

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**RESOLUTION No. R2-2015-0053**

**APPROVING THE 2015 TRIENNIAL REVIEW  
of the  
SAN FRANCISCO BAY BASIN WATER QUALITY CONTROL PLAN  
and  
ADOPTING A PRIORITY LIST OF PRIORITIZED BASIN PLANNING PROJECTS**

**WHEREAS, the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:**

1. The San Francisco Bay Basin Water Quality Control Plan (Basin Plan) is the Water Board's master water quality control planning document. The Basin Plan has been duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), the Office of Administrative Law, and U.S. EPA, where required.
2. The Basin Plan contains the San Francisco Bay Region's water quality standards, which consist of beneficial uses, water quality objectives, and implementation plans necessary to protect those uses.
3. In accordance with section 303(c)(1) of the federal Clean Water Act and section 13240 of the California Water Code (Water Code), the Water Board has concluded its 2015 Basin Plan Triennial Review.
4. Water Board staff prepared an issue paper entitled "Brief Issue Descriptions," dated July 2015, describing potential Basin Plan projects.
5. In accordance with State Water Board procedures, Water Board staff circulated the candidate Basin Plan project descriptions and held a workshop on August 4, 2015, for the purpose of receiving public comments concerning the need for revisions to the water quality standards, (i.e., beneficial use designations, water quality objectives) established in the Basin Plan.
6. Taking into account public comments, Water Board staff developed a staff report, dated October 2015, describing the 2015 Triennial Review process and the list of prioritized Basin Planning projects to be pursued over the next three years. The staff report describes water quality issues, the relative priority for investigating the issues, identifies which issues can be investigated with existing resources, and identifies additional issues along with the additional resources it will take to investigate and complete them.
7. On October 22, 2015, the Water Board provided to all interested parties both the *2015 Triennial Review List of Prioritized Basin Planning Projects* and the supporting staff report and notified these interested parties of its intent to approve the Prioritized List in fulfillment of the 2015 Triennial Review.
8. The Water Board held a public hearing on December 16, 2015, for the purpose of receiving testimony on the 2015 Triennial Review process and staff report.

9. The Water Board reviewed, carefully considered, and responded to all written comments received on the October 2015 staff report and list of prioritized projects as well as oral testimony received relative to the 2015 Triennial Review.

**NOW THEREFORE BE IT RESOLVED, THAT**

1. The Water Board hereby certifies completion of the 2015 Triennial Review and adopts the *2015 Triennial Review List of Prioritized Basin Planning Projects* as set forth in Exhibit A to this Resolution; and
2. The Water Board may address issues described in the 2015 Triennial Review staff report, but not included in Exhibit A, as staff and external resources may become available; and
3. The entire Basin Plan shall remain in effect until such time that appropriate and specific amendments are adopted by the Water Board and approved by the appropriate review authorities.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 17, 2015.

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BRUCE H. WOLFE  
Executive Officer

Exhibit A – 2015 Triennial Review List of Prioritized Basin Planning Projects

**EXHIBIT A**

**2015 Triennial Review List of Prioritized Basin Planning Projects**

<b>PROJECT TITLE</b>	1. Review and Refine Dissolved Oxygen Objectives for San Francisco Bay	
<b>CATEGORY</b>	Water Quality Objectives	
<b>SUMMARY</b>	<p>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. It also includes 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 objectives may not be attainable or applicable.</p> <p>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 compared to 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 within a temporal or spatial nature. This effort may involve developing site-specific dissolved oxygen objectives in tidal wetlands, slough channels, managed ponds, shallow subtidal habitats, or other shoreline habitats.</p> <p>Consideration and refinement of dissolved oxygen objectives will occur in phases. In the first phase, the TMDL for 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. Consideration and refinement of dissolved oxygen objectives in other Bay marshes could follow. In regards to the open Bay, Board staff is working on the development of a nutrient assessment framework for the Bay, and dissolved oxygen is proposed as a primary indicator of nutrient-related impacts. As such, refinement of the existing dissolved oxygen objectives could be evaluated for subtidal habitats in San Francisco Bay.</p>	
<b>PROPOSED BY</b>	Water Board	
<b>SUPPORTED BY</b>	U.S. Environmental Protection Agency San Francisco Public Utilities Commission, Bay Area Clean Water Agencies City of Palo Alto, Central Contra Costa Sanitary District	
<b>PRIORITIZED RANK:1</b>	<b>GENERALIZED RANK: HIGH</b>	
<b>SCORE: 76</b>	<b>COMPLEXITY: HIGH</b>	
<b>ESTIMATED PERSONNEL-YEARS (PY): 1.5</b>	<b>PY RUNNING TOTAL: 1.5</b>	
<b>IMPLEMENTING DIVISION: NPDES, WATERSHED, PLANNING</b>		

<b>PROJECT TITLE</b>	2. Climate Change and Water Resources Policy	
<b>CATEGORY</b>	Plans and Policies	
<b>SUMMARY</b>	<p>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 flooding; 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.</p> <p>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 water and wastewater system infrastructure and water quality from flooding, threats to wetlands, changes in aquatic species composition, impediments to drainage from low gradient streams, and desiccation of first-order streams.</p> <p>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 could take the form of a Climate Change Policy to be included in Chapter 5 of the Basin Plan or modifications to Chapter 4, Implementation Plan. The policy may include the following:</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• describe the Board's efforts to plan for and address climate change impacts; and</li> <li>• present a regulatory framework to apply to permitting of climate adaptation projects, including multi-benefit projects, such as horizontal levees.</li> </ul> <p>Marshes and other types of wetland areas provide a range of important ecosystem services, including buffering against sea level rise. The State Coastal Conservancy has proposed a set of specific recommendations for the protection and enhancement of baylands in the <i>Baylands Ecosystem Habitat Goals Science Update 2015</i>. This project would consider these recommendations, which focus on restoring estuary-watershed connections and ensuring complexity and connectivity when restoring wetland systems. Response strategies such as adapting existing wetlands to keep up with the pace of sea level rise challenge our wetland policies and regulatory approach. This Basin Planning project would explore ways of accomplishing a variety of climate change response strategies, including maximizing beneficial reuse of watershed and bay sources of sediments and implementing alternative permitting strategies.</p>	
<b>PROPOSED BY:</b>	Water Board	
<b>SUPPORTED BY:</b>	San Francisco Estuary Institute, Wil Bruhns, San Francisco Public Utilities Commission, Water Board	
<b>PRIORITIZED RANK: 2</b>	<b>GENERALIZED RANK: HIGH</b>	
<b>SCORE: 70</b>	<b>COMPLEXITY: HIGH</b>	
<b>ESTIMATED PERSONNEL-YEARS (PY): 1.5</b>	<b>PY RUNNING TOTAL: 3</b>	
<b>IMPLEMENTING DIVISION: PLANNING</b>		

<b>PROJECT TITLE</b>	3. Develop Numeric Nutrient Endpoints (NNEs) in Freshwater Streams and Estuaries	
<b>CATEGORY</b>	Water Quality Objectives	
<b>SUMMARY</b>	<p>The State Water Board is engaged in two separate efforts to develop a statewide NNE policy: one NNE effort for California estuaries, and a second effort for wadeable streams throughout the State.</p> <p>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.</p> <p>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 endpoints 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) of a water body to excessive nutrient concentrations. The project schedule anticipates rulemaking in 2017.</p> <p>This Basin Planning project would consist of Water Board staff’s active participation in both efforts, and the estimated PYs are limited to that effort. 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 (section 3.3.3) and its implementation.</p>	
<b>PROPOSED BY</b>	State Water Board	
<b>SUPPORTED BY</b>	BASMAA, U.S. Environmental Protection Agency	
<b>PRIORITIZED RANK: 3</b>	<b>GENERALIZED RANK: HIGH</b>	
<b>SCORE: 67</b>	<b>COMPLEXITY: MEDIUM</b>	
<b>ESTIMATED PERSONNEL-YEARS (PY): 0.3</b>	<b>PY RUNNING TOTAL: 3.3</b>	
<b>IMPLEMENTING DIVISION: PLANNING</b>		

<b>PROJECT TITLE</b>	4. Develop Nutrient Water Quality Objectives for San Francisco Bay Estuary – Support Implementation of the Nutrient Management Strategy	
<b>CATEGORY</b>	Water Quality Objectives	
<b>SUMMARY</b>	<p>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. The Basin Plan does contain a narrative water quality objective. Development of nutrient water quality objectives is a key element of the Water Board’s Regional Nutrient Management Strategy (NMS).</p> <p>Water Board staff has been working with stakeholders and scientists including the San Francisco Estuary Institute (SFEI) and the Southern California Coastal Water Research Program (SCCWRP) to better understand the role nutrients play in water quality in the San Francisco Bay Estuary. 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 the effort to develop nutrient water quality objectives has been the development of a draft Assessment Framework that would be used to assess the Bay’s condition with respect to nutrients.</p> <p>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. The level of PYs estimated for this project provide for a minimum level of engagement in this effort over three years. The majority of the work being conducted to implement the NMS is based on outside resources.</p>	
<b>PROPOSED BY</b>	Water Board	
<b>SUPPORTED BY</b>	U.S. Environmental Protection Agency	
<b>PRIORITIZED RANK: 4</b>	<b>GENERALIZED RANK: HIGH</b>	
<b>SCORE: 62</b>	<b>COMPLEXITY: HIGH</b>	
<b>ESTIMATED PERSONNEL-YEARS (PY): 1.5</b>	<b>PY RUNNING TOTAL: 4.8</b>	
<b>IMPLEMENTING DIVISION: PLANNING; NPDES</b>		

<b>PROJECT TITLE</b>	5. Using Wastewater to Create, Restore, and Enhance Wetlands	
<b>CATEGORY</b>	Plans and Policies and Implementation Plans	
<b>SUMMARY</b>	<p>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 as an important climate change response strategy in the <i>Baylands Ecosystem Habitat Goals Science Update 2015</i> to “restore estuary-watershed connections that nourish the Baylands with sediment and freshwater” (see also the project above on Climate Change and Water Resources Policy).</p> <p>This Basin Planning project would entail several elements. First, the project would explore updating Water Board Resolution No. 94-086 “Policy on the Use of Wastewater to Create, Restore, and/or Enhance Wetlands.” The 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 Bay has been changing as vast areas of former salt evaporating ponds are being restored to marsh under the South Bay Salt Pond Restoration Project and similar projects throughout the region. Moreover, the anticipated accelerated pace of sea level rise makes it important to explore policies that facilitate more rapid marsh accretion (or “build up”).</p> <p>The project would also clarify permitting requirements for wastewater discharges into wetlands and develop near-shore permitting strategies for discharges to wetlands and sloughs. This project would also evaluate and provide guidance about what level of treatment is appropriate for effluent discharged into wetland habitats, including consideration of contaminants of emerging concern (e.g., flame retardants, personal care products, microbeads, and nano particles). 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.</p> <p>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. This project would also potentially evaluate issues associated with discharge prohibition exemptions in the Basin Plan and could address Beneficial Use designation associated with creation of new wetlands.</p>	
<b>PROPOSED BY:</b>	Water Board	
<b>SUPPORTED BY:</b>	Water Board, U.S. Environmental Protection Agency, Bay Area Clean Water Agencies, Palo Alto	
<b>PRIORITIZED RANK: 5</b>	<b>GENERALIZED RANK: HIGH</b>	
<b>SCORE: 60</b>	<b>COMPLEXITY: HIGH</b>	
<b>ESTIMATED PERSONNEL-YEARS (PY): 1.0</b>	<b>PY RUNNING TOTAL: 5.8</b>	
<b>IMPLEMENTING DIVISION: PLANNING, NPDES</b>		



<b>PROJECT TITLE</b>	6. Lake Merced Dissolved Oxygen and pH Objectives	
<b>CATEGORY</b>	Update Water Quality Objectives	
<b>ISSUE SUMMARY</b>	<p>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. Daly City is developing a capital project to address storm-related flooding that currently occurs in the Vista Grande Drainage Basin. Daly City’s project would capture existing stormwater and authorized non-stormwater runoff, which is currently conveyed to the Pacific Ocean via the Vista Grande Canal, and use the water to augment water levels in Lake Merced. These flows would pass through a debris screening device and enter a diversion structure, which would enable all or only portions of the Canal flow to be directed through a constructed treatment wetland and then to the Lake, be routed directly to the Lake from the Canal, or be allowed to continue through the Canal to the ocean outlet.</p> <p>Some stakeholders expect that the augmentation of the water levels will support lake fisheries. 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 creating site-specific water quality objectives (Chapter 3) for dissolved oxygen and pH. The project will likely employ approaches used in other states to define depths within the lake where evaluation of the water quality objective is most appropriate to assess beneficial use support. The amendment would also memorialize Lake Merced water quality management efforts in Chapter 4 of the Basin Plan.</p>	
<b>PROPOSED BY:</b>	Water Board	
<b>SUPPORTED BY:</b>	San Francisco Public Utilities Commission, Daly City, Golden Gate Audubon Society, Lake Merced Cowboys (citizen group)	
<b>PRIORITIZED RANK: 6</b>	<b>GENERALIZED RANK: HIGH</b>	
<b>SCORE: 60</b>	<b>COMPLEXITY: MEDIUM</b>	
<b>ESTIMATED PERSONNEL-YEARS (PY): 2.0</b>	<b>PY RUNNING TOTAL: 7.8</b>	
<b>IMPLEMENTING DIVISION: PLANNING, WATERSHED</b>		