4.5 Hydrology and Water Quality

4.5.1 Methods and Significance Criteria

Methods

This section evaluates the effects on hydrology and water quality that would result from implementation of the proposed action and alternatives.

Anticipated changes in land cover/land use for each alternative are described in Chapter 2, *Proposed Action and Alternatives*. See Section 4.0, *Environmental Consequences*, for a description of the methodology used across all resource chapters for the analysis of cumulative effects.

Impacts on hydrology and water quality were assessed on the basis of the proposed PCCP and review of relevant general plans, as presented in Section 3.5.1, *Regulatory Setting*. Due to the size of the Plan Area, potential impacts on hydrology and water quality resources were analyzed qualitatively on a large-scale level, based on technical reports, other available data (e.g., flood maps), and professional judgment.

The methodology for evaluating impacts on hydrologic and water resources assumes that, as a part of project implementation, standard construction best management practices (BMPs) required by the permitting agencies would be followed, including BMPs specific to in-channel work and managing stormwater and sediment runoff.

The impact analysis related to the PCCP conservation measures is organized into short-term and long-term effects where appropriate. Short-term effects would typically be those associated with construction, and long-term effects would typically be those associated with operations, including recurring maintenance or permanent land use changes that alter hydrologic patterns. Potential impacts were analyzed by comparing existing conditions, as described in Section 3.5.1, *Regulatory Setting*, with conditions that could result from changes in land use or construction activities.

The analysis assesses the potential impacts related to surface water hydrology, flood hazards, groundwater recharge, and surface and groundwater quality, as described below.

- **Surface Water Hydrology:** The surface water hydrology impact analysis considered potential changes in the physical characteristics of waterbodies, impervious surfaces, and drainage patterns throughout the Plan Area as a result implementing the proposed action or alternatives.
- **Flood Hazards:** The impact analysis for flood risk was conducted using the Federal Emergency Management Agency's (FEMA's) National Flood Insurance Program (NFIP) maps and Best Available Maps to determine whether implementation of the conservation measures affects existing designated 100-year and 200-year floodplains.
- **Groundwater Recharge:** Impacts on groundwater recharge were assessed by comparing existing sources of recharge versus recharge capabilities following project implementation. Recharge is determined by the ability of water to infiltrate into the soil.

- **Surface and Groundwater Quality:** Impacts of the PCCP conservation measures on surface water and groundwater quality were analyzed using existing information on existing water quality conditions (i.e., Clean Water Act [CWA] Section 303[d] listed waterbodies). These conditions were then compared to conditions under the proposed action for potential sources of water contaminants generated or inadvertently released during project construction (e.g., sediments, fuel, oil, concrete) and operation. The potential for water quality objectives to be exceeded and beneficial uses to be compromised as a result of the proposed action was also considered.

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a proposed action would be considered to have a significant effect if it would result in any of the following.

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Contribute to inundation by seiche, tsunami, or mudflow.

4.5.2 Impacts and Mitigation Measures

Alternative 1—No Action

As described in Section 4.0, *Environmental Consequences*, Alternative 1 includes reasonably foreseeable activities in the Plan Area associated with urbanization and related infrastructure development, operation, and maintenance identified in the various planning documents of the Permit Applicants, as well as future projects of the South Placer Regional Transportation Authority (SPRTA) and Placer County Water Agency (PCWA), such as local transportation and water projects.

Under Alternative 1, permits would not be issued by USFWS, NMFS, or CDFW for incidental take of the proposed Covered Species through a regional habitat conservation plan (HCP) or natural community conservation plan. As a result, the Permit Applicants and private developers within their jurisdictions would remain subject to the take prohibition for federally listed species under ESA and state-listed species under CESA. The Permit Applicants and others that have ongoing activities or future actions in the Plan Area that may result in the incidental take of federally listed species would need to apply, on a project-by-project basis, for incidental take authorization from either USFWS or NMFS through ESA Section 7 (when a federal agency is involved) or Section 10 (for nonfederal actions). Similarly, the Permit Applicants and others whose ongoing activities or future actions have the potential for incidental take of state-listed species in the Plan Area would apply for incidental take authorization under CESA through a Section 2081 Permit. In addition, regional wetland permits would not be issued by the U.S. Army Corps of Engineers (USACE) and, as a result, the Permit Applicants and private developers within their jurisdictions would remain subject to federal wetland regulations for any ongoing activities or future actions.

As a result of federal and state consultation for impacts on listed species and project-by-project CEQA and NEPA review for effects on biological resources, various types of mitigation measures are expected to be required for individual projects that would go forward under Alternative 1, the no action alternative. These types of mitigation measures are listed below.

- Avoidance and minimization measures incorporating generally accepted species-specific protocols and/or project-specific measures as negotiated with various wildlife agencies. These could include preservation and management of onsite habitat. Other avoidance and minimization requirements could include preconstruction surveys, construction timing restrictions, setback requirements, use restrictions, or other similar measures.
- Restoration and/or enhancement of onsite habitat.
- Compensatory mitigation in offsite areas. Such mitigation could include purchasing credits at a private conservation bank; purchasing and restoring large areas of habitat and using those areas to mitigate various project effects in much the same way that a mitigation bank functions; and purchasing and restoring habitat to mitigate individual project effects.

Though conservation of species and their habitats through mitigation and compensation under the existing regulatory framework would likely result in a pattern of conservation that is geographically fragmented (including mitigation outside the Plan Area) and managed in a piecemeal fashion, the individual restoration and/or enhancement and mitigation measures that would be required on a project-by-project basis would provide many of the hydrology and water quality benefits described under Alternative 2, the proposed action. Implementation of applicable general plan policies and other applicable federal, state, and local regulations would ensure that there would be no adverse effects.

Impact WQ-1: Violation of any water quality standards or waste discharge requirements (NEPA: less than significant; CEQA: less than significant)

Under the no action alternative, construction and eventual operation of public and private development projects and infrastructure facilities in the Plan Area as envisioned in the *Placer County General Plan*, *City of Lincoln General Plan* and SPRTA and PCWA plans would result in impacts related to water quality.

Construction and grading activities for residential and commercial development projects, including supporting infrastructure such as wastewater plants and new transportation facilities, could degrade water quality in the short-term by increasing the potential for soil erosion and associated contaminants from stormwater discharges, thereby resulting in higher sediment loads, turbidity, and other contaminants in receiving waters. Bridge construction and repair, flood control and stormwater management, bank stabilization, and other water infrastructure projects would have short-term construction impacts similar to land development. Contaminated runoff from project sites during and immediately following construction could ultimately be transported offsite via drainage channels. In-stream operations and maintenance activities in stream channels, along streambanks, and on adjacent lands at top-of-bank within riparian corridors also could affect water quality.

Nonpoint source pollution from increased runoff volumes may affect water quality in the long term, primarily as a result of the increase of impervious surfaces (e.g., pavements and buildings) under operating conditions of permanent development. For example, development of new roads, bridges, and parking lots would increase in the potential for oil, grease, and other contaminants from vehicles to accumulate on these impervious surfaces and enter waterbodies. The increase in impervious surfaces can alter peak storm runoff rates, reduce natural groundwater recharge, reduce opportunities for deposition of sediment and pollutants, and reduce natural filtration by native soils and vegetation. Increased peak flows can also erode and destabilize receiving channels and contribute to sediment contamination. Some in-stream activities, such as enhancing stormwater management, improving conveyance through improved bridges and culverts, and stabilizing eroding banks, could benefit water quality by reducing and better managing peak runoff volumes.

The potential for impacts on water quality from development in the Plan Area under the *Placer County General Plan* and *City of Lincoln General Plan* are addressed in general plan policies and in the *West Placer Storm Water Quality Design Manual*. The EIR for the *Placer County General Plan* states that implementation of the policies and programs identified in the general plan would result in less-than-significant impacts on surface water quality (Placer County 1994). The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts on water quality (City of Lincoln 2008).

SPRTA and PCWA projects, which would include in-stream activities, are not specifically addressed in the general plan EIRs. The potential impacts on water quality resulting from construction and operation of SPRTA and PCWA projects in the Plan Area would be similar to impacts of development under the general plans of Placer County and the City of Lincoln. For projects that disturb more than 1 acre of land, SPRTA and PCWA would be required to prepare a stormwater pollution prevention plan (SWPPP) as part of compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. The purpose of a SWPPP is to reduce the amount of construction-related pollutants that are transported by stormwater runoff to surface waters. The SWPPP would emphasize standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas within the planning area. If the area of disturbance is less than 1 acre, the County grading permit for the project would require similar erosion and sediment control measures as required by the Construction General Permit. If no grading permit is required, BMPs required by the CWA Section 401 certification would need to be implemented. If a project is under an acre and does not require Section 401 certification, PCWA's standard construction specifications contracts require the contractor to prepare a SWPPP that is in compliance with the NPDES Construction General Permit.

In addition to compliance with the latest NPDES and other water quality requirements (e.g., USACE's CWA Section 404(b)(1) guidelines, Construction General Permit, Small MS4 Permit, and the General Dewatering Permit), construction projects would also comply with other federal and state regulations and local ordinances, as noted in Section 3.5.1, *Regulatory Setting*. Furthermore, the *Placer County General Plan* includes policies focused on mitigating construction-related water quality impacts, including Policies 6.A.4.e, 6.A.5, 6.A.6, 6.A.7, 6.A.8, and 6.A.10, which are listed in Section 3.5.1, *Regulatory Setting*.

In addition, individual mitigation efforts may be tailored to each project implemented in the Plan Area under the general plans of Placer County or City of Lincoln and to SPRTA and PCWA projects in order to reduce project-specific impacts to less-than-significant levels. Mitigation could include project-specific avoidance and minimization measures, setback requirements, restoration or enhancement of onsite wetlands, creation of new floodplain storage to accommodate hydromodification, and compensatory mitigation in offsite areas.

NEPA Determination: Implementation of applicable general plan policies, the *West Placer Storm Water Quality Design Manual*, and other federal, state, and local regulations would ensure that impacts on water quality as a result of the no action alternative would be less than significant.

CEQA Determination: Implementation of applicable general plan policies, the *West Placer Storm Water Quality Design Manual*, and other federal, state, and local regulations would ensure that impacts on water quality as a result of the no action alternative would be less than significant.

Impact WQ-2: Substantial depletion of groundwater supplies or substantial interference with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

Construction and grading activities in the Plan Area for public and private development envisioned in the *Placer County General Plan*, the *City of Lincoln General Plan*, and for SPRTA transportation projects and PCWA water infrastructure projects would increase the amount of impervious surfaces, which would decrease the amount of land area available for rainfall to infiltrate into the ground. Several policies are in place to ensure that these activities and resultant impervious surfaces do not deplete groundwater supply or interfere with recharge.

The *Placer County General Plan* includes goals and implementation programs aimed at protecting against groundwater overdraft, protecting recharge areas, and supporting major consumptive use of groundwater aquifers in the western part of the county only where it can be demonstrated that use does not exceed safe yield and is appropriately balanced with surface water supply to the same area. The *City of Lincoln General Plan* has similar groundwater management plans and policies, and the general plan EIR found that general plan implementation would have less-than-significant impacts on groundwater supply and recharge (City of Lincoln 2008).

As described in Section 3.5.1, *Regulatory Setting*, in 2007, the City of Lincoln, City of Roseville, PCWA, and the California American Water Company prepared the *Western Placer County Groundwater Management Plan* (WPCGMP) as a planning tool with the objectives of maintaining safe, sustainable, and high-quality groundwater resources. The WPCGMP is intended to be a living document that will be updated in the future to account for progress and changing conditions (City of Roseville et al. 2007). In addition, in 2017, Placer County, the Cities of Lincoln and Roseville, Nevada Irrigation District, PCWA, and California American Water Company agreed to form the West Placer Groundwater Sustainability Agency. The agency will implement the state Sustainable Groundwater Management Act, which requires preparation of local groundwater management plans. The agency

is scheduled to adopt its groundwater sustainability plan by January 2020. Development in the Plan Area under the Placer County and City of Lincoln general plans would adhere to the WPCGMP and eventual West Placer Groundwater Sustainability Agency plans.

Some in-stream activities would likely enhance groundwater supply and recharge. These activities include stormwater management projects that effectively slow the rate of runoff and increase opportunities for groundwater recharge.

In addition, individual mitigation efforts may be tailored to each project developed in the Plan Area under the *Placer County General Plan* or *City of Lincoln General Plan* and to SPRTA and PCWA projects in order to reduce project-specific impacts to less-than-specific levels. Mitigation could include project-specific limitations on groundwater pumping, designation of groundwater recharge areas, restoration or enhancement of onsite wetlands, creation of new floodplain storage, and compensatory mitigation in offsite areas.

NEPA Determination: With implementation of Placer County and City of Lincoln general plan policies, local groundwater management plans, and state and local requirements pertaining to groundwater, impacts on groundwater supplies and recharge under the no action alternative would be less than significant.

CEQA Determination: With implementation of Placer County and City of Lincoln general plan policies, local groundwater management plans, and state and local requirements pertaining to groundwater, impacts on groundwater supplies and recharge under the no action alternative would be less than significant.

Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite (NEPA: less than significant; CEQA: less than significant)

Public and private land development in the Plan Area under the *Placer County General Plan, City of Lincoln General Plan*, and SPRTA and PCWA projects could result in alterations to drainage patterns and cause an increase in the volume and rate of surface runoff during and after construction, potentially resulting in substantial erosion, siltation, or flooding. In addition, increased stormwater runoff resulting from the increased amount of impervious surfaces could create erosive velocities and higher bank shear stress, causing bank and bed erosion or sedimentation in drainages and streams. Some projects, particularly the in-stream activities such as bridge and culvert replacement projects and floodplain enhancement and modification projects, would likely improve natural drainage patterns.

As described in Section 3.5.1, *Regulatory Setting,* both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts. The EIR for the *Lincoln General Plan* found that general plan implementation would have less-than-significant impacts related to siltation or erosion (City of Lincoln 2008). In addition, standard site design requirements, source control measures, and BMPs would protect against violations of water quality standards.

Individual mitigation efforts may need to be tailored to each project developed in the Plan Area under the Placer County and City of Lincoln general plans and to SPRTA and PCWA projects in order to reduce project-specific impacts to less-than-significant levels. Mitigation may include project-specific avoidance and minimization measures, setback requirements, restoration or enhancement

of onsite wetlands, creation of new floodplain storage to accommodate hydromodification, and compensatory mitigation in offsite areas.

NEPA Determination: With implementation of Placer County and City of Lincoln general plan policies, local stormwater management regulations, and state and federal regulations pertaining to drainage, erosion, and siltation, impacts related to drainage siltation or erosion under the no action alternative would be less than significant.

CEQA Determination: With implementation of Placer County and City of Lincoln general plan policies, local stormwater management regulations, and state and federal regulations pertaining to drainage, erosion, and siltation, impacts related to drainage siltation or erosion under the no action alternative would be less than significant.

Impact WQ-4: Substantial alteration of existing drainage patterns in a manner that would result in flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

Development of new roads, bridges, parking lots, and other infrastructure associated with public and private development in the Plan Area pursuant to the *Placer County General Plan*, *City of Lincoln General Plan*, and under SPRTA and PCWA projects would result in an increase in impervious surfaces. These activities could increase peak stormwater runoff and increase sedimentation that could increase the rate of deposition in natural receiving waters and reduce conveyance capacities. The net result could be alteration of drainage patterns with an increased risk of flooding.

Projects would be required to comply with general plan policies, the *Sunset Industrial Area Plan* Policy 3.E.7, *Storm Water Management Manual*, and the *West Placer Storm Water Quality Design Manual*. As discussed in Section 3.5.1, *Regulatory Setting*, existing regulations—such as the requirements of the NFIP, USACE provisions, and California Fish and Game Code Sections 1601–1607, as well as *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4—require that a hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate the modifications would not increase flood risk. In addition, some of the flood control and in-stream activities would improve bridges and culverts and increase floodplain connectivity, all of which could beneficially reduce flood risk by improving water conveyance.

The EIR for the *City of Lincoln General Plan* found that implementation of the general plan would have less-than-significant impacts related to substantial alteration of existing drainage patterns in a manner that would increase flooding (City of Lincoln 2008). As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts and ensure that activities do not increase flood risk.

To reduce project impacts to less-than-significant levels, individual mitigation efforts may need to be tailored to each project developed in the Plan Area under the Placer County and City of Lincoln general plans and to SPRTA and PCWA projects. Mitigation may include project-specific avoidance and minimization measures, setback requirements, restoration or enhancement of onsite wetlands, creation of new floodplain storage to accommodate hydromodification, and compensatory mitigation in offsite areas.

NEPA Determination: With implementation of general plan policies, Placer County's Stormwater Management Program, and other federal, state, and local regulations, impacts related to substantial alteration of drainage patterns under the no action alternative would be less than significant.

CEQA Determination: With implementation of general plan policies, Placer County's Stormwater Management Program, and other federal, state, and local regulations, impacts related to substantial alteration of drainage patterns under the no action alternative would be less than significant.

Impact WQ-5: Creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

Public and private development in the Plan Area under the *Placer County General Plan*, *City of Lincoln General Plan*, and SPRTA and PCWA projects could provide substantial additional sources of polluted runoff. Development could increase nonpoint source pollution from increased runoff volumes as a result of additional impervious surfaces (e.g., pavements and buildings); increase sediment loads in receiving waters by increasing erosion through construction activities; increase the potential for pollutants (e.g., oil and grease) to accumulate on road surfaces due to increases in traffic; and contribute to the pollutant load of stormwater runoff and waterbodies through urban activities (e.g., landscape and infrastructure maintenance).

As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* contain general plan policies and stormwater programs designed to address these potential impacts and ensure activities do not exceed the capacity of stormwater systems or increase polluted runoff. In addition, standard site design requirements, source control measures, and BMPs would apply to public and private development projects would protect against violations of water quality standards. Some drainage projects could reduce demands on stormwater systems and pollutant loads by improving conveyance through improved bridges and culverts, stabilizing streambanks, and increasing floodplain connectivity in a way that would increase flood water storage and provide natural filtration for pollutants.

To reduce potential project impacts to less-than-significant levels, individual mitigation efforts may need to be tailored to each project in the Plan Area under the Placer County and City of Lincoln general plans and to SPRTA and PCWA projects. Mitigation may include project-specific avoidance and minimization measures, setback requirements, restoration or enhancement of onsite wetlands, creation of new floodplain storage to accommodate hydromodification, and compensatory mitigation in offsite areas.

NEPA Determination: With implementation of general plan policies, Placer County's Stormwater Management Program, and other federal, state, and local regulations, impacts related to stormwater drainage capacity and polluted runoff under the no action alternative would be less than significant.

CEQA Determination: With implementation of general plan policies, Placer County's Stormwater Management Program, and other federal, state, and local regulations, impacts related to stormwater drainage capacity and polluted runoff under the no action alternative would be less than significant.

Impact WQ-6: Other substantial degradation of water quality (NEPA: less than significant; CEQA: less than significant)

Growth in the Plan Area associated with the Placer County and City of Lincoln general plans, and SPRTA and PCWA projects would have the same effects related to substantial degradation of water quality as described under Impact WQ-1.

NEPA Determination: With implementation of general plan policies, Placer County's Stormwater Management Program, and other federal, state, and local regulations, impacts related to substantial degradation of water quality under the no action alternative would be less than significant.

CEQA Determination: With implementation of general plan policies, Placer County's Stormwater Management Program, and other federal, state, sand local regulations, impacts related to substantial degradation of water quality under the no action alternative would be less than significant.

Impact WQ-7: Placement of housing within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

Under the no action alternative, public and private development envisioned within the Plan Area in the *Placer County General Plan* and *City of Lincoln General Plan* would go forward. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain (see Section 3.5.1, *Regulatory Setting*). City of Lincoln Policy HS-6.4 requires new residential construction to have its lowest habitable floor elevated above the base flood level elevation determined by FEMA standards. Placer County Policy 4.F.4 states that the County shall require evaluation of potential flood hazards prior to approval of development projects and that the County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions. Adherence to the general plan policies, and to state and federal floodplain regulations, would ensure that impacts would be less than significant. SPRTA and PCWA do not develop housing; therefore SPRTA and PCWA projects would have no impact.

NEPA Determination: Development under the no action alternative would be required to comply with the Placer County and City of Lincoln general plans, and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and to restrict new development within the 100-year flood zone. Therefore, impacts would be less than significant.

CEQA Determination: Development under the no action alternative would be required to comply with the Placer County and City of Lincoln general plans, and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone. Therefore, impacts would be less than significant.

Impact WQ-8: Placement of structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

Under the no action alternative, public and private development envisioned within the Plan Area in the *Placer County General Plan, City of Lincoln General Plan*, and SPRTA and PCWA projects would go forward. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain that would impede or redirect 100-year flood flows (see Section 3.5.1, *Regulatory Setting*).

Any work conducted in an area within the Central Valley Flood Protection Board's (CVFPB's) area of jurisdiction, which includes the lower portion of the Bear River, would require an encroachment permit (see Section 3.5.1, *Regulatory Setting*). An encroachment permit application would trigger the USACE permit process under CWA Section 408, which would require hydraulic modeling to demonstrate potential changes in flood water surface elevations.

Most public and private development under the no action alternative would be located outside of CVFPB jurisdiction but could be located within a FEMA regulated floodplain. If the work has the potential to affect the hydrologic or hydraulic characteristics of a flooding source and, thus, result in the modification of the existing regulatory floodway, the effective Base Flood Elevations (BFEs), or the Special Flood Hazard Area (SFHA), then as described in Section 3.5.1, *Regulatory Setting*, the project proponent would be required to perform hydraulic modeling to demonstrate compliance with FEMA regulations through the Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) process. California Fish and Game Code Sections 1601–1607 also regulate the potential placement of structures that would impede or redirect flood flows within a 100-year flood hazard area. These existing regulations and policies require hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase 100-year flood risk. Implementation of necessary engineering design and risk assessments would ensure that channel modifications would not create or alter flood flows in a manner inconsistent with existing policies and regulations. Construction of new bridges and culverts and flood protection projects under the no action alternative would reduce the risk of flooding.

NEPA Determination: Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects would not be adverse. Impacts would be less than significant.

CEQA Determination: Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects would not be adverse. Impacts would be less than significant.

Impact WQ-9: Exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Increased development in the Plan Area associated with the *Placer County General Plan* and *City of Lincoln General Plan* under the no action alternative could result in more people and structures being exposed to significant risk of flooding. Impacts could include loss, injury, or death involving flooding, including flooding as a result of levee or dam failure. *Placer County General Plan* Policies 8.B.4 and 8.B.6 require that the design and location of dams and levees be in accordance with all applicable design standards and specifications and accepted state-of-the-art design and construction practices. The policies prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and access to the structure are free from flood inundation. In addition, Implementation Program 8.5 states that the County will continually review and revise its applicable portions of the County Emergency Operations Plan that concern dam failure, and the Office of Emergency Services will continue to provide public information on dam failure preparedness and response. *City of Lincoln General Plan* Policy PFS-4.9 discourages development and major fill or structural improvements in the 100-year floodplain, and Policy OSC-1.4 designates as open space all land within the 100-year floodway and all land within 50 feet of the center channel of streams or creeks that provide drainage. The EIR for the *Placer County General Plan* concludes that these policies will ensure that impacts related to dam inundation would be less than significant. The EIR for the *City of Lincoln General Plan* states that, even with implementation of general plan policies, flood hazard impacts would be significant and unavoidable (Placer County 1994; City of Lincoln 2008).

Therefore, effects related to growth in the Plan Area associated with the *City of Lincoln General Plan* would be significant and unavoidable.

NEPA Determination: Adherence to general plan policies and to state and federal requirements would reduce impacts resulting from development under the Placer County and City of Lincoln general plans, but not to a less-than–significant level. Therefore, the impact would be significant and unavoidable.

CEQA Determination: Adherence to general plan policies and to state and federal requirements would reduce impacts resulting from development under the Placer County and City of Lincoln general plans, but not to a less-than–significant level. Therefore, the impact would be significant and unavoidable.

Impact WQ-10: Contribution to inundation by seiche, tsunami, or mudflow (NEPA: less than significant; CEQA: less than significant)

Western Placer County is not at risk due to inundation from a tsunami because of its distance from the ocean. The area is also not prone to seiches or earthquake-generated waves within enclosed or restricted bodies of water. Major earthquakes could produce oscillations or waves in local bodies of water that could overtop and damage levees or other infrastructure.

Implementation of growth associated with the Placer County and City of Lincoln general plans, and SPRTA and PCWA projects would not result in contribution to inundation by seiche, tsunami, or mudflow and, thus, would have a less-than-significant impact.

NEPA Determination: Growth associated with the Placer County and City of Lincoln general plans and SPRTA and PCWA projects would not contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow resulting from such development is very low. Impacts would be less than significant.

CEQA Determination: Growth associated with the Placer County and City of Lincoln general plans and SPRTA and PCWA projects would not contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow resulting from such development is very low. Impacts would be less than significant.

Alternative 2—Proposed Action

Impact WQ-1: Violation of any water quality standards or waste discharge requirements (NEPA: less than significant; CEQA: less than significant)

Activities associated with PCCP implementation are discussed in terms of initial construction and eventual operation of the land use changes.

Construction

The PCCP conservation measures include several physical activities that would involve ground-disturbing activities with the potential to increase pollutant loading to the drainage system (Table 2-13 in Chapter 2, *Proposed Action and Alternatives*).

- Improvement of culverts and other road crossings.
- Mechanical recontouring of vernal pool basins.

- Removal of modification of ditches, raised roads, trails, and other barriers.
- Construction of drainage ditches or retention basins and removal of sediment to enhance vernal pool hydrology.
- Removal of fish barriers.
- Wetland, riparian, and vernal pool grassland habitat restoration within the 100-year floodplain.
- In-channel work associated with stream enhancement and restoration.
- Excavating or recontouring historical vernal pools, swales, and wetlands to natural bathymetry.

Typical construction-related ground-disturbing activities would introduce the potential for increased erosion, runoff, and sedimentation, with subsequent effects on water quality. During site grading, trenching, and other construction activities, areas of bare soil could be exposed to erosive forces during rainfall events. Bare soils are much more likely to erode than vegetated areas because of the lack of dispersion, infiltration, and retention properties created by covering vegetation. The extent of the impacts would depend on soil erosion potential, construction practices, disturbed area size, precipitation events, topography, and proximity to drainage channels. Pollutants such as solvents, petroleum products, pesticides, and fertilizers can attach to and be transported by the sediment and lead to water quality impacts. In addition, construction equipment and activities would have the potential to leak hazardous materials, such as oil and gasoline, and potentially affect surface water or groundwater quality. Improper use or accidental spills of fuels, oils, and other construction-related hazardous materials such as pipe sealant, solvents, and paints could also pose a threat to the water quality of local waterbodies. These potential leaks or spills, if not contained, would be considered a significant impact on groundwater and surface water quality. If precautions were not taken to contain or capture sediments and accidental hazardous spills, construction activities could produce substantial pollutants in stormwater runoff and result in a significant impact on the existing surface water quality.

Projects that would disturb more than 1 acre of land are required to prepare a SWPPP as part of compliance with the NPDES Construction General Permit. The purpose of a SWPPP is to reduce the amount of construction-related pollutants that are transported by stormwater runoff to surface waters. The SWPPP would emphasize standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas within the Plan Area. If the area of disturbance is less than 1 acre, the County grading permit for the project would require similar erosion and sediment control measures as required by the Construction General Permit. If no grading permit is required, BMPs required by the CWA Section 401 certification would need to be implemented.

In addition to compliance with the latest NPDES and other water quality requirements (e.g., Construction General Permit, Small MS4 Permit, and the General Dewatering Permit), construction projects would also comply with other federal and state regulations and local ordinances, as noted in Section 3.5.1, *Regulatory Setting*.

Several of the PCCP conservation measures would require working in or near waterbodies. Construction dewatering in areas of surface water or shallow groundwater may be required during excavation. Dewatering would be conducted locally, and according to the dewatering permit obtained from the Central Valley Regional Water Quality Control Board (Central Valley Water Board), as described in Section 3.5.1, *Regulatory Setting*. In areas where groundwater is shallow and

there would be potential to adversely affect riparian habitat, project features would be installed using the vibration method, which minimizes subsurface disruption.

The *Placer County General Plan* includes policies focused on mitigating construction-related water quality impacts, including Policies 6.A.4.e, 6.A.5, 6.A.6, 6.A.7, 6.A.8, and 6.A.10, which are listed in Section 3.5.1, *Regulatory Setting*.

Operations

The operations of several of the PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, would provide beneficial changes to hydrologic resources and water quality.

- Improvement of culverts would likely provide more natural stream flow conveyance through road crossings that would lessen the potential for erosion and sedimentation problems often associated with improperly functioning culverts.
- Mechanical recontouring of vernal pool basins and removal of sediment and repairs to aquatic/wetland features would create additional natural storage for runoff that would reduce peak runoff downstream that could exceed the capacity of the stormwater drainage system. The improvements would also enhance water quality by creating additional opportunities for treatment of contaminants through natural filtering and treatment processes provided by wetland features.
- The removal or modification of ditches, raised roads, trails, and other barriers to restore natural surface flow would enhance water quality by removing features on the landscape that artificially concentrate and redirect runoff in a manner that often results in problematic soil erosion.
- The use of filter and buffer strips around wetlands and minimization of the use of herbicides would remove or reduce point and nonpoint sources of water pollution.
- The removal and modification of artificial crossings or obstructions in stream channels, including seasonal flashboard dams, pipeline crossings, and concrete dams, would restore natural stream flow conveyance and reduce the potential for streambed and streambank erosions that often occurs at these types of structures.
- Reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage, groundwater recharge, and water treatment in the restored reaches, thereby reducing peak flows and the volume of runoff routed to stormwater drainage systems downstream.

Operations of some of the PCCP conservation measures have the potential to increase soil erosion, but the risk would be managed as described below.

- Prescribed burning for vegetation management has the potential to expose soils and make them more susceptible to erosion, particularly on steep slopes with erodible soils. Proper planning in developing the prescribed burn management plan would reduce this risk substantially by considering topography, soil physical properties, seasonality of when the burn is conducted, and the temperature of the burn to ensure that some vegetative cover remains over the ground to protect soils post-burn.

- Removal of armored levees and replacement with earthen levees would provide habitat benefits but could increase the risk of erosion if stream channels migrate into the earthen levees. Existing USACE regulations would require engineering analysis to demonstrate that the new earthen levees incorporate sufficient vegetation and other stability measures into their design to provide the erosion resistance and stability previously provided by the armored material to be removed.

Development within the Plan Area envisioned in the *Placer County General Plan*, *City of Lincoln General Plan*, and SPRTA and PCWA plans would result in impacts related to initial construction and eventual operation. Impacts would be the same as described for Impact WQ-1 under Alternative 1 and similar to those described above for the PCCP conservation measures. Impacts resulting from Covered Activities would be more extensive than impacts associated with PCCP implementation because of the scale of the Covered Activity projects compared with the PCCP conservation measures.

Construction and grading associated with Covered Activities could degrade water quality in the short-term by increasing the potential for soil erosion and associated contaminants from stormwater discharges, thereby resulting in higher sediment loads, turbidity, and other contaminants in receiving waters. In-stream Covered Activities would include operations and maintenance activities in the stream channel, along the streambank, and on adjacent lands at top-of-bank within the riparian corridor and could affect water quality. However, some of the in-stream Covered Activities could benefit water quality by reducing peak runoff volumes through enhanced stormwater management, improving conveyance through improved bridges and culverts, and stabilizing eroding banks.

The EIR for the *Placer County General Plan* states implementation of the policies and programs identified in the general plan would result in impacts on surface water quality being less than significant. The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts on water quality (City of Lincoln 2008).

The Covered Activities of SPRTA and PCWA, which include in-stream activities, would have impacts similar to impacts of Placer County's and the City of Lincoln's development-related Covered Activities. As stated in Chapter 6 of the Plan, all Covered Activities would be required to comply with the state's General Construction Permit—including requirements to develop a project-based SWPPP—and applicable NPDES program requirements as implemented by the City of Lincoln and Placer County. The site design requirements, source control measures, and BMPs required as the conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards or waste discharge requirements. Furthermore, implementation of PCCP conservation measures would provide many water quality benefits that would help ensure potential effects of Covered Activities would be less than significant.

NEPA Determination: Under Alternative 2, the proposed action, implementation of applicable general plan policies, Placer County's Stormwater Management Program, and other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects from the Covered Activities. Impacts would be less than significant.

CEQA Determination: Under Alternative 2, the proposed action, implementation of applicable general plan policies, Placer County's Stormwater Management Program, and other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects from the Covered Activities. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-2: Substantial depletion of groundwater supplies or substantial interference with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

Several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, would provide beneficial changes to groundwater recharge. The proposed creation and restoration of habitat features that work to slow and retain runoff on the landscape would create enhanced opportunity for water infiltration through the soil and into groundwater storage. The increase of properly functioning wetland areas, including ponds, would create new recharge areas and improve groundwater quality by filtering out sediment and pollutants. Similarly, reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage and groundwater recharge.

Covered Activities would have the same impacts as identified under Impact WQ-2 for Alternative 1. Construction and grading associated with Covered Activities would increase impervious surfaces, which would decrease the amount of land area available for rainfall to infiltrate into the ground. Several policies are in place to ensure that the Covered Activities do not deplete groundwater supply or interfere with recharge. The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts on groundwater supply and recharge (City of Lincoln 2008). The *Placer County General Plan* includes goals and implementation programs aimed at protecting against groundwater overdraft, protecting recharge areas, and supporting major consumptive use of groundwater aquifers in the western part of the county only where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area. The *City of Lincoln General Plan* has similar groundwater management plans and policies.

As described in Section 3.5.1, *Regulatory Setting*, in 2007, the City of Lincoln, City of Roseville, PCWA, and the California American Water Company prepared the WPCGMP as a planning tool with the objectives of maintaining a safe, sustainable, and high-quality groundwater resource. The WPCGMP is intended to be a living document that will be updated in the future to account for progress and changing conditions (City of Roseville et al. 2007). In addition, Placer County, the Cities of Lincoln and Roseville, Nevada Irrigation District, PCWA, and California American Water Company have formed the West Placer Groundwater Sustainability Agency to develop a groundwater sustainability plan by January 2020.

Some Covered Activities, particularly the in-stream activities, would likely enhance groundwater supply and recharge. These include stormwater management activities that effectively slow the rate of runoff and increase opportunities for groundwater recharge. Adherence to these groundwater management goals, in combination with the groundwater benefits created by the PCCP conservation measures, would ensure that potential effects on groundwater supply and recharge resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 2, the proposed action, would have an overall benefit to groundwater recharge. Potential effects on groundwater supply and recharge resulting from Covered Activities would be addressed by existing groundwater management programs, plans, and policies and by implementation of the PCCP conservation measures. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of Alternative 2, the proposed action, would have an overall benefit to groundwater recharge. Potential effects on groundwater supply and recharge resulting from Covered Activities would be addressed by existing groundwater management programs, plans, and policies and by implementation of the PCCP conservation measures. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite (NEPA: less than significant; CEQA: less than significant)

As described under Alternative 2, Impact WQ-1, several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13 would provide beneficial changes to existing drainage patterns that have been altered, and these changes would result in beneficial improvements to patterns of erosion and sedimentation.

- Improvement of culverts would likely provide more natural stream flow conveyance through road crossings that would lessen the potential for erosion and sedimentation problems often associated with improperly functioning culverts.
- Mechanical recontouring of vernal pool basins and removal of sediment and repairs to aquatic/wetland features would create additional natural storage for runoff that would reduce peak runoff downstream that could exceed the capacity of the stormwater drainage system and lead to substantial erosion and siltation.
- The removal or modification of certain ditches, raised roads, trails, and other barriers to restore natural surface flow could enhance water quality by removing features on the landscape that artificially concentrate and redirect runoff in a manner that may result in problematic soil erosion.
- The use of filter and buffer strips around wetlands would create opportunities for sediment to deposit prior to entering aquatic features.
- The removal and modification of certain artificial crossings or obstructions in stream channels, including seasonal flashboard dams, pipeline crossings, and concrete dams, could restore natural stream flow conveyance and reduce the potential for streambed and streambank erosions that may occur at these types of structures.
- Reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage in the restored reaches, thereby reducing peak flows and the volume of runoff routed to stormwater drainage systems downstream that could lead to erosion and siltation problems if the capacity is exceeded.

Covered Activities would result in the same impacts as described under Impact WQ-3 for Alternative 1. Implementation of the Covered Activities, particularly land development, could result in alterations to drainage patterns and cause an increase in the volume and rate of surface runoff,

potentially resulting in substantial erosion, siltation, or flooding. Some Covered Activities, particularly the in-stream activities, such as bridge and culvert replacement and enhancement and floodplain modification, would likely enhance natural drainage patterns.

The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts related to substantial alteration of existing drainage patterns that would lead to substantial siltation or erosion (City of Lincoln 2008). As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts. In addition, the site design requirements, source control measures, and BMPs required as conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards. Furthermore, implementation of the PCCP conservation measures would provide restoration of certain natural drainage patterns and many water quality benefits that would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 2, the proposed action, would have an overall benefit to natural drainage patterns. Potential effects on natural drainage patterns resulting from Covered Activities would be addressed by adherence to general plan policies, implementation of conditions on Covered Activities, and implementation of the PCCP conservation measures. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of Alternative 2, the proposed action, would have an overall benefit to natural drainage patterns. Potential effects on natural drainage patterns resulting from Covered Activities would be addressed by adherence to general plan policies, implementation of conditions on Covered Activities, and implementation of the PCCP conservation measures. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-4: Substantial alteration of existing drainage patterns in a manner that would result in flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

Several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, and described under Alternative 2, Impact WQ-3, would beneficially alter existing drainage patterns by removing artificial landscape modifications and creating and enhancing new aquatic features. The proposed creation and restoration of habitat features that work to slow and retain runoff on the landscape would create enhanced opportunity for water storage and infiltration. The increase of properly functioning wetland areas, including ponds, would reduce the peak flows in receiving waterbodies downstream. Similarly, reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of flood water, provide new opportunities for floodplain storage, and also reduce peak flows in receiving waterbodies. Though the stream channel enhancements may reduce flooding conditions downstream, the additional flow resistance created by increases in channel roughness may locally increase water surface elevations and increase local flooding. Existing regulations—such as NFIP requirements, USACE provisions, and California Fish and Game Code Sections 1601–1607, as well as *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4, which are listed in Section 3.5.1, *Regulatory Setting*—require that a hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase flood risk.

Covered Activities would result in an increase in impervious surfaces and the same impacts as identified under Impact WQ-4 for Alternative 1.

The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts related to substantial alteration of existing drainage patterns in a manner that would increase flooding (City of Lincoln 2008). As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts and ensure activities do not increase flood risk. Furthermore, implementation of PCCP conservation measures, such as restoring natural runoff patterns, improving floodplain storage, and removing channel obstructions, would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 2, the proposed action, would enhance drainage patterns and reduce flooding overall. Potential effects on natural drainage patterns and flooding resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of the Alternative 2, the proposed action, would enhance drainage patterns and reduce flooding overall. Potential effects on natural drainage patterns and flooding resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-5: Creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

Implementation of the PCCP conservation measures would not create new sources of runoff. As described under Alternative 2, Impact WQ-3, implementation of several of the PCCP conservation measures would beneficially alter runoff patterns by creating additional areas of flood storage that would reduce peak flows and the volume of runoff routed to stormwater drainage systems. This would benefit stormwater drainage by reducing the demand on the system. The PCCP conservation measures would also provide new opportunities for water quality treatment within restored and enhanced wetlands rather than routing polluted water to receiving waterbodies and the stormwater drainage system. The PCCP conservation measures are consistent with *Placer County General Plan* Policies 4.E.1, 4.E.10, 4.E.12, and 4.E.14, S*utter County General Plan* Policy I 3.1, and *City of Lincoln General Plan* Policy PFS-4.2, all of which are listed in Section 3.5.1, *Regulatory Setting*.

Covered Activities would result in the same impacts identified under Impact WQ-5 for Alternative 1. Covered Activities may provide additional sources of polluted runoff. However, some flood control and in-stream Covered Activities could beneficially reduce demands on stormwater systems and pollutant loads by improving conveyance through improved bridges and culverts, stabilizing streambanks, and increasing floodplain connectivity that would increase flood water storage and provide natural filtration for pollutants.

As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts and ensure activities do not exceed the capacity of stormwater systems or increase polluted runoff. In addition, the site design requirements, source control measures, and

BMPs required as conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards. Furthermore, implementation of PCCP conservation measures, such as restoring natural runoff patterns, improving floodplain storage, and removing channel obstructions, would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: Many of the PCCP conservation measures of Alternative 2, the proposed action, would beneficially reduce stormwater and polluted runoff. Potential effects related to stormwater drainage systems and polluted runoff resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant.

CEQA Determination: Many of the PCCP conservation measures of Alternative 2, the proposed action, would beneficially reduce stormwater and polluted runoff. Potential effects related to stormwater drainage systems and polluted runoff resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-6: Other substantial degradation of water quality (NEPA: less than significant; CEQA: less than significant)

As described in under Alternative 2, Impact WQ-1, several PCCP conservation measures would improve water quality by restoring natural runoff patterns, providing new flood storage and water treatment opportunities in enhanced and created wetland features, and restoring natural physical processes and geomorphic function to degraded stream reaches. These activities would benefit water quality.

The same effects of the Covered Activities described under Alternative 2, Impact WQ-1, also apply for Impact WQ-6.

NEPA Determination: Implementation of applicable general plan policies and Placer County's Stormwater Management Program, and compliance with applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant.

CEQA Determination: Implementation of applicable general plan policies and Placer County's Stormwater Management Program, and compliance with applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-7: Placement of housing within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

The proposed action would not result in the construction of housing within a 100-year flood hazard area. The Plan Area includes areas currently designated as 100-year flood zones. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain (see Section 3.5.1, *Regulatory Setting*). City of Lincoln Policy HS-6.4 requires new residential construction to have its lowest habitable floor elevated above the base flood level elevation, determined by FEMA standards. Placer County Policy 4.F.4 states that the County shall require evaluation of potential flood hazards prior to approval of development projects and that the County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions. SPRTA and PCWA cannot approve new housing; their activities have no effect. Adherence to the general plan policies and to state and federal floodplain regulations would ensure the Covered Activities have a less-than-significant effect.

NEPA Determination: The PCCP conservation measures would not place housing in a 100-year floodplain and thus would have no impact. Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures would not place housing in a 100-year floodplain and thus would have no impact. Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-8: Placement of structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

The PCCP conservation measures include actions to reconstruct natural channel geometry, install large woody material in channels, and replenish and/or clean spawning gravel. These actions would likely increase channel sinuosity and add roughness elements to streams. The additional roughness and channel length would beneficially slow the velocity of flood water, thereby providing new opportunities for floodplain storage and a reduction in peak flows in receiving waterbodies. Although the stream channel enhancements may reduce flooding conditions downstream, the additional flow resistance created by increases in channel roughness may locally increase water surface elevations and impede or redirect flood flows within a 100-year flood hazard area.

Any work, including PCCP activities and Covered Activities, conducted in an area within CVFPB's area of jurisdiction, which includes the lower portion of the Bear River, would require an encroachment permit (see Section 3.5.1, *Regulatory Setting*). An encroachment permit application would trigger the USACE permit process under CWA Section 408, which would require hydraulic modeling to demonstrate potential changes in flood water surface elevations. Many of the PCCP conservation measures and Covered Activities may be implemented outside of CVFPB jurisdiction, but would be located within a FEMA-regulated floodplain and could affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA. As described in Section 3.5.1, *Regulatory*

Setting, hydraulic modeling would be required to be performed to demonstrate compliance with FEMA regulations through the CLOMR/LOMR process. Other regulations pertaining to placement of structures that would impede or redirect flood flows within a 100-year flood hazard area include California Fish and Game Code Sections 1601–1607 and *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4, which are listed in Section 3.5.1, *Regulatory Setting*. Adherence to these existing regulations and policies would require hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase 100-year flood risk. Implementation of necessary engineering design and risk assessments would ensure that the proposed channel modifications would not create or alter flood flows in a manner inconsistent with existing policies and regulations.

The Plan Area includes areas currently designated as 100-year flood zones. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain that would impede or redirect 100-year flood flows (see Section 3.5.1, *Regulatory Setting*). Some Covered Activities, such as construction of new bridges and culverts and flood protection projects, would reduce the risk of infrastructure flooding from a 100-year flood. Adherence to the general plan policies, and state and federal floodplain regulations, would ensure the Covered Activities would have a less-than-significant effect.

NEPA Determination: The PCCP conservation measures may place structures or make other modifications that would impede or redirect 100-year flood flow. Compliance with FEMA regulations and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures may place structures or make other modifications that would impede or redirect 100-year flood flow. Compliance with FEMA regulations and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-9: Exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Implementation of several PCCP conservation measures—such as creating and enhancing wetlands, remeandering streams, and reestablishing channel and floodplain connections—would beneficially alter runoff patterns by slowing water draining off the land and creating additional areas of flood storage that would reduce peak flows and attenuate the volume of runoff routed downstream. This would reduce flood risks by lowering water surface elevations for a given flood event that must be held back by levees and dams. However, as stated under Alternative 2, Impact WQ-4 and Impact WQ-8, local, reach-scale increases in flood water surface elevations may arise from these proposed conservation measures. As stated in Alternative 2, Impact WQ-4, existing regulations—such as NFIP requirements, USACE provisions, and California Fish and Game Code Sections 1601–1607, as well as *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4, which are listed in Section 3.5.1, *Regulatory Setting*—require that a hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase flood risk.

The PCCP conservation measures do not call for the construction of new dams or new levees. One conservation measure calls for the removal of armored levees and replacement with earthen levees. Adequate engineering design and risk assessment would be necessary to demonstrate the new earthen levees provide the erosion resistance and stability previously provided by the armored material if the levees are still necessary to provide flood protection.

Covered Activities would result in the same impacts as identified under Impact WQ-9 for Alternative 1. Increased development in the Plan Area from the Covered Activities could result in more people and structures being exposed to significant risk of flooding; impacts could include loss, injury, or death involving flooding, including flooding as a result of levee or dam failure. The EIR for the *Placer County General Plan* concludes that general plan policies will ensure that impacts related to dam inundation would be less than significant. The EIR for the *City of Lincoln General Plan* states that, even with implementation of general plan policies, flood hazard impacts would be significant and unavoidable (Placer County 1994; City of Lincoln 2008).

Therefore, the effects of the Covered Activities with the exception of growth associated with the *City of Lincoln General Plan* would be reduced to a less-than-significant level by existing regulations and policies. However, effects related to growth associated with the *City of Lincoln General Plan*, although reduced by existing regulations and policies, would be significant and unavoidable.

NEPA Determination: Implementation of the PCCP conservation measures would not increase exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam. Additionally, adherence to general plan policies and state and federal requirements would reduce effects from Covered Activities, but not to less-than-significant levels. Therefore, the overall impact would be significant and unavoidable.

CEQA Determination: Implementation of the PCCP conservation measures would not increase exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam. Additionally, adherence to general plan policies and state and federal requirements would reduce effects from Covered Activities, but not to less-than–significant levels. Therefore, the overall impact would be significant and unavoidable.

Impact WQ-10: Contribution to inundation by seiche, tsunami, or mudflow (NEPA: less than significant; CEQA: less than significant)

The Plan Area is not at risk due to inundation from a tsunami because of its distance from the ocean. The Plan Area is also not prone to seiches or earthquake-generated waves within enclosed or restricted bodies of water. Major earthquakes could produce oscillations or waves in local bodies of water which could overtop and damage levees or other infrastructure. Implementation of the PCCP conservation measures would not increase the number of persons and property potentially at risk from seiche, and it would not contribute to inundation depth if an event were to occur because it would not create new bodies of water susceptible to seiches.

One conservation measure calls for prescribed burning for vegetation management. Prescribed burns have the potential to expose soils and make them more susceptible to erosion, particularly on steep slopes with erodible soils. A prescribed burn that removes too much vegetation and exposes too much bare soil could increase the risk of soil erosion, and possibly a mudflow if the right combination of steep terrain and heavy rainfall were to occur. Proper planning in developing the prescribed burn management plan would reduce this risk substantially by considering topography,

soil physical properties, seasonality of when the burn is conducted, and the temperature of the burn to ensure that some vegetative cover remains over the ground to protect soils post-burn.

Implementation of the Covered Activities would not result in contribution to inundation by seiche, tsunami, or mudflow, and thus would have a less-than-significant effect.

NEPA Determination: Neither the PCCP conservation measures nor Covered Activities would contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow occurring is very low. Impacts would be less than significant.

CEQA Determination: Neither the PCCP conservation measures nor Covered Activities would contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow occurring is very low. Impacts would be less than significant. No mitigation has been identified.

Alternative 3—Reduced Take/Reduced Fill

Under Alternative 3, there would be a reduction of approximately 1,000 acres in land conversion in the Potential Future Growth Area (PFG) from that proposed in the proposed action, as described in Section 2.4.3, *Alternative 3—Reduced Take/Reduced Fill*.

Impact WQ-1: Violation of any water quality standards or waste discharge requirements (NEPA: less than significant; CEQA: less than significant)

Activities associated with PCCP implementation are discussed in terms of initial construction and eventual operation of the land use changes.

Construction

The PCCP conservation measures include several physical activities that would involve ground-disturbing activities with the potential to increase pollutant loading to the drainage system (Table 2-13 in Chapter 2, *Proposed Action and Alternatives*), as listed below.

- Improvement of culverts and other road crossings.
- Mechanical recontouring of vernal pool basins.
- Removal of modification of ditches, raised roads, trails, and other barriers.
- Construction of drainage ditches or retention basins and removal of sediment to enhance vernal pool hydrology.
- Removal of fish barriers.
- In-channel work associated with stream enhancement and restoration.
- Excavating or recontouring historical vernal pools, swales, and wetlands to natural bathymetry.

Typical construction-related ground-disturbing activities would introduce the potential for increased erosion, runoff, and sedimentation, with subsequent effects on water quality. During site grading, trenching, and other construction activities, areas of bare soil could be exposed to erosive forces during rainfall events. Bare soils are much more likely to erode than vegetated areas because of the lack of dispersion, infiltration, and retention properties created by covering vegetation. The extent of the impacts would depend on soil erosion potential, construction practices, disturbed area size, precipitation events, and topography and proximity to drainage channels. Pollutants such as

solvents, petroleum products, pesticides, and fertilizers can attach to and be transported by the sediment and lead to water quality impacts. In addition, construction equipment and activities would have the potential to leak hazardous materials, such as oil and gasoline, and potentially affect surface water or groundwater quality. Improper use or accidental spills of fuels, oils, and other construction-related hazardous materials such as pipe sealant, solvents, and paints could also pose a threat to the water quality of local waterbodies. These potential leaks or spills, if not contained, would be considered a significant impact on groundwater and surface water quality. If precautions were not taken to contain or capture sediments and accidental hazardous spills, construction activities could produce substantial pollutants in stormwater runoff and result in a significant impact on the existing surface water quality.

Projects that would disturb more than 1 acre of land are required to prepare a SWPPP as part of compliance with the NPDES Construction General Permit. The purpose of a SWPPP is to reduce the amount of construction-related pollutants that are transported by stormwater runoff to surface waters. The SWPPP would emphasize standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas within the Plan Area. If the area of disturbance is less than 1 acre, the County grading permit for the project would require similar erosion and sediment control measures as required by the Construction General Permit. If no grading permit is required, BMPs required by the CWA Section 401 certification would need to be implemented.

In addition to compliance with the latest NPDES and other water quality requirements (e.g., Construction General Permit, Small MS4 Permit, and the General Dewatering Permit), construction projects would also comply with other federal and state regulations and local ordinances, as noted in Section 3.5.1, *Regulatory Setting*.

Several of the PCCP conservation measures would require working in or near waterbodies. Construction dewatering in areas of surface water or shallow groundwater may be required during excavation. Dewatering would be conducted locally, and according to the dewatering permit obtained from the Central Valley Water Board, as described in Section 3.5.1, *Regulatory Setting*. In areas where groundwater is shallow and there would be potential to adversely affect riparian habitat, project features would be installed using the vibration method, which minimizes subsurface disruption.

The *Placer County General Plan* includes policies focused on mitigating construction-related water quality impacts, including Policies 6.A.4.e, 6.A.5, 6.A.6, 6.A.7, 6.A.8, and 6.A.10, which are listed in Section 3.5.1, *Regulatory Setting*.

Operations

The operations of several of the PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13 would provide beneficial changes to hydrologic resources and water quality.

- Improvement of culverts would likely provide more natural stream flow conveyance through road crossings that would lessen the potential for erosion and sedimentation problems often associated with improperly functioning culverts.
- Mechanical recontouring of vernal pool basins and removal of sediment and repairs to aquatic/wetland features would create additional natural storage for runoff that would reduce peak runoff downstream that could exceed the capacity of the stormwater drainage system. The

improvements would also enhance water quality by creating additional opportunities for treatment of contaminants through natural filtering and treatment processes provided by wetland features.

- The removal or modification of ditches, raised roads, trails, and other barriers to restore natural surface flow would enhance water quality by removing features on the landscape that artificially concentrate and redirect runoff in a manner that often results in problematic soil erosion.
- The use of filter and buffer strips around wetlands and minimization of the use of herbicides would remove or reduce point and nonpoint sources of water pollution.
- The removal and modification of artificial crossings or obstructions in stream channels, including seasonal flashboard dams, pipeline crossings, and concrete dams, would restore natural stream flow conveyance and reduce the potential for streambed and streambank erosions that often occurs at these types of structures.
- Reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage, groundwater recharge, and water treatment in the restored reaches, thereby reducing peak flows and the volume of runoff routed to stormwater drainage systems downstream.

Operations of some of the PCCP conservation measures have the potential to increase soil erosion, but the risk would be managed as described below.

- Prescribed burning for vegetation management has the potential to expose soils and make them more susceptible to erosion, particularly on steep slopes with erodible soils. Proper planning in developing the prescribed burn management plan would reduce this risk substantially by considering topography, soil physical properties, seasonality of when the burn is conducted, and the temperature of the burn to ensure that some vegetative cover remains over the ground to protect soils post-burn.
- Removal of armored levees and replacement with earthen levees would provide habitat benefits but could increase the risk of erosion if stream channels migrate into the earthen levees. Existing USACE regulations would require engineering analysis to demonstrate that the new earthen levees incorporate sufficient vegetation and other stability measures into their design to provide the erosion resistance and stability previously provided by the armored material to be removed.

Development within the Plan Area envisioned in the *Placer County General Plan*, *City of Lincoln General Plan*, SPRTA plans, and long-term PCWA plans would result in impacts related to initial construction and eventual operation. Impacts would be the same as described for Impact WQ-1 under Alternative 1 and similar to those described for the PCCP conservation measures. However, impacts resulting from Covered Activities would be more extensive due to the scale of the Covered Activity projects compared with the PCCP conservation measures.

Construction and grading activities for Covered Activities could degrade water quality in the short-term by increasing the potential for soil erosion and associated contaminants from stormwater discharges, thereby resulting in higher sediment loads, turbidity, and other contaminants in receiving waters. Covered Activities would include operations and maintenance activities in the stream channel, along the streambank, and on adjacent lands at top-of-bank within the riparian corridor and could affect water quality. However, some Covered Activities could benefit water

quality by reducing peak runoff volumes through enhanced stormwater management, improving conveyance through improved bridges and culverts, and stabilizing eroding banks.

The EIR for the *Placer County General Plan* states implementation of the policies and programs identified in the general plan would result in impacts on surface water quality being less than significant. The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts on water quality (City of Lincoln 2008).

The Covered Activities of SPRTA and PCWA, which include in-stream activities, would have impacts that are similar to impacts of Placer County's and the City of Lincoln's development-related Covered Activities. As stated in Chapter 6 of the Plan, all Covered Activities would be required to comply with the state's General Construction Permit—including requirements to develop a project-based SWPPP—and applicable NPDES program requirements as implemented by the City of Lincoln and Placer County. The site design requirements, source control measures, and BMPs required as the conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards or waste discharge requirements. Furthermore, implementation of PCCP conservation measures would provide many water quality benefits that would help ensure potential effects of Covered Activities would be less than significant.

NEPA Determination: Under Alternative 3, implementation of applicable general plan policies, Placer County's Stormwater Management Program, and other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects from the Covered Activities. Impacts would be less than significant.

CEQA Determination: Under Alternative 3, implementation of applicable general plan policies, Placer County's Stormwater Management Program, and other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects from the Covered Activities. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-2: Substantial depletion of groundwater supplies or substantial interference with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

Several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, would provide beneficial changes to groundwater recharge. The proposed creation and restoration of habitat features that work to slow and retain runoff on the landscape would create enhanced opportunity for water infiltration through the soil and into groundwater storage. The increase of properly functioning wetland areas, including ponds, would create new recharge areas and improve groundwater quality by filtering out sediment and pollutants. Similarly, reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage and groundwater recharge.

Covered Activities would have the same impacts as identified under Impact WQ-2 for Alternative 1. Construction and grading associated with Covered Activities would increase impervious surfaces, which would decrease the amount of land area available for rainfall to infiltrate into the ground.

Several policies are in place to ensure that the Covered Activities do not deplete groundwater supply or interfere with recharge. The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts for groundwater supply and recharge (City of Lincoln 2008). The *Placer County General Plan* includes goals and implementation programs aimed at protecting against groundwater overdraft, protecting recharge areas, and supporting major consumptive use of groundwater aquifers in the western part of the county only where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area. The *City of Lincoln General Plan* has similar groundwater management plans and policies.

As described in Section 3.5.1, *Regulatory Setting*, in 2007 the City of Lincoln, City of Roseville, PCWA, and the California American Water Company prepared the WPCGMP as a planning tool with the objectives of maintaining a safe, sustainable, and high-quality groundwater resource. The WPCGMP is intended to be a living document that will be updated in the future to account for progress and changing conditions (City of Roseville et al. 2007). In addition, Placer County, the Cities of Lincoln and Roseville, Nevada Irrigation District, PCWA, and California American Water Company have formed the West Placer Groundwater Sustainability Agency to develop a groundwater sustainability plan by January 2020.

Some of the Covered Activities, particularly the in-stream activities, would likely enhance groundwater supply and recharge. These include stormwater management activities that effectively slow the rate of runoff and increase opportunities for groundwater recharge. Adherence to these groundwater management goals, in combination with the groundwater benefits created by the PCCP conservation measures, would ensure that potential effects on groundwater supply and recharge resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 3 would have an overall benefit to groundwater recharge. Potential effects of the Covered Activities on groundwater supply and recharge would be addressed by existing groundwater management programs, plans, and policies and implementation of the PCCP conservation measures. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of Alternative 3 would have an overall benefit to groundwater recharge. Potential effects of the Covered Activities on groundwater supply and recharge would be addressed by existing groundwater management programs, plans, and policies and implementation of the PCCP conservation measures. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite (NEPA: less than significant; CEQA: less than significant)

As described under Alternative 3, Impact WQ-1, several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, would provide beneficial changes to existing drainage patterns that have been altered, and these changes would result in beneficial improvements to patterns of erosion and sedimentation.

- Improvement of culverts would likely provide more natural stream flow conveyance through road crossings that would lessen the potential for erosion and sedimentation problems often associated with improperly functioning culverts.

- Mechanical recontouring of vernal pool basins and removal of sediment and repairs to aquatic/wetland features would create additional natural storage for runoff that would reduce peak runoff downstream that could exceed the capacity of the stormwater drainage system and lead to substantial erosion and siltation.
- The removal or modification of certain ditches, raised roads, trails, and other barriers to restore natural surface flow could enhance water quality by removing features on the landscape that artificially concentrate and redirect runoff in a manner that may result in problematic soil erosion.
- The use of filter and buffer strips around wetlands would create opportunities for sediment to deposit prior to entering aquatic features.
- The removal and modification of certain artificial crossings or obstructions in stream channels, including seasonal flashboard dams, pipeline crossings, and concrete dams, could restore natural stream flow conveyance and reduce the potential for streambed and streambank erosions that may occur at these types of structures.
- Reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage in the restored reaches, thereby reducing peak flows and the volume of runoff routed to stormwater drainage systems downstream that could lead to erosion and siltation problems if the capacity is exceeded.

Covered Activities would result in the same impacts as described under Impact WQ-3 for Alternative 1. Implementation of the Covered Activities, particularly land development, could result in alterations to drainage patterns and cause an increase in the volume and rate of surface runoff, potentially resulting in substantial erosion, siltation, or flooding. Some Covered Activities, particularly the in-stream activities such as bridge and culvert replacement and enhancement and floodplain modification, would likely enhance natural drainage patterns.

The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts related to substantial alteration of existing drainage patterns that would lead to substantial siltation or erosion (City of Lincoln 2008). As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts. In addition, the site design requirements, source control measures, and BMPs required as the conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards. Furthermore, implementation of the PCCP conservation measures would provide restoration of certain natural drainage patterns and many water quality benefits that would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 3 would have an overall benefit to natural drainage patterns. Potential effects of the Covered Activities on natural drainage patterns would be addressed by adherence to general plan policies, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of Alternative 3 would have an overall benefit to natural drainage patterns. Potential effects of the Covered Activities on natural drainage patterns would be addressed by adherence to general plan policies, implementation of the

conditions on Covered Activities, and implementation of the PCCP conservation measures. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-4: Substantial alteration of existing drainage patterns in a manner that would result in flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

Several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, and described under Alternative 3, Impact WQ-3 would beneficially alter existing drainage patterns by removing artificial landscape modifications and creating and enhancing new aquatic features. The proposed creation and restoration of habitat features that work to slow and retain runoff on the landscape would create enhanced opportunity for water storage and infiltration. The increase of properly functioning wetland areas, including ponds, would reduce the peak flows in receiving waterbodies downstream. Similarly, reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of flood water, provide new opportunities for floodplain storage, and also reduce peak flows in receiving waterbodies. Though the stream channel enhancements may reduce flooding conditions downstream, the additional flow resistance created by increases in channel roughness may locally increase water surface elevations and increase local flooding. Existing regulations—such as NFIP requirements, USACE provisions, and California Fish and Game Code Sections 1601–1607, as well as *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4, which are listed in Section 3.5.1, *Regulatory Setting*—require that a hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase flood risk.

Covered Activities would result in an increase in impervious surfaces and the same impacts as identified under Impact WQ-4 for Alternative 1.

The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts related to substantial alteration of existing drainage patterns in a manner that would increase flooding (City of Lincoln 2008). As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts and ensure activities do not increase flood risk. Furthermore, implementation of PCCP conservation measures, such as restoring natural runoff patterns, improving floodplain storage, and removing channel obstructions, would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 3 would enhance drainage patterns and reduce flooding overall. Potential effects of the Covered Activities on natural drainage patterns and flooding would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of conditions on the Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of the Alternative 3 would enhance drainage patterns and reduce flooding overall. Potential effects of the Covered Activities on natural drainage patterns and flooding would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-5: Creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

Implementation of the PCCP conservation measures would not create new sources of runoff. As described under Alternative 3, Impact WQ-3, implementation of several of the PCCP conservation measures would beneficially alter runoff patterns by creating additional areas of flood storage that would reduce peak flows and the volume of runoff routed to stormwater drainage systems. This would benefit stormwater drainage by reducing the demand on the system. The PCCP conservation measures would also provide new opportunities for water quality treatment within restored and enhanced wetlands rather than routing polluted water to receiving waterbodies and the stormwater drainage system. The PCCP conservation measures are consistent with *Placer County General Plan* Policies 4.E.1, 4.E.10, 4.E.12, and 4.E.14, S*utter County General Plan* Policy I 3.1, and *City of Lincoln General Plan* Policy PFS-4.2, all of which are listed in Section 3.5.1, *Regulatory Setting*.

Covered Activities would result in the same impacts identified under Impact WQ-5 for Alternative 1. Covered Activities may provide additional sources of polluted runoff. However, some of the flood control and in-stream Covered Activities could beneficially reduce demands on stormwater systems and pollutant loads by improving conveyance through improved bridges and culverts, stabilizing streambanks, and increasing floodplain connectivity that would increase flood water storage and provide natural filtration for pollutants.

As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts and ensure activities do not exceed the capacity of stormwater systems or increase polluted runoff. In addition, the site design requirements, source control measures, and BMPs required as conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards. Furthermore, implementation of PCCP conservation measures, such as restoring natural runoff patterns, improving floodplain storage, and removing channel obstructions, would help ensure potential effects of the Covered Activities would be less than significant.

NEPA Determination: Many of the PCCP conservation measures of Alternative 3 would beneficially reduce stormwater and polluted runoff. Potential effects of the Covered Activities related to stormwater drainage systems and polluted runoff would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of the conditions on Covered Activities conditions, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant.

CEQA Determination: Many of the PCCP conservation measures of Alternative 3 would beneficially reduce stormwater and polluted runoff. Potential effects of the Covered Activities on stormwater drainage systems and polluted runoff would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-6: Other substantial degradation of water quality (NEPA: less than significant; CEQA: less than significant)

As described under Alternative 3, Impact WQ-1, several PCCP conservation measures would improve water quality by restoring natural runoff patterns, providing new flood storage and water treatment opportunities in enhanced and created wetland features, and restoring natural physical processes and geomorphic function to degraded stream reaches. These activities would benefit water quality.

The same effects of the Covered Activities described under Alternative 3, Impact WQ-1, also apply for Impact WQ-6.

NEPA Determination: Implementation of applicable general plan policies and Placer County's Stormwater Management Program, and compliance with applicable federal, state, and local regulations, would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant.

CEQA Determination: Implementation of applicable general plan policies and Placer County's Stormwater Management Program, and compliance with applicable federal, state, and local regulations, would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-7: Placement of housing within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

The proposed action would not result in the construction of housing within a 100-year flood hazard area. The Plan Area includes areas currently designated as 100-year flood zones. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain (see Section 3.5.1, *Regulatory Setting*). City of Lincoln Policy HS-6.4 requires new residential construction to have its lowest habitable floor elevated above the base flood level elevation, determined by FEMA standards. Placer County Policy 4.F.4 states that the County shall require evaluation of potential flood hazards prior to approval of development projects and that the County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions. SPRTA and PCWA cannot approve new housing; their activities have no effect. Adherence to the general plan policies and to state and federal floodplain regulations would ensure the Covered Activities have a less-than-significant effect.

NEPA Determination: The PCCP conservation measures would not place housing in a 100-year floodplain and thus would have no impact. Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures would not place housing in a 100-year floodplain and thus would have no impact. Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-8: Placement of structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

The PCCP conservation measures include actions to reconstruct natural channel geometry, install large woody material in channels, and replenish and/or clean spawning gravel. These actions would likely increase channel sinuosity and add roughness elements to streams. The additional roughness and channel length would beneficially slow the velocity of flood water, thereby providing new opportunities for floodplain storage and a reduction in peak flows in receiving waterbodies. Although the stream channel enhancements may reduce flooding conditions downstream, the additional flow resistance created by increases in channel roughness may locally increase water surface elevations and impede or redirect flood flows within a 100-year flood hazard area.

Any work, including PCCP activities and Covered Activities, conducted in an area within CVFPB's area of jurisdiction, which includes the lower portion of the Bear River, would require an encroachment permit (see Section 3.5.1, *Regulatory Setting*). An encroachment permit application would then trigger the USACE permit process under CWA Section 408, which would require hydraulic modeling to demonstrate potential changes in flood water surface elevations. Many of the PCCP conservation measures and Covered Activities may be implemented outside of CVFPB jurisdiction, but would be located within a FEMA-regulated floodplain and could affect the hydrologic or hydraulic characteristics of a flooding source and, thus, result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA. As described in Section 3.5.1, *Regulatory Setting*, hydraulic modeling would be required to be performed to demonstrate compliance with FEMA regulations through the CLOMR/LOMR process. Other regulations pertaining to placement of structures that would impede or redirect flood flows within a 100-year flood hazard area include California Fish and Game Code Sections 1601–160 and *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4, which are listed in Section 3.5.1, *Regulatory Setting*. Adherence to these existing regulations and policies would require a hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase 100-year flood risk. Implementation of necessary engineering design and risk assessments would ensure that the proposed channel modifications would not create or alter flood flows in a manner inconsistent with existing policies and regulations.

The Plan Area includes areas currently designated as 100-year flood zones. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain that would impede or redirect 100-year flood flows (see Section 3.5.1, *Regulatory Setting*). Some Covered Activities, such as construction of new bridges and culverts and flood protection projects, would reduce the risk of infrastructure flooding from a 100-year flood. Adherence to the general plan policies, and state and federal floodplain regulations, would ensure the Covered Activities would have a less-than-significant effect.

NEPA Determination: The PCCP conservation measures may place structures or make other modifications that would impede or redirect 100-year flood flow. Compliance with FEMA regulations and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures may place structures or make other modifications that would impede or redirect 100-year flood flow. Compliance with FEMA regulations and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects of Covered Activities associated with the 100-year flood hazard zone would not be adverse. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-9: Exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Implementation of several PCCP conservation measures—such as creating and enhancing wetlands, remeandering streams, and reestablishing channel and floodplain connections—would beneficially alter runoff patterns by slowing down water draining off the land and creating additional areas of flood storage that would reduce peak flows and attenuate the volume of runoff routed downstream. This would reduce flood risks by lowering water surface elevations for a given flood event that must be held back by levees and dams. However, as stated under Alternative 3, Impact WQ-4 and Impact WQ-8, local, reach-scale increases in flood water surface elevations may arise from these proposed conservation measures. These risks would need to be evaluated in the engineering design and permitting required for individual projects as required by existing regulation as described under Alternative 2 Impact WQ-9.

The PCCP conservation measures do not call for the construction of new dams or new levees. One conservation measure calls for the removal of armored levees and replacement with earthen levees. Adequate engineering design and risk assessment would be necessary to demonstrate the new earthen levees provide the erosion resistance and stability previously provided by the armored material if the levees are still necessary to provide flood protection.

Covered Activities would result in the same impacts as identified under Impact WQ-9 for Alternative 1. Increased development in the Plan Area from the Covered Activities could result in more people and structures being exposed to significant risk of flooding; impacts could include loss, injury, or death involving flooding, including flooding as a result of levee or dam failure. The EIR for the *Placer County General Plan* concludes that general plan policies will ensure that impacts related to dam inundation would be less than significant. The EIR for the *City of Lincoln General Plan* states that, even with implementation of general plan policies, flood hazard impacts would be significant and unavoidable (Placer County 1994; City of Lincoln 2008).

Therefore, the effects of the Covered Activities under Alternative 3, with the exception of growth associated with the *City of Lincoln General Plan* would be reduced to a less-than-significant level by existing regulations and policies. However, effects related to growth associated with the *City of Lincoln General Plan*, although reduced by existing regulations and policies, would be significant and unavoidable.

NEPA Determination: Implementation of the PCCP conservation measures under Alternative 3 would not increase exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam. Additionally, adherence to general plan policies and state and federal requirements would reduce effects from Covered Activities, but not to less-than–significant levels. Therefore, the overall impact would be significant and unavoidable.

CEQA Determination: Implementation of the PCCP conservation measures under Alternative 3 would not increase exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam. Additionally, adherence to general plan policies and state and federal requirements would reduce effects from Covered Activities, but not to less-than–significant levels. Therefore, the overall impact would be significant and unavoidable.

Impact WQ-10: Contribution to inundation by seiche, tsunami, or mudflow (NEPA: less than significant; CEQA: less than significant)

The Plan Area is not at risk due to inundation from a tsunami because of its distance from the ocean. The Plan Area is also not prone to seiches or earthquake-generated waves within enclosed or restricted bodies of water. Major earthquakes could produce oscillations or waves in local bodies of water which could overtop and damage levees or other infrastructure. Implementation of the PCCP conservation measures would not increase the number of persons and property potentially at risk from seiche, and it would not contribute to inundation depth if an event were to occur because it would not create new bodies of water susceptible to seiches.

One conservation measure calls for prescribed burning for vegetation management. Prescribed burns have the potential to expose soils and make them more susceptible to erosion, particularly on steep slopes with erodible soils. A prescribed burn that removes too much vegetation and exposes too much bare soil could increase the risk of soil erosion, and possibly a mudflow if the right combination of steep terrain and heavy rainfall were to occur. Proper planning in developing the prescribed burn management plan would reduce this risk substantially by considering topography, soil physical properties, seasonality of when the burn is conducted, and the temperature of the burn to ensure that some vegetative cover remains over the ground to protect soils post-burn.

Implementation of the Covered Activities would not result in contribution to inundation by seiche, tsunami, or mudflow and, thus, would have a less-than-significant effect.

NEPA Determination: Neither the PCCP conservation measures nor Covered Activities would contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow occurring is very low. Impacts would be less than significant.

CEQA Determination: Neither the PCCP conservation measures nor Covered Activities would contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow occurring is very low. Impacts would be less than significant. No mitigation has been identified.

Alternative 4—Reduced Permit Term

Under Alternative 4, it is expected that fewer acres would be restored than under Alternative 2, the proposed action.

Impact WQ-1: Violation of any water quality standards or waste discharge requirements (NEPA: less than significant; CEQA: less than significant)

Activities associated with PCCP implementation are discussed in terms of initial construction and eventual operation of the land use changes.

Construction

The PCCP conservation measures include several physical activities that would involve ground-disturbing activities with the potential to increase pollutant loading to the drainage system (Table 2-13 in Chapter 2, *Proposed Action and Alternatives*), as listed below.

- Improvement of culverts and other road crossings.
- Mechanical recontouring of vernal pool basins.
- Removal of modification of ditches, raised roads, trails, and other barriers.
- Construction of drainage ditches or retention basins and removal of sediment to enhance vernal pool hydrology.
- Removal of fish barriers.
- In-channel work associated with stream enhancement and restoration.
- Excavating or recontouring historical vernal pools, swales, and wetlands to natural bathymetry.

Typical construction-related ground-disturbing activities would introduce the potential for increased erosion, runoff, and sedimentation, with subsequent effects on water quality. During site grading, trenching, and other construction activities, areas of bare soil could be exposed to erosive forces during rainfall events. Bare soils are much more likely to erode than vegetated areas because of the lack of dispersion, infiltration, and retention properties created by covering vegetation. The extent of the impacts would depend on soil erosion potential, construction practices, disturbed area size, precipitation events, and topography and proximity to drainage channels. Pollutants such as solvents, petroleum products, pesticides, and fertilizers can attach to and be transported by the sediment and lead to water quality impacts. In addition, construction equipment and activities would have the potential to leak hazardous materials, such as oil and gasoline, and potentially affect surface water or groundwater quality. Improper use or accidental spills of fuels, oils, and other construction-related hazardous materials such as pipe sealant, solvents, and paints could also pose a threat to the water quality of local waterbodies. These potential leaks or spills, if not contained, would be considered a significant impact on groundwater and surface water quality. If precautions were not taken to contain or capture sediments and accidental hazardous spills, construction activities could produce substantial pollutants in stormwater runoff and result in a significant impact on the existing surface water quality.

Projects that would disturb more than 1 acre of land are required to prepare a SWPPP as part of compliance with the NPDES Construction General Permit. The purpose of a SWPPP is to reduce the amount of construction-related pollutants that are transported by stormwater runoff to surface waters. The SWPPP would emphasize standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas within the Plan Area. If the area of disturbance is less than 1 acre, the County grading permit for the project would require similar erosion and sediment control measures as required by the Construction General Permit. If no

grading permit is required, BMPs required by the CWA Section 401 certification would need to be implemented.

In addition to compliance with the latest NPDES and other water quality requirements (e.g., Construction General Permit, Small MS4 Permit, and the General Dewatering Permit), construction projects would also comply with other federal and state regulations, and other local ordinances, as noted in Section 3.5.1, *Regulatory Setting*.

Several of the PCCP conservation measures would require working in or near waterbodies. Construction dewatering in areas of surface water or shallow groundwater may be required during excavation. Dewatering would be conducted locally, and according to the dewatering permit obtained from the Central Valley Water Board, as described in Section 3.5.1, *Regulatory Setting*. In areas where groundwater is shallow and there would be potential to adversely affect riparian habitat, project features would be installed using the vibration method, which minimizes subsurface disruption.

The *Placer County General Plan* includes policies focused on mitigating construction-related water quality impacts, including Policies 6.A.4.e, 6.A.5, 6.A.6, 6.A.7, 6.A.8, and 6.A.10, which are listed in Section 3.5.1, *Regulatory Setting*.

Operations

The operations of several of the PCCP conservation measures listed in Table 2-13 in Chapter 2, *Proposed Action and Alternatives*, would provide beneficial changes to hydrologic resources and water quality.

- Improvement of culverts would likely provide more natural stream flow conveyance through road crossings that would lessen the potential for erosion and sedimentation problems often associated with improperly functioning culverts.
- Mechanical recontouring of vernal pool basins and removal of sediment and repairs to aquatic/wetland features would create additional natural storage for runoff that would reduce peak runoff downstream that could exceed the capacity of the stormwater drainage system. The improvements would also enhance water quality by creating additional opportunities for treatment of contaminants through natural filtering and treatment processes provided by wetland features.
- The removal or modification of ditches, raised roads, trails, and other barriers to restore natural surface flow would enhance water quality by removing features on the landscape that artificially concentrate and redirect runoff in a manner that often results in problematic soil erosion.
- The use of filter and buffer strips around wetlands and minimization of the use of herbicides would remove or reduce point and nonpoint sources of water pollution.
- The removal and modification of artificial crossings or obstructions in stream channels, including seasonal flashboard dams, pipeline crossings, and concrete dams, would restore natural stream flow conveyance and reduce the potential for streambed and streambank erosions that often occurs at these types of structures.
- Reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage, groundwater recharge, and

water treatment in the restored reaches, thereby reducing peak flows and the volume of runoff routed to stormwater drainage systems downstream.

Operations of some of the PCCP conservation measures have the potential to increase soil erosion, but the risk would be managed as described below.

- Prescribed burning for vegetation management has the potential to expose soils and make them more susceptible to erosion, particularly on steep slopes with erodible soils. Proper planning in developing the prescribed burn management plan would reduce this risk substantially by considering topography, soil physical properties, seasonality of when the burn is conducted, and the temperature of the burn to ensure that some vegetative cover remains over the ground to protect soils post-burn.
- Removal of armored levees and replacement with earthen levees would provide habitat benefits but could increase the risk of erosion if stream channels migrate into the earthen levees. Existing USACE regulations would require engineering analysis to demonstrate that the new earthen levees incorporate sufficient vegetation and other stability measures into their design to provide the erosion resistance and stability previously provided by the armored material to be removed.

Development within the Plan Area envisioned in the *Placer County General Plan*, *City of Lincoln General Plan*, SPRTA plans, and long-term PCWA plans would result in impacts related to initial construction and eventual operation. Impacts would be the same as described for Impact WQ-1 under Alternative 1 and similar to those or the PCCP conservation measures. However, impacts resulting from Covered Activities would be more extensive due to the scale of the Covered Activity projects compared with the PCCP conservation measures.

Construction and grading associated with Covered Activities could degrade water quality in the short-term by increasing the potential for soil erosion and associated contaminants from stormwater discharges, thereby resulting in higher sediment loads, turbidity, and other contaminants in receiving waters. In-stream Covered Activities would include operations and maintenance activities in the stream channel, along the streambank, and on adjacent lands at top-of-bank within the riparian corridor and could affect water quality. However, some of the in-stream Covered Activities could benefit water quality by reducing peak runoff volumes through enhanced stormwater management, improving conveyance through improved bridges and culverts, and stabilizing eroding banks.

The EIR for the *Placer County General Plan* states implementation of the policies and programs identified in the general plan would result in impacts on surface water quality being less than significant. The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts on water quality (City of Lincoln 2008).

The Covered Activities of SPRTA and PCWA, which include in-stream activities, would have impacts similar to impacts resulting from Placer County's and the City of Lincoln's development-related Covered Activities. As stated in Chapter 6 of the Plan, all Covered Activities would be required to comply with the state's General Construction Permit—including requirements to develop a project-based SWPPP—and applicable NPDES program requirements as implemented by the City of Lincoln and Placer County. The site design requirements, source control measures, and BMPs required as conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards or waste discharge requirements. Furthermore, implementation of PCCP

conservation measures would provide many water quality benefits that would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: Under Alternative 4, implementation of applicable general plan policies, Placer County's Stormwater Management Program, and other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant.

CEQA Determination: Under Alternative 4, implementation of applicable general plan policies, Placer County's Stormwater Management Program, and other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-2: Substantial depletion of groundwater supplies or substantial interference with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

Several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, would provide beneficial changes to groundwater recharge. The proposed creation and restoration of habitat features that work to slow and retain runoff on the landscape would create enhanced opportunity for water infiltration through the soil and into groundwater storage. The increase of properly functioning wetland areas, including ponds, would create new recharge areas and improve groundwater quality by filtering out sediment and pollutants. Similarly, reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage and groundwater recharge.

Covered Activities would have the same impacts as identified under Impact WQ-2 for Alternative 1. Construction and grading associated with Covered Activities would increase impervious surfaces, which would decrease the amount of land area available for rainfall to infiltrate into the ground. Several policies are in place to ensure that the Covered Activities do not deplete groundwater supply or interfere with recharge. The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts on groundwater supply and recharge (City of Lincoln 2008). The *Placer County General Plan* includes goals and implementation programs aimed at protecting against groundwater overdraft, protecting recharge areas, and supporting major consumptive use of groundwater aquifer(s) in the western part of the county only where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area. The *City of Lincoln General Plan* has similar groundwater management plans and policies.

As described in Section 3.5.1, *Regulatory Setting*, in 2007 the City of Lincoln, City of Roseville, PCWA, and the California American Water Company prepared the WPCGMP as a planning tool with the objectives of maintaining a safe, sustainable, and high-quality groundwater resource. The WPCGMP is intended to be a living document that will be updated in the future to account for progress and changing conditions (City of Roseville et al. 2007). In addition, Placer County, the Cities of Lincoln and Roseville, Nevada Irrigation District, PCWA, and California American Water Company have

formed the West Placer Groundwater Sustainability Agency to develop a groundwater sustainability plan by January 2020.

Some Covered Activities, particularly the in-stream activities, would likely enhance groundwater supply and recharge. These include stormwater management activities that effectively slow the rate of runoff and increase opportunities for groundwater recharge. Adherence to these groundwater management goals, in combination with the groundwater benefits created by the PCCP conservation measures, would ensure that potential effects on groundwater supply and recharge resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 4 would have an overall benefit to groundwater recharge. Potential effects on groundwater supply and recharge resulting from Covered Activities would be addressed by existing groundwater management programs, plans, and policies and implementation of the PCCP conservation measures. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of Alternative 4 would have an overall benefit to groundwater recharge. Potential effects on groundwater supply and recharge resulting from Covered Activities would be addressed by existing groundwater management programs, plans, and policies and implementation of the PCCP conservation measures. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite (NEPA: less than significant; CEQA: less than significant)

As described under Alternative 4, Impact WQ-1, several PCCP conservation measures listed in Table 2-13 would provide beneficial changes to existing drainage patterns that have been altered, and these changes would result in beneficial improvements to patterns of erosion and sedimentation.

- Improvement of culverts would likely provide more natural stream flow conveyance through road crossings that would lessen the potential for erosion and sedimentation problems often associated with improperly functioning culverts.
- Mechanical recontouring of vernal pool basins and removal of sediment and repairs to aquatic/wetland features would create additional natural storage for runoff that would reduce peak runoff downstream that could exceed the capacity of the stormwater drainage system and lead to substantial erosion and siltation.
- The removal or modification of certain ditches, raised roads, trails, and other barriers to restore natural surface flow could enhance water quality by removing features on the landscape that artificially concentrate and redirect runoff in a manner that may result in problematic soil erosion.
- The use of filter and buffer strips around wetlands would create opportunities for sediment to deposit prior to entering aquatic features.
- The removal and modification of certain artificial crossings or obstructions in stream channels, including seasonal flashboard dams, pipeline crossings, and concrete dams, could restore natural stream flow conveyance and reduce the potential for streambed and streambank erosions that may occur at these types of structures.

- Reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of floodwaters and provide new opportunities for floodplain storage in the restored reaches, thereby reducing peak flows and the volume of runoff routed to stormwater drainage systems downstream that could lead to erosion and siltation problems if the capacity is exceeded.

Covered Activities would result in the same impacts as described under Impact WQ-3 for Alternative 1. Implementation of the Covered Activities, particularly land development, could result in alterations to drainage patterns and cause an increase in the volume and rate of surface runoff, potentially resulting in substantial erosion, siltation, or flooding. Some Covered Activities, particularly the in-stream activities such as bridge and culvert replacement and enhancement and floodplain modification, would likely enhance natural drainage patterns.

The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts related to substantial alteration of existing drainage patterns that would lead to substantial siltation or erosion (City of Lincoln 2008). As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts. In addition, the site design requirements, source control measures, and BMPs required as conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards. Furthermore, implementation of the PCCP conservation measures would provide restoration of certain natural drainage patterns and many water quality benefits that would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 4 would have an overall benefit to natural drainage patterns. Potential effects on natural drainage patterns resulting from Covered Activities would be addressed by adherence to general plan policies, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of Alternative 4 would have an overall benefit to natural drainage patterns. Potential effects on natural drainage patterns resulting from Covered Activities would be addressed by adherence to general plan policies, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-4: Substantial alteration of existing drainage patterns in a manner that would result in flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

Several PCCP conservation measures listed in Chapter 2, *Proposed Action and Alternatives*, Table 2-13, and described under Alternative 4, Impact WQ-3, would beneficially alter existing drainage patterns by removing artificial landscape modifications and creating and enhancing new aquatic features. The proposed creation and restoration of habitat features that work to slow and retain runoff on the landscape would create enhanced opportunity for water storage and infiltration. The increase of properly functioning wetland areas, including ponds, would reduce the peak flows in receiving waterbodies downstream. Similarly, reconstructing natural channel geometry and installation of large woody material would likely increase channel sinuosity and add roughness elements to streams. This would slow the velocity of flood water, provide new opportunities for floodplain storage, and also reduce peak flows in receiving waterbodies. Though the stream channel enhancements may reduce flooding conditions downstream, the additional flow resistance created

by increases in channel roughness may locally increase water surface elevations and increase local flooding. Existing regulations—such as NFIP requirements, USACE provisions, and California Fish and Game Code Sections 1601–1607, as well as *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4, which are listed in Section 3.5.1, *Regulatory Setting*—require that a hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase flood risk.

Covered Activities would result in an increase in impervious surfaces and the same impacts as identified under Impact WQ-4 for Alternative 1.

The EIR for the *City of Lincoln General Plan* found that general plan implementation would have less-than-significant impacts related to substantial alteration of existing drainage patterns in a manner that would increase flooding (City of Lincoln 2008). As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts and ensure activities do not increase flood risk. Furthermore, implementation of PCCP conservation measures, such as restoring natural runoff patterns, improving floodplain storage, and removing channel obstructions, would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: The PCCP conservation measures of Alternative 4 would enhance drainage patterns and reduce flooding overall. Potential effects on natural drainage patterns and flooding resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures of the Alternative 4 would enhance drainage patterns and reduce flooding. Potential effects on natural drainage patterns and flooding resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-5: Creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

Implementation of the PCCP conservation measures would not create new sources of runoff. As described in Impact WQ-3, implementation of several of the PCCP conservation measures would beneficially alter runoff patterns by creating additional areas of flood storage that would reduce peak flows and the volume of runoff routed to stormwater drainage systems. This would benefit stormwater drainage by reducing the demand on the system. The PCCP conservation measures would also provide new opportunities for water quality treatment within restored and enhanced wetlands rather than routing polluted water to receiving waterbodies and the stormwater drainage system. The PCCP conservation measures are consistent with *Placer County General Plan* Policies 4.E.1, 4.E.10, 4.E.12, and 4.E.14, S*utter County General Plan* Policy I 3.1, and *City of Lincoln General Plan* Policy PFS-4.2, all of which are listed in Section 3.5.1, *Regulatory Setting*.

Covered Activities would result in the same impacts identified under Impact WQ-5 for Alternative 1. Covered Activities may provide additional sources of polluted runoff. However, some flood control and in-stream Covered Activities could beneficially reduce demands on stormwater systems and pollutant loads by improving conveyance through improved bridges and culverts, stabilizing streambanks, and increasing floodplain connectivity that would increase flood water storage and provide natural filtration for pollutants.

As described in Section 3.5.1, *Regulatory Setting*, both the *Placer County General Plan* and *City of Lincoln General Plan* include general plan policies and stormwater programs designed to address these potential impacts and ensure activities do not exceed the capacity of stormwater systems or increase polluted runoff. In addition, the site design requirements, source control measures, and BMPs required as conditions for the Covered Activities (see Chapter 6 of the Plan) would protect against violations of water quality standards. Furthermore, implementation of PCCP conservation measures, such as restoring natural runoff patterns, improving floodplain storage, and removing channel obstructions, would help ensure potential effects resulting from Covered Activities would be less than significant.

NEPA Determination: Many of the PCCP conservation measures of Alternative 4 would beneficially reduce stormwater and polluted runoff. Potential effects related to stormwater drainage systems and polluted runoff resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant.

CEQA Determination: Many of the PCCP conservation measures of Alternative 4 would beneficially reduce stormwater and polluted runoff. Potential effects related to stormwater drainage systems and polluted runoff resulting from Covered Activities would be addressed by adherence to applicable general plan policies, Placer County's Stormwater Management Program, implementation of the conditions on Covered Activities, and implementation of the PCCP conservation measures to ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-6: Other substantial degradation of water quality (NEPA: less than significant; CEQA: less than significant)

As described under Alternative 4, Impact WQ-1, several PCCP conservation measures would improve water quality by restoring natural runoff patterns, providing new flood storage and water treatment opportunities in enhanced and created wetland features, and restoring natural physical processes and geomorphic function to degraded stream reaches. These activities would benefit water quality.

The same effects of the Covered Activities described under Alternative 4 Impact WQ-1 also apply for Impact WQ-6.

NEPA Determination: Implementation of applicable general plan policies and Placer County's Stormwater Management Program, and compliance with other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant.

CEQA Determination: Implementation of applicable general plan policies and Placer County's Stormwater Management Program, and compliance with other applicable federal, state, and local regulations would ensure that there would be no adverse effects from the PCCP conservation measures. Similarly, the same policies and regulations, as well as conditions on Covered Activities and implementation of the PCCP conservation measures, would ensure that there would be no adverse effects resulting from the Covered Activities. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-7: Placement of housing within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

The PCCP conservation measures would not result in the construction of housing within a 100-year flood hazard area.

The Plan Area includes areas currently designated as 100-year flood zones. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain (see Section 3.5.1, *Regulatory Setting*). City of Lincoln Policy HS-6.4 requires new residential construction to have its lowest habitable floor elevated above the base flood level elevation, determined by FEMA standards. Placer County Policy 4.F.4 states that the County shall require evaluation of potential flood hazards prior to approval of development projects and that the County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions. SPRTA and PCWA cannot approve new housing; their activities have no effect. Adherence to the general plan policies, and to state and federal floodplain regulations, would ensure the Covered Activities have a less-than-significant effect.

NEPA Determination: The PCCP conservation measures would not place housing in a 100-year floodplain and thus would have no impact. Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects associated with the 100-year flood hazard zone resulting from Covered Activities would not be adverse. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures would not place housing in a 100-year floodplain and thus would have no impact. Local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects associated with 100-year flood hazard zone resulting from Covered Activities would not be adverse. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-8: Placement of structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

The PCCP conservation measures include actions to reconstruct natural channel geometry, install large woody material in channels, and replenish and/or clean spawning gravel. These actions would likely increase channel sinuosity and add roughness elements to streams. The additional roughness and channel length would beneficially slow the velocity of flood water, thereby providing new opportunities for floodplain storage and a reduction in peak flows in receiving waterbodies. Although the stream channel enhancements may reduce flooding conditions downstream, the additional flow resistance created by increases in channel roughness may locally increase water surface elevations and impede or redirect flood flows within a 100-year flood hazard area.

Any work, including PCCP activities and Covered Activities, conducted in an area within CVFPB's area of jurisdiction, which includes the lower portion of the Bear River, would require an encroachment permit (see Section 3.5.1, *Regulatory Setting*). An encroachment permit application would trigger the USACE permit process under CWA Section 408, which would require hydraulic modeling to demonstrate potential changes in flood water surface elevations. Many of the PCCP conservation measures and Covered Activities may be implemented outside of CVFPB jurisdiction, but would be located within a FEMA-regulated floodplain and could affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA. As described in Section 3.5.1, *Regulatory Setting*, hydraulic modeling would be required to be performed to demonstrate compliance with FEMA regulations through the CLOMR/LOMR process. Other regulations pertaining to placement of structures that would impede or redirect flood flows within a 100-year flood hazard area include California Fish and Game Code Sections 1601–1607 and *Placer County General Plan* Policies 6.A.2, 6.A.4.e, and 4.F.4, which are listed in Section 3.5.1, *Regulatory Setting*. Adherence to these existing regulations and policies would require hydraulic analysis be performed on any proposed stream channel or floodplain modifications to demonstrate that those modifications would not increase 100-year flood risk. Implementation of necessary engineering design and risk assessments would ensure that the proposed channel modifications would not create or alter flood flows in a manner inconsistent with existing policies and regulations.

The Plan Area includes areas currently designated as 100-year flood zones. Both the *Placer County General Plan* and *City of Lincoln General Plan* contain several policies related to development in the 100-year floodplain that would impede or redirect 100-year flood flows (see Section 3.5.1, *Regulatory Setting*). Some Covered Activities, such as construction of new bridges and culverts and flood protection projects, would reduce the risk of infrastructure flooding from a 100-year flood. Adherence to the general plan policies, and state and federal floodplain regulations, would ensure the Covered Activities would have a less-than-significant effect.

NEPA Determination: The PCCP conservation measures may place structures or make other modifications that would impede or redirect 100-year flood flow. Compliance with FEMA regulations and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects associated with the 100-year flood hazard zone resulting from Covered Activities would not be adverse. Impacts would be less than significant.

CEQA Determination: The PCCP conservation measures may place structures or make other modifications that would impede or redirect 100-year flood flow. Compliance with FEMA regulations and with local, state, and federal policies and regulations designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone would ensure that effects associated with the 100-year flood hazard zone resulting from Covered Activities would not be adverse. Impacts would be less than significant. No mitigation has been identified.

Impact WQ-9: Exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Implementation of several PCCP conservation measures—such as creating and enhancing wetlands, remeandering streams, and reestablishing channel and floodplain connections—would beneficially alter runoff patterns by slowing down water draining off the land and creating additional areas of

flood storage that would reduce peak flows and attenuate the volume of runoff routed downstream. This would reduce flood risks by lowering water surface elevations for a given flood event that must be held back by levees and dams. However, as stated under Alternative 4, Impact WQ-4 and Impact WQ-8, local, reach-scale increases in flood water surface elevations may arise from these proposed PCCP conservation measures. These risks would need to be evaluated in the engineering design and permitting required for individual projects as required by existing regulation as described under Alternative 2 Impact WQ-9.

The PCCP conservation measures do not call for the construction of new dams or new levees. One conservation measure calls for the removal of armored levees and replacement with earthen levees. Adequate engineering design and risk assessment would be necessary to demonstrate the new earthen levees provide the erosion resistance and stability previously provided by the armored material if the levees are still necessary to provide flood protection.

Covered Activities would result in the same impacts as identified under Impact WQ-9 for Alternative 1. Increased development in the Plan Area from the Covered Activities could result in more people and structures being exposed to significant risk of flooding; impacts could include loss, injury, or death involving flooding, including flooding as a result of levee or dam failure. The EIR for the *Placer County General Plan* concludes that general plan policies will ensure that impacts related to dam inundation would be less than significant. The EIR for the *City of Lincoln General Plan* states that, even with implementation of general plan policies, flood hazard impacts would be significant and unavoidable (Placer County 1994; City of Lincoln 2008).

Therefore, the effects of the Covered Activities with the exception of growth associated with the *City of Lincoln General Plan* would be reduced to a less-than-significant level by existing regulations and policies. However, effects related to growth associated with the *City of Lincoln General Plan* would be significant and unavoidable.

NEPA Determination: Implementation of the PCCP conservation measures under Alternative 4 would not increase exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam. Additionally, adherence to general plan policies and state and federal requirements would reduce effects from Covered Activities, but not to less-than–significant levels. Therefore, the overall impact would be significant and unavoidable.

CEQA Determination: Implementation of the PCCP conservation measures under Alternative 4 would not increase exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam. Additionally, adherence to general plan policies and state and federal requirements would reduce effects from Covered Activities, but not to less-than–significant levels. Therefore, the overall impact would be significant and unavoidable.

Impact WQ-10: Contribution to inundation by seiche, tsunami, or mudflow (NEPA: less than significant; CEQA: less than significant)

The Plan Area is not at risk due to inundation from a tsunami because of its distance from the ocean. The Plan Area is also not prone to seiches or earthquake-generated waves within enclosed or restricted bodies of water. Major earthquakes could produce oscillations or waves in local bodies of water which could overtop and damage levees or other infrastructure. Implementation of the PCCP conservation measures would not increase the number of persons and property potentially at risk from seiche, and it would not contribute to inundation depth if an event were to occur because it would not create new bodies of water susceptible to seiches.

One conservation measure calls for prescribed burning for vegetation management. Prescribed burns have the potential to expose soils and make them more susceptible to erosion, particularly on steep slopes with erodible soils. A prescribed burn that removes too much vegetation and exposes too much bare soil could increase the risk of soil erosion, and possibly a mudflow if the right combination of steep terrain and heavy rainfall were to occur. Proper planning in developing the prescribed burn management plan would reduce this risk substantially by considering topography, soil physical properties, seasonality of when the burn is conducted, and the temperature of the burn to ensure that some vegetative cover remains over the ground to protect soils post-burn.

Implementation of the Covered Activities would not result in contribution to inundation by seiche, tsunami, or mudflow, and thus would have a less-than-significant effect.

NEPA Determination: Neither the PCCP conservation measures nor Covered Activities would contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow occurring is very low. Impacts would be less than significant.

CEQA Determination: Neither the PCCP conservation measures nor Covered Activities would contribute to inundation by seiche or tsunami, and the increased likelihood of a mudflow occurring is very low. Impacts would be less than significant. No mitigation has been identified.

4.5.3 Cumulative Analysis

Alternative 1—No Action

Under Alternative 1, the conservation of species and their habitats would occur on a project-by-project basis through mitigation and compensation under the existing regulatory framework. Although this would likely result in a pattern of conservation that is geographically fragmented and (including out-of-county mitigation) managed in a piecemeal fashion, the individual restoration and/or enhancement and mitigation measures that would be required on a project-by-project basis would provide many of the hydrology and water quality benefits described under Alternative 2, the proposed action. Similar to Alternative 2, the proposed action, these mitigation and conservation measures would mostly provide beneficial environmental effects on water quality and hydrologic resources that would not contribute to cumulative impacts. Once implemented, these mitigation and conservation measures would be available to provide long-term water treatment and stormwater attenuation benefits for existing and future projects if the projects are in a similar geographic area (e.g., a new created wetland is located downstream of a new subdivision and able to provide water treatment instead of a being located in a different watershed from the development). However, the piecemeal implementation of conservation under Alternative 1 would likely provide less benefit than under Alternative 2 because the projects would, and least initially, have a reduced geographic extent, making them less likely to provide multiple benefits. Furthermore, fewer cumulative benefits may be obtained compared Alternative 2 because it could take years or decades longer for the same number of mitigation measures associated with individual projects to be implemented compared to the conservation measures associated with the PCCP and Alternative 2.

As described under Alternative 1, Impact WQ-1, the construction required to build anticipated mitigation and conservation measures required for future projects has the potential to impact water quality from erosion/sedimentation and fuel spills associated with heavy construction. This construction could occur in conjunction with other construction activity in the Plan Area associated with development or civil works structures. Implementation of applicable general plan policies;

Placer County's Stormwater Management Program; and other federal, state, and local regulations, including a SWPPP as part of compliance with the NPDES Construction General Permit and a General Dewatering Permit, establish a consistent program for mitigation of stormwater impacts. These regulatory actions are designed to minimize cumulative, nonpoint source impacts from construction activities, even when more than one activity could potentially affect the same receiving waters. Therefore, individual project implementation of the proposed mitigation and conservation measures would result in less-than-significant cumulative effects on hydrologic and water quality resources.

With respect to growth under local general plans and major projects of the Permit Applicants, cumulative effects would be similar to Alternative 2, the proposed action, with the exception that the benefits of the conservation measures would not be able to help mitigate for project effects. Additional project-specific mitigation would be necessary to provide necessary mitigation. Implementation of these projects and activities would result in less-than-significant cumulative effects on hydrologic and water quality resources if full compliance with local, state, and federal regulations pertaining to protecting water resources is achieved with the necessary mitigation measures.

Alternative 2—Proposed Action

Under Alternative 2, the proposed action, implementation of PCCP conservation measures would mostly provide beneficial environmental effects on water quality and hydrologic resources that would not contribute to cumulative impacts. As described under Impact WQ-1, the construction required to build some of the conservation measures has the potential to impact water quality from erosion/sedimentation and fuel spills associated with heavy construction. This construction could occur in conjunction with other construction activity in the Plan Area associated with development or civil works structures. Implementation of applicable general plan policies; Placer County's Stormwater Management Program; and other federal, state, and local regulations, including SWPPP as part of compliance with the NPDES Construction General Permit and a General Dewatering Permit, would establish a consistent program for mitigation of stormwater impacts. These regulatory actions are designed to minimize cumulative, nonpoint source impacts from construction activities, even when more than one activity could potentially affect the same receiving waters.

The PCCP contains conservation measures that provide for additional water quality and hydrologic benefit over the long term. These include creation and enhancement of new wetlands; establishment of vegetative buffers surrounding streams, wetlands, and uplands; and stream and floodplain restoration. Once implemented, these conservation measures would provide water treatment and stormwater attenuation benefits for existing and future projects.

In addition, implementation of the proposed PCCP, in combination with other regional conservation efforts, including *Placer Legacy* and other HCPs in progress in Sacramento, Yolo, and Sutter Counties, may provide large, regional benefits to water quality. Therefore, implementation of the proposed PCCP would result in less-than-significant cumulative impacts on hydrologic and water quality resources.

The additional development of housing and infrastructure related to the Covered Activities would occur in conjunction with similar development occurring in adjacent areas outside the Plan Area. The net result is exposure of more people and infrastructure to flood risk and increased area of impervious surfaces that would additionally alter local hydrologic resources. This could lead to increased peak flows, increased pollutant runoff into receiving waterbodies and groundwater, and

increased erosion and sedimentation problems. However, the new development would be required to comply with existing policies and regulations to ensure minimization of impacts to a less-than-significant level. This includes enhancement of floodplain storage, erosion control measures, BMPs, and adequate levels of storm-water drainage infrastructure. Some of the Covered Activities, such as the in-stream projects and flood protection projects, would provide benefits to hydrologic resources and water quality by reducing flood risk, stabilizing eroding banks, improving channels, and enhancing conveyance through existing bridges and culverts. Furthermore, the benefits provided by the conservation measures would help mitigate for the effects of the Covered Activities. Therefore, implementation of the proposed Covered Activities would result in less-than-significant cumulative effects on hydrologic and water quality resources if full compliance with local, state, and federal regulations pertaining to protecting water resources is achieved with the necessary mitigation measures.

Alternative 3—Reduced Take/Reduced Fill

The nature of the PCCP conservation measures would be the same under Alternative 3 as under Alternative 2, the proposed action, although there would be a reduction in fill and in PFG. The cumulative benefits for Alternative 3 would be similar to Alternative 2.

Alternative 4—Reduced Permit Term

Under Alternative 4, it is expected that fewer acres would be restored than under Alternative 2, the proposed action. Therefore, the amount of conservation associated with this alternative would be less. The nature of the cumulative benefits for Alternative 4 would be similar to Alternative 2, yet the magnitude of benefit would be less because a smaller amount of conservation would likely occur, resulting in a lower level of water resource benefits to other development occurring in the watershed.

4.5.4 References Cited

City of Lincoln. 2008. *City of Lincoln General Plan Update Final Environmental Impact Report.* State Clearinghouse No. 2005112003. February.

City of Roseville, Placer County Water Agency, City of Lincoln, and California American Water. 2007. *Western Placer County Groundwater Management Plan*. Prepared by MWH. November. Available: https://www.pcwa.net/files/docs/enviro/WPCGMP_Groundwater_Managerment_Plan_07.pdf. Accessed: June 21, 2016.

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