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### South Coast Hydrologic Region

**Water supply reliability.** Projected population increases will have a significant impact on water demands. More than 50 percent of the region's water supplies are imported from other parts of the state through the SWP, the Los Angeles Aqueduct, and the Colorado River Aqueduct. By year 2016 California's Colorado River allocation will be reduced from the current 5.3 million acre-feet per year to 4.4 million acre-feet per year. Several water exchange, conjunctive use, and conservation programs must be developed to offset this reduction. Drought impacts are a long-term concern and require the development of other local sources of supply to meet dry year demands, including recycling, expanded conservation, conjunctive use, and desalination.

**Water quality.** Population growth (to more than 23 million residents by year 2030) and associated urban sprawl will present several water quality challenges, including the need for treatment facilities for the increased wastewater and urban runoff. Storm water, urban runoff, and overflows from sanitary sewers can adversely affect coastal water quality, causing beach closures and swimming restrictions. Extensive shipping and recreational boating can also affect ocean water quality. Imported surface water supplies have water quality problems including high levels of total dissolved solids (TDS) and low levels of perchlorate from the Colorado River, and the presence of organic carbon and bromide in SWP Delta supplies. In particular, high TDS levels in source water can inhibit wastewater reuse. Salinity also intrudes into local groundwater basins near the ocean, which is repulsed by hydraulic groundwater barriers in Los Angeles and Orange Counties. Inland, some local aquifers are polluted by MTBE, perchlorate, chromium 6, and organic chemicals. A large concentration of dairies in the Chino Basin has led to salt, nutrient, and microbial contamination of groundwater. The Los Angeles, San Gabriel, and Santa Ana Rivers are the focus of many watershed planning and restoration activities.

### Sacramento River Hydrologic Region

**Water supply reliability and water transfers.** During extended periods of drought, surface water allocation cutbacks from the SWP and the CVP limit water districts reliant on these supplies. Agricultural users turn to groundwater, switch to lower water-use crops, or allow prime farmland to lie fallow. With a growing demand for high quality water throughout the state, water transfers from Sacramento Valley to other parts of the state are evaluated more closely. Several counties have adopted groundwater ordinances that regulate or impede water transfers outside of the county of origin.

DWR and USBR, under the CALFED Bay-Delta Program and in cooperation with the California Bay-Delta Authority (CBDA),

are studying the feasibility of two proposed surface storage improvements within this region: the enlargement of Shasta Reservoir and a new offstream storage reservoir on the west side of the Sacramento River called Sites Reservoir. Flood protection and the adequacy of existing flood control structures is a major concern for the low-lying areas of the Sacramento Valley floor, particularly in areas where urban expansion is occurring.

**Water quality.** Much of the region's groundwater and surface water are of high quality, but there are some local groundwater problems, from natural contaminant sources and past industrial processes. For instance, at the north end of the Sacramento Valley, wells typically have high TDS content and in the western volcanic and geothermal areas, moderate levels of hydrogen sulfide are found in groundwater. In the Sierra foothills, uranium and radon-bearing rock or sulfide mineral deposits containing heavy metals may contaminate groundwater. In addition, a history of gold mining activities has produced a legacy of mercury, especially in the Cache Creek watershed, and other toxic heavy metals in surface water supplies. Water temperature is a concern in the Sacramento River and its tributaries that provide habitat for four runs of salmon. Along the lower American River, a plume of perchlorate contamination spreads, causing closure of several municipal wells in the vicinity.

**Environmental water supply.** Additional ecosystem protection and restoration efforts are needed to continue improving habitat for threatened and endangered species while maintaining water quality on tributaries that flow into the Sacramento River and eventually into the Delta. Existing and proposed projects include federal and State partnerships with landowners, agricultural water districts, Pacific Gas and Electric Company, and several other entities in the region.

### San Joaquin River Hydrologic Region

**Water supply reliability.** Plans to restore the river habitat and fish populations on the San Joaquin River through higher releases of water from Friant Dam have spurred growing concerns over the long-term availability of the Sierra water supplies for the San Joaquin River. USBR, in cooperation with CBDA, is studying the feasibility of a new surface storage reservoir in the upper San Joaquin basin, with the primary location identified as Temperance Flat.

Extensive groundwater pumping in the Stockton area has generated groundwater overdraft, leading to declining groundwater levels and saline groundwater intrusion. A groundwater recharge program that is under development would divert surplus river water during winter months to help restore groundwater levels and stop the saline groundwater intrusion.