immediately downstream of the substation, but further downstream, where the relative runoff contribution of the Modified Route D Substation is smaller, the effects would diminish to negligible.

Local increases in runoff could be substantial, resulting in local offsite erosion which would occur in the area immediately downstream of the substation. Because of this, Impact H-5 would be significant without mitigation. Mitigation Measure H-5a, which provides additional methods to reduce runoff and

runoff impacts, would reduce this impact to less than significant (Class II). (See Appendix 12 for the full text of the mitigation measures.)

Mitigation Measure for Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream

H-5a Install substation runoff control.

Impact H-7: Accidental releases of contaminants from project facilities could degrade water quality (Class II)

Oil and other contaminants from equipment at the substation could be released accidentally and contaminate local surface water or groundwater. Beneficial uses for surface water and groundwater could be adversely affected through violation of RWQCB water quality objectives for inorganic chemicals, oil and grease, toxicity, and toxic pollutants.

The substation site is upland with no identified water resources, including no groundwater, but it is in an area that drains to the Sweetwater River and Loveland Reservoir. A large uncontained spill could eventually reach Loveland Reservoir. WQ-APM-13 requires clean-up of spills and proper storage and disposal of contaminants. Mitigation Measure H-7a requires development of a Hazardous Substance Control and Emergency Response Plan for project operation. With APMs and H-7a in place, Impact H-7 is classified as less than significant (Class II). (See Appendix 12 for the full text of the mitigation measures.)

Mitigation Measure for Impact H-7: Accidental releases of contaminants from project facilities could degrade water quality

H-7a Develop Hazardous Substance Control and Emergency Response Plan for Project Operation.

E.4.12.4 Star Valley Option

Environmental Setting

The Modified Route D Star Valley Option would cross hilly terrain in a natural condition similar in climate to the Central Link. Much of this area is in the Cleveland National Forest. There are seven watercourse crossings as listed in Table E.4.12-2. With the exception of the Sweetwater River, all are small canyon drainageways typically dry except after rainfall events. All drain to the Sweetwater River. The Sweetwater River is an important regional watercourse which serves as a water supply for the San Diego urban area. The Sweetwater River crossing is upstream of Palo Verde Lake and Loveland Reservoir. Loveland Reservoir is a water supply reservoir operated by the South Bay Irrigation District, which serves National City, Bonita and parts of Chula Vista. Based on USGS stream flow records, the Sweetwater River can have flow in any month of the year, although summer discharges are very low (less than one cubic foot per second), and periods of summer zero flow are common. Average discharge in winter is as high as 34 cubic feet per second. Water quality concerns in the Sweetwater watershed include coliform bacteria, trace metals and other toxics (Project Clean Water, 2007). Beneficial uses as designated by the Regional Water Quality Control Board for Surface water are listed in Table

Table E.4.12-2. Modified Route D Star Valley Option Watercourse Crossings

Watercourse	Milepost*
Unnamed	0.20
Unnamed	0.27
Unnamed	0.58
Sweetwater River	1.39
Unnamed	1.75
Unnamed	2.53
Unnamed	2.57

* As measured from the southern departure point from the Modified Route D Alternative.

E.4.12-2. Beneficial uses of the Sweetwater Reservoir include MUN, AGR, IND, PROC, REC1, REC2, WARM, and WILD. Beneficial uses of the Loveland Reservoir are the same, and include COLD The Modified Route D Star Valley Option crosses no designated groundwater basin.

Environmental Impacts and Mitigation Measures

This alternative crosses no groundwater basins. Therefore, Impact H-3 (Excavation could degrade groundwater quality in areas of shallow groundwater) and Impact H-4 (Groundwater dewatering for project construction could deplete local water supplies) do not apply.

Construction Impacts

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class II)

Beneficial uses for surface water could be adversely affected through violation of RWQCB water quality objectives for sediment, suspended solids, total dissolved solids, and turbidity.

Table E.4.12-2 lists the streams that are at risk of water quality degradation due to construction-induced erosion and sedimentation in the Modified Route D Star Valley Option. There is a potential for sediment-related water-quality contamination of the Sweetwater River, Palo Verde Lake, and the other watercourses mentioned above. Contamination from soil disturbance is significant without mitigation along this alternative because of the steep terrain, natural condition of the vegetation, and possible presence of surface waters during the dry season. Sediment produced from access road construction and for tower pads could be substantial, and could affect watercourses within the Cleveland National Forest, which contains the Sweetwater River crossing.

The Modified Route D Substation will be approximately 40 acres in size and require substantial local grading. The substation site has no identified water resources, but it is adjacent to a local watercourse draining to Peterson Canyon and Loveland Reservoir. Construction-related erosion and sedimentation at this substation could be substantial and significant.

APMs require (1) Minimizing disturbance to drainage channels (WQ-APM-1); (2) Avoiding or spanning watercourses with project structures (WQ-APM-2); (3) Marking sensitive areas for avoidance and providing employee training (WQ-APM-3); (4) Using erosion control best management practices (WQ-APM-4); (5) Construction of stream crossing at periods of low flows with site-specific mitigation and restoration plans (WQ-APM-5,); (6) complying with the State of California General Permit for Storm Water Discharge Associated with Construction Activity (WQ-APM-14); and, (7) Situating access roads away from stream channels and minimizing stream disturbance (WQ-APM-15). A SWPPP for construction-related erosion control is required by WQ-APM-14.

With the implementation of Mitigation Measures H-1k, and H-1l, Impact H-1 is less than significant (Class II).

Mitigation Measures for Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation

H-1k **Comply with Forest Service Conditions.**

H-1l **Construction on Forest Service land to be subject to an approved, site-specific SWPPP and Sediment Control Plan.**

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class II)

Beneficial uses for surface water and groundwater could be adversely affected through violation of RWQCB water quality objectives for inorganic chemicals, oil and grease, toxicity, and toxic pollutants. Watercourses listed in Table E.4.12-2, as well as the downstream water supply reservoirs could be affected by accidental contaminant spills during construction. Contaminating materials could include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. With the implementation of APMs, the SWPPP, and Mitigation Measures H-1c, H-1g, H-2b ~~and~~, H-2c, and H-2d, Impact H-2 is less than significant (Class II). (See Appendix 12 for the full text of the mitigation measures.)

H-1k **Comply with Forest Service Conditions.**

H-1l **Construction on Forest Service land to be subject to an approved, site-specific SWPPP and Sediment Control Plan.**

H-2b **No storage of fuels and hazardous materials near sensitive water resources.**

H-2c **Proper disposal and clean-up of hazardous materials.**

H-2d **Maintain vehicles and equipment.**

Operational Impacts

There are no contaminants associated with the project facilities. Therefore, Impact H-7 (Accidental releases of contaminants from project facilities would degrade water quality) would not occur. There are no underground portions except as otherwise described under Impact H-6. Therefore, Impact H-8 (Underground portions of the power line could be exposed during flow events causing damage to the line or to adjacent property) does not apply.

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III)

Impact H-5, Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream, is less than significant (Class III). The impervious area created by the new towers and foundations is minimal.

Impact H-6: Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion (Class II)

There are two towers, adjacent to the crossings at MPs MRD 0.58 and 2.57, which could disturb stream flows and induce local erosion. This risk is low due to the steep terrain and small discharges expected from these streams. With Mitigation Measure H-6a in place, Impact H-6 is less than significant (Class II). (See Appendix 12 for the full text of the mitigation measures.)

H-6a **Scour protection to include bank erosion and effects to adjacent property.**

E.4.12.5 PCT Reroute Option C/D

The PCT Reroute Option C/D is described in Section E.4.1.3 and illustrated on Figures E.4.1-1b and E.4.1-1c. This route option would diverge from the Modified Route D Alternative route at MP MRD-10.8 and rejoin the route at MP MRD-14.

Environmental Setting

The PCT Reroute Option C/D would cross hilly terrain in a natural condition similar in climate to the Central Link. Much of this area is in the Cleveland National Forest, with interspersed private inholdings. There are four watercourse crossings along this segment, as listed in Table E.4.12-3. With the exception of Hauser Creek, all are small canyon drainageways typically dry except after rainfall events. The PCT Reroute Option C/D would cross the EPA-designated Campo-Cottonwood Creek Sole Source Aquifer.

Table E.4.12-3. PCT Reroute Option C/D Watercourse Crossings

Watercourse	Milepost*
Hauser Creek	11.49
Unnamed	11.85
Unnamed	12.78
Unnamed	13.17

* Modified Route D Alternative mileposts are presented; these watercourse crossings would occur between 500 and 2000 feet to the south of the crossings defined above.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class II)

Beneficial uses for surface water could be adversely affected through violation of RWQCB water quality objectives for sediment, suspended solids, total dissolved solids, and turbidity.

Table E.4.12-3 lists the streams that are at risk of water quality degradation due to construction-induced erosion and sedimentation in the PCT Reroute Option C/D . There is a potential for sediment-related water-quality contamination of Hauser Creek. Contamination from soil disturbance is significant without mitigation along this alternative because of the steep terrain, natural condition of the vegetation, and possible presence of surface waters during the dry season. Sediment produced from access road construction and for tower pads could be substantial, and could affect watercourses within the Cleveland National Forest and the Hauser Mountain Wilderness Study Area to the south.

APMs require (1) Minimizing disturbance to drainage channels (WQ-APM-1); (2) Avoiding or spanning watercourses with project structures (WQ-APM-2); (3) Marking sensitive areas for avoidance and providing employee training (WQ-APM-3); (4) Using erosion control best management practices (WQ-APM-4); (5) Construction of stream crossing at periods of low flows with site-specific mitigation and restoration plans (WQ-APM-5,); (6) complying with the State of California General Permit for Storm Water Discharge Associated with Construction Activity (WQ-APM-14); and, (7) Situating access roads away from stream channels and minimizing stream disturbance (WQ-APM-15). A SWPPP for construction-related erosion control is required by WQ-APM-14.

With the implementation of Mitigation Measures H-1k, and H-1l, Impact H-1 is less than significant (Class II).

Mitigation Measures for Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation

H-1k Comply with Forest Service Conditions.

H-1l Construction on Forest Service land to be subject to an approved, site-specific SWPPP and Sediment Control Plan.

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class II)

Beneficial uses for surface water and groundwater could be adversely affected through violation of RWQCB water quality objectives for inorganic chemicals, oil and grease, toxicity, and toxic pollutants. Watercourses listed in Table E.4.12-2, as well as the downstream water supply reservoirs could be affected by accidental contaminant spills during construction. Contaminating materials could include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. With the implementation of APMs, the SWPPP, and Mitigation Measures H-1c, H-1g, H-2b, H-2c, and H-2d, Impact H-2 is less than significant (Class II). (See Appendix 12 for the full text of the mitigation measures.)

H-1k Comply with Forest Service Conditions.

H-1l Construction on Forest Service land to be subject to an approved, site-specific SWPPP and Sediment Control Plan.

H-2b No storage of fuels and hazardous materials near sensitive water resources.

H-2c Proper disposal and clean-up of hazardous materials.

H-2d Maintain vehicles and equipment.

Impact H-3: Excavation could degrade groundwater quality in areas of shallow groundwater (Class III)

Excavation for tower foundations in shallow groundwater could contaminate groundwater through accidental material spills. Groundwater beneficial uses could be adversely affected through violation of RWQCB water quality objectives for inorganic chemicals, oil and grease, toxicity, and toxic pollutants.

This impact is unlikely to occur primarily for the reason that groundwater along the PCT Reroute Option C/D is typically deeper than the expected depth of excavation, resulting in little chance for direct contamination. APMs WQ-APM-8, WQ-APM-9, and WQ-APM-11 address this issue as follows: (1) WQ-APM-8 requires proper disposal of excavated groundwater contaminated by construction (water will be treated or disposed away from the natural groundwater or surface water); (2) WQ-APM-9 ensures that materials that could contaminate groundwater are kept at least 200 feet from wells; and (3) WQ-APM-11 calls for determining the depth of groundwater prior to construction, avoiding shallow groundwater where possible, and developing methods for avoiding impacts where shallow groundwater cannot be avoided. Impact H-3 is classified as less than significant (Class III) and no mitigation is required.

Impact H-4: Groundwater dewatering for project construction could deplete local water supplies (Class II)

Dewatering could result in a local and temporary drawdown of groundwater levels, temporarily reducing the yield of nearby water supply wells. In addition, blasting or drilling for tower foundations could reduce flows in wells and springs. Water supply wells are typically deeper than the proposed maximum excavation depth of 40 feet, so a temporary drawdown limited to that depth likely will not affect water yield. APM WQ-APM-6 requires identification of these wells and provision of alternate water supplies during the period of depletion. Nonetheless, reduced water flows in wells and springs would be significant should it occur. This impact would be significant (Class II), but it could be mitigated to a less-than-significant level through implementation of Mitigation Measures H-4b, which would restrict blasting where wells would be affected and would ensure timely drinking water replacement.

Mitigation Measure for Impact H-4: Groundwater dewatering for project construction could deplete local water supplies

H-4b Avoid blasting where damage to groundwater wells or springs could occur.

Operational Impacts

There are no transmission towers located in or adjacent to a watercourse. Therefore, Impact H-6 (Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion) does not apply. There are no contaminants associated with the project facilities. Therefore, Impact H-7 (Accidental releases of contaminants from project facilities would degrade water quality) would not occur. There are no underground portions. Therefore, Impact H-8 (Underground portions of the power line could be exposed during flow events causing damage to the line or to adjacent property) does not apply.

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III)

Impact H-5, Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream, is less than significant (Class III). The impervious area created by the new towers and foundations is minimal.

Comparison of Impacts: Modified Route D Alternative and PCT Reroute Option C/D

There is very little difference between these two route options from the perspective of water resources. However, because the PCT Reroute Option C/D would create a new transmission corridor and would have more miles of new access roads (increasing likelihood of erosion and sedimentation), the Modified Route D Alternative segment is preferred for water resources.

E.4.12.~~5~~ 6 Future Transmission System Expansion

For the Proposed Project and route alternatives along the Proposed Project route, Section B.2.7 identifies Future Transmission System Expansion routes for both 230 kV and 500 kV future transmission lines. These routes are identified, and impacts are analyzed in Section D of this EIR/EIS, because SDG&E has indicated that transmission system expansion is foreseeable, possibly within the next 10 years. For the SWPL alternatives, 500 kV and 230 kV expansions would also be possible. The potential expansion routes for the Route D Alternative are described in the following paragraphs.

230 and 500 kV Future Transmission System Expansion

The Modified Route D Alternative would begin at approximately Interstate 8 MP I8-47 and would head southwest then northward until it reached the Interstate 8 Alternative at approximately MP I8-71. A substation could be built to convert the 500 kV line to 230 kV at approximately MD-34, the Modified Route D Substation Alternative. The double-circuit 230 kV line would exit the substation overhead, then continue north into the CNF, joining the Interstate 8 Alternative at approximately MP MRD I8-71 where it transitions to underground at the east end of Alpine Boulevard. The Modified Route D Substation would accommodate up to six 230 kV circuits and a 500 kV circuit. Only two 230 kV circuits are proposed at this time, but construction of additional 230 kV circuits and a 500 kV circuit out of the Modified Route D Substation may be required in the future. There are three routes that are most likely for

these future lines; each is described below. Figure E.1.1-6 illustrates the potential routes of the future transmission lines.

- Two additional 230 kV circuits could be installed underground within Alpine Boulevard, with appropriate compact duct banks and engineering to avoid, or possibly relocate, existing utilities. This route would follow the Interstate 8 Alternative route from the Interstate 8 Alternative Substation until MP I8-70.8 where it would transition underground until MP I8-79 where it would transition overhead again. The future transmission line route would continue to follow the Interstate 8 Alternative's overhead 230 kV route to the point where it meets the Proposed Project at MP 131. See Section E.1.12.1 and E.1.12.2 for the Water Resources setting, impacts, and mitigation measures along the I-8 route. The future transmission route would then join the proposed route corridor to the west, continuing past the Sycamore Canyon Substation to the Chicarita Substation. See Section D.12.2, D.12.8, and D.12.9 for the Water Resources setting, impacts, and mitigation measures for the Inland Valley and Coastal Links. It could then follow the Proposed Project's 230 kV Future Transmission Expansion route (see description in Section B.2.7) from Chicarita to the Escondido Substation shown in Figure B-12a. See Section D.12.11 for the Water Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.
- Additional 230 and 500 kV circuits could follow the Route D Alternative corridor (see description in Section E.3.1) to the north of Descanso, after following the Interstate 8 Alternative 230 kV route from the Interstate 8 Substation to MP I8 70.3. See Section E.3.12.1 and E.3.12.2 for the Water Resources setting, impacts, and mitigation measures along Route D. The Route D corridor would connect with the Proposed Project corridor at MP 114.5, and could then follow either: (1) the Proposed Project southwest to the Chicarita Substation and then follow the Proposed Project's 230 kV Future Transmission Expansion route (see description in Section B.2.7) from Chicarita to the Escondido Substation; or (2) the Proposed Project northeastward to the Proposed Central East Substation and then follow the Proposed Project's 500 kV Future Transmission Expansion route shown in Figure B-12b (see description in Section B.2.7). See Section D.12.2, D.12.7, D.12.8, and D.12.9 for the Water Resources setting, impacts, and mitigation measures for the Central, Inland Valley, and Coastal Links of the Proposed Project. See Section D.12.11 for the Water Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.
- The future 230 and 500 kV lines could follow the Modified Route D Alternative corridor (within the 368 Corridor identified by the Department of Energy's Draft West-wide Corridor Programmatic EIS) south for 8 miles to MP MD-26. See Section E.4.12.1 and E.4.12.2 for the Water Resources setting, impacts, and mitigation measures along Modified Route D. At MP MD-26, new 230 or 500 kV circuits would turn west and connect with the northernmost segment of the West of Forest Alternative route as described in Section E.1.1. See Section E.1.12.5 for the Water Resources setting, impacts, and mitigation measures along MP MD-26 to MP I8-79 corridor. This route would meet up with the Interstate 8 Alternative at approximately MP I8-79 and would follow the Interstate 8 Alternative's overhead 230 kV route to the point where it meets the Proposed Project at MP 131 (for a description of the Interstate 8 transmission corridor see Section E.1.1). The future transmission route would then join the proposed route corridor to the west, continuing past the Sycamore Canyon Substation to the Chicarita Substation. It could then follow the Proposed Project's 230 kV Future Transmission Expansion System (see description in Section B.2.7) from Chicarita to the Escondido Substation. See Section D.12.11 for the Water Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.