

## E.2.12 Water Resources

### E.2.12.1 Environmental Setting

The BCD Alternative would replace that portion of the Interstate 8 alternative between mile markers I8-39 and I8-70.3. This alternative is hydrologically similar to the replaced portion of the I-8 Alternative. The BCD Alternative is in an area with climate and terrain typical of the Central Link, but tending toward dry in the eastern portion similar to the desert area. The area is in a natural condition, moderately hilly, with predominantly dry, ephemeral watercourses. There are 11 major watercourse crossings for the BCD Alternative as listed in Table E.2.12-1. There may be other incidental watercourses that were not identified.

This alternative crosses the Cottonwood Valley Groundwater Basin in the vicinity of MP BCD-9 as indicated in Table E.2.12-1. Depth to groundwater in this basin is at least 50 feet. The Cottonwood Valley Groundwater Basin is an EPA-designated Sole Source Aquifer, which means that 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>).

Table E.2.12-1. BCD Alternative Watercourse Crossings

Watercourse	Associated Groundwater Basin
BCD-0 to BCD-19	
Unnamed	None
Lark Canyon	None
Unnamed	Cottonwood Valley
Tule Creek	Cottonwood Valley
Simmons Canyon	None
La Posta Creek	None
Antone Canyon	None
Fred Canyon	None
Long Canyon	None
Kitchen Creek	None
Horse Canyon	None

### E.2.12.2 Environmental Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the BCD Alternative as a result of construction, operation, and maintenance of the project. There are no project facilities with contaminants in this alternative. Therefore, Impact H-7, accidental releases of contaminants from project facilities could degrade water quality, does not apply. Except as otherwise addressed under Impact H-6, this alternative has no underground features. Therefore, Impact H-8, underground portions of the power line could be subject to damage from stream scour at locations where the line crosses stream channels, does not apply.

Table E.2.12-2 summarizes the impacts of the BCD Alternative for water resources.

Table E.2.12-2. Impacts Identified – Alternatives – Water Quality

Impact No.	Description	Impact Significance
Route BCD Alternative		
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

Table E.2.12-2. Impacts Identified – Alternatives – Water Quality

Impact No.	Description	Impact Significance
H-4	Groundwater dewatering for project construction could deplete local water supplies	Class III
H-5	Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream	Class III
H-6	Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream	Class II
<b>BCD South Option</b>		
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-6	Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream	Class II

## Construction Impacts

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

Construction-related sediment from the BCD Alternative could potentially affect the watercourses listed in Table E.2-8. Ground disturbing activities such as grading for access roads and excavation for new towers, which lead to this impact, would be extensive, particularly in areas where existing roads are not sufficient for access, such as in the portion of this alternative that crosses the National Forest (Note: 0.2 miles of this alternative crosses State Conservation Land. This area is already partly disturbed by access roads, and there are no water crossings). The National Forest portion of this route is generally in steep terrain in areas without existing road access. Sedimentation through new road construction in this National Forest area could be significant without mitigation.

Mitigation Measure H-11 requires a site-specific (as opposed to generic) sediment control plan and SWPPP to be developed for BCD construction within the National Forest. With Mitigation Measures H-1k and H-11 in place, 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-11 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)*

Impact H-2 would apply to the watercourses listed in Table E.2-8 by potentially contaminating streams with diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. APMs WQ-APM-8, WQ-APM-9, WQ-APM-13, and WQ-APM-14 (see Section D.12.4.2) address the issue of water quality contamination through material spills. WQ-APM-8 requires that excavated groundwater, which could be contaminated from construction, not be

returned to the natural system without treatment. WQ-APM-9 requires storage of hazardous materials away from groundwater supply wells. WQ-APM-13 requires proper disposal of hazardous materials and trash, as well as prompt clean-up of spills. WQ-APM-14 requires compliance with State regulations and implementation of a SWPPP which would address materials disposal and clean-up during construction. Additionally, APMs WQ-APM-1, WQ-APM-2 and WQ-APM-15 situate construction activities away from streams where possible. However, as a result of crossing Forest Service land as described under Impact H-1 above, this impact could be significant. Mitigation Measures H-1k and H-1l would reduce this Impact (H-2) to 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.**

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

The Cottonwood Valley Groundwater Basin would be crossed by the BCD Alternative (Table E.2-8 indicates the general location of this groundwater basin). Whereas the depth to groundwater in this basin is generally greater than 50 feet, and therefore below the maximum depth of tower construction, there is a possibility of encountering and degrading groundwater during construction, which could lead to contamination through spills as described for Impact H-2. Inclusion of APMs and the construction SWPPP would reduce Impact H-3 to less than significant (Class III). Specifically, APMs WQ-APM-8, WQ-APM-9, WQ-APM-13, and WQ-APM-14 address the issue of water quality contamination through material spills. WQ-APM-8 requires that excavated groundwater, which could be contaminated from construction, not be returned to the natural system without treatment. WQ-APM-9 requires storage of hazardous materials away from groundwater supply wells. WQ-APM-13 requires proper disposal of hazardous materials and trash, as well as prompt clean-up of spills. WQ-APM-14 requires compliance with State regulations and implementation of a SWPPP which would address materials disposal and clean-up during construction. Additionally, APMs WQ-APM-1, WQ-APM-2 and WQ-APM-15 situate construction activities away from streams where possible.

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

Dewatering for tower construction in the Cottonwood Valley Groundwater Basin is not likely to result in a local and temporary drawdown of groundwater levels because the water bearing zones are mostly 50 feet or more below ground surface, below the depth of excavation. Should this occur in unconfined shallow groundwater found in some parts of the basin, WQ-APM-6 requires identification of these wells and provision of alternate water supplies during the period of depletion. With incorporation of this AMP, Impact H-4 is less than significant (Class III). It is possible that excavation for towers in this groundwater basin or near drainageways would encounter local subsurface water requiring dewatering. This could result in a local drawdown of water levels that could temporarily affect the water supply to local vegetation. This impact would be temporary and localized and should not have any long-term adverse effect (Class III).

## Operational Impacts

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

Impact H-5 would be less than significant (Class III) because the impervious area created by the new towers and foundations is minimal and would not be large enough to create significant amounts of runoff.

### *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)*

Watercourses listed in Table E.2-8 are potentially susceptible to Impact H-6, which would occur if towers are placed in or near watercourses. Placement of towers in watercourses is unlikely. Because of terrain in this alternative, towers are likely to be placed on high ground, resulting in watercourses being spanned. While APMs requiring the avoidance of watercourses where possible would be included, Impact H-6 could still be significant should it be necessary to place a tower in or near a watercourse. With the implementation of Mitigation Measures H-1c and H-6a, 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-1k Comply with Forest Service Conditions.**

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

## E.2.12.3 BCD South Option

The BCD South Option crosses five watercourses: Antone Canyon at Milepost BCDS 1.8, an unnamed watercourse at Milepost BCDS 3.1, La Posta Creek at Milepost BCDS 3.5, and unnamed watercourses at Mileposts BCDS 4.1 and 5.2. All of the watercourses crossed by this option drain to La Posta Creek, which drains to Lake Morena (Morena Reservoir) approximately seven miles downstream of the BCD South Option. Morena Reservoir is operated by the City of San Diego Water Department as part of its water supply system. The water is used for drinking and municipal use in the San Diego area. There is no designated groundwater basin at the BCD South Option site.

## Construction Impacts

As there is no designated groundwater basin at the site of the BCD South Option, 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) would not occur.

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

The BCD South Option crosses five watercourses that are potentially at risk of water quality degradation due to construction-induced erosion and sedimentation. APMs WQ-APM-1, WQ-APM-2, WQ-APM-3, WQ-APM-4, WQ-APM-5, WQ-APM-14, and WQ-APM-15 would ensure that construction-related water quality degradation through erosion and sedimentation (Impact H-1) is reduced to a less than significant level (Class III) and no mitigation is required. However, to ensure that watercourses are not unnecessarily impacted during construction in compliance with NEPA, Mitigation Measure H-1a (CC) is recommended, but not required because the impact is less than significant without mitigation. Please see the explanation of mitigation for less than significant impacts in Section D.1.2.

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

**H-1a (CC) Construct during the dry season.**

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

Impact H-2 would apply to the watercourses listed in the BCD setting. APMs WQ-APM-8, WQ-APM-9, WQ-APM-13, and WQ-APM-14 address the issue of water quality contamination through material spills. WQ-APM-8 requires that excavated groundwater, which could be contaminated from construction, not be returned to the natural system without treatment. WQ-APM-9 requires storage of hazardous materials away from groundwater supply wells. WQ-APM-13 requires proper disposal of hazardous materials and trash, as well as prompt clean-up of spills. WQ-APM-14 requires compliance with State regulations and implementation of a SWPPP which would address materials disposal and clean-up during construction. Additionally, APMs WQ-APM-1, WQ-APM-2 and WQ-APM-15 situate construction activities away from streams where possible. These APMs would ensure that construction-related water quality degradation through spills of potentially harmful materials (Impact H-2) is reduced to a less than significant level (Class III) and no mitigation is required.

#### Operational Impacts

As there will be no facilities that would require contaminants along the BCD South Option, Impact H-7 (Accidental releases of contaminants from project facilities could degrade water quality) would not occur. There would be no underground portions of the BCD South Option and therefore Impact H-8 (Underground portions of the power line could be subject to damage from stream scour at locations where the line crosses stream channels) would not occur.

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

Impact H-5 would be less than significant (Class III) because of the very small alteration of impervious area caused by this alternative.

*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)*

Watercourses listed for the BCD South Option are potentially susceptible to Impact H-6, which would occur and result in damage to adjacent property if towers are placed in or near watercourses. Placement of towers in watercourses would not occur with the BCD South Option; however, towers may be placed near the five watercourses named above. Impact H-6 will be controlled in large part by APMs WQ-APM-2 and WQ-AMP-10 (see Table D.12-6) Nevertheless, Impact H-6 could be significant without mitigation. With Mitigation Measure H-6a in place, Impact H-6 is less than significant (Class II) because it would protect adjacent properties.

*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 avoidance of bank erosion and effects to adjacent property.**