Resource Alignment Proposals
POTW Stakeholder Group
February 4, 2013

The National Pollutant Discharge Elimination System (NPDES) stakeholders appreciate the opportunity to provide the following proposals to the State Water Resources Control Board (State Water Board or Board) as part of Phase 2 of the Board's resource alignment initiative. If adopted, these proposals could result in significant cost savings for Publicly Owned Treatment Works (POTWs) and other entities subject to NPDES Permits and waste discharge requirements.

We recognize that this initiative is currently in Phase 2, which is intended to focus on assessing opportunities for reducing the costs of compliance for dischargers subject to Water Board oversight under the NPDES wastewater, stormwater, irrigated lands, and waste discharge requirement programs. The following proposals developed by the wastewater stakeholders would reduce the costs of compliance, and each of these proposals is designed to maximize the utility/benefit arising from discharger compliance actions, including benefits to the regulated community and to the environment at large. While the proposals below contain rough estimates regarding the magnitude of potential cost savings attributable to each issue identified, more detailed cost information will be provided for those items deemed to merit further development as part of the next phase of this process. It is expected that these proposals would allow agencies to focus their scarce resources in areas where each dollar will go further and demonstrate that permittees can simultaneously maintain and improve water quality while reducing agency costs.

Before reviewing the specific cost savings proposals, we would like to highlight one issue that we see as crucial to meeting the Water Board's objective going forward. We believe it will be critical to establish a process to evaluate, in advance of adoption, the costs of compliance for pending and future regulatory actions that have cost impacts on NPDES permittees. While we appreciate that the State Water Board wants to examine existing policies and requirements to reduce the costs of compliance, that effort will be in vain if new policies and requirements continue to substantially increase those costs and contain some of the same underlying inefficiencies and issues as existing policies and requirements. Thus, we would recommend that the State Water Board begin developing procedures or protocols to address the costs of new requirements *before* they are imposed. A more proactive approach is needed to assess cost effective options for permittees up front, particularly given that it is frequently more expensive and far more inefficient to review requirements that have already been imposed. Such an endeavor could not only reduce the costs of compliance, but prove immensely beneficial to wastewater entities when making their budgeting decisions for the future. These procedures could take the form of an economic guidance document to be applied consistently when new requirements are imposed, or a checklist containing criteria that the State and Regional Water Boards will consider when adopting policies, considering permit requirements, and taking other actions that impose substantial new burdens on permittees. The most important thing is that the costs of compliance, opportunities for reductions in those costs, and assessment of whether commensurate water quality benefits

are likely to be realized for those costs, must be considered before the adoption of the policy or requirement in question. The details and criteria for such a process would need to be worked out with the State Water Board and staff, but this remains a crucial part of any effort to reduce the costs of compliance for dischargers going forward.

The specific cost savings proposals fall into two categories. These address both near-term opportunities for reducing the costs of compliance and more long-term changes that could yield even greater savings for the affected agencies. All of these proposals are designed to maximize the utility and benefit arising from wastewater discharger compliance actions while simultaneously protecting the environment at large.

Near-Term Proposals for Achieving Reductions in the Cost of Compliance

The following proposals identify near-term options for potentially reducing the cost of compliance while remaining protective of water quality and the environment. These changes can likely be implemented without large-scale changes to State Water Board policies. The majority of these approaches relate to changes in the monitoring, reporting and special study requirements contained in entities' individual NPDES permits.

A. *Establish Processes for Streamlining Monitoring Requirements in NPDES Permits*

One of the primary opportunities for potential reductions in the cost of compliance is establishing a process for streamlining monitoring requirements in NPDES permits. These include addressing unnecessary and/or duplicative ambient and effluent monitoring requirements, reducing unnecessary monitoring for entities with a positive compliance record, and increasing use of surrogate sampling as described in greater detail below.

1. It has been the experience of many wastewater agencies that the Water Boards often add new monitoring and reporting requirements over time as part of the Monitoring and Reporting Programs included in their NPDES permits. However, rarely are ongoing monitoring requirements removed or reduced, even when a review of these requirements has revealed that a significant amount of data is collected that does not answer relevant questions. For example:

(1) Unnecessary Ambient Monitoring Requirements: In many cases, dischargers are being required to continue to conduct monitoring that is not essential, most notably at groundwater well locations in the Central Valley. Some requirements appear to be simply carry-overs that are no longer needed to demonstrate compliance, such as oil and grease, which is a legacy from the days of primary treatment. Monitoring requirements for these types of parameters should be eliminated altogether. As another example, the Los Angeles Regional Water Board has just recently indicated its intent to begin requiring monitoring for far more Constituents of Emerging Concern (CECs) than was recommended by the

State Water Board's expert panel on CECs in aquatic ecosystems. Little justification or explanation was provided for adding this monitoring requirement. Dischargers are also frequently being required to contribute to the cost of conducting monitoring that is aimed at determining water quality trends outside the influence of the facility's discharge.

(2) Regional Monitoring Without Reductions to Costs of Compliance: In some instances, reductions in ongoing compliance monitoring have been authorized and the discharger has been allowed to contribute funding (or in-kind services) so that a regional ambient monitoring program may be implemented. This can be a beneficial approach if utilized properly, as described below. However, to the extent that this practice simply moves an equivalent amount of money to another program and is cost-neutral, it does not result in a reduction in the overall costs of compliance. If monitoring is unnecessary and redundant, it should be eliminated altogether in order to decrease the cost of compliance for POTW ratepayers.

Proposed Solution: We suggest that the State Water Board develop, in conjunction with stakeholders, a process to review existing compliance monitoring programs to identify opportunities to streamline routine monitoring requirements. These requirements could still be subject to periodic review, which would allow the State Water Board to adequately determine compliance with permit requirements. In addition, procedures would be needed to define when increased monitoring might be needed (e.g. if new water quality objective exceedance(s) are detected or if other specified changes in the discharge facility occur). Overall, however, this process would assist the State Water Board and individual permittees in identifying monitoring and reporting requirements that are costly to agencies and not necessarily beneficial to improving water quality. This review process could also consider whether regional monitoring, partially funded by the permit-holder, would meet the State Water Board's need for information pertaining to a particular constituent in lieu of effluent monitoring.

Cost Savings: The potential cost savings are significant. As much as $100 million may be spent annually by POTWs on gathering data specified in monitoring requirements. For example, a 2001 report published by the Southern California Coastal Water Research Project (SCCWRP) estimated that Southern California NPDES POTWs spent $17 million dollars on monitoring requirements.[1] Identifying efficiencies in monitoring that could be implemented without jeopardizing water quality could yield savings of thousands of dollars per year, per discharger, which could result in millions of dollars per year in the aggregate.

[1]Schiff, K., S. Weisberg, V.E. Raco-Rands. 2001. Inventory of Ocean Monitoring in the Southern California Bight. pp. 212-217 in: S.B. Weisberg and D. Elmore (eds.), Southern California Coastal Water Research Project 1999-2000 Annual Report. Southern California Coastal Water Research Project. Westminster, CA. cited in the SWRCB, Draft Staff Report Substitute Environmental Documentation for Amendment of the California Ocean Plan, September 26, 2012.

2. **Reduce Unnecessary Monitoring for Entities With a Positive Compliance Record for Specific Parameters:** Many wastewater facilities have a demonstrated positive record of compliance with specific parameters, yet these entities are required to continue monitoring for that parameter on a frequent basis. As one example, a POTW with an established and well managed pre-treatment program proven to reduce BOD, metals, and/or TDS should not be required to continue to monitor for these parameters on a frequent basis throughout the life of its permit. This expends valuable agency resources with no notable water quality benefit.

   Proposed Solution: If a wastewater treatment plant has demonstrated a long record of good compliance for a certain parameter, allow for the reduction in monitoring frequency of that parameter.[2] For example, if a treatment plant runs a BOD test five times per week and goes an entire permit cycle without a BOD violation, allow the monitoring frequency to be reduced to two or three times per week. There could be a backstop in place to require agency's to return to the normal monitoring frequency if they have an exceedance or get within a certain percentage of the permit limit. As one example of where this has been implemented on a very limited basis, the Central Valley Regional Water Quality Control Board has reduced monitoring requirements for a wastewater treatment plant that satisfies these criteria to monitoring for a certain parameter only once per quarter during a single year within the entity's permit cycle. As another example, El Dorado Irrigation District's El Dorado Hills WWTP permit was recently approved with reduced sampling requirements for a number of constituents due to the high quality of their water and positive compliance history. This approach allows the discharger to demonstrate the parameter is not an issue for which more frequent monitoring is necessary, and allows the Regional Board to confirm that the parameter continues to be a non-issue. In addition, some requirements appear to be simply carry-overs that are no longer needed to demonstrate compliance, such as oil and grease, which is a legacy from the days of primary treatment. Such parameters should be eliminated altogether.

   Potential Cost Savings: Moderate, though potentially significant in the aggregate. For example, the costs savings associated with reducing the sampling requirements for EID's WWTP as described above, provide a 40% annual savings by reducing BOD/TSS sampling from five times per week to two times per week. This results in a reduction in actual dollars spent by that agency from $14,040 to $5,616 in one year for those two constituents alone.

3. **Use of Surrogate Sampling Where Appropriate:** Many wastewater entities are frequently required to perform redundant and unnecessary sampling and monitoring that can easily be accomplished through the use of surrogate sampling.

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[2] For an example of this approach, see USEPA's *Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies* (1996), Robert Perciasepe, Assistant Administrator Office of Water.

This consumes valuable, limited agency resources and does not improve water quality.

Proposed Solution: When two or more relatively similar parameters are required to be monitored in an NPDES permit, the Water Boards should allow for a reduction or elimination of the monitoring requirements for one or more of the parameters. For example, if a plant has both turbidity and total suspended solids (TSS) requirements, it would both reduce the cost of compliance and maintain environmental protection to eliminate the TSS monitoring and use turbidity for compliance, or at the discretion of the discharger, to eliminate turbidity monitoring and use TSS for compliance.[3] As another example of a surrogate scenario, a wastewater treatment plant has multiple bacteria monitoring requirements (i.e. fecal coliform and/or total coliform and/or enterococcus), it would reduce the costs of compliance to use only one for compliance and to then eliminate the laboratory testing for the others.

Cost Savings: Moderate.

B. *Eliminate Monitoring and Reporting Requirements That Are Not Relevant to the Specific Permit at Issue or are Otherwise Unnecessary*

Issue: It has been the experience of many wastewater agencies that the Water Boards frequently adopt new NPDES permits with increasing numbers of required studies and reports, some of which are unnecessary or inapplicable to the entities ultimately subject to these requirements. The wastewater stakeholders have developed the following list of studies and reports that, rather than being automatically incorporated into new permits, should be more closely considered for exclusion based on discharge-specific issues prior to the Water Boards requiring their completion:

1. **Salinity Evaluation and Minimization Plan (SEMP):** This document is categorically required of all dischargers in some regions, regardless of the salinity concentrations in the discharged effluent. Many times, the discharger is already in compliance with the salinity goal identified within the NPDES permit, but is still required to prepare an SEMP and implement measures to control salinity in the discharge. Moreover, annual progress reports are often required to document progress towards the prescribed salinity goal, regardless of whether or not the discharger has already met that goal.

   Proposed Solution: The requirement to prepare an SEMP should be based on the potential to cause or contribute to the exceedance of a water quality objective (i.e. a reasonable potential analysis (RPA)), similar to the requirements for other constituents).

[3] See *Turbidity as a Surrogate to Estimate the Effluent Suspended Sediment Concentrations of Sediment Controls at a Construction Site in Southeastern United States* (2002), Richard Warner, which recommends using turbidity as a surrogate for TSS.

Cost Savings: The cost savings for this proposed change vary greatly depending on the complexity of the facility that the SEMP is being prepared for, though the cost of developing an SEMP can range from $5,000 to $50,000. In the aggregate, eliminating this requirement for those entities that meet the criteria described above could potentially be significant.

2. **Constituent Studies vs. Pollution Prevention Plans:** Several permits require Constituent Studies and Pollution Prevention Plans (PPP) for constituents that show reasonable potential (RP) during permit renewal. The goal of a PPP, for the most part, is to identify and reduce constituent loading to the wastewater treatment plant (WWTP). However, Central Valley Regional Water Board staff has indicated that a Constituent Study is required for constituents that have demonstrated RP, and the stated goal is to determine whether or not effluent limits should be required. This is redundant to the analysis performed by the Regional Water Board during permit preparation. Additionally, there are instances where these studies are required for constituents that the permit already assigns effluent limits for, thus making the whole analysis obsolete. This multitude of required studies is particularly problematic for small wastewater treatment plants, both for technical reasons (i.e. small staff unable to certify certain reports) and financial reasons. Finally, a PPP for ammonia has been required for at least one municipal discharger in northern California; the report provides no value as the major source of ammonia coming into a municipal WWTP is human waste.

   Proposed Solution: Consideration must be given to whether a Constituent Study or PPP adds value by providing new and meaningful information before it is required in a permit.[4] If Constituent Studies must be required, a clear definition of what they should entail (and when they should be assigned) should be prepared for use by all Water Boards so that they are assigned consistently.

   Cost Savings: The cost to prepare a constituent study can range from approximately $5,000 to $25,000, and the cost to prepare a PPP can range from approximately $5,000 to $30,000. Thus, in the aggregate, eliminating this requirement under the conditions described above could potentially be significant.

C. *Facilitate Use of Regulatory Tools by Making Processes more Clear and Consistent*

[4] The Water Code provides discretionary authority to the Water Boards to require the preparation of pollution prevention plans under certain circumstances by dischargers subject to NPDES permits and to industrial users that discharge to publicly owned treatment works (POTWs), i.e., subject to the federal pretreatment program. (Wat. Code §13263.3.) These reports are only mandatory where the discharger seeks relief from mandatory minimum penalties pursuant to Water Code section 13381(j).)

Issue: The POTW stakeholders have identified the following studies as potentially valuable tools for reducing the costs of compliance. However, even though the tools have been available for some time, efforts to use them have often been overly costly or unsuccessful because of the way that the studies or the results of those studies are viewed by the Water Boards:

1. **Water Effects Ratio and Translator Studies:** Water Effects Ratio (WER) and translator studies can be very expensive and time consuming for dischargers. The potential relief, in terms of relaxed effluent limits for problem metals, can be great. However, the significant amount of effort required to complete the study, and the fact that the Water Boards could decide to "use discretion" when allowing relaxed limits, often results in a discharger being unwilling to undertake such an endeavor. As a result of perceived water quality violations, many of which can drain valuable municipal resources due to the imposition of mandatory minimum penalties, the discharger is forced to spend money upgrading its facility.

   Proposed Solution: The State Water Board should establish more clear and consistent guidelines for how WERs and translator studies can and should be used and encourage the Regional Water Boards to be more open to these options. In addition, the Water Boards should allow for (or facilitate) regionalized or watershed based translator studies for use by multiple dischargers.

   Cost Savings: The potential cost savings vary greatly dependent on the specific needs and issues at each WWTP. However, a regionalized study could save a particular discharger at least half the cost of the individual study (WER and translator studies can cost $20,000 to $100,000, dependent on many variables). Additionally, if the Regional Water Board were more closely involved in the process, it is likely that they would be more willing to accept the study results and modify effluent limits accordingly. Should this result in a facility avoiding an unnecessary upgrade for metals removal, the potential savings could be in the millions of dollars.

2. **Mixing Zone Studies and Dilution Credits:** Several dischargers have followed the prescribed procedures by performing mixing zone studies, antidegradation analyses, and even biological assessments without final issuance of dilution credits. Some are simply denied, while others are required to wait until the next permit cycle before they are told whether the dilution credits will be granted. Given this circumstance, it is impossible for a discharger to effectively plan for potentially needed plant modifications when that discharger does not know what the final target effluent limits will be. This uncertainty can be costly and can create a significant drain on agency resources that results from the development of the required studies. Many smaller agencies simply lack the resources to undertake the studies, and are thus left out of the process altogether. This can also create a significant amount of stress at the staff level, and can be costly in terms of the mandatory minimum penalties imposed.

As one example of the lack of consistency and clarity in mixing zone and dilution credit determinations, Biological Assessments are an additional (and relatively new) requirement for dischargers that are pursuing dilution credits. Unfortunately, the requirements for this study are not defined by the Regional Water Boards, which often defer to the Department of Fish and Game (DFG). However, even DFG is still trying to determine exactly what they are hoping to achieve from these assessments (i.e. for non-wadable streams versus wadable streams). The lack of consistency with which Biological Assessments are required, as well as variations in scope when they are required, is an example of the kind of expansion and confusion that can occur when there are no guidelines to properly scope dilution credit requirements. This creates an untenable situation for dischargers seeking dilution credits.

Proposed Solution: The process for allowance and denial of dilution credits needs to be more clearly defined, and the State Water Board should establish more clear and consistent guidelines for how mixing zone studies and dilution credits can and should be used.

Cost Savings: The potential cost savings for defining/developing a process by which dilution credits could be positively obtained could be billions of dollars and result in a major reduction in the costs of compliance. On the more specific issue of biological assessments, these studies can cost $10,000 to $100,000, depending on configuration of receiving stream and DFG agreed upon scope (requirements) of the site-specific study.

D. *Establish a More Progressive Approach to Sanitary Sewer Overflow (SSO) Enforcement Actions*

Issue: Several California collection agencies have received significant penalties for SSOs occurring over multiple years based on the total number and/or volume of SSOs during the period. Recognizing that the SSO Reduction Program for the state is relatively new, that not all SSOs are preventable, that municipal government agencies have very limited resources that must be prioritized, and that municipal agencies want to do the right thing, enforcement would be equally or more effective if it were to happen in a much more progressive fashion, as described below. Often, the types of penalties and costs associated with these enforcement actions do not directly benefit the environment and divert valuable agency resources from those projects that could have a direct benefit. Municipal resources should be spent on solving agency problems, not simply paying penalties.

Proposed Solution: Enforcement actions need to be far more progressive in nature. When approaching SSO enforcement, the first step should be an inspection of a sanitary sewer system by Water Board staff and if necessary, required actions specified by the applicable regulatory agency, including a Notice of Violation when appropriate. Penalties should not be administered unless these lower level activities are proven to be unsuccessful. Municipal agencies strive to protect water quality and comply with all

regulatory requirements, and even just a list of required actions through an official letter can be very effective in controlling SSOs.

Cost Savings: Implementing a more progressive enforcement policy could result in potentially significant cost savings for wastewater agencies across the state. For instance, according to the State Water Board Overview of Enforcement Actions and Penalties in Fiscal Year 2011-12, there were 273 compliance and penalty enforcement actions and 3,430 other enforcement actions, with assessed penalties in the amount of $22.5 million. According to the data, 539 of these actions were initiated against NPDES wastewater entities, resulting in $6,811,827 in penalties assessed. If even a percentage of those penalties could have been avoided through the implementation of progressive enforcement, wastewater agencies would be able to spend those funds on other more environmentally beneficial priorities.

E. *Reduce Sanitary Sewer Spill Reporting Requirements for Smaller Spills*

Issue: The Sanitary Sewer System (SSS) Waste Discharge Requirements (WDRs) requires agencies to report all SSOs to the State Water Board. This has created a considerable reporting requirement for even the smallest spills, many of which essentially have no environmental impact.

Proposed Solution: Reduce or eliminate the individual spill reporting requirement for smaller spills that are under a certain threshold or do not reach waters of the state. Alternatively, if reporting is still required, the Water Boards should allow batch reporting in groups of 10 or 25 small SSOs, or allow reporting of such spills once a year in an annual report.

Potential Cost Savings: Potentially substantial, and possibly in the millions of dollars per year statewide.

Long-Term Proposals for Achieving Reductions in the Costs of Compliance

The following proposals have the potential to significantly reduce the costs of compliance, but involve more fundamental changes to the manner in which wastewater entities are currently regulated. The wastewater NPDES stakeholders believe that these proposals may have the greatest overall potential for reducing the costs of compliance over the long run, but may require further analysis and consideration of alternatives.

A. *Consider Alternative Approaches to Addressing De Minimis Sources in TMDLs*

Issue: For many TMDLs, loadings for the particular constituents of concern are allocated to a wide variety of sources, including sources that are considered to be "de minimis" contributors. Often, many of the more significant contributors are non-point sources where there are no easily identifiable entities that can be required to take, or pay for, remedial action. Under those circumstances, the burden has been placed on the more readily identifiable point sources, regardless of the measure of their contribution to the

underlying impairment. For example, in the San Francisco Bay Region, POTWs collectively contribute less than 2 percent of the mercury loads to the Bay, as the majority of the loads come from sources such as runoff from historic mining areas and bed erosion. Nonetheless, POTWs were required by the Mercury TMDL to implement extensive source control and contribute to risk reduction programs. Jointly, Region 2 POTWs successfully reduced their loads by 35 percent since the TMDL was adopted in 2006. This effort was commendable, but this outlay of significant funds and effort resulted in less than one percent reduction of the total loads to the Bay. While pollution prevention strategies are preferable to exorbitantly high end-of-pipe treatment strategies to meet low targets, it is important that POTWs implement effective pollution prevention efforts. Having their resources constrained by a prescriptive set of pollution prevention activities, special studies, monitoring and reporting requirements, and risk reduction efforts only makes sense when POTWs are a significant source.

Proposed Solution: TMDLs need to recognize that there are a number of approaches other than merely setting low limits for entities that are de minimis sources for the specific constituent, particularly when the only way to meet those limits is costly and energy-intensive advanced treatment. For example, the use of performance-based wasteload allocations (WLAs), the use of pollution prevention (P2) in circumstances where it is warranted, and considering the possibility of offsets or group approaches are better options that should be considered. Monitoring relief can also include shifting monitoring priorities from parameters already in compliance to TMDL-specific ones (e.g. a shift from total to dissolved metals). There should be a minimum threshold below which point sources should not be required to implement costly monitoring/reporting programs, special studies and contributions to risk reduction efforts. We would propose that source categories (i.e. POTWs) for constituents with TMDLs be considered "de minimis" if, as a group source, they collectively contribute less than two percent of the total load.

Cost Savings: Potentially significant. As one example, in addition to a POTW's regular activities and contributions to regional monitoring, the POTW watershed permit implementing the mercury TMDL in Region 2 requires fish risk reduction efforts that cost approximately $20,000 per year, and the previous watershed permit also required a mercury loading report at a cost of $25,000 per year and a dental mercury reduction program at a cost of $25,000 per year per POTW. While the cost of this particular program may not appear large when examined in isolation, these types of costs will continue to grow as TMDLs are developed for more constituents in more water bodies.

B. *Implement a Phased Approach to TMDLs*

Issue: Although the SWRCB website indicates that the TMDL strategy in California should rely on an adaptive process that matches management capabilities with scientific understanding, TMDLs often focus on permitted discharges first, requiring expensive treatment technologies or other requirements that may not result in a measureable improvement to water quality. In many cases, the pollution stems from legacy sources, requiring creative solutions to the water quality issue. In others, additional data is needed

to truly understand the sources, waterbody processes, and impacts to beneficial uses in order to craft strategies for TMDL implementation. These challenges require thoughtful and comprehensive processes rather than textbook approaches of setting wasteload allocations and implementation plans.

Solution: In many instances, the State Water Board should move towards a phased implementation approach that selects the most appropriate approach as the first step for certain statewide water quality objectives (and TMDLs). The first phase should include a stakeholder process that engages all potential sources, a regional monitoring program to ensure that good quality data is obtained to guide policy decisions, source control studies, and potentially a pollution prevention component to work toward achieving near-term load reductions. The second phase of TMDL implementation should evaluate the results of phase 1 monitoring and control studies, determine if waste load allocations should be revised and what actions can be reasonably and feasibly achieved that also provide a measurable water quality benefit. It is important that all actions to control the pollutant in the watershed be fairly and comparatively evaluated on a cost versus benefit basis to develop plans that yield the best use of all public resources. For some constituents, it can be very cost-effective for POTWs to employ pollution prevention (P2) techniques to reduce effluent levels. Where appropriate, this can avoid or reduce the need for expensive and energy-intensive advanced treatment technologies. However, P2 strategies may be less reliable in terms of guaranteed pollutant reductions and may take more time to implement than deployment of traditional end-of-pipe treatment, and, moreover, in some cases, treatment may still be needed after implementation of P2 techniques, although less treatment may be necessary. Therefore, phased approaches that encourage pollution prevention and source control should be built into implementation policies and programs for new water quality objectives and TMDLs.[5]

The Delta Mercury TMDL is one example of this process. One of the largest sources of mercury is uncontrolled runoff from abandoned mercury and gold mines. The levels of mercury and methyl mercury in POTWs' discharges are relatively low. The guiding principles for the Delta Mercury TMDL include a phased approach to increase scientific knowledge and contain both regulatory and non-regulatory components, as well as various options to achieve compliance, such as pollution prevention activities or an offset program. As a legacy pollutant, mercury is a large societal issue that justifies broad public participation in developing and implementing solutions.

As identified above, a solution to this issue should incorporate the following four elements: (1) TMDLs must appropriately address all discharge sources equitably; (2) all actions to control the particular constituent of concern in the watershed must be fairly and comparatively evaluated on a cost versus benefit basis to develop plans that yield the best

[5] Examples or Relevant Documents/Reports: Some dischargers, such as the City of Palo Alto, have led the way in advancing source control and P2 techniques in order to avoid having to install costly and environmentally unfriendly end-of-pipe treatment. One driver for them has been the use of sewage sludge incinerators for biosolids disposal. Palo Alto has documented that source control for mercury is far cheaper than end-of-pipe air quality control technologies. *See City of Palo Alto Comments on the Proposed Rule on Standards of Performance for New Stationary Sources and Emission Guidelines for Existing SourcesSewage Sludge Incineration Units, 75 Fed. Reg. 63260 (Oct. 14, 2010)*.

use of all public resources; (3) public outreach and exposure reduction efforts should incorporate a proportional cost sharing methodology based on the amount of the constituent contributed by individual dischargers; (4) incentives and innovative strategies to reduce loadings should be encouraged, such as an offset program; and as identified above, (5) there should be a minimum threshold below which point sources should not be required to implement costly monitoring/reporting programs, special studies and contributions to risk reduction efforts (we would propose that source categories for constituents with TMDLs be considered "de minimis" if they contribute less than two percent of the total load).

Cost Savings: The cost savings associated with this approach are incredibly significant, potentially in the hundreds of millions or billions of dollars if advanced treatment is avoided on a widespread basis across the state.

C. *Clarify and Consistently Apply the Processes for Revising Water Quality Standards*

1. **Issue:** USEPA and the Water Boards have identified several mechanisms for modifying water quality standards, and in the past have indicated that these mechanisms may be appropriate for waterbodies where the water quality standards have not been tailored to local circumstances and compliance is unachievable or costs are expected to be very high. These mechanisms include development of UAAs to modify beneficial use designations that are not achievable (i.e. are not "existing" uses) and modification of water quality criteria through the adoption of a Site Specific Objective (SSO), using techniques for which guidance has been developed by USEPA. Although there are several examples where UAAs or SSOs have successfully been adopted in California, there are also many instances where they have been unsuccessful. Developing requisite studies and following the required public process for adoption of either UAAs or SSOs is costly (ranging from hundreds of thousands to millions of dollars) and requires a lengthy process (2-10 years). However, in some instances, the results have been unsuccessful even after this long and costly process, thus instilling a cynical view towards these mechanisms by all parties. However, the alternative – deployment of costly and environmentally unfriendly end-of-pipe treatment technologies – may be equally unattractive to many parties.

Proposed Solution: The Water Boards need to define a pathway to regulatory success for studies to support changes to beneficial use designations and water quality objectives. This could involve creating a task force of regulatory agency staff (from the Water Boards and USEPA), regulated community representatives, and other interested parties to explore the feasibility of creating a more certain regulatory environment for these alternative mechanisms, such as development of screening criteria, a procedures manual, and a mediation process for use if disputes arise.

Cost Savings: The potential cost saving are significant and could be in the hundreds of thousands or low millions of dollars as a result of reducing or avoiding outlays for unsuccessful UAAs and SSOs. These cost savings could also be in the high millions of dollars if the ultimate result is successful UAAs and SSOs that avoid costly end-of-pipe treatment.

2. **Issue:** A related issue that shows significant potential for reducing the costs of compliance is the manner in which waterbodies are currently designated and de-designated. The current process for designation and de-designation is unworkable, and the use of blanket designations has resulted in many dischargers incurring significant costs for monitoring, reporting, and treatment that stem from an improperly designated waterbody. The UAAs and SSOs described above are often necessary only because of these inappropriate blanket designation (i.e. the blanket MUN designation in the Central Valley).

   Proposed Solution: The Water Boards need to develop a methodology for proper designation and de-designation, which includes taking a big picture view of the value of these tools, how these actions are taken and whether they are appropriate. There also needs to be a better balance between the volume of studies and evidence required to de-designate a waterbody versus the level of information routinely used to designate uses in the first instance.

   Cost Savings: Potentially significant.

D. *Consider Impacts to Design Approach and Related Costs When Considering Defining Compliance Parameters*

Issue: Every engineering design depends on the time course for which the design is relevant. The simplest example is designing protection for 100-year storms because to design for 1000-year storms would be prohibitively expensive and not likely to be relevant to current societal needs. In general, the relationship between cost of design and construction rises exponentially when the time increment increases. Designing for a 100-year storm costs more than twice what it costs for a 50-year storm. Not surprisingly, the same principles hold for wastewater treatment, but this situation is rarely considered. In general, permit writers fit all requirements into the concept of "monthly mean" or "maximum day", but there are rarely biological considerations of what the trade-offs are when imposing these requirements. The way in which these requirements are expressed in permits makes a significant difference in terms of the costs of compliance, but does not necessarily change the environmental benefit. Sometimes the state has regulated based on annual loads of contaminants without ecological harm, and this approach has yielded significant cost savings, but this technique could and should be significantly expanded.

Proposed Solution: Though this approach could be relevant for many areas, two examples of wastewater treatment costs that demonstrate this principle are as follows:

1. Change allowable chlorine residual from 0 all of the time to <0.2 for more than 5 minutes per day. Every treatment plant that dechlorinates its effluent with sulfur dioxide or sodium bisulfite adds an excess to ensure compliance if anything unexpected goes wrong. For many agencies, the excess of sodium bisulfite often exceeds 1 ppm. In Region 2, these excess additions are often done for outfalls receiving initial dilution approaching 100:1. The oxygen demand of this excess sodium bisulfite far exceeds the ecological benefits associated with 0 ppm of chlorine residual every second of every day.

2. Define nutrient removal in terms of annual loads or seasonal loads rather than "maximum daily" concentrations. The ecological relevance of nutrient concentrations is more associated with weeks to months (or seasons) than minutes to days. In addition, nutrients can be quickly washed from a system during a rainy winter so nutrient loading during times of the year when the water residence time is long, winds are weak, and strong stratification is possible are the critical times of concern for nutrient concentrations.

Cost Savings: As it relates to example #1 cited above, roughly calculating a statewide annual cost at $500,000 per million people yields a potential cost savings of approximately $15-20 million. As it relates to example #2 cited above, the Water Environment Research Federation (WERF) has studied this issue extensively, and demonstrated cost savings approaching the order of $10/gal design capacity, which extrapolated statewide could easily exceed several billion dollars. In both of the examples cited above, the cost impacts statewide would range from tens of millions to tens of billions of dollars, and the ecological impacts range from negligible to net positive.