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CALIFORNIA STATE UNIVERSITY LONG BEACH

Program Effectiveness Assessment and Improvement Plan

Prepared by

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1. Introduction

The Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit¹ (Phase II Permit) requires the development and implementation of a *Program Effectiveness Assessment and Improvement Plan* (PEAIP). This PEAIP addresses each of the elements outlined in Provision F.5.h.1. for non-traditional small MS4s and includes the strategy that the University will use to track the short- and long-term effectiveness of the stormwater program, the measures that will be used to assess the effectiveness of the best management practices (BMPs), and the stormwater program as a whole, and a description of how the Campus will use this information to improve their stormwater program.

The Campus stormwater program addresses pollutants of concern (POCs) and implements BMPs; and, consistent with Provision F.5.h.1 requirements, this PEAIP presents a plan for assessing the effectiveness of BMPs that focus on high priority POCs. This approach provides a manageable assessment program that can be improved, targeted, and refined.

The Campus has developed this PEAIP as a guidance document for staff to assist in conducting the program effectiveness assessments (EAs). This PEAIP outlines the approach that the Campus will use to manage its stormwater program to improve its effectiveness at reducing the identified high priority POCs, thereby achieving the maximum extent practicable (MEP) standard and protecting water quality.

This PEAIP addresses the requirements in Provision F.5.h.1, as summarized in **Table 1**.

Table 1. Phase II Permit PEAIP Provisions and Corresponding PEAIP Sections (Non-Traditional Small MS4s)

Phase II Permit Provision(s)	PEAIP Section
F.5.h.1.(i-iii)	1. Introduction
F.5.h.1.(ii)(a)(1-2)	2. Program Effectiveness Assessment Approach and Development
F.5.h.1.(ii)(a)(1)	2.3. Identification of the Stormwater Program Activities
F.5.h.1.(ii)(a)(2)	2.2. Identification of the Key Target Audiences
F.5.h.1.(ii)(a)(2)	2.2. Identification of the Key Target Audiences 2.2.1. Target Audience Actions

The schedule for the implementation of the PEAIP is as follows:

- Year 2 Annual Report (by October 15, 2015): Prepare and submit PEAIP

1.1. STORMWATER PROGRAM GOALS AND OBJECTIVES

Stormwater programs are inherently complex due to a number of factors such as: the number of pollutant sources, the limited ability to directly control the behaviors of target audiences, the

¹ Order No. 2013-0001-DWQ, effective July 1, 2013

number of constituents that must be addressed, the co-mingling of flows within the drainage system, and the potential impacts to water quality from other sources (off-site run on, wind-blown materials, groundwater seepage, aerial deposition, etc.).

The overall goals of the Campus's stormwater management program are to a) reduce the potential impact(s) of pollution from urban areas on waters of the State and waters of the United States (U.S.) and protect their beneficial uses; and b) develop and implement an effective stormwater program that is well-understood and broadly supported by stakeholders.

2. Program Effectiveness Assessment Approach and Development

This PEaip was developed to implement an evaluation of program elements and BMPs, ensuring that they are well-targeted and determining whether intended results are being achieved.

Stormwater program management can be described by a cycle divided into three phases of activity:

- Program Planning and Modification – In this phase, the Campus is identifying the critical components and POCs for its stormwater program, as well as developing an EA approach and management questions to assist in determining if the program is achieving the intended results.
- Program Implementation – In this phase, the Campus is implementing the program and obtaining the assessment data needed to answer the management questions.
- Effectiveness Assessment – In this phase, the Campus is conducting EAs, reviewing the results, and determining if any program modifications are necessary. This will be conducted as a part of the Annual Report. Once identified, the Campus will make the program modifications and initiate the next round of implementation, leading again to renewed assessment and planning.

This process is applied repeatedly over time in order to focus the stormwater program in on the most effective BMPs and the achievement of the desired results.

2.1. IDENTIFICATION OF SOURCES AND IMPACTS

2.1.1. Receiving Water Conditions

One of the primary objectives of the stormwater program is the protection of the beneficial uses of the receiving waters. Where POCs are unidentified, the prioritized BMPs and assessment will be based on common urban pollutants.

In order to identify the POCs for the PEaip, the Campus reviewed the 2010 303(d) list and used best professional judgment and knowledge of local and regional water quality issues. The categories of receiving water impairments that were identified and considered to be potential high priority POCs are:

- TRASH
- SEDIMENT

- PESTICIDE, HERBICIDE, AND FERTILIZER

2.1.2. Urban Runoff

Urban runoff and MS4 contributions were used to focus the PEAIP and that will be used to assess the effectiveness of the stormwater programs. In selecting high priority POCs, the Campus has considered the 2010 303(d) list and common urban pollutants. Best professional judgment and knowledge of local and/or regional water quality issues were also factors in the identification of high priority POCs.

The Campus will focus its EAs on the prioritized BMPs that specifically target these POCs. Although the POCs were chosen based on common urban pollutants, the Campus will review updates to the 303(d) list as necessary. Best professional judgment and knowledge of local and regional water quality issues will also continue to be factors in the identification of POCs.

2.1.3. Source Contributions

A source is anything with the potential to generate pollutants prior to their introduction to the MS4. Source loadings are the pollutant loadings added by the urban sources to an MS4. Source reductions are the changes in the amounts of pollutants associated with specific sources before and after BMPs are employed.

In order to determine the specific target audiences and the appropriate prioritized BMPs, The Campus has evaluated the 2010 303(d) list and local programmatic information and used best professional judgment and knowledge of local and regional water quality issues to identify the primary urban runoff sources of each POC.

2.2. IDENTIFICATION OF THE KEY TARGET AUDIENCES

This component focuses on the actions of target audiences and the factors that influence them. Target audiences are the individuals and populations that a stormwater program is directed to and may include, but are not limited to, students, faculty, staff, visitors, guests, contractors, and the general public. Because source reductions can only be achieved by the people responsible for pollutant loadings, a successful program will be one that is able to induce positive behavioral changes in the target audiences.

2.2.1. Target Audience Actions

This section address the actions of target audiences and whether or not changes are occurring within these target audiences over time. The major categories of target audience actions are:

- Pollutant Generating Activities (PGAs) – behaviors that contribute pollutants to urban runoff (e.g., vehicle and equipment washing without containment, improper waste disposal, spills during materials loading and unloading)
- Best Management Practices (BMPs) – activities or other controls that are implemented to reduce or eliminate discharges of pollutants (e.g., Construction and Post-construction BMPs, Scheduling routine catch basin and storm drain pipe cleaning and maintenance, Spill Prevention and Control Countermeasures (SPCC), implementation of secondary containment)

- Supporting behaviors – include a wide range of potential actions that are distinct from BMP implementation but help support the implementation (e.g., pollution incident reporting, catch basin stenciling, public involvement)

2.3. IDENTIFICATION OF THE STORMWATER PROGRAM ACTIVITIES

This section focuses on the various activities that are conducted within a program. Examples of these activities include providing education to students, faculty and staff, conducting surveys of target audiences, and conducting monitoring.

Based on the identification of the high priority POCs and their potential sources, target audiences, and prioritized BMPs, the Campus has identified the Program Elements for which the implementation of prioritized BMPs will be assessed.

The 303(d) list and local information were reviewed, and best professional judgment of regional water quality issues were used to identify the primary urban sources of the POCs.

3. Management Questions

In order to focus the EAs, the Campus has identified management questions for the prioritized BMPs that may be implemented to address the high priority POCs.

Pursuant to Provision F.5.h.1.(ii)(a), the questions considered for this PEAIIP:

- To what extent has the storm water program elements been implemented?
- To what extent has the target audience been identified and targeted?

4. Data Assessment and Collection

4.1. DATA ASSESSMENT METHODS

During the EA process, the data collected will be analyzed using a variety of methods such as:

- **Qualitative assessment** includes confirmation that an activity (e.g., construction site inspections) was conducted or that a specific task (e.g., Online Stormwater Webpage) was completed.
- **Comparisons to established reference points** involve comparing collected data to established targets (discharge prohibitions, required activity levels, etc.) or other reference points (other programs, previous results, baseline values, visual comparison using photographs over time, etc.).

4.2. DATA COLLECTION METHODS

The assessment data will be collected through various means such as:

- **Internal Tracking** of program data (e.g., inspection data, website public outreach and education efforts)
- **Site Investigations** conducted by Campus staff to directly observe or assess a practice (e.g., inspections, site visits, complaint investigations)

- **Interviews** conducted by Campus to discern awareness and behavior (e.g., field and office staff)
- **Monitoring and Sampling** data obtained directly by campus (e.g., MS4 sampling if needed, maintenance facility visual inspections)
- **Review of External Data Sources** by Campus (e.g., data or information obtained via the State or Regional Water Board, other regulatory programs, online databases, consultants, third parties)
- **Special Investigations:** can encompass any of the categories above, but involves a more intensive one-time focus.

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Glossary of Terms

Adaptive Management: Adaptive Management is a structured process of directing decision-making with an aim toward achieving identified goals or milestones and addressing/reducing uncertainty over time.

Assessment Methods: Assessment Methods are processes used to obtain or evaluate assessment data or information. Depending on the particular outcome and/or management questions, numerous assessment methods may be used.

Best Management Practice (BMP): Defined in 40 CFR 122.2 as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollutants discharged to waters of the United States.

California Stormwater Quality Association (CASQA): Stormwater quality management organizations and individuals, including cities, counties, special districts, industries, and consulting firms throughout the state. (<https://www.casqa.org/>)

Effectiveness Assessment (EA): Effectiveness Assessment includes the methods and activities that stormwater managers use to evaluate how well their programs are working, and to identify modifications necessary to improve them. EA is the mechanism by which feedback is evaluated to enable ongoing adaptive management.

Program Management Cycle: The Program Management Cycle broadly divides stormwater program management into three phases:

1. Program planning and modification;
2. Program implementation; and
3. Effectiveness assessment.

Maximum Extent Practicable (MEP): The technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) for storm water that operators of MS4s must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve, typically by treatment or by a combination of source and/or treatment control BMPs.

Municipal Separate Storm Sewer System (MS4)²: An MS4 is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is:

- Owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.;
- Designed or used to collect or convey stormwater;
- Not a combined sewer; and
- Not part of a Publicly Owned Treatment Works (POTW) (sewage treatment plant).

Phase II MS4 Permit: The Phase II Permit, issued in 1999, requires regulated small MS4s in urbanized areas, as well as small MS4s outside the urbanized areas that are designated by the

² Based on the definition in Title 40 Code of Federal Regulations §122.26 (b)(8)

permitting authority, to obtain NPDES permit coverage for their stormwater discharges. Each regulated MS4 is required to develop and implement a stormwater management program/ approach to reduce and/or eliminate the discharge of pollutants from the MS4 to the maximum extent practicable (MEP) and effectively prohibit discharges of non-stormwater into its MS4, unless such discharges are authorized.

Pollutant of Concern (POC): A pollutant that is reasonably expected to be present in urban runoff and may reasonably be expected to affect the designated uses of the receiving water. Urban runoff pollutants of concern may include sediments, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, and/or pesticides and herbicides.

Program Element: Program Elements are distinct components of a stormwater program that focus on reducing pollutants from a particular activity or pollutant source/target audience. The Program Elements for the Phase II MS4 include the following:

- Program Management
- Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction
- Pollution Prevention/Good Housekeeping
- Post Construction
- Water Quality Monitoring

Receiving Water Conditions: Receiving Water Conditions can include any chemical, biological, or physical parameter that can be measured or assessed in receiving waters (i.e., chemical concentrations, dissolved oxygen levels, biological integrity, species diversity, eutrophication, microbiological or toxicological conditions, hydromodification).

Source: “Source” means anything with the potential to generate pollutants prior to their introduction to the MS4. A typical program broadly addresses the following source categories: residential areas, construction and development sites, commercial and industrial sources, and municipal operations. Sources may alternatively be defined by the populations associated with areas, facilities, or activities, e.g., residents, dog-walkers, mobile car washers, or restaurant employees.

Source Contribution: Source Contribution can refer either to a source loading or to a reduction in that loading. Source loadings are the pollutant loadings added by sources to a MS4. Source reductions are changes in the amounts of pollutants associated with specific sources before and after control measures are employed.

Target Audience: A “Target Audience” consists of the people (individuals and populations) that are expected to gain knowledge or engage in the behaviors that a stormwater program is intended to elicit. BMPs and other controls are implemented by many types of third parties, so the term “target audience” is broadly defined and virtually any group of people could be a target audience, including students, faculty and staff, visitors and guests, the general public, elected and appointed officials, other government agencies, etc.