8. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	■	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	■
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	■
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	■
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	■
f. Otherwise substantially degrade water quality?	☐	■	☐	☐
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	■
h. Place within a 100-year floodplain structures which would impede or redirect flood flows?	☐	☐	☐	■
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	■
j. Be inundated by seiche, tsunami, or mudflow?	☐	☐	☐	■

Existing Conditions

Surface Water Hydrology. The project is located in northeastern San Mateo County on the bayside of the San Francisco Peninsula. This area receives runoff from five watersheds—San Mateo, Sanchez, Mills, San Bruno, and Colma—encompassing approximately 50 square miles. The area also contains three reservoirs: San Andreas, Upper Crystal Springs, and Lower Crystal Springs. Runoff from urban, agricultural, and water storage activities add to each watershed and reservoir, sometimes producing flow in otherwise dry drainages.

Channels, Creeks, and Streams. The southern portion of the power line crosses San Mateo Creek in the City of San Mateo. In Burlingame, the line crosses Mills Creek, an intermittent stream that originates in the western hills above Burlingame and Hillsborough (Mills Canyon Park) in unincorporated San Mateo County. Mills Creek flows east and empties into the San Francisco Bay in Burlingame. The project crosses Mills Creek at the southeast portion of the Rollins Road and David Road intersection in Burlingame then crosses Lomita Creek, Highline Canal, and El Portal Canal in Millbrae. The line passes over a portion of the San Bruno Slough at Airport Boulevard and East Grand Avenue. The slough is considered an extension of San Francisco Bay. An additional navigable slough channel extends south to the West of Bayshore parcel. This channel crosses under US 101 at the Interstate 380 interchange before intersecting the power line corridor north of San Bruno Avenue. The line crosses Colma Creek and San Bruno Slough in South San Francisco. Colma Creek, which has its headwaters in the northwest foothills of Colma, flows in a southeasterly direction and empties into the San Francisco Bay in South San Francisco. In an effort to mitigate floods, Colma Creek has been constrained within a concrete-walled channel through much of South San Francisco.

Precipitation and Infiltration. The climate in the project area is considered semi-arid Mediterranean, characterized by dry, mild summers and moderately moist, cool winters. Most precipitation falls as rain in the winter and spring, with an average annual precipitation of 20 inches. The seasonal variation in precipitation is reflected in stream flows that often dry up by mid to late summer. The soils in most of the project area are classified as poorly drained, low valley bottom clay soils (City of San Mateo, Burlingame, Millbrae, San Bruno, and South San Francisco) with low permeability, and some sections of well-drained, loamy soil (San Bruno Mountain) with moderate permeability.

Regional development has played a major role in increasing both the amount of impervious surface and the rates of evapotranspiration and runoff. Surface water that does not evaporate eventually runs off to stormwater drains and canals and enters the bay as its final destination.

Wetlands/Lagoon. The power line crosses a saltwater lagoon, freshwater marsh, and seasonal wetlands. The Burlingame Lagoon is located northeast of Coyote Point Recreation Area in Burlingame. The Burlingame Lagoon is dominated by tidal action and has vegetation along the perimeter, indicative of salt marsh communities. Both the lagoon and the freshwater marshes receive urban runoff from surrounding industrial, residential, and recreational uses. Towers 1/11, 1/12, 1/13, 1/14, 2/15, 2/16, 2/17, and 2/18 are all located in the navigable waters of the Burlingame Lagoon.

The West of Bayshore parcel is an area dotted with freshwater wetlands west of US 101 and between developed areas of Millbrae and San Bruno. Vegetation indicative of freshwater marshes is scattered along creek channels and in depressions that fill with water during parts of the year. Three towers (4/36, 4/40, and 5/41) are located in delineated seasonal wetlands of artificial origin in the West of Bayshore parcel. An additional tower, 7/57, is also located in a delineated seasonal wetland of artificial origin north of the West of Bayshore parcel.

Tower 11/86 is located in a delineated freshwater wetland of artificial origin on San Bruno Mountain. Table B-2 lists towers and guard structures located in jurisdictional wetlands and existing access routes that cross jurisdictional wetlands.

Flood Hazards. The power line crosses several areas that are subject to flooding between the City of San Mateo and South San Francisco. Most of these areas are at lower elevations and within one mile of San Francisco Bay. The area surrounding the power line corridor within Poplar Creek Golf Course and Coyote Point Recreation Area may be subject to flood inundation as a result of Crystal Springs Dam failure.

Potential sources of flooding in Burlingame include dikes within the Millsdale Industrial Park that have been constructed along principal drainage channels east of the project area. Low-lying areas of the city that parallel US 101 are also prone to flooding, according to the Burlingame 100-Year Flood Plain. These same low-lying areas are also susceptible to flooding from a major tsunami.

A majority of the wetland areas within the West of Bayshore parcel, Millbrae, and San Mateo County are subject to 100-year floods. The greatest chance of flooding in low-lying areas occurs when rain falls at a rate of at least 1 inch per hour preceding a high tide. This is not a common occurrence, except during exceptionally heavy rainstorms. Several pumps in these areas assist with drainage. The project crosses two low-lying areas in San Bruno that are subject to potential flood hazards during periods of high rain and simultaneous high tides. These areas of salt marsh occur west of the San Bruno Avenue exit of US 101, close to the Millbrae Substation.

In addition, the power line crosses land immediately south of the Martin Substation property in Brisbane that lies within a 100-year flood zone.

Surface Water and Groundwater Supply and Use. This section describes the local water supply sources in the area of the proposed project. Municipal drinking water supplies can include both surface water, such as reservoirs, and groundwater wells.

Surface Water. The San Francisco Public Utilities Commission (SFPUC) manages a reservoir system that supplies the bulk of the surface water to northern San Mateo County. The local reservoirs (San Andreas and Upper and Lower Crystal Springs) belong to larger systems (Hetch Hetchy and Alameda), located in the Sierra Nevada Mountains and the East Bay, that provide approximately 85 percent of the total water supply to the Peninsula, or 335,000 acre-feet per year. Water stored in local reservoirs originates west of Interstate 280 and flows to the urbanized areas along the eastern Peninsula. All freshwater within the system is captured and stored in San Andreas, Upper and Lower Crystal Springs, and in two smaller reservoirs: Pilarcitos and Stone Dam. Alameda County reservoirs supplement the

water supply, providing 32,000 acre-feet per year. Once largely supporting agriculture, most surface water in the Bay Area now serves industrial and urban users.

Groundwater. The aquifer system within the project area is the North San Mateo Sub-basin. The bedrock of the basin builds a big valley, with its deepest expression approximately under State Route 92. The basin is composed of several discontinuous gravel, sand, and clay layers, which make it difficult to distinguish the upper from the lower aquifers and their respective depths. Generally, lower aquifers occur below 150 feet and upper aquifers above 150 feet. Groundwater used for drinking is pumped from the deep aquifer.

Surface Water and Groundwater Quality. This section describes the quality of local water resources in the area of the project site, which include surface and groundwater resources, as well as applicable water quality regulations.

Surface Water. San Francisco Bay, located less than 0.5 mile east of the project area, is the region's major waterbody. Its water quality fluctuates seasonally and annually. As a mixing zone between ocean and land into which river flow carries freshwater, sediments, nutrients, toxic contaminants, and other materials, San Francisco Bay receives a range of organic and inorganic contaminants varying widely in their sources, seasonality, toxicity, and environmental behavior.

As previously discussed, the San Francisco Bay region relies heavily on a series of managed freshwater basins for potable water supply. The San Andreas and Upper and Lower Crystal Springs Reservoirs are located approximately 2 miles west of the project area. Although the local Peninsula watershed runoff provides only 3 percent of the water supply to these reservoirs, it can impact water quality through increased sedimentation during large storm events. Oxygen-depleted conditions at the lower depths of Upper and Lower Crystal Springs Reservoirs cause the release of nutrients into the water column in late summer, stimulating algae growth and resulting in higher turbidities as well as taste and odor changes. San Andreas Reservoir, in contrast, is shallow and, as a result, its water is well mixed. The even distribution of oxygen in this reservoir lowers algae growth rates.

The Hetch Hetchy System captures water predominantly in the form of spring snowmelt at higher elevations of the Sierra Nevada Mountains. Tunnels direct the water to the San Andreas and Upper and Lower Crystal Springs Reservoirs. This water meets the water quality requirements for unfiltered water under the Surface Water Treatment Rule. However, because it is transported long distances, combined with other sources, and detained for long time periods, the water must be treated to ensure bacteria and viruses are eliminated.

Groundwater. Groundwater quality varies throughout the South Bay Basins (an area along the Peninsula from San Francisco to San Jose), but it is generally very high, particularly in deeper aquifer systems. In contrast, there is significant and widespread pollution of the shallow aquifers near the project site from leaking fuel and solvent from underground storage tanks. Six agencies regulate the cleanups underway at the majority of these sites. Various pollutants and/or polluting activities have the potential to degrade water quality in the South Bay Basins. The major chemical threats include methyl

tertiary-butyl ether (MTBE), solvents, nitrates, and saltwater intrusion. Construction for the proposed project would not involve excavation or dewatering activities in the shallow aquifers.

Leaking underground storage tanks (LUSTs) and the associated release of MTBE account for the largest number of groundwater pollution sites in the South Bay Basins. However, groundwater contaminants from LUSTs have minimally affected municipal and domestic wells. Refer to Section B.7, Hazards and Hazardous Materials, for the specific locations and descriptions of these pollutants.

Water Quality Regulation. The Regional Water Quality Control Board—Region 2 is responsible for protecting the beneficial uses of water resources in the San Francisco Bay Area. The Region 2 board adopted a *Regional Water Quality Control Board Basin Plan* in June 1995 and amended to the plan in April 2000. The plan sets forth implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. The Basin Plan establishes both numerical and narrative standards and objectives for water quality specific to the Bay Area aimed at protecting aquatic resources. Discharges to surface waters in the region are subject to regulatory standards set forth in the Basin Plan.

Significance Criteria

The significance criteria for this analysis is based on Appendix G of the CEQA Guidelines. The project is considered to have a significance impact on water resources if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area, as mapped on a federal Flood hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year floodplain structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure to a levee or dam; or
- Be inundated by seiche, tsunami, or mudflow

Explanation of the Hydrology and Water Quality Checklist

a. Violate Water Quality or Waste Discharge Standards — **Less-than-Significant With Mitigation Incorporated**

There is potential for limited, minor erosion and siltation as a result of stormwater runoff from disturbed areas. Ground disturbance would be limited to grading activities within the fencelines of the San Mateo, Burlingame, and Millbrae Substations and to auguring for the installation of temporary guard structures in the West of Bayshore parcel and on each side of the BART tracks.

To minimize impact to wetlands, access to the West of Bayshore parcel would be by helicopter and, depending on site conditions, by trucks or on foot. Vehicle access would be via existing unpaved roads, and no grading of existing roads or new roadways would be required.

No ground disturbance would occur at the pull or tension sites. The pull or tension sites, all located in either paved or vegetated areas, would be cut to ground level without disturbing the soil. These sites would be accessed via existing roadways.

Implementation of the following mitigation measure along with the APM-17 and PG&E's BMP Plan would reduce impacts of erosion and sedimentation and will ensure compliance with the *Regional Water Quality Control Board Basin Plan* and water quality objectives.

MM HY-1 PG&E shall implement best management practices (e.g., water bars, silt fences, staked straw bales, and mulching and seeding of all disturbed areas) defined in the California Storm Water Quality Association (Stormwater Best Management Practices Handbook, 2003), the Bay Area Stormwater Agencies Association Start at the Source – Design Guidance Manual, or similar documents. These documents shall be identified by PG&E prior to final project approval.

b. Deplete Groundwater or Interfere with Groundwater Recharge — **No Impact**

The proposed project would not use groundwater resources, nor would it construct new structures that would affect groundwater recharge. Therefore, there would be no impact.

c. Alteration of Drainage Resulting in Erosion — **No Impact**

The project would modify existing substations and upgrade overhead transmission lines. As such, the proposed project would not alter the existing landform or drainage patterns and, therefore, would not result in substantial erosion or siltation. There would be no impact.

d. Alter Drainage Resulting in Flooding — **No Impact**

The project would modify existing substations and upgrade overhead transmission lines. As such, the proposed project would not alter the existing landform or drainage patterns such that existing ponding or flood hazards would be exacerbated. No net new impervious surfaces would be added in the long

run, so that runoff volumes would not be expected to change. Since drainage patterns would not be altered by the project, there would be no flood hazard impact.

e. Create Runoff Exceeding Stormwater Drainage System Capacity **No Impact**

The project would not create or contribute runoff water. Water added to construction areas to suppress dust would be absorbed and would not run off site. The project would not increase the amount of impervious surfaces and, therefore, would not create runoff. There would be no impact.

f. Degrade Water Quality **Less-than-Significant With Mitigation Incorporated**

There is potential for minor erosion and siltation to result from stormwater runoff from disturbed areas (refer to Section B.6, Geology and Soils, of this document for more information on erosion). The project would not result in alteration to existing drainage patterns and, therefore, would not result in substantial long-term erosion or siltation. To reduce impacts of construction-related activities that could affect water quality, MM HY-1, above, is proposed. As a result, the project would not result in a prohibited discharge as defined in the *Regional Water Quality Control Board Basin Plan* or conflict with any of the water quality objectives. This would result in a less-than-significant impact.

Installation of the new breakers or transformers at the substations and routine transport, use, and disposal of fuels, lubricating oils, and hydraulic fluid would involve the use of hazardous materials and oils. In addition, helicopters fueling at the two or three undetermined staging areas could cause a hazardous materials release. Potential spills or releases of hazardous materials could result in adverse impacts to surface and/or groundwater. However, these potential impacts would be reduced to a less-than-significant level through compliance with applicable federal, state, and local laws and MM HAZ-1 to restrict areas of refueling.

g. Place Housing in Flood Zone **No Impact**

No housing would be constructed as a result of the project. Therefore, there would be no flood hazard impacts to residents as a result of the proposed project.

h. Install Structures Impeding Flood Flows **No Impact**

No new structures would be constructed that would impede or redirect flood flow within a 100-year flood hazard area. As a result, the project would not impact on flood flows.

i. Expose Structures to Flooding **No Impact**

The project involves modifications to existing structures in an existing PG&E right-of-way and in existing substations. As a result, the proposed project would not expose people or structures to an increased risk of loss, injury, or death as a result of dam or levee failure.

j. Inundation by Seiche, Tsunami, or Mudflow **No Impact**

The potential of inundation by a tsunami, calculated for the 500-year runup zone, exists in limited parts of the project area (USAEWES, 1975). Because the project involves minor modifications to existing

tower and substation sites, tsunami events would have no impact on the proposed project. Furthermore, the project site is not located near a large lake or other surface water body or any area in which a seiche or mudflow would directly or indirectly affect the site. Therefore, there would be no impacts.