4.3.2 Surface Water

Facilities construction under Alternative 4A would be identical to those described under Alternative 4.

Alternative 4A water conveyance operations would be similar to the range of possible operations for the spring Delta outflow requirements that would occur under Alternative 4 H3 and Alternative 4 H4.

Model simulation results for Alternative 4A Early Long-term (ELT), which are represented by the range of Alternative 4 H3 (ELT) and Alternative 4 H4 (ELT), are summarized in Tables B.2-1 through B.2-6 in Appendix B of the RDEIR/SDEIS. Model simulation results for Alternative 4A at Late Long-term (LLT) which are similar to the range of Alternative 4 H3 (LLT) and Alternative 4 H4 (LLT) are summarized in Tables 6-2 through 6-9 in the Draft EIR/EIS.

Section 6.3.2, *Determination of Effects*, of the Draft EIR/EIS describes criteria used for the NEPA adverse effect and CEQA significant impact determinations.

SWP CVP Reservoir Storage and Related Changes to Flood Potential

Impact SW-1: Changes in SWP or CVP Reservoir Flood Storage Capacity

Reservoir storage in Shasta Lake, Folsom Lake, and Lake Oroville during the October through June period is compared to the flood storage capacity of each reservoir to identify the number of months where the reservoir storage is close to the flood storage capacity.

Changes in the number of months where the reservoir storage is close to the flood storage capacity under Alternative 4A (ELT) as compared to the No Action Alternative (ELT) and Existing Conditions are shown in Tables B.2-1 through B.2-6 in Appendix B of this RDEIR/SDEIS.

Changes in the number of months where the reservoir storage is close to the flood storage capacity under Alternative 4A (LLT) (similar to range of Alternative 4 H3 [LLT] and Alternative 4 H4 [LLT]) as compared to the No Action Alternative (LLT) and Existing Conditions are shown in Tables 6-2 through 6-7 of the Draft EIR/EIS.

NEPA Effects: Under Alternative 4A, the number of months where the reservoir storage is close to the flood storage capacity in Shasta Lake, Folsom Lake, and Lake Oroville would be similar (or show no more than 10% increase) under the No Action Alternative.

A comparison with storage conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that reservoir storages would not be consistently high during October through June under Alternative 4A as compared to the conditions under the No Action Alternative. Therefore, Alternative 4A would not result in adverse effects on reservoir flood storage capacity as compared to the conditions without the project.

CEQA Conclusion: Under Alternative 4A, the number of months where the reservoir storage is close to the flood storage capacity in Shasta Lake, Folsom Lake, and Lake Oroville would be less than under Existing Conditions. These differences represent changes under Alternative 4A, increased demands from Existing Conditions to No Action Alternative, and changes due to sea level rise and climate change.

Alternative 4A would not cause consistently higher storages in the upper Sacramento River watershed during the October through June period. Accordingly, Alternative 4A would result in a less-than-significant impact on flood management. No mitigation is required.

Highest Monthly Flows in Sacramento and San Joaquin Rivers and Related Changes to Flood Potential

Impact SW-2: Changes in Sacramento and San Joaquin River Flood Flows

Changes in highest monthly flows under Alternative 4A (ELT) as compared to the No Action Alternative (ELT) and Existing Conditions are shown in Tables B.2-1 through B.2-3 in Appendix B and Figures 4.3.2-1 through 4.3.2-15 of this RDEIR/SDEIS.

Changes in highest monthly flows under Alternative 4A (LLT) (similar to range of Alternative 4 H3 [LLT] and Alternative 4 H4 [LLT]) as compared to the No Action Alternative (LLT) and Existing Conditions are shown in Figures 6-8 through 6-22 and Tables 6-2 through 6-4 of the Draft EIR/EIS.

Sacramento River at Bend Bridge

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would remain similar to the flows under the No Action Alternative.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would increase by about 2% of the channel capacity (100,000 cfs) as compared to the flows under Existing Conditions. The increase primarily would occur due to sea level rise, climate change, and increased north of Delta demands.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not be a consistent increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result in adverse impacts on flow conditions in the Sacramento River at Bend Bridge as compared to the conditions without the project.

Sacramento River at Freeport

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would decrease by about 1% of the channel capacity (110,000 cfs) as compared to the flows under the No Action Alternative.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would remain similar as compared to the flows under Existing Conditions.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result in adverse impacts on flow conditions in the Sacramento River at Freeport as compared to the conditions without the project.

San Joaquin River at Vernalis

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would remain similar to (or show less than 1% change with respect to the channel capacity: 52,000 cfs) as compared to the flows under the No Action Alternative.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would remain similar (or show less than 1% change with respect to the channel capacity: 52,000 cfs) as compared to the flows under Existing Conditions.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not be a consistent increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result in adverse impacts on flow conditions in the San Joaquin River at Vernalis as compared to the conditions without the project.

Sacramento River at Locations Upstream of Walnut Grove (downstream of north Delta intakes)

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would decrease by about 9% of channel capacity (110,000 cfs) as compared to the flows under the No Action Alternative. This decrease primarily would occur due to the diversion of Sacramento River flow at the north Delta intakes under Alternative 4A.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would decrease by about 8% of channel capacity (110,000 cfs) as compared to the flows under Existing Conditions. This decrease primarily would occur due to the diversion of Sacramento River flow at the north Delta intakes under Alternative 4A.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not be a consistent increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result in adverse impacts on flow conditions in the Sacramento River upstream of Walnut Grove as compared to the conditions without the project.

Trinity River Downstream of Lewiston Dam

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would remain similar as compared to the flows under the No Action Alternative.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would increase by about 4% of channel capacity (6,000 cfs) as compared to the flows under Existing Conditions. This increase primarily would occur due to sea level rise, climate change, and increased north of Delta demands.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not be a consistent increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result in adverse impacts on flow conditions in the Trinity River downstream of Lewiston Lake as compared to the conditions without the project.

American River Downstream of Nimbus Dam

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would remain similar to (or show less than 1% change with respect to the channel capacity: 152,000 cfs) as compared to the flows under the No Action Alternative.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would increase by no more than approximately 1% of the channel capacity (152,000 cfs) as compared to the flows under Existing Conditions. This increase primarily would occur due to sea level rise, climate change, and increased north of Delta demands.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not be a consistent increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result in adverse impacts on flow conditions in the American River at Nimbus Dam as compared to the conditions without the project.

Feather River Downstream of Thermalito Dam

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would increase by about 1% of channel capacity (210,000 cfs) or remain similar as compared to the flows under the No Action Alternative depending on the range of spring Delta outflow requirements.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would increase by about 1% of channel capacity (210,000 cfs) or remain similar as compared to the flows under Existing Conditions depending on the range of spring Delta outflow requirements.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not be a consistent increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result in adverse impacts on flow conditions in the Feather River at Thermalito Dam as compared to the conditions without the project.

Yolo Bypass at Fremont Weir

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would increase no more than approximately 1% of the channel capacity (343,000 cfs) as compared to the flows under the No Action Alternative.

Average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A at ELT would increase no more than 1% of the channel capacity (343,000 cfs) and at LLT would increase no more than 2% of the channel capacity (343,000 cfs) as compared to the flows under the Existing Conditions.

A comparison with flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change and the results show that there would not be a consistent increase in high flow conditions under Alternative 4A as compared to the No Action Alternative. Therefore, Alternative 4A would not result

in adverse impacts on flow conditions in the Yolo Bypass at Fremont Weir as compared to the conditions without the project.

NEPA Effects: Overall, Alternative 4A would not result in an increase in potential risk for flood management compared to the No Action Alternative. Highest monthly flows under Alternative 4A in the locations considered in this analysis either were similar to or less than highest monthly flows that would occur under the No Action Alternative; or the increase in the highest monthly flows would be less than the flood capacity for the channels at these locations.

Therefore, Alternative 4A would not result in adverse effects on flood management.

***CEQA Conclusion*:** Alternative 4A would not result in an increase in potential risk for flood management compared to Existing Conditions when the changes due to sea level rise and climate change are eliminated from the analysis. Highest monthly flows under Alternative 4A in the locations considered in this analysis either were similar to or less than those that would occur under Existing Conditions without the changes in sea level rise and climate change; or the increased highest monthly flows would not exceed the flood capacity of the channels at these locations. Accordingly, Alternative 4A would result in a less-than-significant impact on flood management. No mitigation is required.

Reverse Flows in Old and Middle River

Impact SW-3: Change in Reverse Flow Conditions in Old and Middle Rivers

Changes in average monthly reverse flow conditions for Old and Middle River flows under Alternative 4A (ELT) as compared to the No Action Alternative (ELT) and Existing Conditions are shown in Tables B.2-1 through B.2-3 in Appendix B and Figure 4.3.2-16 in this RDEIR/SDEIS.

Changes in average monthly reverse flow conditions for Old and Middle River flows under Alternative 4A (LLT) (similar to range of Alternative 4 H3 [LLT] and Alternative 4 H4 [LLT]) as compared to the No Action Alternative (LLT) and Existing Conditions are shown in Figure 6-23 and Tables 6-2 through 6-4 of the Draft EIR/EIS.

Reverse flow conditions for Old and Middle River flows would be reduced in all months under Alternative 4A on a long-term average basis except in April and May, compared to reverse flows under both Existing Conditions and the No Action Alternative. Compared to flows under the No Action Alternative, Old and Middle River flows would be generally less positive in April and May.

NEPA Effects: A comparison with reverse flow conditions under the No Action Alternative provides an indication of the potential change due to Alternative 4A without the effects of sea level rise and climate change. The results show that reverse flow conditions under Alternative 4A would be reduced in all months on a long-term average basis except in April and May as compared to No Action Alternative. In April and May the reverse flow conditions would be generally greater than 1% under Alternative 4A as compared to No Action Alternative. The effects to beneficial use of the surface water for water supplies and aquatic resources, is described in Section 4.3.4, *Water Quality* and Section 4.3.7, *Fish and Aquatic Resources*, of this RDEIR/SDEIS.

***CEQA Conclusion*:** Alternative 4A would provide positive changes related to reducing reverse flows in Old and Middle Rivers in June through March and negative changes in the form of increased reverse flow conditions in April and May, compared to Existing Conditions. The increase (more negative) in reverse flow conditions in April and May is generally greater than 1% as compared to

Existing Conditions. The significance of the impact to beneficial use of the surface water for water supplies and aquatic resources, and appropriate Mitigation Measures for those impacts to beneficial uses is described in Section 4.3.4, *Water Quality* and Section 4.3.7, *Fish and Aquatic Resources*, of this RDEIR/SDEIS.

Impact SW-4: Substantially Alter the Existing Drainage Pattern or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding during Construction of Conveyance Facilities

NEPA Effects: Effects associated with construction and operations of facilities under Alternative 4A would be similar to those described under Alternative 1A with the exception of two fewer intakes, elimination of the pumps at the intake locations, and reduction of the intermediate forebay acreage. Additional pumps would be constructed near Clifton Court Forebay under Alternative 4A as compared to Alternative 1A. Because similar construction methods and similar features would be used as under Alternative 1A, the types of effects would be similar. However, the potential for effects would be less than described under Alternative 1A. However, the measures included in Alternative 1A to avoid adverse effects would be included in Alternative 4A.

Alternative 4A would involve excavation, grading, stockpiling, soil compaction, and dewatering that would result in temporary and long-term changes to drainage patterns, drainage paths, and facilities that would in turn, cause changes in drainage flow rates, directions, and velocities. Although intakes have been designed and located on-bank to minimize changes to river flow characteristics, some localized water elevation changes would occur upstream and adjacent to each cofferdam at the intake sites due to facility location within the river. These localized surface elevation changes would not exceed an increase of 0.10 feet at any intake location even under flood flow conditions. Although minimal localized effects could occur, construction of cofferdams could impede river flows at the location of the intakes but would not increase water surface elevations upstream by more than 0.10 feet during flood events. Potential adverse effects could occur due to increased stormwater runoff from paved areas that could increase flows in local drainages; and changes in sediment accumulation near the intakes. Mitigation Measure SW-4 is available to address effects of runoff and sedimentation.

***CEQA Conclusion*:** Alternative 4A could result in alterations to drainage patterns, stream courses, and runoff; and potential for slightly increased surface water elevations near the intakes in the rivers and streams during construction and operations of facilities located within the waterway. Although intakes have been designed and located on-bank to minimize changes to river flow characteristics, some localized water elevation changes would occur upstream and adjacent to each cofferdam at the intake sites due to facility location within the river. These localized surface elevation changes would not exceed an increase of 0.10 feet at any intake location even under flood flow conditions. Potential impacts could occur due to increased stormwater runoff from paved areas that could increase flows in local drainages, and from changes in sediment accumulation near the intakes. These impacts are considered significant. Mitigation Measure SW-4 would reduce this impact to a less-than-significant level by implementing a number of measures which would prevent an increase in runoff volume and rate from land-side construction areas; and which would prevent an increase in sedimentation in the runoff from the construction areas.

Mitigation Measure SW-4: Implement Measures to Reduce Runoff and Sedimentation

Please see Mitigation Measure SW-4 under Impact SW-4 in the discussion of Alternative 1A.

Impact SW-5: Substantially Alter the Existing Drainage Pattern or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding during Construction of Environmental Commitments 3, 4, and 6–11

NEPA Effects: Alternative 4A would include construction of the restoration area facilities under Environmental Commitments 3, 4, and 6–11.

Riparian habitat restoration is anticipated to occur primarily in association with the restoration of tidal marsh habitat, and channel margin habitat. The restored vegetation has the potential of increasing channel roughness, which could result in increases in channel water surface elevations, including under flood flow conditions, and in decreased velocities. Modified channel geometries could increase or decrease channel velocities and/or channel water surface elevations, including under flood flow conditions. Under existing regulations, the USACE, CVFPB, and DWR would require the habitat restoration projects to be flood neutral. The specific permits/decisions/approvals required are included in Table 1-1 of this RDEIR/SDEIS, and in Table 1-2 of the Draft EIR/EIS. Measures to reduce flood potential could include channel dredging to increase channel capacities and decrease channel velocities and/or water surface elevations.

***CEQA Conclusion*:** Alternative 4A would include construction of the restoration area facilities under Environmental Commitments 3, 4, and 6–11. Alternative 4A could result in alterations to drainage patterns, stream courses, and runoff; and potential for increased surface water elevations in the rivers and streams during construction and operations of facilities located within the waterway. These impacts are considered significant. Under existing regulations, the USACE, CVFPB, and DWR would require the habitat restoration projects to be flood neutral. The specific permits/decisions/approvals required are included in Table 1-1 of this RDEIR/SDEIS, and in Table 1-2 of the Draft EIR/EIS. Measures to reduce flood potential could include channel dredging to increase channel capacities and decrease channel velocities and/or water surface elevations. Mitigation Measure SW-4 would reduce this impact to a less-than-significant level by implementing a number of measures which would prevent an increase in runoff volume and rate from land-side construction areas; and which would prevent an increase in sedimentation in the runoff from the construction areas.

Mitigation Measure SW-4: Implement Measures to Reduce Runoff and Sedimentation

Please see Mitigation Measure SW-4 under Impact SW-4 in the discussion of Alternative 1A

Impact SW-6: 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

Effects associated with construction and operations of facilities under Alternative 4A would be similar to those described under Alternative 1A with the exception of two fewer intakes, elimination of the pumps at the intake locations, and reduction of the intermediate forebay acreage. Additional pumps would be constructed near Clifton Court Forebay under Alternative 4A as compared to Alternative 1A. Because similar construction methods and similar features would be used as under Alternative 1A, the types of effects would be similar. However, the potential for effects would be less than described under Alternative 1A because there would be fewer construction sites under this alternative.

NEPA Effects: Paving, soil compaction, and other activities would increase runoff during facilities construction and operations. Construction and operation of dewatering facilities and associated discharge of water would result in localized increases in flows and water surface elevations in receiving channels. These activities could result in adverse effects if the runoff volume exceeds the capacities of local drainages. As noted below in the CEQA Conclusion section, compliance with permit design requirements would avoid adverse effects on surface water quality and flows from dewatering activities. The use of dispersion facilities would reduce the potential for channel erosion. Mitigation Measure SW-4 is available to address adverse effects.

***CEQA Conclusion*:** Alternative 4A actions would include installation of dewatering facilities in accordance with permits issued by the Regional Water Quality Control Board and CVFPB (See Section 6.2.2.4 in Chapter 6, *Surface Water*, of the Draft EIR/EIS). Alternative 4A would include provisions to design the dewatering system in accordance with these permits to avoid significant impacts on surface water quality and flows. However, increased runoff could occur from facilities sites during construction or operations and could result in significant impacts if the runoff volume exceeds the capacities of local drainages. These impacts are considered significant. Mitigation Measure SW-4 would reduce this potential impact to a less-than-significant level.

Mitigation Measure SW-4: Implement Measures to Reduce Runoff and Sedimentation

Please see Mitigation Measure SW-4 under Impact SW-4 in the discussion of Alternative 1A

Impact SW-7: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding Due to the Construction of New Conveyance Facilities

NEPA Effects: Effects associated with construction of conveyance facilities under Alternative 4A would be identical to those described under Alternative 1A with the exception of two fewer intakes, elimination of the pumps at the intake locations, and reduction of the intermediate forebay acreage. Additional pumps would be constructed near Clifton Court Forebay under Alternative 4A as compared to Alternative 1A. Because similar construction methods and similar features would be used as under Alternative 1A, the types of effects would be similar. However, the potential for effects would be less than described under Alternative 1A.

Alternative 4A would not result in an increase to exposure of people or structures to flooding due to construction of the conveyance facilities because the project proponents would be required to comply with USACE, CVFPB, and DWR requirements to avoid increased flood potential and levee failure due to construction and operation of the facilities as described in Section 6.2.2.4 in Chapter 6, *Surface Water*, of the Draft EIR/EIS. Additionally, DWR would consult with local reclamation districts to ensure that construction activities would not conflict with reclamation district flood protection measures. Determination of design flood elevations would need to consider sea level rise to reduce impacts.

***CEQA Conclusion*:** Alternative 4A would not result in an increase to exposure of people or structures to flooding due to construction of the conveyance facilities because the project proponents would be required to comply with the requirements of USACE CVFPB, and DWR to avoid increased flood potential and levee failure due to construction and operation of the facilities as described in Section 6.2.2.4 in Chapter 6, *Surface Water*, of the Draft EIR/EIS. If the design flood elevations did not consider sea level rise to reduce impacts, these impacts are considered significant. Mitigation Measure SW-7 would reduce this impact to a less-than-significant level.

Mitigation Measure SW-7: Implement Measures to Reduce Flood Damage

Please see Mitigation Measure SW-7 under Impact SW-7 in the discussion of Alternative 1A

Impact SW-8: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding Due to Environmental Commitments 3, 4, and 6–11

Tidal marsh habitat, and channel margin habitat could increase flood potential due to impacts on adjacent levees. The newly flooded areas would have larger wind fetch lengths (unobstructed distance which wind can travel over water and potentially develop large waves caused by wind force not tidal force) compared to the existing fetch lengths of the adjacent leveed channels. An increase in fetch length would result in increases in wave height and velocities that reach the existing levees along adjacent islands and floodplains. These potential increases in wave action could also reach the land-side of the remaining existing levees around the restoration area. In accordance with existing requirements of the USACE, CVFPB, and DWR, Alternative 4A would be designed to avoid increased flood potential as compared to Existing Conditions or No Action Alternative.

NEPA Effects: Alternative 4A would not result in an increase to exposure of people or structures to flooding due to the operation of the Environmental Commitments because the facilities would be required to comply with the requirements of the USACE, CVFPB, and DWR to avoid increased flood potential. However, increased wind fetch near open water areas of habitat restoration could cause potential damage to adjacent levees, which would be considered an adverse effect. This impact could become more substantial with sea level rise and climate change. Mitigation Measure SW-8 would reduce this potential adverse effect.

***CEQA Conclusion*:** Alternative 4A would not result in an increase to exposure of people or structures to flooding due to the construction or operations of Environmental Commitments because the facilities would be required to comply with the requirements of the USACE, CVFPB, and DWR to avoid increased flood potential. However, increased wind fetch near open water areas of habitat restoration could cause potential damage to adjacent levees. These impacts are considered significant. Mitigation Measure SW-8 would reduce this potential impact to a level of less than significant.

Mitigation Measure SW-8: Implement Measures to Address Potential Wind Fetch Issues

Please see Mitigation Measure SW-8 under Impact SW-8 in the discussion of Alternative 1A

Impact SW-9: Place within a 100-Year Flood Hazard Area Structures Which Would Impede or Redirect Flood Flows, or Be Subject to Inundation by Mudflow

Effects associated with construction and operations of facilities under Alternative 4A would be identical those described under Alternative 1A with the exception of two fewer intakes, elimination of the pumps at the intake locations, and reduction of the intermediate forebay acreage. Additional pumps would be constructed near Clifton Court Forebay under Alternative 4A as compared to Alternative 1A. Because similar construction methods and similar features would be used as under Alternative 1A, the types of effects would be similar. However, the potential for effects would be less than described under Alternative 1A. The measures included in Alternative 1A to avoid adverse effects would be included in Alternative 4A. As described under Impact SW-1, Alternative 4A would not increase flood potential on the Sacramento River, San Joaquin River, Trinity River, American

River, or Feather River, or Yolo Bypass as described under Impact SW-2. Alternative 4A would include measures, including Mitigation Measure SW-4, to address potential issues associated with alterations to drainage patterns, stream courses, and runoff and potential for increased surface water elevations in the rivers and streams during construction and operations of facilities.

NEPA Effects: Potential adverse effects could occur due to increased stormwater runoff from paved areas that could increase flows in local drainages; and changes in sediment accumulation near the intakes. These effects are considered adverse. Mitigation Measure SW-4 is available to address these potential effects.

***CEQA Conclusion*:** Alternative 4A would not result in an impedance or redirection of flood flows or conditions that would cause inundation by mudflow due to construction or operations of the conveyance facilities or construction of the Environmental Commitments because the project proponents would be required to comply with the requirements of USACE, CVFPB, and DWR to avoid increased flood potential as described in Section 6.2.2.4 of Chapter 6, *Surface Water*, in the Draft EIR/EIS. Potential adverse impacts could occur due to increased stormwater runoff from paved areas that could increase flows in local drainages, as well as changes in sediment accumulation near the intakes. These impacts are considered significant. Mitigation Measure SW-4 would reduce this potential impact to a less-than-significant level by implementing a number of measures which would prevent an increase in runoff volume and rate from land-side construction areas; and which would prevent an increase in sedimentation in the runoff from the construction areas.

Mitigation Measure SW-4: Implement Measures to Reduce Runoff and Sedimentation

Please see Mitigation Measure SW-4 under Impact SW-4 in the discussion of Alternative 1A.