

APPENDIX C

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

RESPONSE TO WRITTEN COMMENTS

On Waste Discharge Requirements for Nutrients from Municipal Wastewater Discharges
to San Francisco Bay (“Tentative Order”)

The Regional Water Board received timely written comments on the Tentative Order distributed on February 6, 2014, for public comment from the following groups and agencies:

1. **Novato Sanitary District (Novato) – February 28, 2014**
2. **Sanitary District No. 5 of Marin County (SD No. 5) – March 5, 2014**
3. **U.S. Environmental Protection Agency (U.S. EPA) – March 6, 2014**
4. **City of Petaluma (Petaluma) – March 10, 2014**
5. **City of Palo Alto (Palo Alto) – March 10, 2014**
6. **San Francisco Baykeeper (Baykeeper) – March 10, 2014**
7. **State Water Contractors and San Luis and Delta-Mendota Water Authority (Water Contractors) – March 10, 2014**
8. **Central Valley Clean Water Association (CVCWA) – March 10, 2014**
9. **Bay Area Clean Water Agencies (BACWA) – March 10, 2014**

This Response to Comments organizes the comments by subject instead of commenter. This is to provide context to revisions to the Tentative Order because some of the comments from different commenters touch on the same subject. The organization of the comments corresponds to sections of the Tentative Order, followed by a future permit requirements section, and an editorial revisions section as follows:

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The comments are in *italics* (quoted where possible, or paraphrased for brevity) followed by Regional Water Board staff’s response. Each comment is keyed to the commenter(s) using the initials or shortened names for the commenter(s) listed above. For the full context and content of the comment, please refer to the comment letters associated with this item available at

http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/tentative_orders.shtml

I. Permit Provisions

Comment 1: (U.S. EPA) *U.S. EPA points out that while the evaluation of treatment upgrades conducted under section VI.C.2 contains the requirement to identify and report the “associated nitrogen and phosphorus removal levels,” the evaluation of treatment*

optimization and sidestream treatment does not. To resolve U.S. EPA's concern over this omission, it requests that we include this requirement for the treatment and sidestream evaluations conducted under Order section VI.C.1.

Response: We modified the Tentative Order to include this requirement.

Comment 2: (Palo Alto) *Palo Alto understands that the Water Board is expecting an optimization study from BACWA that provides information regarding the different treatment processes and optimization opportunities. Palo Alto's wastewater treatment process is slightly different than other advanced secondary plants in the San Francisco Bay. Therefore, Palo Alto wants to clarify that the Water Board plans on accepting one plan that will cover all wastewater treatment plants including Palo Alto's unique treatment process.*

Response: The Tentative Order allows for Dischargers to submit a group report for optimization opportunities; however, it also requires that the evaluation be site-specific. In other words, if BACWA submits a group report, BACWA will identify optimization opportunities for all treatment facilities, including Palo Alto.

Comment 3: (Baykeeper) *Baykeeper indicates that the permit process should eliminate institutional barriers to enhanced utilization of treated water. Urban water providers currently retain the rights to provide water resources for all users within their service area, thus presenting an institutional barrier to enhanced reuse of recycled or suitably treated water. Water districts, for instance, can impose fees or other disincentives against sanitary districts for the opportunity to provide water to industry, landscaping, and agriculture. Given the serious drought conditions facing the State, we encourage the Board to view this Permit as an opportunity to reduce nutrient loads while exploring institutional barriers to water reuse.*

For example, large industrial customers in Contra Costa County, including the region's major refineries, receive freshwater pumped from the Delta by Contra Costa Water District. The Sanitary District could serve these customers with suitably treated water, thereby significantly reducing water resource demands. This may not yield significant nutrient load reductions directly, through increased revenue could fund nutrient removal technologies or provide alternate incentives to reduce nutrient inputs. True, this could result in increased potable water rates for households, though reliability would be enhanced for municipal customers, and Delta water that would otherwise be used for industry may be sold to outside agencies to supplement lost revenue.

Sanitary districts located within the service areas of separate water districts may also be precluded from providing water to large irrigation customers, such as golf courses or Caltrans. Use of recycled or disinfected treated water in these applications should be encouraged wherever possible to directly reduce potable demand and nutrient loads. Processes for identifying such barriers to sensible water reuse should be identified in the permit itself, given the potentially complex developments required to implement such changes, which are generally outside the scope of the process identified in the permit

under ‘Evaluation of Potential Nutrient Discharge Reduction by Treatment Upgrades or Other Means.’

Response: While specific requirements for water recycling are beyond the scope of this permit, we agree that water recycling should be evaluated as a component for reducing nutrient discharges to the Bay and that institutional barriers can make these projects economically unviable. For the evaluation of alternative discharge scenarios under Provision VI.C.2, we revised the Tentative Order as follows:

“In addition to the above upgrade evaluation, Dischargers may evaluate ways to reduce nutrient loading through alternative discharge scenarios, such as water recycling or use of wetlands, in combination with, or in-lieu of, the upgrades to achieve similar levels of nutrient load reductions. This evaluation shall identify any institutional barriers to water recycling along with proposals for overcoming such barriers and include ancillary benefits and adverse impacts associated with such alternative discharge scenarios such as the following:”

Comment 4: (Baykeeper) *Baykeeper indicates that Water Board expectations should be established for scoping and evaluation plans. Scoping and evaluation plans are currently required in the Draft Permit as a means to identify strategies to achieve nutrient discharge reductions over time. Specific metrics or desired outcomes have not been identified though - with the exception that the plans must ‘be acceptable to the Executive Officer.’ Water Board staff can and should provide greater regulatory certainty to the regulated community and the ratepayers they represent, in terms of how the plans will be judged and what are the preferred outcomes.*

The Water Board has experienced long delays on several regulatory matters related to wastewater and stormwater after allowing the regulated community to develop strategies on their own, only to be later rejected by the Executive Officer. This phenomenon seems likely to repeat itself – at great expense, in terms of spent resources and valuable time required to address the issue. We encourage the Board to establish benchmarks for plan evaluation, incentivize specific efforts for regional collaboration, and provide metrics for how nutrient management should fit into strategies for meeting recycled water goals. This effort could benefit from increased stakeholder engagement and scenario building exercises with the community.

Response: Comment noted. The primary reason for requiring a scoping plan is to provide Regional Water Board staff and any other interested parties an opportunity to comment and appropriately adjust the work that will be done in the evaluation phases. We commit to web posting and notifying interested parties of the Optimization and Upgrade Evaluation scoping and evaluation plans to facilitate outside feedback on these efforts. The provisions detail the required components of the work; together with the scoping plan review, the Dischargers will have sufficient feedback on what are the expectations for the work.

Moreover, there may be opportunities to provide feedback within the Nutrient Management Strategy framework. While we envision stakeholders to the Strategy to primarily be involved with issues related to San Francisco Bay (e.g., modeling, receiving water monitoring, and special studies), there may also be an opportunity under the framework currently envisioned to form a technical subgroup to resolve comments from interested parties on the content of treatment optimization and upgrade evaluations.

Comment 5: (Water Contractors) *The Water Contractors request changes to page 4, section VI.C.2 Evaluation of Potential Discharge Reduction by Treatment Upgrades or Other Means. The tentative permit needs to specify nutrient load reduction targets (e.g. 90%, 95%, 99%) or effluent nutrient concentration targets, and specify which nutrient constituents (e.g., nitrate, ammonia, total nitrogen, phosphate, total phosphorus) for the evaluation of treatment upgrades.*

Response: We have not made changes in response to this comment. The purpose of this provision is to provide a range of options for nutrient removal based on treatment plant categories. We do not expect this report to include specific nutrient reduction targets for each facility. As we gather more information through monitoring, modeling, and special studies, we will be able to better target any needed reductions in nitrogen and phosphorus discharges for specific treatment plants. At that time, the Regional Water Board would consider requirements for the Dischargers to drill-down from the options evaluated under this permit to determine specific nutrient reduction targets that can be achieved within their site-specific constraints.

Comment 6: (BACWA) *Section VI.C.3.b on page 7 specifies how the funds provided by the Dischargers shall be spent to support receiving water monitoring for nutrients. While BACWA agrees that it is likely that the funds will be at least partially allocated as described, it is premature to be overly specific in how the funds should be spent over the next five years. Additionally, the science team has not reached a final conclusion about whether monitoring will be done by boat or moored sensors, so it is too early to specify the need for monitoring stations. BACWA proposes the following changes:*

b. Support Receiving Water Monitoring for Nutrients

The Dischargers shall collaborate with other regional stakeholders to support receiving water monitoring for nutrients, as necessary, that go beyond the monitoring already provided by the Regional Monitoring Program and others, ~~by providing~~. Support may include the following:

- i. A network of nutrient monitoring ~~stations~~ locations to track nutrient concentrations, dissolved oxygen, and phytoplankton biomass in San Francisco Bay*
- ii. Adequate data to support modeling of nutrient fate and transport in San Francisco Bay; and*
- iii. Studies furthering the understanding of harmful algae bloom development, including, at a minimum, monitoring for algae species and toxins*

Response: We agree with BACWA’s proposed change from monitoring “stations” to monitoring “locations,” but we have not included the other requested change because it

would make the requirement overly vague. We view the three elements listed as the minimum for receiving water monitoring. Since the provision requires dischargers to collaborate with stakeholders to support monitoring without overly specifying details such as the number of monitoring locations, there is adequate flexibility as priorities evolve. See also response to comment 8, below.

Comment 7: (Water Contractors) *The Water Contractors request changes to page 6, section VI.C.3.a, Support Science Plan Development and Implementation. The tentative permit should include more detail on the science studies required to implement the San Francisco Bay Nutrient Management Strategy, and specifically provide for a process that allows interested parties to provide input on the implementation plan and schedule, and the details of the studies.*

Response: We have not added more detail to Science Plan Development and Implementation to avoid the unintended consequence of constraining these efforts. However, we agree there are benefits for interested parties to provide input to this process. We are forming a Steering Committee to guide implementation of the Nutrient Management Strategy for San Francisco Bay. Members we will invite to join the Steering Committee include Baykeeper, U.S. EPA, BACWA, other Regional Water Boards, the Interagency Ecological Program/Delta Science Program, California Department of Fish & Wildlife, National Marine Fisheries Service, Bay Area County Farm Bureaus, Western States Petroleum Association, Bay Area Stormwater Management Agencies Association, Sacramento Regional County Sanitation District, U.S. Fish & Wildlife Service, U.S. Geological Survey (USGS), and the Water Contractors. We are developing a charter for a governance structure that will guide the Steering Committee in how it implements the Nutrient Management Strategy on matters such as how science studies will be identified and prioritized and how decisions will be made. This will include specific decision making protocols that will provide all interested parties with a transparent process for voicing any concerns related to implementation of the Science Plan under Provision VI.C.3.a of the Tentative Order.

Comment 8: (Water Contractors) *The Water Contractors request changes to page 7, section VI. C. 3.b, Support Receiving Water Monitoring for Nutrients. While the tentative permit includes detail on the effluent monitoring requirements, the receiving water monitoring requirements are very general and require more detail.*

- *The tentative permit should include more detail on what is required by a network of monitoring stations. How will this network be determined? How often will monitoring occur and at what depths? Will there be opportunity for input from interested parties? How will the data be made available for review by the public in a timely fashion and a usable format in order to ensure a transparent process and allow for meaningful public participation?*
- *The tentative permit should specify which nutrients will be monitored (e.g. does this include all N and P species including urea?). Is it the same list that is specified for effluent monitoring in Attachment E? Also, the tentative permit should specify method and detection levels.*

- *The tentative permit receiving water monitoring requirements should also include phytoplankton speciation in order to evaluate whether and how species composition has shifted in response to nutrients.*
- *The tentative permit needs to include more detail on the harmful algae bloom studies. How will these studies be determined? Is there an approval step by the Regional Water Board Executive officer prior to study initiation? This is another area where it is important to provide an opportunity for input from interested parties. At a minimum, the tentative permit should indicate how many monitoring stations, how frequently the monitoring needs to occur, and which toxins will be monitored at what detection levels.*

Response: We have not made changes in response to this comment. The permit includes elements for receiving water that must be conducted; however, it is premature to specify how dischargers have to comply with these requirements. The details on how to comply with receiving water monitoring requirements will be worked out through implementation of the permit. As stated in our response to comment 7, we are forming a Steering Committee to guide the implementation of the Nutrient Management Strategy for San Francisco Bay. This will provide all interested parties with a transparent process for voicing any concerns related to implementation of receiving water monitoring under Provision VI.C.3.b of the Tentative Order.

II. Monitoring and Reporting Program

Comment 9: (SD No. 5) *SD No. 5 requests twice per year effluent monitoring frequency for the Tiburon Wastewater Treatment Plant, based on the facility's design flow rate and low effluent discharge volume over the last 5 years. The Tentative Order's Monitoring and Reporting Program (Table E-3) requires once per month effluent sampling for Major Municipal Dischargers (Flow < 10 mgd). According to U.S. EPA guidance, major/minor status is determined by the permitting authority but a Major Facility is one that has a design flow of 1 mgd or greater or a service population of 10,000 or greater. The Tiburon Wastewater Treatment Plant has been designated a Major Facility by the Regional Water Board but the design flow rate is 0.98 mgd and the facility serves a population of approx. 8,600. As a result, it doesn't match the categories defined in the Tentative Order. Effluent discharges from the Tiburon Wastewater Treatment exceed 1 mgd only during large storm events. Over the past 5 years, the annual average daily flow rate was always less than 0.67 mgd and discharges greater than 1 mgd occurred on only 94 days, or 5% of the time. The impacts of the small effluent flow rates are predicted to be inconsequential and on the order of impacts expected from a Minor Facility. To clarify requirements and make the frequency commensurate with impacts from a Minor Facility, SD No. 5 is requesting twice per year effluent monitoring. The reduced monitoring requirements (from monthly to 2/year) will save SD No. 5 approximately \$11,000 in analytical costs (over the 5-year permit term) and significant staff time that would otherwise be devoted to sample collection and handling. The funds and staff resources are needed to support SD No. 5's ongoing capital projects, which include upgrade of the Tiburon Wastewater Treatment Plant, re-purposing of existing facilities to attenuate peak wet weather inflows, and implementing the sewer rehabilitation plan.*

Response: We agree that SD No. 5 was inadvertently classified as a major discharger and we have revised Table 1 to reflect SD No. 5's appropriate classification as a minor discharger.

Comment 10: (Water Contractors) *The Water Contractors request that the tentative permit specify analytical method and detection level for each of these constituents, or reference where these conditions are specified.*

Response: We have not made changes in response to this comment. The Tentative Order requires the use of analytical methods approved under 40 Code of Federal Regulations section 136. These analytical methods have specific method detection limits associated with them.

III. Fact Sheet

Comment 11: (Palo Alto) *Palo Alto recommends adding Fact Sheet language to clarify the requirement to report on nutrient load impacts of optimization and upgrades implemented in response to other regulations or requirements. Palo Alto indicates that it is scheduled to retire the sewage sludge incinerators by 2019, due to increased requirements from the Environmental Protection Agency. Palo Alto is currently planning on updating its biosolids processing facility to a process that creates energy; however, that process will increase nutrient loading in the effluent. This change in biosolids processing will reduce the amount of greenhouse gases emitted. Therefore, Palo Alto strongly supports BACWA's proposed language to the Fact Sheet.*

(BACWA) *Similarly, BACWA appreciates that the Tentative Order provides POTWs with the opportunity to describe how regulations and requirements not related to nutrient reductions may impact nutrient loads. This requirement recognizes that POTWs are under pressure to balance competing environmental and other benefits when deciding how to optimize or upgrade our facilities. For example, POTWs that upgrade their biosolids processing facilities to produce higher quality biosolids will end up with a higher nutrient concentration sidestream that will increase the load of nutrients in their effluent. Alternatively, other POTWs have completed optimizations for treatment plant reliability and have seen ancillary decreases in nutrient loads. To better clarify the intent of this requirement in the Optimization and Upgrade Studies, BACWA proposes adding the following language to the Fact Sheet:*

"This Order requires Dischargers to evaluate the impact on nutrient loads due to treatment plant optimization and upgrades implemented in response to other regulations or requirements. The Regional Water Board understands reductions in nutrient loads may impact the loads of other pollutants in the effluent as well as biosolids quality, and vice versa. For example, an upgrade from biosolids incineration to anaerobic digestion will result in an increase in nutrient loading to the POTW effluent. This requirement will allow Dischargers to show how nutrient loads will increase or decrease after process changes are made in response to other regulations and requirements, and will help elucidate the balance of competing environmental benefits."

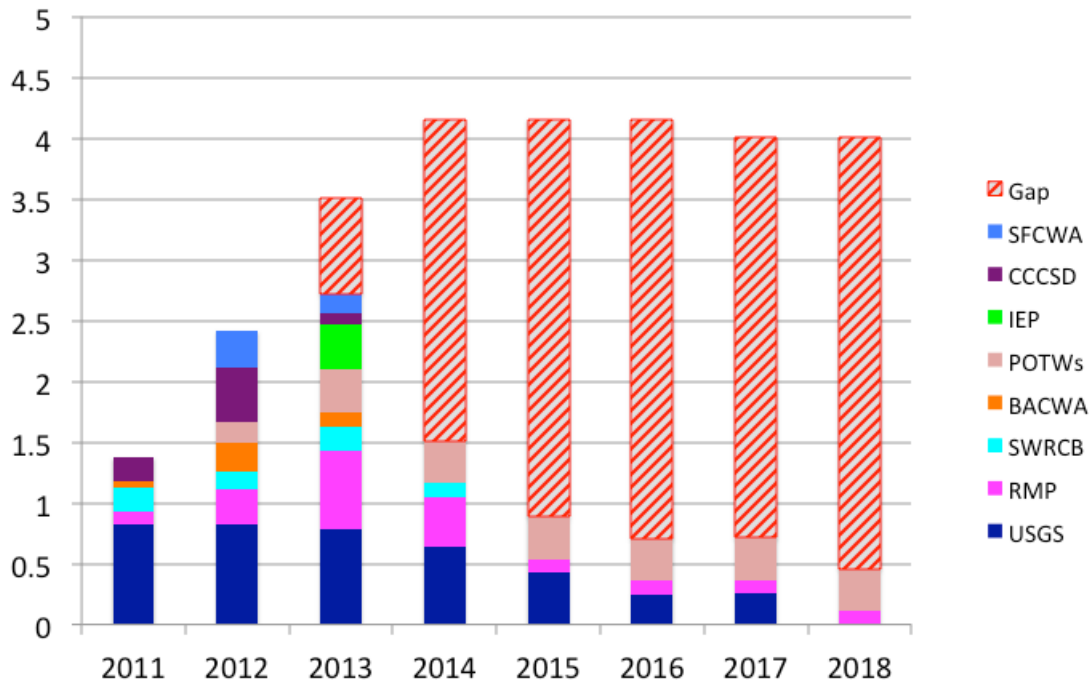
Response: We included the above language in the Fact Sheet.

Comment 12: (BACWA) *Due to the complex hydrodynamics of San Francisco Bay, the location of a discharge may significantly affect the ultimate fate and transport of pollutants discharged and, therefore, the ecological impact of that discharge. The Tentative Order implicitly recognizes this, and requires that Dischargers fund studies related to specific subembayments and document nutrient loads on a subembayment basis. The subembayment boundaries delineated in the Tentative Order are those established in the Basin Plan based somewhat arbitrarily on the location of the San Francisco Bay bridges, and are not reflective of actual San Francisco Bay hydrodynamics.*

BACWA requests that the Basin Plan subembayment boundaries be replaced with those established by the Regional Monitoring Program in 2005, which are based on a review of available information on water and sediment transport. Recognizing that the subembayment boundaries relevant for understanding nutrient discharge impacts may change as nutrient science develops, BACWA further requests that a note be added to the end of section VII on page F-18 stating that the subembayment boundaries delineated in the permit are temporary and will be updated pending the results of scientific investigations into nutrient exchange between the subembayments.

Response: We agree with the commenter that hydrodynamics in the Bay play an important role in determining what ultimately the subembayment boundaries should be and that the location of a discharge may significantly affect the ultimate fate and transport of nutrients in the system. We have not made changes in response to this comment, because the subembayments are the same as used by the San Francisco Estuary Institute's Draft Report, *External Nutrient Loads to San Francisco Bay*, dated April 9, 2013. The work being done to develop an assessment framework for nutrients in the Bay is currently looking at establishing appropriate subembayment boundaries. For the time being, the subembayment boundaries are only being applied in the permit in the context of group reporting of loads. If new information comes to light or the subembayment boundaries included in the Tentative Order become problematic, we can reevaluate them at that time.

Comment 13: (Baykeeper) *Baykeeper indicates that the funding gap for studies and stakeholder coordination must be addressed. Baykeeper points out that BACWA has identified \$880,000, annually over the permit term, for contribution towards monitoring, modeling, and embayment studies. According to a figure presented by BACWA, however, a significant funding gap remains to fully implement the Nutrient Strategy (see below). The full BACWA allocation may not be accurately represented in the below figure. Yet it is clear that implementation of the strategy, coupled with the phasing out of USGS funding, will require significant contributions from unidentified sources.*



Faced with such a severe funding gap, which could exceed \$3 million or about 80% of the required budget by 2018, the Board should question how this gap shall be filled. A reasonable expectation is that Board staff shall work closely with BACWA and SFEI to seek state and federal grants. Additional funding from POTWs and BACWA, however, should be required to complete the necessary analysis. The results from these studies will bear heavily upon decisions of which potentially costly approaches shall be taken to address the issue of nutrient enrichment. Short-term investments in the necessary studies will enhance decision making ability and potentially result in lower long-term cost.

(Water Contractors) *The Water Contractors point out that the tentative permit states that the Bay Area Clean Water Agencies (BACWA) has identified \$880,000 each permit year as a collective level of effort from the Dischargers, and further states that the Regional Water Board finds this amount to be appropriate. This determination about adequacy of the Discharger funding needs to be more transparent. There is no information in the tentative permit to support the statement that \$880,000 is adequate. The tentative permit should include more detail on monitoring, modeling and nutrient studies, a schedule and proposed budget that demonstrates the required studies will have sufficient funding for full implementation.*

Response: We view the commitment of \$880,000 from the publicly-owned wastewater treatment community through BACWA to be a positive first step. We also note that USGS funding will likely be sustained at its current level due to successful efforts to prevent those cuts. That said, we are still concerned with potential funding gaps developing and plan to work closely with all stakeholders to address the gaps. The adequacy of available resources is a critical issue that will be evaluated by the Steering Committee for the Nutrient Management Strategy referenced in response to comment 7.

Specifically, one of the responsibilities of the Steering Committee will be to identify, prioritize, and recommend specific funding needs for technical work. This will include coordination and determination of funding contributions from Steering Committee members and stakeholders including federal and State entities. We will be encouraging all members of the Steering Committee to consider assisting with any funding shortcomings.

As for details on monitoring, modeling, and nutrient studies, our implementation of these plans via the Steering Committee and technical workgroups will provide interested parties with an opportunity to comment and help shape these plans (see response to comment 7).

Comment 14: (Baykeeper) *Baykeeper points out that opportunities for collaboration with other monitoring programs should be explored. The issue of overlapping and potentially duplicative monitoring efforts in the Delta region has been discussed at length and is spawning the creation of a Delta Regional Monitoring Program, following a model similar to the Bay's Regional Monitoring Program (RMP). To address issues of cost and resource constraints for the Region 2 Nutrient Strategy, effort should be made to work with those monitoring programs operating in the northern reaches of Region 2. Staff may consider stating such a preference explicitly in the Permit or encouraging increased collaboration through changes in the Nutrient Strategy. To the extent the funding gap identified in a separate comment can be shrunk through contracts and agencies already operating in the Estuary, the Board should encourage enhanced collaboration between monitoring programs.*

Response: We agree that ensuring collaboration between monitoring programs to efficiently use limited resources is extremely important. To better ensure coordination on the implementation of receiving water monitoring, we are implementing the Nutrient Management Strategy for San Francisco Bay via a Steering Committee that will consist of all interested parties (see response to comment 7). One of the guiding principles of the Nutrient Management Strategy is to communicate transparently and proactively with other stakeholders and technical efforts in the Bay-Delta region to ensure efficiency and minimize overlap and duplication with other efforts.

Comment 15: (Water Contractors) *The Water Contractors respectfully disagree with the Regional Water Board statement that there is insufficient evidence to conclude that nutrients cause or contribute to excursions of the narrative water quality objective for biostimulatory substances. As stated earlier in these comments, consistent with the findings made by the State Water Resources Control Board – supported by a wide range of federal environmental, fish and wildlife agencies - there is already more than enough scientific justification now to require nutrient load reductions for wastewater treatment plant facilities, especially those discharging to Suisun Bay. As noted on page F-17 of the tentative permit, Suisun Bay is characterized as having extremely low phytoplankton biomass and a highly altered phytoplankton community composition. To support its position, the Water Contractors include a Nutrient Science Summary Technical Memorandum that summarizes nutrient impacts on aquatic life in the Bay-Delta Estuary,*

including Suisun Bay, from the published literature. Published studies have shown that the total loads, the forms, and the relative proportions of nutrients have changed over time. These changes have impacted the Bay-Delta Estuary, resulting in declines in primary production and changes in phytoplankton community composition. Ultimately these changes impact lower trophic levels of the Bay-Delta food web dependent on phytoplankton. Relevant narrative objectives that need to be considered in determining nutrient impairment include the following:

3.3.3 Biostimulatory Substances

● Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. Changes in chlorophyll a and associated phytoplankton communities follow complex dynamics that are sometimes associated with a discharge of biostimulatory substances. Irregular and extreme levels of chlorophyll a or phytoplankton blooms may indicate exceedance of this objective and require investigation. (2011 WQCP p3-4)

3.3.8 Population and Community Ecology

● All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce significant alterations in population or community ecology or receiving water biota. In addition, the health and life history characteristics of aquatic organisms waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors. (2011 WQCP p 3-5)

3.3.18 Toxicity

● All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include, but are not limited to, decreased growth rate and decreased reproductive success of resident or indicator species. (2011 WQCP, page 3-7)

Response: We have not made changes in response to this comment. We agree that available scientific information continues to indicate that nutrient loads are a cause for concern. However, we do not agree that existing information is sufficient for the Regional Water Board to make a conclusive determination that discharges from municipal treatment plants cause or contribute to exceedances of narrative water quality objectives. As part of the Nutrient Management Strategy, we are synthesizing all available information, including work cited by the Water Contractors. The Steering Committee for the Nutrient Management Strategy will evaluate this information through a collaborative process to reconcile different scientific viewpoints.

Moreover, the Sacramento Regional Wastewater Treatment Plant will significantly reduce its nutrient loads by 2020. This is likely to improve the health of Suisun Bay from current conditions. Therefore, at this time, it is prudent for the Tentative Order to require monitoring, modeling, and special studies to help determine the assimilative capacity of San Francisco Bay for different nutrient forms. This will help ensure that any

management actions to be required to reduce nutrient loads to San Francisco Bay will produce the desired outcome.

Comment 16: (Water Contractors) *The Water Contractors point out that the tentative permit states that low phytoplankton biomass and a highly altered phytoplankton community composition have characterized the Suisun Bay system since 1987. Published work indicates that changes in Suisun Bay phytoplankton composition began before the invasive clam *Potamocorbula* became established (Glibert et al., 2011 p.371). The Water Contractors point out that it is preferable to cite the underlying research rather than a draft report. See Wilkerson et al 2006; Dugdale et al 2007; Dugdale et al 2012; Dugdale et al 2013; Glibert et al 2011; and Glibert et al 2013. Specific references are provided in Attachment 3.*

Response: In these comments, the Water Contractors make various statements about the state of San Francisco Bay. Since these comments are not substantive relative to the requirements proposed in the Tentative Order, we note them without agreeing or disagreeing with them. These issues will be further explored through the collaborative science process for implementing the Nutrient Management Strategy for San Francisco Bay referenced in response to comment 7.

IV. Future Permit Requirements

Comment 17: (CVCWA) *CVCWA requests that language be added to the Tentative Order to clearly state that regulatory requirements shall be based on the scientific results derived from the completion of the approach described in the Nutrient Management Strategy. This is because those scientific underpinnings are essential to ensure that resources are expended effectively on nutrient management measures that achieve desired environmental outcomes and beneficial use protection.*

Response: Scientific results derived from the approach described in the Nutrient Management Strategy will form a large part of the bases for all future regulatory actions. We revised the Fact Sheet (page F-9) to state:

“The Regional Water Board anticipates using the information from studies conducted under earlier orders and the Nutrient Management Strategy to require implementation of additional management actions, as needed.”

Comment 18: (BACWA) *While BACWA understands that the nutrient strategy is a multi-permit effort, we feel it is premature to speculate what future regulations will entail because of the nascent nature of our understanding of potential impacts and control measures. It should be stressed in the language that any future load caps or other regulatory limits should be based on the results of the scientific studies that are being funded as part of this permit. Using the scientific underpinnings is the only way to ensure that public funds spent on nutrient load reductions will result in environmentally significant water quality benefits. As such, BACWA proposes adding the language underlined below to page F-8.*

“In the 2019 permit reissuance, the Regional Water Board anticipates considering establishment of performance-based effluent limits for nutrients and may require implementation of treatment optimization or other means to reduce loads or increase assimilative capacity if scientific studies show results that warrant such activities. The 2019 permit reissuance will also continue efforts to evaluate control measure scenarios as informed by load response modeling. In the 2024 and 2029 permit reissuances, the Regional Water Board anticipates using the information from studies conducted under earlier orders to require implementation of additional management actions, as needed.”

Response: We included the changes to the Fact Sheet.

Comment 19: (Water Contractors) *The Water Contractors point out that on pages F-8 and F-9 of the Fact Sheet, the tentative permit presents a very long time period for moving from nutrient monitoring, studies and treatment evaluations specified in this tentative permit, to requiring implementation of additional nutrient management actions in 2024 and 2029 permit reissuances. This is an excessively lengthy time period for management actions, and does not reflect the state of the science on nutrient impacts. As stated earlier in these Water Contractors comments, there is already more than enough scientific justification now to require nutrient load reductions for wastewater treatment plant facilities, especially those discharging to Suisun Bay. The schedule presented in the tentative permit appears to pre-judge the outcome of ongoing nutrient studies as not justifying implementation of nutrient management actions. The Water Contractors request that the language in the tentative permit be modified to provide for implementation of nutrient management actions by no later than the 2019 permit reissuance.*

Response: We have not made changes in response to this comment. At the time of each permit reissuance, the permit requirements will be driven by current regulations, science, and the state of knowledge. It is inappropriate to prejudge and state, as the Water Contractors request, that there will be nutrient management actions by no later than the 2019 permit reissuance before the efforts required by the Tentative Order are completed.

Furthermore, our anticipation for consideration of nutrient reductions in the 2024 and 2029 permit cycles is more realistic than 2019. Nutrient fate, transport, and effects are very complex. As stated in our response to comment 15, there is currently some uncertainty in the available science, and there will be a significant reduction in the nutrient load from the Sacramento Regional Wastewater Treatment Plant to Suisun Bay by 2020. It would be appropriate to understand the effects of this change before setting any appropriate reduction levels.

V. Editorial Revisions

Comment 20: (Novato) *Novato requests that we correct the design flow included in Table F-1 of the Fact Sheet.*

Response: We made the correction to the Tentative Order.

Comment 21: (Petaluma) *Petaluma requests that we make editorial corrections to its facility contacts and address information.*

Response: We made the requested corrections to the Tentative Order.

Regional Water Board Staff Initiated Changes

Regional Water Board staff made minor editorial and formatting changes to the Tentative Order.