FOCUS GROUP MEETINGS – WINTER/SPRING 2016
PROPOSED STATEWIDE BIOSTIMULATORY SUBSTANCES AMENDMENT
FOR WADEABLE STREAMS

State Water Resources Control Board (State Water Board) staff is developing proposed amendments to the statewide Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries. The proposed amendments would include consistent, statewide nutrient water quality objectives and implementation methods to control nutrient over-enrichment in waters of the state by limiting anthropogenic factors and sources of eutrophication [Biostimulatory Substances Amendment].

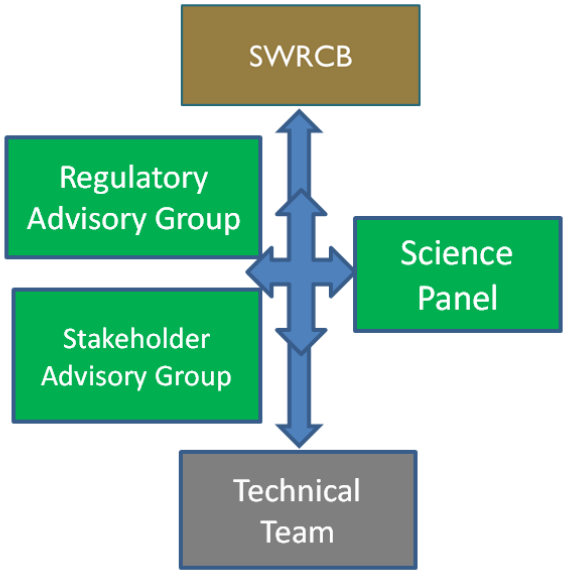
Based on a recent Surface Water Ambient Monitoring Program (SWAMP) report, roughly 60 percent of the State's wadeable stream networks are in good condition with respect to nutrients. The primary goal of the proposed Biostimulatory Substances Amendment is to protect the 60 percent of streams in good condition and restore to the maximum extent possible the other 40 percent. The proposed Biostimulatory Substances Amendment would achieve this goal by establishing narrative objectives for biostimulatory substances supported by numeric translators, which will in turn be implemented in Water Board programs to protect and restore beneficial uses.

The Nutrient Numeric Endpoint (NNE) assessment framework proposes nutrient numeric endpoints[1] based on an evaluation of risk to beneficial uses. The goal is to establish the correct nutrient balance to support beneficial uses and healthy biological conditions. The NNE assessment framework consists of two major components. The first component provides biological response indicators with numeric thresholds that are paired with beneficial uses for assessment purposes. The second component consists of models that link the numeric thresholds of these biological response indicators to nutrient targets, which can then be used for National Pollutant Discharge Elimination System (NPDES) permits, Total Maximum Daily Loads (TMDLs), and other regulatory programs.

Water Board staff have been working with a technical team consisting of staff from the United States Environmental Protection Agency (U.S. EPA), State Water Board, Regional Water Quality Control Boards (Regional Water Boards), Southern California Coastal Water Research Project (SCCWRP), and Tetra Tech. In addition to the technical team, the project includes a regulatory advisory group, a stakeholder advisory group, and a science panel. Throughout this document we will refer to the combination of the regulatory advisory group, stakeholder group, the science panel, and the technical team as the Project Team.

[1]In our documentation, the use of the words "thresholds" or "values" are for science-derived numbers for response indicators or nutrients. The word "endpoints" refers to policy decisions for response indicators. The word "targets" refers to policy decisions on nutrients.

Figure 1 – Project Team Organization



The Project Team has on-going outreach and discussion about the development of the NNE assessment framework and will continue this outreach through the adoption of the amendments.

This first phase of the biostimulatory substances project will focus on wadeable streams. Future phases of the project will address estuaries, enclosed bays, lakes, reservoirs, and non-wadeable streams. However, there are two parallel projects in progress related to biostimulatory substances. These two projects focus specifically on the San Francisco Bay and the Sacramento-San Joaquin Delta because of the complexity and size of the two waterbodies.

I. Purpose of Focus Group Meetings

The purpose of the focus group meetings is for State Water Board staff to present options for the proposed Biostimulatory Substances Amendment and to gather feedback from key groups to aid in the development of the draft regulatory proposal. This document identifies a number of options under consideration within each element of the proposed Biostimulatory Substances Amendment. The options are a starting point to generate discussion and may be modified based on feedback from the focus group meetings. This document also identifies the anticipated timeline for the draft Biostimulatory Substances Amendment project.

II. Background

The Clean Water Act (CWA) gives states the primary authority, with oversight by the U.S. EPA, to establish designated uses (or "beneficial uses" under State law) for waterbodies and to develop water quality criteria (or "objectives" under State law) to protect those designated uses. Each Regional Water Board Basin Plan and statewide plan contains water quality standards,

which consist of beneficial uses, water quality objectives to protect those beneficial uses, the antidegradation policy and, pursuant to state law, a program of implementation for achieving water quality.

Section 304(a) of the CWA directs U.S. EPA to develop scientific information on pollutants and to publish "criteria guidance," often expressed as pollutant concentration levels, which will result in attainment of beneficial uses of the waterbody (e.g., fishing, swimming) as determined by the state. States consider these U.S. EPA "criteria guidance" when they adopt water quality criteria (objectives in California) for waterbodies.

For nutrients, however, there is a great deal of variability in nutrient levels and nutrient responses throughout the country. Because of this variation, U.S. EPA has determined that recommending a single pollutant concentration number to support beneficial uses for nationwide application is not appropriate for nutrients. Instead U.S. EPA is developing nutrient criteria guidance on a regional state-level basis rather than nationwide. U.S. EPA attempted to establish an ecoregion approach for nutrient criteria for all of the states. However, they found that many states reported that an ecoregion nutrient criteria approach did not work and was not representative of the actual regional characteristics of the waterbodies and land uses in their states. In the meantime, U.S. EPA expects states and tribes to develop water quality criteria for nutrients in their geographic regions based on the guidance provided by U.S. EPA (U.S. EPA, 1998).

Biostimulatory substances are difficult and complex to regulate since nutrients occur naturally in the environment and are essential for supporting the ecosystem within a waterbody. Ambient surface water nutrient concentrations alone (e.g., nitrogen and phosphorus) are not a reliable means for assessing eutrophication. Two examples for this are: (1) ambient nutrient concentrations may be low due to excess algal growth simply because the algae have already taken up the nutrients. Thus, low nutrient concentrations do not necessarily indicate absence of eutrophication. (2) High nutrient concentrations do not always cause eutrophication in situations where high water flow, light availability, or grazing by fauna suppress algal production, as can be found in geothermal springs that have natural sources of high nutrient concentrations. Thus, the nutrient concentrations that result in impairment in a high-gradient, shaded stream may be much different from the ones that result in impairment in a low-gradient, unshaded stream. In some cases, hydro-modification or riparian vegetation removal has altered the assimilative capacity so that nutrients have a greater impact on the environment.

A simplified conceptual model of eutrophication involves three groups of variables which may interact to create eutrophic conditions that impair beneficial uses. These three groups are:

1) Nutrient concentrations, which includes, among others: (a) Total Nitrogen (TN) as the sum of nitrate, nitrite, ammonium, and organic nitrogen and (b) Total Phosphorus (TP) as the sum of orthophosphate, mineral-bound and organic phosphorus. Using TN and TP is considered the most conservative and protective approach. Other forms of nutrients are not included since they are minor contributors to eutrophication.

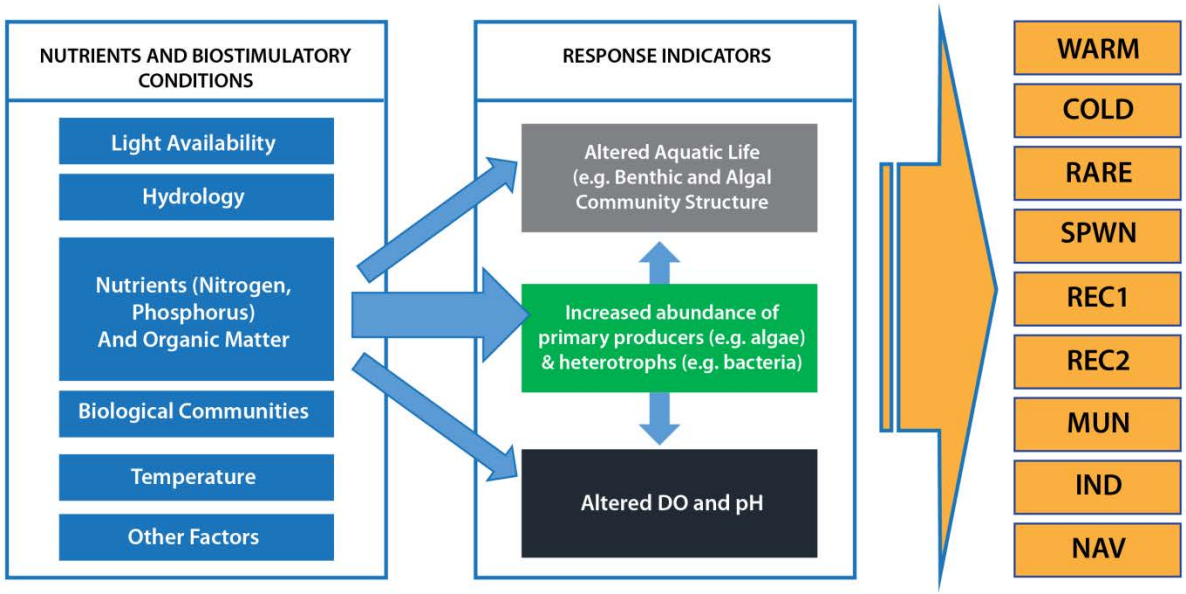
2) Biological response indicators, which include, among others: benthic and planktonic algal biomass and species composition, benthic macroinvertebrate species composition, dissolved oxygen (DO), pH, benthic and suspended organic carbon concentrations, macrophyte cover, and clarity.

3) Environmental conditions, which include, among others: flow, light/shade, temperature, habitat quality, and other aspects of physical habitat such as site elevation, watershed area, and channel substrate (e.g., natural sediment or concrete-lined).

Interactions amongst these three groups of variables may result in excess algal growth, alter the DO and pH balance, alter the food chain, and create nuisance conditions. These alterations may lead to impairment of beneficial uses, such as fish kills or water that is unsafe for swimming in the case of toxic algal blooms. Nutrient concentrations may be the indirect cause of impairment to beneficial uses through their effects on biological response indicators, which in turn can cause a direct impairment to beneficial uses.

One major challenge is supporting the causal linkage between nutrient concentrations and changes to biological response indicators which in turn impair beneficial uses. For example, a stream may experience an increase in algal abundance and a decline in DO that leads to fish kills. This is a change to biological response indicators and impairment to beneficial uses. However, the cause is still uncertain without further investigation. Factors other than increased nutrient concentrations, such as reduced shading and increased water temperatures can also lead to increased algal abundance and a decline in DO.

Figure 2 – Conceptual Model of Eutrophication



Beneficial uses that may be affected by eutrophication include:

- Cold Freshwater Habitat (COLD)
- Warm Freshwater Habitat (WARM)
- Water Contact Recreation (REC-1)
- Noncontact Water Recreation (REC-2)
- Municipal and Domestic Supply (MUN)
- Fish Spawning (SPWN)
- Fish Migration (MIGR)
- Commercial and Sport Fishing (COMM)
- Migration of Aquatic Organism (MIGR)
- Preservation of Rare and Endangered Species (RARE)
- Wildlife Habitat (WILD)

III. Causal-Effect Approach to Establish Nutrient Objectives

In 1999 the U.S. EPA Region IX and the State Water Board began development of nutrient objectives, focused on streams and lakes. Pilot studies were conducted to analyze existing data and explore alternative approaches. Based on these pilot studies, State Water Board staff favor the NNE framework as the approach to establish nutrient objectives. The NNE is based on four central tenets.

1. **Waterbody assessment of beneficial use support is based on biological response indicators, rather than nutrients alone.** The NNE would include a suite of numeric endpoints based on the biological response indicators of an aquatic waterbody to nutrient over-enrichment (e.g., algal biomass, DO). The intent of the NNE framework is to assess and control excess nutrient loads to levels such that the risk or probability of impairing the beneficial uses is low. If the nutrients present, regardless of magnitude, have a low probability of impairing uses, then water quality standards can be considered met.

2. **Use of risk of impairment to beneficial uses to categorize waterbodies.** Often no clear scientific consensus exists on biologically-based levels that indicate impairment due to eutrophication. To address this problem, the NNE would categorize waterbodies into the three Beneficial Use Risk Categories (BURCs). A BURC I waterbody has no symptoms of eutrophication and nutrient levels are sufficiently low so that it is clear that the waterbody is supporting beneficial uses. A BURC II waterbody may have intermediate symptoms of eutrophication. However, additional information and analysis is required to determine if there are impairments to beneficial uses and if the impairments are linked to eutrophication and increased nutrient levels. If impairments are linked to nutrient concentrations further analysis may help develop site-specific nutrient targets that are protective of beneficial uses. Finally, a BURC III waterbody has severe symptoms of eutrophication or nutrient levels that pose a high risk of impairing downstream beneficial uses. Note that the BURCs are not specified as tiered use assessment categories with respect to Section 305(b) of the CWA; rather, they establish ranges for the interpretation of nutrient endpoints, similar to the approach that U.S. EPA has promulgated for nutrient criteria for Florida lakes (75 FR 75762, Dec. 6, 2010).

3. **Use of multiple lines of evidence for a more robust assessment.** When possible, the NNE framework employs the use of multiple indicators in a "weight of evidence" approach which provides a more robust means to assess biological condition and determine impairment. This approach is similar to the multimetric index approach, which defines an array of metrics or measures that individually provide limited information on biological status, but when integrated, functions as an overall indicator of biological condition (ACWI, 1996).

4. **Use of models to link BURC biological thresholds to nutrient targets and other potential management controls.** Models that could be used to propose numeric nutrient targets fall into two general types that bracket a range of possible models: 1) Watershed- or waterbody-specific process models, which require extensive data to develop and can be used to evaluate options involving management of nutrient and biostimulatory conditions; and 2) regional or statewide statistical models.

   Statewide, it is impractical to develop site-specific process models for all water bodies. Therefore, statistical models could be used to propose "default" nutrient targets for waterbodies across a region, with the intent to allow stakeholders the flexibility to work with their respective Regional Water Boards to develop a site-specific model, if necessary. The statewide statistical models would include classification to account for, to the extent possible, gradients in environmental factors that influence waterbody response to nutrients and other biostimulatory conditions.

IV. Fundamentals of the Biostimulatory Substances Amendment

There are two proposed elements for the Biostimulatory Substances Amendment. The proposed elements are introduced in Table 1 below. Following the table are descriptions of potential options. State Water Board staff's current preferred options are found in bold.

Table 1 – Summary of Options to Use in Developing the Proposed Biostimulatory Substances Provisions

Issue	Present Statewide Provisions	Options for Proposed Nutrient Provisions
Element 1: Water Quality Objectives	All of the Regional Water Board Basin Plans contain objectives for biostimulatory substances, nutrients and/or algae. While generally consistent, there are slight variations of the narrative or numeric objectives from region to region.	a) No action b) Numeric Objectives **c) Narrative Objective** 1) Without Numeric Translators **2) With Numeric Translators** d) Site Specific Objectives
Element 2: Program of Implementation - Regulatory Approach	Currently, there is no statewide program of implementation for biostimulatory substances. The Water Boards address biostimulatory substances on a source-by-source basis through current regulatory programs.	a) No action **b) Coordinated Watershed Management Approach** c) Source-by-Source Approach 1) Point Source i. Water Quality Based Effluent Limits ii. Technology Based Effluent Limits iii. Performance Based Effluent Limits 2) Stormwater i. Management Plans ii. Prohibitions iii. Numeric Limits 3) Non-Point Source (Agriculture/Irrigation, Dairies/ Concentrated Animal Feeding Operations, Grazing, & Other) i. Management Plans ii. Prohibitions iii. Numeric Limits

Element 1: Water Quality Objectives

This element considers the need for consistent statewide water quality objectives that reasonably protect the State's waters from excessive biostimulatory substances.

There are three alternatives that staff will consider when developing the proposed amendment: 1) the no action alternative, 2) a statewide numeric objective, 3) a statewide narrative objective. A narrative objective can be paired with numeric translators that provide meaningful endpoints for use in writing permits and assessing a stream's overall health. Under all of the possible actions listed below, Regional Water Board staff would still have the option of developing site-specific objectives for waterbodies within their region.

Present Statewide Provisions

Currently there is no statewide objective for biostimulatory substances. In California, all nutrient objectives are either regional narrative or numeric objectives found in the Regional Water Board Basin Plans, or are under development by Regional Water Boards.

Issue Description

Waterbodies have different responses to varying levels of biostimulatory substances due to the variability in the environment from watershed to watershed throughout the State. For this reason, statewide numeric objectives would be difficult to establish. Any numeric limits established based on statewide nutrient objectives are likely to be too strict in some waters while not protecting beneficial uses in other waters.

Some concerns with narrative objectives are that they may be too subjective and may not be applied consistently. Additionally, it would be more difficult for permit writers to derive proper limits from narrative objectives.

Without statewide biostimulatory substances objectives each region would continue to rely on the regional approach in its Basin Plan. This leads to inconsistencies in addressing sources of biostimulatory substances, and the issues discussed above would persist.

a) No Action

The "no action" option would allow each Regional Water Board to continue to specify water quality objectives for nutrients in its Basin Plan for permits, 303(d) Listing, non-point source, and for TMDL development. Absent a 303(d) Listing or other evidence of impairment there would be no specific driver for establishing nutrient controls. Permit action would only occur after a demonstration of impairment. With this option there would be no consistent statewide approach. Currently there are inconsistencies among Regional Water Boards in 303(d) Listing and in TMDL development.

b) Statewide Numeric Objectives

This option would use a Reference Approach to establish numeric objectives for various stream types or tiers. The objective for each stream would be based on the stream type or tier associated with that particular stream, or stream segment. However given the environmental variability in background nutrient concentrations throughout the state of California, these numeric objectives could be under-protective in some situations and over-protective in others. These situational examples may result in an unnecessary expense of public and private resources resulting in little environmental gain.

c) Statewide Narrative Objectives

This option would establish a statewide, consistent narrative objective for biostimulatory substances.

i) Without Numeric Translators

An example of a current narrative objective from one of the Regional Water Boards' Basin Plans that could be established statewide is as follows:

> 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.

The option would provide a uniform statement about the need to control nutrients to protect beneficial uses. However, its application may be subjective and not interpreted consistently by Regional Water Boards for 303(d) assessments, permit limits, or TMDL development. Each Regional Water Board would have to develop its own procedures to interpret the narrative for its jurisdiction.

ii) With Numeric Translators

A narrative objective with numeric translators would provide a uniform method for using assessment tools or models that link nutrients to beneficial uses and biological condition impairment. Regional Water Board staff would use the numeric endpoints to assess the potential for nutrient impairment. Identification and interpretation guidance would be included with the NNE assessment framework and tools. This option known as the NNE would establish statewide narrative nutrient objectives and consistent thresholds for biological indicators to evaluate the aquatic life beneficial use and to assess impact or risks to those beneficial uses. A link between the NNE and the appropriate beneficial use is important to determine the appropriate nutrient concentrations for a water body. To address uncertainty, the thresholds for

the biological response indicators would be expressed as ranges to place waters into three BURCs:

BURC 1. Current conditions and nutrient levels support beneficial uses. There are no indications of impairment due to biostimulatory substances.

BURC 2. There may be some impairment to beneficial uses. However, it is not evident if the impairment is due to biostimulatory substances or other factors. More evaluation of the water body to determine the relationship between nutrients, other factors, and beneficial uses is needed.

BURC 3. The beneficial uses are impaired. Evidence supports the conclusion that biostimulatory substances are impairing the beneficial uses. Other factors may also contribute to impairment of beneficial uses.

Thresholds were developed by an expert committee in 2005. However, based on a review of more recent data from SWAMP and the Southern California Stormwater Monitoring Coalition, the 2005 thresholds may not be appropriate (Fetscher et al, 2014). Studies are underway to develop more appropriate thresholds. These thresholds will be based on specific indicators that are identified through the ongoing studies.

Assessment tools or models that will evaluate potential targets relative to changes in community structure are under development.

A benefit of the numeric nutrient endpoints is that they can easily evolve as science changes. A challenge is to link the biological thresholds to nutrient endpoints that could be used for permitting and TMDLs.

d) Site Specific Objectives

Site Specific Objectives (SSOs) may be used in conjunction with any of the options listed above. The use of SSOs will require studies and resulting data to determine appropriate biological thresholds and nutrient concentrations that are protective of the water body in question. SSOs would require approval of the Regional Water Board(s), State Water Board, and U.S. EPA.

A push for multiple SSOs could be costly to dischargers and the Water Boards. This would also become a regulatory burden to staff at the Regional Water Boards and could result in a potential backlog for permit renewals. There would likely be inconsistencies among Regional Water Boards in the rigor of studies needed for SSOs approval. However, the Biostimulatory Substances Amendment could remedy the need for studies needed by providing guidance on developing SSOs.

Element 2: Program of Implementation - Regulatory Approach

This element considers the program of implementation that will support the proposed water quality objectives. The program of implementation may establish methods for determining point source limits, non-point source targets, or control actions on a watershed scale as part of the program of implementation to support statewide nutrient objectives.

Present Statewide Provisions

Currently, there is no statewide program of implementation for biostimulatory substances in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). The Regional Water Boards address biostimulatory substances on a source-by-source basis with the 303(d) Listing, NPDES permitting, Non-Point Source, and TMDL regulatory programs. Under the current regulatory programs, point source limits for nitrogen and phosphorus are established based on toxicity, as with nitrogen as ammonia, rather than their potential to contribute to eutrophication.

Issue Description

Water quality control plans include the beneficial uses to be protected, the water quality objectives, and a program of implementation needed for achieving the water quality objectives (Water Code, § 13050(j)). Therefore, when the State Water Board adopts new water quality objectives a program of implementation is often adopted at the same time. The program of implementation shall include, but is not limited to: (a) A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private; (b) A time schedule for the actions to be taken; and, (c) a description of surveillance to be undertaken to determine compliance with objectives (Water Code, § 13242).

Lack of a statewide approach would leave the responsibility to Regional Water Board staff to interpret biological conditions and to develop programs of implementation for waters where beneficial uses are impaired by biostimulatory substances.

Staff could consider the following options and/or others when developing the proposed amendment:

a) No Action

This option would have each Regional Water Board continue to be responsible for developing and implementing their own program of implementation for the biostimulatory substances objectives in their Basin Plans or by developing regional or site-specific objectives.

Relying on current policy options, with no consistent program of implementation could lead to strict nutrient limits for point sources with no flexibility in the choice of control actions. This may result in strict enforcement requirements that do not address all the sources of eutrophication, including environmental conditions, stream classification, or tiers. Without consistent and

appropriate direction, Water Board staff could potentially propose inappropriate nutrient limits focusing solely on numeric nutrient limits.

Without a statewide program of implementation, the nine Regional Water Board's methods of implementation may be inconsistent and may not address all of the contributing factors to eutrophication. If each Regional Water Board develops their own program of implementation, it will take considerable staff time and economic resources, and possibly result in duplication of work products. In addition, using a statewide approach allows for a collaborative effort across all regions.

Under the current system, point source NPDES permits for controlling nitrogen are based on a nitrate standard to protect the municipal water beneficial use (generally 10 mg/L Nitrate as N). While discharges must also meet the ammonia toxicity standards, this can usually be accomplished by converting ammonia to nitrate. The 10 mg/L nitrate standard is set at a higher level than is generally required to protect waters from eutrophication.

Permit limits for the discharge of phosphorus are generally found only in permits for the two Regional Water Boards which have phosphorus standards (i.e., San Diego and Lahontan Regional Water Boards) or where SSOs have been developed in response to TMDLs.

b) Coordinated Watershed Management Approach

A watershed approach would require the cooperative participation of all sources that contribute nutrients into the watershed or have modified the physical conditions in the watershed such that the assimilative capacity for nutrients has been reduced. The partnership would require the cooperation of NPDES permitted dischargers, permitted stormwater dischargers, and non-point source dischargers such as agriculture, dairies, and concentrated animal feeding operations (CAFOs). This option would establish point source limits, non-point source targets, and other control actions on a watershed scale. Other control actions could include, but are not limited to, riparian restoration programs, erosion control, developing catch basins and nutrient sinks, engineered fertilizer control programs, and fencing to protect waterways from livestock.

The watershed approach focuses on the overall health of a watershed and the cumulative effects of biostimulatory substances on the watershed's environment. The effects of nutrients may vary depending on the environmental conditions. The watershed approach focuses not only on the total amounts of nutrients that are being added to the system, but also takes a comprehensive look at the watershed's health and its ability to assimilate the nutrient load.

This option would require that all of the dischargers in the watershed – point and non-point sources – develop an enhanced watershed management plan for the control of biostimulatory substances in the watershed. The enhanced watershed management plan could include traditional control mechanisms – such a nitrification and denitrification for Publicly Owned Treatment Works (POTWs) as well as watershed restoration actions that could increase the assimilative capacity of the watershed. The enhanced watershed management plan would be required to assess upstream, downstream, and potentially groundwater effects in the watershed. The enhanced watershed management plan would also be required to provide an

assessment framework that would ensure the watershed meets the biostimulatory substances water quality objectives and that beneficial uses are protected.

The program of implementation could require the enhanced watershed management plan to take into account all of the factors related to establishing the appropriate levels of biostimulatory substances for a watershed while still protecting beneficial uses. Control action options within a program of implementation for improving the watershed health and restoring beneficial uses would not be limited to simply putting limits or targets on nutrient sources. Dischargers in a watershed would work collaboratively to implement measures to either improve the environmental conditions related to eutrophication and/or to reduce sources of nutrients into the watershed. Possible measures include:

- Fertilizer Application Strategies
- Controlling Runoff
- Erosion Control
- Nutrient Sinks
- Catch Basins
- No-Release to Waterbodies/No Discharge
- Maintain or Improve Shading with Riparian Vegetation
- Stream Restoration Projects
- Fencing or Manure Removal Projects
- Stream Bank Stabilization Activities
- Timber Harvest Strategies
- Habitat Conservation Plans

Successful implementation of measures may reduce the causal effect of nutrients toward eutrophication. However, limits for point sources and targets for non-point sources would still be required to protect beneficial uses after measures have successfully been implemented.

c) Source-by-Source Approach

The Biostimulatory Substances Amendment could specify the following requirements and procedures in lieu of a watershed approach.

1) Point Source

Point sources, including POTWs and industry, are contributors of nutrients into watersheds. Some industries discharge their effluents directly into a waterbody. Others treat it themselves before it is released, and still others send their wastes to POTWs for treatment (NOAA, March 2008).

For all point sources, Regional Water Board staff would propose limits on a source-by-source basis through water quality based effluent limits (WQBELs), technology based effluent limits (TBELs), and/or performance based effluent limits (PBELs).

i. Water Quality Based Effluent Limits (WQBELs)

This option would establish WQBELs on a source-by-source basis using section 1.4 of the SIP to meet biostimulatory substances objectives. Water Boards would establish an average monthly effluent limitation and a maximum daily effluent limitation for both TN and TP. Compliance schedules, interim requirements, monitoring requirements, and reporting requirements would be established in accordance with section 2 of the SIP and the statewide Compliance Schedule Policy.

This option could apply a variance from meeting the proposed objectives. Qualification for a variance would be based on 40 Code of Federal Regulations section 131.14 and the case-by-case exceptions portion of section 5.3 of the SIP.

ii. Technology Based Effluent Limits (TBELs)

This option would require TBELs by defining the level of technology that must be used to provide the minimum level of treatment necessary to meet nutrient objectives. For POTWs, the State could define nitrification and de-nitrification as the Best Available Treatment and define a TBEL for TN between 3 and 7 mg/L. Dischargers would have to comply with meeting statewide limits for TN and TP. A dilution credit could be included to calculate TBELs for TN and TP where there is assimilative capacity.

This option would require any discharger that is not in compliance with statewide limits for TN and TP to upgrade their facilities to include a nitrification/denitrification system. As part of this option, dischargers may apply for a compliance schedule to allow dischargers an appropriate amount of time to update the technology to reduce TN and TP.

iii. Performance Based Effluent Limits (PBELs)

This option would establish PBELs based on current performance where there is dilution and assimilative capacity available in the receiving water and the WQBEL would otherwise be too low for the discharger to meet. To ensure protection or restoration of beneficial uses while understanding that a discharger with supporting evidence is unable to achieve the established low WQBEL, the interim effluent limitation would then be established as a PBEL. The PBEL would be higher than the WQBEL.

The option would establish a PBEL as a possible interim limit until the proper WQBEL can be achieved or as the most appropriate limit based on supporting evidence showing that the WQBEL is unattainable. When establishing the limit as WQBEL or PBEL, the limit should ensure the prevention of any degradation and that downstream uses are protected. PBELs could be established on a source-by-source basis or as part of watershed approach where multiple discharges contribute to a common downstream point.

2) Stormwater

During wet weather, stormwater conveyance systems can transport large loads of TN and TP to downstream waters. This is especially true of agricultural drainage systems that transport wet-weather stormwater to surface waters.

For all stormwater sources, Regional Water Board staff would propose targets on a source-by-source basis through management plans, prohibitions and/or numeric limits for inclusion in Municipal Separate Storm Sewer System (MS4) permits.

i. Management Plan - Nutrient Management Plans

In cases where stormwater is regulated as a point source, this option would establish amendments to existing stormwater management plans as requirements of the applicable MS4 permits. Requirements could also be established, as appropriate, in the Industrial or Construction stormwater permits. In cases where stormwater is addressed as a non-point source, this option would establish targets according to the Non-Point Source Implementation and Enforcement Policy.

ii. Prohibitions

This option would establish prohibitions of discharge for non-stormwater discharges for inclusion in MS4 permits.

iii. Numeric Limits

This option would require the development of numeric effluent and/or receiving water limits for stormwater sources as described in option c) 1) i, ii, and iii.

3) Non-Point Source [Agriculture/Irrigation, Dairies/ Concentrated Animal Feeding Operations, Grazing, & Other (Timber Harvest, 401 Cert, etc.)]

For all non-point sources, Regional Water Board staff would require targets on a source-by-source basis through Waste Discharge Requirements (WDRs), Waivers of WDRs, and/or prohibitions. This option would require landowners and/or operators to comply with meeting statewide targets for TN and TP consistent with the Non-Point Source Implementation and Enforcement Policy.

i. Management Plan – Nutrient Management Plans

This option would require that compliance with limits for TN and TP would be based on implementation of approved nutrient management plans for agriculture, dairies/ CAFOs, grazing, and other land uses consistent to the Non-Point Source Implementation and Enforcement Policy. Agriculture, dairies, CAFOs, grazing and other land uses would ultimately be required to implement management plans until the receiving water meets its numeric targets.

ii. Prohibitions

This option would require TN and TP prohibitions for agriculture, dairies/CAFOs, grazing, and other land uses consistent with the Non-Point Source Implementation and Enforcement Policy.

iii. Numeric Limits

This option would require effluent or receiving water limits for agriculture, effluent or receiving water limits for dairies and CAFOs, receiving water limits for grazing, and effluent or receiving water limits for other land uses as described in option c) 1) i.

V. Existing Nutrient TMDLs and Site Specific Objectives

The proposed Biostimulatory Substances Amendment will apply to all inland surface waters, enclosed bays, and estuaries in California. However, State Water Board staff are proposing that the Biostimulatory Substances Amendment not supersede any existing Regional Water Board adopted nutrient or biostimulatory substances SSOs, or TMDLs, including the implementation programs of those TMDLs.

VI. The Anticipated Schedule for the Development of the Proposed Amendment

Milestone	Estimated Date
Focus Group Outreach (Dischargers – Industry, Publicly Owned Treatment Works, Agriculture, Stormwater, Concentrated Animal Feed Operations/Grazers/Dairies, Environmental Groups, Non-governmental organizations and Tribes)	January 2016- June 2016
Publicly available draft plan and technical staff report	July 2017
Scientific peer review and staff responses	July 2017
Draft substitute environmental documentation (i.e. project alternatives, environmental impacts, economic factors)	October 2018
Public comment period: Draft plan, staff reports, and draft substitute environmental documentation	Summer 2018
Board Workshop	2018
Board Adoption Meeting	2018

VII. For More Information on the Proposed Biostimulatory Substances Amendment

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Program Website

http://www.waterboards.ca.gov/water_issues/programs/nutrient_objectives/
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