Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Potentially Significant Unless Mitigation Incorporation*	*Less than Significant Impact*	*No Impact*
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., 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 of 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 storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) 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?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
h) 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?	☐	☐	☒	☐
i) Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

SETTING

While the subject lands are situated in three distinct areas, the project areas lie in the Pit River drainage area. The Fall River, the main tributary to the Pit River, lies within the project area, and originates from numerous large springs and spring fed tributaries. Ahjumawi Lava Beds State Park drains to spring-fed Horr Pond and Big Lake, the headwaters of the Tule River. McArthur Swamp drains through a series of channels and canals to the Pit River south of the site. At the

western boundary of McArthur Swamp, the Little Tule River joins the Tule River and flows into the Fall River. At Fall River Mills, due south of McArthur Swamp, the Fall River flows into the Pit River.

PG&E has pre-1914 entitlements on the Fall River at Fall River Mills and at Pit 3 Dam (Lake Britton). Additional water rights were appropriated after 1914 for portions of the Pit River Project. The water rights associated with McArthur Swamp are primarily for stock watering.

BURNEY FALLS, BOWMAN DITCH, AND AHJUMAWI PROPERTY

Burney Falls is situated near the mouth of Burney Creek on Lake Britton, which lies within the Pit River Drainage basin. Pit 3 Dam creates Lake Britton, which functions as the forebay for PG&E's Pit River 3 Powerhouse. Burney Creek originates near the Thousand Lakes Wilderness, about 25 miles south of Lake Britton. During summer low flow periods, portions of Burney Creek between the town of Burney and Burney Falls are comprised solely of subsurface flows. From just above Burney Falls to Lake Britton, significant groundwater accretions comprise most of Burney Creek's flow.

The authorized land uses that have a potential to impact water resources within the Pit River drainage include recreation, livestock grazing and watering, agriculture, and septic systems.

PG&E holds all the water rights associated with Bowman Ditch, and its uses of the property do not include any generating facilities or other activities that result in significant uses of water. Recreation activities associated with the adjoining Ahjumawi State Park are the only authorized land uses that have the potential to impact water resources in Bowman Ditch.

Ahjumawi is largely undeveloped, with the exception of over four miles of deteriorated levees along the Tule and Little Tule Rivers. Repair and maintenance of the levees has historically been accomplished with materials dredged from the bottom of the adjacent rivers. Over the past few years, levee leaks due to muskrat activity, erosion caused by wave action, and the absence of routine dredging to protect the Shasta crayfish have resulted in the flooding of Ahjumawi.

MCARTHUR SWAMP AND GLENBURN DREDGE SITE

Research shows that PG&E acquired the site in 1917 as part of its development of the hydroelectric resources of the Pit River. PG&E originally acquired the property from the McArthur family to obtain the land-associated water rights for its projects. A system of levees was subsequently constructed along the Tule River, Horr Pond, and Big Lake. The remainder of the site was drained and protected by levees, and leased to local livestock owners for grazing land. The site remains otherwise undeveloped. The springs on the site flow from fall through the spring until groundwater pumping brings down the water table.

Approximately 5.8 miles of levees along Big Lake and the Tule River protect the McArthur Swamp. Historically, PG&E to prevent inundation of its property, State of California property,

and other private properties adjacent to the levees have maintained the Tule River Levee System, including the 5.8-mile section called the McArthur Swamp levee in the MSMP. McArthur Swamp is drained by several canals, which are used for livestock watering. These canals include the McArthur Canal, the McArthur Drain, The Lee Drain, and the Central Drain.

There are two wells in the vicinity of the site. A state water supply well located along the southern boundary of McArthur Road serves 1,600 people through 460 connections. There is a public water supply well located southeast of the site in the Town of McArthur, which services less than 101 residents at McArthur Mobile Home Park. Additionally, there are two abandoned artesian wells on Rat Farm Road.

Over the 5-year period following the transfer of McArthur Swamp to CWA, the MSMP (described in Section 1.0 Project Description) calls for CWA and the RMA, to take specified actions to improve wildlife habitat, stabilize levees, protect and create habitat for the Shasta crayfish, and some of these actions have the potential to affect hydrologic resources.

REGULATORY SETTING

The federal Clean Water Act provides for restoration and maintenance of water quality, including pollutant discharges and prevention of discharge of pollutants in toxic amounts. Section 401 of the Clean Water Act requires an applicant for a federal license or permit for any activity that may result in a discharge into navigable waters to obtain a certification from the state that discharges will comply with state and federal limitations, or obtain a waiver of certification from the state.

The groundwater basin in the project area is subject to the jurisdiction of Shasta County. A valid permit to drill a well is required in Shasta County. Permits are obtained from the Environmental Health Division, within the Department of Resource Management. Section 13750.5 of the California Water Code requires that any person digging, boring, drilling, deepening, or destroying a water well, cathodic protection well, or monitoring well possess a C-57 Water Well Contractors License. A well permit must clearly identify the drilling contractor and C-57 contractor's license number.

Shasta County's Division of Environmental Health, within the Department of Resource Management, is charged with the responsibility of enforcement of pertinent California health laws, rules, regulations, and Shasta County ordinances.

HYDROLOGY AND WATER IMPACT DISCUSSION

a) The proposed improvement of McArthur Swamp Levee, development of fresh emergent wetlands, and development of reverse cycle wetlands will require considerable earth movement. The proposed project is not expected to contribute pollutants to surface waters over the long term. However, in the near-term, construction activities related to the project (i.e., excavation, soil stockpiling, and grading) will be required and will take place adjacent

to the Tule River. These activities can expose soil and contribute to accelerated soil erosion by wind and water. Short-term construction-related erosion is probable on the project site during construction and could constitute the primary source of water pollutants. Secondary sources could include the incidental release from construction equipment of petroleum-based substances such as gasoline, engine oil, and hydraulic fluid. Soil erosion can cause various environmental impacts, which could directly affect the water quality of the Tule River and adjacent water.

In conformance with requirements of the Clean Water Act administered by the USEPA, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared by CWA, in conformance with the California NPDES General Permit for Storm Water Discharges. The SWPPP shall focus on operations associated with construction activity. The SWPPP shall contain specific actions for construction, storage, stabilization, monitoring, and reporting activities at the project site. Proposed levee protection measures will be performed from the landside of the levee to minimize siltation and erosion impacts to the waters on the opposite side of the levee.

The SWPPP shall include best management practices (BMPs) necessary to control pollutant sources associated with the handling and storage of construction materials and equipment; site grading activities; and post-construction runoff. These BMP elements include hazardous materials storage, storage of construction equipment, containment of leaking construction equipment, spill prevention and control practices, and site worker training. Project related activities could result in temporary increases in sediment in Tule River and therefore, will be conducted in accordance with BMPs designed to minimize sedimentation.

Operating the proposed project in accordance with the SWPPP and its associated BMPs will minimize or eliminate construction-related pollutants from entering Tule River during the levee improvements and wetlands construction activities. In the long term, the project will have beneficial impact by stabilizing the levees. The above measures shall be incorporated into the project to control, reduce and eliminate pollutant sources, the potential for the project activities to violate water quality standards or waste discharge requirements is considered a less than significant impact.

As part of the proposed project, the Dutra dredge “Frances” is to be donated by PG&E to CWA in the land transfer agreement for potential emergency levee maintenance in the future. It has been on site and used for many years by PG&E. IT Corporation identified no recognized environmental conditions for the transfer property during the Phase I Environmental Assessment prepared in 1999. The land transfer itself is not expected to violate any water quality standards or waste discharge requirements.

b) The groundwater body, rivers, springs and lakes are hydraulically interrelated. The Fall River Valley Groundwater Basin is one of two significant groundwater basins in Shasta

County. Although the firm, or reliable, water yield from this basin is unknown, the storage capacity for the 120-square-mile Fall River Valley Basin is estimated to contain approximately one million acre-feet of storage. Primary uses of groundwater in the area include municipal and agricultural uses. The Fall River Community Services District owns and operates a municipal and domestic water system in the communities of Fall River Mills and McArthur. The proposed transfer agreement includes installation of an irrigation well capable of producing 2,000 GPM in Field E6, and additional piping will be installed to deliver water to nearby fields. The water will be used to supply a part of 300 ac-ft of supplemental water per year to achieve wetland management objectives outlined in the MSMP. This groundwater extraction will reduce the amount of water available to the system by the amount that is lost to evapo-transpiration on the wetlands. However, because of the minimal draft on the available groundwater resource by municipal and agricultural uses in the Fall River Valley, this reduction is not expected to impact existing land uses or planned uses. A well drilling permit is required in Shasta County and a subsequent drilling report, including the water well log of boring materials, shall be forwarded to the California Department of Water Resources in accordance with California Water Code Section 13700.

c) Earthwork associated with constructing water management berms and brood ponds, grading fields, ditch maintenance, and road improvements have the potential to alter the existing drainage pattern of the site in a manner that would result in siltation and/erosion. The PEA states that these activities shall be conducted under dry conditions using standard excavation equipment. When water is first applied to the disturbed areas, either by precipitation or irrigation, increases in turbidity and total suspended solids may result. The impact will correspond with other agricultural practices being conducted on fallow land within the Fall River Valley and will, therefore, be insignificant. Any construction impacts are expected to be confined to fields themselves, as the water being applied will be used for irrigation and wildlife habitat in those fields and not immediately discharged, allowing for percolation and settling of any suspended material. PG&E has indicated that the wetland construction work will be completed under a USACOE Nationwide No. 27 Permit, which requires agreement with the USFWS and a water certification or waiver.

According to the Shasta County Grading Ordinance, a grading permit is required for activities involving movement of earth materials in excess of 250 cubic yards or that disturbs 10,000 square feet or more of surface area. In addition, for earth moving activities taking place between October 15 and May 1, a wet weather plan must be prepared by an erosion control specialist. The Shasta County Environmental Health Department conducts a grading permit inspection and is responsible for ensuring compliance on the ground. The project shall obtain a Grading Permit from Shasta County and follow ordinance requirements to control and minimize erosion and sedimentation during earth movement activities.

d) CWA will accept transfer of McArthur Swamp subject to a conservation easement and the MSMP. The Conservation Easement obligates CWA and its successors to preserve the existing beneficial uses of McArthur Swamp, and to use the property in a way that fosters

local community cohesiveness, economic viability, and ecological stability. In particular, the Conservation Easement binds CWA, and all successor owners, to (1) forever preserve the existing scenic, agricultural, and open space condition of the properties; (2) preserve cultural sites existing at McArthur Swamp; (3) maintain existing wildlife benefits; and (4) continue wetland habitat enhancement, property,management, and the protection of the properties in accordance with the MSMP. Although there will be some earth moving to construct water management berms, brood ponds, etc., the project does not include any features that would increase impervious area on the project property and therefore would not substantially alter the existing drainage pattern of the site in a manner that would increase flooding. Implementation of the proposed project will have a less than significant impact on the rate or amount of surface runoff leaving the project site.

e) The drainage system on the site is comprised of a network of canals and drains. The system is also used to provide water for livestock. Impacts from minor construction, such as road repairs, installing a well and related conduit, constructing ponds, and adding fencing may disturb soil temporarily. Permits from local and federal agencies will govern these activities. The minor changes to the improvements will not significantly change the existing uses of the land, and therefore, the quantity of storm water runoff is not expected to increase beyond current conditions. Also, as described in more detail under item (a), short-term construction-related erosion could constitute the primary source of water pollutants. However, the proposed project is not expected to contribute pollutants to surface waters over the long term.

f, g) Portions of the project lands lie within the 100-year flood hazard area. However, no housing or other structures are proposed as part of this project therefore no impact is anticipated.

h) The portion of Ahjumawi Lava Springs State Park located between the Tule River and the Little Tule River was protected by a levee. However the levee failed in recent years, resulting in flooding of this portion of the park. It is not feasible to make repairs to the levee to the levee due to the presence of state and federally listed endangered species, the Shasta Crayfish. Following the transfer of property, the levees will be allowed to deteriorate. The State of California will release all claims against PG&E arising out of the failure of the State Park Levee. This release is necessary to implement the "no maintenance" alternative recommended by the Shasta Crayfish Monitoring and Management Plan, part of the MSMP. Levee improvement work at McArthur Swamp is currently ongoing pursuant to a recommendation made in FERC's Final Environmental Assessment of PG&E's Pit 1 relicensing application. Because this project is limited to the transfer of land, including a Conservation Easement and other terms designed to maintain existing land uses and enhance habitats, the exposure of people and/or structures to significant risk or loss due to flooding as a result of the land transfer is less than significant.

i) The geographic location and topography of the site, remote from major water bodies and essentially level, render the potential for impacts from seiche, tsunami, or mudflow no impact.

REFERENCES

IT Corporation, Phase I Environmental Assessment Report, Pacific Gas and Electric Site, McArthur Swamp Property, McArthur, CA. December 17, 1999.

Camp, Dresser, and McKee, Phase I Environmental Assessment Report, Pacific Gas and Electric Site, Pit 3 Hydroelectric Generating Facility, Shasta County, CA. October, 1997.

FEMA. 1985. Flood Insurance Map Community Panel No. 060358-0150B. September 27.

FEMA. 1985. Flood Insurance Map Community Panel No. 060358-0275B. September 27.

Shasta County, 1996. Shasta County General Plan.

A.00-05-029. Proponent's Environmental Assessment. Application No. 00-05-029.

A.00-05-030. Proponent's Environmental Assessment. Application No. 00-05-030.