Section 4.8
Hydrology and Water Quality

Introduction

This section describes the existing hydrology and water quality in the project area. It discusses impacts related to hydrology, water quality, and flooding that would result from constructing and operating the proposed project. Mitigation measures are identified that would avoid or reduce potentially significant impacts to a less-than-significant level.

Methodology

Surface water and groundwater resources in the project area were analyzed by reviewing recent studies from state and local water agencies, by obtaining information from the cities and counties through which the project passes, and by accessing state water databases.

Affected Environment

Regulatory Setting

Federal Regulations

Clean Water Act (Sections 401 and 404)

The CWA was implemented to "restore and maintain the chemical, physical, and biological integrity of the nation's waters," including streams and wetlands (33 CFR 1251, 33 CFR 328.3). Under Section 404 of the CWA, dredge and fill activities across and in wetlands and streams are regulated by the Corps. Under the CWA, the regional water board must issue or waive Section 401 water quality certification for the project to be permitted under Section 404. Water quality certification requires evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States.

Section 303 (d) of the CWA requires states to identify waterbodies that do not meet water quality objectives and are not supporting their beneficial uses. In addition to identifying the waterbodies that are not supporting beneficial uses, the Section 303 (d) list identifies the pollutant or stressor causing impairment and establishes a priority for developing a control plan to address the impairments.

National Pollutant Discharge Elimination System

Created under the CWA, the NPDES permit program applies to stormwater and point source discharges. EPA has delegated regulatory authority for the NPDES program to the nine regional water quality control boards. As noted in Section 4.6, the Central Coast Water Board has jurisdiction over the project area. A provision of the NPDES permit requires that a SWPPP be developed and that it be implemented concurrently with construction.

State Regulations

Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act of 1969 authorizes the State Water Board to apply WDRs for discharges to state waters. The Act requires that the State Water Board or the Regional Water Board adopt water quality control plans (Basin Plans) for protection of water quality.

The Central Coast Water Board is responsible for protecting the beneficial uses of water resources for the Central Coast region. The Central Coast Water Board adopted a Water Quality Control Plan (Basin Plan) in September 1994 that 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 Central Coast that are aimed at protecting and providing surface water and groundwater at the highest quality that is reasonable. Discharges to surface waters in the region are subject to regulatory standards set forth in the Basin Plan. The tributary rule applies to surface waterbodies that are not described in the Regional Basin Plan, but are part of a larger listed waterbody. The rule states that the beneficial uses of any specified waterbody system generally apply to the tributary streams.

Under this plan, the Central Coast Water Board designates waterbodies with beneficial uses, sets water quality objectives to protect those uses, and implements plans to achieve water quality objectives through its regulatory programs.

Both the CWA and the Porter-Cologne Act require compliance with the NPDES program for projects that disturb 1 acre or more of soil. Because the total area of soil disturbance for the proposed project is greater than 1 acre, construction

activities must comply with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. Compliance with the General Construction Permit requires development and implementation of an SWPPP, which must be prepared before construction begins.

Local Drainage Design Standards

Although the project is not subject to local discretionary permitting requirements, PG&E will obtain any necessary local non-discretionary grading permits. Drainage plans are required when applying for a grading permit in both San Benito and Monterey Counties. Drainage studies are required only when required by the county or city with jurisdiction. The drainage design standards of the affected counties and cities are described below.

San Benito County

The San Benito County Storm Drainage Design Standards (San Benito County 2003) outline design storm requirements and procedures required to determine the hydrologic and hydraulic parameters related to implementation of a project. A hydrology and hydraulics report must be completed and submitted prior to issuance of a grading permit.

City of Hollister

The City of Hollister drainage design standards (City of Hollister 1992) outline design storm requirements and procedures to determine the hydrologic and hydraulic parameters related to implementation of a project. All proposed improvements within the city limits must submit plans and specifications, including a hydrology report for review by the Engineering Department. A portion of the Hollister Pole Segment lies in the Hollister Planning Area, and the Hollister Substation appears to be located in the Hollister Sphere of Influence, between the city limits and the Planning Area. Neither the segment nor the substation is located in the city limits. Thus, the City drainage design standards would not apply until the area is annexed to the City.

City of San Juan Bautista

The City of San Juan Bautista requires that projects within the city limits comply with the City of Hollister drainage design standards (Sundt pers. comm.). The proposed project is close to the City of San Juan Bautista and its Planning Area but is not within either of these boundaries. Therefore, the City of Hollister drainage design standards do not apply to the project.

County of Monterey

Monterey County requires that projects comply with the design storm requirements and procedures in the Caltrans *Highway Design Manual* (http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm) to determine the hydrologic and hydraulic parameters of a proposed project (Guzman pers. comm.).

Project Setting

Surface Water Hydrology

The Hollister Tower Segment is located in the Salinas River Watershed. The Hollister Pole Segment is located in the Pajaro River Watershed. These watersheds and their major sub watersheds are described below and are illustrated in Figure 4.8-1.

Salinas River Watershed

The Salinas River is located in Monterey County. Although the river is not near the project, it is included in this discussion because Gabilan Creek is a tributary to the Salinas River. The Salinas River is the largest river of the central coast of California and drains nearly 4,600 square miles (California Integrated Watershed Mapping Committee 2004). Its elevation ranges from approximately 0 to 945 feet amsl (USGS 1999). It flows north-northwest and drains the Salinas Valley before discharging into the Monterey Bay approximately 11 miles north of the City of Monterey. The watershed is approximately 10 miles wide and 155 miles long.

Crazy Horse Canyon Subwatershed

Crazy Horse Canyon is a subwatershed of the Salinas River Watershed. It captures the runoff from the top of the ridge near the Monterey/San Benito county line, where it flows into Gabilan Creek. The Crazy Horse Canyon Watershed is split into two separate sub watersheds by a ridge that runs between them; however, the water flows into the same tributaries, where it is ultimately converges with the Salinas River. For the purposes of this PEA, the watersheds are combined and described as one.

The Crazy Horse Canyon Watershed drains approximately 6.4 square miles (California Integrated Watershed Mapping Committee 2004). The elevation ranges from 70 to 408 feet amsl (USGS 1999). Gabilan Creek is a tributary to the Salinas River that is located in Monterey County. The entire southwestern portion of the project lies within this watershed.

Pajaro River Watershed

The Pajaro River Watershed covers 1,263 square miles and overlaps four counties: Santa Cruz, Santa Clara, Monterey, and San Benito. Its elevation ranges from sea level to approximately 4,900 feet amsl (USGS 1999). The mouth of the Pajaro River is near Watsonville, where it empties into Monterey Bay just north of Elkhorn Slough. Average precipitation in this watershed ranges from 13 inches in Hollister to over 44 inches in the Santa Cruz Mountains (Central Coast Water Board 2007). This watershed captures precipitation as rainfall and does not accumulate snowpack. Almost all of the annual precipitation falls between November and April (Central Coast Water Board 2007). A large portion of the project is located in this watershed, except for the western portion of the project that is within the County of Monterey and part of the Salinas River Watershed.

Below are descriptions of the sub watersheds of the Pajaro River Watershed in which the Hollister Pole Segment will be located.

San Benito River Subwatershed

The San Benito Watershed is one of the subwatersheds to the Pajaro River Watershed. It covers an area of approximately 866 square miles (California Integrated Watershed Mapping Committee 2004). The elevation ranges from 108 to 1,522 feet amsl (USGS 1999).

The headwaters of San Benito River are near the southern end of the Gabilan Range; the river flows northwest traveling for about 65 miles before its confluence with the Pajaro River. The San Benito River is longer than the Pajaro River and it drains more area, but it has proportionally lower flows. The San Benito River makes up a substantial amount of the Pajaro River Watershed. The streambed is usually dry during summer, as the watershed receives almost all of its precipitation during winter.

Sargent Creek Subwatershed

The Sargent Creek Watershed is a subwatershed to the Pajaro River Watershed. The watershed covers approximately 10.58 square miles (California Integrated Watershed Mapping Committee 2004). The elevation ranges from approximately 105 to 1,358 feet amsl (USGS 1999)

Flint Hills Subwatershed

The Flint Hills Watershed is a subwatershed to the Pajaro River Watershed and is the second largest sub watershed in the project area. This watershed is in the most northern part of the project and accounts for approximately 19.20 square

miles (California Integrated Watershed Mapping Committee 2004). The elevation ranges from 34 to 358 feet amsl (USGS 1999).

Pinecate Creek Subwatershed

Pinecate Creek Watershed is a subwatershed of the Pajaro River Watershed and is larger than the Sargent Creek Watershed. It lies on the western side of the project and covers approximately 13.82 square miles (California Integrated Watershed Mapping Committee 2004). Elevation ranges from 34 to 399 feet amsl (USGS 1999).

Surface Water Quality

The overall goals of water quality regulation are to protect and maintain thriving aquatic ecosystems and the resources those systems provide to society. California's regulatory framework uses water quality objectives both to define appropriate levels of environmental quality and to control activities that can adversely affect aquatic systems. The Central Coast Water Board has set forth numerical water quality objectives for the San Benito River, the Salinas River, and Gabilan Creek. The objectives are included in Table 4.8-1.

Table 4.8-1. Surface Water Quality Objectives for Waterbodies in the Project Area

Subbasin	TDS (mg/L)	Cl (mg/L)	SO_4 (mg/L)	B (mg/L)	Na (mg/L)
Pajaro River at the San Benito River	1,400	300	250	1.0	250
San Benito River	1,000	250	250	1.0	200
Salinas River (Diablo tributary)	1,200	80	700	0.50	50
Gabilan Creek	300	50	50	.02	50

Notes:

B = Boron.
Cl = Chlorine.
mg/L = Milligrams per liter.
Na = Sodium.
SO_4 = Sulfate.
TDS = Total dissolved solids.

Source: Central Coast Water Board 1994.

The Pajaro River, the San Benito River, and the Salinas River Watersheds in the project area have been placed on the Section 303 (d) list of impaired waterbodies (Central Coast Water Board 2002). Table 4.8-2 includes the pollutant or stressor for which each waterbody has been listed.

Table 4.8-2. Section 303 (d) Water Quality Pollutants for Limited Waterbody Segments in the Project Area

Subbasin	Nutrients	Fecal Coliform	Sedimentation/ Siltation	Pesticides	Salinity/Total Dissolved Solids/Chlorides
Pajaro River	X	X	X		
San Benito River		X	X		
Salinas River[a]	X	X	X	X	X
Gabilan Creek		X			

[a] Salinas River: Lower, estuary to near Gonzales Road crossing, watersheds 30910 and 30920.

Source: Central Coast Water Board 2002.

Groundwater Hydrology

The groundwater hydrology varies from the western end of the project located in Monterey County to the eastern end of the project located in San Benito County. The project area overlies three mapped groundwater basins, as described by the California Department of Water Resources (DWR) Bulletin 118 (DWR 2003). The basins are divided by faults, rifts, mountain ranges, and rivers. On the western end of the project (in Monterey County), the groundwater flow direction is generally to the west—toward the ocean. On the eastern end of the project (in San Benito County), groundwater tends to flow toward the San Benito River and follows the contours of the land surface. The groundwater levels throughout the project area vary depending on the location. Within San Benito County, groundwater levels range from 4 to 59 feet (DWR 2004a). No data were available concerning groundwater levels in the foothills of the Diablo Mountain Ranges on the western end of the project, within Monterey County.

Groundwater Quality

No data about groundwater quality were found in DWR's Bulletin 118 for the San Benito River Valley groundwater basin (DWR 2004a). Information for the Gilroy-Hollister Valley Groundwater Basin, San Juan Bautista Subbasin, and Hollister Subbasin indicates that water in the subbasins is somewhat hard and contains significant concentrations of sulfide and chloride (DWR 2004b). Characterization of the groundwater in the Salinas Valley Groundwater Basin, Langley area subbasin has not been determined; but groundwater beneath the Granitic Ridge portion of the subbasin has been affected with elevated levels of nitrate (DWR 2004c).

The Central Coast Water Board has set forth objectives for the groundwater in this region for taste, odors, and radioactivity. Groundwater pumped from this region shall not contain taste and odor producing substances in concentrations that adversely affect beneficial uses (Central Coast Water Board 1994).

Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life (Central Coast Water Board 1994).

Drainage

Storm drain systems in the Cities of Hollister and San Juan Bautista collect and convey stormwater runoff associated with impervious surfaces. Most of the systems drain to nearby streams and creeks. In rural areas, stormwater drainage is not controlled and travels in natural drainage courses to ephemeral receiving waters.

Climate and Precipitation

The climate in the project area is a Mediterranean type, with cool wet winters and hot dry summers. Most of the rainfall occurs in winter, between October and April. Average precipitation in San Benito County varies, depending on the elevation, between 13 and 17 inches (DWR 2004a). The average precipitation in the Monterey County varies between11 and 13 inches—also depending on elevation (DWR 2004c).

Flooding

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance for those communities that comply with FEMA regulations. The proposed project crosses the 100-year floodplain in three locations (FEMA 1991). The Hollister Pole Segment crosses the 100-year floodplain near the San Juan Highway and at the San Benito River. The Proposed River Crossing crosses the 100-year floodplain at the San Benito River (FEMA1991). The Hollister Tower Segment does not cross the floodplain as defined by FEMA (FEMA 1991). The 100-year flood zones for the proposed project are shown in Figure 4.8-2.

Environmental Effects

Significance Criteria

For this analysis, an impact related to hydrology and water quality was considered potentially significant under CEQA if the project would result in any of the following environmental effects; these criteria are based on professional practice and Appendix G of the State CEQA Guidelines:

- Violate any water quality standards, waste discharge requirements, or otherwise substantially degrade water quality;
- 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 that would result in substantial erosion or siltation on site or off site;
- Substantially degrade the existing surface water or groundwater quality as a result of erosion and siltation;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff; or
- Place structures within a 100-year flood hazard area that would impede or redirect flood flows.

Impacts and Mitigation Measures

Construction Impacts

Construction activities with the potential to disturb ground surface include grading for new and existing roads, and demolition and construction of concrete pads for footings of the new towers and poles. Holes for the new towers and poles will be augured to a depth of approximately 12–27 feet and backfilled with concrete or imported material.

Currently, the majority of the project is accessible to maintenance vehicles by existing roads. However, some of the existing roads will be upgraded to accommodate the larger equipment and trucks for access to the remote areas, gravel will be installed to minimize the amount of rutting and erosion during the rainy season, and culverts will be constructed to direct runoff water under the access roads. The total area of temporary disturbance for this project is estimated at approximately 82.9 acres. Of this area, approximately 3.5 acres will be improved for power line footings or access roads.

Potential violation of water quality standards from construction activities – less-than-significant impact

PG&E or its contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) that describes erosion and sediment control measures to be implemented for the project. Implementation of the SWPPP, as described below in APM HYDRO-1, will ensure that impacts associated with construction-related erosion and sedimentation will be less than significant.

APM HYDRO-1: PREPARE AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.

PG&E or its contractor will prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP will include a list of BMPs to be implemented in areas with potential to drain to tributaries of the Salinas River in Monterey County or to the San Benito River in San Benito County. These BMPs will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of the project-specific SWPPP may include, but are not limited to, the following control measures:

- Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, grass buffer strips, high infiltration substrates, grassy swales, and temporary revegetation or other ground cover) will be employed to control erosion from disturbed areas.
- Drainage facilities in downstream offsite areas will be protected from sediment using BMPs consistent with Central Coast Water Board requirements.
- Vegetative cover will be established on the disturbed areas as soon as possible after disturbance.

Potential spills of hazardous materials – less-than-significant impact

Maintenance and operation of equipment will use known hazardous materials such as gasoline, engine oil, and concrete, which could contaminate runoff and surface waters in the project area. Discharge of hazardous materials into surface waters during construction could result in violation of certain water quality standards. Implementation of a Spill Prevention Control and Countermeasure Plan (SPCCP), as described below in APM HYDRO-2, will ensure that this impact is less than significant.

APM HYDRO-2: DEVELOP AND IMPLEMENT A SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN.

PG&E or its contractor will develop and implement an SPCCP to minimize the potential for, and effects of, spills of hazardous, toxic, or petroleum substances during all construction activities. The SPCCP will be completed and included in the SWPPP before any construction activities begin. PG&E will routinely inspect the construction areas to verify that the control measures specified in the SPCCP are properly implemented and maintained. PG&E will notify its contractors immediately if there is a noncompliance issue and will require compliance.

If an appreciable spill has occurred, a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination.

This analysis will conform to American Society for Testing and Materials (ASTM) standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, PG&E and its contractors will select and implement additional measures to control contamination, with a performance standard that groundwater quality and surface water quality must be returned to baseline conditions.

Potential alteration of drainage patterns – less-than-significant impact

Grading, drilling, and other earthwork during construction of the proposed project would result in soil disturbance that could temporarily alter drainage patterns and increase the hazard of erosion and sedimentation. This would cause water quality degradation. Implementation of the BMPs detailed in the SWPPP, particularly the erosion control measures, will minimize the potential for the proposed project to substantially alter the existing drainage pattern of the site or project area in a manner that would result in substantial erosion or siltation onsite or offsite.

In addition to the SWPPP, implementation of APM HYDRO-3 described below will ensure that impacts related to erosion and sedimentation for altered drainage patterns are less than significant.

APM HYDRO-3: PERFORM A DRAINAGE STUDY AND IMPLEMENT A DRAINAGE PLAN

A study will be performed for any area that crosses a waterway and requires a conveyance structure (culvert) for grading of new construction maintenance roads. The study will include calculations for the potential increases in stormwater runoff from related construction activities. The study also will identify critical drainage paths, and PG&E will implement drainage improvements to minimize the risk of flooding to downstream areas. The Drainage Plan will require that PG&E or its contractor will be responsible for proper maintenance of the drainages and any BMP associated with each drainage. Implementation of these measures will ensure that altered drainage patterns from project-related construction activities do not significantly affect erosion or sedimentation.

Potential degradation of water quality from dewatering activities – less-than-significant impact

The depth of the water table is expected to be below most excavations and drilling activities throughout the project area. However, groundwater could be encountered when excavation takes place near an ephemeral stream or creek and at lower elevations on the valley floor near or in the San Benito River. Dewatering may be required prior to and during pole placement, construction of foundations for TSPs, or other construction-related activities. The quantity of

water removed will be small and impacts to the groundwater supply are expected to be minimal. However, if the water removed from the dewatering activities was not properly disposed of, turbid or concrete-laden water could be released into the waterway, which would adversely affect water quality.

Implementation of APM HYDRO-1 will ensure that this impact is less than significant.

Placing structures within the 100-year floodplain – less-than-significant impact

The proposed project crosses sections of the mapped 100-year floodplain as defined by FEMA in three locations. The only permanent proposed project features that lie within the mapped 100-year floodplain are footings for new poles. The total area for all of the new foundations is approximately 0.004112 acre. The foundations for the poles are relatively small compared to the 100-year flood area, and they will not substantially impede or redirect flood flows.

PG&E plans to locate some of the temporary staging areas in the 100-year floodplain. These staging areas will be removed when construction is completed and will be restored to their natural states. For the San Benito River, the pole locations for the Proposed River Crossing are outside the stream course (because the poles will span from bank to bank). Therefore, no significant construction or disturbance will occur within the active San Benito River channel, and the future flood flows of the San Benito River will not be affected.

The impact to the hydrology, inundation, and flow path of the floodplain is less than significant, and no mitigation is required.

Operations Impacts

Operation and maintenance activities for the new and updated power lines will not affect the water quality or hydrology in the project vicinity. The operation and maintenance practices related to the power lines and supporting permanent infrastructure will be identical to current operation and maintenance, and in compliance with all current water quality regulations. Therefore, no impacts on hydrology or water quality are associated with operation or maintenance of the power lines.

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