CHAPTER 8
FLOOD CONTROL

Floods can be damaging and costly, often resulting in loss of life or substantial property damage. Levees, dams, and reservoirs provide flood control throughout most of California. Dams and reservoir operations can reduce flows downstream by storing inflows and controlling releases. Levees are intended to confine flows within river channels. The effectiveness of a levee is a function of the levee's integrity and its maximum design flow capacity. This chapter discusses the effects of the Proposed Project/Action and alternatives on flood control, relative to the bases of comparison.

8.1 ENVIRONMENTAL SETTING/AFFECTED ENVIRONMENT

This section describes the existing flood control operations within the three areas potentially affected by implementing the Proposed Project/Action or an alternative: (1) the Yuba Region; (2) the CVP/SWP Upstream of the Delta Region; and (3) the Delta Region.

8.1.1 YUBA REGION

New Bullards Bar Reservoir, located on the North Yuba River, is the storage facility of the Yuba Project. The reservoir has a total storage capacity of 966 TAF with a required minimum pool of 234 TAF (as required by YCWA's FERC license), thus leaving 732 TAF of capacity that can be regulated. A portion of this regulated capacity, up to 170 TAF, normally must be held empty from September 15 through May 31 for flood control. This flood control storage space is utilized to maintain Yuba River instream flows below the river's flood channel capacity, which ranges between 120,000 cfs and 180,000 cfs depending on the flow in the Feather River.

Under normal operations, the North Yuba River inflow to New Bullards Bar Reservoir is augmented by diversions from the Middle Yuba River to Oregon Creek via the Lohmann Ridge Tunnel, and by diversions from Oregon Creek into the reservoir via the Camptonville Tunnel. During major flood control operations, these diversions are normally closed. The average combined inflow to New Bullards Bar Reservoir from the North Yuba River and the diversions from the Middle Yuba River and Oregon Creek is about 1.2 MAF[1]. Non-flood releases from New Bullards Bar Reservoir are made through the New Colgate Powerhouse, which has a capacity of 3,400 cfs. During flood operations, releases also are made through the New Bullards Bar spillway gates and the bottom outlet. The maximum objective flood control release for New Bullards Bar Reservoir is 50,000 cfs and the spillway gate release capacity at full pool is 150,000 cfs.

New Bullards Bar Reservoir releases and flows from the Middle Yuba and South Yuba Rivers pass through Englebright Reservoir into the lower Yuba River. Englebright Reservoir has a total storage capacity of 70 TAF and has limited regulating capability. Under non-flood flow conditions, Englebright Reservoir is used to attenuate power peaking releases from the New Colgate Powerhouse and tributary inflows. Englebright Reservoir does not have any dedicated flood storage space and only provides minimal flood control benefits. Because the outlet

[1] Based on model simulations of current facilities for the 1922 to 1994 period, and estimated historical inflows for the 1995 to 2005 period.

capacity of the Narrows I and Narrows II powerhouses that release flow to the lower Yuba River from Englebright Reservoir totals 4,170 cfs, flows above that level are uncontrolled (spilling over the top of Englebright Dam). Differences in flows between the Proposed Project/Action and the basis of comparison above that level therefore tend to be a function of river and reservoir operations in response to storm and flood control requirements.

8.1.2 CVP/SWP UPSTREAM OF THE DELTA REGION

The CVP/SWP Upstream of the Delta Region is defined as those waterways and flood control infrastructure (e.g., levees, pumps, diversion weirs, and bypass channels) associated with CVP/SWP operations including:

- Oroville Reservoir and the Feather River downstream from Oroville Reservoir to the confluence with the Sacramento River; and
- The Sacramento River downstream from the Feather River confluence to the Delta.

For reservoirs, the CVP/SWP Upstream of the Delta Region encompasses the reservoirs and associated flood control structures.

8.1.2.1 FEATHER RIVER BASIN

The Feather River contributes very significant flood flows to the Sacramento River Flood Control Project (SRFCP). Approximately 50 percent of the design flow for the Sacramento River at Sacramento and the Yolo Bypass near Sacramento originates in the Feather River watershed. Feather River flood flows are significantly regulated by Oroville and New Bullards Bar reservoirs.

Oroville Reservoir holds winter and spring runoff for later releases into the Feather River. During flood events, Oroville Reservoir aids in reducing downstream flooding. Up to 750 TAF of flood space is preserved within the 3.5 MAF of storage capacity for the storage of flood flows, as required by the Corps. From October through March, the maximum designated flood space is 750 TAF. From April through June, the flood space requirement decreases to zero. The flood space requirement increases again in September in preparation for the upcoming flood season. Flood control releases are made to meet Corps flood control criteria. During times when flood control space is not required to accomplish flood control objectives, reservoir space can be used for storing water (DWR 2001). Similar to Shasta Reservoir, the actual volume of storage capacity reserved for flood control varies from month-to-month and year-to-year depending on hydrologic conditions.

The lower Feather River is leveed from its confluence with the Sacramento River upstream to Hamilton Bend near the City of Oroville on the west bank, and from the confluence upstream to Honcut Creek on the east bank. Oroville Dam, the lower-most dam on the Feather River, regulates downstream flows, and is located downstream of the confluence of the West Branch and the North, Middle, and South forks of the Feather River, upstream from Honcut Creek, the Yuba River and the Bear River (**Figure 8-1**). The lower Feather River channel capacity above the confluence with the lower Yuba River is 210,000 cfs (Reclamation *et al.* 2004).

Figure 8-1. Feather River Reference Map

8.1.2.2 SACRAMENTO RIVER BASIN

The Sacramento River is leveed from Ord Ferry to the southern tip of Sherman Island in the Delta. Flood control on the Sacramento River also is managed by a system of weirs and bypasses constructed by the Corps. The system includes five bypasses: Butte Basin, Sutter, Yolo, Tisdale, and Sacramento bypasses. Moulton and Colusa weirs feed floodwaters into the Butte Basin Bypass, water flows over the Tisdale Weir into Sutter Bypass, and over the Fremont Weir and the Sacramento Bypass into the Yolo Bypass. The Yolo Bypass carries five times the flow of the Sacramento River at peak flood flows. Flood control operations are based on regulating criteria developed by the Corps, pursuant to the Flood Control Act of 1944.

The SRFCP, consisting of levees built, improved or adopted by the Corps and turned over to state and local agencies for maintenance, provides flood protection for the lower reaches of the Sacramento River and into the Delta.

8.1.3 DELTA REGION

The flood control system in the Delta (with the exception of the Delta Cross Channel control gates) operates passively. Since the construction of the CVP/SWP, and more importantly, since construction of the Yolo Bypass system, flood flows in the Delta have been more controlled. Flooding still occurs, but has been confined to the individual islands or tracts and is due mostly to levee instability or overtopping. The major factors influencing Delta water levels include high flows, high tide, and wind. The highest water stages typically occur in December through February when these factors are compounded.

8.1.4 REGULATORY SETTING

8.1.4.1 FEDERAL AND STATE

Responsibility for flood control in California is shared between agencies. The Corps and the State of California share ownership of the levees in the Sacramento Flood Control System. The flood control system is carefully regulated to provide planned flood protection. The State Reclamation Board regulates all activities on or adjacent to levees that have the potential to impact the operation and efficacy of the levees. Permits must be obtained from the State Reclamation Board prior to any alteration of the levee system.

The Corps provides written instructions on the operation of the major flood control reservoirs. The Corps monitors the operation of the reservoirs to assure they are operated in accordance with Corps regulations. In addition, the Corps is responsible for administering Section 404 of the CWA. The CWA may impact operation and maintenance activities concerning the levees and flood control channels.

8.1.4.2 LOCAL

The Yuba and Feather River levees are operated and maintained by local levee and reclamation districts. These maintenance activities are monitored by the State Reclamation Board to assure compliance with federal regulations. New Bullards Bar Reservoir is operated by YCWA.

NEW BULLARDS BAR DAM FLOOD CONTROL REGULATIONS

New Bullards Bar Dam must be operated from September 16 to May 31 to comply with Part 208 *"Flood Control Regulations, New Bullards Bar Dam and Reservoir, North Yuba River, California,"*

pursuant to Section 7 of the Flood Control Act of 1944 (58 Stat. 890). Under the contract between the United States and YCWA entered into on May 9, 1966, YCWA agreed to reserve 170 TAF of storage space for flood control in accordance with rules and regulations enumerated in Appendix A of the "*Report on Reservoir Regulation for Flood Control*." The seasonal flood storage space allocation schedule is presented in **Table 8-1**.

Table 8-1. New Bullards Bar Reservoir Flood Storage End-of-Month Space Allocation (TAF)

End of Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Flood Space	170	170	170	170	170	170	70	0	0	0	0	56

New Bullards Bar Reservoir is operated to limit flows in the lower Yuba River and lower Feather River to design flood capacity. **Table 8-2** lists the flow capacity objectives of these two rivers.

Table 8-2. Lower Yuba River and Lower Feather River Flow Capacity Objectives (cfs)

New Bullards Bar Maximum Objective Flow Below Dam	50,000
Yuba River Upstream from Feather River (High Feather River Flows)	120,000
Yuba River Upstream from Feather River (Low Feather River Flows)	180,000
Feather River Below Oroville Dam	150,000
Feather River Upstream from Yuba River	210,000
Feather River Downstream from Yuba River	300,000
Feather River at Nicolaus	320,000

8.2 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES

The Proposed Project/Action and alternatives would not: (1) involve the construction or modification of any infrastructure that would alter existing drainage patterns; (2) substantially increase surface runoff conditions on land areas within the study region; (3) result in surface runoff conditions that would exceed existing or planned drainage systems; (4) contribute substantial levels of polluted runoff to the system; or (5) place housing or other structures within the 100-year flood hazard area. In addition, the Proposed Project/Action and alternatives would not affect channel carrying capacities, nor would they require modifications of any existing flood control diagrams.

With implementation of the Proposed Project/Action or alternatives, New Bullards Bar Reservoir storage would be expected to be utilized to a greater degree than under the bases of comparison, to maintain higher minimum instream flows. Because the Proposed Project/Action and alternatives are expected to reduce New Bullards Bar Reservoir storage, relative to the bases of comparison, increases in the magnitude or frequency of New Bullards Bar Reservoir flood control releases are not expected to occur with implementation of the Proposed Project/Action or alternatives. However, the Proposed Project/Action and alternatives do have the potential to affect the magnitude, frequency, and timing of Oroville Reservoir releases, relative to the bases of comparison, when the following conditions are met:

- Lower Yuba River instream flows are greater than the legally required minimum instream flows (e.g., RD-1644 Interim or RD-1644 Long-term flows);
- Oroville Reservoir releases are greater than the flow needed to meet both the lower Feather River diversion demands and the legally required minimum instream flows

immediately downstream of the Thermalito Afterbay return (i.e., upstream of the Yuba River confluence); and

- Hydrologic or operational conditions in the Delta prohibit water transfers.

Under these conditions, Oroville Reservoir releases may be decreased by the incremental amount of lower Yuba River instream flows that are above the legally required minimum instream flows. The incremental amount of water is not released from Oroville Reservoir, and is therefore effectively "backed-up" or stored in Oroville Reservoir. Because Oroville Reservoir storage may increase under these conditions, changes in the timing, magnitude, or frequency of Oroville Reservoir flood control releases may occur, relative to the bases of comparison. Any potential increase in Oroville Reservoir storage resulting from using lower Yuba River flows to "back-up" Feather River (into Oroville Reservoir) flows is expected to be small. Nevertheless, this chapter quantitatively evaluates the potential for flood control impacts resulting from the "backing-up" of water into Oroville Reservoir, which may occur with implementation of the Proposed Project/Action or one of the alternatives.

8.2.1 IMPACT ASSESSMENT METHODOLOGY

The impact assessment relies on mass balance hydrologic modeling to provide a quantitative basis from which to assess the potential impacts of the Proposed Project/Action and alternatives on flood control within the project study area. Specifically, the hydrologic modeling analyses and post-processing applications are utilized to simulate data representing Yuba River Basin and CVP/SWP operational conditions that would occur from implementation of any of the alternatives evaluated in this EIR/EIS, which are compared to modeled data representing operational conditions under the bases of comparison. The hydrologic modeling analyses were conducted using a 72-year simulation period, spanning from 1922 to 1993.

This assessment is based on the potential impacts the Proposed Project/Action and alternatives may have on the flood protection provided by the affected reservoirs (i.e., New Bullards Bar and Oroville reservoirs) and rivers (i.e., Yuba, Sacramento, and Feather rivers), relative to the bases of comparison. Flood control releases are evaluated differently for New Bullards Bar and Oroville reservoirs because each reservoir has different operational criteria, varying in complexity, during those months when potential floods may occur.

The evaluation applicable to New Bullards Bar Reservoir is a two-step process. First, the occurrences of the reservoir storage level reaching the minimum reservoir storage reserved for flood control, expected for each month in which flood control storage reservation is specified, are identified over the 72-year simulation period for the Proposed Project/Action and alternatives and the bases of comparison. Second, the frequency and magnitude of flood control releases expected with implementation of the Proposed Project/Action and alternatives are examined, relative to the bases of comparison. It is recognized that mean monthly flows produced by the model do not capture the magnitude of any particular flood control release; however, comparison of mean monthly flows between the Proposed Project/Action and the bases of comparison will provide a relative indicator of the differences in magnitude of flood control flow events. The number of occurrences of flood control releases (cfs) expected for each individual month over the 72-year simulation period is compared between the Proposed Project/Action and the bases of comparison for each alternative. For the purposes of this analysis, a flood control release is represented by the end-of-month storage volume reaching or encroaching into the minimum reservoir storage reserved for flood control. On the Yuba River, flood control releases are triggered when New Bullards Bar Reservoir storage volume reaches

796 TAF any time during October through March; 896 TAF during April; and 910 TAF during September. There are no storage volume flood control release triggers from May through August. The frequency at which flood control releases would occur at New Bullards Bar Reservoir under the Proposed Project/Action and alternatives is compared to the frequency at which flood control releases would occur under the bases of comparison. Additionally, the exceedance percentages of flood flows (flows greater than 4,170 cfs as recorded at Smartville) are compared between the Proposed Project/Action and alternatives, and the bases of comparison.

Flood control operations at Oroville Reservoir are more complex than those at New Bullards Bar in that minimum flood control storage requirements can differ from month-to-month and year-to-year based on several parameters (i.e., precipitation index, water year type, and maximum flow requirements at different nodes downstream of the reservoir). To simplify the evaluation process, long-term average end-of-month storage volumes and end-of-month storage volumes by water year type are evaluated for the Proposed Project/Action, relative to the bases of comparison for Oroville Reservoir. The evaluation is conducted for the months of September through April.

8.2.2 IMPACT INDICATORS AND SIGNIFICANCE CRITERIA FOR FLOOD CONTROL

For the Yuba River, a substantial increase in the number of potential flood control releases (i.e., reservoir storage reaches flood control target value) from New Bullards Bar Reservoir under the Proposed Project/Action and alternatives, relative to the bases of comparison, would be considered significant. Additionally, a substantial increase in mean monthly flows exceeding 4,170 cfs is considered an indicator of a potential increase in the magnitude of flood flows. For Oroville Reservoir, long-term average end-of-month storage volumes and end-of-month storage volumes by water year type under the Proposed Project/Action and alternatives, relative to the bases of comparison, is evaluated. For CEQA and NEPA purposes, a substantial increase in end-of-month storage volumes under the Proposed Project/Action or an alternative, relative to the bases of comparison, would be considered significant.

As discussed in Chapter 4, CEQA and NEPA have different legal and regulatory standards that require slightly different assumptions in the modeling runs used to compare the Proposed Project/Action and alternatives to the appropriate CEQA and NEPA bases of comparison in the impact assessments. Although only one project (the Yuba Accord Alternative) and one other action alternative (the Modified Flow Alternative) are evaluated in this EIR/EIS, it is necessary to use separate NEPA and CEQA modeling scenarios for the Proposed Project/Action, alternatives and bases of comparisons to make the appropriate comparisons. As a result, the scenarios compared in the impact assessments below have either a "CEQA" or a "NEPA" prefix before the name of the alternative being evaluated. A detailed discussion of the different assumptions used for the CEQA and NEPA scenarios is included in Appendix D.

As also discussed in Chapter 4, while the CEQA and NEPA analyses in this EIR/EIS refer to "potentially significant," "less than significant," "no" and "beneficial" impacts, the first two comparisons (CEQA Yuba Accord Alternative compared to the CEQA No Project Alternative and CEQA Modified Flow Alternative compared to the CEQA No Project Alternative) presented below instead refer to whether or not the proposed change would "unreasonably affect" the evaluated parameter. This is because these first two comparisons are made to determine whether the action alternative would satisfy the requirement of Water Code Section 1736 that the proposed change associated with the action alternative "*would not unreasonably affect fish, wildlife, or other instream beneficial uses*."

8.2.3 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE CEQA YUBA ACCORD ALTERNATIVE COMPARED TO THE CEQA NO PROJECT ALTERNATIVE

Impact 8.2.3-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases

Minimum storage space reserved for flood control purposes in New Bullards Bar Reservoir is set for the September through April time period as described above. Over the 72-year simulation period, New Bullards Bar Reservoir would reach minimum flood control storage levels 49 times under the CEQA Yuba Accord Alternative compared to 54 times under the CEQA No Project Alternative (Appendix F4, 3 vs. 2, pgs. 2 - 8, and 13).

When flows exceed 4,170 cfs in the lower Yuba River, Englebright Dam is spilling and flows are considered uncontrolled. During the months of October through April, the likelihood of flows exceeding 4,170 cfs would be the same or less under the CEQA Yuba Accord Alternative relative to the CEQA No Project Alternative (Appendix F4, 3 vs. 2, pgs. 101 through 107). Therefore, the CEQA Yuba Accord Alternative, relative to the CEQA No Project Alternative, would not unreasonably affect flood control releases.

Impact 8.2.3-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases

Simulated end-of-month storage volumes in Oroville Reservoir under the CEQA Yuba Accord Alternative would be within one percent of those simulated under the CEQA No Project Alternative for all water year types (Appendix F4, 3 vs. 2, pg. 406). Therefore, the CEQA Yuba Accord Alternative, relative to the CEQA No Project Alternative, would not unreasonably affect flood control releases.

8.2.4 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE CEQA MODIFIED FLOW ALTERNATIVE COMPARED TO THE CEQA NO PROJECT ALTERNATIVE

Impact 8.2.4-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases

Minimum storage space reserved for flood control purposes in New Bullards Bar Reservoir is set for the September through April time period as described above. Over the 72-year simulation period, New Bullards Bar Reservoir would reach minimum flood control storage levels 51 times under the CEQA Modified Flow Alternative compared to 54 times under the CEQA No Project Alternative (Appendix F4, 4 vs. 2, pgs. 2 - 8, and 13).

When flows exceed 4,170 cfs in the lower Yuba River, Englebright Dam is spilling and flows are considered uncontrolled. During the months of October through April, the likelihood of flows exceeding 4,170 cfs would be the same or less under the CEQA Modified Flow Alternative and the CEQA No Project Alternative (Appendix F4, 4 vs. 2, pgs. 101 through 107). Therefore, the CEQA Modified Flow Alternative, relative to the CEQA No Project Alternative, would not unreasonably affect flood control releases.

Impact 8.2.4-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases

Simulated end-of-month storage volumes in Oroville Reservoir under the CEQA Modified Flow Alternative would be within one percent of those simulated under the CEQA No Project

Alternative for all water year types (Appendix F4, 4 vs. 2, pg. 406). Therefore, the CEQA Modified Flow Alternative, relative to the CEQA No Project Alternative, would not unreasonably affect flood control releases.

8.2.5 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE CEQA YUBA ACCORD ALTERNATIVE COMPARED TO THE CEQA EXISTING CONDITION

Impact 8.2.5-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases

Minimum storage space reserved for flood control purposes in New Bullards Bar Reservoir is set for the September through April time period as described above. Over the 72-year simulation period, New Bullards Bar Reservoir would reach minimum flood control storage levels 49 times under the CEQA Yuba Accord Alternative compared to 51 times under the CEQA Existing Condition (Appendix F4, 3 vs. 1, pgs. 2 - 8, and 13).

When flows exceed 4,170 cfs in the lower Yuba River, Englebright Dam is spilling and flows are considered uncontrolled. During the months of October through January, the likelihood of flows exceeding 4,170 cfs would be slightly more (one to three percent) under the CEQA Yuba Accord Alternative relative to the CEQA Existing Condition. From February through April, the likelihood of flows exceeding 4,170 cfs would be slightly less (one to two percent) under the CEQA Yuba Accord Alternative relative to CEQA Existing Condition (Appendix F4, 3 vs. 1, pgs. 101 through 107). Therefore, potential impacts associated with changes in flood control releases under the CEQA Yuba Accord Alternative, relative to the CEQA Existing Condition, would be less than significant.

Impact 8.2.5-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases

Simulated end-of-month storage volumes in Oroville Reservoir under the CEQA Yuba Accord Alternative would be within one percent of those simulated under the CEQA Existing Condition for all water year types (Appendix F4, 3 vs. 1, pg. 406). Therefore, potential impacts associated with changes in flood control releases under the CEQA Yuba Accord Alternative, relative to the CEQA Existing Condition, would be less than significant.

8.2.6 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE CEQA MODIFIED FLOW ALTERNATIVE COMPARED TO THE CEQA EXISTING CONDITION

Impact 8.2.6-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases

Minimum storage space reserved for flood control purposes in New Bullards Bar Reservoir is set for the September through April time period as described above. Over the 72-year simulation period, New Bullards Bar Reservoir would reach minimum flood control storage levels the same number of times under the CEQA Modified Flow Alternative compared to the CEQA Existing Condition (Appendix F4, 4 vs. 1, pgs. 2 - 8, and 13).

When flows exceed 4,170 cfs in the lower Yuba River, Englebright Dam is spilling and flows are considered uncontrolled. During the months of October and November, the likelihood of flows exceeding 4,170 cfs would be the same under the CEQA Modified Flow Alternative compared to the CEQA Existing Condition. During December and January, the likelihood of flows

exceeding 4,170 cfs would be two percent and one percent higher, respectively, under the CEQA Modified Flow Alternative, relative to CEQA Existing Condition. During February, the likelihood of flows exceeding 4,170 cfs would be two percent lower under the CEQA Modified Flow Alternative, relative to CEQA Existing Condition and from March through April, the likelihood of flows exceeding 4,170 cfs would be the same under both scenarios (Appendix F4, 4 vs. 1, pgs. 101 through 107). Therefore, potential impacts associated with changes in flood control releases under the CEQA Modified Flow Alternative, relative to the CEQA Existing Condition, would be less than significant.

Impact 8.2.6-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases

Simulated end-of-month storage volumes in Oroville Reservoir under the CEQA Modified Flow Alternative would be within one percent of those simulated under the CEQA Existing Condition for all water year types (Appendix F4, 4 vs. 1, pg. 406). Therefore, potential impacts associated with changes in flood control releases under the CEQA Modified Flow Alternative, relative to the CEQA Existing Condition, would be less than significant.

8.2.7 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE CEQA NO PROJECT/NEPA NO ACTION ALTERNATIVE COMPARED TO THE CEQA EXISTING CONDITION/NEPA AFFECTED ENVIRONMENT

As discussed in Chapter 3, the key elements and activities (e.g., implementation of the RD-1644 Long-term instream flow requirements) for the CEQA No Project Alternative would be the same for the NEPA No Action Alternative. The primary differences between the CEQA No Project and NEPA No Action alternatives are various hydrologic and other modeling assumptions (see Section 4.5 and Appendix D). Because of these differences between the No Project and No Action alternatives, these alternatives are distinguished as separate alternatives for CEQA and NEPA evaluation purposes.

Based on current plans and consistent with available infrastructure and community services, the CEQA No Project Alternative in this EIR/EIS is based on current environmental conditions (e.g., project operations, water demands, and level of land development) plus potential future operational and environmental conditions (e.g., implementation of the RD-1644 Long-term instream flow requirements in the lower Yuba River) that probably would occur in the foreseeable future in the absence of the Proposed Project/Action or another action alternative. The NEPA No Action Alternative also is based on conditions without the proposed project, but uses a longer-term future timeframe that is not restricted by existing infrastructure or physical and regulatory environmental conditions. The differences between these modeling characterizations and assumptions for the CEQA No Project and the NEPA No Action alternatives, including the rationale for developing these two different scenarios for this EIR/EIS, are explained in Chapter 4[2].

Although implementation of the RD-1644 Long-term instream flow requirements would occur under both the CEQA No Project and the NEPA No Action alternatives, the resultant model

[2] For modeling purposes related to CEQA analytical requirements, OCAP Study 3 (2001 level of development) is used as the foundational study upon which the modeling scenarios for the CEQA No Project Alternative and the CEQA Existing Condition were developed. For modeling purposes related to NEPA analytical requirements, OCAP Study 5 (2020 level of development) is used as the foundational study upon which the modeling scenarios for the NEPA No Action Alternative was developed.

outputs for both scenarios are different because of variations in the way near-term and long-term future operations are characterized for other parameters in the CEQA and NEPA assumptions. As discussed in Chapter 4, the principal difference between the CEQA No Project Alternative and the NEPA No Action Alternative is that the NEPA No Action Alternative includes several potential future water projects in the Sacramento and San Joaquin valleys (e.g., CVP/SWP Intertie, FRWP, SDIP and a long-term EWA Program or a program equivalent to the EWA), while the CEQA No Project Alternative does not. Because many of the other assumed conditions for these two scenarios are similar, the longer-term analysis of the NEPA No Action Alternative compared to the NEPA Affected Environment builds upon the nearer-term analysis of the CEQA No Project Alternative compared to the CEQA Existing Condition.

Because the same foundational modeling base (OCAP Study 3) was used to characterize near-term conditions (2001 level of development) for both the CEQA No Project Alternative and the CEQA Existing Condition, it was possible to conduct a detailed analysis to quantitatively evaluate the hydrologic changes in the Yuba Region and the CVP/SWP system that would be expected to occur under these conditions. Building on this CEQA analysis, the analysis of the NEPA No Action Alternative compared to the NEPA Affected Environment, consists of two components: (1) an analysis of near-term future without project conditions quantified through the CEQA No Project Alternative, relative to the CEQA Existing Condition; and (2) a qualitative analysis of longer-term future without-project conditions (the NEPA No Action Alternative)[3].

8.2.7.1 CEQA NO PROJECT ALTERNATIVE COMPARED TO THE CEQA EXISTING CONDITION

Impact 8.2.7.1-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases

Minimum storage space reserved for flood control purposes in New Bullards Bar Reservoir is set for the September through April time period as described above. Over the 72-year simulation period, New Bullards Bar Reservoir would reach minimum flood control storage levels 55 times under the CEQA No Project Alternative compared to 51 times under the CEQA Existing Condition (Appendix F4, 2 vs. 1, pgs. 2 - 8, and 13).

When flows exceed 4,170 cfs in the lower Yuba River, Englebright Dam is spilling and flows are considered uncontrolled. During the months of October and November, the likelihood of flows exceeding 4,170 cfs would be slightly more (one percent) under the CEQA No Project Alternative, relative to the CEQA Existing Condition. During December, the likelihood of flows exceeding 4,170 cfs would be eight percent higher under the CEQA No Project Alternative, relative to the CEQA Existing Condition. During January, the likelihood of flows exceeding 4,170 cfs would be two percent less under the CEQA No Project Alternative, relative to the CEQA Existing Condition. From February through April, the likelihood of flows exceeding 4,170 cfs would be slightly more (one percent) under the CEQA No Project Alternative relative to the CEQA Existing Condition (Appendix F4, 2 vs. 1, pgs. 101 through 107). Therefore, potential impacts associated with changes in flood control releases under the CEQA No Project Alternative, relative to the CEQA Existing Condition, would be less than significant.

[3] The second analytical component cannot be evaluated quantitatively due to the differences in the underlying baseline assumptions for OCAP Study 3 and OCAP Study 5.

Impact 8.2.7.1-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases

Simulated end-of-month storage volumes in Oroville Reservoir under the CEQA No Project Alternative would be within one percent of those simulated under the CEQA Existing Condition for all water year types (Appendix F4, 2 vs. 1, pg. 406). Therefore, potential impacts associated with changes in flood control releases under the CEQA No Project Alternative, relative to the CEQA Existing Condition, would be less than significant.

8.2.7.2 NEPA NO ACTION ALTERNATIVE COMPARED TO THE NEPA AFFECTED ENVIRONMENT

In the Yuba Region, the primary differences between the NEPA No Action Alternative and the NEPA Affected Environment would be the changes in lower Yuba River flows associated with the implementation of the RD-1644 Long-term instream flow requirements, to replace the RD-1644 Interim instream flow requirements, and the increased local surface water demands for the Wheatland Water District. These also are the primary difference that would occur in the Yuba Region between the CEQA No Project Alternative and the CEQA Existing Condition. The potential effects to flood control that were evaluated in the quantitative analyses that is presented in Section 8.2.7.1 above for the CEQA No Project Alternative relative to the CEQA Existing Condition (see also Appendix F4, 2 vs. 1) therefore also are used for comparison of the NEPA No Action Alternative relative to the NEPA Affected Environment, and are not repeated here.

As discussed above, the analysis of the NEPA No Action Alternative includes several additional proposed projects in the project study area that are not included in the CEQA analysis. However, these other proposed projects would not significantly affect hydrologic conditions needed for flood control in the Yuba Region and, thus, are only discussed in the context of CVP/SWP operations upstream of and within the Delta.

Under the NEPA No Action Alternative, future levels of demand for water in California would be addressed through the implementation of numerous projects, including water conveyance projects (e.g., SDIP[4]), water transfers and acquisition programs (e.g., a long-term EWA Program or a program equivalent to the EWA) and other projects related to CVP/SWP system operations (e.g., CVP/SWP Intertie and FRWP).

Agencies participating in groundwater substitution programs or other water transfer programs could cause reservoirs to release more water during July through September than under NEPA Affected Environment. Thus, because end-of-September carry-over storage most likely would be lower, the extra volumes of available storage space could alter the timing or necessity to make flood control release events. However, CVP/SWP reservoir flood control operations are governed by the Corps flood control guidelines, which are designed to limit reservoir releases such that they are within channel capacities. Although future CVP/SWP reservoir operations may be altered as a result of new projects under the NEPA No Action Alternative compared to the NEPA Affected Environment, flood control operations would continue to adhere to Corps guidelines. Therefore, it is anticipated that potential effects on flood control associated with water conveyance projects, water transfer and acquisition programs and other projects related

[4] The SDIP includes a maximum pumping rate of 8,500 cfs at the Banks Pumping Plant.

to CVP/SWP operations under the NEPA No Action Alternative, compared to the NEPA Affected Environment, would be minimal.

8.2.8 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE NEPA YUBA ACCORD ALTERNATIVE COMPARED TO THE NEPA NO ACTION ALTERNATIVE

Impact 8.2.8-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases

Minimum storage space reserved for flood control purposes in New Bullards Bar Reservoir is set for the September through April time period as described above. Over the 72-year simulation period, New Bullards Bar Reservoir would reach simulated minimum flood control storage levels 55 times under the NEPA No Action Alternative compared to 49 times under the NEPA Yuba Accord Alternative (Appendix F4, 6 vs. 5, pgs. 2 - 8, and 13).

When flows exceed 4,170 cfs in the lower Yuba River, Englebright Dam is spilling and flows are considered uncontrolled. During the months of October through April the likelihood of flows exceeding 4,170 cfs would be the same or less (two to six percent) under the NEPA Yuba Accord Alternative, relative to the NEPA No Action Alternative (Appendix F4, 6 vs. 5, pgs. 101 through 107). Therefore, potential impacts associated with changes in flood control releases under the NEPA Yuba Accord Alternative, relative to the NEPA No Action Alternative, would be less than significant.

Impact 8.2.8-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases

Simulated end-of-month storage volumes in Oroville Reservoir under the NEPA Yuba Accord Alternative would be within one percent of those simulated under the NEPA No Action Alternative for all water year types (Appendix F4, 6 vs. 5, pg. 406). Therefore, potential impacts associated with changes in flood control releases under the NEPA Yuba Accord Alternative, relative to the NEPA No Action Alternative, would be less than significant.

8.2.9 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE NEPA MODIFIED FLOW ALTERNATIVE COMPARED TO THE NEPA NO ACTION ALTERNATIVE

Impact 8.2.9-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases

Minimum storage space reserved for flood control purposes in New Bullards Bar Reservoir is set for the September through April time period as described above. Over the 72-year simulation period, New Bullards Bar Reservoir would reach simulated minimum flood control storage levels 55 times under the NEPA No Action Alternative compared to 51 times under the NEPA Modified Flow Alternative (Appendix F4, 7 vs. 5, pgs. 2 - 8, and 13).

When flows exceed 4,170 cfs in the lower Yuba River, Englebright Dam is spilling and flows are considered uncontrolled. During the months of October through April, the likelihood of flows exceeding 4,170 cfs would be the same or less (two to six percent) under the NEPA Modified Flow Alternative, relative to the NEPA No Action Alternative (Appendix F4, 7 vs. 5, pgs. 101 through 107). Therefore, potential impacts associated with changes in flood control releases under the NEPA Modified Flow Alternative, relative to the NEPA No Action Alternative, would be less than significant.

Impact 8.2.9-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases

Simulated end-of-month storage volumes in Oroville Reservoir under the NEPA Modified Flow Alternative would be within one percent of those simulated under the NEPA No Action Alternative for all water year types (Appendix F4, 7 vs. 5, pg. 406). Therefore, potential impacts associated with changes in flood control releases under the NEPA Modified Flow Alternative, relative to the NEPA No Action Alternative, would be less than significant.

8.3 CUMULATIVE IMPACTS

Hydrologic modeling was used to evaluate the cumulative effects of the Yuba Accord Alternative and other likely changes in CVP/SWP operations on hydrology and water supply. The proposed projects that have been adequately defined (e.g., in recent project-level environmental documents or CALSIM II modeling) and that have the potential to contribute to cumulative impacts are included in the quantitative assessment of the Yuba Accord's impacts. For analytical purposes of this EIR/EIS, the projects that are considered well-defined and "reasonably foreseeable" are described in Chapter 21. Additionally, the assumptions used to categorize future hydrologic cumulative conditions that are quantitatively simulated using CALSIM II and the post-processing tools are presented in Appendix D. To the extent feasible, potential cumulative impacts on resources dependent on hydrology or water supply (e.g., reservoir surface elevations) are analyzed quantitatively. Because several projects cannot be accurately characterized for hydrologic modeling purposes at this time, either due to the nature of the particular project or because specific operations details are only in the preliminary phases of development, these projects are evaluated qualitatively.

Only those projects that could affect surface water quality are included in the qualitative evaluation that is presented in subsequent sections of this chapter. Although most of the proposed projects described in Chapter 21 could have project-specific impacts that will be addressed in future project-specific environmental documentation, future implementation of these projects is not expected to result in cumulative impacts to regional water supply operations, or water-related and water dependent resources that also could be affected by the Proposed Project/Action or alternatives (see Chapter 21). For this reason, only the limited number of projects with the potential to cumulatively impact flood control in the project study area are specifically considered qualitatively in the cumulative impacts analysis for flood control:

- Water Storage Projects
  - Upstream of Delta Off-Stream Storage (Sites Reservoir)
  - Shasta Lake Water Resources Investigation (Shasta Reservoir Enlargement)
  - Folsom Dam Safety and Flood Damage Reduction Project
  - Folsom Dam Raise Project
  - Upper San Joaquin River Basin Storage Investigation
- Projects Related to Changes in CVP/SWP System Operations
  - Long-Term CVP and SWP Operations Criteria and Plan
  - Delta Cross Channel Re-operation and Through-Delta Facility
  - CVP/SWP Integration Proposition
  - Isolated Delta Facility
  - Delta-Mendota Canal Recirculation Feasibility Study

- Oroville Facilities FERC Relicensing
- Monterey Plus EIR

❑ Water Transfer and Acquisition Programs

- Dry Year Water Purchase Program
- Sacramento Valley Water Management Program
- Delta Improvements Package
- CVPIA Water Acquisition Program
- City of Stockton Delta Water Supply Project

❑ Flood Control, Ecosystem Restoration and Fisheries Improvement Projects

- North Delta Flood Control and Ecosystem Restoration Project
- Lower San Joaquin Flood Improvements
- San Joaquin River Restoration Settlement Act (Friant Settlement Legislation)

❑ Local Projects in the Yuba Region

- Yuba River Development Project FERC Relicensing

These projects are described in Chapter 21 and qualitatively addressed below.

8.3.1 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE YUBA ACCORD ALTERNATIVE CUMULATIVE CONDITION COMPARED TO THE EXISTING CONDITION

For CEQA, the purpose of the cumulative analysis is to determine whether the incremental effects of the Proposed Project (Yuba Accord Alternative) would be expected to be "cumulatively considerable" when viewed in connection with the effects of past projects, other current projects, and probable future projects (PRC Section 21083, subdivision (b)(2)).[5] The following sections describe this analysis for each type of project discussed above.

For NEPA, the scope of an EIS must include "*cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement*" (40 CFR Section 1508.25(a)(2)).

Because the CEQ regulations implementing NEPA and the CEQA guidelines contain very similar requirements for analyzing, and definitions of, cumulative impacts, the discussions of cumulative impacts of the Yuba Accord Alternative Cumulative Condition relative to the Existing Condition will be the basis for evaluation of cumulative impacts for both CEQA and NEPA. In addition, an analysis of the Modified Flow Alternative Cumulative Condition relative to the Existing Condition is provided to fulfill NEPA requirements.

The following sections describe this analysis for the projects discussed in Section 8.3 above.

[5] The "*Guide to the California Environmental Quality Act*" (Remy *et al.* 1999) states that "*…although a project may cause an "individually limited" or "individually minor" incremental impact that, by itself, is not significant, the increment may be "cumulatively considerable", and thus significant, when viewed against the backdrop of past, present, and probable future projects.*" (CEQA Guidelines, Section 15064, subd. (i)(l), 15065, subd. (c), 15355, subd. (b)).

8.3.1.1 WATER STORAGE PROJECTS

Enlargement of existing dam and reservoir facilities would involve raising their flood control pools, which would provide additional storage space and capacity for flood control operations. The ability of these reservoirs to hold more flood water also would allow for longer timeframes for evacuating downstream communities, if necessary. Because many of the other reasonably foreseeable projects would occur in river systems (e.g., San Joaquin and lower American rivers) located outside of the project study area, it is unlikely that the Yuba Accord Alternative would contribute to, or even affect, flood control operations in these river systems under cumulative conditions.

8.3.1.2 PROJECTS RELATED TO CVP/SWP SYSTEM OPERATIONS

Changes in CVP/SWP system operations could contribute to increases in water storage volumes in some reservoirs, resulting in reductions of flood control capacities. CALFED storage and levee program actions, as well as other regional projects, could contribute to cumulative flood control and levee stability effects within the CVP/SWP system. CVP/SWP reservoir flood control operations are governed by the Corps' flood control guidelines, which are designed to limit reservoir releases such that the releases are within channel capacities. Although future CVP/SWP reservoir operations may be altered as a result of new projects on the planning horizon, flood control operations would continue to adhere to Corps guidelines.

8.3.1.3 WATER TRANSFER AND ACQUISITION PROGRAMS

Several water projects (e.g., SVWMP, Dry Year Water Purchase Program, CVPIA Water Acquisition Program, in addition to a long-term EWA Program or a program equivalent to the EWA) could purchase water through groundwater substitution programs. Under these programs, water held in reservoirs during April through June generally would be released during July through September. Water releases to help meet refuge demands generally would occur when these demands are greatest, typically from April through May and September through December. Agencies participating in groundwater substitution programs or other water transfer programs could cause reservoirs to release more water during July through September than under existing conditions. Thus, because end-of-September carry-over storage most likely would be lower, the extra volumes of available storage space could alter the timing or necessity to make flood control release events. Except for the EWA Program, no other water transfer programs are currently managing water that involves early deliveries, and none are likely to do so (Reclamation *et al.* 2003). Because Component 1 water from the Yuba Accord Alternative would be provided to the EWA Program (or an equivalent program), potential cumulative effects on flood control as a result of pre-delivery are not anticipated.

Because the Proposed Project/Action is expected to reduce New Bullards Bar Reservoir storage, relative to the basis of comparison, increases in the magnitude or frequency of New Bullards Bar Reservoir flood control releases are not anticipated. Additionally, increased releases associated with water transfers from the Yuba Accord Alternative and other projects would occur outside the flood season and, therefore, would not present a risk to flood control.

8.3.1.4 FLOOD CONTROL, ECOSYSTEM RESTORATION AND FISHERIES IMPROVEMENT PROJECTS

Flood control, ecosystem restoration and fisheries improvement projects would be targeted to improve flood control and aquatic habitat conditions within the project study area. Other

reasonably foreseeable flood control and ecosystem restoration projects would be limited to the Delta Region. Over time, habitat restoration actions could improve floodplain development by increasing riparian and wetland habitats that may help to dissipate stream energy associated with high flows (BLM 1998). In some years, flood releases from Friant Dam on the San Joaquin River are large enough to overwhelm parts of the river channel and the aging levee system (Environmental Entrepreneurs Website 2006). As part of the actions to be undertaken by San Joaquin River Restoration Settlement Act, restoring the river channel and improving the levees to allow for natural river functions, including the capacity to carry higher flows for out-migrating juvenile salmon, would naturally provide greater flood-carrying capacity. Implementation of other projects could improve channel capacity and conveyance of flood flows through the Delta by allowing floodwaters to move through the system in a more controlled manner, thus reducing surge effects and potential levee failures (DWR 2004).

Because the Proposed Project/Action is expected to reduce New Bullards Bar Reservoir storage, relative to the basis of comparison, increases in the magnitude or frequency of New Bullards Bar Reservoir flood control releases are not anticipated. The Proposed Project/Action would not store or transfer water when flood control operations are in effect.

If the Yuba Accord Alternative is implemented, revenues could be used to fund local flood control improvement projects in Yuba County. These types of activities would occur subsequent to the Yuba Accord, and would require separate supplemental environmental documentation prior to implementation, but would be expected to provide a beneficial effect to flood control management in the Yuba Region.

8.3.1.5 LOCAL PROJECTS IN THE YUBA REGION

Of the projects identified above, only the Yuba River Development Project FERC Relicensing has the potential to affect future flood control operations in the Yuba Region. Through the relicensing process, FERC may impose new regulatory constraints on the Yuba Project, which could affect New Bullards Bar Reservoir operations and YCWA's ability to manage flood control releases into the lower Yuba River. However, flood control guidelines would be followed regardless of whether or not the Yuba Accord Alternative was implemented.

8.3.1.6 OTHER CUMULATIVE FLOOD CONTROL IMPACT CONSIDERATIONS

The quantitative operations-related impact considerations for the CEQA Yuba Accord Alternative, relative to the CEQA Existing Condition, are discussed in Section 8.2.5. Potential impacts identified in Section 8.2.5 are summarized below and provide an indication of the potential incremental contributions of the Yuba Accord Alternative to cumulative impacts. These potential impacts are summarized here:

- Impact 8.2.5-1: Increases in New Bullards Bar Reservoir end-of-month storage volumes that could affect flood control releases – Less than Significant
- Impact 8.2.5-2: Increases in Oroville Reservoir end-of-month storage volumes that could affect flood control releases - Less than Significant

Although these impacts would be less than significant, the potential nevertheless exists for cumulative impacts. Cumulative impact determinations are presented below, and are based upon consideration of the quantified Yuba Accord Alternative impacts relative to the CEQA Existing Condition, in combination with other reasonably foreseeable projects. These cumulative impact determinations are summarized by region.

8.3.1.7 POTENTIAL FOR CUMULATIVE FLOOD CONTROL IMPACTS WITHIN THE PROJECT STUDY AREA

Because results from the quantitative analysis generally indicate that direct project-related impacts on flood control would be less than significant, the potential for the Yuba Accord Alternative to incrementally contribute to cumulative flood control impacts within the project study area would be minimal. The frequency and magnitude of these quantitative hydrologic changes, in concert with the other qualitative analytical considerations, are both contributing factors used to reach the overall cumulative impact conclusions discussed below for the Yuba Accord Alternative Cumulative Condition, relative to the CEQA Existing Condition.

Impact 8.3.1.7-1: Potential for significant cumulative flood control impacts within the Yuba Region

Of the projects discussed above, only the Yuba River Development Project FERC Relicensing has the potential to affect future flood control operations in the Yuba Region. While, as part of the relicensing, FERC may impose new regulatory constraints on the Yuba Project, which could affect New Bullards Bar Reservoir operations and YCWA's ability to manage flood control releases into the lower Yuba River, YCWA still would follow Corps flood control guidelines for the Yuba Project, and it is not anticipated that FERC's new conditions would significantly affect the Yuba Project's flood control operations. The overall effects on flood control in the Yuba Region, therefore, would be minor, and the impacts on flood control within the Yuba Region of the Yuba Accord Alternative Cumulative Condition, compared to the CEQA Existing Condition, would be less than significant.

Impact 8.3.1.7-2: Potential for significant cumulative flood control impacts within the CVP/SWP Upstream of the Delta Region

For the reasons discussed above, it is anticipated that the new water storage projects, new water transfer and acquisition programs, and new flood control ecosystem restoration and fisheries improvement projects discussed above would not adversely impact flood control and, therefore, would not have any cumulative impacts in the CVP/SWP Upstream of Delta Region. While changes in CVP/SWP system operations could contribute to increases in water storage volumes in some reservoirs, resulting in reductions in flood control capacities, these reservoirs still would be operated to meet the applicable Corps flood control guidelines, so any reductions in flood control capacities would be minor. The overall effects on flood control in the CVP/SWP Upstream of Delta Region, therefore, would be minor and the impacts on flood control within the CVP/SWP Upstream of Delta Region of the Yuba Accord Alternative Cumulative Condition, compared to the CEQA Existing Condition, would be less than significant.

Impact 8.3.1.7-3: Potential for significant cumulative flood control impacts within the Delta Region

For the reasons discussed above, it is anticipated that the new water storage projects, new water transfer and acquisition programs, and new flood control ecosystem restoration and fisheries improvement projects discussed above would not adversely impact flood control and, therefore, would not have any cumulative impacts in the Delta Region. While changes in CVP/SWP system operations could contribute to increases in water storage volumes in some reservoirs, resulting in reductions in flood control capacities, these reservoirs still would be operated to meet the applicable Corps flood control guidelines, so any reductions in flood control capacities would be minor. The overall effects on flood control in the CVP/SWP Upstream of Delta Region, therefore, would be minor and the impacts on flood control within the Delta Region of

the Yuba Accord Alternative Cumulative Condition, compared to the CEQA Existing Condition, would be less than significant.

8.3.2 ENVIRONMENTAL IMPACTS/ENVIRONMENTAL CONSEQUENCES OF THE MODIFIED FLOW ALTERNATIVE CUMULATIVE CONDITION COMPARED TO THE EXISTING CONDITION

It is anticipated that the Modified Flow Alternative Cumulative Condition will have the same potential for cumulative impacts as the Yuba Accord Cumulative Condition. Therefore, the description of the potential impacts in Section 8.3.1 also serves as the description of cumulative impacts associated with the Modified Flow Alternative. Thus, the Modified Flow Alternative Cumulative Condition would result in the following potential cumulative impacts:

- Yuba Region - Potential cumulative impacts on flood control in the Yuba Region would be less than significant.
- CVP/SWP Upstream of the Delta Region - Potential cumulative impacts on flood control in the CVP/SWP Upstream of the Delta Region would be less than significant.
- Delta Region - Potential cumulative impacts on flood control in the Delta Region would be less than significant.

8.4 POTENTIAL CONDITIONS TO SUPPORT APPROVAL OF YCWA'S WATER RIGHTS PETITION

No unreasonable adverse effects to flood control would occur under the Proposed Project/Action or an action alternative. Therefore, no impact avoidance measures or other protective conditions are identified for SWRCB consideration in determining whether or not to approve YCWA's petitions to implement the Yuba Accord.

8.5 MITIGATION MEASURES/ENVIRONMENTAL COMMITMENTS

No adverse effects would occur to flood control under the Proposed Project/Action or an action alternative and, thus, no mitigation is required.

8.6 POTENTIALLY SIGNIFICANT UNAVOIDABLE IMPACTS

There are no significant unavoidable impacts to flood control associated with the implementation of the Proposed Project/Action or an action alternative.