Brief Issue Descriptions

for the

2015 Triennial Review

of the

San Francisco Bay Basin

Water Quality Control Plan

(Basin Plan)

July 2015

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1 INTRODUCTION

The San Francisco Bay Regional Water Quality Control Board (Water Board) is conducting the 2015 triennial review of the water quality standards in its Water Quality Control Plan (Basin Plan, http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml). The last triennial review was completed in 2012. The Water Board's triennial review will identify those issues that are considered a priority to address through Basin Plan amendment projects. Based on previous stakeholder comments, coordination with the statewide Basin Plan roundtable and a review of regulatory program needs, Water Board staff has identified the following issues within the Basin Plan for consideration in the upcoming 2015 triennial review. The projects are presented in categories of project type: beneficial uses, water quality objectives, implementation plans, other plans and policies, and editorial updates. Their order within these categories does not reflect their priority, which will be established through the triennial review public process. We prepared this list to inform the public and inspire interested parties to generate ideas to share with us to assist in our efforts to identify and prioritize Basin Plan amendment projects that will best address the water quality planning needs of our region.

2 UPDATE BENEFICIAL USES

State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the State. The beneficial uses described in Chapter 2 of the Basin Plan define the resources, services, and qualities of the State's aquatic systems. The Water Board is charged with protecting all these beneficial uses from pollution and nuisance that may occur as a result of waste discharges in the Region. Beneficial uses of surface water bodies (lakes, rivers, and wetlands) and groundwater aquifers presented here serve as a basis for establishing water quality objectives and discharge prohibitions to attain this goal.

2.1 Add Unnamed Water Bodies That Receive Discharges

A small number of NPDES wastewater permits cover discharges to water bodies not named in the Basin Plan. Mostly, these are new discharge points subsequent to the water body Basin Plan update accomplished in 2010. As of 2015, there are approximately six additional water bodies that should be added to the Basin Plan because they receive an NPDES-permitted discharge. This candidate project would add water bodies receiving discharges which are not currently named in the Basin Plan.

2.2 Review for Presence of the Commercial and Sportfishing Use (COMM)

This project entails reviewing water bodies in the region for the presence of the COMM beneficial use. There are several water bodies in the region (mainly lakes and reservoirs) where fishing for consumption exists, but the water bodies are not listed for the COMM use. It is important that this use is accurately assigned to the regions' water bodies because the COMM beneficial use is considered impaired when high contaminant concentrations make fish unsafe for human consumption.

2.3 Alignment of Ocean Plan and Basin Plan relative to REC1 Use

The applicability of the water contact recreation (REC1) beneficial use in the Pacific Ocean is defined in the California Ocean Plan. The Ocean Plan restricts effluent limits intended to protect

REC1 to a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour and *areas designated with REC1 by a regional board*. Because the San Francisco Bay Region Basin Plan provides no specific details on where REC1 applies, by default it assigns REC1 to the entire Pacific Ocean, and therefore the Basin Plan's effluent limits (e.g., for bacteria) must apply to the entirety of the ocean out to the edge of State waters which is three nautical miles away from shore. This may be considered an overly broad application of the REC1 use that provides no water quality benefit in State waters and unnecessarily complicates permitting the San Francisco Public Utilities Commission's Oceanside outfall that discharges effluent well beyond three nautical miles. The project would clarify that the Basin Plan's application of REC1 to the Pacific Ocean would be equivalent to the Ocean Plan's distance and depth contour specification.

2.4 Complete the Stream and Wetland Systems Protection Policy

This project is to complete the Stream and Wetland Policy currently under development. The resulting Basin Plan amendment would protect stream and wetland systems, which include stream channels, wetlands, floodplains, and riparian areas. The amendment is expected to help protect and restore the physical characteristics of these systems, including their connectivity and natural hydrologic regimes, in order to protect beneficial uses. The proposed stream protection amendment would designate two new beneficial uses of streams and wetlands: water quality enhancement and flood peak attenuation/flood water storage. These beneficial uses explicitly recognize that physical characteristics of water bodies contribute to better water quality, and need to be protected in the Board's permitting programs in order to achieve the Board's mission of protecting all beneficial uses of the Region's water bodies. The proposed amendment would also include additions to the implementation plan chapter to explain how the Water Board will regulate controllable water quality factors in a variety of permitting contexts in order to protect the new beneficial uses.

3 UPDATE WATER QUALITY OBJECTIVES

The overarching purpose of water quality regulation is to protect and maintain thriving aquatic ecosystems and the resources those systems provide to society and to accomplish this in an economically and socially sound manner. California's regulatory framework uses water quality objectives both to define appropriate levels of environmental quality and to control activities that can adversely affect aquatic systems. The following candidate projects provide specific examples of water quality objectives we are considering updating.

3.1 Consider Refinement and/or Development of Site-Specific Objectives for Dissolved Oxygen in San Francisco Bay

The Basin Plan includes a minimum water quality objective of 5.0 mg/L for dissolved oxygen in all tidal waters downstream of the Carquinez Bridge and 7.0 mg/L upstream of the Carquinez Bridge and also include a requirement that the median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. These objectives were adopted in the 1975 Basin Plan and are generally being attained in most of the Bay's subtidal waters. Concerns exist about the applicability of these objectives to certain habitats in the Bay, e.g., marsh tidal sloughs and managed ponds, where the current objectives may not be attainable or applicable.

Updating the dissolved oxygen objectives is especially important in view of the dramatic increase in opportunities for restoration of unique habitats around the Bay margins. These unique habitats include extensive tidal wetlands and slough networks as well as pans and other ponded areas. However, dissolved oxygen concentrations in shallow water habitats such as tidal wetlands and slough networks vary much more than in the main water mass of San Francisco Bay and frequently exhibit concentrations less than 5.0 mg/L and certainly less than 7.0 mg/L. Because restoration efforts of habitats around Bay margins cannot consistently demonstrate compliance with permit conditions derived from the Basin Plan's dissolved oxygen objective of 5.0 mg/L, it is appropriate to explore the possibility of refining the existing objectives by providing more specifics about allowable exceedances both temporal and spatial or possibly, developing site-specific dissolved oxygen objectives in tidal wetlands, slough channels, managed ponds, shallow subtidal habitats or other shoreline habitats.

The TMDL in Suisun Marsh is developing an approach for site-specific dissolved oxygen objectives that may provide a blueprint for other shallow-water habitats around the Bay. In addition, Board staff is working on the development of a nutrient assessment framework for San Francisco Bay and dissolved oxygen is proposed as a primary indicator of nutrient-related impacts. As such, the existing dissolved oxygen objectives should be evaluated for various habitats in San Francisco Bay.

3.2 Update the Basin Plan's Toxicity Testing Requirements

The State Water Board is developing an amendment to the Toxicity Control Provisions of the Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. This toxicity policy has been delayed by legal challenges and may not be finalized until 2016. The toxicity amendment would update procedures for assessing the potential for chemicals to cause toxicity to aquatic life in surface waters.

Currently, there are inconsistencies between different State and Regional Water Boards' toxicity testing requirements that result in uneven protections for aquatic life and an unequal playing field for waste dischargers. By adopting numeric toxicity objectives, the State Water Board would establish a clear, consistent definition of toxicity. By contrast, existing narrative toxicity objectives can be subject to a vast range of interpretations.

The draft State Water Board policy would require a new statistical approach, endorsed by U.S. EPA, to be applied consistently throughout California. The new approach, called the Test of Significant Toxicity (TST), incorporates the latest statistical approach and benefits from extensive peer review. This policy would supersede aspects of the Basin Plan's current toxicity policy, so we would likely need to edit the Basin Plan sections on toxicity (3.3.18 and 4.5.5.3) to conform to the policy. In addition, the policy allows for some Regional Water Board implementation discretion which could result in possible Basin Plan revisions or additions.

3.3 Revise Pentachlorophenol (PCP) Water Quality Objectives

PCP criteria were included in the California Toxics Rule (CTR) of 2000. Subsequently, the US Fish and Wildlife Service and the National Marine Fisheries Service issued a Biological Opinion concluding that the U.S. EPA's CTR water quality criteria for PCP are not protective of the early life stages of salmonids under conditions of low dissolved oxygen and high temperatures. As a result, the U.S. EPA calculated criteria that are protective. The U.S. EPA has asked the State and

this Water Board as part of the last triennial review to identify where these aquatic conditions occur and to adopt the revised (lower) PCP water quality criteria.

This project, which has been a candidate in past triennial reviews, would develop a basin plan amendment to adopt the proposed more restrictive objectives for PCP and create a plan to implement the objectives where applicable to protect the early life stages of salmonids that may be present under conditions of low dissolved oxygen and high temperatures in the San Francisco Bay Region. Information is not available at this time to indicate where aquatic conditions occur in the Region that might pose a risk to salmonids.

3.4 Develop Nutrient Water Quality Objectives for San Francisco Bay

The Basin Plan does not currently include numeric water quality objectives protective of nutrient-related impairments, such as excessive algae growth, unnatural foam, odor, and other impacts associated with excessive nitrogen and phosphorous. Water Board staff are engaged in multiple efforts – both local and statewide – to address nutrient-related issues in the Bay and freshwater systems.

San Francisco Bay Water Board staff has been working with stakeholders and scientists with the Southern California Coastal Water Research Program (SCCWRP) and the San Francisco Estuary Institute (SFEI) to develop nutrient water quality objectives for the San Francisco Bay Estuary. Early development efforts led to the creation of a regional Nutrient Management Strategy (NMS). The NMS calls for a collaborative effort to conduct scientific studies to support regulatory management decisions. Key goals of this effort include synthesis of the available scientific information and development of a science plan, continued development of numeric nutrient objectives, development of a monitoring program to gather the observations necessary to support modeling of the Bay ecosystem's response to nutrients, and development of implementation strategies. The first product of this effort is the development of a draft Assessment Framework that would be used to assess the Bay's condition with respect to nutrients.

For this project, Water Board staff would continue to participate in the governance structure that has been established to implement the NMS, which includes a Steering Committee, and technical and stakeholder workgroups, and would continue to support refinement of the Assessment Framework and future development of water quality objectives.

3.5 Develop Numeric Nutrient Endpoints (NNEs) in Estuaries and Freshwater

The State Water Board is engaged in two separate efforts to develop statewide NNE policy: one NNE effort for California estuaries, and a second effort for wadeable streams throughout the state.

A Technical Advisory Group has been established by the State Water Board to support application of the NNE framework to all California estuaries. The State Water Board has contracted with the Southern California Coastal Water Research Project to develop an estuarine classification system, review candidate nutrient-related indicators for all estuaries, explore revision of dissolved oxygen objectives, and review studies supporting a numeric endpoint for macroalgae on estuarine tidal flats.

The State Water Board is also developing a freshwater nutrient policy for wadeable streams that includes narrative nutrient objectives along with numeric guidance to translate the narrative objectives into numeric water quality objectives as well as an implementation plan to define how nutrient objectives will be used in regulatory programs such as 303(d) listing, NPDES compliance, 401 certification, etc. The NNE framework will be used to establish numeric endpoints based on the response (e.g. algal biomass, dissolved oxygen, etc.) of a water body to excessive nutrient concentrations. The project schedule anticipates rulemaking in 2017.

This candidate Basin Planning project consists of Water Board staff's active participation in both efforts. As each nears completion, Staff will evaluate the applicability to the Region's water bodies and the need for changes to the Basin Plan's narrative nutrient objective and its implementation.

3.6 Development and Implementation of Biological Objectives

Biological assessments provide direct measures of the cumulative response of the biological community to all sources of stress; they measure the condition of the aquatic resource to be protected. Biological indicators are tools that directly assess if beneficial uses such as warm or cold freshwater habitat are supported. Biological indicators are numeric tools to quantify current condition relative to a biological quality goal, or target, to which water quality can be managed, rather than the maximum allowable level of a pollutant that may affect aquatic life in that water body at particular concentrations. Therefore, biological assessment methods are more integrative and environmentally relevant goals for the protection of aquatic life than the objectives based on pollutants that are currently in the Basin Plan. U.S. EPA is encouraging states to use biological assessment data.

In the Bay Area, many entities have been collecting bioassessment samples needed to develop regionally-based biological indictors. Since 2001, the Surface Water Ambient Monitoring Program (SWAMP) has collected benthic macroinvertebrate bioassessment data by monitoring watersheds throughout the San Francisco Bay Region. Data collectors include Bay Area stormwater programs, Region 2 SWAMP, SWAMP's Perennial Streams Assessment Program, and SWAMP's Reference Condition Management Program. Biological indicators are based on suitable reference sites, sites that have minimal human disturbance in the watershed or around the sampling area. Indicator development depends on accounting for natural variation through water body classification or modeling, in order to identify the community structure that is expected in the absence of human disturbance or aquatic stress. The current Region 2 narrative objective for population and community ecology (Basin Plan section 3.3.8) can serve as the objective to pair with a Bay-Specific or state-wide biological indicator. Narrative biological objectives are coupled with numeric biological indicators (e.g., Index of Biological Integrity, observed vs. expected ratio scores) to provide a quantitative measure of the beneficial use status.

Since 2011, the State Water Board has been developing a statewide implementation plan to utilize bioassessment data in perennial streams and rivers. Regional staff actively participates in the scientific technical team and Regulatory Advisory Group. Depending on the ultimate result of the statewide policy, such as whether it applies perennial and non-perennial streams, Region 2 may undertake a Basin Plan amendment to describe a regional approach to using benthic macroinvertebrate bioassessment data to minimize degradation of biological condition in streams and to improve biological conditions where feasible.

3.7 Incorporate Revised 2012 U.S. EPA Recreational Water Quality Criteria (RWQC) for Bacteria

In 2012, U.S. EPA issued new recreational water quality criteria recommendations for protecting human health in all coastal and non-coastal waters designated for primary contact recreation use. The 2012 RWQC recommends the use of two bacteria indicators of fecal contamination, E. coli (fresh water only) and enterococci (marine and fresh water). The U.S. EPA also introduced a new concept, Statistical Threshold Value (STV), as a clarification and replacement for the term 'single sample maximum'. The new U.S. EPA criteria no longer recommend different pathogen indicator values for beaches based on intensity of use.

The 2012 Criteria include two options for numeric concentration thresholds based on two different gastrointestinal disease rates. According to the U.S. EPA both options would protect the public from exposure to harmful levels of pathogens. The option based on the higher disease rate is largely consistent with current numeric values for enterococcus and E. Coli objectives, but the second option (based on a lower disease rate) would result in somewhat lower numeric objectives for these indicators. The State Water Board will recommend one of these two sets of indicators. In either case, the total and fecal coliform indicators are not recommended by U.S. EPA and will be eliminated. The State Water Board's program implementing the new criteria may also contain other elements such as a reference beach/natural source exclusion process and exemptions to the new criteria under conditions of high flow.

Upon the State Water Board's adoption of the new criteria and other associated policies, the Water Board would need to make corresponding changes to our Basin Plan to provide clarity and consistency with the State Water Board action.

3.8 Review Un-ionized Ammonia Water Quality Objective

This candidate project will be to review and revise, as necessary, the un-ionized ammonia water quality objective for San Francisco Bay and its associated implementation provisions. Specifically, the purpose of the project is to ensure that the Basin Plan's objective and implementation provisions (e.g., for NPDES permits) are consistent with the magnitude and averaging period of U.S. EPA's acute and chronic saltwater criteria for un-ionized ammonia.

3.9 Lake Merced Dissolved Oxygen and pH Objectives

Lake Merced is a small, eutrophic (nutrient-enriched) urban lake in San Francisco that is currently listed as impaired by low dissolved oxygen and high pH. The City of Daly City is developing a capital project to address storm-related flooding that currently occurs in the Vista Grande Drainage Basin. The project would capture existing stormwater and authorized non-stormwater runoff that is currently conveyed to the Pacific Ocean, and use the water to augment water levels in Lake Merced. The increased water levels and other associated lake management efforts (e.g., routing water into a treatment wetland prior to discharge into Lake Merced) may offer some water quality improvements but not enough to remedy the impairments based on existing water quality objectives. This Basin Planning project would explore water quality standards actions (Chapter 3) for dissolved oxygen and pH, and it would also memorialize Lake Merced water quality management efforts in Chapter 4 of the Basin Plan.

4 UPDATE IMPLEMENTATION PLANS

The Water Board's overall mission is to protect the beneficial uses supported by the quality of the Region's surface water and groundwater. Together, the beneficial uses described in detail in Chapter 2 define the resources, services, and qualities of aquatic ecosystems that are the ultimate goals of protecting and achieving water quality. The objectives presented in Chapter 3 present a framework for determining whether water quality is indeed supporting these beneficial uses. This chapter describes in detail the Water Board's regulatory programs and specific plans of action for meeting water quality objectives and protecting beneficial uses. The following are specific implementation plan sections we have identified as candidates for updating.

4.1 Environmental Screening Levels (ESLs) for Groundwater Cleanups

Staff would update the Basin Plan with a description of the tiered decision process used to determine relevant exposure pathways and appropriate site cleanup levels using environmental screening levels (ESLs). ESLs are conservative contaminant concentrations in a particular media (soil, soil gas, or groundwater) below which the contaminant can be assumed not to pose a significant, long-term (chronic) threat to human health and the environment. The decision process expands the existing protection of groundwater beneficial uses to include potential risk to human health from indoor air exposure and protection of aquatic receptors.

Accomplishing this project would both promote consistency and optimal resource allocation in groundwater cleanup projects because ESLs are a powerful tool to focus regulatory attention on the most significant contaminant concerns during site assessment and cleanup. This update would not incorporate the current ESL criteria as fixed numbers, but rather memorialize the approach for deriving and applying ESLs to cleanup sites. This would document our current process for screening sites using a multiple pathway conceptual model, which includes groundwater and surface water interactions. This project was included in the prioritized list in the last three Triennial Reviews and some initial work, supported by the Toxics Division, has already been conducted.

4.2 Low-Threat Site Closure Requirements

Staff would update the Basin Plan with a description of the criteria for Low-Threat Closure included in the region's Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites (Assessment Tool, developed in 2009) to complement to the State Water Board's policy for Low Threat Closure of Petroleum Underground Storage Tank (UST) sites. The State Water Board's policy establishes criteria under which certain types of UST sites that present a low threat to human health, safety, and the environment can be closed, that is no longer subject to investigation and cleanup requirements. The Regional Board's Assessment Tool only applies to solvent-impacted sites so it does not overlap or conflict with the State Water Board's policy for petroleum UST.

The update would benefit staff in that they could focus their attention on sites that pose the most threat to human health and the environment. The update would also improve consistency in decision-making by providing guidance to Water Board staff, responsible parties, consultants, and other stakeholders, on clarifying future requirements for these sites. For example, some sites may require no further action (i.e., site closure); others may require only monitoring but no further active remediation; other sites may require additional work (e.g., a higher degree of site

characterization and/or remediation). This project has been a candidate project in several triennial reviews.

4.3 Using Wastewater to Create, Restore, and Enhance Wetlands

The receiving waters downstream of many Bay Area wastewater treatment plants include recently restored wetlands or areas that will be restored to wetland habitat in coming years. In many circumstances, using the treated wastewater as a source of freshwater for restored wetlands could provide an environmental benefit by increasing the amount of freshwater and brackish wetlands available to birds and wildlife dependent on such habitats. Using treated wastewater in this fashion as a source of freshwater was identified in the ***Baylands Ecosystem Habitat Goals 2015 Science Update*** to "restore estuary-watershed connections that nourish the Baylands with sediment and freshwater" (see also the Project below on Climate Change and Water Resources Policy).

This Basin Planning project would entail several elements. First, the project would explore updating Resolution 94-086 "Policy on the Use of Wastewater to Create, Restore, and/or Enhance Wetlands." The current Resolution 94-086 policy is now over 20 years old. Much has been learned about wetland restoration over the intervening years and the hydrology and topography of the San Francisco Bay has been changing as vast areas of former salt evaporating ponds are being restored to marsh under the San Francisco Bay Salt Pond Restoration Project. Moreover, the anticipated accelerated pace of sea level rise makes it important to explore policies that facilitate more rapid marsh accretion (build up).

The project would also clarify permitting requirements for wastewater discharges into wetlands, develop near-shore permitting strategies for discharges to wetlands and sloughs and would seek to encourage the beneficial re-use of wastewater for restoring wetland habitat in a manner consistent with the Water Board's mandate to protect water quality and the beneficial uses of wetlands. The project would evaluate and provide guidance about what level of treatment is appropriate for effluent discharged into wetland habitats, including consideration of contaminants of emerging concern. The project would also recognize that the San Francisco Bay estuary represents a unique California environment that is being enhanced as wetlands are being restored around the fringes of the Bay.

Establishing NPDES permits for discharging wastewater in wetlands is complicated by a variety of regulatory issues; this project would explore those regulatory issues and identify policy options. For example, clarifying the circumstances when discharge prohibition exemptions may be granted (e.g., under the "Net Environmental Benefit" exemption) would help ensure that the exemptions are applied consistently and intelligently in permits for all shallow water discharges. Last, clarifying text could be added in Section 2.2.3 and in Table 2-4 to explain that wetland beneficial uses do not necessarily include all those listed. For instance, newly created wetlands where there is not, and has never been, public access do not have the contact recreation beneficial use.

4.4 Update Conditions for Exemption to Discharge Prohibitions

Section 4.2 of the Basin Plan establish discharge prohibitions that apply throughout the Region and lists factors that the Board may consider in granting exceptions to the prohibitions. One of the factors listed is if compliance with the prohibition causes an inordinate burden relative to the

beneficial uses protected. In such a case an exception may be granted provided there is an equivalent level of environmental protection through alternate means such as improved treatment reliability.

This project would update section 4.2 to remove "improved treatment reliability" as a means of providing equivalent protection. The prohibitions and this condition for exception were put into place with the 1982 Basin Plan. Since then, municipal wastewater treatment technologies have matured along with required pretreatment measures that prevent treatment upsets. Reliable treatment has thus become a minimum expectation of all treatment facilities rather than as an achievement deserving of special privilege.

The candidate project would identify permitted discharges that currently rely upon improved treatment reliability for exception to a prohibition, determine if the treatment at those facilities is in fact reliable, consider impacts of the proposed update on those facilities, and identify other refinements to the exception that would be more appropriate for those facilities.

4.5 Develop Regulatory Strategy for Contaminants of Emerging Concern

CECs pose a significant challenge in that there are many chemicals in use for which there are no water quality objectives. While there is a growing body of information about the likelihood of some of these contaminants contributing to impacts on beneficial uses, for many there is still a lack of toxicity and environmental occurrence information. This project would consider the need for a Basin Plan amendment that addresses decision-making about management actions required to address CECs in the region.

In the last decade, the Regional Monitoring Program (RMP) has been conducting special studies on the occurrence, fate and toxicity of CECs in the San Francisco Bay and have prepare a research and monitoring strategy for CECs, based on a tiered risk-based approach. In conjunction with this effort, we have developed a management strategy linked to the tiered risk-based approach.

This Basin Planning project would involve adopting the management strategy as a regulatory strategy for CECs and updating Section 4.26.3 of Chapter 4, Implementation Plan, which discusses the Board's approach to Emerging Toxic Pollutants of Concern. Here we would describe the tiered risk-based approach and appropriate management actions like source control, monitoring and the need for developing water quality objectives.

4.6 Update Cyanide Dilution Credits

The project would be to update Table 4-6 to add cyanide dilution credits for shallow water dischargers and discharge locations not already in the table. Some dischargers (e.g., Fairfield-Suisun and City of Palo Alto) discharge to waters not listed in the table. Therefore, with each permit reissuance, the Water Board must consider appropriate mixing zones and dilution credits for the discharges not listed Table 4-6. Often, the same effluent is discharged to two or more receiving waters. In these cases, compliance with the effluent limitations is typically measured at just one location; however, different effluent limits may apply. Cyanide effluent limitations may differ for no reason other than that the mixing zones (or lack thereof) result in different dilution credits. As a result, the effective effluent limitations may be more stringent than the Water Board intended when it adopted Table 4-6. This project would ensure consistency and reduce the effort needed to resolve these challenges during permit preparation.

4.7 Salt and Nutrient Management Plans

The State Water Board adopted a Recycled Water Policy in February 2009. The purpose of the Policy is to increase the use of recycled water in a manner consistent with state and federal water quality laws. The Recycled Water Policy requires that Salt and Nutrient Management Plans (SNMPs) be completed to facilitate basin-wide management of salts and nutrients from all sources in a manner that optimizes recycled water use while ensuring protection of groundwater supply and beneficial uses, agricultural beneficial uses, and human health.

The Recycled Water Policy requires stakeholders to develop implementation plans to meet these management goals for salts and nutrients. All groundwater basins in the region will eventually be required to develop salt and nutrient management plans. Board staff has identified four priority groundwater basins – Niles Cone and the Sonoma, Livermore-Amador and Santa Clara valleys. The SNMP for Sonoma Valley has already been adopted through a Water Board resolution. Draft SNMPs have been submitted for review and comment for Livermore-Amador and Santa Clara Valleys. The SNMPs will assess sources, identify linkages to water quality objectives and establish a plan to achieve and maintain water quality objectives.

Completed SNMPs may be recognized by the Water Board either through Board resolution or by incorporation of key features into the Basin Plan. To facilitate updating the Basin Plan with these SNMPs Water Board staff will provide regulatory and technical guidance during the stakeholder-led development of these plans.

5 UPDATE PLANS AND POLICIES

In addition to the Basin Plan, many other plans and policies direct the Water Board's actions or clarify the Water Board's intent. Chapter 5 describes numerous State Water Board plans and policies and Water Board policies. The following are specific examples of policies we are considering updating.

5.1 Priority Ranking for TMDL Development

The Water Board is working on a range of TMDL projects throughout the region. TMDLs often include water quality standards issues, and most will be adopted as Basin Plan amendments. For these reasons, we include our TMDL priorities in the Triennial Review.

The current list of impaired waters for the San Francisco Bay Region is available on the State Water Board's website. We present here, for stakeholder review and comment, the list of TMDLs that are of higher priority for development and completion as Basin Plan amendments over the next three years:

- Butano and Pescadero Creeks Sediment
- Pacific Dry Dock II (sediment hotspot)
- Permanente Creek Selenium
- Petaluma River Nutrients and Pathogens
- San Francisco Bay Beaches (pathogens)
- San Gregorio Creek Sediment
- San Mateo Coast, Fitzgerald Marine Reserve/San Vicente Creek
- Stevens Creek Toxicity

- Statewide Policy on Mercury in Reservoirs
- Suisun Marsh Dissolved Oxygen, Mercury and Nutrients

5.2 Climate Change and Water Resources Policy

Climate scientists agree that the earth's climate is changing and sea levels are rising as a result. As the earth's climate changes, California will likely experience: rising sea levels; warmer temperatures; more extreme weather, including droughts; and changes in the seasonal patterns of rainfall and snowmelt runoff. California's changing climate can present challenges for every Water Board program, but the Basin Plan does not currently mention climate change or how climate change may affect the Water Board's mission to protect water quality.

This candidate project is to update the Basin Plan to reflect the relationship between climate change and water quality regulation and would consist of two elements. First, a narrative description would be added to Chapter 1 to explain how climate change could lead to physical and biological impacts like severe drought, inundation of low-lying areas from sea level rise, threats to wetlands and infrastructure, changes in species composition, and impediments to drainage from low gradient streams.

The second, and more challenging, project element would be to identify specific ways that Water Board programs might integrate consideration of climate change into permitting and other implementation actions. This second element would likely take the form of a Climate Change Policy to be included in Chapter 5 of the Basin Plan. The policy would:

- Describe existing efforts to address climate change impacts on Water Board programs, including efforts being led by the Water Board, permittees, other agencies, and others generally.
- Describe the Board's efforts to plan for and address climate change impacts.
- Offer useful guidance to aid Water Board staff and stakeholders in considering climate change impacts.

The scope of the problem makes this project technically complex and challenging, but there is a growing body of information that can inform our policies at the regional level. To take one example, baylands provide a range of important ecosystem services, including buffering against sea level rise. The Coastal Conservancy has proposed a set of specific recommendations for the protection and enhancement of baylands in its ***Baylands Ecosystem Habitat Goals 2015 Science Update.*** These recommendations focus on restoring estuary-watershed connections and ensuring complexity and connectivity when restoring wetlands systems. These recommendations, including proposals to adapt existing wetlands to keep up with the pace of sea level rise, challenge our wetlands policies and regulatory approach.

The Basin Planning project would explore ways of encouraging the accomplishment of these and other climate change response strategies.

5.3 Develop Policy for Managing Mercury in Restored Wetlands

Wetlands pose a dilemma for resource managers and regulators because these environments provide badly-needed habitat for a wide variety of wildlife, but their chemical and biological features can increase exposure to certain types of contaminants, notably mercury. Wetlands are complex systems, especially with respect to contaminant cycling in wetland food webs. In the

face of this complexity, regulators must balance the need to protect wildlife and people from hazardous exposure to contaminants against the myriad environmental benefits and ecological services provided by wetlands. The Water Board does not currently have a comprehensive policy providing unambiguous direction to wetland restorers and managers about how to manage in the face of this complexity. The San Francisco Bay Mercury TMDL requires wetland restoration projects to include pre- and post-restoration monitoring to demonstrate that they have been designed and are operated to minimize methylmercury production and biological uptake, and result in no net increase in mercury or methylmercury loads to the Bay.

In this candidate project, the Water Board would develop policy to help provide regulatory certainty in the challenging context of managing mercury in wetlands. The policy would likely include elements to provide restoration project proponents with greater certainty about required monitoring (e.g., over what duration, time of year, spatial coverage, which media or species/biosentinels) and the regulatory consequences of the monitoring results. We would also try to address the challenges of using dredged material for wetland restoration — how to use the material responsibly while minimizing the risk of exposure of biota to contaminants in the material. Last, we would include elements explicitly addressing how to balance the potential increased risks to wildlife from contaminant exposure as wetlands are restored with the ecological benefits provided by restored wetlands.

This project would ultimately result in policy incorporated into the Basin Plan. This project would build on existing efforts by SFEI and the South Bay Salt Pond project to develop mercury monitoring frameworks that can be used to adaptively manage restoration projects.

6 EDITORIAL REVISIONS, MINOR CLARIFICATIONS or CORRECTIONS

This category of project involves making editorial non-regulatory changes that clarify or update some of the program descriptions to be consistent with new laws, plans and regulations or to correct minor errors. These changes are sometimes needed for clarity and to ensure that the public is informed about the latest requirements to protect water quality. These changes would usually be non-regulatory. That is, they would not impose new requirements on permittees, but rather clarify existing regulatory requirements or program descriptions. As an example, Chapter 7 was created (as a non-regulatory amendment) in the Basin Plan to include Water Quality Attainment Strategies, such as Total Maximum Daily Loads (TMDLs). Chapters 4 and 7 need to be aligned to account for already adopted TMDLs and future TMDL Basin Plan amendments.

6.1 Clarify Turbidity Water Quality Objective

The Basin Plan's turbidity water quality objective is difficult to interpret:

> *Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU*

This language is often subject to misinterpretation when determining whether dredging operations are negatively impacting water quality in the Bay. The language can be improved for clarity as well as consistency with turbidity objectives found in the Basin Plans from other

regions. Because improving this language would require only minor clarifying changes, this project could be accomplished as part of another Basin Planning project.

6.2 Miscellaneous Editorial Changes

Possible Basin Plan editorial changes have been identified by Water Board staff and through suggestions submitted by the public during the 2009 and 2012 Triennial Reviews. These include:

- Updating footnotes to Tables 3.3 and 3-4 to reflect U.S. EPA's final tributyltin criteria adopted in 2003. Currently the draft criteria are reflected in the footnotes. These criteria will remain as advisory and not be incorporated as objectives.
- Updating the discussion of oil spills in Section 4.24 to better explain the role of the Water Board, especially to reflect experience from the Cosco Busan spill.
- Clarifying on Table 3-6 (Water Quality Objectives for Agricultural Supply) the difference between a threshold and a limit.
- Including a footnote to Table 3-3A explaining that water effect ratios are already included in copper site-specific objectives but that total to dissolved translators are not.
- Updating footnote f to Table 3 to make it clear that copper site-specific objectives have been developed and are shown in Table 3-3A.
- Correct the coordinates on Table 4-8 for Pacifica wastewater treatment plant outfall (37.6146 and 122.4890) and its location shown on Figure 4-1.
- Updating Section 4-8 (Stormwater Discharges) to incorporate by reference the limitations on point source storm water and nonpoint source discharges to provide special protections for marine aquatic life and natural water quality in Areas of Special Biological Significance (ASBS).
- Update and/or remove text from Section 4.11, which provides non-regulatory narrative about special circumstances related to specific POTWs. Much of the text is out of date and not necessary.

For more information about any of these candidate basin planning projects or the triennial review process itself, please contact:

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