2014
Triennial Review
of the
WATER QUALITY CONTROL PLAN
for the
NORTH COAST REGION

November 21, 2014

State of California
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Please cite as:
North Coast Regional Water Quality Control Board. 2014. Triennial review of the water quality control plan for the North Coast Region for 2014 through 2017. Santa Rosa, CA. 45 pp.

GLOSSARY OF TERMS

This resource offers a general understanding of the many terms and abbreviations used by the North Coast Regional Water Quality Control Board (Regional Water Board). The definitions herein do not constitute the Regional Water Boards' official use of terms and phrases for regulatory purposes, and nothing in these documents should be construed to alter or supplant the meaning of any other Regional Water Board document.

Acre-foot - The amount of water needed to cover one acre of land one foot deep (equal to 325,851 gallons). An acre foot can support the annual indoor and outdoor needs of one to two urban households.

Anti-degradation Clause - Part of federal and state water quality standard requiring a balancing of the public's interest before allowing water quality to be degraded. The State's Water Board policy on anti-degradation is often referred to as 68-16, after the resolution that first adopted it.

Basin Plan - The plan for the protection of water quality prepared by the Regional Water Quality Control Board in response to the Porter-Cologne Water Quality Control Act. The Basin Plan for the North Coast Region is also known as the Water Quality Control Plan for the North Coast Region and contains Water Quality Standards for the federal Clean Water Act.

Beneficial Uses - "Beneficial uses" of the waters of the state that may be protected against water quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Best Management Practices (BMPs) - The practice or combination of practices that are determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (including technological, economic, and institutional considerations).

California Environmental Protection Agency (Cal/EPA) - The umbrella agency responsible for protecting environmental quality throughout the state. Cal/EPA acts at the agency level for the five state boards, departments and office within it. These are the Department of Toxic Substances Control, Department of Pesticide Regulation, Office of Environmental Health Hazard Assessment, Air Resources Board, and the California Water Boards.

California Environmental Quality Act (CEQA) - The established state policy of environmental protection. CEQA requires the review, identification, and mitigation of potential adverse effects of proposed projects on the environment.

California Water Code (CWC) - Compilation of state statutes related to water resources. California Water Code, Division 7 is known as Porter-Cologne Water Quality Control Act.

California Water Plan - The plan is required by California Water Code Section 10004. It contains information about the coordinated control, protection, development, and utilization of water in California, and provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The Department of Water Resources updates the plan every five years.

Calwater Classification System - A set of standardized watershed boundaries for California nested into larger previously standardized watersheds, which meet standardized delineation criteria. The system was developed by a state and federal interagency committee in 1997. The number follows the format:
Hydrologic Region + Basin/ HU + HA + HAS. See Hydrologic Unit (HU), Hydrologic Area (HA), and Hydrologic Subarea (HSA).

Clean Water Act (CWA) - Also known as the Federal Water Pollution Control Act. Federal legislation enacted in 1972 to restore and maintain the chemical, physical and biological integrity of the surface waters of the United States. The stated goals of the CWA are that all waters be fishable and swimmable.

Code of Federal Regulations (CFR) - Compilation of federal statutes. The Clean Water Act and many other water program statutes are contained in Title 40, Protection of Environment (40 CFR).

Department of Water Resources (DWR) – The DWR built and maintains the California State Water Project (SWP) and developed and updates the California Water Plan (Bulletin160 series). The DWR, in cooperation with other agencies, manage the water resources of California.

Discharger - Any person who proposes to discharge or discharges waste that could affect the quality of California waters. The term includes any person who owns, or is responsible for the operation of, a waste management unit.

Environmental Impact Report (EIR) - A document required by the California Environmental Quality Act (CEQA) that assesses the environmental effects of a project proposed to be approved or carried out by a state or local agency.

Environmental Protection Agency (U.S. EPA) - Federal regulatory agency responsible for protecting environmental quality throughout the nation. It acts in an oversight role to state environmental agencies that carry out federal laws.

Hydrologic Area (HA) - Major subdivisions of hydrologic units. Best described as major tributaries of a river, large valley groundwater basin, or a component of a stream or desert basin group.

Hydrologic Subarea (HSA) - Consist of a major segment of a hydrologic area having significant geographical characteristics of hydrological homogeneity.

Hydrologic Unit (HU) - Each hydrologic region is divided into hydrologic units, which are defined by surface drainage as well as topographic and geographic conditions. A hydrologic unit may encompass a major river watershed or a major groundwater basin, contiguous watersheds with similar hydrogeologic characteristics, or a closed drainage area, such as a desert basin or group of such basins.

Impaired Waters - A waterbody that has been determined under state and federal law as not meeting water quality standards. Impaired waters are included on 303(d) List of Water Quality Limited Segments, also known as the List of Impaired Waters.

Implementation Monitoring - Monitoring used to assess whether activities and control practices were carried out as planned.

Mitigation - Steps taken that will eliminate, avoid, rectify, compensate for or reduce adverse environmental impacts.

Municipal Discharge - Discharge of effluent from treatment plants that receive wastewater from households, commercial establishments, and industries.

Narrative Objectives - Non-numeric, qualitative guidelines that describe a desired water quality goal.

National Pollutant Discharge Elimination System (NPDES) - A provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a permit is issued that complies with the Clean Water Act. The State and Regional Boards issue Waste Discharge Requirements (WDR) that serve as NPDES permits in California.

Natural Background Levels - Chemical, physical, and biological levels representing conditions that would result from natural processes, such as weathering and dissolution.

Negative Declaration - A statement that must be prepared when a project is not exempt from CEQA and will not have a significant adverse effect upon the environment. The negative declaration is an informational document that describes the reasons why the project will not have a significant effect and proposes measures to completely mitigate or avoid any possible effects.

Nonpoint Sources - Refers to pollutants from diffuse sources that reach water through means other than a discernable, confined, and discrete conveyance.

Point Sources - This refers to pollutants discharged to water through any discernable, confined, and discrete conveyance, such as a pipe**.**

Porter-Cologne Water Quality Control Act (Porter-Cologne Act) - Also known as California Water Code, Division 7. Anti-pollution legislation enacted by the California Legislature in 1970. It provides a framework for the regulation of waste discharges to both surface and ground waters of the state. It further provides for the adoption of water quality control plans and the implementation of these plans by adopting waste discharge requirements for individual dischargers or classes of dischargers.

Public Notice - A notice which describes the activity for which approval is being sought or the action that is being proposed. It identifies the person, business, or local government seeking approval of a specific course of action, and the statutory authority involved. Additionally, it usually states the location and time where the proposed activity or action will be considered and how public comments may be submitted.

Regional Water Quality Control Boards (Regional Boards) - The nine Regional Boards located throughout California that are responsible for enforcing water quality standards within their regional boundaries.

State Water Resources Control Board (State Water Board) - The state agency responsible for protecting water quality in California under the Porter-Cologne Act. The State Water Board protects water quality by setting statewide policy, coordinating and supporting the Regional Boards' efforts, and reviewing petitions that contest Regional Board actions. The State Water Board is solely responsible for allocating surface water rights.

Statewide Plan - A water quality control plan adopted by the State Water Resources Control Board in accordance with the provisions of Water Code § 13240 through 13244, for waters where water quality standards are required by the Federal Water Pollution Control Act. Such plans supersede regional water quality control plans for the same waters to the extent of a conflict. California Water Code § 13170

Total Maximum Daily Load (TMDL) - The term TMDL is used in two ways. 1) It is the total maximum daily load of a pollutant that a waterbody can handle and still achieve acceptable water quality (this is also known as the loading capacity). If the TMDL is exceeded and the water quality is insufficient to support beneficial uses, then that waterbody is listed on the 303(d) List of Impaired Waterbodies. Listing triggers the establishment of a schedule for developing a control plan to address the impairment. 2) A TMDL is a control plan that is intended to identify, quantify, and control the sources of pollution within a given waterbody, such that water quality objectives are achieved and the beneficial uses of water are fully protected.

Triennial Review Process - A process with its origins in the Clean Water Act of reviewing the efficacy and currency of the provisions in Basin Plans and statewide plans on a three year cycle, and updating as appropriate.

Underground Storage Tank (UST) - A tank located at least partially underground and designed to hold gasoline or other petroleum products or chemicals.

Waste Discharge Requirements (WDR) - The order adopted by the regional boards that regulates discharges of waste to surface water and discharges of waste to land. WDRs are often synonymous with "permits."

Water Quality Certification - State certification required by Section 401 of the federal Clean Water Act that a federally permitted activity meets state water quality standards.

303 (d) List - Also known as the List of Impaired Waterbodies. Section 303(d) of the federal Clean Water Act and 40 CFR §130.7 require states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses.

Section 13243 – The section of the Porter-Cologne Water Quality Control Act that authorizes the Regional Water Board, in a water quality control plan or in waste discharge requirements, to specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.

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The 2014 triennial review of the *Water Quality Control Plan for the North Coast Region* (Basin Plan) was initiated in January 2014 and will conclude in a hearing before the North Coast Regional Water Quality Control Board (Regional Water Board) on March 12, 2015. In the hearing, the Regional Water Board will decide whether or not to adopt a proposed list of potential Basin Plan Amendment (BPA) projects, the high ranking projects to be incorporated into the workplan of the Planning Unit for 2015 through 2017. The Regional Water Board will also decide whether or not to adopt proposed editorial revisions to Chapter 1, Chapter 2, Chapter 4 and Chapter 5 of the Basin Plan.

The projects proposed for adoption as high priority projects include:

1a. Russian River pathogen TMDL and action plan,
1b. Laguna de Santa Rosa TMDLs and action plan,
1c. Ocean beaches and freshwater streams bacteria TMDL and action plan,
2. Water Quality Objective Update Amendment
3. Exemption criteria for the seasonal point source waste discharge prohibition
4. Groundwater Protection Policy
5. Numeric flow objective for the Navarro River
6. Policy on the potential effects of climate change on water quality

CHAPTER 1
INTRODUCTION

1.1 THE WATER QUALITY CONTROL PLAN (BASIN PLAN)

The *Water Quality Control Plan for the North Coast Region* (Basin Plan) contains the regulations adopted by the North Coast Regional Water Quality Control Board (Regional Water Board) to control the discharge of waste and other factors[1] affecting the quality of waters of the state[2] within the boundaries of the North Coast Region. It is amended from time to time to incorporate new beneficial uses, water quality objectives, and programs of implementation including monitoring programs and to conduct substantive and non-substantive revisions of existing language. The Regional Water Board approves a prioritized list of basin plan amendment projects through its triennial review of the Basin Plan, generally every three years.

1.1.1 Triennial Review List of Priorities

Section 13240 of the Porter-Cologne Water Quality Control Act and Section 303 (c)(1) of the federal Clean Water Act require a review of basin plans at least once each three-year period to keep pace with changes in regulation, new technologies, policies, and physical changes within the region.

The Regional Water Board is responsible for reviewing the Basin Plan, and is required to: 1) identify those portions of the Basin Plan which are in need of modification or new additions; 2) adopt standards as appropriate; and 3) recognize those portions of the Basin Plan which are appropriate as written. The Regional Water Board solicits written and oral public input which it considers prior to adopting by resolution a prioritized list of basin planning projects. The highest priority projects are included on the "short list" which establishes the workplan of the Regional Water Board's Planning Unit for the next 3 year period.

A triennial review of the Basin Plan was last conducted in 2011 resulting in the Regional Water Board's adoption of Resolution No. R1-2011-0091, including as an attachment the *Proposed 2011 Triennial Review List of Potential Basin Plan Amendments*[3]. The projects included on the short list in 2011 are:

1. TMDL-related projects in the Elk River, Freshwater Creek, Eel River, Mattole River, Navarro River, Russian River, and the Laguna de Santa Rosa;
   Status: TMDL action plans for the Eel, Mattole, and Navarro rivers were adopted by the Regional Water Board in March 2014. TMDLs and action plans for the Russian River and Laguna de Santa Rosa are still under development. A TMDL and Waste Discharge Requirement for the Upper Elk River are under development. There have been no significant developments on the Freshwater Creek TMDL since 2011.
2. Temperature Implementation Policy;
   Status: Temperature Implementation Policy was adopted by the Regional Water Board in March 2014.
3. Water quality objectives (WQO) for groundwater and surface water, including new and revised programs of implementation;

[1] As described in the State Water Board's Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program, 2004 (Nonpoint Source Policy), factors that affect water quality include not only waste discharges, but also saline intrusion, reduction of waste assimilative capacity caused by reduction in water quantity, hydrogeologic modifications, watershed management projects, and land use.

[2] CWC § 13050(e) defines "Waters of the state" to mean any surface water or groundwater, including saline waters, within the boundaries of the state.

[3] http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/111013_tr/100929_res_11-0091_trirev.pdf

Status: This project has been divided into two phases. Phase I (Water Quality Objective Update) is still in progress with an anticipated adoption hearing in June 2015. Phase II (Groundwater Protection Policy) has been scoped and will be staffed once Phase I is complete.

4. Dissolved oxygen (DO) water quality objectives for free flowing streams, wetlands, and lakes; and,
   Status: The development of DO objectives for free-flowing streams has been combined with Phase I WQO Update Amendment above with an anticipated adoption hearing in June 2015. There has been no significant development with respect to DO in wetlands and lakes.
5. An Aquatic Ecosystem Restoration Policy.
   Status: An adoption hearing is anticipated for this project in January 2015.

This report documents the triennial review of the Basin Plan that was conducted in 2014, and describes the basis for staff's recommendations to the Board with respect to the prioritization of potential Basin Plan Amendment projects (Appendix A—*2014 Triennial Review of the Basin Plan, Draft Proposed Basin Plan Amendment Project Priorities*). A description of each of the potential Basin Plan Amendment projects and staff's proposed ranking is provided in Chapter 2 of this report. This report, including staff's draft recommendations, will be circulated for public review during a 45-day comment period with written comments due by close of business on January 9, 2015. Staff will respond to comments in a Response to Comments document to be distributed with the a *2014 Triennial Review of the Basin Plan, Proposed Basin Plan Amendment Project Priorities* released 10-day prior to a duly noticed hearing at the March 2015 Regional Water Board meeting. The Regional Water Board will adopt a resolution and prioritized list of projects, after considering the recommendations of staff and public input, and in accordance with its own deliberations and vote. As a general matter, high ranking Basin Plan Amendment projects not yet completed from the previous triennial review list remain high ranking, unless otherwise indicated.

1.1.2 Overview of the Basin Plan

The North Coast Regional Water Board is one of nine regional water boards that function as part of the California State Water Board system within the California Environmental Protection Agency. The Regional Water Board has the authority and responsibility to regulate the activities and factors which may affect the quality of the waters of the state within the North Coast Region's boundaries to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.[4] The Basin Plan, as amended periodically; 1) establishes the beneficial uses of water within the region and the water quality objectives necessary to protect those uses, including an antidegradation policy; 2) the action plans and policies by which protections are implemented; and 3) the monitoring which is conducted to ensure attainment of water quality standards. Under the Clean Water Act, water quality standards include designated uses, water quality criteria, and an antidegradation policy. The *Porter-Cologne Water Quality Control Act* (Porter-Cologne) modifies the federal language to refer to designated uses as *beneficial uses* and water quality criteria as *water quality objectives*, which includes the State Water Board's antidegradation policy (Resolution 68-16). Porter-Cologne also requires a *program of implementation* for water quality protection in California.[5] A program of implementation includes actions necessary to achieve objectives, a time schedule for the actions to be taken, and monitoring to determine compliance with water quality objectives and protection of beneficial uses of water.

1.1.2.1 Beneficial Uses of Water

Beneficial uses of water are those uses of water that may be protected against degradation of quality such as; but not limited to, domestic, municipal, agricultural supply, industrial supply, power generation, recreation,

[4] CWC § 13000.
[5] CWC § 13242.

aesthetic enjoyment, navigation, preservation and enhancement of fish, wildlife and other aquatic resources or preserves.[6] In 1972, the State Water Board adopted a uniform list of beneficial uses to be applied throughout the state. This list was updated in 1996. In addition to these beneficial uses, the Regional Water Board has adopted five beneficial uses specifically applicable in the North Coast Region.

- Wetland Habitat (WET) Uses of water that support natural and man-made wetland ecosystems, including, but not limited to, preservation or enhancement of unique wetland functions, vegetation, fish, shellfish, invertebrates, insects, and wildlife habitat.
- Flood Peak Attenuation/Flood Water Storage (FLD) Use of riparian wetlands in flood plain areas and other wetlands that receive natural surface drainage and buffer its passage to receiving waters.
- Water Quality Enhancement (WQE) Uses of waters, including wetlands and other waterbodies, that support natural enhancement or improvement of water quality in or downstream of a waterbody including, but not limited to, erosion control, filtration and purification of naturally occurring water pollutants, streambank stabilization, maintenance of channel integrity, and siltation control.
- Native American Culture (CUL) Uses of water that support the cultural and/or traditional rights of indigenous people such as subsistence fishing and shellfish gathering, basket weaving and jewelry material collection, navigation to traditional ceremonial locations, and ceremonial uses.
- Subsistence Fishing (FISH) Uses of water that support subsistence fishing.

Table 2-1 of the Basin Plan identifies the beneficial uses that have been designated for individual hydrologic units, areas, subunits, or drainages. The federal antidegradation policy[7] requires that existing instream water uses and the level of water quality necessary to protect those uses be maintained and protected. It also states that existing uses are those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in water quality standards.[8] Accordingly, the Regional Water Board implements its water quality protection programs to protect all existing beneficial uses, whether or not they have been designated and are listed in Table 2-1 of the Basin Plan.

1.1.2.2 Water Quality Objectives

Water quality objectives are the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance[9] within a specific area.[10] The Regional Water Board is responsible for establishing water quality objectives which, in the Board's judgment, are necessary for the reasonable protection of beneficial uses and for the prevention of nuisance conditions in the North Coast Region.[11] Water quality objectives form the basis for establishment of waste discharge control mechanisms, discharge prohibitions, maximum acceptable cleanup standards, and other Regional Water Board actions. The water quality objectives that apply to a given waterbody are those that protect the most sensitive of the designated or existing beneficial uses.

Water quality objectives define, in narrative or numeric form, the minimum ambient water quality conditions necessary to support beneficial uses. As examples, the ambient water quality necessary to protect water contact recreation use (e.g., swimming) is based on human health studies and the potential for contaminants to be

[6] CWC § 13050 (f)
[7] 40 CFR § 131.12(a)(1)
[8] 40 CFR § 131.3(e)
[9] CWC § 13050 (m) defines "nuisance" to mean anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes.
[10] CWC § 13050 (h)
[11] CWC § 13241.

accidentally ingested. The ambient water quality necessary to protect cold water spawning is based on aquatic life studies and the requirements of developing salmonid eggs and alevin for cold, clean, well-oxygenated water through the intergravel environment.

High Quality Waters

In accordance with Resolution No. 68-16, *Statement of Policy With Respect to Maintaining High Quality Waters in California* (Antidegradation Policy), whenever the existing quality of water is better than the quality established in policies, as of the date on which such policies become effective, such existing high quality will be maintained until: 1) it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State; 2) will not unreasonably affect present and anticipated beneficial use of such water, and 3) will not result in water quality less than that prescribed in the policies. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet Waste Discharge Requirements (WDRs). This will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

Impaired Waters - Surface Water

In accordance with Clean Water Act Section 303(d), whenever the existing quality of surface water is less than the quality established in the Basin Plan, then the total maximum daily load (TMDL) of the pollutant(s) of concern must be calculated. The total maximum pollutant loading is then distributed to the various pollutant sources (e.g., point sources, nonpoint sources, and natural background) as load allocations. The load allocations form the basis for the development of new or revised programs of implementation.

Impaired Waters - Groundwater

Applicable to both surface and groundwaters, anyone who discharges waste in violation of WDRs or prohibitions, or creates a condition of nuisance or pollution[12] is subject, under order of the Regional Water Board, to the investigation, cleanup, and abatement of the waste and/or condition of nuisance or pollution.[13] Specific to groundwaters though, and in accordance with Resolution No. 92-49 (*Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304*), the presumptive cleanup level for groundwater cleanups is natural background or the best water quality which is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible. Any such alternative cleanup level shall:

1. Be consistent with maximum benefit to the people of the state;
2. Not unreasonably affect present and anticipated beneficial use of such water; and,
3. Not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards.

1.1.2.3 Program of Implementation

[12] CWC § 13304 (l)(1) defines "pollution" to mean an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (A) The waters for beneficial uses. (B) Facilities which serve these beneficial uses. Pollution may include contamination. CWC § 13304 (k) defines "contamination" to mean an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.
[13] CWC § 13304.

The Basin Plan describes the program of implementation under which beneficial uses of water are protected and restored and water quality objectives are achieved. The implementation program contained in the Basin Plan includes prohibitions, schedules of compliance, action plans, policies, and guidelines adopted by the Regional Water Board for that purpose. The Regional Water Board also implements the policies and plans of the State Water Resources Control Board (State Water Board). These are listed on the State Water Board's website.[14] Finally, the Basin Plan includes a description of the statewide and regional monitoring activities, which the State Water Board and Regional Water Board undertake in an effort to assess the condition of the region's waters and confirm that its programs of implementation are effective.

Water Quality Control Mechanisms

The programs of implementation established in the Basin Plan are generally implemented through the adoption for individual or general water quality control mechanisms, including but not limited to: WDRs, waivers of WDRs, water quality certification under Section 401 of the Clean Water Act of federally permitted projects, and cleanup and abatement orders.

Discharge Prohibitions

Also important to the water quality protection programs of the North Coast Region are several discharge prohibitions, as summarized below. Any discharge in violation of these discharge prohibitions are subject to the enforcement of the Board. (Please refer to the language contained in the Basin Plan itself to determine the specific, legal obligations associated with any of these discharge prohibitions). The Basin Plan contains:

1. A prohibition against the point source discharge of waste to all surface waters of the Region except the Mad, Eel, and Russian rivers or as otherwise allowed by the policies or action plans contained in the Point Source Measures section of the Basin Plan or the State's Thermal Plan or Ocean Plan. Specific allowances are made for:
    a. Existing discharges to coastal streams and natural drainages that flow directly to the ocean;
    b. Discharges to tidal waters meeting certain criteria;
    c. Discharges from treatment facilities designed to remove pollutants from groundwater polluted with petroleum products and halogenated volatile hydrocarbons;
    d. Stormwater discharges meeting certain criteria; and
    e. Low threat discharges meeting certain criteria.
2. A prohibition against the discharge (or placement or disposal in locations where it could discharge) of soil, silt, bark, slash, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature in quantities which could be deleterious to fish, wildlife, or other beneficial uses.
3. A prohibition against the controllable discharge (or placement or disposal in locations where it could discharge) of soil, silt, bark, slash, sawdust, or other organic and earthen material from any logging, construction, gravel mining, agricultural, grazing or other activity of whatever nature into waters of the state within the Garcia River Watershed.
4. A prohibition against the discharge of waste in violation of water quality objectives in the Klamath River Basin that are not authorized by the Regional Water Board.

Controllable Water Quality Factors

Additionally important to the water quality protection programs of the North Coast Region is the concept of controllable water quality factors. The Legislature declared in the Porter-Cologne[15] that activities and factors which may affect the quality of waters of the state must be regulated. The Basin Plan (NCRWQB, 2011) further defines controllable factors as those actions, conditions, or circumstances resulting from man's activities

[14] http://www.waterboards.ca.gov/plans_policies/
[15] §13000

that may influence the quality of the waters of the state and that may be reasonably controlled. The Nonpoint Source Implementation and Enforcement Policy[16] indicates that water quality factors include not only waste discharges, but also saline intrusion, reduction of waste assimilative capacity caused by reduction in water quantity, hydrogeologic modifications, watershed management projects, and land use, as examples. The Basin Plan further requires that controllable water quality factors comply with established water quality objectives. The Regional Water Board collaborates with other agencies[17], to ensure the compliance of controllable water quality factors with water quality objectives. Further, Porter-Cologne gives the Regional Water Board the responsibility to require as necessary any state or local agency to investigate and report on any technical factors involved in water quality control or to obtain and submit analyses of water, under certain circumstances[18]. Finally, the development of water quality objectives requires consideration of the water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area,[19] thereby further promoting collaboration with other agencies and entities.

1.2 SUBSTITUTE ENVIRONMENTAL DOCUMENT

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 study.[20]

The 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 plans.[21] These documents must do the following:

1. Provide a brief description of the proposed activity;
2. Provide a reasonable discussion of alternatives to the proposed activity; and,
3. Provide an analysis of mitigation measures needed to minimize any significant adverse environmental impacts of the proposed activity.

Additionally, When the Regional Water Board adopts a rule or regulation requiring the installation of pollution control equipment, establishing a performance standard or establishing a treatment requirement, CEQA[22] and CEQA Guidelines[23] require an environmental analysis of the reasonably foreseeable methods by which compliance with that rule or regulation will be achieved. A Substitute Environmental Document (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 proposed water quality protection program.

[16] http://www.waterboards.ca.gov/water_issues/programs/nps/docs/plans_policies/nps_iepolicy.pdf
[17] Including the State Water Board's Division of Water Rights, the California Department of Fish and Wildlife, and the California Department of Forestry and Fire Protection to name a few.
[18] CWC § 13225 (c)
[19] CWC § 13241 (c).
[20] Cal. Code Regs., tit. 14, § 15251(g).
[21] Cal. Code Regs., tit. 23, § 3777.
[22] Pub. Resources Code, § 21159 (a).
[23] Cal. Code Regs., tit.14, § 15187 (c).

2. An analysis of the reasonably foreseeable feasible mitigation measures relating to the identified environmental impacts.
3. An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation, which would avoid or eliminate any identified impacts.

The environmental analysis must take into account a reasonable range factors[24], including: environmental factors, technical factors, population, geographic areas, specific sites, and economic factors. 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 analysis". [25] Rather, in most circumstances, the project level analysis will be performed by the responsible party or the agency with jurisdiction over the activity conducted.

For proposed basin plan amendments including new or revised water quality standards, requirements of the Clean Water Act also apply. As such, the draft SED must include the documentation necessary to support U.S. EPA's approval. In conformance with 40 CFR Part 131, U.S. EPA must determine if State-adopted water quality standards are:

- Consistent with the requirements of the Clean Water Act;
- Protective of beneficial uses;
- Legally adopted;
- Based on appropriate technical and scientific data and analyses; and
- In conformance with the definition of Water Quality Standards.

As a State regulation, the amended basin plan language must also meet the standard of review for regulations as described in Government Code Section 11349 including standards of: necessity, authority, clarity, consistency, reference, and non-duplication.

The draft SED provides a description of the proposed amendment and all of the documentation necessary to support the Regional Water Board's adoption (including the actual proposed amendment language). The final SED will include: the draft SED, public comments and staff's responses to the comments, the proposed resolution for Board adoption, and other pertinent documentation as contained in the Administrative Record.

The Triennial Review is a planning process and does not require a CEQA analysis or development of an SED, nor does it require the review and approval of the State Water Board, Office of Administrative Law, or USEPA. But any of the projects identified in the 2014 triennial review of the Basin Plan which result in an amendment to the Basin Plan will require the analyses and approvals as described above. At the completion of the 2014 triennial review of the Basin Plan, the Regional Water Board will submit the Administrative Record, including this triennial review staff report, the Response to Comments document, the adopted resolution and priority ranking of projects to U.S. EPA for their information.

1.3 PUBLIC PARTICIPATION

The Regional Water Board decision-making process is designed to maximize consideration of stakeholder knowledge, views and concerns when making decisions regarding water quality in the North Coast Region,

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

[25] Public Resources Code, § 21159(d).

including multiple informal and formal opportunities for data sharing, review, and comment. The 2014 triennial review of the Basin Plan included the following public outreach activities:

1. Staff meeting to solicit internal staff input;
2. Outreach to individual programs and units within the Regional Water Board;
3. Widely distributed public solicitation, including outreach to other public agencies. Formal solicitation period opened January 11, 2014 with a deadline for written recommendations of June 20, 2014;
4. Three public scoping meetings at locations throughout the Region, including: Santa Rosa (April 8, 2014), Redding (April 9, 2014), and Fortuna (May 8, 2014). The scoping meeting held in Fortuna was an item on the Regional Water Board's regularly scheduled Board meeting agenda and as such allowed for Board members input, as well.

This staff report and proposed 2014 list of priorities is available for public review and comment during a 45-day public comment period with written comments due January 9, 2015. In association with this period, a workshop on the proposed list of priorities was held on November 19, 2014 at the Regional Water Board's regularly scheduled Board meeting in Santa Rosa. Responses to public comments will be composed and staff's recommendations finalized in a *Proposed 2014 Triennial Review List of Potential Basin Plan Amendments* to be presented in a hearing to the Regional Water Board for its consideration and adoption on March 12, 2015.

CHAPTER 2
TRIENNIAL REVIEW BASIN PLAN AMENDMENT PROJECTS

This chapter describes staff's review of each potential Basin Plan Amendment (BPA) project which has been considered during the 2014 triennial review of the Basin Plan. The chapter includes a description of each of the potential projects, its status, and staff's recommendation regarding its inclusion on the priority list. It concludes with staff's draft recommendations regarding the priority ranking of the potential Basin Plan amendment projects, including a summary table as Appendix A. Projects considered as part of the 2014 triennial review of the Basin Plan include:

1. Projects on the *Proposed 2011 Triennial Review List of Potential Basin Plan Amendments*,
2. Projects recommended through the 2014 public solicitation process,
3. Statewide policies requiring amendment of the Basin Plan, and
4. Nonsubstantive revisions to provide editorial corrections and clarifications.

2.1 2011 TRIENNIAL REVIEW OF THE BASIN PLAN

Task 1: TMDL Implementation Strategies (Action Plans for Elk River, Freshwater Creek, Eel River, Mattole River, Navarro River, Russian River, and Laguna de Santa Rosa)

In 2007 as part of the triennial review process, the Regional Water Board directed staff to re-engage in the development of watershed specific action plans for impaired waterbodies. The Regional Water Board specifically directed staff, as the highest priority, to develop watershed specific implementation programs (e.g. action plans) as part of TMDL development for the Elk River, Freshwater Creek, Eel River, Mattole River Navarro River, Russian River and Laguna de Santa Rosa. As part of TMDL and action plan development, staff also reviews the beneficial uses and water quality objectives applicable to each watershed, with the potential to recommend revisions to the water quality standards, as appropriate.

Task 1a. Elk River TMDL Action Plan and revision of beneficial uses

The Elk River Watershed was listed under Section 303(d) of the Clean Water Act as impaired due to excessive sedimentation and siltation in 1998. Staff began working on the development of a TMDL for sediment in 2002. The Regional Water Board implemented sediment controls through the adoption of Cleanup and Abatement Orders (issued in 1997, 1998, 2002, 2004, and 2006) and Waste Discharge Requirements (issued in 2002, 2003, 2006 and 2012). Sediment deposition since approximately 1993 limits the flow capacity and causes nuisance conditions in the form of flooding and water supply impacts in the middle reach of the watershed, which have worsened despite tightened sediment controls. In response, efforts are underway in the development and funding of a scope of work to study the feasibility of instream sediment remediation. Documentation of key milestones associated with the Elk River Sediment TMDL project is available on the Regional Water Board's website and include:

- *Staff Report for Proposed Regional Water Board Actions in the North Fork Elk River and Bear, Freshwater, Jordan and Stitz Creek Watersheds* (2000)
- Independent Scientific Review Panel's *Final Report on Sediment Impairment and Effects on Beneficial Uses of the Elk River and Stitz, Bear, Jordan and Freshwater Creeks* (2002)
- Independent Scientific Review Panel's *Phase II Report on Sediment Impairment and Effects on Beneficial Uses of the Elk River and Stitz, Bear, Jordan and Freshwater Creeks* (2003)
- *Elk River and Freshwater Creek TMDL Resident Interviews: Historic Perspectives* (2003)
- *Preliminary Assessment of Flooding in the Lower Elk River* (2004)

- LiDAR Campaign Final Report for *Freshwater Creek Watershed and Elk River Watershed Tributaries to Humboldt Bay, California* (2005)
- Stillwater, *Elk River Landslide Hazard Report* (2005)
- NHE and Stillwater, *Elk River Hydrodynamic and Sediment Transport Pilot Modeling Report* (2012)
- Elk River Restoration Summit (2012)
- *Peer Review Draft Staff Report to Support the Technical Sediment TMDL for the Upper Elk River* (2013)
- Initiation of the *Elk River Recovery Assessment and Pilot Implementation Program* (2014)

Staff has tailored the watershed assessment and implementation strategies based in part on the priority and location of sediment sources and impairments, as well as existing or reasonably foreseeable programs for addressing impairments. Below is a description of the approaches and where they apply.

Elk River Watershed

Staff proposes the development of an Elk River stewardship group through which to address water quality, habitat, human health, and other issues on a watershed basis, in coordination and collaboration with a wide range of stakeholders, including federal land managers and timberland owners in the upper watershed, residents, and lower watershed landowners and their representatives.

Upper Little South Fork Elk River Watershed

This subbasin has been identified as a reference watershed for the purposes of assessing sediment delivery and sedimentation in the Elk River Watershed. It is under the management of the U.S. Bureau of Land Management (BLM) and is within the Headwaters Forest Reserve, primarily an old growth redwood forest stand. Assessments indicate that the subbasin meets water quality standards and does not contribute to downstream beneficial use impairments. Staff proposes that a sediment TMDL for the Upper Little South Fork Elk River Watershed is unnecessary and the subbasin can be delisted from the 303(d) list.

Lower Elk River and Martin Slough

The Lower Elk River Watershed is delineated as those mainstem and tributary waters flowing to Humboldt Bay downstream of the Berta Road bridge on the mainstem Elk River (approximately 6 miles from the mouth). The Lower Elk River Watershed is generally a low gradient baylands, developed for grazing and agriculture. Martin Slough drains portions within and adjacent to the City of Eureka and is rapidly urbanizing. Under the municipal storm water program, Eureka is a Phase II municipality, requiring conformance with the Phase II Municipal Storm Water Permit. Additionally in 2013, the Regional Water Board designated rapidly urbanizing county areas, adjacent to the city of Eureka, and draining to Martin Slough as Phase II communities. Finally, all projects that disturb more than 1 acre of land are required to comply with the Construction General Permit for stormwater, so as to control erosion and sedimentation.

Staff proposes that a sediment TMDL for the Lower Elk River and Martin Slough is unlikely to be necessary, if three implementation programs below are fully developed, implemented and show success:

- The State's grazing program successfully implements actions to control sediment discharges from the dairy lands; and
- In Martin Slough, the Phase II municipalities successfully controls storm-based sediment discharges.
- The Construction General Permit successfully controls storm-based sediment discharges from construction sites

If these three program and permits are being fully implemented by the permittees, then neither a sediment TMDL nor a basin plan amendment will be necessary.

Wetland beneficial uses have been identified in the Elk River Watershed, particularly in the baylands of the lower Elk River. These beneficial uses include: wetland habitat (WET), water quality enhancement (WQE), and flood peak attenuation/flood water storage (FLD).

Upper Elk River

Staff has developed a draft staff report for a sediment TMDL for the Upper Elk River Watershed, which was submitted for scientific peer review in March 2013 and is on the Regional Water Board's website, along with scientific peer review comments and staff's response to comments. Stakeholder outreach, as well as several information items and workshops were held before the Regional Water Board during 2014, resulting in substantial public and Board input. Staff is now rewriting the staff report in preparation for release for public review. The staff report assesses three general sources of sediment: hillslope sources associated with past and ongoing timber operations, in-channel tributary sources, and stored sediment in the depositional reaches that is causing nuisance conditions in the form of flooding and water supply impacts.

Staff proposes a 3-fold program of implementation for the TMDL which includes:

1. A waste discharge requirement (WDR) for timberlands in the Upper Elk River Watershed to address all sources of nonpoint source pollution;

2. A waste sediment remediation action to cleanup the instream sediment deposits now causing nuisance conditions starting at the bottom end of the North Fork Elk and South Fork Elk and continuing down through the upper portion of the mainstem. The *Elk River Recovery Assessment* has been fully funded. Contractors are conducting full scale hydrodynamic and sediment transport modeling from the top of the impacted reach to the river's discharge into Humboldt Bay. The results of the modeling will inform the development of a suite of appropriate waste sediment remediation actions to be formulated into a remediation action plan, followed by individual project designs ready for implementation. Development and implementation of a remediation action plan have not yet been funded.

3. The development of an Elk River Watershed stewardship group to assist in the recovery of the Elk River Watershed ecosystem through coordinated monitoring, collaborative funding, assistance with permitting, and the development of an adaptive management strategy which considers the environmental, economic and social needs of the watershed and all its stakeholders.

Status: Staff is assigned to this project and has been active during the 2011-2014 triennial review period.

Staff Recommendation: Remove the development of an action plan for the Elk River Watershed from the 2014 triennial review list. Develop a WDR for control of nonpoint source discharges from timberlands in the Upper Elk River Watershed as the mechanism to implement sediment load allocations developed through the TMDL to be adopted as a single action. Implement instream sediment remediation as a separate but related action, through the leadership of a watershed stewardship group. Delist the Little South Fork Elk River Watershed from the 303(d) list based on evidence provided in the Upper Elk River Watershed TMDL. Retain development of an action plan for the Lower Elk River Watershed on the 2014 triennial review list as a medium priority TMDL/Basin Plan amendment project, until such time as an alternate program of implementation is developed and codified. Retain revision of beneficial uses for the Elk River on the 2014 triennial review list as a medium priority Basin Plan amendment project as part of the Stream and Wetland System Protection Policy.

Task 1b. Freshwater Creek Sediment TMDL Action Plan and beneficial uses review

The Regional Water Board and U.S. EPA listed the Freshwater Creek Watershed under the Clean Water Act Section 303(d) as a sediment impaired waterbody in 1998. Regional Water Board staff were assigned to establish a TMDL for sediment in the Freshwater Creek Watershed with the goal of restoring the sediment impaired beneficial uses of water of Freshwater Creek and its tributaries. Substantial field work and data analysis have been conducted in support of a sediment TMDL for Freshwater Creek with many work products posted on the Regional Water Board website, including a sediment source analysis and assessment of slope stability and landslide hazard.

Status: Staff were last active on this project up through 2008. In fiscal year 2013-2014 staff were assigned to review existing data and information and develop a framework for a TMDL staff report. No staff have been assigned to this project in fiscal year 2014-2015.

Staff Recommendation: Retain development of a TMDL action plan for the Freshwater Creek Watershed and revisions of beneficial uses on the 2014 triennial review list. Reprioritize it as a medium priority TMDL/Basin Plan amendment project.

Task 1c. Eel River Temperature TMDL Action Plan

Status: Completed

Task 1d. Mattole River Temperature TMDL Action Plan

Status: Completed

Task 1e. Navarro River Temperature TMDL Action Plan

Status: Completed

Task 1f. Russian River Pathogen TMDL Action Plan, beneficial use and water quality objective revisions

Sections of the Russian River Watershed are listed on the Clean Water Act 303(d) list of impaired water bodies due to high fecal indicator bacteria levels (e.g., total coliform, fecal coliform, E. coli and enterococcus). High fecal indicator bacteria (FIB) levels may indicate the presence of pathogenic organisms that are found in warm-blooded animal waste. Pathogens pose potential health risks to people who recreate in contaminated waters.

Impairments for pathogenic indicator bacteria apply to the mainstem Russian River from Fife Creek in Guerneville to Dutch Bill Creek in Monte Rio, the mainstem Russian River near Healdsburg Memorial Beach, an un-named tributary on Fitch Mountain, Santa Rosa Creek, the Laguna de Santa Rosa, and Green Valley Creek. The Russian River Pathogen TMDL was initiated to address the current impairment of recreational beneficial uses of the Russian River and its tributaries. In addition to these reaches, the Regional Water Board suspects FIB contamination in the Russian River from above Alexander Valley to the mouth of the Russian River at Jenner.

Data collection and analysis are documented in the following reports, available on the Regional Water Board website.

- *Russian River Pathogen TMDL Monitoring Pilot Project: A Summary Report to the North Coast Regional Water Quality Control Board* (September 2009)

- *Russian River Pathogen TMDL Monitoring Design: A Technical Report to the North Coast Regional Water Quality Control Board* (September 2009)
- *Fact Sheet summarizing the Russian River Pathogen Pilot Study* (January 2011)
- *Russian River Pathogen TMDL 2011-2012 Monitoring Report* (May 2012)
- *Onsite Wastewater Treatment System Impact Study Report* (July 2013)
- *Russian River Beach Recreation Impact Study Report* (Nov 2013)
- *Upper Russian River Fecal Indicator Bacteria Monitoring Report* (Nov 2013)
- *Russian River Human Impact Study - Phylochip Microbial Community Analysis* (May 2014)

Status: Staff are assigned to this project and have been active during the 2011-2014 triennial review period. The draft TMDL is expected to be complete and available for public review in the winter of 2015.

Staff Recommendation: Retain Russian River Pathogen TMDL Action Plan and beneficial use and water quality objective revisions on the 2014 triennial review list as a high priority TMDL/Basin Plan amendment project.

Task 1g. Laguna de Santa Rosa Nutrient, Dissolved Oxygen, Temperature and Sediment TMDL Action Plan, beneficial use and water quality objective revision

The Laguna de Santa Rosa is a major tributary of the Russian River and drains a 254 square mile watershed in Sonoma County, California. Major tributaries to the Laguna de Santa Rosa include Windsor Creek, Mark West Creek, Santa Rosa Creek, Blucher Creek, and Copeland Creek.

The current 2010 Clean Water Act Section 303(d) List of Impaired Waters (2010 303(d) List) divides the Laguna de Santa Rosa Watershed into three water bodies, according to the Hydrologic Sub Areas (HSAs). The water bodies are as follows: the Laguna de Santa Rosa HSA, the Mark West Creek HSA, and the Santa Rosa Creek HSA. It is the intent of Regional Water Board staff to clarify the geographic extent of the impairments in the next listing cycle. Regional Water Board staff also intend to remap the Laguna Watershed so that the waterbodies are not divided by HSAs, but in smaller segments with mainstem reaches separate from tributary waterbodies. Based on the review and conclusions of a Technical Advisory Committee (TAC) composed of local, knowledgeable fishery experts, the beneficial use designation of SPAWN in the mainstem Laguna de Santa Rosa will be clarified to apply only to the habitat requirements of warm water fish. The TAC concluded that the mainstem Laguna has never provided habitat suitable for salmonid spawning. Clarification of the SPAWN beneficial use negates the need to consider revisions to the DO objectives for the mainstem.

A TMDL for high levels of ammonia and low dissolved oxygen concentrations was approved by the U.S. EPA in 1995 as the *Waste Reduction Strategy for the Laguna de Santa Rosa.* The Waste Reduction Strategy focused on the reduction of nitrogen loading from point and non-point sources. Regional Water Board staff are currently developing new TMDLs for nitrogen, phosphorus, dissolved oxygen, temperature, and sediment in the Laguna de Santa Rosa Watershed to address continuing water quality impairments. These TMDLs will apply to entire Laguna de Santa Rosa Watershed, including Mark West Creek, Santa Rosa Creek, and all the tributaries. Technical reports found on the Regional Water Board website include:

- *Pre-European Settlement Spatial Data Model Evaluation* - November 2010
- *Gradient Analysis of Environmental Variables to Delineate Pre-European Settlement Land Cover Boundaries* - November 2010
- *Nutrient Loading Estimates for Laguna TMDL Source Analysis* - November 2010
- *Sediment Quality of the Laguna de Santa Rosa* - May 2011
- *Water Quality Model Development History for the Laguna de Santa Rosa TMDL* - May 2011

- *Constructing Stream Flow Rating Power Equations for the Pre-settlement Lakes in the Laguna de Santa Rosa Watershed* - June 2011
- *Dissolved Oxygen Model Development and Evaluation* - June 2011
- *Diel Water Quality within the Laguna de Santa Rosa Watershed during 2001-2002* - October 2011
- *Development of the Laguna de Santa Rosa Watershed Pre-European Settlement Spatial Data Model* - December 2011
- *Descriptive Statistics of Diel Water Quality collected within the Laguna de Santa Rosa Watershed during the years 1995 through 2011* - December 2011
- *Development of the Land Cover Loading Model for the Laguna de Santa Rosa Watershed* - December 2011
- *Dissolved Oxygen Model Application for Pre-Settlement Laguna Watershed Conditions* - March 2012
- *Laguna de Santa Rosa TMDL Linkage Analysis through Application of Water Quality Models* - March 2012
- *Laguna de Santa Rosa TMDL Linkage Analysis and Loading Capacity Assessment for Total Nitrogen and Ammonia Nitrogen Toxicity* - March 2012
- *Assessment of Nutrients Limiting Algal Biomass Production in the Laguna de Santa Rosa* - March 2012
- *Assessment of the Total Nitrogen and Ammonia Nitrogen Goals from the 1995 Laguna TMDL* - May 2012

Because legacy, stored, nutrient-rich sediments have been identified as a large contributor to the noted impairments attention is being diverted to implementation actions, including the development of a nutrient trading program. The City of Santa Rosa operates under a zero-discharge permit and is looking for instream sediment-removal and stream restoration projects to offset their discharge. The local Resource Conservation District has received a grant to help establish a trading program in which local dairies can also participate.

Status: Staff are assigned to this project and have been active during the 2011-2014 triennial review period.

Staff Recommendation: Retain Laguna de Santa Rosa Nutrient, Dissolved Oxygen, Temperature and Sediment TMDL Action Plan and beneficial use clarification on the 2014 triennial review list as a high priority TMDL/Basin Plan amendment project. No revision of water quality objectives will be necessary.

Task 2. Temperature Implementation Policy

Status: Completed

Task 3. Ground/Surface Water Objectives – Implementation Plan, includes editorial amendments to Chapters 3, 4, and 6.

This proposed amendment has been divided into the Water Quality Objectives Update Amendment (Phase I) and development of a Groundwater Protection Policy (Phase II).

Phase I – Water Quality Objectives Update Amendment

This amendment was initially released for public comment in February 2012. The proposed WQO Update Amendment to the Basin Plan includes a number of actions relative to updating water quality objectives for both surface waters and groundwaters in the North Coast Region. The primary goals of the proposed WQO Update Amendment are to:

- Develop a narrative groundwater toxicity objective,
- Replace Table 3-2 with a revised chemical constituents objective referencing Title 22,

- Specifically incorporate the California Toxics Rule and the State Implementation Policy,
- Add a description clarifying the process the Regional Water Board uses when narrative objectives are translated into numeric limits for use in permits, orders, or other Board actions, and
- Add other substantive and non-substantive revisions to Chapters 3 of the Basin Plan, as appropriate.

Regional Water Board staff revised the Staff Report and the proposed Basin Plan language in response to public and Board input and released it for a second round of comments in March 2013. Staff postponed the Regional Water Board adoption hearing for the WQO Update Amendment which was scheduled for June 13, 2013 and replaced it with an informational item to provide an update on the status of this amendment. Staff has made additional revisions to the amendment in light of the most recent public comments and will bring the WQO Update Amendment to the Board in June 2015, following an additional 45-day comment period, in early 2015. Reports available on the website include:

- Executive Officer's Summary Report (6/13/13)
- Notice of Document Availability and Public Hearing (2/21/13)
- Revised SED /Staff Report (2/21/13)
- Notice of Public Workshop (3/15/12) and Availability of Documents (2/3/12)
- Executive Officer's Summary Report for March 15, 2012 Workshop
- Public Workshop Presentation (3/15/12)
- Staff Report dated February 3, 2012 (includes proposed Basin Plan language) (2/3/12)
- Notice of Public Workshop (11/ 3/11 and 11/8/11)
- Executive Officer's Summary Report for November 3 & 8, 2011 Workshops
- Public Workshop Presentation (11/3/11 and 11/8/11)
- Public Participation Plan (9/1/11)
- CEQA Scoping Meeting Presentation (7/8/10)

Phase II—Groundwater Protection Policy

Specific changes under Phase II may include, and are not limited to, the following:

- Reorganize Chapter 4, including an index and new headings within this chapter to be consistent with other recent edits to the Basin Plan.
- Revise and/or delete existing plans and policies to bring the Basin Plan up to date with current regulations and practices.
- Adopt a regionwide prohibition against the discharge of waste in violation of water quality standards, similar to that now in effect the Klamath Basin.
- Add a groundwater protection policy and a comprehensive implementation program for this policy. This task is intended to prevent impacts to the beneficial uses of receiving waters (groundwater) from the discharge of waste by identifying management measures and monitoring programs to ensure that all land disposal projects are designed to protect applicable water quality standards (i.e. beneficial uses and water quality objectives). Action plans for agricultural and other operations that can affect water quality will be developed under this policy.
- Delete the outdated Action Plans in the Basin Plan (such as the Action Plan for Accidental Spills and Contingencies).

Status: In process. This project has been divided into 2 phases. Phase I includes revisions to the water quality objectives contained in the Chapter 3 of the Basin Plan, including editorial revisions. Staff have been active on this project during the 2011-2014 triennial review period. A basin plan amendment for Phase I will be proposed for adoption at the Regional Water Board meeting in June 2015. Phase II includes substantive and editorial

revisions to Chapter 4 of the Basin Plan. Phase II has been scoped. Staff will turn full attention to Phase II of this project once Phase I has been adopted. During the 2011-2014 triennial review period, staff have conducted early outreach efforts and have been building collaborative relationships with entities involved in groundwater protection or management efforts, in preparation for the development of Phase II.

Staff Recommendation: Retain Phase I and Phase II on the 2014 triennial review list as two separate high priority Basin Plan amendment projects.

Task 4. Dissolved Oxygen Objectives for Wetlands, Free Flowing Streams (except the Klamath mainstem) and Lakes

Regional Water Board staff began working on the revision of the dissolved oxygen (DO) objectives associated with this task in 2008. However, revisions to the dissolved oxygen objectives have been prioritized on all the Triennial Review Lists since 1988. Much staff time and effort has been expended on this issue in the intervening years.

In late 2008, CEQA scoping meetings were held to seek input on the scope of the environmental analysis that should be conducted as part of the Basin Plan Amendment process. A draft Staff Report was submitted to formal peer review in mid-2009 addressing DO objectives in free-flowing aquatic systems (i.e., rivers). In 2010, a site-specific objective (SSO) for DO in the Klamath River was adopted by the Regional and State Water Boards and approved by U.S. EPA, based on this work.

Efforts to develop a DO TMDL for the Laguna de Santa Rosa have highlighted the need to develop DO objectives specific to non-riverine systems, such as lakes, reservoirs, wetlands and estuaries, as well as ephemeral streams. Planning staff have worked in close coordination with TMDL staff to assess DO standards for the Laguna de Santa Rosa as described above. DO objectives for wetlands, lakes, and estuaries regionwide still require review and revision.

Status: In process. Revision of DO objectives for free flowing streams has been included in Phase I of Task 3 above and will be proposed for adoption in June 2015. Revision of DO objectives for wetlands, lakes, and estuaries have been scoped. See Task 9-- Stream and Wetland System Protection Policy description below for discussion of DO objectives for wetlands. See Task 17 for description of DO objectives for lakes and estuaries.

Staff Recommendation*:* Retain on the 2014 triennial review list. Divide project into 3 elements:

a. DO for free flowing streams to be included in the WQO Update Amendment as a high priority Basin Plan amendment project,
b. DO objectives for wetlands to be included with the Stream and Wetland System Protection Policy as a medium priority Basin Plan amendment project, and
c. DO objectives for lakes and estuaries to be included as a low priority Basin Plan amendment project.

Task 5. Aquatic Ecosystem Restoration Policy

Regional Water Board staff has developed a draft policy to address permitting issues specific to restoration projects. The policy articulates the Regional Water Board's support for aquatic ecosystem restoration projects designed to restore impaired beneficial uses of water. It articulates the Regional Water Board's existing authority to permit these kinds of projects. It will also acknowledge that restoration projects sometimes result in short term water quality impacts (e.g., increased turbidity); but, they are deserving of permitting certainty

because of the long-term water quality benefits they promise. The policy will affirm that no provisions of the Basin Plan should be viewed as inhibiting the permitting of restoration projects.

Status: The draft policy was released for public comments on November 17, 2014. A workshop for the proposed policy was held on November 20, 2014. It is scheduled for Board's consideration and adoption in January 2015.

Staff Recommendation: Remove from the 2014 triennial review list because of proposed adoption of the policy in January 2015.

Task 6. Stream and Wetlands Protection

In 2005, Regional Water Board staff began working on the Stream and Wetlands System Protection Policy after U.S. EPA awarded grant funding to both the North Coast and the San Francisco Bay Regional Water Quality Control Boards to develop a comprehensive Stream and Wetlands System Protection Policy as a Basin Plan amendment for consideration separately by the two Boards. However, due to loss of resources (loss of planning staff) and higher priorities (adoption of the Klamath TMDL) no work on this project has been undertaken by staff from the North Coast Region since 2008. Staff from the San Francisco Bay Regional Water Board continued as the lead on development of the joint work product through 2011.

A draft Substitute Environmental Document supporting a proposed Stream and Wetland System Protection Policy has been developed and reviewed by scientific peer reviewer. The proposed policy includes:

- Wetland beneficial uses (similar to the wetland beneficial uses adopted by the North Coast Board in 2003).
- Three new objectives designed to protect stream and wetland beneficial uses, including objectives to protect:
    - Stream process and dynamic equilibrium;
    - Stream and wetland system habitat integrity; and
    - Watershed hydrology. (The watershed hydrology objective was included, in part, by staff to address the issues contained in Task 10 regarding instream flows).
- An implementation program based on achieving water quality objectives to protect and restore the physical integrity and associated functionality of stream and wetland systems, including perennial, intermittent, and ephemeral streams and wetlands and their associated riparian areas.

Status: This project was identified as a medium priority project as part of the 2011 triennial review (e.g., not on the "short list"). There has been no staff assigned to this project during the 2011-2014 triennial review period.

Staff Recommendation: Retain on the 2014 triennial review list, combining development of the Stream and Wetland System Protection Policy with the development of a watershed hydrology objective (see Task 7), water quality objectives for DO (see Task 4) and pH (see Task 19) in wetlands, and revision of Table 2-1 (see Task 11) to include designation of the WET, WQE, and FLD beneficial uses, where appropriate. Analysis of conditions in the Elk River watershed (see Task 1a) and Laguna de Santa Rosa watershed (see Task 1g) within the TMDL program have resulted in sufficient documentation of the presence and function of wetlands in those areas.

Task 7. Instream Flow (Watershed Hydrology) Objective

Regional Water Board staff has only been peripherally involved in this task since adoption of the 2007 Triennial Review List. At the request of staff from the North Coast Regional Water Board, San Francisco Regional Water Board staff included a narrative watershed hydrology objective in the draft *Stream and Wetlands System Protection Policy* that was submitted for peer review. It describes the need to maintain and protect 4-dimentional hydrologic functionality, including hillslope to valley, headwaters to estuary, groundwater to surface water, and annual/seasonal connectivity in a manner that mimics the natural pattern and range of flows necessary to support beneficial uses and prevent nuisance.

Improved coordination between the Regional Water Board and the Division of Water Rights remains a high priority for Regional Water Board, staff and external stakeholders. Similarly, the need to maintain adequate instream flow has been identified in several TMDLs adopted by the Regional Water Board. A narrative watershed hydrology objective supports the development of implementation measures which protect instream flows, until such time as numeric flow objectives can be developed for individual streams or watersheds.

Status: Staff in the North Coast Region have not been assigned to work on this project during the 2011-2014 triennial review period. But, staff in the San Francisco Bay Region have developed a draft Substitute Environmental Document, including proposed Basin Plan amendment. Staff at the San Francisco Bay Region have not yet pursued adoption of the proposed *Stream and Wetlands System Protection Policy*.

Staff Recommendation: Retain on the 2014 triennial review list as a medium priority Basin Plan amendment project. Keep as combined with the Stream and Wetland System Protection Policy.

Task 8. Adopt Policy for Mixing Zones

A mixing zone is a specified zone within the influence of a point source discharge where effluent is allowed to mix with receiving water prior to being monitored for compliance with effluent limitations. For a mixing zone to be allowed as a compliance tool in a discharge permit, the Basin Plan must contain a mixing zone policy which describes the limitations and parameters of its application. The Basin Plan does not currently contain such a policy. The State Implementation Plan for the California Toxics Rule (CTR), however, allows a mixing zone for constituents identified in CTR.

Over the years, several Publicly Owned Treatment Works (POTWs) have requested through the triennial review process that the Regional Water Board develop and adopt a mixing zone policy. In support of this request, the City of Santa Rosa hired Merritt Smith Consulting to evaluate the feasibility and appropriate conditions of a mixing zone policy for the North Coast Region. In January 2011 Merritt Smith Consulting submitted a report of their findings which is found on the Regional Water Board website entitled *Evaluation of a Mixing Zone Policy for Health-Related Constituents* containing the following elements:

- A description of the existing regulations and policies
- Basin Plan Amendment Alternatives
- Environmental Analysis
- References
- Appendices

The City of Santa Rosa later determined that it did not need a mixing zone to be able to comply with effluent limitations and so staff were reassigned to other projects. But, back in 2007 and again as part of the 2014 triennial review of the Basin Plan, the City of Ukiah has requested the development of a mixing zone policy to support its calculated need for a mixing zone so as to be able to comply with effluent limits, in the absence of improved treatment. The City of Ukiah has specifically requested a policy which applies to the pollutant limits established to protect human-health (e.g. nitrates, chlorine break-down products, etc). Ukiah completed an

expensive (multimillion dollar) treatment plant upgrade project in the early 2000s and constructed the project through 2009. Unfortunately, the need to address nutrients was not on their radar, so their upgrade project did not address the need for nutrient removal. Ukiah uses trickling filters for biological treatment, and they are not amenable to modification to achieve consistent nitrification and cannot achieve denitrification (conversion of nitrate to nitrogen gas to remove it from the waste stream). It would take another expensive upgrade ($22+ million in capital costs) to add the technology needed for them to achieve consistent compliance with ammonia and nitrate effluent limitations.

Status: This project was identified as medium priority Basin Plan amendment project during the 2011 triennial review (not on the "short list"). No staff were assigned during the 2011-2014 triennial review period.

Staff Recommendation: Retain on the 2014 triennial review list as a medium project priority.

Task 9. Update Policy on the Regulation of Fish Hatcheries, Fish Rearing Facilities, and Aquaculture Operations

Regional Water Board staff began limited engagement on this task in 2008. Staff from the Department of Fish and Wildlife was extremely interested in pursuing revisions to the Policy due to the nature of some of the existing language and permitting concerns. Of particular concern were the following two existing prohibitions:

- The discharge of waste resulting from cleaning activities shall be prohibited.
- The discharge of detectable levels of chemicals used for the treatment and control of disease, other than salt (NaCl) shall be prohibited."

Regional Water Board staff undertook research and review of the history of the Policy, with an interest in enhancing waste prevention and minimization as an important concept, as well as incorporating strong monitoring and reporting requirements and protective effluent limits as permit conditions.

Since the 2011 triennial review, legal staff has concluded that the existing Hatchery Policy does not bar staff from amending the NPDES permits for hatcheries in a manner appropriate to accomplish the goals above.

Status: NPDES permits for hatcheries are being updated and revised in the absence of any revisions to the Hatchery Policy.

Staff Recommendation: Remove from the 2014 triennial review List.

Task 11. Update Beneficial Uses Chapter (Table 2-1)

The beneficial use Basin Plan Amendment, adopted by the Regional Water Board in June 2003, included definitions of five additional beneficial uses of water; however, an additional amendment to Chapter 2 of the Basin Plan is required to make the following updates to the chapter and table:

- Add designations for the new Subsistence Fishing (FISH) use to specific Hydrologic Areas (HAs) and Hydrologic Sub-areas (HSAs) in Table 2-1.
- Add additional designations for the new Native American Cultural use to specific HAs and HSAs in Table 2-1.
- Delineate wetlands in the region and add designations for specific wetland areas to Table 2-1.
- Delineate groundwater basins in the region and designate beneficial uses to the specific basins (add Table 2-2).

Status: Graduate students at the Yale School of Forestry and Environmental Studies conducted a telephone and email research effort to collect information from Northern California tribes, Rancherias, and other entities which could support the designation of the CUL and FISH beneficial uses to additional waters in the North Coast Region. They were unable to gather significant new information. Wetland delineations, however, are regularly made as part of 401 certifications. Further, wetlands and wetland-related beneficial uses have been identified as part of the Elk River TMDL and Laguna de Santa Rosa TMDL analyses. Finally, the requirements of the Recycled Water Policy for the development of Salt and Nutrient Management Plans for each of the 63 groundwater basins in the Region has resulted in a decision to develop a programmatic approach to salt and nutrient control, focusing first on high priority groundwater basins. As part of that effort, proposed in combination with Phase II—Groundwater Protection Policy, beneficial uses should be identified and Table 2-1 updated.

Staff Recommendation: Retain on the 2014 triennial review List. Update Table 2-1 with groundwater basin-specific beneficial uses as part of Phase II—development of a Groundwater Protection Policy and as a high priority project. Update Table 2-1 with WET, WQE, and FLD beneficial uses where existing information supports the designations (e.g., Elk River Watershed, Laguna de Santa Rosa) as part of the development of a Stream and Wetland System Protection Policy and as a medium priority project. Update Table 2-1 with CUL and FISH beneficial uses where additional information can be gathered as a low priority project.

Task 11. Designate Wild and Outstanding National Resource Waters

An Outstanding National Resource Water (ONRW) is a designation under the Clean Water Act which restricts the degradation of high quality waters. The two ONRWs in California include Mono Lake and Lake Tahoe, both in Lahontan Region.

In 2007, the Environmental Law Foundation and several environmental organizations formally requested, in the form of a petition, that a number of Regional Water Boards designate several river segments as Outstanding Natural Resource Waters (ONRW). The request for ONRW designation included those river segments currently designated as "Wild and Scenic" under California's Wild and Scenic River Act (Public Resources Code § 5093.50 -.70). In a letter, dated May 8, 2007, State Water Board staff on behalf of the petitioned regions stated that these requests will be evaluated individually during the region's Triennial Review process. Stakeholders again requested the designation of ONRWs in the North Coast Region during the 2014 triennial review process, specifically highlighting the potential of the Smith River as a good candidate.

Staff were assigned on a temporary basis to evaluate the waterbodies with the greatest potential for ONRW designation and the best process by which to bring such a designation before the Board for adoption. Preliminary scoping suggests that as predominantly or wholly owned by the federal government and managed by the U.S Forest Service (USFS), the Salmon River and Middle Fork Eel River make good candidates for ONRW designation. Preliminary scoping also suggests that bringing such a recommended designation to the Board in parallel with renewal of the USFS waiver may provide a reasonable and efficient platform for the Board's consideration. As part of an effort to think ahead to the potential water quality impacts associated with climate change, one potentially important tool to protect high quality waters and ensure some amount of ecosystem resilience will be the designation of ONRWs and their heightened protected status.

Status: Staff were temporarily assigned to conduct preliminary scoping in calendar year 2014.

Staff Recommendation: Maintain on 2011 triennial review List. Collaborate with timber staff to consider development of the information necessary to support designation of the Salmon River and the Middle Fork Eel, as a companion to renewal of the USFS waiver in 2015.

Task 12. Consider Ammonia Objectives

U.S. EPA has published final national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater. U.S. EPA's 2013 ammonia criteria reflect new data on sensitive freshwater mussels and snails, incorporate scientific views U.S. EPA received on its draft 2009 criteria, and supersede U.S. EPA's previously recommended 1999 ammonia criteria. In addition to the criteria document, U.S. EPA has also published supporting information to assist states, territories, and authorized tribes considering adoption of the new recommended criteria into their water quality standards.

Permitting staff currently implement U.S. EPA's ammonia criteria through its application of the Basin Plan's toxicity objective and chemical constituents objectives, including footnote 2 to Table 3-2. Adoption of the Phase I—Water Quality Objective Update Amendment, to be proposed in June 2015, should further clarify the process by which more stringent criteria than contained in the Basin Plan are implemented in permits, orders, and other regulatory mechanisms. Amendment of the Basin Plan to include the updated ammonia criteria is not viewed as critical.

Status: No staff have been assigned to this project during the 2011-2014 triennial review period.

Staff Recommendation: Retain on the 2014 triennial review list as a low priority.

Task 13: Revise Fluoride Objective

The fluoride water quality objective presently listed in the Basin Plan, specified as optimum fluoride concentrations for surface waters, are temperature-based and range from 0.6 to 2.4 mg/l (Table 3-2). In September 2003, the California Department of Public Health (CDPH) implemented a maximum level for fluoride of 2.0 parts per million. In addition, U.S. EPA announced in January 2011, that it was initiating a review of the water quality criteria for fluoride based on new information related to human health. This review is at least in part due to the U.S. Department of Health and Human Services proposal that the recommended level of fluoride in drinking water can be set at the lowest end of the current optimal range to prevent tooth decay.

The Phase I—Water Quality Objective Update Amendment being developed under Task 6 would result in the deletion of Table 3-2 (which includes the fluoride levels) from the Basin Plan and replacing it with prospective incorporation of Title 22 as the chemical constituents objective. In addition, the amendment will clarify the approach staff uses when interpreting footnote 2 to Table 3-2 to implement more stringent policies and objectives, as necessary. Permitting staff believe that implementation of the chemical constituents objective addresses the need to implement the most up-to-date fluoride criteria.

Status: No staff have been assigned to this project during the 2011-2014 triennial review period.

Staff Recommendation: Delete this project from 2014 triennial review list as unnecessary.

Task 14. Low Flows in the Lower Russian River and other impaired waterbodies

Written comments were received during the 2011 Triennial Review of the Basin Plan specifically requesting that a basin plan amendment addressing low flows in the Lower Russian River and other impaired waterbodies be considered a priority. The 2011 Triennial Review Priority List was adopted, identifying this project as Task 14. The issue of primary concern is that legal and illegal water diversions sometimes result in cumulative impacts on stream flows which can either exacerbate or cause beneficial use impairment. Some of the direct impairments potentially resulting from loss of flow include: loss of aquatic habitat, loss of water supplies to downstream users, and loss of recreational and cultural opportunities. In addition, reduction in stream flow can contribute to a degradation in existing water quality conditions by either concentrating constituents or triggering an ecosystem response, such as eutrophication or sedimentation.

Status: While there were no staff resources applied to this task as a potential Basin Plan amendment project, considerable staff resources have been applied in the 2011-2014 period to the assessment and consideration of flow, as it relates to water quality, including its evaluation for potential listing on the 303(d) list of impaired waters.

Recommendation: Retain on the 2014 triennial review list. Consider identifying only a few specific waters as a high priority for numeric flow objective development, moving other individual waters up from low to high priority, depending on the disposition of other higher ranked projects. Ensure that the development of numeric flow objectives be conducted in close collaboration with California Department of Fish and Wildlife, as well as the State Water Board's Division of Water Rights.

Task 15. Dissolved Oxygen Objectives for Estuaries

The dissolved oxygen objectives for bays in the North Coast Region are site specific daily minimums for Humboldt Bay and Bodega Bay. The daily minimum DO objectives are based on day-time grab samples collected during the 1950s and 1960s and do not represent the true minimum DO concentrations which fluctuate with salinity, temperature, atmospheric pressure. As a response variable, DO also fluctuates as a result of the condition of the water delivered from the upgradient drainage, including nutrient concentrations, temperature, and organic material. It also varies as a result of changes in nutrient and organic matter loading from the estuary itself as a result of natural and anthropogenically altered estuarine habitat.

Status: As part of the development of Site Specific Objectives for the Klamath River in 2010, staff adapted the narrative water quality objective for dissolved oxygen in Newport Bay as a recommendation for the Klamath River estuary. Staff have not been assigned in the 2011 through 2014 triennial review period to assess the DO objectives as they apply in other estuaries in the Region and recommend revised objectives.

Staff Recommendation: While it is clear that the DO objectives for Humboldt Bay and Bodega Bay require updating, Planning staff have no indication that the existing DO objectives are causing difficulty with respect to permitting or implementation of water quality protection programs. As such, given the other Basin planning priorities, staff recommend that revision of the DO objectives for estuaries be retained on the 2014 triennial review list as a low priority.

Task 16. Surface Water Toxicity Objective

As part of the 2007 triennial review, staff was requested to revise the toxicity objective for surface water by removing the term 'acute'. The current language states "effluent limits based on acute bioassays of effluents will be prescribed." At that time, it was proposed that the language be modified to reflect that effluent limits be prescribed based on bioassays of effluent. Since that time, staff has determined that during a large-scale

editorial revision of the Basin Plan in 1994, an alteration in the punctuation resulted in a change in the meaning of the original objective and can simply be reversed to return to the original meaning.

Status: Staff assessed this triennial review project request and determined that it could easily accommodate as part of the Phase I–Water Quality Objectives Update amendment. The WQO Update amendment is currently proposed to be brought before the Regional Water Board in an adoption hearing in June 2015.

Staff Recommendation: Retain on the 2014 triennial review list as a high priority. Combine this task with the Phase I—WQO Update amendment to be proposed for adoption in June 2015.

Task 17. Table 3-1 for Upper Russian River

In 2011, the City of Healdsburg requested that as part of the 2011 Triennial Review process staff make a high priority of relaxing the site specific total dissolved solids (TDS) and specific conductance (SC) objectives for the Upper Russian River, as listed in Table 3-1. The most recent revision of the Healdsburg's NPDES permit does not include specific TDS and specific conductance limits, as was the case in the previous NPDES permit. But, the current NPDES permit does require that the City conduct a special study to determine natural background levels for these constituents in Basalt Pond and the Upper Russian River, as is necessary to assess whether or not the objectives can reasonably be relaxed. The study was completed between October 2012 and May 2013. The monitoring data showed that the upgradient pond SC and TDS complies with the Basin Plan objectives while Basalt Pond TDS and SC are elevated above the water quality objectives. Effluent TDS and SC is higher than the concentrations in Basalt Pond. The data points to Healdsburg's effluent discharge as being the cause of elevated TDS and SC in Basalt Pond. The City's current argument is that Basalt Pond is a wetland and water quality standards appropriate to wetland protection should be applied.

Status: No planning staff resources were assigned to this project during the 2011-2014 triennial review period. During this period, the City conducted an analysis of natural background conditions for TDS and SC in Basalt Pond and the Upper Russian River, as described above.

Staff Recommendation: Retain this task on the 2014 triennial review list as a low priority. Consider evaluating Basalt Pond using wetland delineation procedures to determine if Table 2-1 should be updated by designating Basalt Pond with WET, WQE, and/or FLD beneficial uses.

Task 18. Recycled Water Reservoirs – 25 year return frequency

As part of the public review of the staff report for the 2011 Triennial Review of the Basin Plan, HydroScience Engineers submitted a one page email on June 2, 2011 requesting that recycled water storage management be consistent with the statewide Recycle Water Policy, adopted by the State Water Board in 2009. The state policy requires that recycled water reservoirs be managed to preclude discharges from storm events of lesser intensity/duration than 24-hours, 25 year storm. The project was added to the proposed priority list. But, since that time, permitting staff have incorporated the requirements described above directly into the permits themselves. As such, staff no longer believe an amendment of the Basin Plan is necessary to accomplish this goal.

Status: No planning staff resources have been assigned to this task during the 2011-2014 triennial review period. But, permitting staff have developed appropriate permit language to address this issue.

Staff Recommendations: Delete this task from the 2014 triennial review list.

Task 19. pH Objective

As described in the 2011 staff report, the Regional Water Board was asked to relax the Basin Plan standard for pH from 6.5 to the U.S. EPA standard of 6.0. Section 301(b)(1)(c) of the Clean Water Act (CWA) and section 122.44(d) of the federal regulations requires that NPDES permits to specify effluent limitations more stringent than technology-based effluent limitations, if necessary to achieve water quality standards set forth in the Basin Plan. In addition, sections 402(o)(2) and 303(d)(4) of the CWA and section 122.44(l) of the federal regulations prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. In 2011, staff concluded that the information and/or circumstances necessary to satisfy requirements for consideration of relaxed limitations had not been provided, as part of the requested revision.

Status: No staff resources were assigned to this task during the 2011 to 2014 triennial review period.

Staff Recommendations: Retain this task on the 2014 triennial review list as a low priority.

Task 20. TMDL Action Plans for Impaired Waters, not included in Task 1

The 303(d) list for 2012 includes numerous waterbody segment-contaminant pairs with noted impairments associated with sedimentation, elevated temperatures, nutrient enrichment and depressed DO, indicator bacteria, mercury, aluminum, diazanon, manganese, specific conductivity, altered pH, microcystin, dioxin and PCBs, and invasive species. As a general matter, the Basin Plan's Sediment TMDL Implementation Plan is available for staff to utilize when addressing sedimentation issues in impaired waters. Similarly, the recently adopted Temperature Implementation Policy is available to address temperature impairments. The State Water Board is developing a mercury program to address mercury contaminants in reservoirs, which Regional Water Board staff will rely on to address local mercury impairments. Of the remaining impairments, indicator bacteria are the most widely spread. Aluminum findings are also fairly widespread. Humboldt Bay is impaired with dioxin and PCBs. Bodega Bay is impaired by nutrients and exotic species, in addition to sediment and indicator bacteria. Diazanon has been found in Foss Creek, in the Middle Russian River Hydrologic Unit. And manganese, specific conductivity, and altered pH are noted in reaches of the Russian River Watershed.

Status: Staff resources have not been assigned during the 2011-2014 triennial review period to the development of TMDLs for other waterbody-pollutant pairs, besides those identified in Task 1. TMDL program staff have identified ocean beaches and freshwater indicator bacteria impairments as the most critical TMDL-related issue, followed by dioxin and PCBs in Humboldt Bay. Sediment impairments in the watersheds draining to Humboldt Bay have also been identified as a priority.

Staff Recommendation: Retain as a low priority the development of TMDL action plans for impairments in Bodega Bay and those related to aluminum, diazanon, manganese, specific conductivity, and altered pH elsewhere in the Region.

Task 21. Adopt Freshwater Bacteria Objectives

The Basin Plan water quality standards include only total and fecal coliform bacteria as indicators. In 1986, U.S. EPA published 304(a) water quality criteria for bacteria in which they recommend the use of Escherichia coli (*E. coli*) and enterococci rather than fecal coliform for the protection of primary contact recreation (REC-1) in marine/coastal waters. The epidemiological data, upon which the national criteria are based, suggest that these bacterial indicators are better correlated to water contact-exposure related health effects. In addition, the U.S. EPA "Action Plan for Beaches and Recreational Waters" (EPA/600/R-98/079, March 1999) required all

states, by 2003, to adopt bacterial standards that are consistent with the U.S. EPA guidance. The State Water Board began working on an Amendment to address this issue in 2005 at the request of the nine Regional Water Boards.

In 2012, the U.S. EPA published new Recreational Water Quality Criteria for pathogens. The State Board has reinitiated its bacteria objective project to consider U.S. EPA's newest recommendations. A public hearing on a proposed regulation is tentatively scheduled for the fall of 2015.

Status: The State Water Board will be asked to amend the Water Quality Control Plan for Inland Surface Waters (Inland Surface Waters Plan) to incorporate new bacteria objectives. The Inland Surface Waters Plan is independently enforceable and does not require an amendment of the Basin Plan to incorporate.

Staff Recommendation*:* Delete this task from the 2014 triennial review list.

Task 22: Consider Update of Nutrient Objective

The State Water Board is initiating the process to develop a nutrient policy for inland surface waters, excluding inland bays and estuaries in California. The nutrient policy could include objectives and control strategies to help improve water quality in aquatic habitats by providing the benchmarks that describe conditions necessary to protect beneficial uses. Creating a nutrient policy for the state will assist in supporting the Water Boards' Mission to preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.

The State Water Board intends to develop narrative nutrient objectives, with numeric guidance to translate the narrative objectives. This numeric guidance, could include the Nutrient Numeric Endpoint (NNE) framework which establishes numeric endpoints based on the response of a water body to nutrient overenrichment (e.g. algal biomass, dissolved oxygen, etc.).

The technical foundation of the nutrients for freshwater lakes and streams has been developed and the State Water Board is initiating public scoping and peer review.

Status: State Water Board leads. A Stakeholder Advisory Group has been assembled to assist in development. Upon development, the State Water Board will be asked to amend the Inland Surface Waters Plan to incorporate the new objective and implementation policy.

Staff Recommendation*:* Delete this task from the 2014 triennial review list.

Task 23: Adopt Chlorine Objectives

A *Total Residual Chlorine and Chlorine-Produced Oxidants Policy of California* is being developed by State Water Board. The policy will be applicable to any dischargers using chlorine in its processes. The proposed statewide policy will establish objectives for Total Residual Chlorine and Chlorine Produced-Oxidants for inland surface waters, enclosed bays, and estuaries. Consistent statewide procedures are being created to provide regulation in NPDES permits and equitable compliance determination to adequately enforce violations of chlorine excursions.

Status: State Water Board staff were last active on this project in 2006. New staff have been assigned to the project this fiscal year. Upon development, the State Water Board will be asked to amend the Inland Surface Waters Plan to incorporate the new objective and implementation plan.

Staff Recommendation*:* Delete this task from the 2014 triennial review list.

Task 24: Adopt Biocriteria Objectives

The State Water Board has initiated the process of developing a biological integrity assessment implementation plan for freshwater streams and rivers in California. Biological integrity assessment will help improve water quality in California streams and rivers by providing the narrative or numeric benchmarks that describe conditions necessary to protect aquatic life beneficial uses. The State Water Board utilized a Science Team of experts from the Department of Fish and Wildlife, the Southern California Coastal Water Research Project, and the U.S. Geological Survey to conduct the technical work necessary to support development of the State's biological integrity assessment implementation plan. The Science Team has produced draft manuscripts documenting progress in three technical areas that serve as the foundation for the upcoming biological integrity assessment:

- Assessing Reference Network Performance, which describes the State's Perennial Stream Reference Conditions.
- Maximizing the Applicability of Bioassessment Scoring Tools in Environmentally Complex Regions, which describes the new California Stream Condition Index (CSCI) for biological integrity assessment that optimizes statewide consistency with local flexibility.
- Causal Assessment Evaluation and Guidance for California, which describes the stressor identification process developed by the U.S. EPA and important considerations for its use with biological integrity assessment.

  Causal Assessment Evaluation Appendices
  1. Garcia River
  2. Salinas River
  3. San Diego River
  4. Santa Clara River

Status: Upon development, the State Water Board will be asked to amend the Inland Surface Waters Plan to incorporate the new objective and implementation plan.

Staff Recommendation*:* Delete this task from the 2014 triennial review list.

Task 25: Revise Onsite Wastewater Policy

The State Water Board adopted on June 19, 2012 the *Water Quality Control Policy for Siting, Design, Operation, and Maintenance of onsite Wastewater Treatment Systems* (OWTS Policy). It is a statewide policy designed to apply consistent requirements for onsite systems across the State and to transfer the control and responsibility of regulating onsite systems to local agencies. Regional Water Boards were required to amend their basin plans to incorporate the OWTS Policy by May 2014. Regional Water Board staff reviewed the statewide policy against the requirements of the Region's own policy for onsite systems to identify any critical discrepancies. Staff identified one Basin Plan provision, which was not included in the statewide policy be retained by the Regional Water Board. In June 2014, the Regional Water Board adopted the statewide policy into the Basin Plan, retaining the existing policy to apply to the Russian River until the completion of the pathogen TMDL. It also retained a provision regarding the need for multi-unit systems to have the legal and economic ability to perform system maintenance. Program staff have been working with their county counterparts to develop an approvable Local Area Management Plan (LAMP), by which onsite systems will be locally regulated.

Status: This policy was adopted by the Regional Water Board in June 2014.

Staff Recommendation*:* Delete this task from the 2014 triennial review list.

Task 26. Adopt Mercury Objectives and Implementation Plan

Mercury is negatively impacting the beneficial uses of many waters of the state by making fish unsafe for human and wildlife consumption. Although mercury occurs naturally in the environment, concentrations of mercury exceed background levels because of human activities. Gold and mercury mines and atmospheric deposition are the predominant sources of mercury, with minor contributions from industrial and municipal wastewater discharges and urban runoff.

State and Regional Water Board staff are developing a statewide water quality control program for mercury (statewide mercury program or program) that will include: 1) mercury control program for reservoirs; and 2) mercury water quality objectives.

The Statewide Mercury Control Program for Reservoirs will address the 74 currently identified mercury impaired waters, including in the North Coast Region: Lake Pillsbury, Iron Gate Reservoir, Copco Lake, Lake Shastina, Ruth Lake, Spring Lake, Lake Sonoma, Lake Mendocino, Dead Lake, and Trinity Lake. The State Water Board is developing water quality objectives to protect humans and wildlife that consume locally caught fish. The objectives will likely be expressed as a methylmercury concentration in fish tissue. These objectives will inform mercury policy, mercury pollution prevention plans, and water quality permits. They will apply to California's inland surface waters, enclosed bays, and estuaries.

Status: State Water Board staff have conducted CEQA scoping, focus group meetings, and contracted with UC Davis to conduct an assessment of fish consumption amongst tribal communities to determine if larger fish consumption rates are necessary to protect those communities. Upon development, the State Water Board will be asked to amend the Inland Surface Waters Plan to incorporate the new objective and implementation plan.

Staff Recommendation*:* Delete this task from the 2014 triennial review list.

Task 27. Consider Endocrine Disruptors and Objectives

The State Water Resources Control Board has recognized that assessing how chemicals of emerging concern (CECs) affect both recycled and ambient discharged water cannot be achieved through chemical monitoring alone. In 2011, The State Water Board contracted the Southern California Coastal Water Research Project (SCCWRP) to establish and manage a team of investigators to develop bioassays to identify known and unknown CECs that may potentially be found in recycled water as envisioned by the CEC Advisory Panel. The Bioanalytical Investigative Team identified an appropriate extraction protocol for isolating and concentrating the CECs from recycled water. The Bioanalytical Investigative Team then identified and tested currently available bioanalytical kits with a variety of modes of action that could potentially be used to assess CECs in recycled water. The Bioanalytical Investigative Team also included an interpretive framework in their report to facilitate the decision making process when identifying threats to human health. The Bioanalytical Investigative Team's final report titled *Development of Bioanalytical Techniques for Monitoring of Constituents/chemicals of Emerging Concern (CECs) in Recycled Water Applications for the State of California* includes additional details and recommendations for next steps.

In accordance with the provisions of the Recycled Water Policy, a CEC Advisory Panel has been established to address questions about regulating CECs with respect to the use of recycled water. The Panel's primary charge

is to provide guidance for developing monitoring programs that assess potential CEC threats from various water recycling practices, including groundwater recharge/reuse and urban landscape irrigation. On June 25, 2010, the CEC Advisory Panel provided recommendations to the State Water Board and California Department of Public Health in their final report.

Related to the North Coast Region, a pilot monitoring project in the Russian River will be initiated in 2015-2016 to investigate the occurrence of select CECs in the watershed, determine the prevalence of select CECs in sport fish, and to develop a list of priority pesticides for monitoring.

None of these endeavors is explicitly designed to result in the development of objectives for endocrine disrupters. But, each of these efforts is advancing the knowledge in this area.

Status: Neither the State Water Board nor the Regional Water Board are explicitly involved in developing objectives for endocrine disrupters. Data and data analysis are necessary before such an effort can be undertaken.

Staff Recommendation: Retain this task on the 2014 triennial review list as a low priority.

Task 28. Salt and Nutrient Management Plans

In May 2009, the State Water Board adopted the Recycled Water Policy. The purpose of the Recycled Water Policy is to increase the use of recycled water from municipal wastewater sources and increase the use of storm water, encourage the conjunctive use of surface water and groundwater, and improve and conserve the use of local water supplies. The Policy requires the development of salt and nutrient management plans (SNMPs) for all groundwater basins in the state. These plans are intended to provide watershed-based control of these constituents by managing all sources of salts and nutrients as necessary to protect groundwater.

City of Santa Rosa has spearheaded an effort to develop a Salt and Nutrient Management Plan for the Santa Rosa Plain groundwater basin. Staff are working with City staff and their consultants to finalize the plan and develop a monitoring plan which can inform future revisions. The Santa Rosa Plain groundwater basin is the only basin for which a local entity has emerged to develop a Salt and Nutrient Management Plan.

Staff will be developing a groundwater protection strategy which 1) articulates support for the conjunctive management of surface water and groundwater resources while establishing a policy framework for assessing the benefits and risks to water quality, 2) articulates a program for the control of waste discharges with the potential to impact groundwater quality (e.g., direct discharges to groundwater and discharges to land), and 3) addresses the requirements of the State's Recycled Water Policy to support increased use of recycled water while assessing and controlling the risk of salt and nutrient contamination and contamination by chemicals of emerging concern (CECs). A comprehensive groundwater protection strategy also addresses: saltwater intrusion due to global warming, natural and artificial groundwater recharge, and the potential degradation of high quality groundwater.

As identified by the Department of Water Resources (DWR) the North Coast Region contains sixty-two groundwater basins, many in sparsely populated and remote areas where the primary land uses are timber production, grazing, and irrigated agriculture. This amendment will include a proposed framework for salt and nutrient loading potential, groundwater contamination risk, and the thresholds

necessary to ensure appropriate protections are developed and actions are taken to properly manage the identified risks. Staff will also participate with other Regions to develop a consistent framework for low-threat basins.

Status: Staff have been working with the City of Santa Rosa to finalize the Salt and Nutrient Management Plan for the Santa Rosa Plain groundwater basin. Staff have also developed a scope of work to collect and analyze existing data across the region, necessary to build a GIS-based risk model and identify groundwater risk to salt and nutrient contamination. This would be the basis for developing proper controls and monitoring to include in the Groundwater Protection Policy described in Task 3 above.

Staff Recommendation: Retain on the 2014 triennial review list as a high priority. Combine with the Groundwater and Surface water quality objectives and implementation plan project (Task 3 above), Phase II.

Task 29. Copper Objective

As a result of public request, updating the Basin Plan's water quality objective for copper was put on the 2011 Triennial Review list and ranked as a low priority. The specific request was to update the aquatic life criteria for copper to incorporate the "latest recommended EPA national criteria for copper." Since that time, staff have come to understand the request specifically to refer to the Biotic Ligand Model and its use to develop site specific objectives for copper that take into account water chemistry and hardness.

Status: There have been no staff resources assigned to this project during the 2011-2014 triennial review period.

Staff Recommendation: Retain this task on the 2014 triennial review list as a low priority.

Task 30. Location of Estuary, Harbors, Enclosed Bay Boundaries

The State Water Board has contracted with CSU Northridge to map the beneficial uses of each of the Region's within the Water Board system using an interactive, web-based format. Associated with this project is the identification of specific watershed boundaries, including the location and beneficial uses associated with bays, estuaries, and harbors.

Status: CSU Northridge on behalf of the State Water Board has developed a draft of the project which is currently being reviewed for quality by each of the Regional Water Boards.

Staff Recommendation: Retain this task on the 2014 triennial review list and provide access to the map as part of the electronic version of the Basin Plan found on the Regional Water Board's website. Incorporate into the Basin Plan as amendment, as appropriate, location data for individual waterbodies.

Task 31. Editorial Revisions

In 2007, Regional Water Board staff began working on a basin plan amendment to address those portions of the Basin Plan that were in need of updating/revision of an "editorial" or "administrative" nature. These types of revisions will not change any regulatory provision of the Basin Plan, and are considered a "Change Without Regulatory Effect" (1 CCR §100). The types of changes associated with this BPA include grammatical corrections, citation corrections, addition of section numbers, relocation/formatting of the tables, etc.

Editorial revisions to Chapter 1 – Introduction were adopted by the Regional Water Board on June 2008 (Resolution R1-2008-0014). This amendment introduced the formatting approach that will be used in the

remaining chapters. These types of global revisions include replacing the existing header structure "Section 1 – Introduction" with "Chapter 1 – Introduction" as well as adding section header numbering. Both of these approaches will be reflected in the remaining editorial amendment work.

The editorial revisions to Chapter 1 were not forwarded to the State Water Board for their approval with the intention of combining it with a similar package of editorial revisions for Chapter 2. Due to a staffing shortage, the editorial revision to Chapter 2 were not completed until 2011 when they were brought to the Regional Water Board for adoption. Problems with the adoption procedure, however, has necessitated the readoption of Chapter 2 by the Regional Water Board. In the meantime, a number of additional editorial revisions are necessary to update the version of Chapter 1 adopted in 2008. Further, an effort was made to confirm and revise the basic regional statistics and descriptions contained in Chapter 1 since it has been well over a decade since the descriptions were first given.

Editorial revisions to Chapter 2 – Beneficial Uses include such things as:

- Correcting typographical and grammatical corrections.
- Reordering of existing text, including alphabetizing beneficial use definitions.
- Relocation of Table 2-1 to end of chapter.
- Addition of a subsidence fishing (FISH) to text and to new column in Table 2-1.
- Removal of explanatory text, such as the discussion on water supply use, "Rare" beneficial use, and the various classes of water. It is staff intent to incorporate this type of "non-regulatory" information into Fact Sheets that will be posted on line and can be readily updated by staff as the situation warrants.

Editorial revisions to Chapter 3 – Water Quality Objectives will be incorporated into the basin planning work being undertaken as part of the Groundwater/Surface Water Quality Objectives and Implementation Plan, Phase I.

Editorial revisions to Chapter 4 – Implementation Plans will be incorporated into the basin planning work being undertaken as part of Groundwater Protection Policy, Phase II.

Editorial revisions to Chapter 5 – Statewide Plans and Policies. As part of the Chapter 5 editorial amendment, the references to State Water Board plans and policies are being revised to direct the reader to the State Water Board's webpage, rather than to the "Section 5 – Plans and Polices". This approach is consistent with what other regions are doing as it will obviate the need to update the regional basin plan each time a State plan or policy is revised.

Editorial revisions to Chapter 6 – Surveillance and Monitoring. Proposed editorial revisions to Chapter 6 include discussion of five major changes:

- Initiation of the statewide Surface Water Ambient Monitoring Program (SWAMP).
- Dissolution of State Mussel Watch and Toxic Substances Monitoring Programs.
- Development of a statewide 303(d) impaired waterbody listing policy, monitoring by local jurisdictions.
- Development of the statewide citizen monitoring program (Clean Water Team).
- Development of the Groundwater Ambient Monitoring and Assessment Program (GAMA).

Status: Proposed editorial revisions to Chapters 1 and 2 are included as Appendices B and C, respectively. Proposed editorial revisions to Chapters 3 and 6 are included in the Phase I Water Quality Objective Update Amendment tentatively planned to come before the Regional Water Board in a hearing in June 2015.

Staff Recommendation: Consider adopting the editorial revisions to Chapters 1 and 2 under a separate resolution, but as part of the 2014 Triennial Review adoption in March 2015. Consider adopting the editorial revisions to Chapters 3 and 6 as part of the Water Quality Objective Update Amendment. Consider adopting editorial revisions to Chapter 4 as part of the Groundwater Protection Policy. Consider eliminating Chapter 5 and including a reference to the State Water Board' website instead. Delete this task from the 2014 Triennial Review as a separate task and redistribute to be included in other BPA tasks, as described.

2.2 2014 TRIENNIAL REVIEW BPA PROJECT RECOMMENDATIONS

The 2014 Triennial Review of the Basin Plan was opened on January 11, 2014 with the announcement via the Executive Officer's Report that the public was invited to submit suggestions to staff regarding the need for revisions to the Basin Plan. Written recommendations were accepted up through close of business on June 20, 2014. During the intervening months, staff held three public workshops to solicit oral input. The workshops were held in Santa Rosa, Redding, and Fortuna. The result of the solicitation was oral input from:

- City of Ukiah
- Russian River Protection Committee
- Senator Evan's Office
- Congressman Doug LaMalfa's Office
- Ca. Department of Fish and Wildlife
- Siskiyou County
- City of Fortuna
- Center for Biological Diversity
- Humboldt Baykeeper
- Karuk Tribe

Staff also received written input from 7 entities, including:

- City of Fortuna
- Russian River Watershed Association
- Center for Biological Diversity
- Earth Law Center
- Klamath Riverkeeper
- Humboldt Baykeeper
- Karuk Tribe

2.2.1 Suggested Projects Not Requiring a Basin Plan Amendment

Of the suggestions received through public solicitation, the following are projects that, though important, do not require an amendment of the Basin Plan to accomplish. As such, these are not considered under the 2014 Triennial Review of the Basin Plan. But, these project suggestions have been forwarded to the Regional Water Board's executive team for consideration in other office work planning exercises. These project suggestions include:

- Protection of high quality waters under the Antidegradation Policy
- Monitoring for CECs
- Address effects of expanded Gulf of the Farallones National Marine Sanctuary on the control of waste discharges with potential to impact ocean waters
- Sediment toxicity monitoring

2.2.2 Suggested Projects Already on the 2011 Triennial Review List of Priorities

Also received as part of the 2014 Triennial Review solicitation for input, were several Basin Plan Amendment projects that were already on the 2011 Triennial Review priority list. These projects are described above and need no further description here. The 2011 Task # is referenced for convenience.

- Designation of Outstanding National Resource Waters (Task 11)
- Numeric flow criteria for individual waters, as necessary (Task 14)
- Watershed hydrology objective (Task 7)
- Riparian Protection Policy (Task 6)
- Groundwater Protection Policy(Task 3—Phase II)
- Mixing zone policy to address human health-related constituents (Task 8)

2.2.3 Suggested Projects to Consider in the 2014 Triennial Review

The following are new potential Basin Plan Amendment projects submitted to the Regional Water Board for consideration under the 2014 triennial review of the Basin Plan. The projects are each described, their status identified, and staff's recommendation provided.

2.2.3.1 Exemption from the seasonal point source discharge prohibition

The North Coast Region's Basin Plan includes a point source waste discharge prohibition which applies to all of the surface waters in the region, except the Mad, Eel, and Russian rivers. In these three waterbodies, a seasonal waste discharge prohibition applies by which discharges are restricted to the wet weather season: October 15 through April 15, with flow limitations (1% of ambient flow unless otherwise approved by the Board). It was established in the original Basin Plan first adopted in 1975 and was based at least in part on the limited treatment capabilities of the time. This project was requested by the City of Fortuna, dischargers to the Eel River. It involves evaluating all of the factors associated with point source waste discharge, ambient water quality and quantity conditions in the Eel River, as well as desired quality and quantity to support summer-based beneficial uses with the potential to develop exemption criteria to support the beneficial discharge of highly treated wastewater for the purpose of summer flow augmentation. Because the seasonal prohibition also applies in the Mad and Russian rivers, staff should evaluate the potential benefits of allowing an exemption in these watersheds, as well.

This project requires:

1. An assessment of the dry season water quality and quantity conditions in the Eel River Watershed (and potentially the Mad and Russian rivers) over a period of time which includes a range of water years (e.g., the last 10 years) and any resulting beneficial use impacts (especially to REC-1, REC-2, MUN, COLD and RARE).
2. An assessment of the quality and quantity of treated wastewater currently produced now and under future treatment expansions by point source dischargers, including consideration of chemicals of emerging concern; maximum, minimum, and average concentrations of priority pollutants; acute and chronic toxicity, bioaccumulative potential, and biostimulatory potential, as examples.
3. An assessment from existing studies and the scientific literature of appropriate water quality and quantity thresholds by which to best support the dry season beneficial uses. Depending on a number of factors, it may be necessary to develop flow criteria in support of this effort.
4. The development of a matrix which compares the benefits and risks of summer point source discharges to summer flows, summer water quality conditions, and beneficial use support.

Status: The resource agencies have indicated support for this project on the basis that low summer flows in the Eel River are a limiting factor to the success of endangered and threatened salmonid species. The City of Fortuna has offered themselves as a willing partner in the development of the information necessary to

accomplish this task. Program staff have been working with City staff over the last year, discussing the possibility of a seasonal discharge prohibition exemption as a tool to address their need to move their current discharge location. No Planning staff resources have been applied to the development of this project to date.

Staff Recommendation: Add to the 2014 Triennial Review list as a high priority.

2.2.3.2 Update the Humboldt Bay Action Plan

Humboldt Bay is the largest protected water on the west coast between San Francisco Bay and Coos Bay, Oregon. It provides numerous and diverse beneficial uses including: navigation, subsistence and recreational shellfish harvesting; aquaculture; commercial and sport fishing; contact and non-contact water recreation; cold freshwater habitat; wildlife habitat; rare, threatened, and endangered species; migration and spawning habitat; Native American culture; and estuarine habitat. Humboldt Bay is listed as impaired under Section 303(d) of the Clean Water Act for dioxin and PCBs. Tributaries to the bay are listed as impaired for sediment (i.e., Jacoby Creek, Elk River, and Freshwater Creek) and indicator bacteria (i.e., Jolly Giant Creek, Gannon Slough, and Elk River).

The Humboldt Bay Action Plan was last updated in 1994. It particularly highlights concerns related to bacterial contamination, primarily resulting from pastures and rangelands, and requiring shellfish harvest closures upon any storm producing rainfall in excess of ½ inch in 24 hours. The action plan is general in nature and indicates the agency's intention to:

1. Conduct discharger surveillance and monitoring;
2. Review and assess land use activities, by
    - Reviewing and monitoring agricultural impacts,
    - Scrutinizing forestry activities to avoid individual and cumulative impacts,
    - Implementing NPDES regulations to control urban runoff,
    - Requiring cleanup of contaminated soils, runoff, and groundwater from urban sites,
    - Utilizing cleanup and abatement practices to cleanup contaminated groundwater from past spills and leaks, particularly those with discharges to the bay, and
    - Assisting small business owners in preventing discharges of polluting chemicals; and
3. Continue coordination with other state and local agencies with various responsibilities with regards to Humboldt Bay.

Given the listing of Humboldt Bay and its tributaries as impaired for a variety of constituents, it is clear that the approach as described above has not fully succeeded in maintaining the necessary water quality conditions to protect beneficial uses. The Humboldt Bay Action Plan, similar to a TMDL Action Plan, allows for the development of a broad array of coordinated implementation measures or actions by which, in collaboration with others, to address a variety of controllable factors, including waste discharge. Its update could precipitate the expansion of the agency's larger efforts in watershed stewardship to more formally develop partnerships and identify opportunities to more efficiently use the authorities and funds of multiple stakeholders to address common concerns in a coordinated manner. As an example, the Ocean Protection Council has contributed funds to the cities of Arcata and Eureka, and has proposed funding to Humboldt County, to assess vulnerability of infrastructure to sea level rise and to update the county plan to address such issues.

Status: Staff resources have not been applied to this project during the 2011-2014 triennial review period.

Staff Recommendation: Add to the 2014 triennial review as a medium priority. While coordination and collaboration with multiple stakeholders are critical to addressing the water quality issues in Humboldt Bay, and the revision of the Humboldt Bay Action Plan could be a vehicle to promote stronger partnerships, it is not

essential to accomplishing that larger goal. Also see Humboldt Bay TMDL and tributary TMDL discussion below.

2.2.3.3 Complete sediment TMDLs for tributaries to Humboldt Bay, including Elk River Sediment TMDL, Freshwater Creek Sediment TMDL, and Jacoby Creek Sediment TMDL

The Elk River, Freshwater Creek, and Jacoby Creek have been listed as impaired under Section 303(d) of the Clean Water Act for sediment. The primary controllable sediment inputs come from forestry activities, but include agricultural activities and urban runoff, as well. Considerable data collection and analysis have been conducted in the Elk River and Freshwater Creek watersheds, as described in Section 2.1 Tasks 1a and 1b, respectively. Sediment TMDL development in the Jacoby Creek Watershed has not yet been initiated. In consideration of the economic and ecological importance of Humboldt Bay to the North Coast Region, implementing updated control measures in these tributary systems is critical. Completion of sediment TMDLs for these watersheds could be the basis for the development and implementation of the robust control mechanisms necessary to attain water quality standards and promote restoration of these tributary systems. Though, Porter-Cologne, the Basin Plan generally, and the Sediment Implementation Policy within the Basin Plan offer the authorities necessary to implement more rigorous control requirements even in the absence of TMDL analyses.

Status: There have been no staff resources applied to the development of the Jacoby Creek Sediment TMDL in the 2011-2014 triennial review period. See Section 2.1 Tasks 1a and 1b above for the status of Elk River and Freshwater Creek, respectively.

Staff Recommendation: Add the development of a sediment TMDL and action plan for the Jacoby Creek Watershed to the 2014 triennial review list as a medium priority. See Section 2.1 Task 1a and 1b above for staff recommendations for the Elk River and Freshwater Creek, respectively.

2.2.3.4 Humboldt Bay dioxin and PCB TMDL Action Plan

Humboldt Bay was listed under Section 303(d) of the Clean Water Act as impaired due to PCBs in 2002. The listing was expanded in 2006 to include dioxin toxic equivalents. Data evaluated during the 2012 listing cycle confirmed exceedances of PCBs and dioxin toxic equivalents in sediment and tissue samples. Development of a TMDL has not been initiated.

Various stakeholders with an interest in the state of Humboldt Bay formed a Working Group to meet and discuss the issues associated with dioxin contamination in the Bay. Regional Water Board staff participated in the Working Group up through 2010 with the goal of helping to develop a standardized sampling and analytical protocol to:

- Maximize information gained from limited sampling and analytical resources
- Increase the credibility and exchange of data
- Assure that data meet quality standards for human and ecological risk assessment
- Improve coordination of monitoring activities among private, public, volunteer, university, tribal, and government groups

Specifically, the Working Group was interested in standardized protocols which could be used to support:

- Evaluation of existing data for potential use in various applications
- Characterization of existing contamination – spatial, temporal, media
- Identification and contribution of sources
- Definition of local background concentrations
- Modeling deposition and movement of dioxins/furans and PCBs
- Assessment of impairment

- Exposure studies
- Human health and ecological risk assessment
- Analysis of seasonal, annual, and long-term trends
- Decisions about development
- Decisions about habitat protection
- Development of dredging permits, including placement of dredge spoils

Status: Up through 2010, Regional Water Board staff were involved in the Humboldt Bay Dioxin Workgroup. With the loss of staff to retirement in that year, the Regional Water Board's involvement in the effort came to an end. Dredging needs have combined with interest in levy repair and wetland restoration recently precipitating a discussion about the suitability of bay sediment for restoration work, an issue which is being addressed in the Enforcement, Grants, and Solid Waste Unit. But, as a general matter, there have been no staff resources applied to the dioxin toxic equivalents and PCB issue in Humboldt Bay during the 2011-2014 triennial review period.

Staff Recommendation: Add this issue to the 2014 triennial review list as a medium TMDL priority, on the basis that the individual projects are being addressed through other programs.

2.2.3.5 Ocean beaches and freshwater streams bacteria TMDL and Action Plan
As described in Section 2.1 Task 1f, the Russian River has been listed under Section 303(d) of the Clean Water Act as impaired by pathogens. A pathogen TMDL is currently under development as is an action plan, so as to characterize the problem and develop a strategy to address it. The 2012 Integrated Report includes assessment of additional bacteria data from around the Region and concludes that the following waterbodies also are impaired due to elevated indicator bacteria. Indicator bacteria are assessed to determine the likelihood that a waterbody contains pathogens that could be harmful to human health.

- Campbell Cove, Bodega Hydrologic Unit (HU)
- Lower mainstem Elk River and Martin Slough, Eureka Plain HU
- Campbell Creek tributary to Gannon Slough, Eureka Plain HU
- Jolly Giant Creek, Eureka Plain HU
- Widow White Creek tributary to Norton Creek, Mad River HU
- Pudding Creek Lagoon in Pudding Creek, Mendocino Coast HU
- Little River, Trinidad HU
- Clam Beach, Trinidad HU

An ocean beaches and freshwater streams bacteria TMDL and action plan would follow completion of the Russian River pathogen TMDL and action plan. It would refine the approach developed for the Russian River, deriving efficiencies from replicating those elements of the analysis and load allocations that result from the thorough and detailed work associated with the Russian River TMDL. Where sources of pathogen contamination differ significantly from those identified in the Russian River, it is possible that a different approach may be needed.

Status: There have been no staff resources during the 2011-2014 triennial review period applied to the development of pathogen TMDLs, except for the Russian River.

Staff Recommendation: Add this issue to the 2014 triennial review list as a high priority, on the basis that pathogen contamination is a risk to human health. Also, consider that the sources of indicator bacteria/pathogens are often random and disperse and may not be readily addressed through the implementation of other programs.

2.2.3.6 Policy to Address the Effects of Climate Change on Water Quality

The North Coast Region constitutes about 12% of the state's geographic area including approximately 340 miles of scenic coastline. Historically, it has also accounted for about 41% of its annual runoff. The North Coast Region straddles the Southern Oregon/Northern California and Central California ecologically significant units for coho salmon. It also has two major bays: Humboldt Bay and Bodega Bay, both of which support significant development, including roads, treatment facilities, structures, homes, and industry. Dairy farming and other agricultural pursuits are common in the region's low lying estuaries. And, many of the region's watersheds are groundwater-fed during summer months, requiring adequate wet weather infiltration. The incidences of toxic algae blooms in the North Coast have increased notably over the last several years, as well as water shortages during the dry season. This project involves identifying all of the factors associated with climate change (as derived from well-accepted climate change models for California and the North Coast Region) with the potential to impact water quality and beneficial uses, including: impacts due to sea level rise, more intense winter storm events punctuated with longer periods of drought, alterations in the pH of ocean and bay waters, alteration in floral and faunal species composition and extent, etc. The potential impact of these factors on water quality and beneficial uses will be evaluated by conducting a spatial analysis using GIS, from which to highlight the most notable issues and concerns likely to result in the next 5, 10, 20 and 50 year planning horizons. The result will be a series of recommendations regarding the need for regulation, policy, permit conditions, involvement with county planning agencies, and other outreach, as necessary to ensure adequate and timely action. Basin Planning efforts that could result from this evaluation include the development of: seasonal beneficial uses and objectives, natural conditions clause, policy for the protection of groundwater recharge, policy for the sustainable management of floodplain and riparian function, designation of Outstanding National Resource Waters, and others.

Status: The State Water Board and the Regional Water Boards, as proposed in *First Update to the Climate Change Scoping Plan* (May 2014), are by 2016 to modify policies and permits to achieve conservation, water recycling, stormwater reuse, and wastewater-to-energy goals. Staff resources have been applied, in particular, to the development and implementation through permits of conservation, water recycling, stormwater reuse goals. Many of these are in place now. Staff also have been involved in considerable collaboration with public and non-profit entities on the topic of climate change and water quality impacts. But, no staff resources have been applied to the review and assessment of the Basin Plan policies affecting conservation, water recycling, stormwater reuse, and wastewater-to-energy goals and the need for their revision to more effectively address impacts. Nor have staff resources been applied to more generally considering the potential impacts to water quality from the effects of climate change and the policies which should be developed or updated to more effectively address the issues.

Staff Recommendations: Add to the 2014 Triennial Review list as a high priority.

2.2.3.7 Policy to promote groundwater recharge

Groundwater is an important source of drinking water in the North Coast Region both as municipal and domestic supply. Agriculture is also heavily dependent on groundwater resources for irrigation and stock watering. For example, the Department of Water Resources (DWR) has identified 8 groundwater basins in the North Coast Region which will require the development of Sustainable Groundwater Plans by 2020-2022 under the Groundwater Sustainability Act of 2014. These basins are important because they provide water supplies to approximately 60% of the North Coast Region's population. They are:

- Shasta Valley
- Santa Rosa Plain
- Smith River Plain
- Tule Lake

- Ukiah Valley
- Eel River Valley
- Scott River Valley
- Butte Valley

Related, the proper functioning of many of the perennial stream systems in the North Coast Region is largely dependent on groundwater for summer flows. Groundwater resources are particularly vulnerable during drought, when natural groundwater recharge is reduced, surface water availability is reduced, and pumping rates increase, resulting in the potential to lower the water table and further exacerbate low surface water flow conditions. In addition to the effects of pumping, compacted land surfaces and the capture and rerouting of stormwater also has an effect on water table elevation by reducing the natural opportunities for groundwater recharge.

This proposed project would establish a policy to promote groundwater recharge through a variety of potential methods including but not limited to: the preservation or restoration of landscape conditions that naturally promote the slowing of runoff for increased infiltration and groundwater recharge, the preservation or restoration of natural groundwater recharge areas, the recharge of groundwater with captured stormwater, and the alteration of urban stormwater control measures to better retain stormwater on the land surface and allow for natural infiltration (e.g., Low Impact Development (LID) principles).

Status: While there have been no staff resources applied to the development of this issue as a Basin Plan amendment, numerous WDRs and NPDES permits include provisions related to stormwater management and LID.

Staff Recommendation: Add this issue to the 2014 triennial review list by including it in the Groundwater Protection Policy described above in Section 2.1 Task 3 Phase II.

2.2.3.8 Development of a natural conditions clause

The natural water quality conditions present in some locations exceed the applicable water quality objectives. For example, the native geology of a watershed may produce ambient water that is naturally high in certain constituents, including trace elements, total dissolved solids (TDS) or nutrients (e.g., phosphorus). As an example, where volcanic geology, such as in the Upper Klamath Basin, results in phosphorus rich waters, the natural diel cycle for dissolved oxygen (DO) may extend outside the range of DO concentrations generally recognized as supportive of cold water fisheries, where nutrient enrichment results in abundant algae growth. Similarly, where sediments are high in aluminum or manganese, ambient water quality may also be elevated with respect to those constituents.

A natural conditions clause simply allows the Regional Water Board to distinguish between receiving water exceedances that are the result of natural conditions versus the discharge of waste or other controllable factor. Such a clause could be useful when assessing ambient water quality data for the purpose of identifying impaired waters under Section 303(d) of the Clean Water Act. Such a clause could also be useful when determining the compliance status of a discharger.

Status: There have been no staff resources applied to this issue during the 2011-2014 triennial review period.

Staff Recommendation: Add to the 2014 triennial review list as a low priority. For the purposes of compliance with receiving water limitations, many of the permits issued by the Regional Water Board require upstream and downstream monitoring. When downstream monitoring indicates a worsening of water quality as compared to

upstream conditions, an assessment of the dischargers compliance status may be undertaken. With respect to 303(d) listing, a preliminary investigation into the degree to which elevated pollutant concentrations are attributable to natural conditions is necessary prior to be able to exercise any allowances provided by a natural conditions clause. Highlighting the exceedances on the 303(d) list, may help develop funding to pursue such an investigation.

2.2.3.9 Revise biostimulatory substances objective to address biostimulatory conditions
This topic is related to the adoption of the CA Nutrient Numeric Endpoint (CA NNE) objective statewide, but has other policy implications driving the need for revision of this narrative objective. The CA NNE is based in large part on biostimulatory response variables such as dissolved oxygen, nuisance algal conditions, and pH which can be directly linked to supporting conditions for beneficial uses. In addition to consideration of nutrient concentrations as a causal factor, the CA NNE also takes into account other controllable risk factors that directly contribute to the development of biostimulatory nuisance conditions such as temperature, riparian cover, flow, among others. The current Basin Plan language for biostimulatory substances does not adequately address other controllable risk factors such as temperature, sediment, riparian condition, and flow. Revising the biostimulatory substances objective will contribute to improved 303(d) listing decisions and a more meaningful 305(b) assessment. Therefore the development of a narrative objective for biostimulatory conditions will be more consistent with current science and better support decision making for the Regional Water Board on issues related to accelerated eutrophication of waterbodies due to anthropogenic factors.

Status: Staff resources were applied to this issue as part of the Klamath TMDL development process leading up to TMDL adoption in 2010. Since that time, staff resources have been applied to collaboration with the State Water Board in development of nutrient objectives, specifically the CA Nutrient Numeric Endpoint objective. No staff resources have been applied specifically to revision of the biostimulatory substances objective for Region 1.

Staff Recommendation: Add to the 2014 Triennial Review list as a medium priority.

2.2.3.10 Revise to the Scott and Shasta TMDLs
The Scott and Shasta TMDLs were adopted over 8 years ago. Commenters have suggested that the TMDL Action Plans lack meaningful implementation plans and current policies to protect beneficial uses and restore these critical watersheds. In particular, commenters indicate the need for the Scott TMDL Action Plan to include a requirement for a Groundwater Management Plan that specifically incorporates measures to protect instream flows. The commenters further suggest that both the Scott and Shasta TMDL Action Plans should include riparian restoration and management measures.

Status: Significant staff resources have been applied to scientific study, stakeholder outreach, land management planning, inspections, and collaboration with other public and non-profit entities in the service of water quality protection and habitat enhancement in both the Scott and the Shasta rivers.

Staff Recommendation: Add to the 2014 Triennial Review list as a low priority.

2.3 STAFF'S RECOMMENDED PROJECT RANKING

The following is a description of the criteria staff used when ranking the projects contained in the 2014 triennial review list. These are narrative criteria requiring best professional judgment. The proposed ranking is the result

of internal discussion amongst Planning Unit, TMDL Development Unit, and Executive staff. Based on staff resources available to apply to BPA projects, the top 6 projects are identified as high priority. The high priority projects are the ones to be included on the workplan for Planning staff through 2017. As a general matter, staff resources are likely sufficient to at least initiate effort on a total of 6 TMDL and planning projects. Projects ranked 7 through 12 (i.e., the next 6 projects) are identified as medium priority. These are the projects that staff would turn to next, should it complete the high priority projects by the next triennial review period. The remaining projects are identified as low priority and are unlikely to garner staff resources prior to 2017.

Projects were ranked based on the following the questions:

1. Was the project ranked high on the 2011 Triennial Review?
2. Does the project address new science, policy or regulation?
3. Does the project promote healthy watersheds?
4. Can the project result in effective regulation?
5. Will the project promote strong partnerships?

2.3.1 High Priority Projects

The high priority projects are divided into 2 categories: TMDL projects and other planning projects. TMDL action plans require the resources of both the TMDL program and the Planning Unit. But, because a substantial portion of the effort associated with a TMDL action plan is in the development of the technical TMDL itself, the two categories are considered separately.

1a. Russian River Pathogen TMDL and Action Plan, including WQS review

- ✓ This project ranked high on the 2011 triennial review list. It also is implicated in the Onsite Waste Treatment System (OWTS) Policy adopted by the State Water Board which allows an exemption for the Russian River from the requirements of State's OWTS Policy until the development of the pathogen TMDL. (The Regional Water Board must implement its regional onsite systems policy until TMDL completion). The TMDL relies on new, innovative analytical protocols by which specific animal sources (e.g., human, dog, bovine, etc.) of pathogenic contamination are distinguished through genetic markers. Implementation of the pathogen TMDL will promote human health for users of the Russian River by reducing sources of bacterial contamination and meeting recommended recreational criteria recently established by U.S. EPA. The Action Plan will be designed to effectively reduce the sources of bacterial contamination and meet objectives through collaboration with local entities towards the repair and/or installation of appropriate human waste control measures.

1b. Laguna de Santa Rosa TMDLs and Action Plan, including WQS review

- ✓ This project ranked high on the 2011 triennial review list. The issues requiring attention as part of this TMDL include systemic alterations to the watershed which have significantly impaired its natural functions. The project has utilized new techniques such as the California Rapid Assessment Method to delineate, characterize, and score the function of wetland types within the Laguna de Santa Rosa. The goal of the TMDL is to promote a healthy watershed by reducing contaminant inputs; but also, by improving ecosystem function through remediation and restoration. A nutrient credit trading program will augment the regulatory program to promote cost effective source control measures and provide a source of funding for restoration efforts. Early implementation of the TMDL has already demonstrated the development of strong partnerships throughout the basin,

including State and local agencies, special districts (RCD), and non-profit organizations, as well landowners.

1c. Ocean beaches and freshwater streams bacteria TMDL and Action Plans

- ✓ This project was not ranked on the 2011 triennial review list. But development and implementation of bacteria TMDLs for the region's listed waters will either implement recently revised U.S. EPA criteria or new statewide objectives, if the State Water Board adopts new objectives within the next three years. It will also benefit from the innovative work conducted as part of the Russian River pathogen TMDL, by applying more broadly the lessons and efficiencies learned in that project. As above, control of bacterial contamination will promote human health in the watersheds now impaired. The TMDL action plan will require close collaboration with local planning, permitting, and public health agencies to ensure the repair and installation of appropriate human waste treatment and control measures.

2. Phase I – Water Quality Objectives Update Amendment, including: revised chemical constituents objective, revised DO objective for free-flowing streams, new groundwater toxicity objective, revised surface water toxicity objective, and editorial revisions to Chapters 3 and 6.
   - ✓ This project was highly ranked on the 2011 triennial review list. Its core purpose is to support the implementation of the most recent science and up-to-date criteria through the application of the Water Quality Goals report and other similar tools. By ensuring application of the most protective human health or aquatic life criteria in cleanups and permitting, this project supports the goals of healthy watersheds. It provides effective regulation that does not require continual update and revision as new science evolves; but instead incorporates a process for identifying the most protective criteria. At its core is the goal of reducing the project by project debates that are often required when staff propose implementation of authorities that are only minimally described in the Basin Plan.

3. Develop criteria for exemption from seasonal discharge prohibition on point source waste discharge to Eel River, considering flow augmentation benefits. Evaluate applicability to Mad and Russian rivers. Evaluate need for numeric flow objectives to define low flow requirements.
   - ✓ This project was not ranked on the 2011 triennial review list. It considers the growing appreciation for the relationship between water quality and water quantity by evaluating the potential benefits to beneficial uses that could be derived from flow augmentation during the low flow season, especially as a response to the ecological pressures associated with climate change. It also considers the improvements in wastewater treatment technology and effluent quality, as compared to that of the 1970s when the prohibition was first designed. Embedded in the project is a risk analysis by which the benefits of flow augmentation are weighed against the potential risks associated with effluent discharge. So, while the project promotes a healthy watershed, it is not without compromise. But, exemption criteria can provide a very effective way of evaluating the risks and benefits, and considering the interests of multiple stakeholders, including resources agencies, city service entities, regulatory agencies, and the public.

4. Phase II – Groundwater Protection Policy, including the development of a policy for the discharge of waste to land, a policy to promote groundwater recharge, a programmatic approach to assessing and controlling salt and nutrient impacts on groundwater, the designation of beneficial uses for individual groundwater basins, and editorial revisions to Chapter 4.
   - ✓ This project was highly ranked on the 2011 triennial review. It addresses a growing appreciation of the importance of groundwater management and groundwater quality protection to the support of beneficial uses, especially given the pressures associated with climate change and extended

periods of drought. It strongly promotes healthy watersheds by extending consideration of watersheds to include underlying groundwater and groundwater basins. It also provides support for a growing statewide effort to overlay groundwater use with a regulatory scheme which helps to promote wise and efficient use of the resource. Finally, this project promotes the identification and development of new partnerships, better aligning the issues of water quantity and water quality.

5. Develop instream flow objectives for the Navarro River
   - ✓ The development of flow objectives for impaired waters is a task that was included on the 2011 triennial review list. But, it was not ranked as a high priority. It is a relatively new concept for the Regional Water Boards to be developing numeric flow objectives to promote water rights decisions as a means of protecting beneficial uses. But clearly, the integration of water quality goals with flow requirements will promote healthy watersheds in a manner not previously possible. Similarly, the development of numeric flow objectives will make much more efficient and effective the water right permitting process. A very significant benefit of this project will be the strengthening of partnerships amongst state agencies, including the Regional Water Board, Division of Water Rights, and the Department of Fish and Wildlife.

6. Develop a policy to address the effects of climate change on water quality
   - ✓ This project was not included in the 2011 triennial review list. But, its importance is specifically derived from the array of new science that has been developed, identifying a series of potential climate related effects which may have an impact on beneficial uses and water quality conditions. As recommended in the *Scoping Plan* described above, the Regional Water Board is encouraged to consider revisions to the Basin Plan and/or provisions to be included in discharge permits which could address some of the identified issues. This project is specifically intended to promote ecosystem resilience to the stresses associated with climate change. The potential outcomes of the project include a range of non-regulatory and regulatory approaches, including the adoption of a resolution establishing principles important to the protection of water quality in the face of sea level rise and other climate-related changes; the development of permit conditions; amendment to existing policies, guidelines or action plans; or the development of new policies, guidelines or action plans. This project has the potential to promote a wide variety of new partnerships with federal, state, and local agencies; non-profit organizations; research organizations and academic institutions, and other interested stakeholders.

2.3.2 Medium Priority Projects

The medium priority projects are a collection of 6 projects which are considered very important potential Basin Plan amendment projects, but rank slightly lower than the projects identified above. Given the limited staff resources, there is no immediate ability to initiate these projects, except once the high priority projects are completed.

7. Designate Outstanding National Resource Waters
   - ✓ This project was identified on the 2011 triennial review list. But it was not a high ranking project. It does not respond to new science, policy or regulation. But, it could be a very important tool for promoting watershed health, particularly in watersheds with high quality water deserving of additional protections. It may prove to be a useful tool in response to climate change by preserving those areas where the potential for ecosystem resilience exists. The designation of ONRWs provides a very effective means of controlling the degree to which the

degradation of high quality waters by waste discharge can be allowed. In a watershed such as the Smith River Watershed, the development of strong partnerships would be critical to success.

8. Develop a Mixing Zone Policy for human health-based constituents
    - ✓ This project was included on the 2011 triennial review list. But it was not a high ranking project. The project does not respond to new science, policy or regulation. Nor does it promote healthy watersheds, in as much as it results in higher pollutant concentrations than would otherwise be allowed. But, it does ensure effective regulation by clearly defining the zone within the receiving water within which constituents of concern must properly mix prior to entering the wider environment. The development of a mixing zone policy represents a significant partnership with the POTW community in the Russian River Watershed. This community has collaborated over the course of many years with Regional Water Board staff in the development of the technical information necessary to support a mixing zone policy.

9. Develop a Stream and Wetland System Protection Policy, including the development of a watershed hydrology objective, DO and pH objectives for wetlands, and the designation of WET, FLD, and WQE beneficial uses, where appropriate.
    - ✓ This project was included on the 2011 triennial review list. But it was not a high ranking project. It responds to new wetland science which establishes the water quality benefits of healthy riparian and wetland ecosystems. Implementation of a Stream and Wetland System Protection Policy would strongly support healthy watersheds. But, concern arose in the Region 2 office that such a policy might not produce effective regulation, in as much as attainment of proposed water quality objectives could not be demonstrated as possible everywhere. Implementation of such a policy would promote strong partnerships among federal (e.g., U.S. Army Corps of Engineers), state, and local agencies, as well as the development and restoration communities.

10. Revise the biostimulatory substances objective to address biostimulatory conditions
    - ✓ This project was not identified on the 2011 triennial review list. It responds to new science that establishes a link amongst multiple variables, including nutrients, temperature, flow and others, which in combination produce biostimulatory conditions. Revision of the objective would promote watershed health by promoting a more rational approach to assessing and controlling biostimulation; though the existing objective does not hinder this outcome. Nonetheless, the revision would promote more effective regulation, while having a negligible effect on existing partnerships.

The following two projects are TMDL projects. TMDL staff will turn their attention to these projects as soon as the top 3 TMDL projects are complete. The ranking of these projects as #11 and #12 is for convenience only. The medium priority category could as easily be divided into TMDL and non-TMDL planning projects.

11. Humboldt Bay dioxin and PCB TMDLs and Action Plan
    - ✓ This project was included on the 2011 triennial review list as part of a category of "other" impaired waters to be addressed by the development of TMDLs and action plans. But, it was not ranked as a high priority project. One of the fundamental difficulties with this project, as identified by staff formerly working on it, is the lack of standardized methods for data collection and analysis amongst project partners. As such, a coherent analysis of conditions is uncertain. Implementation of a TMDL action plan would promote a healthy bay ecosystem, assuming that remediation approaches could be identified by which to safely remove or immobilize contaminated sediment. The development of a TMDL for dioxin and PCBs in Humboldt Bay

would clearly improve existing regulatory conditions by ensuring that all sediment-related projects adhered to the same protocols and protections. Similarly, the implementation of a TMDL action plan would promote the development of strong partnerships among multiple parties, including: oyster farmers, the harbor district, preserve managers, U.S. Army Corps of Engineers, cities, and others.

12. Sediment TMDLs and Action Plans for Humboldt Bay tributaries: Freshwater Creek, Jacoby Creek, and Lower Elk River
    - ✓ The Lower Elk River and Freshwater Creek sediment TMDLs were included on the 2011 triennial review as high priority projects. As above, the Jacoby Creek sediment TMDL was included in the "other" impaired waters category. These projects do not respond to any new science, policy or regulation. In fact, they follow a long string of sediment TMDLs which should pave the way for simplified analyses and efficient implementation. Implementation of updated sediment control measures would promote watershed health and effective regulation. It would have a negligible effect on existing partnerships.

2.3.3 Low Priority Projects

The low priority projects are all the remaining projects ranked #13 through #24. These projects are ones which while important, did not rank high on the 2011 triennial review list (nos. 14, 19, and 20); still require the development of good science to support (nos. 13, 14, 16, 17, and 18); are not strictly necessary given other policies or regulations (nos. 13, 14, 15, 16, 17, 19, 20, 22, and 24); are not immediately important to watershed health (nos. 14 and 21); do not demonstrably improve the effectiveness of regulation (no. 21), and/or have no appreciable effect on the development of strong partnerships (nos. 14, 15, 17, 22, and 24). In addition, the actual ranking of these projects is not critical to the outcome of the triennial review which is primarily designed to establish the workplan for the Planning Unit for the next three years. As such, the reader is directed to Appendix A to find the low priority projects and their proposed ranking. There is no further assessment provided here.

CHAPTER 3
PROPOSED EDITORIAL REVISIONS

Regional Water Board staff has prepared an editorial amendment to the Basin Plan to update chapters 1, 2, 4 and 5. The purpose of the editorial amendment is to make the Basin Plan more user-friendly through non-regulatory language changes such as grammatical corrections, section reordering corrections, and updated language.

The editorial amendments to the Basin Plan will not cause any change to the regulatory provisions of the Basin Plan, and therefore will be proposed as a "Change without Regulatory Effect" (1 CCR §100). The revisions will not result in any physical change to the environment, thus the editorial amendment is not defined as a project for the purposes of the California Environmental Quality Act (CEQA).

3.1 Chapter 1

Editorial revisions to Chapter 1, Introduction to the Basin Plan, were adopted by the Regional Water Board in June of 2008. Due to resource limitations and other high priority planning work, development of the proposed editorial amendments for the remaining chapters were deferred and the adopted amendment for the Chapter 1 revisions was not send on to the State Water Board for adoption. Additional edits to this chapter are being proposed to bring it up to date with current regulation. Staff has also confirmed and updated statistical data. All proposed edits are shown in strikethrough / underline (see Appendix B).

3.2 Chapters 2 and 4

In August 2011, staff released proposed editorial revisions to Chapter 2, Beneficial Uses. These edits were taken to the Regional Water Board in October 2011; however, there were some concerns about whether the public noticing requirements had been fully met so the amendment was never sent on to the State Water Board.

The changes made to Chapter 2 in 2011 as well as additional edits are shown in strikethrough / underline (see Appendix C). This proposed draft includes revisions to the language proposed in the 2011 version as well as an editorial revision to Chapter 4, Implementation Plans. The proposed Chapter 4 revision is limited to the relocation of existing Chapter 2 text regarding the region's wetland implementation program, as this information more appropriately belongs in the Implementation Plan section of the Basin Plan.

3.3 Chapter 5

Staff is proposing to remove all text from Chapter 5, Plans and Policies, and insert a reference to the State Water Board's website as Plans and Policies (see Appendix D). The Regional Water Board is required to implement the provisions of several statewide plans and policies which is the reason why they are included in the Basin Plan. However, the State Water Board's plans and policies are updated fairly regularly and it can be challenging for the Regional Water Board to maintain an up-to-date version of this chapter. Staff believes that accessing plans and policies on the State Water Board's website where they are regularly updated is now a more effective approach to keeping the public aware of the Regional and State Water Board's work.

APPENDIX A

2014 Triennial Review of the Basin Plan
Draft Proposed Basin Plan Amendment Project Priorities

2014 Ranking	2011 Ranking	Issue	Status	Staff Recommendations for 2014 Triennial Review List
High Priority TMDL Action Plans and related Standards Actions				
1a	1f	Develop Russian River Pathogen TMDL Action Plan and revise beneficial uses and water quality objectives	Ongoing	Retain
1b	1g	Develop Laguna de Santa Rosa Nutrient, Dissolved Oxygen, Temperature and Sediment TMDL Action Plan and revise beneficial uses and water quality objectives	Ongoing	Retain
1c	NA	Develop ocean beaches and freshwater streams bacteria TMDL Action Plan	New in 2014	Add
Other High Priority Basin Plan Amendment Projects				
2	3a	Update chemical constituent objectives and add a groundwater toxicity objective (WQO Update Amendment), including editorial amendments to Chapters 3 and 6.	Proposed adoption hearing June 2015	Retain
	4b	Update DO objectives for free-flowing streams	Included in WQO Update Amendment. Proposed adoption hearing June 2015	Retain
	16	Update surface water toxicity objective (see Statewide projects: Toxicity)	Reverse editorial revisions made in 1994. Included as part of WQO Update Amendment. Proposed for adoption hearing June 2015	Retain
3	NA	Develop criteria for exemption from seasonal discharge prohibition on point source waste discharge to Eel River, considering flow augmentation benefits. Evaluate Mad and Russian rivers.	New in 2014	Add
	14a	Develop numeric flow objectives to address low flow conditions. Focus on the Eel River. Evaluate Mad and Russian rivers	Needed to support exemption from seasonal discharge prohibition	Retain
4	3b	Develop Groundwater Protection Policy, including editorial amendment to Chapter 4	Ongoing	Retain
	NA	Develop policy to promote groundwater recharge	New in 2014	Add

2014 Ranking	2011 Ranking	Issue	Status	Staff Recommendations for 2014 Triennial Review List
	28	Develop a programmatic approach to managing salts and nutrients in groundwater, as per the Statewide Recycled Water Policy	Proposed as an element of Groundwater Protection Policy	Retain
	10c	Update Table 2-1 to include beneficial uses for individual groundwater basins, where appropriate	No action taken yet	Retain
5	NA	Develop instream flow objectives for the Navarro River	New in 2014	Add
6	NA	Develop policy to address the effects of climate change on water quality	New in 2014	Add
Medium Priority Basin Plan Amendment Projects, including TMDL Action Plans				
7	11	Designate Outstanding National Resource Waters	Preliminary scoping completed	Retain
8	8	Develop a Mixing Zone Policy for human health-based constituents	Substantial staff and stakeholder project development	Retain
9	6	Develop a Stream and Wetland System Protection Policy (see Statewide projects: WRAPP)	Region 1 and Region 2. Proposed policy developed.	Retain elements that augment State Board's WRAPP
	7	Develop a watershed hydrology objective	Region 1 and Region 2. Proposed narrative objective developed	Retain
	4a	Develop DO objectives for wetlands	Preliminary scoping completed	Retain
	10a	Update Table 2-1 to include WET, WQE, and FLD beneficial uses	Data collected for Elk River watershed and Laguna de Santa Rosa	Retain
	19b	Update pH objective—for wetlands	Preliminary scoping completed	Retain
10	NA	Revise biostimulatory substances objective to address biostimulatory conditions (see Statewide Projects: Nutrients)	New in 2014	Add
11	NA	Develop Humboldt Bay dioxin and PCB TMDL Action Plan	New in 2014	Add
	NA	Update Humboldt Bay Action Plan	New in 2014	Add
12	1b	Develop Freshwater Creek Sediment TMDL Action Plan and revise beneficial uses	Sediment source analysis and landslide hazard mapping complete	Retain
	NA	Develop Jacoby Creek Sediment TMDL Action Plan	New in 2014	Add
	1.a.3	Develop Lower Elk River Sediment TMDL Action Plan, and revise beneficial uses	Propose for approval under 4b, if MS4 and Grazing Policy adequately address issues	Retain
Low Priority Basin Plan Amendment Projects, including TMDL Action Plans				
13	10b	Update Table 2-1 to include FISH and CUL beneficial	Preliminary scoping completed	Retain

2014 Ranking	2011 Ranking	Issue	Status	Staff Recommendations for 2014 Triennial Review List
		uses		
14	NA	Develop a natural conditions clause	New in 2014	Add
15	12	Revise ammonia objective to incorporate USEPA's most recent ammonia criteria	No action yet taken	Retain
16	14b	Develop numeric flow objectives to address low flow conditions in impaired waters	No action yet taken	Retain
17	4c	Update DO objectives for lakes	Preliminary scoping completed	Retain
	15	Update DO objectives for estuaries	Preliminary scoping completed	Retain
18	27	Develop water quality objectives for endocrine disrupters	No action yet taken	Retain
19	NA	Revise Scott TMDL Action Plan	New in 2014	Add
20	NA	Revise Shasta TMDL Action Plan	New in 2014	Add
21	17	Revise specific conductance and total dissolved solids site specific objectives for the Upper Russian River	No action yet taken	Retain
22	19a	Revise pH objective to be consistent with USEPA criteria	No action yet taken	Retain
23	20	Develop TMDL Action Plans for other 303(d) listed waterbodies	No action yet taken	Retain
24	29	Revise copper objective to consider the Biotic Ligand Model	No action yet taken	Retain
Statewide Plans and Policies				
NA	21	Update freshwater bacteria objectives	State Water Board to update Inland Surface Waters Plan	Remove—no Basin Plan amendment necessary
NA	22	Update nutrient objectives	State Water Board to update Inland Surface Waters Plan	Remove-- no Basin Plan amendment necessary
NA	23	Update chlorine objectives	State Water Board to update Inland Surface Waters Plan	Remove-- no Basin Plan amendment necessary
NA	24	Develop biological objectives	State Water Board to update Inland Surface Waters Plan	Remove--- no Basin Plan amendment necessary
NA	25	Update Onsite Wastewater Treatment System Policy	Completed (included below)	Remove
NA	26	Update mercury objectives and implementation program	State Water Board to update Inland Surface Waters Plan	Remove
NA	NA	Update toxicity objectives and implementation program	State Water Board to update Inland Surface Waters Plan	Do not add—no Basin Plan amendment necessary
NA	NA	Develop program for the control of trash	New in 2014: State Water Board to update Inland Surface Waters Plan and Ocean Plan	Do not add—no Basin Plan amendment necessary

2014 Ranking	2011 Ranking	Issue	Status	Staff Recommendations for 2014 Triennial Review List
NA	NA	Develop a program for the control of pollution associated with desalinization	New in 2014: State Water Board to update Ocean Plan	Do not add—no Basin Plan amendment necessary
25	NA	Develop Wetland and Riparian Area Protection Policy	New in 2014: State Water Board to develop a Water Quality Control Plan for Wetlands	Do not add—no Basin Plan amendment necessary
26	NA	Revise the Antidegradation Policy to address issues associated with groundwater	New in 2014	Add—incorporate into Basin Plan, when adopted
27	30	Determine the precise location of estuary, harbor and enclosed bay boundaries	State Water Board mapping project includes this task	Retain—incorporate map into Basin Plan, when completed/adopted
2011 Basin Plan Amendment Projects Completed or Deleted				
NA	1.a.1	Develop Upper Elk River Sediment TMDL Action Plan	Proposed adoption of WDR and TMDL as a single action	Remove
NA	1.a.2	Develop Upper Little South Fork River Sediment TMDL Action Plan	Proposed for delisting from the 303(d) list	Remove
NA	1c	Develop Eel River Temperature TMDL Action Plan	Completed	Remove
NA	1d	Develop Mattole River Temperature TMDL Action Plan	Completed	Remove
NA	1e	Develop Navarro River Temperature TMDL Action Plan	Completed	Remove
NA	2	Develop Temperature Implementation Policy	Completed	Remove
NA	5	Develop Aquatic Ecosystem Restoration Policy	Proposed adoption hearing January 2015	Remove
NA	9	Develop Hatcheries Policy	Policy interpreted to allow NPDES permitting of point source discharges from hatcheries	Remove
NA	13	Revise fluoride objective	To be addressed through the WQO Update Amendment, Proposed adoption hearing in June 2015	Remove
NA	25	Update Onsite Wastewater Treatment System Policy	Completed (included above)	Remove
NA	NA	Consider Statewide projects as described above that will be amended into the Inland Surface Waters, Bays and Estuaries Plan or the Ocean Plan	Various, see State Board website	Remove from Triennial Review List
NA	31	Make editorial revisions to Chapters 3, 4, and 6	Combined with other amendment projects	Remove

2014 Ranking	2011 Ranking	Issue	Status	Staff Recommendations for 2014 Triennial Review List
2014 Projects Suggested but Not Requiring a Basin Plan Amendment				
NA	NA	Develop Protection of high quality waters under the Antidegradation Policy	New in 2014	Do not add—no Basin Plan amendment necessary
NA	NA	Evaluate the degree to which existing waste discharge controls will comply with requirements applicable to the expanded Gulf of Farallones National Marine Sanctuary	New in 2014	Do not add— no Basin Plan amendment necessary
NA	NA	Develop sediment toxicity monitoring	New in 2014	Do not add— no Basin Plan amendment necessary
NA	NA	Develop ambient monitoring of chemicals of emerging concern	New in 2014	Do not add— no Basin Plan amendment necessary

APPENDIX B

Proposed Revisions to Chapter 1 of the Basin Plan

APPENDIX C

Proposed Revisions to Chapter 2 and 4 of the Basin Plan

APPENDIX D

Proposed Revisions to Chapter 5 of the Basin Plan