Appendix F
Impact Summary Tables for Alternatives 1, 2, and 3

This appendix presents impact summary tables that detail the potential environmental impacts of the No Project Alternative (Alternative 1), Low Flow Alternative (Alternative 2), and High Flow Alternative (Alternative 3) on various environmental resource areas. Mitigation measures that could reduce potentially significant impacts are detailed in Sections 7.3 through 7.20.

Additional discussion of Alternatives 1, 2, and 3 is provided in Section 7.2, *Description of Alternatives*, and Section 7.24, *Alternatives Analysis.*

Table F-1. Impact Summary—No Project Alternative (Alternative 1)

Impact	Impact Conclusions
AESTHETICS	
Impact AES-a: Have a substantial adverse effect on a scenic vista **Impact AES-b:** Substantially damage scenic resources, including, but not limited to trees, rock outctoppings, and historic buildings within a state scenic highway **Impact AES-c:** Substantially degrade the existing visual character or quality of the site and its surroundings	**Potentially Significant** Reduced reservoir levels could result in exposure of more unvegetated ground, or "bathtub rings" **Less that Significant** Altered streamflows could affect water levels and appearance Reduced Sacramento/Delta supply to municipalities could affect the visual quality of the urban environment Reduced Sacramento/Delta supplies to wildlife refuges could result in slight changes to the visual character of these areas Municipal water conservation measures could cause a change in the visual character of localized settings Agricultural land coversion could affect aesthetic resources if properties are developed or neglected
Impact AES-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	**No Impact**
AGRICULTURE AND FOREST RESOURCES	
Impact AG-a: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use **Impact AG-e:** Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Important Farmland to nonagricultural use	**Potentially Significant** Increased use of water transfers could further incentivize farmland conversion, particularly in rapidly urbanizing areas Lower groundwater levels could reduce groundwater available for agricultural use Reduced streamflows and water levels at some locations could affect the ability of existing diversion intakes to divert water for agricultural use **Less than Significant** Reduced Sacramento/Delta supply to agriculture could lead to changes in distribution of crop types and acreage and conversion of farmland to nonagricultural use
Impact AG-b: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	**No Impact**

Impact	Impact Conclusions
Impact AG-c: Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))	**No Impact**
Impact AG-d: Result in the loss of forest land or conversion of forest land to non-forest use	**No Impact**
AIR QUALITY	
Impact AQ-a: Conflict with or obstruct implementation of the applicable air quality plan **Impact AQ-b:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation **Impact AQ-c:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)	**Potentially Significant** Increased groundwater pumping using diesel pumps and generators could result in emissions **Less than Significant** Lower streamflow and reservoir levels could result in exposure to increased windblown dust emissions Agricultural land fallowing could result in exposure to increased fugitive dust Post-harvest rice burning could result in exposure to air pollutant emissions
Impact AQ-d: Expose sensitive receptors to substantial pollutant concentrations	**Less than Significant** Lower reservoir levels could result in exposure to increased windblown dust emissons Agricultural land fallowing could result in exposure to increased fugitive dust on lands where soil is exposed Post-harvest rice burning, groundwater pumping, and the use of other water management actions could result in exposure to pollutant emissions
Impact AQ-e: Create objectionable odors affecting a substantial number of people	**Less than Significant** Formation of harmful algal blooms from reduced flows and reservoir levels could produce odor compounds Reductions in overall wastewater flow and increased use of recycled water could result in increases in odors Increases in odors from increased groundwater pumping and other water management actions

Impact	Impact Conclusions
BIOLOGICAL RESOURCES—TERRESTRIAL	
Impact TER-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service	**Potentially Significant**
	A less natural flow regime could contribute to the spread of invasive species
	Changes in Delta inflows and Delta outflows could affect habitat conditions for freshwater and tidal marsh species in the Delta and Suisun Marsh
	Lower groundwater levels could affect natural communities that are dependent on groundwater, and sensitive species that are reliant on groundwater dependent ecosystems
	Capturing flood flows for groundwater storage and recovery could diminish instream ecological benefits of high flow events
	Water transfers based on cropland idling could affect special-status species that use agricultural fields
	Increased use of recycled water that would otherwise discharge to streams could diminish ecological benefits of instream flows, especially in dry seasons and in low flow conditions where streamflow is dependent on wastewater discharges
	Less than Significant
	Reduced Sacramento/Delta supply to wildlife refuges and agricultural lands could affect habitat for special-status species, such as giant gartersnake, Swainson's hawk, greater sandhill crane, tricolored blackbird, and California black rail
	Reduced Sacramento/Delta supply to municipal use could affect special-status plant and wildlife species
	Reduced reservoir water levels could affect habitat for species such as bald eagle, American white pelican, western pond turtle, and amphibians
	Reduced streamflow below export reservoirs could affect habitat for special-status terrestrial species
Impact TER-b: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service **Impact TER-c:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes,	**Potentially Significant**
	An impaired flow regime could affect natural processes, such as sediment deposition, marsh accretion, nutrient transport, seed dispersal, and flow-related disturbance, which could affect riverine and associated riparian habitat
	Reduced frequency and duration of floodplain inundation could affect riparian and wetland habitat and associated natural communities
	Decreases in Delta inflows and Delta outflows could affect freshwater marshes and tidal marshes

Impact	Impact Conclusions
versnal pools, coastal wetlands, etc.) through direct removal, filling, hydrolgical interruption, or other means	Reductions in water recycling and municipal water conservation measures could increase municipal discharges and result in conditions unfavorable to wetlands and sensitive natural communities adapted to the natural flow regime
	Reductions in reservior levels and streamflow below reservoirs could affect associated riparian and wetland habitat
	Lower groundwater levels could affect riparian and wetland habitat, and sensitive groundwater-dependent natural communities and wetlands
	Capturing flood flows for groundwater storage and recovery could diminish the instream ecological benefits of high flow events
	Increased use of water transfers could affect groundwater-dependent natural communities and some perennial wetlands in some areas, and could exacerbate effects from lower groundwater levels on riparian and wetland habitat, and sensitive natural communities
	Increased use of water recycling could diminish riparian and wetland habitat, especially in dry seasons and in low flow conditions where streamflow depends on wastewater discharges
	Less than Significant
	Reduced Sacramento/Delta supply to wildlife refuges could decrease wetland area over time
	Reduced Sacramento/Delta supply could affect water quality in managed wetlands
	Reduced streamflows below export reservoirs could affect riparian and wetland habitat
	Reduced agricultural and municipal discharges could affect some wetland communities and native vegetation
Impact TER-d: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	**Potentially Significant**
	A less natural flow regime could affect native resident and migratory wildlife that use riverine and associated wetland and riparian habitat and natural communities as migratory corridors or nursery sites
	Increased use of water transfers could result in conversion of crop types that provide foraging habitat for migratory waterfowl and shorebirds
	Less than Significant
	Reduced Sacramento/Delta supply for wildlife refuges and agriculture could decrease the amount of habitat available for resident and migratory waterfowl and shorebirds

Impact	Impact Conclusions
	Reduced reservoir levels could affect the amount of breeding habitat for resident or migratory waterfowl populations
	Reduced groundwater levels could affect habitat for resident or migratory waterfowl and shore birds
Impact TER-e: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	**No Impact**
Impact TER-f: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	**Less than Significant**
	Reduced Sacramento/Delta supply could affect habitat goals of some habitat conservation plans
BIOLOGICAL RESOURCES—AQUATIC	
Impact AQUA-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service **Impact AQUA-d:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	**Potentially Signficant**
	A less natural flow regime could affect native fish in the Sacramento/Delta
	Changes in Delta inflows and outflows could affect native anadromous, estuarine, and resident fish species
	Reduced frequency and duration of floodplain inundation in Feather River and Yolo Bypass could affect aquatic species
	Reductions in reservoir levels and streamflows could affect water temperatures below some reservoirs
	Lower groundwater levels could affect stream-aquifer interactions and streamflows in some locations
	Diversion of surface water for groundwater storage and recovery could reduce peak flows that provide ecological and habitat functions (e.g., floodplain inundation)
	Water transfers could alter hydrologic patterns and affect aquatic biological resources in some locations
	Increased water recycling could decrease the volume of treated wastewater effluent discharge into water bodies that are migratory corridors for fish
	Increased Delta exports could further alter migration cues and transport flows, and lead to greater entrainment of native fish species into the interior Delta
	Less than Significant
	Reduced Sacramento/Delta supply to agriculture could affect habitat for special status species that depend in part on Sacramento/Delta water supply for habitat (i.e.,

Impact	Impact Conclusions
	irrigation runoff in agricultural drain for desert pupfish) Changes in reservoir levels could affect native reservoir fish species, such as minnows and suckers
Impact AQUA-f: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	**Less than Significant** Reduced water supply could frustrate certain conservation plan management actions
CULTURAL RESOURCES	
Impact CUL-a: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 **Impact CUL-b:** Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5	**Potentially Significant** Changes in reservoir levels could expose previously inundated cultural resources and/or significant historic or archeaological resources to increased wave action, erosion, and human activity **Less than Significant** Changes in streamflows could result in inundation and exposure of historic or archeological resources
Impact CUL-c: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	**No Impact**
Impact CUL-d: Disturb any human remains, including those interred outside of dedicated cemeteries	**Potentially Significant** Reduced reservoir levels could expose previously inundated land containing human burials, which could result in the disturbance of the burial and impacts from human activity **Less than Significant** Changes in river flows could alter the baseline conditions of human burials interred within or outside of dedicated cemeteries
ENERGY	
Impact EN-a: The effects of the project on energy resources **Impact EN-b:** The effect of the project on peak and base period demands for electricity and other forms of energy **Impact EN-c:** The effects of the project on local and regional energy supplies and requirements for additional capacity **Impact EN-d:** The degree to which the project complies	**Less than Significant** Changes in hydrology could result in a change in hydropower generation Changes in water supply could cause an increase in energy use to replace Sacramento/Delta supplies from actions such as increased groundwater pumping and other water management actions Changes in water supply could result in a change in the energy used to export water from the Delta

Impact	Impact Conclusions
with existing energy standards **Impact EN-e:** Energy requirements and energy use efficiencies by amount and fuel type for each stage of the project	
Impact EN-f: The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives	**Less than Significant** Reduction in agricultural production could increase energy use for transportation
GEOLOGY AND SOILS	
Impact GEO-a: Expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving: rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, or landslides	**No Impact**
Impact GEO-b: Result in substantial soil erosion or the loss of topsoil	**Less than Significant** Agriculture fallowing could temporarily increase erosion and sedimentation
Impact GEO-c: Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse	**Potentially Significant** Lower groundwater levels could exacerbate existing problems associated with ground subsidence
I**mpact GEO-d:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	**No Impact**
Impact GEO-e: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater	**No Impact**
GREENHOUSE GAS EMISSIONS	
Impact GHG-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	**Potentially Significant** Increased groundwater pumping from wells with diesel-powered pumps could generate additional greenhouse gas emissions **Less than Significant** Groundwater storage and recovery, water transfers, and water recycling could result in emissions associated with energy use

Impact	Impact Conclusions
	Reductions in hydropower generation could result in additional energy generation at fossil-fuel facilities Increased groundwater pumping from wells with electric fuel pumps could generate additional greenhouse gas emissions
Impact GHG-b: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	**Less than Significant** Increased groundwater pumping from wells with diesel-powered pumps could result in emissions in excess of existing thresholds and could conflict with the state's long-term emission reduction trajectory
HAZARDS AND HAZARDOUS MATERIALS	
Impact HAZ-a: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	**No Impact**
Impact HAZ-b: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	**No Impact**
Impact HAZ-c: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	**No Impact**
Impact HAZ-d: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	**No Impact**
Impact HAZ-e: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area	**No Impact**
Impact HAZ-f: For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area	**No Impact**

Impact	Impact Conclusions
Impact HAZ-g: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	**No Impact**
Impact HAZ-h: Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	**Less than Significant**
	Reductions in reservoir levels in areas likely to continue experiencing forest fires could affect wildlife fire suppression practices
HYDROLOGY & WATER QUALITY—SURFACE WATER	
Impact SW-a: Violate any water quality standards or waste discharge requirements **Impact SW-f**: Otherwise substantially degrade water quality	**Potentially Significant**
	Increases in water level fluctuation at some reservoirs could result in increased bioaccumulation of methylmercury in fish
	Reductions in reservoir levels and lowered streamflows below reservoirs could result in increased temperature in some locations and times of year
	Changes in reservoir levels could result in increased production of harmful algal blooms in some locations
	Changes in Delta outflow could affect electrical conductivity (EC) in the Delta
	Changes in Delta outflow could affect chloride and bromide at municipal intakes in the Delta
	Increased seawater intrusion could result in water quality changes in the Delta
	Decreased flows could affect water quality for fish
	Decreased flows could concentrate certain constituents in waterbodies and affect water quality
	Reduced flushing flows in winter and spring could exacerbate harmful algal blooms and invasive vegetation
	Reductions in groundwater accretions could cause decreases in water quality associated with lower streamflows or higher temperatures
	Diversion of surface water for groundwater storage and recovery could limit the dilution effect of existing flows and exacerbate existing water quality impairments
	Increased use of water transfers could affect water quality in some locations
	Increased water recycling could reduce instream flows, which could reduce dilution of local sources of contaminants

Impact	Impact Conclusions
	Less than Significant
	Reduced streamflows of streams below some reservoirs could result in less dilution and increased concentration of contaminants
	Increased flows could result in increased input of mercury and methylmercury production downstream, including in areas such as the Yolo Bypass
	Changes in water supply source could result in temporary exceedances of maximum contaminant levels in municipal water supply
	Changes in water supply and indoor water conservation could result in site-specific exceedances of waste discharge requirements due to changes in wastewater treatment plant (WWTP) influent and effluent quality and quantity
	Reductions in delivery of higher quality Sacramento/Delta supplies to wildlife refuges and managed wetlands could affect water quality
	Changes in flows could result in moderately elevated turbidity and total suspended solids (TSS) levels in some locations, and reduced occurrence of the highest turbidity and TSS levels
	Changes in floodplain inundation could have effects on nutrients, organic material, invasive aquatic plants, and harmful algal blooms
Impact SW-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 **Impact SW-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	**Less than Significant** Changes in flows could increase risk of erosion and flooding in some areas
Impact SW-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	**No Impact**
Impact SW-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	**No Impact**

Impact	Impact Conclusions
Impact SW-h: Place within a 100-year flood hazard area structures which would impede or redirect flood flows	**No Impact**
Impact SW-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	**Less than Significant** Changes in flows in some locations could increase the risk of downstream flooding in some areas
Impact SW-j: Inundation by seiche, tsunami, or mudflow	**No Impact**
HYDROLOGY & WATER QUALITY—GROUNDWATER	
Impact GW-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 (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	**Potentially Signficant** Increased groundwater pumping and reductions in incidental groundwater recharge from applied irrigation could lower groundwater levels and contribute to groundwater overdraft Lower groundwater levels could result in an increase in frequency and severity of critical shortages or dry wells occurring in some areas for communities that rely on groundwater, including economically disadvantaged communities Surface water transfers through groundwater substitution could result in lower groundwater levels in basin of origin Agricultural conservation measures could reduce incidental groundwater recharge that would lower groundwater levels **Less than Signficant** Reduced flows downstream of reservoirs could affect stream-aquifer interactions Reduced Sacramento/Delta supplies could have localized impacts on groundwater storage in areas where Sacramento/Delta supplies are used for groundwater banking Increased water recycling could have effects on groundwater levels Municipal water conservation measures could reduce incidental groundwater recharge from urban runoff
Impact GW-a: Violate any water quality standards or waste discharge requirements **Impact GW-f:** Otherwise substantially degrade water quality	**Potentially Signficant** Decreased infiltration from stream-aquifer interactions from reduced flows in the Sacramento/Delta watershed could affect groundwater quality Lower groundwater levels can result in changes in groundwater flow direction and gradients in localized areas, which could exacerbate the migration of contaminants In some locations, lower groundwater levels may concentrate salts and nutrients in groundwater over time through evaporative enrichment

Impact	Impact Conclusions
	Lower groundwater levels could affect groundwater quality and potentially affect drinking water wells in some areas, including economically disadvantaged communities
	Lower groundwater levels could have localized effects on groundwater quality by concentrating pollutants where groundwater contamination already exists
	Groundwater storage and recovery projects that use poor quality water to recharge groundwater basins could contribute to salt and nutrient loading or introduce contaminants to the underlying aquifer
	Other water management actions (water transfers through groundwater substitution, water recycling and agriculture conservation) could result in lower groundwater levels, which could exacerbate groundwater quality impairments or contribute to contaminant loading in localized areas
	Less than Significant
	Recycled water may percolate into the underlying groundwater basin, and could affect groundwater quality
LAND USE AND PLANNING	
Impact LU-a: Physically divide an established community	**No Impact**
Impact LU-b: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect	**No Impact**
Impact LU-c: Conflict with any applicable habitat conservation plan or natural community conservation plan	**Less than Significant**
	See Terrestrial Biological Resources Impact TER-f
MINERAL RESOURCES	
Impact MIN-a: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	**No Impact**
Impact MIN-b: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	**No Impact**

Impact	Impact Conclusions
NOISE	
Impact NOI-a: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies **Impact NOI-c:** A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project **Impact NOI-d:** A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	**Less than Significant** Increased groundwater pumping for replacement water supply, groundwater storage and recovery, or groundwater substitution transfers could result in higher noise levels
Impact NOI-b: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels	**Less than Significant** Increased groundwater pumping could result in localized and intermittent perceptible vibration
Impact NOI-e: For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	**No Impact**
Impact NOI-f: For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels	**No Impact**
POPULATION AND HOUSING	
Impact POP-a: Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	**No Impact**
Impact POP-b: Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere	**No Impact**
Impact POP-c: Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere	**No Impact**

Impact	Impact Conclusions
PUBLIC SERVICES	
Impact PS-a: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, or other public facilities	**No Impact**
RECREATION	
Impact REC-a: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	**Potentially Significant**
	Changes in flow could affect recreational opportunities dependent on healthy rivers and a functioning watershed
	Reduced reservoir levels could affect boat ramp accessibility affecting recreation opportunities at some reservoirs
	Less than Significant
	Incremental increase in potential harmful algal blooms could cause closures to recreation in some waterbodies
	Changes in reservoir water surface area and elevation could affect sportfish populations and reduce fishing opportunities at some locations
	Reduced deliveries to wildlife refuges could affect recreational opportunities (e.g., wildlife viewing)
	Reduced municipal water supply could affect municipal recreational opportunities at parks, playfields, and swimming pools
Impact REC-b: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	**Potentially Significant**
	Reduced reservoir levels could affect boat ramp accessibility and lead to modification of existing or development of new boat ramps in some locations
TRANSPORTATION/TRAFFIC	
Impact TRA-a: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the	**Less than Significant**
	Changes in agricultural land use or fallowing could lead to changes in agricultural product-related transportation

Impact	Impact Conclusions
circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit **Impact TRA-f:** Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	
Impact TRA-b: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways	**No Impact**
Impact TRA-c: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	**No Impact**
Impact TRA-d: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	**No Impact**
Impact TRA-e: Result in inadequate emergency access	**No Impact**
UTILITIES AND SERVICE SYSTEMS	
Impact UT-a: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	**Potentially Significant**
	Changes in hydrology could alter the assimilative capacity of some streams where treated wastewater is discharged
	Groundwater storage and recovery or water transfers could increase concentrations of some pollutants of concern in WWTP influent, if the source of the stored groundwater or transfer is of lower quality
	Less than Significant
	Reductions in water supply could result in the use of other lower quality water supply sources that affect WWTP influent and effluent
	Reduced municipal supply and increased indoor water conservation could lead to a decrease in the production of wastewater and increase chemical constituent concentrations in WWTP influent

Impact	Impact Conclusions
Impact UT-b: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	**Potentially Significant**
	Changes in hydrology and changes in supply could result in construction to modify or expand existing treatment facilities in order to prevent or mitigate exceedances of drinking water standards and wastewater discharge water quality objectives.
Impact UT-c: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	**No Impact**
Impact UT-d: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed	**Potentially Significan**
	Reduced groundwater levels could affect water supplies for communities that rely on groundwater as their primary municipal water source, including economically disadvantaged communities
	Reduced streamflows and water levels at some locations could affect the ability of existing diversion intakes to divert water, which could affect municipal water supplies
	Less than Significant
	Reduced Sacramento/Delta water for municipal use could affect municipal water supplies
Impact UT-e: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	**No Impact**
Impact UT-f: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs **Impact UT-g:** Comply with federal, state, and local statutes and regulations related to solid waste	**Less than Significant**
	Changes to agricultural crop type or production resulting from changes in water supply could generate solid waste
	Increased water recycling could lead to an increase in solid waste byproducts

Table F-2. Impact Summary—Low Flow Alternative (Alternative 2)

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
AESTHETICS		
Impact AES-a: Have a substantial adverse effect on a scenic vista **Impact AES-b:** Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway **Impact AES-c:** Substantially degrade the existing visual character or quality of the site and its surroundings	**Potentially Significant**	
	Reservoir level changes may result in exposure of more unvegetated ground or "bathtub rings"	Reduced
	Agriculture land conversion could affect aesthetic resources if properties are developed or neglected	Reduced
	Less that Significant	
	Altered streamflows could affect water levels and appearance	Reduced
	Reduced Sacramento/Delta supply to municipalities could affect the visual quality of the urban environment	Reduced
	Reduced Sacramento/Delta supplies to wildlife refuges could result in slight changes to the visual character of these areas	Reduced
	Municipal water conservation measures could cause a change in the visual character of localized settings	Reduced
Impact AES-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	**No Impact**	Same
AGRICULTURE AND FOREST RESOURCES		
Impact AG-a: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use **Impact AG-e:** Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Important Farmland to nonagricultural use	**Potentially Significant**	
	Reduced Sacramento/Delta supply to agriculture could lead to changes in distribution of crop types and acreage and conversion of farmland to nonagricultural use	Reduced
	Increased use of water transfers could further incentivize farmland conversion, particularly in rapidly urbanizing areas	Reduced
	Lower groundwater levels could reduce groundwater available for agricultural use	Reduced
	Reduced streamflow and water levels at some locations could affect the ability of existing diversion intakes to divert water for agricultural use	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Increased inundation in the Sutter and Yolo Bypasses during the planting season could affect crop acreage	Reduced
Impact AG-b: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	**No Impact**	Same
Impact AG-c: Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))	**No Impact**	Same
Impact AG-d: Result in the loss of forest land or conversion of forest land to non-forest use	**No Impact**	Same
AIR QUALITY		
Impact AQ-a: Conflict with or obstruct implementation of the applicable air quality plan **Impact AQ-b:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation **Impact AQ-c:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)	**Potentially Significant**	
	Increased groundwater pumping using diesel pumps and generators could result in emissions	Reduced
	Less than Significant	
	Lower streamflows and reservoir levels could result in exposure to increased windblown dust emissions	Reduced
	Agricultural land fallowing could result in exposure to increased fugitive dust	Reduced
	Post-harvest rice burning could result in exposure to air pollutant emissions	Reduced
	Beneficial	
	Water conservation could result in a reduction in emissions	Reduced
Impact AQ-d: Expose sensitive receptors to substantial pollutant concentrations	**Less than Significant**	
	Lower reservoir levels could result in exposure to increased windblown dust emissions	Reduced
	Agricultural land fallowing could result in exposure to increased fugitive dust on lands where soil is exposed	Reduced
	Post-harvest rice burning, groundwater pumping, and the use	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	of other water management actions could result in exposure to pollutant emissions	
Impact AQ-e: Create objectionable odors affecting a substantial number of people	**Less than Significant**	
	Formation of harmful algal blooms from reduced flows and reservoir levels could produce odor compounds	Reduced
	Reductions in overall wastewater flow and increased use of recycled water could result in increases in odors	Reduced
	Increases in odors from increased groundwater pumping and other water management actions	Reduced
BIOLOGICAL RESOURCES—TERRESTRIAL		
Impact TER-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service	**Potentially Significant**	
	Increased inundation in flood bypasses during the planting season could affect crop acreage, which could affect special-status wildlife species that use croplands as habitat	Reduced
	Reduced Sacramento/Delta supply to wildlife refuges and agricultural lands could affect habitat for special-status species, including giant gartersnake, Swainson's hawk, greater sandhill crane, tricolored blackbird, and California black rail	Reduced
	Reduced Sacramento/Delta supply to municipal and agricultural use could affect special-status plant and wildlife species	Reduced
	Capturing flood flows for groundwater storage and recovery could diminish instream ecological benefits of high flow events*	Reduced
	Water transfers based on cropland idling could affect special-status species that use agricultural fields	Reduced
	Increased use of recycled water that would otherwise discharge to streams could diminish ecological benefits of instream flows, especially in dry seasons and in low flow conditions where streamflow is dependent on wastewater discharges*	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Less than Significant	
	Increased winter flows on the Sacramento and Feather Rivers could affect bank swallow habitat	Reduced
	Changes in reservoir water levels could affect habitat for bald eagle, American white pelican, western pond turtle, and amphibians	Reduced
	Changes in streamflow below export reservoirs could affect habitat for special-status terrestrial species	Reduced
	Lower groundwater levels could affect natural communities that are dependent on groundwater, and sensitive species that are reliant on groundwater dependent ecosystems	Reduced
	Beneficial	
	Restoration and maintenance of natural flow would improve conditions for special-status plants and wildlife	Reduced
	A more natural flow regime could contribute to the control of invasive species in combination with invasive species control efforts	Reduced
	Increased frequency and duration of floodplain inundation would improve habitat for wintering waterfowl and other wildlife species	Reduced
	Changes in Delta inflows and Delta outflows would improve habitat conditions for freshwater and tidal marsh species in the Delta and Suisun Marsh	Reduced
Impact TER-b: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service **Impact TER-c:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal,	**Potentially Significant**	
	Changes in reservoir levels and streamflow below reservoirs could affect associated riparian and wetland habitat	Reduced
	Reduced Sacramento/Delta supply to wildlife refuges could decrease wetland area over time	Reduced
	Reduced Sacramento/Delta supply could affect water quality in managed wetlands	Reduced
	Reduced Sacramento/Delta supply to municipal and agricultural use could affect sensitive riparian and wetland	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
filling, hydrological interruption, or other means	habitat, and other natural communities	
	Lower groundwater levels could affect riparian and wetland habitat, and sensitive groundwater-dependent natural communities and wetlands	Reduced
	Capturing flood flows for groundwater storage and recovery could diminish the instream ecological benefits of high flow events*	Reduced
	Increased use of water transfers could affect groundwater-dependent natural communities and some perennial wetlands in some areas, and could exacerbate effects from lower groundwater levels on riparian and wetland habitat and sensitive natural communities	Reduced
	Increased use of water recycling could diminish riparian and wetland habitat, especially in dry seasons and in low-flow conditions where streamflow depends on wastewater discharges*	Reduced
	Less than Significant	
	Reduced streamflows below export reservoirs could affect riparian and wetland habitat	Reduced
	Reduced agricultural and municipal discharges could affect some wetland communities and native vegetation	Reduced
	Beneficial	
	A more natural flow regime would restore and maintain natural processes, such as sediment deposition, marsh accretion, nutrient transport, seed dispersal, and flow-related disturbance, which would benefit riverine and associated wetland and riparian habitat	Reduced
	Increased frequency and duration of floodplain inundation would benefit riparian and wetland habitat and associated natural communities	Reduced
	Changes in Delta inflows and Delta outflows would benefit freshwater marshes and tidal marshes	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Increased use of water recycling and municipal water conservation measures could reduce municipal discharges and support conditions favorable to wetlands and sensitive natural communities adapted to the natural flow regime	Reduced
Impact TER-d: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	**Potentially Significant**	
	Reduced Sacramento/Delta supply for wildlife refuges and agriculture could decrease the amount of habitat available for resident and migratory waterfowl and shorebirds	Reduced
	Increased use of water transfers could result in conversion of crop types that provide foraging habitat for migratory waterfowl and shorebirds	Reduced
	Less than Significant	
	Changes in reservoir levels could affect the amount of breeding habitat for resident or migratory waterfowl populations	Reduced
	Beneficial	
	A more natural flow regime would benefit native resident and migratory wildlife that use riverine and associated wetland and riparian habitat and natural communities as migratory corridors or nursery sites	Reduced
Impact TER-e: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	**No Impact**	Same
Impact TER-f: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	**Less than Significant**	
	Reduced Sacramento/Delta supply could affect habitat goals of some habitat conservation plans	Reduced
	Beneficial	
	Changes in Sacramento/Delta tributary flows, Delta inflows, and Delta outflows would complement actions identified in some habitat conservation plans	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
BIOLOGICAL RESOURCES—AQUATIC		
Impact AQUA-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service **Impact AQUA-d:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	**Potentially Significant**	
	Changes in reservoir levels could affect downstream flows and water temperatures below some reservoirs	Reduced
	Reduced Sacramento/Delta supply to agriculture could affect habitat for special status species that depend in part on Sacramento/Delta water supply for habitat (i.e., irrigation runoff in agricultural drain for desert pupfish)	Reduced
	Lower groundwater levels could affect stream-aquifer interactions and streamflows in some locations	Reduced
	Diversion of surface water for groundwater storage and recovery could reduce peak flows that provide ecological and habitat functions (e.g., floodplain inundation)*	Reduced
	Water transfers could alter hydrologic patterns and affect aquatic biological resources in some locations	Reduced
	Increased water recycling could decrease the volume of treated wastewater effluent discharge into water bodies that are migratory corridors for fish*	Reduced
	Less than Significant	
	Changes in interior Delta flows	Reduced
	Changes in wet season flows (geomorphic flows) on regulated tributaries in the Sacramento/Delta regions could cause some erosion, but would also result in ecological benefits of floodplain inundation	Reduced
	Changes in reservoir levels could affect native reservoir fish species, such as minnows and suckers	Reduced
	Beneficial	
	A more natural flow regime would support a connected and functioning ecosystem and benefit native fish in the Sacramento/Delta	Reduced
	Changes in Delta inflows and outflows would benefit native anadromous, estuarine, and resident fish species	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Increased frequency and duration of floodplain inundation in Feather River and Yolo Bypass would benefit aquatic species	Reduced
Impact AQUA-f: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	**Less than Significant**	
	Reduced Sacramento/Delta supply could frustrate certain conservation plan management actions	Reduced
CULTURAL RESOURCES		
Impact CUL-a: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 **Impact CUL-b:** Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5	**Potentially Significant**	
	Changes in reservoir levels could expose previously inundated cultural resources and/or significant historic or archaeological resources to increased wave action, erosion, and human activity	Reduced
	Less than Significant	
	Changes in streamflows could result in inundation and exposure of historic or archaeological resources	Reduced
Impact CUL-c: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	**No Impact**	Same
Impact CUL-d: Disturb any human remains, including those interred outside of dedicated cemeteries	**Potentially Significant**	
	Changes in reservoir levels could expose previously inundated land containing human burials, which could result in the disturbance of the burial and impacts from human activity	Reduced
	Less than Significant	
	Changes in river flows could alter the baseline conditions of human burials interred within or outside of dedicated cemeteries	Reduced
ENERGY		
Impact EN-a: The effects of the project on energy resources **Impact EN-b:** The effect of the project on peak and base period demands for electricity and other forms of energy **Impact EN-c:** The effects of the project on local and regional energy supplies and requirements for additional capacity	**Potentially Significant**	
	Changes in hydrology would result in a decrease in hydropower generation in the summer which could be significant for an individual project or community	Reduced
	Changes in water supply could cause an increase in energy use	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
Impact EN-d: The degree to which the project complies with existing energy standards **Impact EN-e:** Energy requirements and energy use efficiencies by amount and fuel type for each stage of the project	to replace Sacramento/Delta supplies from actions such as increased groundwater pumping and other water management actions	
	Beneficial	
	Changes in water supply could result in a reduction in the energy used to export water from the Delta	Reduced
	Water conservation could result in a reduction in energy use	Reduced
Impact EN-f: The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives	**Less than Significant**	
	Reduction in agricultural production could increase energy use for transportation	Reduced
GEOLOGY AND SOILS		
Impact GEO-a: Expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving: rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, or landslides	**No Impact**	Same
Impact GEO-b: Result in substantial soil erosion or the loss of topsoil	**Less than Significant**	
	Agriculture fallowing could temporarily increase erosion and sedimentation	Reduced
Impact GEO-c: Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse	**Potentially Significant**	
	Lower groundwater levels could exacerbate existing problems associated with ground subsidence	Reduced
I**mpact GEO-d:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	**No Impact**	Same
Impact GEO-e: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
GREENHOUSE GAS EMISSIONS		
Impact GHG-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	**Potentially Significant**	
	Increased groundwater pumping from wells with diesel-powered pumps could generate additional greenhouse gas emissions	Reduced
	Groundwater storage and recovery, water transfers, and water recycling could result in emissions associated with energy use	Reduced
	Less than Significant	
	Reductions in hydropower generation could result in additional energy generation at fossil-fuel facilities	Reduced
	Increased groundwater pumping from wells with electric fuel pumps could generate additional greenhouse gas emissions	Reduced
	Beneficial	
	Changes in water supply could result in a reduction in the energy used to export water from the Delta and a corresponding reduction in greenhouse gas emissions	Reduced
	Water conservation could result in a reduction in energy use and greenhouse gas emissions	Reduced
Impact GHG-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases	**Potentially Significant**	
	Increased groundwater pumping from wells with diesel-powered pumps could result in emissions in excess of existing thresholds and could conflict with the state's long-term emission reduction trajectory	Reduced
	Beneficial	
	Water use efficiency, water recycling, and reuse of urban runoff would be beneficial in meeting other state and local GHG goals	Reduced
HAZARDS AND HAZARDOUS MATERIALS		
Impact HAZ-a: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
Impact HAZ-b: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	**No Impact**	Same
Impact HAZ-c: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	**No Impact**	Same
Impact HAZ-d: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	**No Impact**	Same
Impact HAZ-e: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area	**No Impact**	Same
Impact HAZ-f: For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area	**No Impact**	Same
Impact HAZ-g: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	**No Impact**	Same
Impact HAZ-h: Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	**Less than Significant**	
	Changes in reservoir levels in areas likely to continue experiencing forest fires could affect wildland fire suppression practices	Reduced
HYDROLOGY AND WATER QUALITY—SURFACE WATER		
Impact SW-a: Violate any water quality standards or waste discharge requirements **Impact SW-f**: Otherwise substantially degrade water quality	**Potentially Significant**	
	Reduced streamflows of smaller streams below some reservoirs could result in less dilution and increased concentration of contaminants	Reduced
	Increased flows could result in increased input of mercury and	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	methylmercury production downstream, including in areas such as the Yolo Bypass	
	Increases in water level fluctuation at some reservoirs could result in increased bioaccumulation of methylmercury in fish	Reduced
	Changes in reservoir levels and lowered streamflows below reservoirs could result in increased water temperature in some locations and times of year, particularly while specific cold water habitat implementation measures are refined	Reduced
	Changes in reservoir levels could result in increased production of harmful algal blooms (HABs) in some locations	Reduced
	Lower summer and fall flows in some Delta channels could result in incremental increased production of HABs and invasive aquatic plants	Reduced
	Changes in water supply could result in temporary exceedances of maximum contaminant levels in municipal water supply	Reduced
	Changes in water supply and indoor water conservation could result in site-specific exceedances of waste discharge requirements due to changes in wastewater treatment plant (WWTP) influent and effluent quality and quantity	Reduced
	Reductions in delivery of higher quality Sacramento/Delta supplies to wildlife refuges and managed wetlands could affect water quality	Reduced
	Reductions in groundwater accretions could cause decreases in water quality associated with lower streamflows or higher temperatures	Reduced
	Diversion of surface water for groundwater storage and recovery could limit the dilution effect of existing flows and exacerbate existing water quality impairments*	Reduced
	Increased use of water transfers could affect water quality in some locations	Reduced
	Increased water recycling could reduce instream flows, which could reduce dilution of local sources of contaminants*	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Less than Significant	
	Changes in flows could result in moderately elevated turbidity and total suspended solids (TSS) levels in some locations, and reduced occurrence of the highest turbidity and TSS levels	Reduced
	Increased Delta outflow would result in little change or beneficial reductions in electrical conductivity (EC) in the Delta	Reduced
	Increased Delta outflow would result in little change or beneficial reductions in chloride and bromide at municipal intakes in the Delta	Reduced
	Increased floodplain inundation could affect nutrients, organic material, invasive aquatic plants, and HABs	Reduced
	Beneficial	
	Reduced seawater intrusion could result in water quality improvements in the Delta, including dilution and flushing of some contaminants and reductions in EC, bromide, and chloride	Reduced
	Increased flows would enhance water quality for fish	Reduced
	Increased flows could dilute certain constituents in waterbodies that would provide a water quality benefit	Reduced
	Changes in Delta outflows could reduce HABs and invasive vegetation	Reduced
Impact SW-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 **Impact SW-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	**Potentially Significant**	
	Increases in Clear Creek flow downstream of Whiskeytown Lake could increase risk of erosion and flooding in this area*	Reduced
	Beneficial	
	A more natural flow regime could contribute to the restoration of beneficial geomorphic processes (i.e., those that clean fine sediment from spawning gravels, maintain a diversity of bed forms, and help maintain functional floodplain and riparian habitats through floodplain inundation)	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Changes in Delta inflows would provide for floodplain inundation to benefit native species	Reduced
Impact SW-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	**No Impact**	Same
Impact SW-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 **Impact SW-h:** Place within a 100-year flood hazard area structures which would impede or redirect flood flows	**No Impact**	Same
Impact SW-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	**Potentially Significant**	
	Increases in Clear Creek flow downstream of Whiskeytown Lake could increase the risk of downstream flooding in this area*	Reduced
Impact SW-j: Inundation by seiche, tsunami, or mudflow	**No Impact**	Same
HYDROLOGY AND WATER QUALITY—GROUNDWATER		
Impact GW-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 (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	**Potentially Significant**	
	Increased groundwater pumping and reductions in incidental groundwater recharge from applied irrigation could lower groundwater levels and contribute to groundwater overdraft	Reduced
	Lower groundwater levels could result in an increase in frequency and severity of critical shortages or dry wells occurring in some areas for communities that rely on groundwater, including economically disadvantaged communities	Reduced
	Reduced Sacramento/Delta supplies could have localized impacts on groundwater storage in areas where Sacramento/Delta supplies are used for groundwater banking	Reduced
	Surface water transfers through groundwater substitution could result in lower groundwater levels in basin of origin	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Agricultural conservation measures could reduce incidental groundwater recharge that would lower groundwater levels	Reduced
	Less than Significant	
	Reduced flows downstream of reservoirs could affect stream-aquifer interactions	Reduced
	Increased water recycling could have effects on groundwater levels	Reduced
	Municipal water conservation measures could reduce incidental groundwater recharge from urban runoff	Reduced
	Beneficial	
	Groundwater storage and recovery could enhance groundwater levels	Reduced
	Water recycling could increase groundwater levels in some areas if a portion of the recycled water reaches the aquifer or if the recycled water offsets a use that previously was supplied by groundwater	Reduced
Impact GW-a: Violate any water quality standards or waste discharge requirements **Impact GW-f:** Otherwise substantially degrade water quality	**Potentially Significant**	
	Lower groundwater levels can result in changes in groundwater flow direction and gradients in localized areas, which could exacerbate the migration of contaminants	Reduced
	In some locations, lower groundwater levels may concentrate salts and nutrients in groundwater over time through evaporative enrichment	Reduced
	Lower groundwater levels could affect groundwater quality and potentially affect drinking water wells in some areas, including economically disadvantaged communities	Reduced
	Lower groundwater levels could have localized effects on groundwater quality by concentrating pollutants where groundwater contamination already exists	Reduced
	Groundwater storage and recovery projects that use poor quality water to recharge groundwater basins could contribute to salt and nutrient loading or introduce	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	contaminants to the underlying aquifer*	
	Other water management actions (water transfers through groundwater substitution and agriculture water conservation) could result in lower groundwater levels, which could exacerbate groundwater quality impairments or contribute to contaminant loading in localized areas	Reduced
	Less than Significant	
	Recycled water may percolate into the underlying groundwater basin, and could affect groundwater quality	Reduced
	Beneficial	
	Increased infiltration from stream-aquifer interactions from increased flows in the Sacramento/Delta could improve groundwater quality	Reduced
	Groundwater storage and recovery projects that use high-quality water to recharge groundwater basins may provide an effective strategy to maintain or improve groundwater quality	Reduced
LAND USE AND PLANNING		
Impact LU-a: Physically divide an established community	**No Impact**	Same
Impact LU-b: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect	**No Impact**	Same
Impact LU-c: Conflict with any applicable habitat conservation plan or natural community conservation plan	**Less than Significant**	
	See Section 7.6.1, *Terrestrial Biological Resources,* Impact TER-f	Reduced
MINERAL RESOURCES		
Impact MIN-a: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
Impact MIN-b: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	**No Impact**	Same
NOISE		
Impact NOI-a: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies **Impact NOI-c:** A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project **Impact NOI-d:** A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	**Potentially Significant**	
	Increased groundwater pumping for replacement water supply, groundwater storage and recovery, or groundwater substitution transfers could result in higher noise levels	Reduced
Impact NOI-b: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels	**Less than Significant**	
	Increased groundwater pumping could result in localized and intermittent perceptible vibration	Reduced
Impact NOI-e: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	**No Impact**	Same
Impact NOI-f: For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels	**No Impact**	Same
POPULATION AND HOUSING		
Impact POP-a: Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	**No Impact**	Same
Impact POP-b: Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
Impact POP-c: Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere	**No Impact**	Same
PUBLIC SERVICES		
Impact PS-a: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities	**No Impact**	Same
RECREATION		
Impact REC-a: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	**Potentially Significant**	
	Changes in reservoir levels could affect boat ramp accessibility affecting recreation opportunities at some reservoirs	Reduced
	Less than Significant	
	Reduced summer flows could affect the boating difficulty of rapids for rafting and kayaking at some locations	Reduced
	Increased spring and early summer flows could reduce opportunities for swimming or wading in rivers at some locations	Reduced
	Incremental increase in potential harmful algal blooms could cause closures to recreation in some waterbodies	Reduced
	Changes in reservoir water surface area and elevation could affect sportfish populations and reduce fishing opportunities at some locations	Reduced
	Reduced deliveries to wildlife refuges could affect recreational opportunities (e.g., wildlife viewing)	Reduced
	Reduced municipal water supply could affect municipal recreational opportunities at parks, playfields, and swimming	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	pools	
	Beneficial	
	Changes in flow could improve recreational opportunities	Reduced
Impact REC-b: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	**Potentially Significant**	
	Changes in reservoir levels could affect boat ramp accessibility and lead to modification of existing or development of new boat ramps in some locations	Reduced
TRANSPORTATION/TRAFFIC		
Impact TRA-a: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit **Impact TRA-f:** Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	**Less than Significant**	
	Increased intermittent inundation of floodplains bounded by levees where roads and pedestrian and bicycle paths exist could affect transportation	Reduced
	Increased closures of the Delta Cross Channel (DCC) gates could affect recreational boat navigation	Reduced
	Changes in agricultural land use or fallowing could lead to changes in agricultural product-related transportation	Reduced
Impact TRA-b: Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways	**No Impact**	Same
Impact TRA-c: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	**No Impact**	Same
Impact TRA-d: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	**No Impact**	Same
Impact TRA-e: Result in inadequate emergency access	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
UTILITIES AND SERVICE SYSTEMS		
Impact UT-a: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	**Potentially Significant**	
	Changes in hydrology and water supply could alter the assimilative capacity of some streams where treated wastewater is discharged	Reduced
	Changes in water supply could result in the use of other lower quality water supply sources that affect WWTP influent and effluent	Reduced
	Reduced municipal supply and increased indoor water conservation could lead to a decrease in the production of wastewater and increase chemical constituent concentrations in WWTP influent	Reduced
	Groundwater storage and recovery or water transfers could increase concentrations of some pollutants of concern in WWTP influent, if the source of the stored groundwater or transfer is of lower quality	Reduced
Impact UT-b: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	**Potentially Significant**	
	Changes in hydrology and water supply could result in construction to modify or expand existing treatment facilities in order to prevent or mitigate exceedances of drinking water standards and wastewater discharge water quality objectives	Reduced
Impact UT-c: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	**No Impact**	Same
Impact UT-d: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed	**Potentially Significant**	
	Reduced Sacramento/Delta supply to municipal use could affect municipal water supplies	Reduced
	Reduced groundwater levels could affect water supplies for communities that rely on groundwater as their primary municipal water source, including economically disadvantaged communities	Reduced

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Reduced streamflows and water levels at some locations could affect the ability of existing diversion intakes to divert water, which could affect municipal water supplies	Reduced
	Beneficial	
	Other water management actions (groundwater storage and recovery, water transfers, water recycling, water conservation) could contribute to meeting water demands for municipal use	Reduced
Impact UT-e: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	**No Impact**	Same
Impact UT-f: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	**Less than Significant**	
	Changes to agricultural crop type or production resulting from changes in water supply could generate solid waste	Reduced
Impact UT-g: Comply with federal, state, and local statutes and regulations related to solid waste	Increased water recycling could lead to an increase in solid waste byproducts	Reduced

Table F-3. Impact Summary—High Flow Alternative (Alternative 3)

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
AESTHETICS		
Impact AES-a: Have a substantial adverse effect on a scenic vista **Impact AES-b:** Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway **Impact AES-c:** Substantially degrade the existing visual character or quality of the site and its surroundings	**Potentially Significant**	
	Reservoir level changes may result in exposure of more unvegetated ground, or "bathtub rings"	Increased
	Agriculture land conversion could affect aesthetic resources if properties are developed or neglected	Increased
	Less that Significant	
	Altered streamflows could affect water levels and appearance	Increased
	Reduced Sacramento/Delta supply to municipalities could affect the visual quality of the urban environment	Increased
	Reduced Sacramento/Delta supplies to wildlife refuges could result in slight changes to the visual character of these areas	Increased
	Municipal water conservation measures could cause a change in the visual character of localized settings	Increased
Impact AES-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	**No Impact**	Same
AGRICULTURE AND FOREST RESOURCES		
Impact AG-a: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use **Impact AG-e:** Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Important Farmland to nonagricultural use	**Potentially Significant**	
	Reduced Sacramento/Delta supply to agriculture could lead to changes in distribution of crop types and acreage and conversion of farmland to nonagricultural use	Increased
	Lower groundwater levels could reduce groundwater available for agricultural use	Increased
	Increased use of water transfers could further incentivize farmland conversion, particularly in rapidly urbanizing areas	Increased
	Reduced streamflow and water levels at some locations could affect the ability of existing diversion intakes to divert water for agricultural use	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Increased inundation in the Sutter and Yolo Bypasses during the planting season could affect crop acreage	Increased
Impact AG-b: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	**No Impact**	Same
Impact AG-c: Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))	**No Impact**	Same
Impact AG-d: Result in the loss of forest land or conversion of forest land to non-forest use	**No Impact**	Same
AIR QUALITY		
Impact AQ-a: Conflict with or obstruct implementation of the applicable air quality plan **Impact AQ-b:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation **Impact AQ-c:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)	**Potentially Significant**	
	Increased groundwater pumping using diesel pumps and generators could result in emissions	Increased
	Less than Significant	
	Lower streamflows and reservoir levels could result in exposure to increased windblown dust emissions	Increased
	Agricultural land fallowing could result in exposure to increased fugitive dust	Increased
	Post-harvest rice burning could result in exposure to air pollutant emissions	Increased
	Beneficial	
	Water conservation could result in a reduction in emissions	Increased
Impact AQ-d: Expose sensitive receptors to substantial pollutant concentrations	**Less than Significant**	
	Lower reservoir levels could result in exposure to increased windblown dust emissions	Increased
	Agricultural land fallowing could result in exposure to increased fugitive dust on lands where soil is exposed	Increased
	Post-harvest rice burning, groundwater pumping, and the use	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	of other water management actions could result in exposure to pollutant emissions	
Impact AQ-e: Create objectionable odors affecting a substantial number of people	**Less than Significant**	
	Formation of harmful algal blooms from reduced flows and reservoir levels could produce odor compounds	Increased
	Reductions in overall wastewater flow and increased use of recycled water could result in increases in odors	Increased
	Increases in odors from increased groundwater pumping and other water management actions	Increased
BIOLOGICAL RESOURCES—TERRESTRIAL		
Impact TER-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service	**Potentially Significant**	
	Increased inundation in flood bypasses during the planting season could affect crop acreage, which could affect special-status wildlife species that use croplands as habitat	Increased
	Reduced Sacramento/Delta supply to wildlife refuges and agricultural lands could affect habitat for special-status species, including giant gartersnake, Swainson's hawk, greater sandhill crane, tricolored blackbird, and California black rail	Increased
	Reduced Sacramento/Delta supply to municipal and agricultural use could affect special-status plant and wildlife species	Increased
	Capturing flood flows for groundwater storage and recovery could diminish instream ecological benefits of high flow events*	Increased
	Water transfers based on cropland idling could affect special-status species that use agricultural fields	Increased
	Increased use of recycled water that would otherwise discharge to streams could diminish ecological benefits of instream flows, especially in dry seasons and in low flow conditions where streamflow is dependent on wastewater discharges*	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Less than Significant	
	Increased winter flows on the Sacramento and Feather Rivers could affect bank swallow habitat	Increased
	Changes in reservoir water levels could affect habitat for bald eagle, American white pelican, western pond turtle, and amphibians	Increased
	Changes in streamflow below export reservoirs could affect habitat for special-status terrestrial species	Increased
	Lower groundwater levels could affect natural communities that are dependent on groundwater, and sensitive species that are reliant on groundwater dependent ecosystems	Increased
	Beneficial	
	Restoration and maintenance of natural flow would improve conditions for special-status plants and wildlife	Increased
	A more natural flow regime could contribute to the control of invasive species in combination with invasive species control efforts	Increased
	Increased frequency and duration of floodplain inundation would improve habitat for wintering waterfowl and other wildlife species	Increased
	Changes in Delta inflows and Delta outflows would improve habitat conditions for freshwater and tidal marsh species in the Delta and Suisun Marsh	Increased
Impact TER-b: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service **Impact TER-c:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal,	**Potentially Significant**	
	Changes in reservoir levels and streamflow below reservoirs could affect associated riparian and wetland habitat	Increased
	Reduced Sacramento/Delta supply to wildlife refuges could decrease wetland area over time	Increased
	Reduced Sacramento/Delta supply could affect water quality in managed wetlands	Increased
	Reduced Sacramento/Delta supply to municipal and agricultural use could affect sensitive riparian and wetland	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
filling, hydrological interruption, or other means	habitat, and other natural communities	
	Lower groundwater levels could affect riparian and wetland habitat, and sensitive groundwater-dependent natural communities and wetlands	Increased
	Capturing flood flows for groundwater storage and recovery could diminish the instream ecological benefits of high flow events*	Increased
	Increased use of water transfers could affect groundwater-dependent natural communities and some perennial wetlands in some areas, and could exacerbate effects from lower groundwater levels on riparian and wetland habitat and sensitive natural communities	Increased
	Increased use of water recycling could diminish riparian and wetland habitat, especially in dry seasons and in low-flow conditions where streamflow depends on wastewater discharges*	Increased
	Less than Significant	
	Reduced streamflows below export reservoirs could affect riparian and wetland habitat	Increased
	Reduced agricultural and municipal discharges could affect some wetland communities and native vegetation	Increased
	Beneficial	
	A more natural flow regime would restore and maintain natural processes, such as sediment deposition, marsh accretion, nutrient transport, seed dispersal, and flow-related disturbance, which would benefit riverine and associated wetland and riparian habitat	Increased
	Increased frequency and duration of floodplain inundation would benefit riparian and wetland habitat and associated natural communities	Increased
	Changes in Delta inflows and Delta outflows would benefit freshwater marshes and tidal marshes	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Increased use of water recycling and municipal water conservation measures could reduce municipal discharges and support conditions favorable to wetlands and sensitive natural communities adapted to the natural flow regime	Increased
Impact TER-d: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	**Potentially Significant**	
	Reduced Sacramento/Delta supply for wildlife refuges and agriculture could decrease the amount of habitat available for resident and migratory waterfowl and shorebirds	Increased
	Increased use of water transfers could result in conversion of crop types that provide foraging habitat for migratory waterfowl and shorebirds	Increased
	Less than Significant	
	Changes in reservoir levels could affect the amount of breeding habitat for resident or migratory waterfowl populations	Increased
	Beneficial	
	A more natural flow regime would benefit native resident and migratory wildlife that use riverine and associated wetland and riparian habitat and natural communities as migratory corridors or nursery sites	Increased
Impact TER-e: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	**No Impact**	Same
Impact TER-f: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	**Less than Significant**	
	Reduced Sacramento/Delta supply could affect habitat goals of some habitat conservation plans	Increased
	Beneficial	
	Changes in Sacramento/Delta tributary flows, Delta inflows, and Delta outflows would complement actions identified in some habitat conservation plans	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
BIOLOGICAL RESOURCES—AQUATIC		
Impact AQUA-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service **Impact AQUA-d:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	**Potentially Significant**	
	Changes in reservoir levels could affect downstream flows and water temperatures below some reservoirs	Increased
	Reduced Sacramento/Delta supply to agriculture could affect habitat for special status species that depend in part on Sacramento/Delta water supply for habitat (i.e., irrigation runoff in agricultural drain for desert pupfish)	Increased
	Lower groundwater levels could affect stream-aquifer interactions and streamflows in some locations	Increased
	Diversion of surface water for groundwater storage and recovery could reduce peak flows that provide ecological and habitat functions (e.g., floodplain inundation)*	Increased
	Water transfers could alter hydrologic patterns and affect aquatic biological resources in some locations	Increased
	Increased water recycling could decrease the volume of treated wastewater effluent discharge into water bodies that are migratory corridors for fish*	Increased
	Less than Significant	
	Changes in interior Delta flows	Increased
	Changes in wet season flows (geomorphic flows) on regulated tributaries in the Sacramento/Delta regions could cause some erosion, but would also result in ecological benefits of floodplain inundation	Increased
	Changes in reservoir levels could affect native reservoir fish species, such as minnows and suckers	Increased
	Beneficial	
	A more natural flow regime would support a connected and functioning ecosystem and benefit native fish in the Sacramento/Delta	Increased
	Changes in Delta inflows and outflows would benefit native anadromous, estuarine, and resident fish species	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Increased frequency and duration of floodplain inundation in Feather River and Yolo Bypass would benefit aquatic species	Increased
Impact AQUA-f: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	**Less than Significant**	
	Reduced Sacramento/Delta supply could frustrate certain conservation plan management actions	Increased
CULTURAL RESOURCES		
Impact CUL-a: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 **Impact CUL-b:** Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5	**Potentially Significant**	
	Changes in reservoir levels could expose previously inundated cultural resources and/or significant historic or archaeological resources to increased wave action, erosion, and human activity	Increased
	Less than Significant	
	Changes in streamflows could result in inundation and exposure of historic or archaeological resources	Increased
Impact CUL-c: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	**No Impact**	Same
Impact CUL-d: Disturb any human remains, including those interred outside of dedicated cemeteries	**Potentially Significant**	
	Changes in reservoir levels could expose previously inundated land containing human burials, which could result in the disturbance of the burial and impacts from human activity	Increased
	Less than Significant	
	Changes in river flows could alter the baseline conditions of human burials interred within or outside of dedicated cemeteries	Increased
ENERGY		
Impact EN-a: The effects of the project on energy resources **Impact EN-b:** The effect of the project on peak and base period demands for electricity and other forms of energy **Impact EN-c:** The effects of the project on local and regional energy supplies and requirements for additional capacity **Impact EN-d:** The degree to which the project complies	**Potentially Significant**	
	Changes in hydrology would result in a decrease in hydropower generation in the summer which could be significant for an individual project or community	Increased
	Changes in water supply could cause an increase in energy use to replace Sacramento/Delta supplies from actions such as	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
with existing energy standards **Impact EN-e:** Energy requirements and energy use efficiencies by amount and fuel type for each stage of the project	increased groundwater pumping and other water management actions	
	Beneficial	
	Changes in water supply could result in a reduction in the energy used to export water from the Delta	Increased
	Water conservation could result in a reduction in energy use	Increased
Impact EN-f: The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives	**Less than Significant**	
	Reduction in agricultural production could increase energy use for transportation	Increased
GEOLOGY AND SOILS		
Impact GEO-a: Expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving: rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, or landslides	**No Impact**	Same
Impact GEO-b: Result in substantial soil erosion or the loss of topsoil	**Less than Significant**	
	Agriculture fallowing could temporarily increase erosion and sedimentation	Increased
Impact GEO-c: Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse	**Potentially Significant**	
	Lower groundwater levels could exacerbate existing problems associated with ground subsidence	Increased
I**mpact GEO-d:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	**No Impact**	Same
Impact GEO-e: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
GREENHOUSE GAS EMISSIONS		
Impact GHG-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	**Potentially Significant**	
	Increased groundwater pumping from wells with diesel-powered pumps could generate additional greenhouse gas emissions	Increased
	Groundwater storage and recovery, water transfers, and water recycling could result in emissions associated with energy use	Increased
	Less than Significant	
	Reductions in hydropower generation could result in additional energy generation at fossil-fuel facilities	Increased
	Increased groundwater pumping from wells with electric fuel pumps could generate additional greenhouse gas emissions	Increased
	Beneficial	
	Changes in water supply could result in a reduction in the energy used to export water from the Delta and a corresponding reduction in greenhouse gas emissions	Increased
	Water conservation could result in a reduction in energy use and greenhouse gas emissions	Increased
Impact GHG-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases	**Potentially Significant**	
	Increased groundwater pumping from wells with diesel-powered pumps could result in emissions in excess of existing thresholds and could conflict with the state's long-term emission reduction trajectory	Increased
	Beneficial	
	Water use efficiency, water recycling, and reuse of urban runoff would be beneficial in meeting other state and local GHG goals	Increased
HAZARDS AND HAZARDOUS MATERIALS		
Impact HAZ-a: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
Impact HAZ-b: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	**No Impact**	Same
Impact HAZ-c: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	**No Impact**	Same
Impact HAZ-d: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	**No Impact**	Same
Impact HAZ-e: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area	**No Impact**	Same
Impact HAZ-f: For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area	**No Impact**	Same
Impact HAZ-g: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	**No Impact**	Same
Impact HAZ-h: Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	**Less than Significant**	
	Changes in reservoir levels in areas likely to continue experiencing forest fires could affect wildland fire suppression practices	Increased
HYDROLOGY AND WATER QUALITY—SURFACE WATER		
Impact SW-a: Violate any water quality standards or waste discharge requirements **Impact SW-f**: Otherwise substantially degrade water quality	**Potentially Significant**	
	Reduced streamflows of smaller streams below some reservoirs could result in less dilution and increased concentration of contaminants	Increased
	Increased flows could result in increased input of mercury and	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	methylmercury production downstream, including in areas such as the Yolo Bypass	
	Increases in water level fluctuation at some reservoirs could result in increased bioaccumulation of methylmercury in fish	Increased
	Changes in reservoir levels and lowered streamflows below reservoirs could result in increased water temperature in some locations and times of year, particularly while specific cold water habitat implementation measures are refined	Increased
	Changes in reservoir levels could result in increased production of harmful algal blooms (HABs) in some locations	Increased
	Lower summer and fall flows in some Delta channels could result in incremental increased production of HABs and invasive aquatic plants	Increased
	Changes in water supply could result in temporary exceedances of maximum contaminant levels in municipal water supply	Increased
	Changes in water supply and indoor water conservation could result in site-specific exceedances of waste discharge requirements due to changes in wastewater treatment plant (WWTP) influent and effluent quality and quantity	Increased
	Reductions in delivery of higher quality Sacramento/Delta supplies to wildlife refuges and managed wetlands could affect water quality	Increased
	Reductions in groundwater accretions could cause decreases in water quality associated with lower streamflows or higher temperatures	Increased
	Diversion of surface water for groundwater storage and recovery could limit the dilution effect of existing flows and exacerbate existing water quality impairments*	Increased
	Increased use of water transfers could affect water quality in some locations	Increased
	Increased water recycling could reduce instream flows, which could reduce dilution of local sources of contaminants*	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Less than Significant	
	Changes in flows could result in moderately elevated turbidity and total suspended solids (TSS) levels in some locations, and reduced occurrence of the highest turbidity and TSS levels	Increased
	Increased Delta outflow would result in little change or beneficial reductions in electrical conductivity (EC) in the Delta	Increased
	Increased Delta outflow would result in little change or beneficial reductions in chloride and bromide at municipal intakes in the Delta	Increased
	Increased floodplain inundation could affect nutrients, organic material, invasive aquatic plants, and HABs	Increased
	Beneficial	
	Reduced seawater intrusion could result in water quality improvements in the Delta, including dilution and flushing of some contaminants and reductions in EC, bromide, and chloride	Increased
	Increased flows would enhance water quality for fish	Increased
	Increased flows could dilute certain constituents in waterbodies that would provide a water quality benefit	Increased
	Changes in Delta outflows could reduce HABs and invasive vegetation	Increased
Impact SW-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	**Potentially Significant**	
	Increases in Clear Creek flow downstream of Whiskeytown Lake could increase risk of erosion and flooding in this area*	Increased
Impact SW-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	**Beneficial**	
	A more natural flow regime could contribute to the restoration of beneficial geomorphic processes (i.e., those that clean fine sediment from spawning gravels, maintain a diversity of bed forms, and help maintain functional floodplain and riparian habitats through floodplain inundation)	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Changes in Delta inflows would provide for floodplain inundation to benefit native species	Increased
Impact SW-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	**No Impact**	Same
Impact SW-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 **Impact SW-h:** Place within a 100-year flood hazard area structures which would impede or redirect flood flows	**No Impact**	Same
Impact SW-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	**Potentially Significant**	
	Increases in Clear Creek flow downstream of Whiskeytown Lake could increase the risk of downstream flooding in this area*	Increased
Impact SW-j: Inundation by seiche, tsunami, or mudflow	**No Impact**	Same
HYDROLOGY AND WATER QUALITY—GROUNDWATER		
Impact GW-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 (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	**Potentially Significant**	
	Increased groundwater pumping and reductions in incidental groundwater recharge from applied irrigation could lower groundwater levels and contribute to groundwater overdraft	Increased
	Lower groundwater levels could result in an increase in frequency and severity of critical shortages or dry wells occurring in some areas for communities that rely on groundwater, including economically disadvantaged communities	Increased
	Reduced Sacramento/Delta supplies could have localized impacts on groundwater storage in areas where Sacramento/Delta supplies are used for groundwater banking	Increased
	Surface water transfers through groundwater substitution could result in lower groundwater levels in basin of origin	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Agricultural conservation measures could reduce incidental groundwater recharge that would lower groundwater levels	Increased
	Less than Significant	
	Reduced flows downstream of reservoirs could affect stream-aquifer interactions	Increased
	Increased water recycling could have effects on groundwater levels	Increased
	Municipal water conservation measures could reduce incidental groundwater recharge from urban runoff	Increased
	Beneficial	
	Groundwater storage and recovery could enhance groundwater levels	Increased
	Water recycling could increase groundwater levels in some areas if a portion of the recycled water reaches the aquifer or if the recycled water offsets a use that previously was supplied by groundwater	Increased
Impact GW-a: Violate any water quality standards or waste discharge requirements **Impact GW-f:** Otherwise substantially degrade water quality	**Potentially Significant**	
	Lower groundwater levels can result in changes in groundwater flow direction and gradients in localized areas, which could exacerbate the migration of contaminants	Increased
	In some locations, lower groundwater levels may concentrate salts and nutrients in groundwater over time through evaporative enrichment	Increased
	Lower groundwater levels could affect groundwater quality and potentially affect drinking water wells in some areas, including economically disadvantaged communities	Increased
	Lower groundwater levels could have localized effects on groundwater quality by concentrating pollutants where groundwater contamination already exists	Increased
	Groundwater storage and recovery projects that use poor quality water to recharge groundwater basins could contribute to salt and nutrient loading or introduce	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	contaminants to the underlying aquifer*	
	Other water management actions (water transfers through groundwater substitution and agriculture water conservation) could result in lower groundwater levels, which could exacerbate groundwater quality impairments or contribute to contaminant loading in localized areas	Increased
	Less than Significant	
	Recycled water may percolate into the underlying groundwater basin, and could affect groundwater quality	Increased
	Beneficial	
	Increased infiltration from stream-aquifer interactions from increased flows in the Sacramento/Delta could improve groundwater quality	Increased
	Groundwater storage and recovery projects that use high-quality water to recharge groundwater basins may provide an effective strategy to maintain or improve groundwater quality	Increased
LAND USE AND PLANNING		
Impact LU-a: Physically divide an established community	**No Impact**	Same
Impact LU-b: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect	**No Impact**	Same
Impact LU-c: Conflict with any applicable habitat conservation plan or natural community conservation plan	**Less than Significant**	
	See Section 7.6.1, *Terrestrial Biological Resources,* Impact TER-f	Increased
MINERAL RESOURCES		
Impact MIN-a: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
Impact MIN-b: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	**No Impact**	Same
NOISE		
Impact NOI-a: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies **Impact NOI-c:** A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project **Impact NOI-d:** A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	**Potentially Significant**	
	Increased groundwater pumping for replacement water supply, groundwater storage and recovery, or groundwater substitution transfers could result in higher noise levels	Increased
Impact NOI-b: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels	**Less than Significant**	
	Increased groundwater pumping could result in localized and intermittent perceptible vibration	Increased
Impact NOI-e: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	**No Impact**	Same
Impact NOI-f: For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels	**No Impact**	Same
POPULATION AND HOUSING		
Impact POP-a: Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	**No Impact**	Same
Impact POP-b: Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
Impact POP-c: Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere	**No Impact**	Same
PUBLIC SERVICES		
Impact PS-a: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities	**No Impact**	Same
RECREATION		
Impact REC-a: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	**Potentially Significant**	
	Changes in reservoir levels could affect boat ramp accessibility affecting recreation opportunities at some reservoirs	Increased
	Less than Significant	
	Reduced summer flows could affect the boating difficulty of rapids for rafting and kayaking at some locations	Increased
	Increased spring and early summer flows could reduce opportunities for swimming or wading in rivers at some locations	Increased
	Incremental increase in potential harmful algal blooms could cause closures to recreation in some waterbodies	Increased
	Changes in reservoir water surface area and elevation could affect sportfish populations and reduce fishing opportunities at some locations	Increased
	Reduced deliveries to wildlife refuges could affect recreational opportunities (e.g., wildlife viewing)	Increased
	Reduced municipal water supply could affect municipal recreational opportunities at parks, playfields, and swimming	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	pools	
	Beneficial	
	Changes in flow could improve recreational opportunities	Increased
Impact REC-b: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	**Potentially Significant**	
	Changes in reservoir levels could affect boat ramp accessibility and lead to modification of existing or development of new boat ramps in some locations	Increased
TRANSPORTATION/TRAFFIC		
Impact TRA-a: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit **Impact TRA-f:** Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	**Less than Significant**	
	Increased intermittent inundation of floodplains bounded by levees where roads and pedestrian and bicycle paths exist could affect transportation	Increased
	Increased closures of the Delta Cross Channel (DCC) gates could affect recreational boat navigation	Increased
	Changes in agricultural land use or fallowing could lead to changes in agricultural product-related transportation	Increased
Impact TRA-b: Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways	**No Impact**	Same
Impact TRA-c: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	**No Impact**	Same
Impact TRA-d: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	**No Impact**	Same
Impact TRA-e: Result in inadequate emergency access	**No Impact**	Same

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
UTILITIES AND SERVICE SYSTEMS		
Impact UT-a: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	**Potentially Significant**	
	Changes in hydrology and water supply could alter the assimilative capacity of some streams where treated wastewater is discharged	Increased
	Changes in water supply could result in the use of other lower quality water supply sources that affect WWTP influent and effluent	Increased
	Reduced municipal supply and increased indoor water conservation could lead to a decrease in the production of wastewater and increase chemical constituent concentrations in WWTP influent	Increased
	Groundwater storage and recovery or water transfers could increase concentrations of some pollutants of concern in WWTP influent, if the source of the stored groundwater or transfer is of lower quality	Increased
Impact UT-b: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	**Potentially Significant**	
	Changes in hydrology and water supply could result in construction to modify or expand existing treatment facilities in order to prevent or mitigate exceedances of drinking water standards and wastewater discharge water quality objectives	Increased
Impact UT-c: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	**No Impact**	Same
Impact UT-d: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed	**Potentially Significant**	
	Reduced Sacramento/Delta supply to municipal use could affect municipal water supplies	Increased
	Reduced groundwater levels could affect water supplies for communities that rely on groundwater as their primary municipal water source, including economically disadvantaged communities	Increased

Impact	Impact Conclusions	Impact Compared to Proposed Plan Amendments
	Reduced streamflows and water levels at some locations could affect the ability of existing diversion intakes to divert water, which could affect municipal water supplies	Increased
	Beneficial	
	Other water management actions (groundwater storage and recovery, water transfers, water recycling, water conservation) could contribute to meeting water demands for municipal use	Increased
Impact UT-e: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	**No Impact**	Same
Impact UT-f: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	**Less than Significant**	
	Changes to agricultural crop type or production resulting from changes in water supply could generate solid waste	Increased
Impact UT-g: Comply with federal, state, and local statutes and regulations related to solid waste	Increased water recycling could lead to an increase in solid waste byproducts	Increased