APPENDIX A - PROPOSED PROJECT LIST

June 25, 2015

Storm Water Strategic Initiative

Storm Water Strategic Initiative

Proposed Project List

Introduction: This document contains a proposed list of projects developed during the Storm Water Strategic Initiative process. The term "Project" refers to any action or work element the Storm Water Program pursues to achieve the Water Boards' goals. Projects are organized and presented according to the guiding principle and issue topic the project will address. Each project description includes the following categories:

Project Title

Priority: Project priority rank based on scored criteria; see Section 5 for the scoring criteria.

Assessment: Explanation of prioritization based on two summary criteria: (1) how important is completing the project for the Storm Water Program to align with the guiding principles, (2) how achievable is the project, and 3) do the Water Boards have the needed authority and resources to complete the project?

Issues: A list of the Issue (identified by number, see Table 1) that the project will address.

Goal: A goal for each project and associated with the issue(s) the project addresses.

Objective: An action item(s) to support the goal.

Scope: A scope of work to accomplish the objective.

Background: Information, including barriers, regarding the issues and project. Previous and/or current information is also included to assist in developing the project scope.

Product and Timelines: For each major task, the resulting product is identified and estimates of the timeline and required resources is provided. Resource estimates are given in terms of both staff resource allocations and contract funds.

Staff resource allocations:

- Low – Less than one person working full time for the product timeframe
- Medium – One to two people working full time for the product timeframe
- High – More than two people working full time for the product timeframe

Proposed necessary contract funds:

- ≤ $150,000 – Less than or equal to $150,000 contract for external resources
- > $150,000 – Greater than $150,000 contract for external resources

Storm Water Strategic Initiative

Proposed Project List

Guiding Principle 1: The Water Boards' Programs Treat Storm Water as Valuable Water Resource

Issue: Storm water policy and management actions should optimize the use of storm water as a resource.

Project 1 Support Storm Water Capture and Use

a. Storm Water Capture and Use Goal

Priority: Very High

Assessment - Critically important, readily achievable

Issue(s): 1, 3, 5, 6, 7, 8, and 27

Goal: To increase storm water capture and use.

Objective: Develop strategies and set regionally-based goals to increase storm water capture and use.

Scope: This project will identify existing storm water capture and use strategies the Water Boards are successfully utilizing to maintain and restore storm water infiltration and achieve multiple benefits such as, flood control, drought and climate change preparedness, water supply augmentation, groundwater recharge, water quality improvement, habitat restoration and protection, and recreational uses (open space). This project will consider broadening the use of existing strategies, where appropriate, for implementation throughout the state. This project will also consider new opportunities to increase storm water capture and use. The project will identify how to align Water Board programs addressing conservation, recycled water and groundwater management with storm water capture actions that implement multiple benefit projects. With this information, the project will produce regionally-based metrics (or a suite of metrics) for short-term and long-term storm water capture and beneficial use goals. Project documentation will include the technical rationale and scientific basis of the goals, and implementation requirements including the quantifiable measures indicating attainment of the project goal(s). Additionally, the Water Boards will commit to the goals and any metrics developed for quantifying the expected storm water capture and beneficial use in the form of a new resolution (to amend or supplement the information in State Water Board Resolution 2013-003).

Background: This project represents continued steps forward from the storm water reuse goal identified in the State Water Board Recycled Water Policy (as amended in State Water Board Resolution 2013-003) by setting more detailed, regionally based goals and quantifiable performance measures. The current drought has created additional pressure on the State to manage its water resources more effectively, as

reflected in the goal in Governor Brown's Executive Order B-29-15 to reduce statewide water use by 25 percent. Beyond drought response, storm water projects that provide multiple benefits present opportunities for better buy-in by communities. For example, well-conceived storm water resource projects can provide, in addition to storm water capture and treatment, benefits to the public like increased space for public recreation, increased tree canopy, increased stream and riparian habitat area and many others. When conceived properly and implemented effectively, the result is a sense of ownership and pride in the natural infrastructure and community empowerment. By establishing a statewide goal for storm water capture and beneficial use, the State Water Board will lead the State's effort to incorporate storm water capture and use in its management of water resources. A statewide storm water capture and use goal will serve as the impetus to implement storm water capture and multiple benefit projects, such as Projects 1.b and 1.c. below. The Water Board acknowledges that in order to achieve such a goal, local and regional agencies must cooperate and implement their own independent mandates that support the goal. Some agencies, such as the Santa Ana Watershed Project Authority's "One Water, One Watershed" plan, have already benefited from a comprehensive approach that treats storm water as a resource.

Products and Timelines:

1.5 Years: Develop a staff report identifying strategies for increasing storm water capture and beneficial use. (Low staff resource allocation and ≤ $150,000 in contract funds)

6 Months: Prepare a draft Storm Water Capture and Use Resolution for the State Water Board consideration of adoption. (Low staff resource allocation)

b. Barriers to Storm Water Capture and Use

Priority: High

Assessment – Critically important, achievable with moderate barriers

Issue(s): 1 and 4

Goal: To eliminate existing barriers to capturing and beneficially using storm water.

Objective: Identify actions required to eliminate existing legal, political, logistic and technical barriers to the implementation of storm water capture and beneficial use and begin to implement them.

Scope: The intent of this project is to increase understanding and address the limitations to the capture and use of storm water. Barriers are diverse and include technical, political, legal and logistical issues, and may differ from region to region. The analysis of technical barriers will include: (1) technical feasibility challenges often encountered when attempting storm water quality retrofit projects; (2) a description of

high potential urban retrofit project types to support storm water treatment, infiltration and groundwater augmentation (such as detention, retention, and catch basin retrofits); and 3) and a summary of potential risks to groundwater quality from infiltration-based storm water management designs (e.g., infiltration basins, bioretention, dry wells) and methods to avoid potential contamination. Legal considerations will also be identified and evaluated, including water rights, instream environmental impacts, and storm water infiltration in adjudicated and non-adjudicated basins. Political and logistical barrier considerations may include potential mitigation by the new Sustainable Groundwater Management Act. This project will also identify and, where feasible, implement follow-up actions to address the identified barriers.

Background: Storm water capture projects are often hindered by water quality concerns related to captured water, the impact on other parties' water rights and stream and wetland ecosystems, and funding. Guidance on the technical aspects of determining water quality treatment needs for different types of use, identification of appropriate stream hydrographs, and legal opinions on water rights implications, are needed before many stakeholders can support increased storm water capture and use, and funding of such projects. Financial barriers to storm water capture and use are addressed in Project 8 below.

Products and Timelines:

9 Months: Develop staff report identifying the barriers to storm water capture and recharge and recommending actions to remove or alleviate identified barriers, as appropriate. (Low staff resource allocation or ≤ $150,000 in contract funds)

2 Year: Implement actions identified in the staff report to remove barriers. (Medium staff resource allocation)

6 Months: Develop guidance, where needed, for addressing legal and technical barriers to implementing storm water capture and use projects. (Medium staff resource allocation)

c. Increase Storm Water Capture and Use through Regulatory Approaches

Priority: Very High

Assessment – Critically important, readily achievable

Issue(s): 1, 5, 9, 10, 11, and 12

Goal: To increase storm water capture and use, especially in existing urban areas.

Objective: Adopt storm water policies, guidelines and permits incentivizing storm water capture and use.

Scope: This project will review current storm water permits, policies, and programs to identify where storm water capture and beneficial use can be required or incentivized for both new and existing development. The analysis will focus on the results of Project 1.a and 1.b. Consideration will be given to requiring or incentivizing multiple-benefit approaches, green infrastructure, flood control, regional storm water retention, infiltration facilities, and direct use. Options for regulatory requirement-based actions and incentives could include: (1) incentivizing multiple-benefit project proponents through alternative compliance pathways consistent with the principles discussed in the adopted order resolving the Los Angeles MS4 petition; (2) funding and financial tools for encouraging retrofit and/or alternative compliance pathways; (3) requiring or incentivizing retrofits of existing infrastructure; and (4) using existing regulatory authority to ensure implementation of multiple-benefit projects and retrofits.

Background: Traditional permitting practices mainly focus on storm water capture and use for new development/redevelopment and less on modifying the existing urban landscape. A concerted effort to retrofit existing urban landscape to green infrastructure is needed to restore storm water infiltration capacity previously lost in developed areas. While large-scale retrofit to urban landscape appear to be costly, cost effective options for increasing storm water capture and use while achieving environmental outcomes include: (1) converting to green infrastructure at the end of existing infrastructure life-cycles; (2) using simple retrofits like standardized parkway curb cuts in public right of ways; and (3) establishing healthy, living soil in landscaped areas. Increasing storm water infiltration in developed areas provides multiple benefits, including improving groundwater recharge, restoring other lost watershed processes such as base flow to creeks, and reducing pollutant loads discharged to surface waters.

Products and Timelines:

Note: This project will be informed by Projects 1.a and 1.b, and should be implemented subsequent to the staff reports developed as outcomes of those projects.

1.5 Years: Develop a staff report to identify opportunities to require and incentivize storm water capture and use. (Medium staff resource allocation)

Project 2 Stakeholder Collaboration to Promote Storm Water as a Resource

Priority: Medium

Assessment – Critically important, achievable with significant barriers

Issue(s): 1, 3, 5, 6, and 7

Goal: To increase awareness and use of storm water as a resource through collaboration with federal, state and local agencies, non-governmental organizations and the public.

Objective: Partner with flood control agencies, water conservation efforts, groundwater sustainability agencies, water agencies and municipalities to promote projects that provide multiple environmental outcomes.

Scope: Identify opportunities and barriers to collaborating with other agencies to promote the treatment of storm water as a resource and promote water use efficiency. Develop templates for formal or informal partnership agreements to take advantage of opportunities and remove barriers to multiple benefit projects. Identify ways to incentivize multiple benefit projects (e.g. water supply offset or other non-permitting incentives).

Background: Many agencies, especially the Department of Water Resources and other water supply agencies, can potentially benefit from projects that use storm water as a resource. These beneficiaries can be important partners. However, water supply agencies are cautious of linking their projects to storm water retention projects related to Municipal Separate Storm Sewer System (MS4) permits, particularly because of compliance deadlines. Agencies, such as school districts, that have land for multiple benefit projects may have concerns about environmental liability. The Water Boards acknowledge that in order for successful completion of this project, other agencies will need to participate and implement their own authorities and mandates in order to increase the use of storm water as a resource. The new Sustainable Groundwater Management Act (SGMA) provides an opportunity for storm water projects to be leveraged through agency collaboration to help achieve groundwater sustainability. SGMA may be one of the catalysts the Water Board can rely on to encourage participation of other agencies in treating storm water as a resource.

Products and Timelines:

6 months: Identify opportunities and any barriers to collaborate with other agencies. (Low staff resource allocation)

9 months: Meet with a select but limited number of water agencies to discuss collaboration opportunities. (Low staff resource allocation)

1 year: Propose a template for a Memorandum of Agreement or other agreement mechanism with water agencies to form sustainable relationships and communication avenues. (Low staff resource allocation)

Ongoing: Participate in work groups or meetings to facilitate collaboration. (Low staff resource allocation)

Project 3 Monetary Value of Storm Water

Priority: Medium

Assessment – Critically important, achievable with significant barriers

Issue(s): 1, 2, 3, 4, 11, 17, and 18

Goal: To support establishing a monetary value of storm water and options for institutionalizing the value of storm water.

Objective: Create a Water Boards-supported framework establishing a monetary value of storm water in volumetric terms as an additional source of local water supply as well as its value to water quality. Collaborate with the appropriate agencies and stakeholders to institutionalize values of storm water.

Scope: The storm water value framework would create a method for calculating the net unit cost of storm water as a water supply source as compared to the current and projected cost of imported water. The method would consider groundwater basin specific factors that will affect the cost of infiltration and extraction for potable use, the cost offset for water quality protection, the cost for imported water, and other factors that influence the monetary value of storm water.

Upon completion of the value framework, the project would evaluate the mechanisms for multi-agency agreements that promote storm water capture and use projects. The pros and cons of each mechanism would be identified and evaluated. Legal hurdles and opportunities would also be identified and evaluated. These mechanisms could include memoranda of agreement or Joint Power Agreements (JPAs) between municipalities and water agencies that address water rights issues, facilitate cooperative funding of storm water capture projects, and establish a crediting system or dedicated revenue stream for municipalities based on the volume of storm water recharged.

Background: Many stakeholders commented that in order for storm water capture and use projects to gain traction, there needs to be an established framework for calculating the monetary value of storm water. The City of Los Angeles Department of Water and Power and the Natural Resource Defense Council have both conducted studies to quantify the potential for storm water capture and use projects with the former study focused on Los Angeles area and the latter on the urban areas of Los Angeles and the Bay area. However, the effort to establish a monetary value has proven challenging and is driven in many cases by local conditions and agency needs. UCLA's Luskin Center and the Pacific Institute have completed some preliminary work on the monetary value of storm water and are currently working to broaden the research on the economic value of storm water.

The Sustainable Groundwater Management Act (SGMA) may create a new mechanism for monetizing storm water through the implementation of groundwater sustainability plans. Restrictions on extractions implemented through sustainability plans may cause local groundwater markets to mature without impacting water rights. As markets

develop, storm water use would be increasingly incentivized. A monetary framework developed within the next five years could support leveraging storm water as a resource when sustainability plans are adopted five to seven years from now.

Products and Timelines:

2 years: Prepare a Staff Report outlining methods and results of economic value of storm water (or incorporate the results of other studies into Staff Guidance). Compile case studies (if available) and prepare and approve template MOA/JPA legal documents for municipality and water agency water crediting partnerships. (Medium staff resource allocation)

2 years: Propose a framework for storm water capture and recharge crediting systems to be incorporated into institutional mechanisms. (Medium staff resource allocation)

Project 4 Senate Bill 985 Storm Water Resource Plan Implementation

Priority: Very High

Assessment – Critically important, required by statute

Issue(s): 1, 5, 6, 12, and 13

Goal: To increase storm water capture, treatment, and use through watershed-based planning and prioritization of multiple benefit projects.

Objective: Adopt guidelines for storm water resource plans pursuant to the Storm Water Resource Planning Act of 2014, Senate Bill 985 (SB 985). Modify storm water planning, permitting and funding programs to support the priority actions identified in storm water resource plans.

Scope: Adopt Storm Water Resource Plan guidelines for public agencies. Develop review criteria for Water Board staff to evaluate Storm Water Resource Plans. Review current storm water permits, policies, plans, and funding programs to identify how to best incorporate Storm Water Resource Planning efforts.

Background: Storm Water Resource Plans are now a requirement for Public Agencies receiving grant funds for storm water capture and use projects. The intent of SB 985 is to encourage the use of storm water and dry weather runoff as a resource to improve water quality, reduce localized flooding, and increase water supplies for beneficial uses and the environment. Therefore, the development of Storm Water Resource Plans will encourage Public Agencies to identify opportunities to use existing publicly owned lands and easements to capture, treat, store, and use storm water and dry weather runoff either onsite or offsite. The Storm Water Resource Plans should prioritize projects that will assist in attaining water quality outcomes. SB 985 also requires the Water Board to specify the types of local agencies that must be consulted, which provides an

opportunity to ensure collaboration with water supply and groundwater sustainability agencies. Resources to develop the guidelines for Storm Water Resource Plans are proposed in the Governor's budget for Fiscal Year 2015/16. However, resources to review the Plans have not been proposed.

Products and Timelines:

2 years: Adopt and implement Storm Water Resource Plan Guidelines (Medium staff resource allocation)

Ongoing: Review Storm Water Resource Plans. Work with other watershed planning efforts to incorporate the principles of Storm Water Resource Plans in related programs. (High staff resource allocation)

Issue: Consistent and widespread messaging is needed to broaden the understanding of the value of storm water.

No specific project; this issue is to be incorporated into all proposed projects.

Guiding Principle 2: The Water Boards' Storm Water Programs Preserve Watershed Processes to Achieve Desired Water Quality Outcomes

Issue: Storm water permits should provide accountability and support water quality outcomes.

Project 5 Alternative Compliance Approaches for Municipal Storm Water Permit Receiving Water Limitations

Priority: High

Assessment – Critically important, achievable with moderate barriers

Issue(s): 1, 2, 5, 9, 10, 11, 13, 27, 35, and 36

Goal: To incorporate alternative compliance approaches for receiving water limitations in municipal storm water permits.

Objective: Develop guidance and permit template language for Water Board staff to incorporate alternative compliance measures.

Scope: Compile and evaluate alternative compliance approaches to meeting receiving water limitations in municipal storm water permits throughout California, including the transferability of the alternative compliance approach to other regions/permittees. Monitor implementation of the Water Board decision regarding the Los Angeles MS4 permit appeal and other Water Boards' efforts to develop alternative compliance options.

Based on this evaluation, develop general guidance, consistent with the State Water Board's action on the Los Angeles MS4 Permit, for Water Boards to incorporate alternative compliance approaches into storm water permits. The San Francisco Bay Region has also developed an approach applied within the Regional Municipal Storm Water Permit for translating or implementing receiving water limitations through explicit enforceable permit provisions that would be incorporated into this evaluation. Establish technical guidance and supporting documentation for Water Board staff to incorporate alternative compliance approaches into storm water permits, while ensuring water quality outcomes are achieved. This project has a direct nexus with Project 6.

Background: Since the beginning of the storm water regulatory program in the early 1990's, there has been considerable discussion regarding the NPDES permit requirement that dischargers must not cause or contribute to an exceedance of a water quality standard. This discussion was further expanded to address the TMDL requirements. Dischargers claimed that the strict reading of the requirement would lead to cost prohibitive compliance efforts and that the discharger did not have a method of demonstrating compliance with its NPDES permit short of these efforts that would require many years. Two recent NPDES permitting efforts have attempted to address this issue. Both the Los Angeles Countywide permit and the San Diego Region wide permit have identified an alternative compliance approach for the municipalities to use in demonstrating compliance with the permit. Petitioners associated with the Los Angeles permit challenged whether the alternative compliance pathway was legal and appropriate. The State Water Board issued an order addressing the arguments on June 16, 2015. The San Francisco Bay Region Municipal Regional Storm Water Permit also provides examples of translating or implementing receiving water limitations through explicit enforceable permit provisions.

Products and Timelines:

Note: Work will be informed by the State Water Board's decision/order on the LA County MS4 Permit.

2 Years: Staff report evaluating alternative compliance approaches to meeting receiving water limitations in storm water permits throughout California, including the transferability of the alternative compliance approach to other regions/permittees. (Medium staff resource allocation or Low staff resource allocation and >$150,000 in contract funds)

1 Year: Present draft general guidance, consistent with the State Water Board decisions/orders, for Water Boards to incorporate alternative compliance approaches into storm water permits. (Low staff resource allocation)

Project 6 Watershed-Based Compliance and Management Guidelines and Tools

Priority: High

Assessment – Critically important, achievable with moderate barriers

Issue(s): 1, 9, 10, and 16

Goal: To apply watershed management-based tools to achieve water quality outcomes.

Objective: Develop technical guidance, including data and modeling needs, for local storm water programs to demonstrate water quality protection and support watershed-based storm water management.

Scope: Develop guidance for municipalities to: (1) prioritize their water quality issues and limiting pollutants; (2) plan and implement a watershed-based storm water management plan; and (3) conduct a reasonable assurance analysis for the water quality outcomes of the watershed-based plans. The reasonable assurance analysis guidance will identify the data and modeling requirements for demonstrating water quality protection. This project has a direct nexus with Project 5.

Background: Watershed-based storm water planning, and to a lesser extent, reasonable assurance analysis is being incorporated into municipal permits on a region by region basis. The most recent Los Angeles County MS4 permit allows permittees to use Watershed Management Programs and Enhanced Watershed Management Programs to achieve water quality standards (e.g., wasteload allocations) and requires permittees to conduct reasonable assurance analysis to demonstrate that their storm water management plans will attain water quality standards. Elsewhere in the state, the San Francisco Bay Water Board is working on similar issues and is promoting use of green infrastructure plans and will be convening workshops with United States Environmental Protection Agency (U.S. EPA) on approaches for conducting reasonable assurance analysis that demonstrates attainment of water quality standards. This project would incorporate findings, conclusions, and recommendations from existing efforts to standardize the watershed-based compliance tools and reasonable assurance analysis methods used across the state.

Products and Timelines:

9 Months: Staff report based on evaluation of existing application of the Los Angeles Water Board staff's guidance for conducting reasonable assurance analysis and resulting Watershed Management Programs and Enhanced Watershed Management Programs, and other watershed-based compliance and management tools under development or in use elsewhere in the state. (Medium staff resource allocation or Low staff resource allocation and ≤ $150,000 in contract funds)

9 Months: Technical guidance (version one) based on the evaluation report findings and recommendations that presents tools for developing watershed-based plans to achieve water quality standards with controls for various pollutants or combination of pollutants of concern, including information and data needs and modeling options for siting and sizing

of controls and conducting reasonable assurance analysis that the watershed-based control plan will achieve water quality outcomes. (Medium staff resource allocation or Low staff resource allocation and ≤ $150,000 in contract funds)

2 Years: Technical guidance (version two) based on the evaluation report and version one findings and recommendations that presents advanced tools for development of watershed-based control plans and conducting reasonable assurance analysis, including consideration of watershed-based sizing criteria for controls. (Medium staff resource allocation and > $150,000 in contract funds)

Project 7 Post-Construction Requirements for Watershed Health

Priority: High

Assessment – Critically important, achievable with moderate barriers

Issue(s): 9 and 10

Goal: To establish and promote implementation of post-construction management practices that restore and maintain watershed health.

Objective: Develop technical guidance and permitting tools to promote implementation of post-construction requirements based on watershed processes, statewide.

Scope: Develop methodology to identify watershed-specific processes that are critical to watershed health, to be applied to all watersheds at the statewide scale. Conduct analysis to identify dominant watershed processes and sensitivity of receiving water bodies to degradation of those processes, for each watershed throughout the state. Determine post-construction management strategies necessary to protect watershed health for each dominant watershed process/receiving water type combination, and whether those strategies are best applied at the regional or site scale. Develop tools, guidance, permitting approaches, permit language, and/or policy to implement those post-construction management strategies. Identify and select options such as the development of technical resource centers, dedicated web site, or workshops for promoting the implementation of post construction requirements.

Background: Many regions are expected to experience significant growth over the next two decades. For example over 20,000 acres are slated for development in Sacramento County in the next 20 years. Much of this growth will occur in the existing urban margins or undeveloped foothills where the potential for hydromodification could severely harm already stressed riparian habitats and natural hydrogeology. Other Regions are also expected to experience similar growth. The Central Coast Regional Water Quality Control Board has developed post-construction requirements that are tailored to protecting the specific watershed processes that are critical to watershed health for each watershed in its region. Post-construction requirements vary between watersheds,

depending upon which watershed processes need protection in order for watershed health to be maintained. This ensures that sensitive watersheds receive adequate protection, while also allowing development projects to avoid implementing unnecessary storm water management strategies.

Products and Timelines:

1 Year: Staff report outlining a methodology for conducting the watershed analysis at the statewide level (Region 3's efforts could serve as a foundation), results of the analysis using available data, validation using ground truthing, and recommendations for post-construction management strategies. Staff report will also identify options for promoting the implementation of the post construction requirements. (Medium staff resource allocation and ≤ $150,000 in contract funds)

3 Years: Using a stakeholder process, develop tools, guidance, permitting approaches, permit language, and/or policy to implement those post-construction management strategies at the appropriate regional or local scale. (High staff resource allocation or Medium staff resource allocation and > $150,000 in contract funds)

Guiding Principle 3: The Water Boards Implement Efficient and Effective Regulatory Programs

Issue: Storm water program funding barriers need to be addressed.

Project 8 Funding for Storm Water Programs

Priority: High

Assessment – Critically important, achievable with moderate barriers

Issue(s): 1, 17, 18, and 20

Goal: To eliminate barriers to funding local storm water programs and to increase availability of grant and loan funding of storm water capture and use projects.

Objective: Support funding of storm water programs throughout the state.

Scope: Review funding programs including the Integrated Regional Water Management, Clean Water State Revolving Fund (through Water Boards), Infrastructure State Revolving Fund (through I-Bank), Bond funds (including transportation, climate change, SB 985, Proposition 1) and evaluate opportunities for the State Water Board to support funding of storm water programs throughout the state. Potential Board actions include: (1) adopting a resolution that recognizes consistent funding sources as a key to treating storm water as resource; (2) supporting the concept that storm water is a utility and

supporting efforts to amending Proposition 218; (3) engaging local elected officials and establishing regional resource centers; and (4) supporting changes to grant and loan guidelines to help meet storm water program requirements and make loans more accessible to municipalities. Transportation and climate change funding sources should be explored. The Water Board should also develop a strategy to educate the public regarding storm water funding opportunities.

Background: With California facing a fourth year of drought, storm water programs will play a larger role in providing solutions. Storm water programs in California are either not funded by fees or have fees that are inadequate to fully fund the program. The Water Boards' support for consistent funding will enable municipalities to implement effective programs that improve water quality and help mitigate drought conditions. Estimates of the cost needed for storm water programs will be informed by Projects 9, 10, and 11.

Products and Timelines:

0.5 Year: Report summarizing the limitations of current storm water funding programs (Low staff resource allocation)

1.5 Years: Develop strategy and recommendations for increasing funding for storm water programs. (Medium staff resource allocation)

2 Years: Create a network of regional resources centers that assist local storm water programs with implementation of storm water projects by providing funding and technical support and tools. (Medium staff resource allocation)

Project 9 Municipal Storm Water Permitting Compliance Cost

Priority: Medium

Assessment – Critically important, achievable with significant barriers

Issue(s): 20

Goal: To standardize an approach for estimating the cost of complying with permits issued through the Water Boards' municipal storm water programs.

Objective: Develop a framework to identify cost of compliance with storm water permit requirements.

Scope: Develop a standard accounting and allocation method to estimate the storm water program costs including costs for personnel, operation and maintenance, and capital improvements. The method would differentiate cost of compliance from unrelated cost of infrastructure construction and maintenance.

Background: Previous studies have shown that municipalities are not consistent in their approaches in estimating the cost of a storm water program. Different accounting and allocation methods (e.g. allocation of street sweeping to which public works program – storm water or street maintenance) are used to assign cost to a program. This creates a range in calculated program costs that varies from municipality to municipality and creates confusion as to the true cost of permit compliance. Previous work that includes cost information will be utilized where possible.

Products and Timelines:

1.5 Years: Report outlining costs associated with storm water permits, standardized estimating procedures and a case study. (Medium staff resource allocation or > $150,000 in contract funds)

Project 10 Industrial and Construction Storm Water Permitting Compliance Cost

Priority: Medium

Assessment – Important, achievable with moderate barriers

Issue(s): 19 and 20

Goal: To improve the transparency of cost resulting from proposed permit requirements during the adoption phase of industrial and construction permits.

Objective: Establish a procedure for Water Board staff to use in the permit development process that will estimate sector-specific cost for all new requirements in future construction and industrial storm water permits.

Scope: For some sectors and perhaps even at the best management practice (BMP) level, the effort should identify the range of costs expected for a discharger in compliance with the requirements. This information will in turn support the work associated with Project 18, Sector Specific Technology Based Numeric Effluent Limits.

Background: The Industrial and Construction General Storm Water Permit requirements often result in unknown costs to the discharger(s). The overall cost of the program is perceived to be increasing by the discharger community. Staff has proposed complex permit systems in the past seven years aimed at aligning more costs/requirements with riskier and/or more appropriate facilities and situations. The missing pieces of information for decision makers are the cost of compliance and the associated or expected benefits of compliance.

Products and Timelines:

Note: This project may be informed by Project 18.

1.5 Years: Report outlining costs associated with storm water permits, standardized estimating procedures and a case study. (Medium staff resource allocation or > $150,000 in contract funds)

Project 11 Storm Water Program Asset Management Planning and Cost Estimation

Priority: Low

Assessment – Somewhat important, achievable with moderate barriers

Issue(s): 19 and 20

Goal: To encourage the incorporation of storm water infrastructure costs (capital, operation and maintenance) in municipalities' asset management programs.

Objective: Create a guidance document for local storm water permittees to develop asset management plans that assist municipalities to accurately estimate program assets.

Scope: Evaluate existing storm water asset management methods and prepare a California specific method for developing asset management plans.

Background: The concept of an asset management plan for a watershed is a relatively new concept. An asset management plan is a long-range planning document used to provide a rational framework for understanding and planning the asset portfolio. The U.S. Environmental Protection Agency (U.S. EPA) Environmental Finance Center has developed information on the concept of asset management. However, the City of San Diego has lead the effort and has developed a Watershed Asset Management Plan (WAMP) which documents the current state of assets (e.g., asset inventory, valuation, condition, risk) and projects the long-range asset renewal (rehabilitation and replacement) requirements for the City Storm Water Division. The City has developed a WAMP for each of the six watersheds in the City's jurisdiction. Each WAMP identifies the assets owned and managed by the Division, provides an understanding of critical assets required to deliver the services, records the strategies that will be used to manage the assets, and documents the future investments required to deliver the committed services. This information is used by City of San Diego to develop more accurate and transparent cost information that can be provided to the public. The cost information can also be used demonstrate the need for more and stable funding sources.

Products and Timelines:

1 Year: Review existing plans from City of San Diego, EPA Environmental Finance Center, and others. Develop statewide guidance document for storm water permittees

to develop a storm water asset management plan. (Low staff resource allocation and > $150,000 in contract funds)

Issue: Storm water programs need effective reporting and assessment methods.

Project 12 Municipal Storm Water Program Monitoring and Effectiveness Assessment

Priority: High

Assessment – Important, readily achievable

Issue(s): 22, 23, 24, 26, and 36

Goal: To efficiently and effectively collect, manage and use data and information collected from entities subject to storm water program permits and requirements to inform and drive better management decisions, at all affected levels (e.g., permittees, stakeholder groups, public and Water Boards).

Objective: Identify monitoring and effectiveness assessment approaches that efficiently generate information used for adaptive management and improvement of the local municipal storm water programs regulated by Water Board requirements.

Scope: The project will result in a data and information management approach that will most efficiently inform Water Board storm water program management decisions to improve program effectiveness and maximize water quality-based outcomes. The first step will be to identify the data and information needs. The project will explore traditional water quality monitoring and new measures of program effectiveness, such as surrogate measures for discharge and receiving water quality (this work will be leveraged with efforts already undertaken by stakeholders). The project will develop methodologies and tools for answering high priority monitoring and effectiveness assessment questions, such as how and where compliance with receiving water limitations should be assessed, how to estimate baseline pollutant loads, how to determine relative spatial risks to receiving water quality, and how to quantify the expected load reduction associated with water quality improvement projects. The project includes development of training materials and statewide workgroups to set up implementation, training, and troubleshooting.

Background: Significant funds are spent annually on storm water monitoring and effectiveness assessment. However, actionable information is often not generated from this expenditure. Reduced costs and increased utility of monitoring and effectiveness assessment is needed. Use of simple, spatially-based pollutant load and reduction information would support identification and prioritization of water quality actions. Complex techniques are not always better in developing and using pollutant load models to evaluate program performance and priorities. Simple models can yield valuable information to support short-term and long-term storm water program decisions and

priorities. Currently, the Central Coast Regional Water Quality Control Board is developing a spatial approach to estimate pollutant loads and load reductions in a manner that will provide a visual and simple way to identify and prioritize areas where water quality improvements are needed. This work builds from earlier work conducted by staff of the Lahontan Regional Water Board to provide a useable, transparent, and scientifically-credible tool to estimate baseline pollutant loads, determine relative spatial risks to receiving water quality, and quantify the expected load reduction associated with water quality improvement actions. Rather than attempting to model multiple pollutant types, the methodology uses credible and effective representative parameters (i.e., total suspended solids and volume) to create a ranking of municipal catchments in terms of relative risk to the receiving water. The result is information that serves as an effective communication tool between Water Board staff and municipal representatives.

Products and Timelines:
3 Years: Develop technical guidance document that identifies the most useful data to collect for storm water program effectiveness analysis, and how best to report this water data and information on water quality, program effectiveness to drive the best responses and management actions. Develop tools, including guidance on assessing receiving water limitations, estimating baseline pollutant loads, determining relative spatial risks to receiving water quality, and quantify the expected load reduction associated with water quality improvement actions. (Medium staff resource allocation or > $150,000 in contract funds)

Project 13 Storm Water Program Data and Information "Open Data" Project

Priority: High

Assessment – Important, achievable with moderate barriers

Issue(s): 15, 22, 23, 25, and 26

Goal: To increase the amount and use of storm water data and information for Water Boards decision making and program performance review.

Objective: Increase the amount and quality of data and information entered in and queried out of the Water Boards' existing data collection systems.

Scope: This project will integrate the existing data and information reporting functions available in the Storm Water Multiple Application and Report Tracking System (SMARTS), the California Integrated Water Quality System (CIWQS) and the California Environmental Data Exchange Network (CEDEN).

The Water Boards use these systems to collect and track information of interest to the Water Boards and our stakeholders. Types of data and information collected include permittee information (enrollment in general permit, co-permittees, type of facility,

industry code, location, size, etc.), compliance evaluations (i.e., inspections, ad-hoc and annual report review, etc.) and enforcement actions (notices of violation, notices of non-compliance, formal enforcement, etc.). The creation of the web site will improve the ability and to query permittee information, and will improve the efficiency of assessing compliance. Additionally, this project will improve program performance review by conducting a pilot project to test the ability of new technology (e.g., tablets, smart phones, etc.) to increase efficiency and effectiveness of data entry (e.g., inspections and inspection reports) by collecting and transmitting inspection data directly from the field to pertinent databases. To continue the storm water programs' progression toward collection of usable data and information, this project will produce a report with recommendations for how to make further improvements to achieve open, free and available data and information for all stakeholders.

Background:

"Open data" is public data and information that can be used, modified, and shared for any purpose. The Water Boards' existing storm water data collection systems limit data collaborative activities. This limits the Water Boards' ability to use data and information in daily decision making and program advancement processes. Stakeholders view this problem as multi-faceted: (1) hurdles to enter data into our existing data systems, like SMARTS, CIWQS and CEDEN; (2) obstacles to making changes to the data infrastructure to enhance openness; and (3) challenges to extracting data and information from the data systems, especially when using multiple sets of information simultaneously. The Water Boards currently have an open data project led by the Office of Information Management and Analysis that may be able to support the development of a web site for storm water data. The Water Boards regulate thousands of storm water sites, facilities, and municipalities. However, because of inadequate staff levels, the ability to assess compliance for each site, facility, and municipality is lacking. Methods and tools that can broaden the number of sites assessed for compliance are needed.

Products and Timelines:

2 Years: Build a web site for real-time connections to SMARTS, CIWQS and CEDEN reporting information for the Storm Water Program. (Medium staff resource allocation)

1 Year: Obtain permission and secure funding for the purchase of 25 field devices for Water Board storm water inspectors to test and use. Develop template that standardizes inspection information/data to be uploaded into SMARTS through these electronic devices. (Low staff resource allocation and ≤ $150,000 equipment funds)

1 Year: Prepare a report with recommendations for incorporating open data concepts and collaborative activities for the Water Boards Storm Water Program. (Medium staff resource allocation)

Project 14 Storm Water Permit Compliance Evaluation

Priority: Medium

Assessment – Important, achievable with significant barriers

Issue(s): 11 and 14

Goal: To improve the effectiveness of National Pollutant Discharge Elimination System (NPDES) Permit enforcement actions and increase permit compliance.

Objective: Develop recommended focus areas for existing storm water permit compliance evaluation and identify potential additional resources for conducing focused subsequent program audits and compliance inspections to deter noncompliance through increased Water Board staff field presence. Collaborate with other state and local agencies on existing compliance efforts that are established statewide.

Scope: The project will assist Water Board storm water program staff by focusing compliance evaluations on permit requirements that provide the most effective water quality outcomes. The project will include: (1) research to identify and prioritize elements of the program's permits that require additional resources to determine effective compliance strategies; (2) revisions of the Administrative Procedures Manuals to outline the standard methods used by the program for audit, inspection and compliance determination procedures; and (3) collaboration within the agency and with other agencies on increasing the efficiency of the programs inspections, audits and compliance determinations. The project includes assisting the Water Board storm water program with outreach to storm water permittees to disseminate the results of the compliance evaluation. This compliance assistance is proposed to be in addition to the existing compliance responsibilities, and will provide additional resources for evaluating the overall effectiveness of the storm water program.

Background: Significant funds are spent annually on storm water audits, inspection and compliance evaluations. However, focused compliance evaluations on key permit requirements related to effective water quality outcomes need to be identified and will support implementing the requirements developed in the storm water program's permits. Many agencies have a program for audits, inspections and compliance evaluations that directly overlap with multiple elements of the compliance determinations conducted in the storm water program. This project would provide the resources for conducting effective collaboration with other agencies and would identify focused compliance issues that exist across multiple programs statewide. Developing and supporting these partnerships is a crucial element for expanding the knowledge of storm water program staff on the breadth of environmental concerns at the facilities and MS4s the storm water program regulates and lead to direct water quality benefits and increase the efficiency of our compliance determinations and the efficiency for multiple agencies.

Products and Timelines:

1 Year: Develop technical guidance document that identifies storm water permit compliance areas to focus on and conduct meetings to disseminate recommendations with associated Water Board storm water programs. If necessary, amend the Administrative Procedures Manual to add additional procedures for the agreed upon enforcement procedures related to these enforcement goals. (Low staff resource allocation)

3 Months: Provide assistance to the associated Water Board storm water programs in conducting outreach through letters or meetings with permitted storm water facilities and MS4s to disseminate the resulting goals of the outcome oriented compliance review. (Low staff resource allocation)

1 year: This project would provide the resources for developing a point of contact for facilitation between the Water Board storm water program and other agencies that conduct work that overlaps the storm water program and would consist of hosting and attending coordination meetings with other agencies and providing deliverables that assist with compliance determinations statewide. The main objective is to increase the efficiency of our compliance determinations and facilitate coordination with other agencies that regulate the same permitted storm water facilities and MS4s of the storm water program (Low staff resource allocation).

Ongoing: Provide assistance to the associated Water Board storm water programs in conducting inspections and audits of permitted storm water facilities and MS4s with specific emphasis on the identified outcome oriented enforcement objectives. (Medium staff resource allocation)

Issue: Storm water policy and permits should be periodically updated to reflect the continually improving understanding and management of storm water.

Project 15 Standardized Minimum Control Measures for Specific Municipal Program Elements

Priority: Medium

Assessment – Somewhat important, achievable with moderate barriers

Issue(s): 29, 32, and 35

Goal: To standardize approaches to storm water permit requirements, as appropriate.

Objective: Develop permitting and policy-making guidance tools to implement consistent and applicable minimum control measures statewide.

Scope: Review concepts initiated in previous efforts and current permits to identify those sections or issues where standardized approaches for storm water permits could improve program efficiency and water quality outcomes. Such focus areas could include minimum control measures for mature program tasks such as illicit connections/illicit discharges and establishment of adequate authority for municipalities. Products would consist of minimum control measures for municipal permits.

Background: Significant time and effort are spent preparing and reissuing municipal storm water permits. The time and resources could be reduced if the Water Boards developed a template for those issues that do not require region specific requirements or would benefit from a conceptual framework that provides the flexibility for the regions to address unique topographic, climatic, hydrologic, and geologic and land use differences. Several efforts have been attempted over the years to develop either draft statewide municipal permit language or statewide permit template for municipal storm water permits, and though some success was achieved in terms of agreements, these efforts were terminated before any products were finalized.

Products and Timelines:

6 months: Create work group and identify permitting issues that could be addressed through development of standardized language efficiency and water quality outcomes. (Low State Water Board staff resource allocation and Low Regional Water Board staff resource allocation (each region))

1 Year: Produce permit writing tools and sample permit language for the minimum control measures identified for standardization. (Low State Water Board staff resource allocation and Low Regional Water Board staff resource allocation (each region))

Project 16 Statewide Regulatory Framework for Municipal Storm Water

Priority: High

Assessment – Critically important, achievable with moderate barriers

Issue(s): 5, 16, 27, 28, 30, 31, 33, 35, and 36

Goal: To establish a statewide regulatory framework for municipal storm water programs that supports adaptive management and sustainable water quality protection.

Objective: Develop an approach that compliments federal and state regulations and incorporates adaptive management, provides a sustainable pathway to water quality protection, and promotes green infrastructure.

Scope: The framework/approach would provide guidance in the development and application of technology and water quality based effluent limits, the incorporation of TMDLs into permits, and addressing impacts on beneficial uses during wet weather

conditions. The approach may ultimately be incorporated into the State Implementation Plan for Inland Waters, Enclosed Bays, and Estuaries of California or equivalent document. This project has a nexus with many of the other projects, particularly Projects 5, 6, 12, 14, 15, and 17.

Background: The NPDES permitting program for municipalities has evolved over the years, progressing from the incorporation of the technology-based standard of reducing pollutants to the maximum extent practicable (MEP) and general compliance with receiving water limitations to incorporate more targeted water quality based requirements based on TMDL limitations. The approach taken by Regional Boards in their locally issued permits has varied and many times stakeholders have requested that the State Board provide better guidance and consistency in the form of a Statewide Storm Water Policy. Furthermore, stakeholders and regulators are both looking for opportunities to create a storm water program that can be adapted and will provide for long term sustainable water quality protection. This project would address the issue of consistency and provide guidance for permit writers in their efforts to craft permits that provide for adaptive management and sustainable water quality protection.

Products and Timelines:

1 Year: Initiate stakeholder process to receive input on framework/approach. (Low staff resource allocation)

4 Years: Develop guidelines to implement the approach for both the Water Boards and regulated community. Draft either stand-alone storm water document or incorporate guidelines into State Implementation Plan for Inland Waters, Enclosed Bays, and Estuaries of California or equivalent document. (Medium staff resource allocation)

Ongoing: As necessary or required, update the document(s) or guideline(s) to reflect changes or additions. (Low staff resource allocation)

Project 17 Training and Information-Sharing for Water Board Staff and the Regulated Community

Priority: High

Assessment – Important, readily achievable

Issue(s): 1, 3, 4, 5, 6, 7, 9, 10, 11, 13, 22, 23, 27, 28, 30, 31, 32, 33, 38

Goal: To further educate the Water Boards staff and the regulated community on effective storm water management tools and practices.

Objective: Develop training for staff and the regulated storm water community.

Scope: Review available storm water management training and identify gaps in storm water education. Conduct training and skill-sharing events with staff and the regulated community as directed by analysis of training needs. This project has a nexus with most of the other projects.

Background: Storm water programs face challenges to advance storm water management in response to regulatory, science, technology, socio-political, and economic interest pressures.

Products and Timelines:

Ongoing: Analyze the current status of external and internal storm water management training. Develop staff report outlining storm water training needs and provide recommendations (Low staff resource allocation)

Ongoing: Develop and conduct training courses based on the report's recommendations. (Low staff resource allocation)

Project 18 Sector-specific Technology-based Numeric Effluent Limitations for Industrial and Construction Storm Water Permits

Priority: Low

Assessment – Somewhat important, achievable with significant barriers

Issue(s): 33

Goal: To adopt sector-specific technology-based numeric effluent limitations, as appropriate, for industrial and construction storm water permits that provide for the greatest pollutant reductions that are economically achievable for the industry.

Objective: Continue the collection of pollutant discharge data for specific sectors and implement sector-specific-technology based numeric effluent limitations (NELs) as appropriate, in industrial and construction storm water permits.

Scope: Review existing effluent and BMP performance data (SMARTS), along with information about industrial and construction scenarios (e.g., high risk) where there is sufficient data to develop a technology based NEL. For each sector and pollutant, determine the control and treatment options to evaluate. Determine the scenarios (compliance storm) to evaluate. For each scenario, estimate the pollutant load and pollutant load reduction. This review would also include an analysis on how the proposed NELs relate to TMDL requirements and include researching options for developing NELs that comply with these TMDL requirements. This project would also provide assistance to the associated Water Board storm water programs in conducting outreach via letters or meetings with permitted storm water facilities to discuss the proposed outcomes of this project.

Background: The Water Boards have the authority to include NELs in NPDES Storm Water Permits. Previously, data to support the development of technology based NELs for the majority of sectors permitted and pollutants of concerns did not exist. While there is not sufficient data to develop NELs across all sectors and pollutants, the Water Boards likely can identify some specific sectors and pollutants for which to develop NEL. The Water Boards can improve efficiency and water quality by evaluating opportunities where the NELs also address TMDL requirements.

Products and Timelines:

1.5 Years: Develop a staff report for public comment summarizing available data (include a data quality analysis) and suggested sectors and pollutants for technology based NEL development. (Medium staff resource allocation)

1 Year: Develop technical document to outline source control and treatment options and scenarios to be analyzed. (Medium staff resource allocation)

2.5 Years: Develop a staff report for public comment that estimates pollutant load reductions for each identified scenario and proposes technology based NELs. (Low staff resource allocation)

1 Year: Propose for adoption permit language that includes, where appropriate, technology based Numeric Effluent Limitations. (Medium staff resource allocation)

Project 19 Trash Control

Priority: Medium

Assessment – Important, achievable with significant barriers

Issue(s): 15, 16, and 40

Goal: To address generation of trash in “hot spots” generated by sources outside of regulated municipal storm water systems.

Objective: Evaluate current strategies and develop new methods to address the generation of trash in “hot spots”, such as discharges from homeless encampments, high-use beaches, and parks adjacent to waters of the state.

Scope: Evaluate the current strategies available and being used to address trash generation in “hot spots” within the San Francisco Bay Region, Los Angeles Region, and San Diego Region. Compile strategies for determining and addressing trash generation in “hot spots” that can that can provide statewide guidance to region specific efforts. Establish a mechanism to determine areas that would be “hot spots” and require trash controls efforts. Develop tools, guidance, permitting approaches, permit language, and/or policy to implement trash control strategies. Determine where ongoing efforts by

stakeholders and non-governmental organizations can be leveraged to support the Water Boards trash control efforts. Provide implementation support for the amendments to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Trash Amendments) and amend the Trash Amendments, if needed.

Background: The Trash Amendments were adopted by the State Water Board in April 2015. The Trash Amendments establish a statewide narrative water quality objective for trash and implementation provisions using a land-use based compliance approach that targets high trash generating areas. The Trash Amendments will be implemented through NPDES permits, waste discharge requirements (WDRs), waivers of WDRs. The Trash Amendments focus on necessary trash controls (e.g., structural and instructional controls) at industrial facilities and within municipal storm water systems in specific high trash generating areas. For municipalities, one focus is controlling trash in five priority land uses: high density residential, industrial, commercial, mixed urban, and public transportation stations. In addition to these land uses, Regional Water Boards can determine that, within a municipal service area, specific locations or land uses generate substantial amounts of trash and require additional trash controls. These areas may include schools, stadiums, and utility roads.

Significant sources of trash that adversely impact beneficial uses of a water body are often outside the jurisdiction of the municipal storm water permittee. Outside a municipal jurisdiction, Regional Water Boards may implement trash control requirements in WDRs or waivers of WDRs, for areas that generate trash and/or where direct dumping to a water body may occur. These areas may include high use campgrounds, picnic areas, beach recreation areas, marinas, and homeless encampments. Some Regional Water Boards, like the San Francisco Bay, Los Angeles, and San Diego, are addressing sources of trash from areas deemed to be “hot spots”. During adoption of the Trash Amendments, the State Water Board directed Water Board staff to further evaluate strategies to address trash at “hot spots”.

Products and Timelines:

1 Year: Staff report outlining existing strategies to address trash generation in “hot spots” outside of a municipality jurisdiction. (Medium staff resource allocation)

2.5 Years: Develop tools, guidance, permitting approaches, template permit language, and/or policy to implement trash control strategies. Leverage ongoing local efforts by stakeholders and non-governmental organizations. Provide support to all the parties (Water Board staff, permittees, stakeholders) responsible for implementing the recently adopted Trash Amendments and amend the Trash Amendments, if needed. (Low staff resource allocation)

Project 20 Alignment of Water Quality Statewide Planning Efforts with Storm Water Program Implementation – Pilot Using the Biological Integrity Plan

Priority: High

Assessment – Important, readily achievable

Issue(s): 9, 14, and 16

Goal: To ensure that water quality planning efforts are well integrated into the storm water program.

Objective: Using the Draft Biological Integrity Plan being prepared by State Water Board staff as a pilot, incorporate compliance endpoints in storm water permits that further support statewide planning efforts.

Scope: This project will integrate storm water staff into the Biological Integrity Plan advisory groups to exchange information and use bioassessment in the storm water program. The project will also review the draft bioassessment narrative developed for the Biological Integrity Plan being prepared by State Water Board staff and work with stakeholders to develop a framework for conducting biological assessments and interpreting biological data as a measure of compliance with a storm water permit.

Background: Statewide water planning efforts often identify the Water Boards' storm water program as a key implementation tool, or key partner. Examples include, the statewide Trash Amendments to the statewide water quality control plans recently approved by the State Water Board, sediment quality objectives, and groundwater sustainability planning. One current planning effort, the Draft Biological Integrity Plan, provides Water Board staff an opportunity to be involved in the development stage of the plan and better integrate guidance on coordinating plan outcomes and storm water regulations. Bioassessment is a tool for assessing the biological integrity (ecological condition) of a waterbody. Through the Surface Water Ambient Monitoring Program (SWAMP), Water Board staff has developed standard bioassessment protocols and has used them for the past 13 years to monitor the condition of California streams. Bioassessment monitoring requirements have been incorporated into storm water permits to evaluate environmental condition and assess the effectiveness of management actions. The State Board is in the process of developing a Biological Integrity Plan to promote statewide consistency in conducting biological assessments and interpreting biological data. The Plan will include an implementation section describing how bioassessment should be incorporated into each Water Board regulatory program.

Products and Timelines:

2 Years: Review existing efforts, identify appropriate use of bioassessment data, and inform the implementation section of the Draft Biological Integrity Plan being prepared by State Water Board staff. (Expected date of State Water Board consideration of adoption of Biological Integrity Plan adoption: Fall 2017) (Low staff resource allocation)

Guiding Principle 4: The Water Boards Collaborate to Solve Water Quality and Pollutant Problems with an Array of Regulatory and Non-Regulatory Approaches

Issue: True source control should be efficiently and effectively supported as a solution for applicable storm water pollutants.

Project 21 True Source Control and Pollution Prevention

Priority: Medium

Assessment – Important, achievable with significant barriers

Issue(s): 6, 38, 39, and 40

Goal: To promote and implement, when appropriate, the control of storm water pollutants through pollution prevention measures including “true source control”.

Objective: Identify opportunities to control storm water pollutants through 'true source control' or other measures of pollution prevention during the pollutant life cycle.

Scope: Identify those pollutants causing water quality degradation that are still being manufactured and in use considering the strength of the relationship between the pollutant and impacts to aquatic life or human health. Priority will be placed on those pollutants that exhibit a strong relationship between environmental exposure and effect. Evaluate those pollutants identified during the analysis that could most effectively be controlled through true source control or other life cycle pollutant prevention measures. This would include evaluating the impacts on human health and welfare, quality of life, feasibility associated with regulated (limited) use, product bans, identification of critical steps in product lifecycles for pollution prevention management practices, and replacement products and the risks to the environment associated with replacement compounds or products. Identify potential or promising institutional controls that could be applied to better protect storm water quality, identify codes and regulations that would affect the use of institutional controls and agencies and departments with the legal authority to amend the regulations and codes (e.g., Department of Toxic Substances Control, Department of Pesticide Regulation). Collaborate with those agencies and departments to support the development of institutional controls to protect storm water quality. Develop cooperative agreements with appropriate authorities responsible for

maintaining the California Building Code, plumbing code, pesticide use regulations, and Cal Green to amend or develop codes and regulations that are consistent with or support the implementation of the Water Board source control and pollution prevention related permits plans and policies.

Background: True source control, for the purposes of this document, means the interruption or removal of pollutants from the storm water pathway before there is any risk of exposure. This can be achieved by using alternative products and green chemistry or by altering or limiting uses and applications. The costs associated with removing pollutants from storm water may be much greater than costs associated with true source control or other lifecycle interruption or pollution prevention based actions. However, only a few pollutants have been controlled using this type of toolbox, and as a result, site-based source control and treatment related management practices still dominate the landscape even though the installation and maintenance costs can be significant. This effort is intended to identify where opportunities exist to control storm water pollutants through 'true source control or other measures of pollution prevention during the pollutant lifecycle.

Products and Timelines:

3 Years: Develop Study and permit language or incentives. (Low staff resource allocation and > $150,000 in contract funds)

1.5 Years: Develop agreements, straw man language, and template permit language. (Low staff resource allocation and > $150,000 in contract funds)

Project 22 Urban Pesticide Reduction

Priority: High

Assessment – Important, achievable with moderate barriers

Issue(s): 6, 22, 38, 39, and 40

Goal: To eliminate pesticide pollutant impairment of water bodies from urban storm water runoff.

Objective: Establish statewide source control efforts for pesticides in urban storm water.

Scope: Amend the statewide Water Quality Control Plans to account for urban pesticide discharges to: (1) recognize one of the primary mechanisms for urban pesticide pollution prevention is through use management under the authority of agencies that regulate pesticide use; (2) establish a framework for working with the Department of Pesticide Regulation (DPR) and U.S. EPA Office of Pesticide Programs (OPP) to improve pesticide evaluation and mitigation processes; (3) establish a framework for coordinating

pesticide/toxicity monitoring by appropriate agencies; and (4) establish minimum source control efforts for urban storm water permittees.

Background: Pesticides continue to cause impairments to urban water bodies across the state, even as "old" pesticide uses are banned and replaced by new pesticides. Some practices and structures can reduce pesticide concentrations, but practically speaking, attaining the reductions necessary to meet water quality standards through engineering changes to storm water systems and municipal discharger-led changes to pesticide use practices would likely be cost-prohibitive for two reasons: (1) the pesticides of interest are widely used and cause or contribute to toxicity at very low concentrations, and (2) state law does not allow local authorities to ban or limit pesticide sales and use. The most effective way to reduce urban pesticide-related impairments is through managing pesticide usage via existing state and federal pesticide regulatory authorities. Previous experiences suggest that resources focused on working with pesticide regulators (DPR and U.S. EPA OPP) to implement their authority will more effectively achieve our goals as compared to attempting to control pesticides solely by using our own regulatory authorities on municipal dischargers.

A statewide framework for urban pesticide pollution control efforts, established via an amendment to the State's Water Quality Control Plans, with a scope including the four elements listed above, could help more effectively and consistency control urban pesticides.

Regional Board staff, mainly from San Francisco Bay and Central Valley Regional Water Quality Control Boards, in coordination with CASQA and other members of the Urban Pesticide Pollution Prevention Partnership, has invested significant efforts into working with DPR and EPA OPP, with considerable success. A formal commitment by the Water Boards to implement a pollution prevention framework could strengthen these proactive efforts and productive relationships with pesticide regulators. A statewide plan would also encourage collective monitoring, data sharing, and education efforts by the regulated community and establish consistent minimum pesticide source control efforts for the urban storm water permittees.

This effort also relates to increased use of storm water as a resource for groundwater recharge, as pesticide pollution prevention will be a benefit for groundwater quality in areas where urban runoff is captured for groundwater recharge, and to efforts to reduce and filter runoff and convert to sustainable landscapes that require less chemical inputs.

Products and Timelines:

6 Months: Develop a detailed project management and scoping plan. (Medium staff resource allocation)

Storm Water Strategic Initiative

Proposed Project List

1 Year: Draft amendment and staff report for the general framework to improve pesticide evaluation, mitigation processes, coordinating pesticide/toxicity monitoring, and establish minimum source control efforts for urban storm water permittees. Includes holding stakeholder meetings, approximately quarterly, during development. (Low State Water Board staff resource allocation and Low Regional Water Board staff allocation)

6 Months: State Water Board Workshop, Responses to comments, Final Staff Report and Plan Amendment. (Low State Water Board staff resource allocation and Low Regional Water Board staff allocation)