

9.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ENVIRONMENTAL ANALYSIS

9.1 Introduction

Staff from the Regional Water Board developed a proposed amendment to the Water Quality Control Plan for the North Coast Region (Basin Plan) that would incorporate the *Policy for the Implementation of the Water Quality Objectives for Temperature* (hereinafter proposed Temperature Implementation Policy) into the Basin Plan. The proposed amendment would modify Section 4 of the Basin Plan by adding the Temperature Implementation Policy. Additionally, staff propose the adoption of action plans to implement the Total Daily Maximum Loads (TMDLs) for elevated water temperature in the Upper Main Eel, Middle Main Eel, Lower Main Eel, South Fork Eel, North Fork Eel, Middle Fork Eel, Mattole, and Navarro River watersheds (hereinafter proposed Action Plans for the Eel River, Mattole River and Navarro River Temperature TMDLs).

This staff report which includes the discussions on the background and purpose of the proposed Basin Plan amendment, the interpretation and implementation of the water quality objectives for temperature, North Coast Temperature TMDL analyses, proposed Temperature Implementation Policy and Action Plans, environmental impact and economic analysis, is part of the overall Substitute Environmental Document (hereinafter SED). This chapter of the staff report identifies mitigation for compliance measures identified for the factors influencing temperature. Consistent with the California Environmental Quality Act (CEQA), this document does not engage in speculation or conjecture, but rather considers the project alternatives, the reasonably foreseeable environmental impacts of the reasonably foreseeable methods of compliance, and the mitigation measures which would be required to avoid, minimize, or mitigate the identified impacts. The adoption of the proposed Basin Plan amendment does not result in any direct adverse effects on the environment. All potentially significant adverse effects are related to individual site-specific projects or permits and site-specific compliance measures. The analysis provided uses site-specific circumstances as example or illustration of how the Temperature Implementation Policy and Action Plans could be implemented, and thus indirectly effect the environment. However, this analysis does not constitute an absolute outcome or certainty in the determinations made in this staff report. Therefore, this environmental analysis is set at a programmatic level and is more general in nature to cover the range of potential effects.

Many of the projects that might be undertaken by affected persons as a result of the Temperature Implementation Policy and Action Plans would be subject to a project-level CEQA review conducted by the Regional or State Water Board or by another lead agency, which would entail identification and mitigation of any significant environmental effects. In addition, other regulatory mechanisms can be expected to provide opportunities for minimizing and avoiding significant environmental effects. These regulatory requirements and mitigation measures are likely to reduce many, but not all, of the potential indirect impacts to less than significant levels. In

some cases it may not be possible to mitigate the indirect impacts of the Temperature Implementation Policy to a less-than-significant level. In addition some actions may not require discretionary approvals or an agency with regulatory authority may not take action. Finally, some impacts may not be identified or mitigated because it is impossible to predict who will take action in response to the Temperature Implementation Policy and Action Plans, or what action they will take. For these reasons, this programmatic analysis must acknowledge the potential for significant impacts that cannot be mitigated to a less than significant level.

9.2 California Environmental Quality Act Requirements for Exempt-Regulatory Programs

The Regional Water Board is the lead agency for evaluating the environmental impacts of Basin Plan amendments pursuant to CEQA. Although subject to CEQA, the Regional Water Board basin planning process is certified by the Secretary for Resources as “functionally equivalent” to CEQA, and therefore exempt from the requirement for preparation of an environmental impact report or negative declaration and initial study¹⁹. The State Water Resources Control Board (State Water Board) has promulgated guidelines for exempt regulatory programs that describe the documents required for the adoption or approval of standards, rules, regulations or plans²⁰. These documents must do the following:

1. Provide a brief description of the proposed activity.
In this case, the proposed activity is the adoption of a Basin Plan amendment including: a) A regional Temperature Implementation Policy; and b) Temperature Action Plans for the Eel River, Mattole River and Navarro River Temperature TMDLs. The rationale to support the policy and action plans are fully described in the Chapters 5 and 6. A brief description is provided in Section 9.2.1.
2. Provide a reasonable discussion of alternatives to the proposed activity.
Discussion is provided in Section 9.3.
3. Provide an analysis of mitigation measures needed to minimize any significant adverse environmental impacts of the proposed activity. Discussion is provided in Section 9.4.

Additionally, for actions by the Regional Water Board that adopt a rule or regulation requiring the installation of pollution control equipment, establish a performance standard or establish a treatment requirement, CEQA²¹ and CEQA Guidelines²² require an environmental analysis of the reasonably foreseeable methods by which

¹⁹ Cal. Code Regs., tit. 14, § 15251(g).

²⁰ Cal. Code Regs., tit. 23, § 3777.

²¹ Pub. Resources Code, § 21159 (a).

²² Cal. Code Regs., tit.14, § 15187 (c).

compliance with that rule or regulation will be achieved. A SED satisfies this requirement if it contains the following components, some of which are repetitive with the list above:

1. An analysis of the environmental impacts from the reasonably foreseeable methods of compliance. The reasonably foreseeable methods of compliance (hereinafter compliance measures) are the potential actions that responsible parties may employ to comply with the TMDL load allocations, numeric targets and the implementation measures in the proposed Action Plans. This analysis is presented in Section 9.4.
2. An analysis of the reasonably foreseeable feasible mitigation measures relating to the identified environmental impacts. This analysis is presented in Section 9.4.
3. An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation, which would avoid or eliminate any identified impacts. This analysis is presented in Section 9.4.

The environmental analysis must take into account a reasonable range of:²³

- Environmental factors (see Environmental Setting and Land Use, Chapter 8.0);
- Technical factors (see Analysis of Compliance Measures, Associated Environmental Impacts, and Potential Mitigation Measures, Sections 9.4 and 9.5);
- Population (see Environmental Setting and Land Use, Chapter 8.0);
- Geographic areas (see Environmental Setting and Land Use, Chapter 8.0);
- Specific sites (see Analysis of Compliance Measures, Associated Impacts, and Potential Mitigation Measures, Section 9.4); and
- Economic factors (see Economic Considerations, Chapter 10).

While the regulations require consideration of a “reasonable range” of the factors listed above, an examination of every site is not required, only consideration of a reasonably representative sample of them. The statute specifically states that the agency shall not conduct a “project level analysis²⁴.” Rather, in most circumstances, the project level analysis will be performed by the responsible party or the agency with jurisdiction over the activity conducted.

9.2.1 Description of the Proposed Activity

The proposed project is the adoption of a Temperature Implementation Policy and Action Plans, which comprehensively address controllable factors that adversely affect stream temperatures. Controllable factors include increased exposure to solar radiation due to loss of stream shade, physical stream channel alteration in

²³ Cal. Code Regs., tit. 14, § 15187(d); Pub. Resources Code, § 21159 (c).

²⁴ Public Resources Code, § 21159(d).

response to elevated sediment loads, engineered stream channel alteration, and alteration of hydrology resulting from impoundments, water diversions, and landscape alteration. The intent of the Temperature Implementation Policy and Action Plans is to document in one place the tools and actions available and necessary to achieve temperature water quality standards so as to protect and restore the beneficial uses of water in the North Coast Region.²⁵ Many of actions described in the Temperature Implementation Policy and Action Plans are already in effect and being implemented, while others will be developed in the future. The Temperature Implementation Policy and Action Plans provide a common approach to ensuring attainment of the water quality objective for temperature, and ensure that high quality waters are also protected.

Implementation actions to meet temperature objectives are described in this chapter as a range of compliance measures in the following categories: Measures to Preserve and Maintain Shade; Measures to Control Sedimentation; Measures to Address Tailwater and Surface Impoundments; Measures to Preserve Existing Cold Water Resources; Restoration; and Measures to Restore and Maintain Stream Flows. Specific compliance measures are detailed in section 9.4, along with associated impacts and mitigation measures. Further discussion of potential environmental impacts and levels of significance from implementing compliance measures is presented in section 9.5.

While the compliance measures themselves are forms of mitigation to be applied in the context of the activity or factor influencing water temperatures, CEQA requires review of environmental impacts that result from measures intended to improve the environment. Several compliance measures evaluated do have potentially significant adverse effects on the environment such as air quality, noise and traffic from temporary construction activities. However, the long term benefits from implementation of compliance measures (such as aquatic ecosystem restoration) could and will likely outweigh any short term adverse effects.

9.2.2 Scoping

The Regional Water Board has solicited comments from interested persons and governmental agencies regarding the scope and content of the environmental information to be included in the SED. On February 5th, 2013, the Regional Water Board circulated a Notice to Hold CEQA Scoping Meetings for a Proposed Amendment to the Water Quality Control Plan for the North Coast Region Incorporating a Policy for the Implementation of the Water Quality Objective for Temperature and Temperature TMDL Action Plans for the Navarro, Eel, and Mattole River Water. On February 15th, 27th and 28th, 2013, Regional Water Board staff held scoping meetings in Santa Rosa, Bayside, and Yreka CA, respectively.

²⁵ 40 CFR § 131: water quality standards include beneficial uses, the water quality objectives to protect those uses, and the anti-degradation policy (Resolution No. 68-18).

The purpose of the meetings was to explain the proposed project and provide related information to resource agency personnel and the interested public and to invite them to submit written comments concerning the range of actions, Policy alternatives, mitigation measures, and significant effects that should be analyzed in the SED. Staff provided relevant information including a presentation on the Basin Plan amendment process, the Temperature Implementation Policy and Action Plans, and CEQA process. Informational handouts included the scoping notice and fact sheet, Regional Water Board Resolution No. R1-2012-0013 (Policy Statement for the Implementation of the Water Quality Objective for Temperature in the North Coast Region), and checklist based on appendix G of the CEQA guidelines.

The scoping period ended on April 1, 2013. 41 comments provided were received in written form, while 59 were received verbally form at the scoping meetings. With some comments being identical there was a total of 88 public comments received. Comments were received from five federal, state and local agencies, eight nongovernmental organizations and special-interest groups, and four individuals.

9.3 Analysis of Reasonable Alternatives to the Proposed Activity

Regional Water Board staff has identified four approaches (or alternatives) to succeed in the fulfillment of the project objectives to attain water quality standards for ambient water temperatures in the North Coast Region. The purpose of this analysis is to determine if there is an alternative that would feasibly attain the basic project objective of the rule or regulation, but would lessen, avoid, or eliminate any identified adverse environmental impacts.

The first alternative, analyzes a “No Action” alternative with no change to the Basin Plan or program implementation. The second alternative contemplates a broad approach to riparian protection that requires designation of riparian buffer zone (e.g. stream setback requirement) and implements a regional waste discharge prohibition. The third alternative includes the adoption of individual temperature TMDLs for each impaired watershed listed on the Clean Water Act 303(d) list as discrete and individual actions. The fourth and final alternative, and staff’s recommended approach, is to develop and adopt a comprehensive policy for restoring and maintaining ambient water temperature throughout the region in impaired and non-impaired waters, as well as, three stand-alone temperature TMDL Action Plans for the Eel, Mattole and Navarro River watersheds.

The alternatives are compared on the basis of their ability to protect water quality and beneficial uses (i.e., their likelihood of success) and whether the approach is feasible, flexible and equitable.

9.3.1 No Action - No Change in Basin Plan Language or in Program Implementation

Under the “No Action” alternative, no amendment to the Basin Plan would occur and staff would continue to implement existing Regional and State Water Board programs, as in the past. Under this alternative, the Regional Water Board would continue to implement temperature controls in a piecemeal fashion as individual

permits were developed and adopted. This alternative would not increase the likelihood of water quality protection because it may not address all the controllable factors that affect stream temperature (i.e., shade, sediment and flow) nor prioritize the restoration of the impaired beneficial uses of water. Further, under this alternative the Regional Water Board would not have documented and organized its strategy for addressing temperature in one place that helps guide staff, other agencies, and the public. Additionally, with the Basin Plan remaining nearly silent on the controllable factors that affect stream temperatures other agencies are more likely to develop programs that do not consider or overlook these important influences.

Pros:

- Allows re-direction of Basin Planning staff to begin/continue work on the next issue on Triennial Review Priority List.
- Allows TMDL Development staff to begin/continue work on the development of the next TMDL on Impaired Waters List.

Cons:

- Temperature continues to be addressed in a piecemeal fashion as individual permits are developed and adopted.
- Lack of documented and organized strategy for addressing temperature to help guide staff, other agencies and public to ensure regional action to attain and maintain the water quality objective for temperature throughout the region.
- The basin plan remains silent on the importance of shade, sediment and flow as controllable factors affecting stream temperatures.

9.3.2 Adopt a Basin Plan Amendment that defines prescriptive rules for specific land uses and establishes prohibitions (broad riparian protection) at the regional level

This approach would be based on the development of riparian buffers for streams and waste discharge prohibitions to those areas on the regional level for all land use activities. Adoption of general riparian setbacks on all streams throughout the region is an option to protect water quality and achieve water quality standards. Natural and/or well vegetated riparian zones provide numerous functions and values including but not limited to aesthetics, wildlife habitat, sediment retention, pollutant reduction/removal, nutrient cycling, flood peak attenuation, habitat complexity and stream temperature.

This approach would include the regionwide application of riparian setbacks along stream courses to ensure the preservation of riparian vegetation to protect beneficial uses, notwithstanding site specific conditions or activities. Control factors and compliance measures would not be assessed at the project level, but applied universally throughout the region. Waste discharge prohibitions within a riparian buffer would be the primary regulatory tool used to protect beneficial uses. Stream and/or riparian setbacks would also be implemented and enforced through existing

permits/orders administered within existing regulatory programs such as timber harvest, non-point source, 401 certification, and storm water.

The application of riparian buffers does not directly address areas that have been degraded or do not currently meet site potential shade. Restoration actions alone will be insufficient to restore ambient water temperatures in some areas. For example management measures within regulated lands, such as stream and riparian enhancement/mitigation, sediment remediation, and stream flow allocations will still be needed in some areas so as to restore degraded areas to fully attain water quality standards. Furthermore, this blanket approach may be overly prescriptive and burdensome in some geographic areas while inadequate in others. Even though this approach protects water quality and provides several benefits to wildlife, it only partially promotes site potential shade and does not address the other controllable factors (i.e., flow and sediment) that affect stream temperatures.

Pros:

- Broadly supports water quality protection and preservation of existing conditions.
- Would save time and resources for staff by avoiding site by site review and assessment to areas with well vegetated riparian area.

Cons:

- Would not proactively address proactively degraded or barren riparian areas.
- Would be overly burdensome in some geographic areas while inadequate in others.
- Does not address all controllable factors such as flow, and lacks documented and organized strategy to help guide other agencies to ensure regional action to attain and maintain the water quality objective for temperature throughout the region.
- Could make the conversion of in-stream impoundments to off-channel storage within the riparian zones difficult.

9.3.3 Develop technical TMDLs, Action Plans, and Adopt Basin Plan Amendments for each individual impaired watershed

This alternative would entail the status quo approach to temperature TMDL development for each impaired watershed. In general this approach requires data collection and assessment and 303 (d) listing for waters not yet identified. It requires technical TMDL development (extensive data collection, assessment, and modeling of load allocations) and the development of an action plan and Basin Plan amendment. Technical TMDLs for elevated water temperatures have been developed for the Eel, Mattole and Navarro watersheds; but the action plans/Basin Plan amendments are still required. The following are a list of temperature impaired waters requiring both a technical TMDL and action plan.

Albion River Hydrologic Area (HA)
Big River HA

Garcia River HA
 Gualala River HA (with the exception of the Little North Fork Gualala River)
 Noyo River Hydrologic Sub-Area (HSA)
 Pudding Creek HSA
 Ten Mile River HSA
 Redwood Creek HA
 Russian River Watershed: Lower Russian River HA, Middle Russian River Mark West
 Creek HSA, Middle Russian River HA: Santa Rosa Creek HSA
 Trinity River: South Fork HA

Individual TMDL development for the watersheds listed above would be overly
 consumptive of staff resources as the timeline for completion of each technical
 TMDL and Actions Plan would be a range of three to five years to complete.

Pros:

- More public outreach.

Cons:

- Defers the implementation of TMDL action plans for many years-to-decades.
- Creates an unfair regulatory environment where some watersheds come under regulation much sooner than others.
- Focuses considerable staff resources over a long period of time to a single water quality issue.

9.3.4 Adopt Basin Plan Amendment to include a Regional Temperature Implementation Policy and Temperature Action Plans for the Eel River, Mattole River and Navarro River Temperature TMDLs (Recommended Alternative)

Staff recommends adoption of the Basin Plan amendment to include a Regional Temperature Implementation Policy and Temperature Action Plans for the Eel River, Mattole River and Navarro River Temperature TMDLs. The scientific justification for the policy and action plans is detailed in Section 2 of this staff report. In summary, Regional Water Board staff finds the proposed policy to comprehensively address all controllable factors that adversely affect stream temperatures and highlight the importance of shade, sediment and stream flow. Addressing actions to achieve and maintain the water quality objective for temperature in the proposed fashion is the most efficacious strategy for Regional Water Board staff resources and regional water quality protection and restoration. Existing programs at the Regional Water Board and State Water Board Division of Water Rights will be directed to consider all opportunities to restore and maintain riparian shade, including both regulatory and non-regulatory means. While this amendment does not establish blanket riparian setbacks throughout the region, it does establish riparian protection in the Basin Plan and in so doing strengthens the Regional Water Board’s authority to address riparian shade when issuing permits and making recommendations to other local, state, and federal agencies.

The case-by-case nature of the policy avoids overly burdensome prescriptions and promotes riparian protection at the program and permit levels. In addition, the Temperature Implementation Policy and Actions Plans enable staff to effectively address discrete temperature related concerns throughout the entire region in a consistent manner. The science supporting the proposed Basin Plan amendment is well established and results in consistent findings throughout the region. Therefore, the proposed adoption of the Temperature Implementation Policy and Actions Plans is the preferred alternative. It applies broadly to address all impaired waters and non-impaired waters and focuses staff resources on regional implementation actions as opposed to the development of individual TMDLs. Since factors affecting stream temperature are so similar throughout the region this amendment is the superior alternative in both the attainment and maintenance of temperature objectives and effective use of staff resources.

The technical support for the proposed Temperature Implementation Policy and Action Plans can be found, in part, in Sections 2 and 6 of this staff report. The technical TMDLs are also available on the Regional Water Board webpage: http://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/

Pros:

- Identifies shade as an important controllable factor in the Basin Plan.
- Ensures regional action to attain and maintain the water quality objective for temperature throughout the region.
- Takes full advantage of the commonality of factors that affect stream temperature in all watersheds.
- Promotes efficient working relationships with other agencies to build synergies in actions addressing the protection of beneficial uses.
- Clarifies priorities for temperature protection for consideration by other agencies.

Cons:

- Reliance on site-specific approaches doesn't provide clear information on compliance measures in a prospective manner.

9.4 Analysis of Compliance Measures, Potential Environmental Impacts, and Possible Mitigation Measures

This analysis of potential environmental impacts was conducted by considering a wide range of compliance measures available to comply with the Temperature Implementation Policy and Action Plans. Specific compliance measures and other pollution controls that likely will be used to comply with requirements of the Temperature Implementation Policy and Action Plans will depend on a number of conditions such as the factors contributing to impairment (e.g., shade, sediment, and/or flow), source category (e.g., land use activity such as road and crossing construction, reservoir management, or agriculture) and environmental setting (e.g., rainfall, geology, and topography). A combination of structural (e.g., engineered) and non-structural (e.g., operation and maintenance) compliance measures will

likely be used by responsible parties. Compliance measures likely to be included as part of those future programs are analyzed broadly in this document. The compliance measures that could be used to comply with the proposed Temperature Implementation Policy and Action Plans, and the potential environmental impacts associated with their implementation are discussed below. The categories of resources that the Regional Water Board has identified as potentially being impacted by the implementation of compliance measures include:²⁶

- Aesthetics;
- Agriculture
- Air quality;
- Biological resources;
- Cultural resources;
- Geology and soils;
- Greenhouse Gases;
- Hazards and Hazardous Materials;
- Hydrology and water quality;
- Land use / planning;
- Mineral resources;
- Noise;
- Population and housing;
- Public Services;
- Recreation;
- Transportation/traffic; and
- Utilities and service systems;

The environmental analysis of the compliance measures, potential impacts and possible mitigation measures to avoid those impacts is presented below. It is generally organized to correspond with the organization of the proposed implementation actions presented in the draft Temperature Implementation Policy which correspond to the actions detailed in the Action Plans for the Eel River, Mattole River and Navarro River Temperature TMDLs. The following examples are not meant to be exhaustive of the suitable suite of compliance measures, but rather provide a representative sample with the widest range to accommodate as many compliance scenarios as possible.

9.4.1 Analysis of Compliance Measures, Potential Environmental Impacts, and Potential Mitigation Measures to Preserve and Maintain Shade

Compliance Measures to Restore and Maintain Site Potential Shade:

- Increase riparian and in-channel tree canopy retention for surface waters to support beneficial uses.
- Limit development and harvest actions in riparian areas to attain site potential

²⁶ See CEQA Checklist (Section 9.5.2)

shade.

- Develop a grazing management plan for upland and riparian management.
- Calculate the timing and number of livestock that can be accommodated while maintaining adequate vegetative cover, stream corridor integrity, and water resources.
- Establish native or introduced forage species (grasses, forbs, legumes, shrubs, and trees) through pasture, field, orchard and rangeland planting.
- Implement the controlled harvest of vegetation with grazing or browsing animals to achieve a specific objective.
- Exclude animals, people, or vehicles from an area to protect, maintain, or improve the quantity and quality of riparian vegetation.
- Construct animal trails to provide movement of livestock through difficult or ecologically sensitive terrain.
- Stabilize stream crossings to provide controlled access across a stream for livestock and farm machinery.
- Plant vegetation to increase shade in accordance with site potential.

Potential Environmental Impacts

- Aesthetics - Decrease scenic views of waterbodies through the retention of vegetation. Ponds could create a new source of glare. Increased riparian vegetation and the preservation of large woody vegetation could lead to increased fuel load for wildfires which degraded scenic views.
- Agriculture - Potential conflict with or conversion of prime agricultural land or land subject to the Williamson Act from implementing grazing restrictions.
- Biological Resources - Risk of introducing invasive species thorough pasture, hay and rangeland planting and management. Risk of conflict between site potential shade and requirements of sensitive flora or fauna.
- Hydrology/water quality – Reduction in stream flows due to the increase in evapotranspiration from increased riparian tree retention. Temporary sediment discharges from construction and/or restoration activities.
- Mineral resources - Decreased access for gravel, gold or other mineral extraction activities.
- Transportation/traffic – Increased tree retention may conflict with transportation agencies (public roads) site distance requirements and areas designated as clear recovery zones.

Possible Measures to Avoid, Minimize or Mitigate Potential Impacts from Compliance Measures to Maintain Site Potential Shade

- Aesthetics – Proper siting, constructing berms or excess freeboard around the perimeter of a pond. Planting vegetation such as native trees, grasses, and forbs. Fuel management measures such as understory thinning, select harvest prescriptions and firebreaks.
- Agriculture - Coordination between project proponents, Regional Water Board staff and other local, state and federal agencies to achieve site potential shade and attempt to ensure the preservation of agricultural lands.

- Biological Resources - Use certified weed-free grass and seed mix to prevent the introduction of invasive species. Consult with federal, state and local agencies regarding location of sensitive (e.g., threatened or endangered) wildlife resources.
- Hydrology/water quality – Plant native vegetation that has evolved with the natural environment. Allow for the removal or thinning of upland vegetation that has high evapotranspiration rates and increases fire risks. Implement standard BMPs to control erosion and sediment from construction sites.
- Public Services – Strategically placing firebreak lines in riparian and upland areas that don't affect temperature, to prevent fires, reduce erosion and sedimentation, and protect public safety.
- Transportation/traffic – Strategic planning and design to avoid and minimize the placement of facilities that have site distance conflicts. Case-by-case evaluations may reveal that appropriate site distance may be attained through minor vegetation trimming that does not affect water temperatures. Otherwise, off-site compensatory mitigation such as riparian planting or restoration within a watershed boundary may be necessary to off-set the affects.

9.4.2 Analysis of Compliance Measures, Potential Environmental Impacts, and Potential Mitigation Measures to Address Sedimentation

Compliance Measures for Erosion and Sediment Control:

Structural erosion and sediment control compliance measures:

- Soil conservation cover straw cover, bonded fiber matrix, grass seeding, temporary plastic cover, residue tillage, heavy use area protection, strip cropping.
- Silt fence, straw waddle, straw bale, gravel check dam, gravel bag berm, stock pile cover.
- Sediment control basin, pond, embankment pond.
- Riparian buffer/filter strip, grassed waterway/bioswale.
- Active sediment treatment system.
- Culverts, stream crossings, water diversions, bridges.
- Bench contouring, contour farming, terrace, vegetated windbreak/hedgerow planting.
- Exclusionary fences.
- Micro-irrigation systems.
- Lined irrigation channels.
- Rock slope protection, lined waterway/outlet, road/trail access control, underground outlet, vertical drain.
- Road/trail landing closures/treatment, forest trails and landings.
- Slide stabilization, soil stabilization or fill and cut slopes, removal of unstable fill.
- Low impact development (LID) to maintain the predevelopment hydrograph to sustain site runoff volume and velocity to attain sediment and water discharge

equilibrium within streams.

- In-stream bioengineering.
- In-stream and riparian planting.
- Stream bank/shoreline protection.
- Road surface materials, paving, chip sealing, rocking, dust abatement. Establish native or introduced forage species (grasses, forbs, legumes, shrubs, and trees) through pasture, field, orchard and rangeland planting.
- Exclude animals, people, or vehicles from an area to protect, maintain, or improve the quantity and quality of riparian vegetation.
- Construct animal trails to provide movement of livestock through difficult or ecologically sensitive terrain.
- Stabilize stream crossings to provide controlled access across a stream for livestock and farm machinery.

Non-structural erosion and sediment control compliance measures:

- Dry weather construction or harvest scheduling.
- Inventory excessive sediment delivery sites, prioritize sites by threat to water quality, design and plan remediation, track and report remediation implementation success.
- Road drainage design, disconnect road drainage from watercourses (drain to hill slopes), install drainage structures at intervals to prevent erosion of the inboard ditch or gull formation at the hill slope outfall, outslope roads.
- Timing and intensity of road use.
- Proximity of roads to watercourses.
- Proximity of roads to unstable or landslide prone areas.
- Develop a grazing management plan for upland and riparian management.
- Calculate the number of livestock that can be maintained while maintaining adequate vegetative cover, stream corridor integrity, and water resources.

Potential Environmental Impacts

- Aesthetics - Decrease scenic views of waterbodies through the retention or planting of vegetation.
- Agriculture - Potential conflict with or conversion of prime agricultural land or land subject to the Williamson Act from implementing riparian buffers.
- Air quality – Short term construction-related emissions could include exhaust from construction equipment and fugitive dust from land clearing, earthmoving, movement of vehicles, and wind erosion of exposed soil during reservoir construction or removal, stream and/or riparian restoration. Potential odors from stagnant water in sediment basins or ponds.
- Biological – Short term construction, stream dewatering or diversions, turbidity discharges from construction activities or in-stream dam removal, stream and/or riparian restoration. Several species of fauna (e.g., snakes, fish, salamanders, and birds) have been entrapped or tangled in erosion control products such as the plastic casing covering straw waddles, or from the monofilament fibers from silt fences that are either in place on active

construction sites or from materials that were left in place and degraded. Stream restoration actions to reduce erosion, remove sediment, and improve habitat or riparian restoration actions to increase shade may conflict with the requirements of certain flora or fauna.

- Cultural - Short term construction disturbance from earth moving.
- Geology/Soils – Construction activities or poorly designed facilities could result in short term and long term erosion, and could result in soil compaction reducing soil moisture and biological functions.
- Water Quality – Excessive use of rip-rap or stream stabilization structures intended to beneficially affect flow could alter conditions downstream. Work within and adjacent to waters increases the risk of leaking equipment or hazardous material spills, short term turbidity increases and/or discharges of settleable solids. Decrease stream flows and/or aquifer storage from dust abatement. Alterations of natural hydrology and increases in stream temperatures by concentrating or redirecting road runoff. Increased risk of soil or groundwater contamination with concentrated minerals, salts, or persistent pesticides. Increased risk of erosion and sedimentation from the construction of trails, stream crossings, and riparian grazing. Increase risk of groundwater contamination of petroleum hydrocarbons and metals from the infiltration of storm water runoff.
- Mineral resources – Decreased access for gravel, gold and other mineral activities.
- Noise – Exposure to short term construction equipment, alternative water supply operations and maintenance.
- Public Services – Restoration or construction activities within parks that have streams or landslides adjacent to streams. Increased enforcement on sediment discharges from illegal cultivations could lead to an increased demand in local, state and federal law enforcement resources. Increase burden on vector control from wetland creation and sediment control basins.
- Transportation – Short term traffic increases associated with sediment reduction project, construction projects, dam removal, stream and/or riparian restoration.
- Utilities and service systems – Construction and installation of sediment catch basins or irrigation delivery/recovery systems could cause an adverse impact to the environment.

Potential Measures to Avoid, Minimize or Mitigate Impacts from Erosion and Sediment Control Compliance Measures

- Air quality – Dust control, avoid days of poor air quality, monitor levels and cease work prior to exceeding standards, retrofit equipment, use low emissions vehicles when possible, schedule work to reduce the use of high emission vehicles. Proper design to eliminate standing water, covers, aeration, filters, barriers, and/or odor suppressing chemical additives.
- Biological – Consult with federal, state and local agencies regarding location of sensitive (e.g., threatened or endangered) wildlife resources. Select

appropriate or alternate structural BMPs such as bio-degradable, synthetic free or earthen material BMPs. Implement non-structural BMPs such as scheduling, proper design and the removal of temporary BMPs for erosion and sediment controls after stabilization and or project completion. Developing species relocation plans or interpreting natural site vegetative conditions to include sensitive flora. Develop compensatory mitigation projects for aquatic ecosystem creation, restoration or enhancement.

- Cultural – Consult with Tribes, historical societies, federal, state and local agencies regarding location of cultural resources prior to use of heavy equipment in areas with known or suspected cultural resources. Projects subject to the jurisdiction of the Water Boards will be required to comply with Public Resource Code section 21159. This is expected to ensure the implementation of necessary site specific actions to avoid, minimize and mitigate any impacts to historical, archaeological, and paleontological resources or site, or unique geologic features. All future actions must comply with the CEQA process and requirements for tribal consultation provided by Senate Bill 18 (SB 18) (State 2004, Ch 905) and Government Code section 65252.
- Geology/Soils – One of the core actions in the proposed policy, as well as existing regulation, is erosion and sediment control. All future actions subject to this proposed Basin Plan amendment must focus on the avoidance, minimization and mitigation of impacts related to unstable or sensitive geologic areas, soil erosion or the loss of topsoil. Typically, an array of structural and non-structural BMPs will be used in any future project as the means to comply with this proposed Basin Plan amendment and existing regulations such as the Sediment Implementation Policy, WDRs and Waivers, NPDES permits, and 401 Certifications.
- Water Quality – Plant native vegetation that has evolved with the natural environment. Allow for the thinning of upland vegetation that has high evapotranspiration rates and increases fire risks. Use sediment, erosion, spill prevention, and waste management BMPs during construction and vegetation thinning activities. For example scheduling, straw, seed, silt fence, straw waddle, straw bales, drip protection, vehicle cleaning and maintenance, and site inspections. Install and maintain erosion control measures (e.g. waterbars, rolling dips, mulch, rock rip-rap) to prevent discharge of excess sediment from soil disturbing activities. Relocate roads away from unstable and landslide prone terrain. Drain roads away from unstable areas during construction, reconstruction of maintenance activities. Locate new roads on stable ground to the maximum extent practicable. Minimize cutbank height and avoid placement of fill on steep slopes. Use off-channel water collection features for dust abatement purposes. Install adequate number/type of road drainage features to prevent concentration of road runoff. Seek professional (e.g. Natural Resources Conservation Service, local resource conservation district) in developing land management plans and observational techniques to ensure optimal stocking rates for rangelands. Protect drainage channels from

sediment contributions with vegetated buffers, wattles or similar erosion control devices. Plant a cover crop on exposed soil to reduce the length of time in which soil is exposed to wind and water. Cover exposed soil that will not receive immediate planting with straw or other suitable erosion control material. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream and groundwater quality and quality from structural BMPs.

- Transportation – Through the existing project planning, CEQA process, interagency coordination and existing regulation (NPDES storm water permits and 401 Certifications) potential conflicts are resolved by avoidance, minimization, or off-site compensatory mitigation.

9.4.3 Analysis of Compliance Measures, Potential Environmental Impacts, and Potential Mitigation Measures to Address Tailwater and Surface Impoundments

Flood irrigation is a common irrigation practice in parts of the North Coast Region. When irrigation water is applied to a field in this manner, it generally flows across the field as a thin sheet or in shallow rivulets, and is prone to heating during daylight hours and cooling at night in response to air temperature. Proper tailwater management is a factor in achieving compliance with the water quality objectives for temperature and temperature TMDLs.

A number of tailwater management practices are presented in the Non-Point Source (NPS) Program and the CDFW Coho Recovery Strategy. Practices include the reuse of tailwater, constructing off-stream retention ponds for evaporating and percolating tailwater through the ground, and a community based approach to managing tailwater among groups of water users.

Several large dams exist throughout the North Coast Region; additionally, there are several smaller impoundments – often termed “flashboard” dams – that are used to raise the water levels in streams to provide for diversion (either direct or pumping) primarily for agricultural use. Large and small scale impoundments can alter the thermal regime of a river system. Differences in heat loading due to impoundments can occur because of an increase in water surface area, providing a larger surface area over which energy transfer can occur. Larger air-water interface provides additional area for solar radiation to enter the system; however, the larger surface area also allows increased fetch (allowing more wind mixing) and potentially improved cooling due to evaporation. Probably a more important characteristic of the impoundment is the increased thermal mass, which leads to moderation of the diurnal temperature signal. Finally, impoundments generally increase river width and limit the ability of riparian shading to reduce incoming solar radiation. Similarly, the effect of topographic shading due to stream banks or bluffs is reduced when the river width is increased due to an impoundment. Therefore, addressing surface water impoundments is a major factor in achieving compliance with the water quality objectives for temperature and temperature TMDLs.

Compliance Measures for Tailwater and Surface Water Impoundments:

Structural compliance measures:

- Pond, embankment pond.
- Riparian buffer/filter strip, grassed waterway/bioswale.
- Lining of an irrigation channel.
- Installation of a pipeline in lieu of an uncovered channel.
- Install surface drainage field ditch to collect excess water.
- Minimize discharge from edge of fields.
- Construct tailwater management system.
 - Construction of a reservoir and pumping facilities.
- Land leveling to prevent discharge from field edges to surface waters.
- Construct off-stream retention ponds for evaporating and percolating tailwater.
- Control structures for irrigation.
- Micro-irrigation systems.
- Dam removal.
- Bypass flow structures.

Non-structural BMPs/compliance measures:

- Irrigation management plans to operate the irrigation system so that the timing and amount of irrigation water applied matches crop needs.

Potential Environmental Impacts Associated with Compliance Measures for Tailwater and Surface Water Impoundments

- Aesthetics – Potential glare from ponds or unsightly water facilities.
- Air quality – Short term construction-related emissions could include exhaust from construction equipment and fugitive dust from land clearing, earthmoving, movement of vehicles, and wind erosion of exposed soil during pond or embankment construction.
- Biological – Short term construction, stream dewatering or diversions, turbidity discharges from construction activities or in-stream dam removal. Loss of wetlands habitat from repair of leaky conveyance systems or alteration of irrigation practices. Switching from on-stream storage facilities to springs, seeps or groundwater as potential water sources could reduce the input of cold water and could result in impacts to areas of thermal refugia. Loss of critical habitat from sediment discharges. Loss of warm water habitat for non-native species.
- Cultural - Short term construction disturbance from earth moving or reservoir drawdowns. Construction or removal of recreational, water supply or hydroelectric facilities could result in long term adverse cultural or historical impacts.
- Geology/Soils – Poorly designed or operated irrigation facilities could result in short term and long term erosion. Water facility construction could result in soils compaction reducing soil moisture and biological functions.

- Water Quality –Increased risk of soil or groundwater contamination with concentrated minerals, salts, nutrients or persistent pesticides from the infiltration of irrigation water. Increased risk of soil erosion from soil disturbance. Work within and adjacent to waters increases the risk of leaking equipment or hazardous material spills, short term turbidity increases and/or discharges of settleable solids. The removal of dams could result in a short term violation of water quality standards as sediments and organic rich waters flow downstream. The removal of on-stream and off-stream storage facilities, dams, and construction of minimum bypass flow and fish passage structures could result in changes to hydrology in streams as well as short term violation of water quality standards. Switching from on-stream storage facilities to springs, seeps or groundwater as potential water sources could reduce the input of cold water and could result in impacts to areas of thermal refugia.
- Noise – Exposure to short term construction equipment, alternative water supply operations and maintenance.
- Transportation – Short term traffic increases associated construction projects and dam removals.
- Utilities and service systems –Dam removal could lead to short term interruptions in utilities such as gas, water, electricity, phone, etc. Dam removal could lead to a temporary decrease in available water supply.

The monitoring conducted will focus on the protocols that will aid in the compilation and assessment of data collected to verify effectiveness.

Potential Measures to Avoid, Minimize or Mitigate Impacts from Tailwater and Surface Water Impoundment Compliance Measures

- Aesthetics - Proper siting for facilities, constructing berms or excess freeboard around the perimeter of a pond, or planting vegetation along the perimeter of a pond.
- Air quality – Dust control, avoid days of poor air quality, monitor levels and cease work prior to exceeding standards, retrofit equipment, use low emissions vehicles when possible, schedule work to reduce the use of high emission vehicles.
- Biological – Consult with federal, state and local agencies regarding sensitive (e.g., threatened or endangered) wildlife resources. Implement non-structural BMPs such as scheduling, proper design and the removal of temporary BMPs for erosion and sediment controls after stabilization and or project completion. Developing species relocation plans or interpreting natural site vegetative conditions to include sensitive flora. Develop compensatory mitigation projects for aquatic ecosystem creation, restoration or enhancement.
- Cultural – Consult with Tribes, historical societies, federal, state and local agencies regarding location of cultural resources prior to use of heavy equipment in areas with known or suspected cultural resources. Projects subject to the jurisdiction of the Water Boards will be required to comply with Public Resource Code section 21159. This is expected to ensure that the

implementation of any necessary site specific actions to avoid, minimize and mitigate any impacts to historical, archaeological, and paleontological resources or site, or unique geologic features. All future actions must comply with the CEQA process and requirements for tribal consultation provided by Senate Bill 18 (SB 18) (State 2004, Ch 905) and Government Code section 65252.

- Geology/Soils – One of the core actions in the proposed policy as well as existing regulation is erosion and sediment control. All future actions subject to this proposed Basin Plan amendment must focus on the avoidance, minimization and mitigation of impacts related to unstable or sensitive geologic areas, soil erosion or the loss of topsoil. Typically an array of structural and non-structural compliance measures will be used in any future project as means to comply with this proposed Basin Plan amendment and existing regulations such as the Sediment Implementation Policy, WDRs and Waivers, NPDES permits, and 401 Certifications.
- Noise – Exposure to short term construction equipment, alternative water supply operations and maintenance.
- Water Quality – Plant native vegetation. Allow for the removal or thinning of upland vegetation that has high evapotranspiration rates and increases fire risks. Use precision (site specific) farming techniques; monitor chemical condition of soil, water, and plant residuals carefully prior to applying fertilizers, pesticides, or water, including tailwater. Leach soils within the root zone as necessary to prevent salt build up in that portion of the soil profile. Monitor ground water to ensure no salt (or other constituents) accumulate in ground water. Avoid introduction of storm water into tailwater system to prevent impacts to storm water. Maintain filter strips between fields and surface water to prevent discharge of tailwater directly into surface waters. Install surface drainage field ditch to collect excess water. Seek professional (e.g. Natural Resources Conservation Service, local resource conservation district, consultants, etc.) in developing land management plans and observational techniques to ensure efficient and effective water use. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream and groundwater quality and quality from structural compliance measures. Don't concentrate drainage such that toxic levels of constituents are discharge to waters.
- Transportation – Short term traffic increases associated dam removal.
- Utilities and service systems – Develop waste management plans for dam removal projects. Coordinate with prospective landfills regarding the estimated amount of waste generated by a proposed project and landfill capacity. Plan for and develop conservation and efficiency projects for water supply. Plan for and develop recycled water projects and aquifer storage and recovery (ASR) projects.

9.4.4 Analysis of Compliance Measures, Potential Environmental Impacts, and Potential Mitigation Measures Associated with Preserving Existing Cold Water Resources

The preservation of cold water resources is a critical component in the proposed Basin Plan amendment. Areas of thermal refugia in the North Coast Region are essential to the support of the cold water fishery because they moderate the impact of naturally elevated temperatures. Thermal refugia are typically identified as areas of cool water created by inflowing tributaries, springs, seeps upwelling hyporheic flow, and/or groundwater in an otherwise warm stream channel offering refuge habitat to cold-water fish and other cold water aquatic species (Watercourse, 2005). The refugia created by some tributaries are typically in the plumes and pools of cold water that form in the mainstems at the tributary confluence. Refugia also exist in some tributary streams themselves. The shape and extent of refugia are highly variable and are dependent on stream geomorphology, riparian canopy, sediment dynamics, and flow. Regional Water Board staffs recognize there are a number of factors that can cause seasonal and inter-annual changes in the existence, location, and size of the thermal refugia. Taken as a whole, these thermal refugia comprise a network of support for populations of cold water fishes and healthy aquatic ecosystem conditions. Their protection has become even more important with the abundance of impairments for temperature throughout the North Coast Region.

Compliance Measures Associated with Preserving Cold Water Resources:

- Avoid of areas of known thermal refugia during critical time for fish.
- Control of erosion and sediment discharges to areas of known thermal refugia.
- Remove fish passage barriers to areas of known thermal refugia.
- Conduct streambank restoration and riparian revegetation to areas of known thermal refugia.
- Construct riparian fencing to preserve areas of known thermal refugia
- Modify and/or remove on-stream storage facilities and dams which influence identified cold water resources.
- Construct new or modify off-stream storage facilities to replace on-stream facilities affecting cold water resources.
- Install and operate groundwater wells at a location with little or no influence over the flows associated with a cold water resource.
- Modify the operation and timing of groundwater, surface water, or riparian right water extraction.
- Rely on alternative water sources and conservation efforts.
- Construct and/or modify water transfer, irrigation and/or irrigation water management facilities to improve water use efficiency.
- Enhanced aquifer recharge (i.e., ASR).

Potential Environmental Impacts Associated with Preserving Cold Water Resources

- Aesthetics – Construction activities could have short term aesthetic impacts while sitting for water facility locations could degrade or impede scenic views in the long term.
- Agricultural Resources – Potential conflict with or conversion of prime agricultural land or land subject to the Williamson Act from implementing riparian buffers.
- Air Quality – Construction could increase short term exhaust and particulate matter. Alternative water supplies or increased pumping could result in long term increase in greenhouse gases.
- Biological Resources – Construction or removal of in-stream facilities could result in short term disturbances of wetlands, special status species and sensitive natural areas. Reduction in surface flows through groundwater extraction or increased reliance on riparian rights could degrade riparian habitat. Switching from on-stream storage facilities to springs, seeps or groundwater as potential water sources could reduce the input of cold water and could results in impacts to areas of thermal refugia.
- Cultural Resources – Short term construction disturbance from earth moving or reservoir drawdowns, stream and/or riparian restoration could cause adverse impacts to cultural or historical resources. Construction or removal of recreational, water supply or hydroelectric facilities could result in long term adverse cultural or historical impacts.
- Geology/Soils – Construction activities or poorly designed facilities could results in short term and long term erosion, and could results in soil compaction, reduced soil moisture, and reduced biological productivity within soils.
- Hazards and Hazardous Materials – Construction activities could result in the increase in hazardous materials used in construction, and in the operation and maintenance of new or expanded facilities.
- Hydrology / Water Quality – Excessive use of rip-rap or stream stabilization structures intended to beneficially affect flow could alter conditions downstream. Work within and adjacent to waters increases the risk of leaking equipment or hazardous material spills, short term turbidity increases and/or discharges of settleable solids. Decrease stream flows and/or aquifer storage from dust abatement. Alterations of natural hydrology and increases in stream temperatures by concentrating or redirecting road runoff or diverting stream during construction. Increased risk of erosion and sedimentation from the construction of stream crossings, and riparian fencing.
- Land Use/Planning – Reliance on alternative water sources, water conservation efforts, and preservation of areas of known thermal refugia could have a conflict with local plans or ordinances that call for an increase through various water supply and/or development projects. Municipal, domestic, agricultural and industrial water supply could be impacted by certain restrictions on the extraction of water from riparian areas or areas of

- known thermal refugia. Construction or expansion of off-stream water storage facilities could conflict with local plans or ordinances.
- Mineral Resources – The construction or expansion of a water storage facility could reduce the ability to access mineral resources in the project footprint.
 - Noise – Construction, modification or removal of facilities for the purpose of groundwater or surface water extraction, energy supply and/or recreation could result in short term and long term impacts from noise.
 - Population and Housing – Water conservation and/or reliance on alternative water sources could have an impact on housing development or existing housing populations. Moving to reliance on larger water suppliers could increase their demand and thus lead to an increased level of water extraction in specific locations.
 - Recreation - Dams (for whatever purpose – hydropower, summer recreation, and drinking water extraction) could be removed to achieve flows needed to comply with temperature objectives reducing the area of water available for recreating. If dam removal is selected as a compliance measure swimming and boating (lake skiing and whitewater boating) could be adversely affected. In addition, recreational facilities such as campgrounds and boat launches would be removed if full or partial removal of the dams is selected as a compliance measure. Additionally, recreational fishing for introduced species would be lost after dam removal eliminated their habitat and conditions favored native species.
 - Transportation and Traffic – Compliance measures that require construction activities could result in traffic delays. A reduction in water resource availability could lead to agricultural land conversion, which in turn could lead to increased development and traffic.
 - Utilities/Service Systems – Compliance measures that require construction or demolition of facilities could result in short term interruption of utilities. Hydroelectric dam removal could create a local or regional shift in power supply services. Water conservation and/or reliance on alternative water sources could have an impact on municipal water supply.

Possible Mitigation Measures Associated with Preserving of Cold Water Resources Compliance Measures

- Aesthetics – Proper siting, constructing berms or excess freeboard around the perimeter of a pond, or planting vegetation along the perimeter of a pond.
- Agricultural Resources – Implement structural and non-structural water irrigation water management, irrigation pipelines, conservation cover, cover crop, pond sealing or lining, field borders, stream buffers, roof runoff capture structures, and culverts for water conveyance. Coordination between project proponents, Regional Water Board staff, Division of Water Rights, other local state and federal agencies to achieve mutually beneficial solutions that ensure the preservation of agricultural lands and cold water resources.
- Air Quality – Air monitoring, dust control BMPs, design water retention BMP structures to drain in 72 hours to prevent vectors and odors, equipment

timing, wind barriers, aggregate cover, multi-year crop, and residue management.

- Biological Resources – Consult with USFWS, CDFW, and NMFS, erosion and sediment control BMPs, waste management BMPS, biological monitors, work-windows, vegetated stream buffers, critical habitat/species identification surveys, water diversion fish screens, velocity dissipaters, and water drafting protocols.
- Geology/Soils – One of the core actions in the proposed policy, as well as existing regulation, is erosion and sediment control. All future actions subject to this proposed Basin Plan amendment must focus on the avoidance, minimization and mitigation of impacts related to unstable or sensitive geologic areas, soil erosion or the loss of topsoil. Typically, an array of structural and non-structural BMPs will be used in any future project as the means to comply with this proposed Basin Plan amendment and existing regulations such as the Sediment Implementation Policy, WDRs and Waivers, NPDES permits, and 401 Certifications.
- Hazards and Hazardous Materials – Develop pollution prevention plans incorporating structural and non-structural waste handling, storage and management BMPs including, but not limited to water tight containers, spill kits, and appropriate material labels.
- Hydrology / Water Quality – In general, the combination of several structural and non-structural compliance measures/BMPs can be used to mitigate impacts to water quality. Use sediment, erosion, spill prevention, and waste management BMPs during construction and vegetation thinning activities. For example scheduling, straw, seed, silt fence, straw waddle, straw bales, drip protection, vehicle cleaning and maintenance, and site inspections. Install and maintain erosion control measures (e.g. waterbars, rolling dips, mulch, rock rip-rap) to prevent discharge of excess sediment from soil disturbing activities. Use off-channel water collection features for dust abatement purposes. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream from structural compliance measures.
- Land Use/Planning – Consult with local, state and federal agencies for guidance and recommendations.
- Transportation – Through the existing project planning, CEQA process, interagency coordination and existing regulation (NPDES storm water permits and 401 Certifications) potential conflicts are resolved by avoidance, minimization, or off-site compensatory mitigation.
- Utilities and service systems – Develop management plans for water conservation and water efficiency projects (i.e., ASR).

9.4.5 Analysis of Compliance Measures, Potential Environmental Impacts, and Potential Mitigation Measures Associated with Aquatic Ecosystem Restoration to Address Stream Temperatures

Generally aquatic ecosystem restoration actions are planned, designed and implemented in ways to best reduce environmental impacts. While there are potential short term impacts associated with these types of compliance measures they are generally beneficial for the environment in the long term and can be implemented without any adverse environmental impacts. For example there is a categorical exemption within the CEQA guidelines that allow for small habitat restoration projects²⁷.

Compliance Measures Associated with Aquatic Ecosystem Restoration to Address Stream Temperatures

- Stabilize stream crossings to provide controlled access across a stream for livestock and farm machinery.
- Stream or river bank revegetation to increase shade in accordance with site potential.
- In-stream gravel augmentation.
- Large woody debris/habitat enhancement projects.
- Stream or river bank stabilization with native vegetation or other bioengineering techniques, the primary purpose of which is to reduce or eliminate erosion and sedimentation and support site potential shade.
- Culvert replacement conducted in accordance with published guidelines of the Department of Fish and Wildlife or National Marine Fisheries, the primary purpose of which is to improve habitat, provide shade, reduce sedimentation, or provide access to areas of thermal refugia.

Potential Environmental Impacts Associated with Aquatic Ecosystem Restoration to Address Stream Temperatures

- Aesthetics - Decrease scenic views of waterbodies through the retention of vegetation.
- Air quality – Short term construction-related emissions could include exhaust from construction equipment and fugitive dust from land clearing, earthmoving, movement of vehicles, and wind erosion of exposed soil during reservoir construction or removal, stream and/or riparian restoration.
- Agriculture - Potential conflict with or conversion of prime agricultural land or land subject to the Williamson Act from implementing grazing restrictions.
- Biological Resources - Risk of introducing invasive species thorough pasture, hay and rangeland planting and management. Short term construction, stream dewatering or diversions, turbidity discharges from construction activities or in-stream dam removal, stream and/or riparian restoration.
- Cultural - Short term construction disturbance from earth moving.

²⁷ Cal. Pub. Resources Code, § 21083 & 21084

- Hydrology/water quality – Reduction in stream flows due to the increase in evapotranspiration from increased riparian tree retention. Temporary sediment discharges from construction and/or restoration activities. Excessive use of rip-rap or stream stabilization structures intended to beneficially affect flow could alter conditions downstream. Work within and adjacent to waters increases the risk of leaking equipment or hazardous material spills, short term turbidity increases and/or discharges of settleable solids. Decrease stream flows and/or aquifer storage from dust abatement.
- Mineral resources - Decreased access for gravel, gold or other mineral extraction activities.
- Noise – Exposure to short term construction equipment, alternative water supply operations and maintenance.
- Public Services – Restoration or construction activities within parks that have streams or landslides adjacent to streams.
- Transportation/traffic – Increased tree retention may conflict with transportation agencies (public roads) site distance requirements and areas designated as clear recovery zones. Short term traffic increases associated with sediment reduction project, construction projects, dam removal, stream and/or riparian restoration.

Possible Mitigation Measures for Impacts Associated with Compliance Measures to Restore Aquatic Ecosystems

- Air quality – Dust control, avoid days of poor air quality, monitor levels and cease work prior to exceeding standards, retrofit equipment, use low emissions vehicles when possible, schedule work to reduce the use of high emission vehicles.
- Agriculture - Coordination between project proponents, Regional Water Board staff and other local, state and federal agencies to achieve restoration goals and attempt to ensure the preservation of agricultural lands.
- Biological Resources - Consult with federal, state and local agencies regarding location of sensitive (e.g., threatened or endangered) wildlife resources. Select appropriate or alternate structural BMPs such as bio-degradable, synthetic free or earthen material BMPs. Implement non-structural BMPs such as scheduling, proper design and the removal of temporary BMPs for erosion and sediment controls after stabilization and or project completion. Developing species relocation plans or interpreting natural site vegetative conditions to include sensitive flora.
- Cultural – Consult with Tribes, historical societies, federal, state and local agencies regarding location of cultural resources prior to use of heavy equipment in areas with known or suspected cultural resources. Projects subject to the jurisdiction of the Water Boards will be required to comply with Public Resource Code section 21159. This is expected to ensure the implementation of necessary site specific actions to avoid, minimize and mitigate any impacts to historical, archaeological, and paleontological resources or site, or unique geologic features. All future actions must comply

with the CEQA process and requirements for tribal consultation provided by Senate Bill 18 (SB 18) (State 2004, Ch 905) and Government Code section 65252.

- **Geology/Soils** – One of the core actions in the proposed policy, as well as existing regulation, is erosion and sediment control. All future actions subject to this proposed Basin Plan amendment must focus on the avoidance, minimization and mitigation of impacts related to unstable or sensitive geologic areas, soil erosion or the loss of topsoil. Typically, an array of structural and non-structural BMPs will be used in any future project as the means to comply with this proposed Basin Plan amendment and existing regulations such as the Sediment Implementation Policy, WDRs and Waivers, NPDES permits, and 401 Certifications.
- **Water Quality** – Plant native vegetation that has evolved with the natural environment. Use sediment, erosion, spill prevention, and waste management BMPs during construction and vegetation thinning activities. For example scheduling, straw, seed, silt fence, straw waddle, straw bales, drip protection, vehicle cleaning and maintenance, and site inspections. Install and maintain erosion control measures (e.g. waterbars, rolling dips, mulch, rock rip-rap) to prevent discharge of excess sediment from soil disturbing activities. Relocate roads away from unstable and landslide prone terrain. Use off-channel water collection features for dust abatement purposes. Install adequate number/type of road drainage features to prevent concentration of road runoff. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream from structural compliance measures.
- **Transportation** – Through the existing project planning, CEQA process, interagency coordination and existing regulation (NPDES storm water permits and 401 Certifications) potential conflicts are resolved by avoidance, minimization, or off-site compensatory mitigation.

9.4.6 Analysis of Compliance Measures, Potential Environmental Impacts, and Potential Mitigation Measures to Restore and Maintain Stream Flows that Support Beneficial Uses

Coordination with the State Water Board is ongoing. The Regional Water Board participates in the appropriate water right permitting and water quality certification (pursuant to section 401 of the Clean Water Act) processes associated with water rights. Potential projects that require 401 certifications (e.g. Federal Energy Regulatory Commission-Licensing Projects) and/or water rights permits will be subject to the CEQA process and must provide additional project-level analysis. The majority of the foreseeable compliance measures associated with the actions referenced above address dams (hydropower, seasonal, and recreation and drinking water supply) and surface water allocations.

Compliance Measures to Restore and Maintain Stream Flows that Support Beneficial Uses

- Construct, modify and/or remove on-stream storage facilities and dams.
- Construct new or modify off-stream storage facilities.
- Install and operate groundwater wells.
- Modify the operation and timing of groundwater, surface water, or riparian right water extraction.
- Rely on alternative water sources and conservation efforts.
- Construct and/or modify water transfer, irrigation and/or irrigation water management facilities.
- Enhanced infiltration of groundwater (i.e., ASR)

Potential Environmental Impacts of Compliance Measures to Restore and Maintain Stream Flows that Support Beneficial Uses

- Aesthetics – Construction activities could have short term aesthetic impacts while sitting for water facility locations could degrade or impede scenic views in the long term.
- Agricultural Resources – Switching from surface water diversions to groundwater pumping could lower water table, reduce soil moisture, contribute to land subsidence and reduce aquifer storage capability. Regulation on water use could lead to the conversion of agricultural lands.
- Air Quality – Construction could increase short term exhaust and particulate matter. Alternative water supplies or increased pumping could result in long term increase in greenhouse gases.
- Biological Resources – Construction or removal of in-stream facilities could result in short term disturbances of wetlands, special status species and sensitive natural areas. Reduction in surface flows through groundwater extraction or increased reliance on riparian rights could degrade riparian habitat. Switching from on-stream storage facilities to springs, seeps or groundwater as potential water sources could reduce the input of cold water and could results in impacts to areas of thermal refugia.
- Cultural Resources – Short term construction disturbance from earth moving or reservoir drawdowns, stream and/or riparian restoration could cause adverse impacts to cultural or historical resources. Construction or removal of recreational, water supply or hydroelectric facilities could result in long term adverse cultural or historical impacts.
- Geology/Soils – Construction activities or poorly designed facilities could resulting in short term and long term erosion, and could results in soil compaction, reduced soil moisture, and reduced biological productivity within soils.
- Hazards and Hazardous Materials – The increased use of groundwater and construction of water supply facilities could result in the increase in hazardous materials used in construction, and in the operation and maintenance of new or expanded facilities.

- Hydrology / Water Quality – Short term construction and poorly designed facilities could lead to erosion, sedimentation or hazardous materials discharges. The increase in groundwater extraction could reduce surface water flows and result in increased pollutant concentration due to less dilution. The removal of dams could result in a short term violation of water quality standards as sediments and organic rich waters flow downstream. The removal of on-stream and off-stream storage facilities, dams, and construction of minimum bypass flow and fish passage structures could result in changes to hydrology in streams as well as short term violation of water quality standards. Switching from on-stream storage facilities to springs, seeps or groundwater as potential water sources could reduce the input of cold water and could result in impacts to areas of thermal refugia.
- Land Use/Planning – Increased riparian water rights use as a result of the policy may result in impacts on local plans to increase surface and groundwater extraction. Reliance on alternative water sources could have a conflict with local plans or ordinances. Construction or expansion of off-stream water storage facilities could conflict with local plans or ordinances.
- Mineral Resources – The construction or expansion of a water storage facility could reduce the ability to access mineral resources in the project footprint.
- Noise – Construction, modification or removal of facilities for the purpose of groundwater or surface water extraction, energy supply and/or recreation could result in short term and long term impacts from noise.
- Population and Housing – Water conservation and/or reliance on alternative water sources could have an impact on housing development or existing housing populations. Moving to reliance on larger water suppliers could increase their demand and thus lead to an increased level of extraction in specific locations.
- Recreation - Dams (for whatever purpose – hydropower, summer recreation, and drinking water extraction) could be removed to achieve flows needed to comply with temperature objectives reducing the area of water available for recreating. If dam removal is selected as a compliance measure, swimming and boating (lake skiing and whitewater boating) could be adversely affected. In addition, recreational facilities such as campgrounds and boat launches would be removed if full or partial removal of the dams is selected as a compliance measure. Additionally, recreational fishing for introduced species would be lost after dam removal eliminated their habitat and conditions favored native species.
- Transportation and Traffic – Compliance measures that require construction activities could result in traffic delays.
- Utilities/Service Systems – Compliance measures that require construction or demolition of facilities could result in short term interruption of utilities. Hydroelectric dam removal could create a local or regional shift in power supply services.

Potential Measures to Avoid, Minimize or Mitigate Impacts from Compliance Measures to Preserve Adequate Stream Flows

- Aesthetics – Proper siting, constructing berms or excess freeboard around the perimeter of a pond, or planting vegetation along the perimeter of a pond.
- Agricultural Resources – Implement structural and non-structural water irrigation water management, irrigation pipelines, conservation cover, cover crop, pond sealing or lining, field borders, stream buffers, roof runoff capture structures, and culverts for water conveyance.
- Air Quality – Air monitoring, dust control BMPs, design water retention BMP structures to drain in 72 hours to prevent vectors and odors, equipment timing, wind barriers, aggregate cover, multi-year crop, and residue management.
- Biological Resources – Consult with USFWS, CDFW, and NMFS, erosion and sediment control BMPs, waste management BMPS, biological monitors, work-windows, vegetated stream buffers, critical habitat/species identification surveys, water diversion fish screens, velocity dissipaters, and water drafting protocols.
- Geology/Soils – One of the core actions in the proposed policy, as well as existing regulation, is erosion and sediment control. All future actions subject to this proposed Basin Plan amendment must focus on the avoidance, minimization and mitigation of impacts related to unstable or sensitive geologic areas, soil erosion or the loss of topsoil. Typically, an array of structural and non-structural BMPs will be used in any future project as the means to comply with this proposed Basin Plan amendment and existing regulations such as the Sediment Implementation Policy, WDRs and Waivers, NPDES permits, and 401 Certifications.
- Hazards and Hazardous Materials – Develop pollution prevention plans incorporating structural and non-structural waste handling, storage and management BMPs including, but not limited to water tight containers, spill kits, and appropriate material labels.
- Hydrology / Water Quality – See compliance measures throughout this SED. In general, the combination of several structural and non-structural compliance measures/BMPs can be used to mitigate impacts to water quality.
- Land Use/Planning – Consult with agencies for guidance and recommendations.
- Transportation – Through the existing project planning, CEQA process, interagency coordination and existing regulation (NPDES storm water permits and 401 Certifications) potential conflicts are resolved by avoidance, minimization, or off-site compensatory mitigation.
- Utilities and service systems – Develop management plans for waste handling. Water conservation and water efficiency projects. Aquifer storage and recovery (ASR).

9.5 Discussion of Potential Environmental Impacts

Potential impacts of the reasonably foreseeable compliance measures were evaluated with respect to earth, air, water, plant life, animal life, noise, light, land use, natural resources, risk of upset, population, housing, transportation, public services, energy, utilities and services systems, human health, aesthetics, recreation, and archeological/historical concerns. Additionally, mandatory findings of significance regarding short-term, long-term, cumulative and substantial impacts were evaluated.

9.5.1 Thresholds of Significance

A significant effect on the environment is defined in statute as “*a substantial, or potentially substantial, adverse change in the environment*” where “*Environment*” is defined by Public Resources Code section 21060.5 as “*the physical conditions which exist within the area which will be affected by a proposed project, including air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance.*”²⁸

Social or economic changes related to a physical change of the environment were also considered in determining whether there would be a significant effect on the environment. However, adverse social and economic impacts alone are not significant effects on the environment. A more detailed analysis of the range of costs of compliance measures, and potential funding sources is discussed in Chapter 10.

In this analysis, the level of significance was based on baseline or current conditions. Short-term impacts associated with the construction of compliance measures with the exception of dam decommissioning activities) were considered less than significant with mitigation because the impacts due to construction activities are temporary and similar to typical capital improvement projects and maintenance activities currently performed throughout the region. Because of this, where it is uncertain whether the potential impacts could be mitigated to levels of insignificance, the Regional Water Board acted conservatively and concluded in this analysis that potential compliance measures would result in a potentially significant impacts.

When assessing the significance of impact- related implementation of the proposed Basin Plan amendment it is imperative to distinguish the level of mitigation possible under a proposed project versus a proposed policy. A complex policy could lead to several potential outcomes that are much more difficult to predict as compared to a complicated project at one place in time that has many moving parts, but none the less has a quantifiable impact on the environment. Additionally, the inclusion of mitigation measures within the adoption of a policy or action plan has the same level of potential as does the impact itself. For example, a potential mitigation measure to address air quality impacts as a result of a compliance measure designed to comply with Temperature Implementation Policy or Action Plans is not directly

²⁸ Pub. Resources Code §21068

enforceable by the Regional Water Board and therefore is deferred mitigation that can only be addressed and implemented at the project level.

The evaluation considered whether the construction or implementation of compliance measures would cause a substantial, adverse change in any of the physical conditions within the area affected by the measure. In addition, the evaluation considered environmental effects in proportion to their severity and probability of occurrence.

9.5.2 Environmental Checklist

1. Project title:

Proposed Amendment to the Water Quality Control Plan for the North Coast Region to add the Policy for the Implementation of the Water Quality Objectives for Temperature and Action Plans to Address Water Temperature Impairments in the Mattole, Navarro, and Eel River Watersheds.

2. Lead agency name and address:

North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

3. Contact person and phone number:

Matt St John (707) 576-3762

4. Project location:

The project would be applicable to the area under the jurisdiction of the North Coast Regional Water Quality Control Board.

5. Description of the project: See section 9.2.1.

I. AESTHETICS -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		X		
c) Substantially degrade the				

existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		X		

AESTHETICS a) and c): Less Than Significant

Discussion: Compliance measures such as planting trees and/or retaining trees are generally regarded as positive aesthetics. Scenic vistas usually include well vegetated areas. In some cases the planting or retention of large woody vegetation could reduce visibility to and adjacent water body; however, vegetation also provides habitat for wildlife and is known to enhance water quality which would improve the overall landscape. Compliance measures such as riparian restoration, modifications to water supply and water storage practices in agricultural lands, and erosion and sediment control measures may modify the appearance of an area; however, these measures are not likely to result in the elimination of agricultural occupations thereby eliminating areas of open space. Therefore, impacts to scenic vistas are considered less than significant.

AESTHETICS b) and d): Less Than Significant with Mitigation Incorporated

Compliance measures such as the preservation of large woody vegetation could lead to an increase fuel load for wildfires which could then impact scenic areas. Fire impacts on riparian zones vary proportionally with the severity and extent of burning in the catchment and are affected by stream size. Riparian zones can act as a buffer against fire and therefore as a refuge for fire-sensitive species. However, under some circumstances, such as dry pre-fire climatic conditions and the accumulation of dry fuel, riparian can areas become corridors for fire movement. Fire incursion into riparian zones creates canopy gaps and drier conditions, which allow subsequent buildup of dead wood and establishment of fire adapted species. In concert, this increases fuel loads and the probability of another fire. Secondary effects of riparian fire include altering nutrient fluxes and cycling, increasing sediment loads, and stimulating erosion. Riparian fires are potentially important in shaping ecological characteristics in many regions, but this is poorly quantified. A better understanding of riparian fire regimes is essential to assess the effects of fire in helping shape the complex ecological characteristics of riparian zones over the longer-term. (Pettit, N. E., and R. J. Naiman. 2007) Based on the evidence and nature of forest fires this appears to be a less than significant impact on the environment, if mitigated with proper fuel management. For example, the thinning of understory vegetation and select harvest prescriptions can decrease the fuel load while concurrently preserving and restoring shade along water courses. Additionally,

firebreaks can be used in upland and riparian areas that do not affect water temperatures to ensure strategic defense against wildfires.

A compliance measure that required land disturbance, such as the construction of a settling basin or a riparian fence, may include minor surface soil excavation or grading during construction, which could result in increased disturbance of the soil. If, however, scenic resources were identified at the site, they would be avoided, and standard construction techniques and erosion and sediment control practices would require revegetation and would not result in permanent damage to scenic resources.

Neither the structural nor the non-structural compliance measures would be expected to degrade the existing visual character or quality of a site and its surroundings with the application of appropriate mitigation measures. Although implementation of structural BMPs could result in some change in visual character or ground surface relief features, most of the compliance measures identified as part of the environmental analysis are of relatively small scale, such as installation of road drainage features, riparian planting, riparian fencing, or small scale water diversion systems. Likely, changes to the visual character or quality of the site and its surroundings will not be noticeable.

The larger scale projects, such as dam decommissioning, road decommissioning on USFS land, or construction of an off stream water storage facility could potentially impact aesthetic resources. Visual impacts associated with dam decommissioning can be addressed through the decommissioning plan by including mitigation measures such as early establishment of native vegetation (grass, forbes and trees) on exposed surfaces.

The construction of an off stream storage facility (i.e., pond) could be expected to occasionally create a new source of substantial glare. Mitigation measures to reduce the significance include proper siting, constructing berms or excess freeboard around the perimeter of a pond, or planting vegetation along the perimeter of a pond.

II. AGRICULTURE AND FOREST RESOURCES:

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources

Boards. Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	X			
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	X			
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to nonforest use?	X			

AGRICULTURE AND FOREST RESOURCES: a), b) and e) Potentially Significant and Unavoidable

Discussion: Compliance measures such as riparian buffers could cause incidental loss of agricultural use in lands mapped as Prime Farmland, Unique Farmland or

Farmland of Statewide Importance. These losses on a regionwide basis would only affect a very narrow band of land on either side of the watercourse, and as derived from the readily accessible information from the Farmland Mapping and Monitoring Program the U.S. Department of Agriculture National Agriculture Statistics Service it is estimated that no more than 5% of the North Coast Region is mapped as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. Additionally, some areas that are mapped as prime, unique or important may comply with the proposed Basin Plan amendment while others may not. Although there are many factors that affect this determination, it can be assumed that agricultural lands that implement new riparian protection actions or compliance measures to mitigate elevated stream temperatures could be taking land out of production. While avoidance and minimization measures can be used to lessen impacts, there is no mitigation for loss of land; therefore, this is potentially significant and unavoidable impact.

AGRICULTURE AND FOREST RESOURCES: c) and d) No Impact

Discussion: No elements of the proposed Basin Plan amendment will rezone or force the rezoning of Timberlands Production or result in the conversion of forested land to non-forested land. In short, the anticipated compliance measures for timberlands is to retain more forested areas along streams and therefore has no impact on the classification of conversion of timberlands.

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing	X			

emissions which exceed quantitative thresholds for ozone precursors)?				
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?		X		

AIR QUALITY: a) and d) No Impact.

Discussion: Compliance measures would not result in any conflicts with or obstruction to the implementation of the applicable air quality plan or expose sensitive receptors to substantial pollutant concentrations.

AIR QUALITY: b) and c) Potentially Significant and Unavoidable.

Discussion: Excluding the issue of Klamath dam removal, the policy is anticipated to have a beneficial effect on the environment, greenhouse gas (GHG) emissions and climate change. Further, actions such as riparian preservation and restoration will sequester carbon from the atmosphere through plant photosynthesis. In addition, trapping soils through erosion and sediment control will reduce GHGs when carbon is locked up in trapped sediments, as well as living vegetation. Therefore, it is staff’s judgment that the overall long term benefits of the proposed Basin Plan amendment will aid in the reduction of GHGs and help provide resilience in the condition of North Coast watersheds and water resources as we face the uncertainty of climate change.

Compliance measures could result in the generation of fugitive dust and particulate matter during construction or maintenance activities, which could temporarily impact ambient air quality. Any such impacts would be temporary, and would be controlled with standard construction operations, such as the use of moisture to reduce the transfer of particulates and dust to air and conducting operations when the air quality in the basin is good (i.e. no catastrophic wildfires). The emissions of air pollutants during the construction of facilities for compliance are unlikely to have an effect on ambient air quality.

Implementation of compliance measures that require the use of heavy equipment, such as dam decommissioning, construction of settling basins, road drainage installation or re-contouring of existing road prisms, could result in vehicle emissions during construction. However, these impacts would be short-term, and would not result in conflicts with, or obstruction of the implementation of the applicable air quality plan. Air quality impacts associated with heavy equipment used to modify or remove on-stream or off-stream storage facilities or implement

other structural compliance measures such as those could be potentially significant, but they would be limited to those resulting from short-term construction activities.

Large scale dam removal (demolition) and other large-scale restoration activities are reasonably foreseeable compliance measure that could result in the short term violation of local air quality standards, and therefore pose a potentially significant impact. Compliance measures such as erosion control, reservoir reseeding and riparian planting are not likely to result in a violation of air quality standards; however, the fine particulate matter and vehicle emissions from dam removal activities could exceed established thresholds and as a result would be considered a potentially significant impact and unavoidable.

AIR QUALITY: e) Less Than Significant with Mitigation

Discussion: The majority of compliance measures would not be expected to result in objectionable odors affecting a substantial number of people.

Compliance measures may result in objectionable odors in the short-term due to exhaust from construction equipment and vehicles. Certain structural compliance measures, such as detention basins, could become a source of objectionable odors if designs allow for water stagnation or collection of water with sulfur-containing compounds. This could also be the case if anaerobic sediment is exposed to the air as a result of dam removal operations. The application of mitigation measures designed to offset the number of people impacted will likely decrease this to a less than significant effect. Any odors would be very short-lived.

Dischargers and other responsible parties will likely be required to monitor the implementation of compliance measures to ensure they are working correctly. If odors were occurring from implementation of a settling or filtration basin, mitigation measures, such as proper design to eliminate standing water, covers, aeration, filters, barriers, and/or odor suppressing chemical additives, would be required. Compliance measures that could result in stagnant water should be inspected regularly to ensure that treatment devices are not clogged, pooling water, odorous, or mosquito vectors.

IV. BIOLOGICAL RESOURCES -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate,		X		

sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			X	

BIOLOGICAL RESOURCES: a) Less Than Significant with Mitigation Incorporation

Discussion: Compliance measures may have a potential impact upon species identified as a candidate, sensitive, or special status species in local or regional plan, policies or regulations or by the CDFW or USFWS if they occur in an area where such species are located.

Riparian and wetland communities have been greatly reduced in size within California with wetland losses of up to 91 percent by estimation of the US Fish and Wildlife Service (USFWS). Thus, such habitats within the region are very important to the many species they support. Special-status species are vulnerable to any habitat loss or degradation. The ability to move to other habitat through wildlife corridors is vital to many terrestrial species. Modification of existing terrestrial habitat in the project area, especially limited riparian and wetland habitat, would have the potential to cause adverse effects.

Compliance measures could potentially have an impact if they are implemented in sensitive areas or areas of critical habitat. When installing structural compliance measures that involve substantial earth moving or riparian restoration activities that have the potential to affect candidate, sensitive, or special status species, project proponents are required to consult with federal, state and local agencies, including but not limited to the county, CDFW and the USFWS. Project proponents must ensure project actions avoid, minimize and/or mitigate for impacts to rare, threatened or endangered species.

Disturbances associated with dam demolition or haul roads where clearing, grading, and staging of equipment occurs could have impacts on sensitive habitats, including wetlands and riparian habitats along reservoirs and river reaches. Heavy machinery traversing wetland and riparian areas could change local topography and destroy wetland and riparian vegetation, and could introduce hazardous materials that would adversely affect water quality in wetland and riparian areas.

Once a project plan is prepared and construction areas are delineated, measures would be implemented prior to and during construction to avoid and mitigate impacts to sensitive vegetation communities such as wetlands. During project level construction activities to implement compliance measures, both structural and non-structural compliance measures can be implemented to avoid, minimize or mitigate potentially significant impacts to sensitive species.

For example, wetlands within 100 feet of any ground disturbance and construction-related activities (including staging and access roads) would be clearly marked and/or fenced to avoid impacts from construction equipment and vehicles. If new, temporary access roads are required, grading would be conducted such that existing hydrology would be maintained. In addition, water pollution control measures such as erosion control, sediment control, and waste management would be implemented

to avoid and minimize potential water quality impacts from polluted storm water runoff to streams, wetlands and riparian areas. Another example of avoidance or minimization includes work window restriction on stream restoration activities for the protection of several aquatic species. Additionally, aquatic ecosystem creation, restoration or enhancement projects are often designed to provide compensatory mitigation for impacts that cannot be avoided or minimized. See section 9.4 for more detail on potential compliance measures that can also be implemented as mitigation measures to reduce impacts to biological resources.

Stream restoration actions to reduce erosion, remove sediment, and improve habitat or riparian restoration actions to increase shade may conflict with the requirements of certain flora or fauna. Specific examples include low lying flora that would be out competed in the riparian zone by taller shade producing trees. In most cases impacts could be avoided by adjusting the timing and/or location of the actions to take into account candidate, sensitive, or special status species or their habitats. Additionally, the Temperature Policy and Actions Plans rely on site potential conditions and case-by-case determinations for implementation. Therefore, conflicts between the proposed Temperature Implementation Policy/Action Plans and particular species would be resolved at the project level. Mitigation measures would include collaboration between water board staff and CDFW and USFWS staff to reach agreement on the most sensitive beneficial use.

Substantial adverse effects either directly or through habitat modification, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are less than significant with mitigation.

BIOLOGICAL RESOURCES: b) Less Than Significant with Mitigation Incorporation

Discussion: Substantial long term adverse effects on any riparian habitat or other sensitive natural community are not expected because the proposed Policy and Action Plan requires protection of riparian areas, reduction of anthropogenic sources of sediment, and recommendations to allocate water rights in a manner that support all beneficial uses. However, the implementation of various compliance measures has the potential to result in short term adverse effects.

For example, according to one of the dam decommissioning studies for the Klamath River hydroelectric facilities, approximately 480 acres of riparian area surrounding the three reservoirs could be lost through dam removal. If wetland construction, watershed-wide riparian protection and replanting, and re-vegetation of the exposed reservoir surfaces are applied as mitigation measures, the impact from the loss of riparian habitat from these sites will likely be less than significant (Klamath EIS/EIR, 2012).

Compliance measures that may not have an impact when implemented in one area could potentially have an impact if they are implemented in a sensitive area. Therefore, when installing structural BMPs that may include substantial earth moving or other alteration to riparian habitat, riparian habitat or other sensitive natural communities should be avoided. Because of these mitigation requirements, substantial adverse effects are not expected to occur either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

As a result of the Temperature Policy, there could be an increase in riparian diversion of surface water and groundwater if water users choose to utilize riparian basis of right in addition to or in lieu of utilizing an appropriative water right. Increased riparian diversion could reduce surface water flows in the spring and summer, which are critical periods for fish habitat.

Although riparian water rights do not require the State Water Board's approval, the State Water Board has the authority to regulate riparian rights under the reasonable use doctrine. A particular water use or method of diversion may be determined to be unreasonable based on its impact on fish, wildlife, or other instream beneficial uses. (*Environmental Defense Fund, Inc. v. East Bay Municipal Utility District* (1980) 26 Cal.3d 183 [161 Cal.Rptr. 466].)

The State Water Board also has an affirmative duty to take the public trust into account in the planning and allocation of water resources. The purpose of the public trust doctrine is to protect navigation, fishing, recreation, environmental values, and fish and wildlife habitat. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419, 434-435 [189 Cal.Rptr. 346].) Under the public trust doctrine, the State retains supervisory control over the navigable waters of the state and the lands underlying those waters. (*Id.* at p. 445.) In applying the public trust doctrine, the State Water Board has the power to reconsider past water allocations even if the State Water Board considered public trust impacts in its original water allocation decision. Thus, the State Water Board may exercise its authority under the doctrines of reasonable use and the public trust to address reduced instream flows in the policy area and adverse effects to fish, wildlife, or other instream beneficial uses due to riparian diversions.

The potential impacts are less than significant with mitigation incorporated.

BIOLOGICAL RESOURCES: c) Less Than Significant with Mitigation Incorporated

Discussion: All activities in federally protected wetlands, except those statutory exemption like agricultural, require the responsible party to obtain a Clean Water Act (CWA) Section 404 permit from the Army Corps of Engineers and a CWA Section

401 Water Quality Certification. These permits must include conditions that ensure that all water quality objectives for the wetland are protected.

Disturbances associated with dam demolition or haul roads where clearing, grading, and staging of equipment occurs could have impacts on sensitive habitats, including wetlands and riparian habitats along reservoirs and river reaches. Heavy machinery traversing wetland and riparian areas could change local topography and destroy wetland and riparian vegetation, and could introduce hazardous materials that would adversely affect water quality in wetland and riparian areas. However, once a project level plan is prepared and construction areas are delineated, measures would be implemented prior to and during construction to avoid, minimize and mitigate impacts to sensitive vegetation communities such as wetlands. During project level implementation of compliance measures, both structural and non-structural BMPs can be used to avoid, minimize or mitigate potentially significant impacts to sensitive species.

BMPs avoid and minimize impacts to wetlands by identifying construction buffers to limit access to wetlands near the construction area. For wetlands that are temporarily or permanently impacted, compensatory mitigation requirements will be required, implemented and monitored for success under state and federal law. In addition, if new temporary access roads are required for construction or demolition, grading would be conducted such that existing hydrology would be maintained. Also, BMPs would be implemented to address potential water quality impacts from polluted storm water runoff to streams, wetlands and riparian areas. Therefore, this is a less than significant impact with mitigation incorporated.

BIOLOGICAL RESOURCES: d) Less Than Significant with Mitigation Incorporated

Discussion: The majority of the North Coast rivers and their tributaries provide habitat, including the migration, for both native resident and migratory fish. A migratory corridor is generally described as a landscape feature (such as a ridgeline, canyon, stream or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources such as water, food, or den sites. Wildlife corridors are generally an area of habitat, usually linear in nature, which connect two or more habitat patches that would otherwise be fragmented or isolated from one another.

Most of the compliance measures will likely not interfere with the movement of these species. Although dam removal would ultimately result in greater movement for spawning fish, significant adverse effects on fish movement could occur at least temporarily unless appropriate mitigation is implemented to limit the duration of increased turbidity associated with dam removal and the decommissioning activities are timed to protect the most sensitive species/life stages.

Compliance measures and BMPs such as riparian fencing (for cattle exclusion), silt fence and straw wattles (for sediment control) have been known to entrap or entangle terrestrial wildlife (such as elk and deer) as well as some aquatic species (salamanders) and reptiles (snakes). Some specific areas are more prone to creating barriers to wildlife and can best be dealt with on a case-by-case basis. If there is a potential for an adverse impact to wildlife migration and/or use of a native wildlife nursery, the timing of the discharge, the location or the type of the compliance measure can be changed to avoid or minimize the impact to less than significant levels. For example rotational grazing practices and hot wire fences are alternatives to exclusionary fencing that have the potential to impede wildlife migration. Another example is concentrating efforts on erosion control methods to avoid using silt fences in sensitive areas. Additionally, natural fiber straw waddles without plastic netting are available to use as alternatives to sediment control technologies that may be a migration barrier. Based on the site specific situation, the case-by-case flexibility associated with the Temperature Implementation Policy and Action Plans and the avoidance, minimization, and mitigation measures associated with a particular project, the potential impacts are less than significant with mitigation incorporated.

BIOLOGICAL RESOURCES: e) Less Than Significant

Discussion: Compliance measures encourage riparian protection through the development of localized policies and ordinances are not expected to conflict with ordinances protecting biological resources, such as a tree preservation policy.

BIOLOGICAL RESOURCES: f) Less Than Significant

Discussion: It is unlikely that the implementation of compliance measures would conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP) or other approved local, regional, or state habitat conservation plan. More likely the compliance measures would be similar to measures already committed to under these types of plans. Such similarities are likely to ensure that compliance measures are in alignment with any adopted HCP, NCCP or other approved local, regional, or state habitat conservation plan.

In some rare instances it could be possible that a low lying special status species with an associated conservation plan could be present in the riparian zone that could accommodate larger trees to produce shade. However, the larger shade producing vegetation may out compete or adversely affect that special status species. These instances are likely sparse and since the Temperature Implementation Policy and Action Plans are to be implemented case-by-case these types of discrepancies can be handled at the project or permit level through agency collaboration and so as to prevent significant impact on the environment.

V. CULTURAL RESOURCES -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	X			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	X			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d) Disturb any human remains, including those interred outside of formal cemeteries?	X			

CULTURAL RESOURCES: a), b) and d) Potentially Significant and Unavoidable

Discussion: It is unlikely that the majority of compliance measures would cause a substantial adverse change in the significance of a historical or archaeological resource pursuant to section 15064.5. The implementation of compliance measures as recommended under the proposed Basin Plan amendment would not result in the alteration of a significant historical or archaeological resource unless that resource was otherwise impairing flows, causing excessive erosion or limiting site potential shade. However, in cases where the installation of structural compliance measures may involve large scale excavation activities or the construction of a large scale infrastructure, a cultural resources investigation should be conducted before any substantial disturbance. The cultural resources investigation will include, at a minimum, a records search for previously identified cultural resources and previously conducted cultural resources investigations of the project parcel and vicinity. All future actions must comply with the CEQA process and requirements for tribal consultation provided by Senate Bill 18 (SB 18) (State 2004, Ch 905) and Government Code section 65252.

In the event that avoidance is infeasible, the future projects will be required to follow Native American Heritage Commission’s mandate for Native American Human Burials and Skeletal Remains, in partnership with affected tribe(s), in order to adequately provide for recovering scientifically consequential information for the site. In the event that the ground disturbances or reservoir drawdowns uncover

previously undiscovered or documented resources, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains. (Health & Safety Code, Section 7050.5; Public Resource Code, Section 5097.9 et seq) This record search should also include, at a minimum, contacting the appropriate information center of the California Historical Resources Information System, operated under the auspices of the California Office of Historic Preservation. In coordination with the information center or a qualified archaeologist, a determination regarding whether previously identified cultural resources will be affected by the proposed project must be made and if previously conducted investigations were performed to satisfy the requirements of CEQA. If not, a cultural resources survey would need to be conducted. The purpose of this investigation would be to identify resources before they are affected by a proposed project and avoid the impact. If resources are identified site-specific implementation will minimize impacts. Even with such measures incorporated, impacts may still be potentially significant and unavoidable.

CULTURAL RESOURCES: c) Less Than Significant Impact

Discussion: The implementation of compliance measures would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Non-structural BMPs will not result in the direct or indirect destruction of a unique paleontological resource or site or unique geologic feature.

Similarly, it is unlikely that implementation of any structural BMP would result in the destruction of a unique paleontological resource or site or unique geologic feature. However, in cases where the installation of structural BMPs may involve excavation activities, an investigation of paleontological resources would need to be conducted by a trained professional before any substantial disturbance of land that has not been disturbed previously.

VI. GEOLOGY AND SOILS -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning				X

Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?		X		
b) Result in substantial soil erosion or the loss of topsoil?		X		
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?		X		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

GEOLOGY AND SOILS: a)(iv), b) and c) Less Than Significant with Mitigation

Compliance measures do not change the exposure of people or structures to potential substantial adverse effects involving landslides over current conditions. The geographic scope of the activities covered under the proposed Basin Plan amendment will include areas that are highly susceptible to soil erosion and shallow landslides due to the presence of steep slopes, high rainfall rates, and/or underlying geology. A major focus of the sediment control actions and in existing regulation ensure proper road drainage, surface soil stability, and full vegetation potential which reduces soil erosion, and can reduce or prevent large-scale slope and fill failures.

Implementation of compliance measures may result in minor temporary soil excavation or disturbance during implementation of compliance measures that involve construction of structural BMPs such as road drainage installation, field leveling for irrigation management or installation of off channel stock watering ponds. Construction related erosion impacts should cease with the cessation of construction activity. As a result of the correct implementation and maintenance of compliance measures outlined in section 9.4.2 the potential for increased soil erosion, loss of topsoil or landslides is less than significant with mitigation incorporated.

GEOLOGY AND SOILS: a)(i, ii and iii), d) and e) No Impact

None of the compliance measures would result in any adverse impact related to fault zones, liquefaction or other seismic related activity. Nor would it result in any lateral spreading, subsidence, liquefaction, or collapse. Even if structural BMPs that were recommended were located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), they would not create substantial risks to life or property. The structural BMPs that have been identified as the foreseeable means of compliance do not involve moving permanent structures or people into a new area, and so there would be no risk to life or property created. In addition, the proposed Basin Plan amendment (and the identified compliance measures) will not result in any impacts from septic tanks or alternative waste water disposal systems.

VII. GREENHOUSE GAS EMISSIONS – Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate Greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

GREENHOUSE GAS EMISSIONS: a) Potentially Significant and Unavoidable

Discussion: Adoption of the policy itself will not cause a direct impact to greenhouse gases (GHGs). Implementation of the compliance measures at the project level could results in an increase risk or contribution to greenhouse gases

related to exhaust and equipment from vehicles during construction activities such as restoration and alternate water supply construction. In the case of dam removal, emissions from replacement power sources will likely cause a significant and unavoidable impact from GHG emissions until PacifiCorp can add new sources or renewable power to compensate for the loss of the hydroelectric facilities.

GREENHOUSE GAS EMISSIONS: b) Less Than Significant

Discussion: Compliance measures could conflict with an applicable plan, project or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. However, this project will be consistent with the State Water Board Resolution No. 2008-0030 which directs Water Board staffs to “require...climate change considerations, in all future policies, guidelines, and regulatory actions.” Also, the proposed Basin Plan amendment is intended to conform with the goals of Assembly Bill (AB) 32 (States, 2005, ch 488). AB 32 requires that GHG emissions be reduced to 1990 levels by 2020. This requirement relates to anthropogenic sources of GHGs. Impact associated with individual projects will be analyzed and appropriate mitigation implemented to reduce GHGs.

VIII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous			X	

materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

HAZARDS AND HAZARDOUS MATERIALS: a) and b) Less Than Significant with Mitigation Incorporated

Discussion: Road repair and maintenance can involve the transport and use of materials that would qualify as hazardous pursuant to the California Health and Safety Code section 25501(o). There is the possibility that hazardous materials may be transported to a site and be present during compliance measure construction, installation and maintenance activities. These materials include gasoline and diesel to fuel equipment, hydraulic fluid associated with equipment operations and machinery, asphalt and oils for road surfacing, and surface stabilizers (e.g. lignin) for running surfaces on unimproved roads. Maintenance yards house fuel, oil

(machine, hydraulic, crankcase), chemicals (acids, solvents & degreasers, corrosives, antifreeze), hazardous waste, heavy metals, nutrients, fertilizer, pesticides, herbicides, paint products, and sediments. Maintenance yard activities have the potential to discharge these materials to storm water drain systems or watercourses. Some BMPs specifically target proper storage of these types of materials. Dust palliatives and de-icing agents may be used in some instances but these materials properly applied according to BMPs are not considered hazardous materials. Compliance measures would have the potential for a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.

In order to mitigate the potential adverse effects, pollution prevention and waste management BMPs should be used in the implementation of compliance measures. Existing regulations require the proper storage, handling and use of these types of materials. The U.S. Forest Service, California Department of Transportation, Five Counties Salmonid Conservation Program in the Counties of Del Norte, Humboldt, Mendocino, Siskiyou, and Trinity in the North Coast Region, California Association of Storm Water Quality, are just a few of the examples of exiting manuals that provide numerous pollution prevention and waste management BMPs. Many of these manuals include measures to be taken in the event of a spill.

In the event of an accident, responsible parties must comply with the requirements of the California Emergency Management Agency Hazardous Materials Spill reporting process. Any significant release or threatened release of a hazardous material requires immediate reporting by the responsible person to the Cal EMA State Warning Center (800) 852-7550 and the Certified Unified Program Agency (CUPA) or 911. The CUPA may designate a call to 911 as meeting the requirement to call them. Contact information for a jurisdiction's CUPA can be found at <http://cersapps.calepa.ca.gov/Public/Directory/> or <http://cersapps.calepa.ca.gov/Public/UPAListing>. Notifying the State Warning Center (800) 852-7550 and the CUPA or 911 constitutes compliance with the requirements of section 11004 of title 42 of the United States Code regarding verbal notification of the SERC and LEPC (California Code of Regulations, Title 19 Section 2703 (e)). Additional information regarding spill reporting may be found at: <http://www.calema.ca.gov/HazardousMaterials/Pages/Spill-Release-Reporting.aspx>

Any hazardous waste generated from the demolition of dams and any associated hydroelectric facilities would need to be disposed of in designated hazardous waste landfills. This would include treated wood waste, PCBs present in transformers and other electrical equipment, asbestos in building materials, fuels and oils, concrete dust (if it generates high pH waste) and soils or other material contaminated with lead from the use of lead-based paint. Incorporating a suite of mitigation measures will reduce the potential impacts to less than significant.

Any blasting activities would need to be conducted by a licensed professional and mitigation measures clearly described in the dam decommissioning plan, including a transportation plan for the explosive materials. At a minimum, these measures should include, all non-essential workers being prohibited from entering the site and stationed downwind at a safe distance away from blasting operations. Based on the existing regulations and BMPs available to use in conjunction with selected compliance measures, the potential impact from the proposed Basin Plan amendment is less than significant with mitigation incorporated.

HAZARDS AND HAZARDOUS MATERIALS: c) and d) Less Than Significant

Discussion: Compliance measures would not emit hazardous emissions or result in the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Again, there is the possibility that hazardous materials (e.g., oil, gasoline) may be present during construction and installation activities, but potential risks of exposure would be small, especially with proper handling and storage procedures. All risks of exposure would be short term and would be eliminated with the completion of construction and installation activities.

HAZARDS AND HAZARDOUS MATERIALS: e), f), g) and h) No Impact

Discussion: Compliance measures would not result in the emission or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, nor is it located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5. The proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Therefore, there is no impact.

IX. HYDROLOGY AND WATER QUALITY -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	X			
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of	X			

the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	X			
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise substantially degrade water quality?			X	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?		X		
i) Expose people or structures to a significant risk of loss, injury or death involving flooding,			X	

including flooding as a result of the failure of a levee or dam?				
j) Inundation by seiche, tsunami, or mudflow?				X

HYDROLOGY AND WATER QUALITY: a) Potentially Significant

Discussion: By requiring the implementation of compliance measures to preserve and maintain shade, control sediment, and maintain stream flows supportive of beneficial uses, the proposed Basin Plan amendment will have an overall beneficial impact on water quality in the North Coast Region.

There are special circumstances, however, under which potential significant impacts could occur. For example, the primary environmental impact associated with dam removal is the short term impact to water quality from the release of the stored in-reservoir sediment. Dam decommissioning will result in temporary increases in turbidity, suspended sediment load and reduction of dissolved oxygen, which will likely exceed Basin Plan water quality objectives. Short term water quality exceedances may be acceptable in cases where long term benefits to be beneficial uses outweigh short term impacts, based on detailed, site-specific information and findings.

HYDROLOGY AND WATER QUALITY: b) Potentially Significant

Discussion: The proposed Basin Plan amendment identifies the alteration of the natural pattern and range of surface water flows as a controllable factor with respect to ambient water temperatures. Alteration of a water right as a result of this policy could result in some project proponents seeking alternative water sources.

In addition, surface water supplies may be insufficient to meet all future demands even in the absence of the proposed Basin Plan amendment. Surface water resources are already limited in some regions of the North Coast Region and future water supplies in those areas will be limited by the natural supply availability rather than restrictions on water diversion and storage. Some streams in the region are already fully appropriated for some or all of the year.

Pumping groundwater instead of diverting surface water could potentially deplete groundwater resources, which could potentially result in a reduction in surface water flows, particularly summer flows, which could affect surface water flows. Reduced surface water flow could potentially harm riparian vegetation or degrade habitat for sensitive species; could potentially adversely affect water temperature and increase constituent concentrations due to reduced dilution; and could potentially adversely affect recreational opportunities.

Depending on the circumstances, switching from surface water diversions to groundwater pumping or diverting water under riparian rights could have a

significant adverse impact on biological resources, water quality, or recreation. As discussed below, however, the possible effects of a user switching from a surface water diversion to a ground water diversion are dependent on a wide range of variables, and therefore it is highly uncertain whether any particular user who may switch to groundwater will cause a delay in surface water flow depletion, whether any such delay will cause a significant reduction in surface water flows, or whether any delayed reduction in flows will have a significant adverse impact on the environment.

Surface water flow depletion may continue after groundwater pumping stops because it takes time for groundwater levels to recover from the previous pumping stress and for the depleted aquifer defined by the cone of depression to be recharged with water. Therefore the time of maximum stream depletion may occur after pumping has stopped. Eventually, the aquifer and stream may return to their pre-pumping conditions, but the time required for full recovery may be quite long and exceed the total time that the well was pumped. Any time delay may range from a few days in the zone adjacent to the stream to thousands of years for water that moves from the central part of some recharge areas through deeper parts of the groundwater system (Heath, 1983).

The level of significance for a potential impact to hydrology/watery quality attributable to a delay in surface water flow depletion as a result of diverters switching to groundwater pumping or riparian rights is dependent on site specific circumstances. In light of the fact that the switch to groundwater or riparian diversions as alternative sources of supply is possible the potential impacts to hydrology and water quality are significant and unavoidable.

HYDROLOGY AND WATER QUALITY: c) Potentially Significant

Discussion: This staff report has identified a number of compliance measures that could result in the construction of structural compliance measures, such as infiltration basins, field leveling or road construction, bioengineering and in-stream restoration which could potentially cause an alteration of the existing drainage pattern of a site. In most cases however, these measures would be small and installed with appropriately designed mitigation measures, which would limit any alteration of the existing drainage pattern unless beneficial to the environment, and therefore would not result in substantial erosion or siltation on- or off-site.

The exception would be in the event of dam decommissioning such as has been proposed for the Klamath River hydroelectric facilities. The greatest impacts from erosion or siltation associated with the decommissioning of the dams Klamath would be during drawing down of the reservoir water level. However, once a new channel was established, the erosion of the in-reservoir sediment would dissipate. Impacts that cause erosion or siltation are potentially significant and unavoidable.

HYDROLOGY AND WATER QUALITY: h) Less Than Significant with Mitigation Incorporated

Discussion: It is possible that compliance with the proposed Basin Plan amendment would place structures within a 100-year flood hazard area which could impede or redirect flood flows. For example, switching from an in-stream diversion to off-stream storage could result in a structure being placed within the flood plain. However, it is in these instances that coordination with project proponents and other agencies is best suited to reduce potentially significant impacts. Ideally, these types of conversions would be subject to an individual CEQA analysis and would be implemented in a manner that avoid, minimize or mitigates potential significant impacts. As presented in section 9.4.3, mitigation measures include proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects. Although there is a possibility that these types of compliance measures could cause an adverse impact, any potentially significant impacts will be avoided or mitigated to less than significant with mitigation incorporated.

HYDROLOGY AND WATER QUALITY: d) e), f), and i) Less Than Significant

Discussion: A number of compliance measures could result in the construction of infiltration basins, field leveling or road construction, bioengineering and in-stream restoration each of these have the potential to cause an alteration of the existing drainage pattern of a site. In most cases however, these measures would be small and be installed with appropriately designed mitigation measures such as those presented throughout section 9.4, so as to reduce the alterations of the existing drainage pattern in a manner which would result in a potential for flooding on- or off-site.

The Regional Water Board implements the NPDES program for storm water in the North Coast Region. Staff implementing this proposed Basin Plan amendment will consult with storm water staff to ensure that no permitted projects result in the concentration of runoff that would exceed that capacity of planned storm water facilities or result in additional sources of polluted runoff.

None of the compliance measures identified in this staff report contemplate the use of non-structural or structural BMPs that would 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.

HYDROLOGY AND WATER QUALITY: g) and j) No Impact

Discussion: None of the compliance measures identified in this staff report would 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. Staff has determined that this finding is still appropriate even under a dam

decommissioning scenario as the dams were not designed nor operated as flood control structures. As such their ultimately removal would not significant impact housing with a flood area as described above

None of the compliance measures identified in this staff report contemplate the use of non-structural or structural BMPs that would cause inundation by seiche, tsunami, or mudflow.

X. LAND USE AND PLANNING - Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?		X		
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?		X		

LAND USE AND PLANNING: a) No Impact

Discussion: None of the compliance measures identified in this SED contemplate the use of non-structural or structural BMPs that would physically divide an established community.

LAND USE AND PLANNING: b) Less Than Significant with Mitigation Incorporated

Discussion: The primary goal of this project is the protection and restoration of water quality and beneficial uses of water in the North Coast Region. One of the staff actions in the proposed Basin Plan amendment is to provide cities, counties, and state and federal agencies guidance and recommendations on compliance.

Additionally, the proposed amendment directs staff to work with local governments to develop strategies to address the prevention, reduction, and mitigation of elevated water temperatures, including, but not limited to, riparian ordinances, general plans, and other management policies. Therefore, it is unlikely that compliance with the proposed Basin Plan amendment would conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and the appropriate finding is less than significant with mitigation incorporated.

LAND USE AND PLANNING: c) Less Than Significant with Mitigation Incorporated

Discussion: Depending on the structural compliance measures selected, direct or indirect impacts to existing fish or wildlife habitat may occur; however, any such impact would be temporary. Compliance measures that may not have an impact when implemented in one area could potentially have an impact if they are implemented in a sensitive area. For instance the construction of a compliance measure such as an off-channel water storage facility could be located in an identified habit conservation area. Therefore, when installing structural compliance that may include substantial earth movement, responsible parties will be required under their applicable permit (or as necessary to comply with applicable prohibitions), to consult with various Federal, State and local agencies, including but not limited to the county the project is located in, CDFG and the USFWS. Typically Regional Water Board staff work with other agencies and project proponents on the development of Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) to ensure compliance with all regulations.

If appropriate to avoid conflicts with any HCP or NCCP, the timing and/or location of the BMPs may be adjusted to reduce any potential conflict with any such plans. If, however, such adjustments could not be made, the compliance measures would have to be changed to avoid any adverse impacts to rare, threatened or endangered species, or the discharge would not be permitted to occur. Because of these mitigation requirements, conflict with the provisions of an adopted HCP or NCCP is not likely to occur. Therefore the appropriate finding is less than significant with mitigation incorporated.

XI. MINERAL RESOURCES -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of			X	

availability of a known mineral resource that would be of value to the region and the residents of the state?				
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	

MINERAL RESOURCES: a) and b) Less Than Significant

Discussion: None of the compliance measures identified in this SED contemplate the use of non-structural or structural BMPs that would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. It is possible that access to certain areas for gravel, gold or other mineral extraction activities could be affected by compliance measures such as riparian buffers, or areas of exclusion or stream bank stabilization projects. While possible, these management measures are unlikely to bar access completely. Therefore, the appropriate finding is less than significant.

XII. NOISE -- Would the project result in:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	X			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X	

NOISE: a), b) and d) Potentially Significant and Unavoidable

Discussion: Increased noise levels would likely be associated with heavy equipment operation associated with construction of structural compliance measures. For the most part the implementation of structural compliance measures may result in localized increased noise levels that can be minimized or mitigated through timing are not predicted to be a significant impact. For example noise levels from activities such as road construction and/or maintenance would not exceed the existing levels and the loudest activities from other construction actions can be planned during peak daily noise. However, dam decommissioning would likely involve drilling and blasting of the concrete structures, and this will cause an adverse impact to the noise level in the surrounding communities even with minimization and mitigation measures incorporated. Demolition of several of the dams and their associated facilities would result in significant and unavoidable impacts by exceeding local noise ordinances, exposing people to groundborne vibrations and increasing the ambient noise levels for outdoor receptors.

NOISE: c), e) and f) Less Than Significant

Discussion: None of the compliance measures identified in this SED contemplate the use of structural BMPs that would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project as noise generation is associated with the short term, temporary use of heavy equipment.

None of the compliance measures identified in this SED contemplate the use of structural BMPs that would likely be located within an airport land use plan or within two miles of a public airport or public use airport. However, even if this were to occur, the implementation of the compliance measures would not result in excessive noise levels. The use of heavy equipment for the construction and installation of some structural BMPs could result in temporary increases in existing noise levels, but the noise associated with heavy equipment use is not any louder than noises that would typically occur within two miles of an airport.

None of the compliance measures identified in this SED contemplate the use of structural BMPs that would likely be located in the vicinity of a private airstrip. However, even if this were to occur, the compliance measures identified in this SED would not result in excessive noise levels. The use of heavy equipment for the construction and installation of some structural BMPs could result in temporary increases in existing noise levels, but the noise associated with heavy equipment use is not any louder than noises that would typically occur within the vicinity of a private airstrip.

XIII. POPULATION AND HOUSING -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

POPULATION AND HOUSING: a), b) and c) No Impact

Discussion: None of the compliance measures identified in this SED contemplate the use of structural BMPs that would induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or

indirectly (for example, through extension of roads or other infrastructure). None of the compliance measures identified in this SED contemplate the use of structural BMPs that would displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere. None of the compliance measures identified in this SED would displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. Therefore, there is no impact.

XIV. PUBLIC SERVICES				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?		X		
Police protection?			X	
Schools?				X
Parks?				X
Other public facilities?				X

PUBLIC SERVICES: Fire Protection) Less Than Significant with Mitigation Incorporated

Logically, the increase in riparian vegetation increases the fuel loads for wildfires. While fuel loads do not cause fires the increasing mass available can increase severity of a fire and could impact the demand on fire protection services. Allowing for the removal or thinning of upland vegetation that has high evapotranspiration rates and increases fire risks could be a mitigation measure that result in multiple benefits to the environment. For more discussion see the section on aesthetics. The appropriate finding is less than significant with mitigation incorporated.

PUBLIC SERVICES: Police Protection) Less Than Significant

With the widespread increase in marijuana cultivation throughout the region both local and state law enforcement and resource agencies have seen an increase in the number of cases that lead to enforcement actions. Marijuana cultivation in the region has caused discharges of sediment and pesticides as well as an increased water demand. While many of these operations are legal under California law they are still illegal under federal law. According to Regional Water Board staff, many of these small and state legal operations are seeking input and making attempts to reduce their impacts to environment through routine BMPs that address erosion and sediment control as well as water efficiency strategies. Still many more large scale operations go fully beyond the scope law with little caution towards criminal and environmental legality. With observations spanning over the past few decades and special emphasis on the last few years, the demand on law enforcement including the Regional Water Board has already taken place. Moreover, while the Temperature Policy will apply to marijuana growers with respect shade, sediment, and flow, these components do not necessarily implicate police resources. Therefore, a significant increase in the demand for public services has already occurred and the impact from this Policy on police services is less than significant.

PUBLIC SERVICES: Schools, Parks or other public facilities) No Impact

Discussion: The proposed Basin Plan amendment does not involve new or physically altered government facilities. Because the proposed project does not involve these elements, the appropriate finding is no impact.

XV. RECREATION-- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	X			
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	X			

RECREATION: a) and b) Potentially Significant and Unavoidable

Discussion: None of the compliance measures identified in this SED, with the exception of dam decommissioning, contemplate the use of structural BMPs that would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

In the event that the Klamath River reservoirs are decommissioned, flatwater recreation users will have to use the other flatwater facilities in the region. In addition, impact to white-water recreation will be adversely affected in specific reaches of the Klamath River due to changes in flow stages at certain times of year and have been determined to be significant and unavoidable.

Once a decommissioning plan is developed, mitigation measures identified, in the plan must ensure that the other regional facilities have the infrastructure in place to support the increased user base. Mitigation measures identified include such things as installation/relocation of campgrounds, restrooms, boat ramps, garbage service, etc.

Although, significant impacts to recreation have been identified the long term benefit associated with the removal of the Klamath hydroelectric facilities is positive towards recreational values. For example several of the reservoirs and reaches of the Klamath River are impaired for recreation due to poor water quality associated with toxic algal blooms. It has been determined that dam removal would alleviate these impairments. Additionally, it has been determined that dam removal would have long-term beneficial effects on free-flowing condition, water quality, scenic, wildlife, fishery, and recreation river values associated with the upstream and downstream reaches designated as Wild and Scenic.

XVI. TRANSPORTATION/TRAFFIC -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant			X	

components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?		X		
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		X		
e) Result in inadequate emergency access?			X	
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	

TRANSPORTATION/TRAFFIC: a) and b) Less Than Significant

Discussion: None of the compliance measures identified in this SED, contemplate the use of structural BMPs that would cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections). Construction activities have the potential to increase traffic volumes or reduce speeds on public roads.

However, it is staffs judgment that the potential compliance measures are unlikely to be correlated with the public road systems to any significant degree.

TRANSPORTATION/TRAFFIC: c) and d) Less Than Significant with Mitigation Incorporated

Discussion: Increased tree retention may conflict with the site distance requirements of transportation agencies (public roads) areas designated as clear recovery zones. Different levels of road systems (e.g. freeways, highways, interstates, city streets and county roads) have various levels of design requirements in consideration of site distance to help ensure public safety. In addition, clear recovery zones (areas adjacent to road shoulders) are created and maintained in certain locations outside the highway shoulder to provide an opportunity for vehicles that leave the roadway to come to a safe stop or to return to the roadway. A recoverable slope is a slope on which a motorist may, to a greater or lesser extent, retain or regain control of a vehicle by slowing or stopping. Slopes flatter than 1V:4H are generally considered recoverable (U.S. Federal Highway Administration).

Thousands of miles of roads either parallel or intersect streams, riparian areas and/or floodplains. Therefore, it is possible that retaining riparian vegetation to provide site potential shade or the installation of sediment control compliance measures could infringe upon site distance or clear recovery zone requirements. However, with proper planning and coordination with local, county and state transportation agencies most conflicts could be resolved. For instance during the road planning, design and environmental impact assessment stages these types of constraints or conflicts are analyzed by transportation engineers and biologists. Through the existing project planning, CEQA process, interagency coordination and existing regulation (NPDES storm water permits and 401 Certifications) potential conflicts are resolved by avoidance, minimization, or off-site compensatory mitigation. For example many structural BMPs designed to reduce sediment and polluted storm water runoff have often been determined to be possible to construct, but infeasible due to safety constraints. Alternately, adequately vegetated slopes flatter than 1V:4H are also potential locations for structural BMPs for biofiltration of polluted storm water and are known to reduce erosion and sediment transport. Through proper coordination, planning and design clear recovery zones can meet public safety, storm water treatment, and erosion and sediment control goals. Therefore, it is staffs determination that the potential impacts are less than significant with mitigation incorporated.

TRANSPORTATION/TRAFFIC: e) and f) Less Than Significant

The proposed project does not involve installation of hazardous design features, and will not affect emergency access or parking capacity. The proposed project will not conflict with policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such

facilities. Because the proposed project does not involve these elements, the appropriate finding is less than significant.

XVII. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	X			
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state,				

and local statutes and regulations related to solid waste?			X	
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UTILITIES AND SERVICE SYSTEMS: a) and e) No Impact

The proposed Basin Plan amendment will not have any effect on wastewater treatment requirements. Therefore, the appropriate finding is no impact.

UTILITIES AND SERVICE SYSTEMS: b), c), and d) and Potentially Significant and Unavoidable

Compliance measures that require construction or demolition of facilities could result in short term interruption of utilities. Several compliance measures, including but not limited to, sediment control basins, LID features, irrigation systems and tailwater management systems to reduce sediment transport to streams have the potential to cause an impact on utilities. However, mitigation measures can reduce any impacts to a less than significant level. Dam removal could lead to short term interruptions in utilities, including but not limited to water, gas and electricity.

Reliance on groundwater or alternate water sources could result in expansion of existing water and energy delivery systems. This amount would depend on which compliance measures are selected and on the hydrology and extent of existing permitted water use at future points of diversion. In addition, surface water supplies may be insufficient to meet all future demands even in the absence of the Basin Plan amendment. Surface water resources are already limited in some areas and future water supplies will be limited by the natural supply availability rather than by restrictions on water diversion and storage. Some streams in the region area are already fully appropriated for some or all of the year. The selection of the appropriate compliance measures by responsible parties will need to take into consideration their existing water resources. Basing selection of compliance measures on existing water resources will prevent the need to seek new entitlements.

Another alternative water supply practice for water purveyors currently being considered in the North Coast Region is groundwater banking, also known as aquifer storage and recovery (ASR). With potential restrictions on municipal water supplies there is the potential for ASR projects to become more common place throughout the region. There are potential adverse environmental impacts with these types of projects. However, in light of climate change and existing regulations on flow restrictions in many areas in the North Coast Region, these types of measures could mitigate potential increases in demand.

One of the potential alternative practices that could be used by growers would be the use of cover crops to increase infiltration and reduce surface runoff of water, which may contain contaminants. The use of cover crops may require additional irrigation water, but may also result in reduced evaporation from soil surfaces, resulting in no or little net change in irrigation water needs. Improved irrigation efficiency, one of the principle means of reducing agricultural discharges, will likely result in water savings.

If additional riparian diversion facilities are constructed, the construction activity should be undertaken in a manner that does not adversely affect fish and wildlife resources, per Fish and Wildlife Code section 1602. If CDFW determines that the construction activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement (Agreement) would be prepared. Conditions that CDFW may require include, but are not limited to, avoidance or minimization of vegetation removal, use of standard erosion control measures, limitations on the use of heavy equipment, limitations on work periods to avoid impacts on fisheries and wildlife resources, minimum bypass flow requirements, and requirements to restore degraded sites or compensate for permanent habitat losses. In addition, rendering a dam incapable of storing water by leaving the structure in place while allowing water to pass through, may be a less costly alternative, and may reduce impacts to fish and wildlife habitat to less than significant levels. The Agreement would include reasonable conditions necessary to protect those resources and must comply with CEQA.

In addition to the regulatory requirements described above, the seasonal storage of surface water in most new off stream storage facilities will require a water right permit from the State Water Board. Unless an exemption applies, the State Water Board's review of water right applications is subject to CEQA. In addition, in acting on water right applications, the State Water Board must take into consideration the public interest and the applicable Basin Plan. (Wat. Code, §§ 1253, 1255, 1257, 1258.) Accordingly, the State Water Board will have the opportunity to identify and mitigate the impacts of constructing off-channel storage reservoirs as part of the State Water Board's review of individual water right applications. Similarly, the State Water Board will have the opportunity to ensure that applicants comply with any other applicable regulatory requirements. Inclusion of the following permit terms, will ensure that applicants comply with any other applicable regulatory requirements.

- *No water shall be diverted under this permit, and no construction related to such diversion shall commence, until permittee obtains all necessary permits or other approvals required by other agencies. If an amended permit is issued, no new facilities shall be utilized, nor shall the amount of water diverted increase beyond the maximum amount diverted during the previously authorized time period, until permittee complies with the requirements of this term.*

Within 90 days of the issuance of this permit or any subsequent amendment, permittee shall prepare and submit to the Division of Water Rights a list of, or provide information that shows proof of attempts to solicit information regarding the need for, permits or approvals that may be required for the project. At a minimum, permittee shall provide a list or other information pertaining to whether any of the following permits or approvals are required: (1) lake or streambed alteration agreement with the Department of Fish and Wildlife (Fish & G. Code, § 1600 et seq.); (2) Department of Water Resources, Division of Safety of Dams approval (Wat. Code, § 6002.); (3) Regional Water Quality Control Board Waste Discharge Requirements (Wat. Code, § 13260 et seq.); (4) U.S. Army Corps of Engineers Clean Water Act section 404 permit (33 U.S.C. § 1344.); or, (5) local grading permits.

Permittee shall, within 30 days of issuance of all permits, approvals or waivers, transmit copies to the Division of Water Rights.

Based on the wide range of potential impacts associated with water treatment and supply, and enforcement of mitigation a measure is uncertain, adverse impacts to the environment are potentially significant and unavoidable.

UTILITIES AND SERVICE SYSTEMS: f) and g) Less Than Significant

Discussion: Other than the discussion of compliance measures for dam removal, none of the compliance measures identified in this SED generate a significant source of solid waste. Construction and implementation of structural BMPs may generate solid wastes requiring disposal such as earthen material or erosion control materials (e.g. silt fences, temporary fencing, rusted out culverts). The amount of waste needing disposal, however, will be very minimal, and could therefore be served by an existing landfill.

For dam removal, the implementation of a Hazardous Materials Management Plan (HMMP) would mitigate the effects on the environment to a less than significant amount. HMMPs typically include potential options for disposal sites and BMPs for waste handling, transporting and disposal, as well as health and safety measures to protect workers and the public. This mitigation measure should reduce the impacts and eliminate problems with compliance with federal, state, and local statutes and regulations related to solid waste disposal.

The potential practices that could be applied by growers should not result in any changes in the generation of solid waste and therefore should not affect compliance with federal, state, or local statutes and regulations related to solid waste.

MANDATORY FINDINGS OF SIGNIFICANCE a) Potentially Significant and Unavoidable

Discussion: All of these compliance measures identified in this environmental analysis will likely improve water quality from the current baseline in the watershed which will likely continue without the application of these additional protections.

Compliance measures that require substantial earth movement would likely undergo consultation with federal, state and local agencies, including but not limited to the county the project is located in, CDFG and the USFWS. Specific mitigation measures would be applied by the agencies to avoid impacts to rare, threatened or endangered species. If no such mitigation is available, the use of that compliance measure in the specific area should not be implemented. In most cases the impacts of installing structural compliance measures would be temporary, and any impacts could be avoided by adjusting the timing and/or location to take into account any candidate, sensitive, or special status species or their habitats.

The exception to this would be short term impacts associated with dam decommissioning which has the potential to significantly impact water quality from the release of increased loads of fine grained sediment. It is estimated that impacts to water quality would range from weeks to months with the application of appropriate mitigation measures.

The potential impacts of the project will not cause a significant cumulative impact in the environment with the exception of a dam decommissioning scenario. In fact, the adoption of the proposed Basin Plan amendment should result in improved water quality in the North Coast Region will have significant beneficial effects on the environment over the long term.

MANDATORY FINDINGS OF SIGNIFICANCE b) Potentially Significant and Unavoidable

Discussion: Cumulative impacts, defined in section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts. Cumulative impact assessment must consider not only the impacts of the proposed Basin Plan amendment, but also the impacts from other Basin Plan Amendments, municipal, and private projects, which have occurred in the past, are presently occurring, and may occur in the future, in the watershed during the period of implementation.

Non-structural compliance measures that may be implemented are not likely to have cumulative impacts on the environment. Impacts associated with implementation of most of the structural measures will be short-term, temporary and spatially distributed across the watershed, and will not have significant adverse effects on the environment. Compliance measures that involve substantial earth

movement could have potentially significant cumulative impacts. However, many of these activities will be regulated under existing State and Regional permits, including but not limited to state-wide Caltrans storm water permit, storm water permit for construction sites over one (1) acre, or timber harvest operations on public and private lands. The likelihood of installation of structural compliance measures on federal land is quite high as approximately 55% of the region is in federal ownership. Regional Water Board staff's engagement in these regulatory programs will provide an opportunity to limit the potential for cumulative impacts by ensuring that multiple projects proposing implementation of BMPs with the potential to cause short-term impacts are phased appropriately to limit potential cumulative impacts.

Based on a review of the available information, and as a result of implementing the range of compliance measures from the preservation of shade to sediment controls and the modification of water supply to dam decommissioning, it has been determined that significant and unavoidable impacts to the environment are likely to occur. These impacts include elevated exhaust levels, fugitive dust, vehicle and GHG emissions, turbidity, suspended sediment loads and reductions of dissolved oxygen, potential negative alteration of critical habitat for multiple fish species, groundwater resources, cultural resources, scenic quality, recreation, and noise. Most of these impacts are expected to be short term. Individual project-specific CEQA review will be necessary in those cases as appropriate. Many can and will be mitigated to less than significant levels with the implementation of specific mitigation measures. However, because of the programmatic nature of this CEQA analyses, it is not possible to say with certainty that all impacts will be mitigated to less than significant levels. Identified mitigation will become enforceable in permits and other orders by the Regional Water Board, but we cannot be certain that other agencies will adopt the recommended mitigation for activities under the jurisdiction of other agencies. As a result, even impacts identified as less than significant with mitigation incorporated must also be considered unavoidable at this time.

Notwithstanding the potential negative affects discussed above and throughout this SED, it is likely that long term beneficial effects will be realized on aesthetic resources, biological resources, geology and soils, GHG emissions, hydrology and water quality, and recreation.

MANDATORY FINDINGS OF SIGNIFICANCE c) Less Than Significant

Discussion: As explained previously, the proposed Basin Plan amendment is designed to improve long term water quality by providing a regulatory program designed to protect and restore water quality and the beneficial uses of water in the North Coast Region. An important objective of the proposed Basin Plan amendment is the restoration of a healthy and viable salmonid fishery and the preservation of high quality waters.

9.6 Alternative Means of Compliance

The CEQA requires an analysis of reasonably foreseeable alternative means of compliance with the rule or regulation, which would avoid or eliminate the identified impacts²⁹. The responsible parties can use the structural and non-structural compliance measures described in section 9.4, or other structural and non-structural compliance measures, to control and prevent pollution, and meet the requirements of the proposed Basin Plan amendment. The alternative means of compliance consist of the different combinations of structural and non-structural compliance measures that the responsible parties might use to meet their load allocations and achieve compliance with the temperature objectives or TMDL Action Plans. Because there are innumerable ways to combine compliance measures, all of the possible alternative means of compliance cannot be discussed here. However, because most of the adverse environmental effects are associated with the construction of structural compliance measures related to earth movement or construction of infrastructure (e.g., fencing, off-channel water facilities, aquatic ecosystem restoration) to avoid or eliminate impacts, project proponents should always maximize the use of non-structural measures to the extent feasible, and design structural compliance measures to take into consideration site-specific conditions to minimize environmental effects.

²⁹ Cal. Code Regs., tit. 14, § 15187(c)(3).