Stormwater Management Plan

California State University Chico

Department of Environmental Health and Safety

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Section

Appendix:

1.0 INTRODUCTION

1.1 Regulatory Background

As authorized under the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The NPDES Program is a federal program which has been delegated to the State of California for implementation through the State's Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards. California State University, Chico (CSU, Chico) has been deemed a Phase II non-traditional small municipal separate storm sewer system (MS4) by California State Water Resources Control Board and is required to comply with all permit regulations found in Section F of the Small MS4 General Permit Water Quality Order No. 2013-0001-DWQ, NPDES No CAS000004.

Polluted stormwater runoff is often transported to municipal separate storm sewer systems and ultimately discharged into local waterways (rivers, streams, lakes, and bays) without treatment. Pollutants are deposited into nearby waterways, discouraging recreational use of the resource, and interfering with the habitat for fish, other aquatic organisms, and wildlife. The Phase II Rule requires an MS4 to improve the nation's waterways by reducing the pollutants which stormwater picks up and carries into storm systems during storm events.

The purpose of the Phase II regulations is to require operators of small MS4s to develop a program to:

- Reduce the discharge of pollutants to the "maximum extent possible" (MEP);
- Protect water quality; and
- Satisfy the appropriate water quality requirements of the Clean Water Act and the SWRCB plan.

1.2 Purpose

The purpose of the Stormwater Management Plan (SWMP) is to:

- Identify pollutant sources potentially affecting the quality and quantity of stormwater discharges;
- Define the minimum best management practices (BMPs) applicable to CSU, Chico based on specific site conditions and practices; and
- Establish the required minimum documentation and tracking requirements to complete annual program effectiveness, improvement, and reporting.

This SWMP covers California State University, Chico's main campus and its offsite dormitory, University Village.

1.3 Legal and Financial Authority

California State University, Chico, as well as all other campuses covered by the Phase II Small MS4 General permit, are unique institutions which have been classified as non-traditional since they do not fit the most common type of permittee, a municipality. CSU, Chico does not have external entities to regulate in the same manner as municipal permittees have. Therefore, a statement of adequate legal authority has been signed by both the Executive Vice-Chancellor of

the California State University system and by CSU, Chico's Director of Environmental Health and Safety. Both signed statements can be found in Appendix A.

1.4 Stormwater Management Plan Representatives

California State University, Chico
Environmental Health and Safety Department
Marvin Pratt, Director of Environmental Health and Safety
Holly Swan, Environmental Programs Manager

Contact: (530) 898-5126

2.0 SITE INFORMATION

2.1 Facility Information

California State University, Chico is one of twenty-three California State University (CSU) campuses governed by the Chancellor of the CSU system and is an internationally recognized public teaching institution. Approximately 17,500 students attend the University and 2,000 full or part time employees work at the University.

The CSU, Chico main campus is situated within the city limits of the City of Chico in Butte County, California. The map in Appendix B shows the Butte County area and associated waterways. The main campus covers approximately 120 acres. The facility is generally bounded by the Esplanade to the east, West Second Street to the south, the Union Pacific Railway easement to the west, and Legion Avenue, Mansion Avenue and East Francis Willard Avenue to the north. A map of the main campus is located in Appendix C.

2.2 Facility Operations

CSU, Chico employees skilled trades, maintenance, grounds, and custodial staff for day-to-day operations. Typical duties include building and infrastructure maintenance, fleet maintenance and repair, daily cleaning of common buildings, grounds and landscaping maintenance, and small construction jobs.

2.3 Land Use

Most buildings house a combination of academic classrooms, offices, laboratories, meeting rooms, and computer labs. Other facilities include a library, sports stadiums, recreation areas, a theatre, cafeterias, dormitories, cafeterias and food courts, greenhouses, a medical center, a gym, parking lots and structures, a maintenance yard, and a heating and cooling plant.

2.4 Stormwater Drainage System

California State University, Chico's storm drain system consists of bioswales, cisterns, trench drains, drain inlets, and underground piping. The majority of stormwater runoff discharges into the Big Chico Creek which lies within the Sacramento River watershed. There is a total of 25 outfalls within CSU, Chico's boundaries which discharge into Big Chico Creek.

A few storm drains on the outskirts of the main campus, and at University Village, discharge directly into the City of Chico's MS4. A map of all stormwater infrastructure is in Appendix D.

3.0 CONTROL MEASURES

Outlined in the MS4 permit six minimum control measures are required. They include the following programs:

- Public Education and Outreach;
- Public Involvement and Participation;
- Illicit Discharge Detection and Elimination;
- Pollution Prevention and Good Housekeeping for Operations;
- Construction Site Stormwater Runoff Control; and
- Post-Construction Stormwater Management

These requirements include three fundamental principles:

1. Effectively prohibit non-stormwater discharges through the storm drain system.
2. Implement controls to reduce the discharge of pollutants to receiving waters.
3. Follow provisions that the State Water Resources Control Board has determined appropriate for the control of such pollutants.

3.1 Education and Outreach Program

The University is required to develop and implement a comprehensive stormwater public Education and Outreach Program. The goal of this minimum control measure is to increase the public's knowledge regarding the storm drain system, impacts of urban runoff and illicit discharges on receiving waters, and potential BMP solutions. The public is defined as the following:

- Students
- Staff
- Faculty
- Visitors

California State University, Chico will focus its educational efforts on these target audiences. Educational materials will specifically focus on local pollutants of concern and regional water quality issues. CSU, Chico has developed several activities as part of its education and outreach strategy to help educate the public on the importance of stormwater pollution prevention. The University's Department of Environmental Health and Safety (EHS) will oversee the creation and distribution of all educational and outreach material, unless otherwise specified.

3.1.1 Compliance Participation Option

The University complies with the Education and Outreach Program requirement by participating in its own education and outreach within the University's jurisdictional boundaries.

3.1.2 Staff Training Illicit Discharge Detection and Elimination

An element of the Education and Outreach Program is to incorporate illicit discharge detection and eliminate training for staff. The goal of this training is to inform and raise

awareness to CSU, Chico's staff, to increase the detection of illicit discharges, and enhance the notification and reporting of illicit discharges.

A training program has been implemented for staff, who as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe an illicit discharge to the storm drain system. The training program will include information on the following:

- How to identify an illicit discharge,
- Proper procedures for reporting and responding to the illicit discharge, and
- Contact information, including the procedure for reporting an illicit discharge.

The training will encourage staff to be proactive when observing, reporting, and eliminating illicit discharges to the storm drain system. Training will be given as necessary, but at a minimum on an annual basis. Training will be updated as necessary to ensure the most up-to-date and applicable information is being shared with staff.

In addition to the training, contact information is provided in all fleet vehicles which are used by field staff and informative memos about illicit discharge detection are sent out to all employees via the University's Employee Announcement system.

3.1.3 Staff Training - Pollution Prevention and Good Housekeeping

Another element of the Education and Outreach Program is to provide training to operations staff on pollution prevention and good housekeeping measures. The purpose of this training is to inform and raise awareness to CSU, Chico's staff on what can be done around the facility in terms of good housekeeping practices and ways to reduce pollution.

Staff will receive, at a minimum, biennial training on how to incorporate pollution prevention and good housekeeping techniques into their daily operations. Staff who will receive the training will include custodians, grounds crew, trades workers, facilities workers and fleet maintenance workers. The training will include information on general stormwater education and clear guidance on appropriate stormwater BMPs. Training will be updated as necessary to ensure the most up-to-date and applicable information is being shared with staff.

3.1.4 Other Public Outreach and Education Opportunities

In addition to the trainings listed above, other outreach and education events and strategies will be utilized to administer stormwater information to target audiences when available and applicable. A complete list of all outreach and educational opportunities are listed in Table 3.1

Table 3.1 Summary of all Education and Outreach Activities

Topic	Target Audience	Method	Frequency
Stormwater Regulations	Students, staff, faculty, and visitors	Making SWMP available at EHS	Continuously
Illicit Discharge Education	a. Staff (select staff only) b. Staff and faculty c. Students, staff, faculty, and visitors	a. In person training b. Employee Announcements c. EHS webpage	a. Annually b. Biannually c. Continuously
Pollution Prevention and Good Housekeeping – General	Staff (relevant staff only)	In person training	Biennially
Pollution Prevention and Good Housekeeping – Pesticides, Herbicides, and Fertilizers	Staff (relevant staff only)	In person training	Biennially
General Stormwater and Pollution Prevention	a. Students b. Students, staff, faculty, and visitors c. Students, staff, faculty, and visitors d. Students e. Students f. Students, staff, faculty, and visitors	a. Information booth at Sustainability Fair and Earth Day b. Information pamphlet at Gateway Science museum c. Links to educational brochures and websites on EHS webpage d. Student Announcements e. Social Media f. Strom drain markers	a. Yearly b. Continuously c. Continuously d. Biannually e. No set frequency f. Continuously
Stormwater-friendly Landscaping (bioswales)	Students, staff, faculty, and visitors	Informative signage near Student Services Center (administered by FMS)	Continuously
Water efficient landscaping (native plants)	Students, staff, faculty, and visitors	Informative signage at Gateway Science Museum (administered by museum) and along Big Chico Creek (administered by FMS)	Continuously

3.2 Public Involvement and Participation Program

The University is required to create a mechanism for public involvement and participation. The goal of this minimum control measure is to allow participation and involvement by encouraging volunteerism and comment and input on policy.

Comments and suggestions received from the campus community will be reviewed by EHS for applicability to the SWMP and possible implementation. Contact information is provided on the Department of Environmental Health and Safety (EHS) website. Copies of the SWMP is available at EHS for the public to review. In addition, high priority storm drain inlets are labeled and educational information on the EHS website will be utilized as a method to communicate stormwater awareness to target audiences.

3.3 Illicit Discharge Detection and Elimination Program (IDDEP)

Regulations require identification and elimination of all non-stormwater discharges, and appropriate response to protect the campus community and the environment. The goal of this minimum control measure is to detect, investigate, and eliminate non-stormwater discharges ("illicit discharges") into CSU, Chico's stormwater system. An illicit discharge is defined as "a point source discharge of pollutants to an MS4 which is not composed entirely of stormwater and not authorized by an NPDES permit". Non-stormwater discharges which are not specifically exempted by the NPDES permit are prohibited. Information on how to report an illicit discharge is located on EHS's website. A tracking log will be kept of reported issues.

3.3.1 Outfall Mapping

A map located in Appendix D shows accurate locations of all outfall locations. Outfalls discharging into Big Chico Creek have been inventoried and photographed. Submerged outfalls and other outfalls which may pose a threat to public safety are not required to be inventoried.

3.3.2 Field Sampling to Detect Illicit Discharges

The University was required per the NDPES permit to conduct field sampling to detect potential discharges while conducting the outfall inventory and sample any discharges which were unrelated to a storm event. During the inventory event no discharges were observed.

3.3.3 Illicit Discharge Detection and Elimination Source Investigation and Corrective Action Procedures

The University must identify and locate the source of any non-stormwater discharge within 72-hours of becoming aware of the discharge. Non-stormwater discharges suspected of being sanitary sewage and/or significantly contaminated shall be given priority. Investigations of non-storm discharges suspected of being cooling water, wash water, or natural flows may be delayed until after all suspected sanitary sewage and/or significantly contaminated discharges have been investigated, eliminated and/or resolved. If sanitary sewer or other significantly contaminated discharge is identified, the City of Chico shall be notified as a downstream MS4 owner/operator. CSU, Chico will report immediately the

occurrence of any dry weather flows believed to be an immediate threat to human health or the environment to the Butte County Public Health Department.

If a non-stormwater discharge is located, the Department of Environmental Health and Safety, and the Facilities Management and Services plumbers will immediately be contacted. The CSU, Chico stormwater map will be used to locate the intake and the outfall of the storm drains being affected to trace the source. CSU, Chico will determine and document through its investigations the source of all non-stormwater discharges. If the source of the non-stormwater discharge is found to be a discharge authorized under the NPDES permit, no further action is required. Corrective actions will be taken if the discharge was found to be illicit. A written report of all illicit discharges will be kept at the Department of Environmental Health and Safety.

3.4 Pollution Prevention and Good Housekeeping for Operations Program

The University must develop and implement a Pollution Prevention and Good Housekeeping Program for the site-specific facilities and activities. The goal of this minimum control measure is to reduce the amount of pollutant runoff from the University's facilities and day-to-day operations. Employee training (summarized in section 3.0) and best management practice implementation are required to fulfill this requirement.

3.4.1 Inventory and Map of Operated Facilities

CSU, Chico's facilities include buildings, landscaped areas, parking lots and structures, sidewalks, a maintenance yard, recreational areas, and sports stadiums. For the purpose of this Plan all land that is owned by the University is considered the "operated facility". A map of the operated facility can be found in Appendix C.

3.4.2 Facility Assessment and Inspections

Assessments (site evaluations) were performed to locate potential pollutant hot spots. At a minimum, these hot spot locations must include maintenance yards, hazardous waste facilities, and fuel storage locations. These types of facilities are all located within the boundaries of the Facilities Management and Services (FMS) maintenance yard. A facility assessment deemed FMS to be the sole hot spot within the University's boundaries. Information regarding the potential sources of pollution at the FMS yard can be found in the University's Spill Prevention, Control, and Countermeasures Plan and the University's Hazardous Materials Business Plan. A Site Evaluation Form can be found in Appendix E.

Quarterly inspections of the FMS yard will be performed to ensure materials and equipment are clean and orderly, to minimize the potential for pollutant discharge, and to ensure implementation of appropriate BMPs. All other non-hotspot locations will be inspected on an annual basis. If deficiencies are identified, corrective action(s) will be taken. A visual observation of the discharge point will be made during the inspection process. Where discharges are observed any observed problems (color, foam, sheen, turbidity) will be recorded and traced to pollutant source and remediated within seven (7) days. A Hot Spot Inspection Form can be found in Appendix F.

Given the reoccurring nature of activities on campus, the University does not foresee hot spot locations to change from year to year. However, in addition to hot spot inspections, an annual assessment of all operated facilities will be performed to determine their potential to impact surface waters. This will be a formal process utilizing a Site Evaluation Form; however, continuous monitoring is done by staff who walk the facility daily and are trained to notify and report any problems or sources of potential stormwater impact. A summary of facility inspection and assessment activities is summarized in Table 3.2.

Table 3.2 Summary of facility inspections and assessments performed on campus

Type	Location	Frequency
Inspection	FMS Yard	Quarterly
Inspection	All locations	Annually
Assessment	All locations	Annually

3.4.3 Storm Drain Assessment, Prioritization, and Maintenance

Facilities Management and Services plumbers have institutional knowledge on which storm drains and drainage structures accumulate excessive amounts of trash and debris, collect runoff from drainage areas with exposed soil, and/or regularly backup. Based on their knowledge, some drains and structures are considered "high priority'. All other storm drains and structures are considered "non-high priority". A map of high priority storm drains and structures can be found in Appendix G. Prior to seasonal rain, a work order is produced to inspect and clean all high priority storm drains and structures.

A procedure is in place to dewater and dispose of materials extracted from catch basins. This procedure ensures water removed during the catch basin cleaning process and waste material will not renter the storm drain system. The procedure is as follows:

- All larger sized green waste and garbage is removed by hand or shovel and disposed of, respectively, in a green waste bin or trash receptacle.
- A Vac-tron truck mounted suction device is then used to remove leftover green waste, mud and debris (sludge).
- The Vac-tron is then hauled to the University Farm where the sludge is dumped into an area away from any water sources.
- The material is dried then utilized as topsoil around the Farm.

3.4.4 BMPs for Operations and Maintenance Activities

Operations and maintenance activities fall into one of the following categories:

- Custodial
- Grounds and Landscaping
- Facility maintenance
- Vehicle and equipment fueling, maintenance, and storage

An operations and maintenance (O&M) activity assessment identified O&M activities on campus which may contribute to stormwater pollution. To prepare the list of potential pollutant sources from operations and maintenance activities, CSU, Chico staff reviewed information on historic spills, utilized knowledge of day-today operations, and best professional judgement. Operations and maintenance activities and the pollutants which may be associated with each activity are summarized in Table. 3.3.

Best management practices have been developed and implemented to reduce pollutants from these listed activities. BMP's for operations and maintenance activities will be inspected quarterly. This will be done by inspecting a random section of the campus grounds. Due to the nature of these reoccurring activities the effectiveness of the BMPs are not expected to change from year to year, however BMPs will be evaluated annually.

A summary of these BMP inspections and evaluations is summarized in Table 3.4. Operations and Maintenance Best Management Practice Inspection Form can be found in Appendix H; an Evaluation Form in Appendix I of this plan.

Table 3.3 Summary of O&M Activities which may cause Polluted Runoff and Associated Pollutants

O&M Activities	Associated Pollutants
Building maintenance	Wash water, paint chips, cleaning products, dirt and sediment
Construction activities	Concrete, drywall, paint, sediment, gasoline, diesel
Equipment storage	Cleaning compounds, diesel, paint, hazardous materials
Fleet maintenance and repair	Oil, grease, litter, heavy metals
Grounds maintenance	Organic pollutants, debris, cleaning compounds, diesel, hazardous materials
Landscaping	Green waste, fuel, oil, fertilizers, herbicides, nutrients, sediment
Outdoor storage of raw materials	Sand, asphalt, soil, heavy metals
Painting	Paint, rinse water, thinner
Solid waste/garbage containers	Litter, debris, organic materials
Vehicle fueling	Diesel, gasoline
Vehicle and equipment washing	Cleaning products, oil, grease, vehicular fluids

Table 3.4 Summary of BMP Inspections and Assessments Performed on Campus

Type	Frequency
Inspection	Quarterly
Evaluation	Annually

3.4.5 Pesticide, Herbicide, and Fertilizer Application and New Landscape Design and Maintenance Management

The University will focus on pollution prevention, source control BMPs, and landscape design and maintenance to reduce the amount of pesticides, herbicides, and fertilizers used. The University has reduced the number of acres of turf which needs maintenance. This has led to a reduction in the amount of mowing needed and the amount of water, pesticides, herbicides, and fertilizers used. The University has also brought about changes in the design of the spaces to highlight native and drought tolerant plants. A breakdown of approximate landscape area use is summarized in Table 3.5.

The University's Manager of Grounds and Landscaping reviews the pesticides, herbicides, and fertilizers used on campus to evaluate their effectiveness and look for opportunities to reduce their use. All our applicators hold a Qualified Applicators Certificate administered by California's Department of Pesticide Regulation.

Table 3.5 Landscape Area Use

Landscape Type	Acreage
Landscape	85
Hardscape	41
Lawns/turfs	33
Shrub beds	7
Bioswales	0.4

In addition, grounds crew are trained on an annual basis on stormwater issues and BMPs. Topics covered include:

- Keep clippings and leaves away from waterways and out of the street using mulching, composting, or landfilling;
- Preventing application of pesticides and fertilizers when two (2) or more consecutive days with greater than 50% change of rainfall are predicted;
- Prohibiting application within five (5) feet of pavement, and 25-feet of a storm drain inlet, or 50-feet of a water body;
- Properly disposing of unused pesticides, herbicides and fertilizers (a comprehensive waste management program is managed by EHS that includes pesticides, herbicides, and fertilizers); and
- Minimizing irrigation runoff.

3.5 Construction Site Runoff Control Program

As a permitted facility, the University must develop, implement, and enforce a Construction Site Runoff Program. The goal of this minimum control measure is to prevent sediment, construction materials, and wastes from leaving construction sites and entering the stormwater drainage system. Contract language is required to ensure in-house construction operators and outside contractors comply with the State's Construction General Permit and implement appropriate BMPs. These requirements must be met by all projects that disturb one or more acres of soil or that disturb less than one acre but are part of a larger common plan, development, or sale.

Appropriate contract language has been added to capital projects as the California State University Chancellors Office level. Locally, it is included in the building permit system to ensure contractors of smaller projects are aware of the requirements.

3.6 Post Construction Stormwater Management Program

Lastly, as a minimum control measure, the University must develop a Post Construction Stormwater Management Program. The goal of this program is to reduce discharges of post construction stormwater runoff from new development and redevelopment areas. To comply with these requirements, CSU, Chico has adopted the requirements under the guidance of the Office of the Chancellor of the CSU system.

The CSU Guidance Document for Post Construction BMPs can be found in Appendix J.

4.0 PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT PLAN

In addition to the six (6) minimum control measures (Programs) listed above, the Small MS4 General Permit also requires the development of a Program Effectiveness Assessment and Improvement Plan (PEIAP) The purpose of the PEAIP is to track short and long-term progress of the stormwater program and to make modifications where necessary.

Appendix K of this document outlines the PEAIP.

5.0 TRASH AMENDMENTS

The Trash Amendment (Order 13383) established a statewide water quality objective for trash and a prohibition of trash discharge, or deposition where it may be discharged, to surface waters. This amendment applies to all NPDES MS4 permits including non-traditional permittees such as universities. Through this order the SWRCB requires the University to determine and report locations and land uses within their jurisdictional boundaries that generate substantial amount of trash and create an implementation plan to achieve full capture equivalency.

Appendix L of this document contains the University's track determination letter, Trash Implementation Plan, and a baseline trash generation map.

6.0 RECORDKEEPING AND REPORTING

6.1 Reporting

An annual report is submitted to State Water Resources Control Board via their SMARTS Program by October 15th of each year. The information provided in these annual reports will be a summary of the past year's activities (on a fiscal year schedule from July 1st – June 30th). The report must certify compliance will all requirements of the University's permit. If the University is unable to certify compliance with a requirement, a reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance must be submitted via SMARTS.

6.2 Recordkeeping

Documentation retention is necessary to support the annual report to SMARTS. The University will keep records for a minimum of three (3) years.

Statement of Adequate Legal Authority
General Permit for Waste Discharge Requirements for
Storm Water Discharges from
Small Municipal Separate Storm Sewer Systems (MS4s), Order No 2013-00001-DWQ, NPDES No. CAS000004

I, J. Marvin Pratt, Authorized Signatory, representing California State University, Chico, hereby state on behalf of the University that I have read the requirements of the General Permit for Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), Order No 2013-00001-DWQ, NPDES No. CAS000004, consulted with the appropriate University staff, and determined that the University has the authority to adequately carry out the requirements for a Non-traditional Small Municipal Separate Storm Sewer System as described in Sections A, B, C, D, F, G, H, I and J of the Permit Order within the jurisdictional areas shown on the Boundary Map submitted by the University to the Storm Water Multiple Application and Report Tracking System (SMARTS).


[Signature]

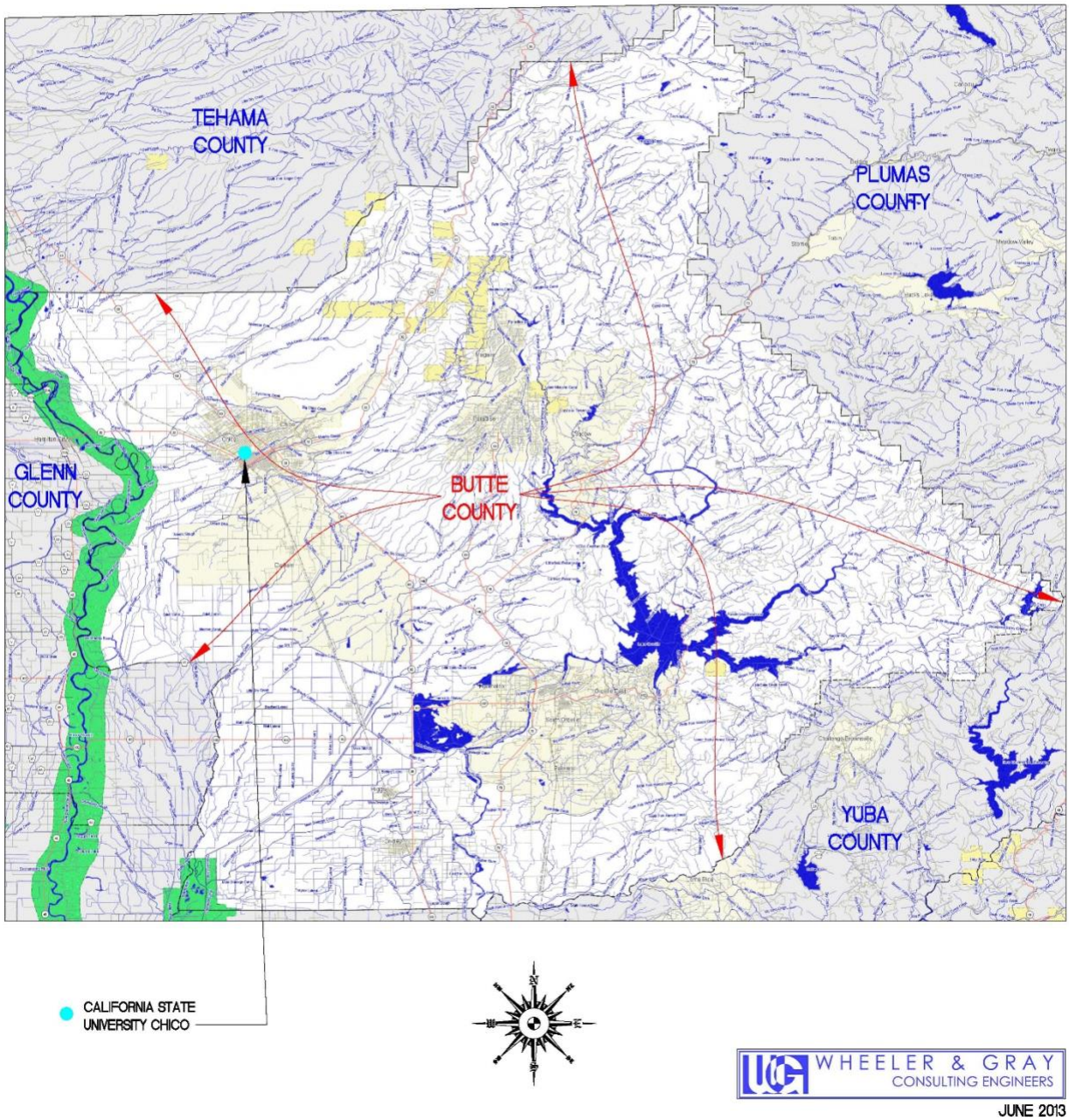
Date: May 26, 2015

J. Marvin Pratt
[Name], Authorized Signatory for
California State University, Chico

CALIFORNIA STATE UNIVERSITY CHICO

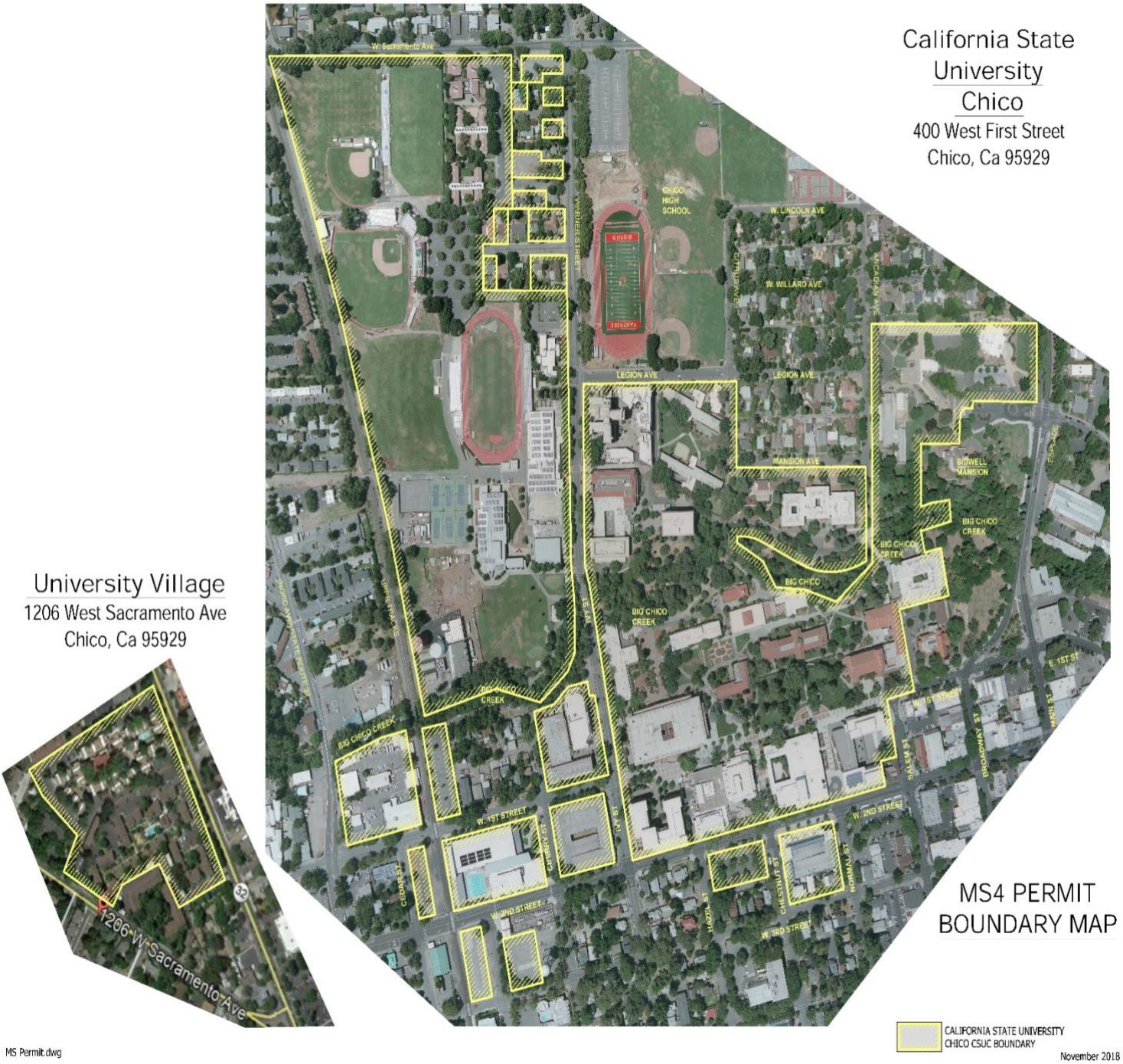
400 WEST FIRST STREET
CHICO, CA 95929

BUTTE COUNTY
PHASE I MS4 LIMITS



WHEELER & GRAY
CONSULTING ENGINEERS

JUNE 2013


California State University Chico
400 West First Street
Chico, Ca 95929
University Village
1206 West Sacramento Ave
Chico, Ca 95929
1206 W Sacramento Ave
W. Sacramento Ave
CHICO HIGH SCHOOL
W. LINCOLN AVE
W. WILLARD AVE
LEGION AVE
MANSION AVE
BIDWELL MANSION
BIG CHICO CREEK
W. 1ST STREET
W. 2ND STREET
W. 3RD STREET
E. 1ST ST
MAIN ST
BROADWAY ST
STATE ST
MS4 PERMIT BOUNDARY MAP
CALIFORNIA STATE UNIVERSITY CHICO CSUC BOUNDARY
November 2018
MS Permit.dwg


REFERENCE ONLY
STORM DRAIN
Indicates assumed outfall to Big Chico Creek based on previous maps
Indicates known directional flow
as of 10.22.19

Department of Environmental Health & Safety

Site Evaluation Form (for Hot Spots)

Name or Description of Location:	
Date:	Assessed By:

A. VEHICLE OPERATIONS ☐ N/A (Skip to Part B)	
A1. Types of vehicles: ☐ Fleet vehicles ☐ School buses ☐ Equipment ☐ Oher _____	
A2. Vehicle activities (circle all that apply): ☐ Maintained ☐ Repaired ☐ Fueled ☐ Washed ☐ Stored	○
A3. Are vehicles stored and/or repaired outside? ☐ Yes ☐ No If yes, is there a runoff diversion methods? ☐ Yes ☐ No	○
A4. Is there evidence of spills/leakage from vehicles? ☐ Yes ☐ No	○
A5. Are uncovered outdoor fueling areas present? ☐ Yes ☐ No	○
A6. Are fueling areas directly connected to storm drains? ☐ Yes ☐ No	○
A7. Are vehicles and/or equipment washed outdoor? ☐ Yes ☐ No If yes, does the area discharge to the storm drain? ☐ Yes ☐ No	○

B. OUTDOOR MATERIALS ☐ N/A (Skip to part C)	
B1. Are loading/unloading operations present? ☐ Yes ☐ No If yes, are they uncovered and draining towards a storm drain inlet? ☐ Yes ☐ No	○
B2. Are materials stored outside? ☐ Yes ☐ No If yes, where are they stored? ☐ Grass/dirt area ☐ Concrete/asphalt ☐ Bermed area	○
B3. Is the storage area directly or indirectly connected to a storm drain? ☐ Yes ☐ No	○
B4. Is staining or discoloration around the area visible? ☐ Yes ☐ No	○
B5. Does outdoor storage area lack a cover? ☐ Yes ☐ No	○
B6. Are liquid materials stored without secondary containment? ☐ Yes ☐ No	○
B7. Are storage containers missing labels or in poor condition? ☐ Yes ☐ No	○

C. WASTE MANAGEMENT ☐ N/A (Skip to Part D)	
C1. Types of waste: ☐ Garbage ☐ Construction ☐ Hazardous ☐ Green	
C2. Is the dumpster properly maintained? ☐ Yes ☐ No	○
C3. Is the dumpster near a storm drain inlet or waterbody? ☐ Yes ☐ No If yes, are there runoff diversion methods? ☐ Yes ☐ No	○

D. BUILDING CONDITION ☐ N/A (skip to part E)	
D1. Condition of building surfaces: ☐ Clean ☐ Stained ☐ Dirty ☐ Damaged	○

E. PARKING AREAS ☐ N/A (skip to part E)	
E1. Condition of parking lot: ☐ Clean ☐ Stained ☐ Dirty ☐ Damaged Surface material: ☐ Paved/concrete ☐ Gravel ☐ Permeable	○
E2. Do downspouts discharge to impervious surfaces? ☐ Yes ☐ No Are downspouts directly connected to storm drains? ☐ Yes ☐ No	○
E3. Evidence of poor cleaning practices (stains leading to storm drain)? ☐ Yes ☐ No	○

F. TURF/LANDSCAPED AREAS ☐ N/A (skip to part F)	
F1. Percent of site with: Forest canopy ___% Landscaping ___% Bare Soil ___%	○
F2. Rate the turf management status: ☐ High ☐ Medium ☐ Low	○
F3. Evidence of permanent irrigation or "non-target" irrigation? ☐ Yes ☐ No	○
F4. Do landscaped areas drain to the storm drain system? ☐ Yes ☐ No	○
F5. Do landscape plants accumulate organic matter on impervious surfaces? ☐ Yes ☐ No	○

HOTSPOT STATUS

☐ Not a hotspot (>5 circles)
☐ Potential hotspot (5 to 10 circles)
☐ Confirmed hotspot (10 to 15 circles)
☐ Severe hotspot (>15 circles)

Department of Environmental Health & Safety

Hotspot Site Inspection

Name or description of location:	
Date:	Inspected by:

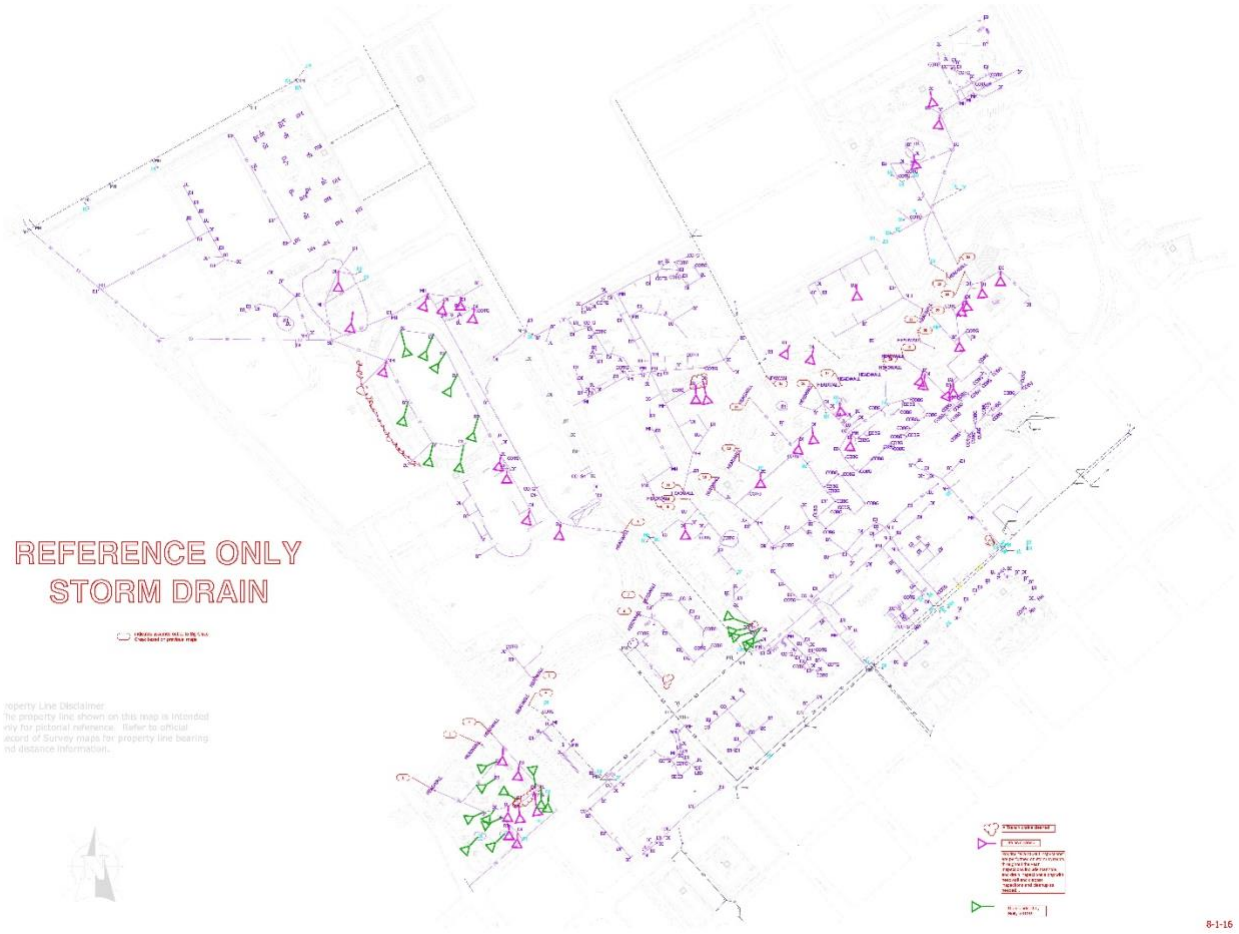
I. General Information	
Weather at time of inspection:	☐ Clear ☐ Partially cloudy ☐ Overcast ☐ Raining
Estimated time since last rain event:	
Locations inspected include:	☐ Waste storage area ☐ Dumpster area ☐ Fueling area ☐ Vehicle maintenance ☐ Materials storage ☐ Loading/unloading
Photos Taken:	☐ Yes ☐ No If yes, reference IDs:

II. Facility Visual Observations	
Any surface stains?	☐ Yes ☐ No
Evidence of sediment, sand, or mud on pavement?	☐ Yes ☐ No
Evidence of trash or litter?	☐ Yes ☐ No
Evidence of improperly stored materials that may release pollutants?	☐ Yes ☐ No
Evidence of missing or inadequate BMPs?	☐ Yes ☐ No
Evidence of spills?	☐ Yes ☐ No
Evidence of potential or actual discharge of pollutants?	☐ Yes ☐ No

III. Discharge Visual Observations	☐ N/A (if no discharge)
Floating material	☐ Yes ☐ No
Settled solids	☐ Yes ☐ No
Suspended solids	☐ Yes ☐ No
Oil sheen	☐ Yes ☐ No
Discoloration	☐ Yes ☐ No
Turbidity	☐ Yes ☐ No
Odor	☐ Yes ☐ No
Foam	☐ Yes ☐ No

IV. Deficiencies

V. Corrective Actions


REFERENCE ONLY
STORM DRAIN
8-1-16

Department of Environmental Health & Safety

Operations & Maintenance Best Management Practices Inspection

Description of location (building numbers, cross streets, etc.):	
Date:	Inspected by:

I. General Information	
Weather at time of inspection:	☐ Clear ☐ Partially cloudy ☐ Overcast ☐ Raining
Estimated time since last rain event:	
Types of facilities inspected:	
Photos Taken:	☐ Yes ☐ No How many? If yes, reference IDs:

II. O&M Activity BMP's – use Appendix G for reference				
C01	Wash water disposal	☐ Good	☐ Needs improvement	☐ N/A
C02	Cleaning products disposal	☐ Good	☐ Needs improvement	☐ N/A
C03	Floor stripping and waxing waste disposal	☐ Good	☐ Needs improvement	☐ N/A
G05	Chemical and hazardous waste disposal	☐ Good	☐ Needs improvement	☐ N/A
G06	Material, waste, and chemical storage	☐ Good	☐ Needs improvement	☐ N/A
G07	Litter reduction	☐ Good	☐ Needs improvement	☐ N/A
G08	Outdoor trash receptacle management	☐ Good	☐ Needs improvement	☐ N/A
L01	Incidental runoff prevention/landscape irrigation	☐ Good	☐ Needs improvement	☐ N/A
L02	Grass clippings and leaf litter disposal	☐ Good	☐ Needs improvement	☐ N/A
L03	Fertilizer, pesticide, and herbicide management	☐ Good	☐ Needs improvement	☐ N/A
L04	Fertilizer application	☐ Good	☐ Needs improvement	☐ N/A
L05	Sediment control	☐ Good	☐ Needs improvement	☐ N/A
M01	Pressure washing water disposal	☐ Good	☐ Needs improvement	☐ N/A
M02	Paint and solvent cleanup and disposal	☐ Good	☐ Needs improvement	☐ N/A
M03	Concrete waste management	☐ Good	☐ Needs improvement	☐ N/A
M04	Storm drain maintenance	☐ Good	☐ Needs improvement	☐ N/A
V01	Fuel storage	☐ Good	☐ Needs improvement	☐ N/A
V02	Vehicle and equipment fueling procedures	☐ Good	☐ Needs improvement	☐ N/A
V03	Vehicle wash water disposal	☐ Good	☐ Needs improvement	☐ N/A
V04	Vehicle and equipment storage	☐ Good	☐ Needs improvement	☐ N/A
V05	Vehicle maintenance procedures	☐ Good	☐ Needs improvement	☐ N/A

III. Specific departments notes

IV. BMP or Corrective Action Requirements

Department of Environmental Health & Safety

Operations & Maintenance BMP Evaluation

Date:	Inspected by:

I. General Information	
Weather at time of inspection:	☐ Clear ☐ Partially cloudy ☐ Overcast ☐ Raining
Estimated time since last rain event:	
Photos Taken:	☐ Yes ☐ No How many? If yes, reference IDs:

II. Visual Observations - Creek	Upstream	Downstream
Floating material	☐ Yes ☐ No	☐ Yes ☐ No
Suspended solids	☐ Yes ☐ No	☐ Yes ☐ No
Oil sheen	☐ Yes ☐ No	☐ Yes ☐ No
Discoloration	☐ Yes ☐ No	☐ Yes ☐ No
Turbidity	☐ Yes ☐ No	☐ Yes ☐ No
Odor	☐ Yes ☐ No	☐ Yes ☐ No
Foam	☐ Yes ☐ No	☐ Yes ☐ No

III. Visual Observations - Outfalls	
Outfall #	Source of Discharge:
Outfall #	Source of Discharge:
Outfall #	Source of Discharge:
Outfall #	Source of Discharge:
Outfall #	Source of Discharge:

IV. Notes

_____

_____

_____

_____

CALIFORNIA STATE UNIVERSITY

Guidance Document
Post Construction BMPs

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)
Phase II MS4 Permit

NOVEMBER 14, 2014

GUIDANCE

For Design and Development of Phase II Small Municipal Separate Storm Sewer System (MS4) Post Construction Best Management Practices (BMP) Requirements for California State University Campuses

I. EXECUTIVE SUMMARY

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B. Requirements for Non-Traditional MS4s
C. Structural Post Construction Best Management Practices
D. Non-Structural Post Construction Best Management Practices
E. Goals

II. PRINCIPLES FOR DESIGN OF STRUCTURAL BMPs

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B. Alternatives
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D. Examples

III. PRINCIPLES FOR DEVELOPMENT AND IMPLEMENTATION OF POST CONSTRUCTION NON-STRUCTURAL BMPS

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I. EXECUTIVE SUMMARY

A. Adoption and Designations

In February, 2013 the State Water Resources Board adopted a renewed Phase II General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). Phase II Small MS4s are not regulated under the municipal Phase I regulations. The permit became effective on July 1, 2013. The permit designates most California State University campuses as "Non-Traditional" MS4s. These designations can be found in Attachment B of the permit. Traditional MS4s are cities, counties and drainage and flood control districts that own and operate surface and sub-surface storm drain systems. Non-traditional MS4s are operators of substantial storm drain systems that are owned by state or federal government entities. Requirements specific to Non-traditional MS4s are contained in Sections A, B, C, D and F of the permit order.

For CSU campuses the permit is self-governing. It is the responsibility of the campus to report compliance efforts and certify compliance using the State Water Board's Stormwater Multi-Application Reporting and Tracking System (SMARTS). Compliance can also be monitored by the public at large.

B. Requirements for Non-Traditional MS4s

Requirements in the permit order are phased in by year over the term of the permit, which is five years. During Year 2 of the permit Non-Traditional MS4s are required to implement a Post Construction Storm Water Management Program (SWMP). Post-Construction Storm Water Management Programming is a combination of structural and non-structural Best Management Practices (BMPs).

C. Structural Post Construction Best Management Practices

Structural BMPs function by storing or detaining runoff so that storm-water constituents settle out or are filtered and trapped by underlying soil or media. Basic mechanisms for removal of constituents are gravity settling, infiltration of soluble nutrients through the soil profile or filter media, or biological and chemical processes. Structural BMPs might use one or more of these mechanisms to achieve constituent removal from storm-water. Structural BMPs also retain runoff to reduce peak flows, which decreases hydro-modification downstream. Structural BMPs are permanent improvements and are designed integrally with a project, such as bio-swales, catch basin filters and permeable paving.

D. Non-Structural Post Construction Best Management Practices

Non-structural BMPs are typically "source control" measures, designed to reduce the level of contaminants and their concentrations in stormwater runoff. Non-structural BMPs are such measures as literature and signage that encourage facility users to eliminate non-stormwater discharges into the storm drain system and include maintenance programs, spill prevention plans and street sweeping.

E. Goals

This document is intended to provide California State University campuses with system-wide guidance for design, implementation, operation and maintenance of post-construction BMP elements. This document offers guidance to campus design and planning staff and maintenance staff to:

- Comply with the permit requirements,
- Develop campus design practices and principles that optimizes project costs and site impacts of

structural BMPs,

- Develop principles for development of non-structural BMPs that use existing campus programs and materials to the maximum extent applicable.
- Establish consistency across the CSU system for MS4 permit compliance.

II. PRINCIPLES FOR DESIGN OF POST CONSTRUCTION STRUCTURAL BMPS

A. Permit Requirements

Section F.5.g of the permit divides requirements into four categories. They are:

1) Site Design Measures (Section F.5.g.1) for projects that create or replace between 2,500 square feet and 5,000 square feet of impervious surface,
2) Low Impact Development (LID) Design Standards (Section F.5.g.2) for projects that create or replace more than 5,000 square feet of impervious surface.
3) Alternative Post-Construction Storm Water Management Programs (Section F.5.g.3) for multi-benefit projects, which include water supply, flood control and drainage, habitat, open space preservation recreation and climate change.
4) Operation and Maintenance (O&M) of Post-Construction Storm Water Management Measures for new development projects, which requires a verification program to ensure BMPs are properly operated and maintained.

There are additional requirements, conditions and exclusions for road projects that create 5,000 square feet or more of new impervious surface. These are discussed in more detail in following paragraphs.

B. Compliance Options

Understanding the requirements of the permit is critical to designing economical structural BMPs that meet the requirements of the permit.

Projects 2,500 Square Feet to 5,000 Square Feet (F.5.g.1 - Site Design Measures)

The first level of projects that are required to include post construction BMPs are projects covering areas of at least 2,500 square feet and not more than 5,000 square feet. These projects are required to comply with the State Water Board SMARTS Post-Construction Calculator (*http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_app_21.xls*), or equivalent, to quantify the runoff reduction resulting from implementation of site design measures.

The Post Construction Calculator is an Excel® spreadsheet that accepts input of project data and returns options for measures that will re-create the pre-project hydrologic site conditions. The goal is to achieve no increase in runoff from the project site. The options provided by the calculator can be extensive and costly and the calculator ignores specific site conditions, and off-site conditions, that may provide mitigation that satisfies the permit requirements. For these reasons the Calculator is not always the best tool for permit compliance for projects of this size.

The permit allows the use of an "equivalent" method to quantify runoff reduction. This equivalent can be a simple hydrologic calculation based on an 85th percentile storm (the storm frequency that includes 85% of all storm events) and using basic runoff coefficients. For physical plant and facilities managers and directors who are responsible for maintenance work, this calculation can be done once and then applied to future projects with adjustments for project size and other factors.

Projects 5,000 Square Feet & Larger (F.5.g.2 - Low Impact Development Design Standards)

For projects that create or replace 5,000 square feet or more of impervious surface the permit allows four specific numeric sizing criteria – two volume based and two flow based – from which to choose. They are as follows:

(1) Volumetric Criteria:

a) The maximized capture storm water volume for the tributary area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) pages 175-178 (that is, approximately the 85th percentile 24-hour storm runoff event); or

b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology in Section 5 of CASQA's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

(2) Flow-based Criteria

a) The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or

b) The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records.

The most direct method above is Option a) under 2) Flow-based Criteria. This method requires no further research and no references. It is also unlikely any of the other options will produce significant cost savings because the numerical differences will be small and there will be no discernable size reductions in BMPs.

Volume based solutions require dedication of land for storage of storm water. Flow based solutions can be integrated into landscaped areas, parking surface with permeable material and other site elements.

Projects larger than 5,000 square feet are sub-divided into two categories. They are:

1) Projects that increase impervious surfaces by 50% or more of the project site.

   For these projects, runoff and pollutant reduction is required for all impervious surfaces within the project site "to the extent feasible" from all impervious surfaces.*

2) Projects that increase impervious surfaces by less than 50% of the project site.

For these projects, runoff and pollutant reduction is required only from new and/or replaced impervious surfaces.

* A pollutant is broadly defined as any agent that may cause or contribute to the degradation of water quality such that a condition of pollution or contamination is created or aggravated.

"To the extent feasible" is not defined in the permit and it is difficult to find a definition on the State Water Board's web site or the federal EPA's web site. In most cases, the closest matches found are variations of the phrase, such as "maximum extent practicable," "maximum extent feasible," and "technically feasible." In general, to the extent feasible should consider all factors, including technical feasibility, fiscal feasibility, public health risks, societal concerns, and social benefits. The criteria and factors used to determine this should be consistent and reasonable.

Alternative Post Construction Storm Water Management Program

The permit allows provides for compliance using projects having multiple benefits (see Permit Section F.5.g.3). This general option allows the campus to mitigate storm water quality effects on another part of campus and to combine mitigation requirements from multiple projects into one or more mitigation efforts.

In practice, this means that multiple small projects on a campus can be mitigated with a project on another part of the campus. For example, a recreation field or garden created in one part of a campus can be used to mitigate a project in another part of the campus. New building projects that include landscaping and that exceed their own mitigation requirements can be used for mitigation for other projects.

This will require advanced planning by the campus, but this work can be integrated into project planning and master planning. Non-traditional Phase II MS4 permittees are not required to create a campus-wide water quality management plan; however, mitigation must be tracked and recorded to show compliance and effectiveness.

Taken as a whole, the above narrative describes and the tool box provided in the permit for compliance for large and small projects. To take advantage of this tool box some basics during planning and design to be considered are:

- Begin site planning early. Site planning participants should include the architect/ designer, landscape architect and the designer of the site storm-water BMPs, which is usually a civil engineer. Ideally, the BMP designer should have experience in hydrology and hydraulics. This will facilitate comparison of the options, alternatives, adjustments and exceptions to the requirements.

- Identify common site elements that can be developed as BMPs for storm water treatment or retention system. These may include landscape buffers, seating areas, tree wells, pedestrian plazas and other elements.

- Use landscaping as structural BMPs. In most cases, projects will already include landscaping as site features.

- Keep runoff on the surface to the maximum extent possible. Surface drainage is slower and will increase time of concentration, which will decrease peak flows.

- Combine storm site drains with water quality management BMPs.
- Use small footprint BMPs when possible. Examples of this are:
  - Catch basin filters
    - Permeable pavers arranged in strips, such as walkways that are perpendicular to surface flow
  - Individual tree wells with functioning filter and infiltration systems.
- Use small changes in building/improvement locations to create spaces to increase BMP effectiveness. Examples of this are:
  - Shifting a building a few feet in one direction to create a flow path into which roof drainage can be conducted to allow surface flow
  - Raising a finish floor by small increments (inches) to create flow paths
- Avoid increasing site improvements footprint solely for BMP components.
- Use self-treating and self-retaining areas.
- Consult with campus maintenance as part of planning and design process.
- The permit does not require that every drop of rainfall be treated and/or retained and it does not require treatment of the entire site if the increase in impervious area is less than 50%.
- Control runoff at the source when possible. Drainage system and control or treatment structure costs increase with distance from the source.
- Avoid underground treatment and storage systems. These usually have large footprints, have high construction costs and are expensive and inconvenient to maintain.
- Avoid one-size-fits-all design concepts, such as retaining the first three-quarters inch of runoff.
- Avoid "standard" or "typical" structural BMP details. Many of these have been developed by cities and counties and are included in their SUSMP criteria, but are not necessary to develop effective BMPs under the Phase II MS4 permit.

III. PRINCIPLES FOR DEVELOPMENT OF POST CONSTRUCTION NON-STRUCTURAL BMPS

Non-structural BMPs consist of processes, prohibitions, procedures, schedules of activities, etc., that prevent pollutants from contacting storm water discharges and authorized non–storm water discharges. They are generally considered low technology, but cost-effective measures.

Post Construction Non-structural BMPs fall into broad general categories. These include:

- Good Housekeeping
- Preventive Maintenance
- Spill Response (for any pollutant)
- Material Handling and Storage Procedures
- Employee Training
- Waste Handling and Recycling Procedures

- Record Keeping and Reporting
- Erosion Control and Site Stabilization Requirements
- Inspections
- Quality Assurance
- Public Outreach and Education

These categories apply across campuses for all facilities.

For many of the categories listed above, BMPs are already in place on California State University campuses. These include:

- Street Sweeping Schedules
- Storm Drain Maintenance Programs
- Sanitary Sewer Maintenance Programs
- Spill Prevention, Control and Counter-Measure (SPCC) Plans
- Equipment Maintenance Manuals and Programs
- Public Education and Outreach Efforts

These documents and plans can be adapted to the Post Construction Storm Water Management Program, which, in some case, can be as simple as changing the title of documents. In some cases, the only effort necessary is reporting or uploading plans and procedures to the State's SMARTS web site during prior to reporting deadlines.

The most efficient effort for producing non-structural BMPs is to use existing items as described above. Using BMP material common to other campuses leverages efforts across the CSU system. This can be new material produced by collaboration among campuses, or existing material that one or more campuses may already be using. For new projects, maintenance and operation manuals and materials may be produced by product suppliers or contractors. This effort can be added to construction contract document packages in either specifications or drawings.

The following are some general guidelines for developing post-construction BMPs that apply across all types of projects:

- Use Existing Campus-Created Content
- Adapt Content from other Recently Completed Projects
- Use Existing BMP Literature and Materials Created by Other Campuses
- Use Public Domain Material
- Use Materials Created by Phase I and other Phase II MS4s
- Adapt Content/Text from Equipment Operating and Maintenance Manuals

Using the guidelines each campus can minimize efforts to produce structural and post-construction BMPs and fully comply with the requirements of the MS4 permit.

IV. Resources and Links

More information, as well as some content, can be found at the following:

www.casqa.org

www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

JUNE 2015

CALIFORNIA STATE UNIVERSITY CHICO

Program Effectiveness Assessment and Improvement Plan

Prepared by

WHEELER & GRAY CONSULTING ENGINEERS, INC.
650 SIERRA MADRE VILLA, SUITE 300
PASADENA, CA 91107

Collaborative Project Partners

CALIFORNIA STATE UNIVERSITY – SOUTHERN CALIFORNIA USERS GROUP

- CSU Channel Islands
- CSU Dominguez Hills
- Cal State LA
- CSU Long Beach
- Cal Poly Pomona
- CSU San Bernardino

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1. Introduction

The Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit[1] (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 number of constituents that must be addressed, the co-mingling of flows within the drainage

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

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

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 PEAIP:

- 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.

END OF DOCUMENT

Appendix A

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 permitting authority, to obtain NPDES permit coverage for their stormwater discharges. Each

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

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.

TRACK DETERMINATION LETTER, TRASH IMPLEMENTATION PLAN AND BASELINE TRASH GENERATION MAP — APPENDIX L

California State University, Chico
Chico, California 95929-0019
Environmental Health and Safety
530-898-5126
Fax: 530-898-6511
www.csuchico.edu/ehs

October 16, 2017

California Water Boards
1001 I Street
Post Office Box 100
Sacramento, California 95812-0100

To Whom It May Concern,

This letter is to inform the California Water Boards that California State University, Chico (WDID 5R04M2000100) is selecting Compliance Track 1 of the Trash Policy requirements. Please see the Jurisdictional Map uploaded in this account.

Sincerely,

Marvin Pratt, MPA CHMM
Director of Environmental Health and Safety
California State University, Chico

The California State University

California State University, Chico
Chico, California 95929-0019
Environmental Health and Safety
530-898-5126
Fax: 530-898-6511
www.csuchico.edu/ehs

November 29, 2018

California Water Boards
1001 I Street
Post Office Box 100
Sacramento, California 95812-0100

To Whom It May Concern,

This letter is to inform the California State Water Resources Control Board that California State University, Chico (WDID 5R04M2000100) has decided to change tracks (from Track 1 to Track 2) for the Statewide Trash Amendment.

Visual Trash Assessments were performed. During these surveys it was brought to our attention that the levels of trash generated on campus is low. This is due to the high frequency to which street-weeping occurs and the daily custodial and grounds activities that occur on campus. We believe that other control measures in addition to pre-existing best management practices will be able to achieve full capture equivalency. Because of this it is more logical for the University to comply with Track 2 requirements.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Marvin Pratt, MPA CHMM
Director of Environmental Health and Safety
California State University, Chico

The California State University

1.0 INTRODUCTION

The purpose of this Implementation Plan is to identify the approach to achieve full capture system equivalency as required by Track 2 of the Statewide Trash Amendments. This Plan may be modified as needed as new information may be obtained.

2.0 MONITORING PLAN

To identify the locations where trash control is needed, On-Land Visual Trash Assessments (OVTAs) were utilized. Priority land-use areas (specifically industrial and high density residential) and other areas deemed to have the potential to generate trash (the University's Stadium, loading docks, and dumpster areas) were surveyed.

2.2 BASELINE ASSESSMENTS

On the 1st, 6th, and 27th of November 2018, a total of sixteen (16) Baseline OVTAs were performed by two (2) trained personnel. On each date, there was no measurable rainfall in the last 48-hours and all were done prior to reoccurring trash control measures such as street sweeping.

Of the sixteen (16) assessments, ten (10) areas were categorized as Type A (Low Trash Level), five (5) were categorized as Type B (Moderate Trash Level), and one (1) was categorized as Type C (High Trash Level). Attached is a summary of all OVTA results showing Map ID, area type and associated trash category of each surveyed area. Pictures of each area were taken.

2.3 PROGRESS ASSESSEMENTS

Twice a year (once in the dry season and once in the wet) Progress OVTAs will be performed. These will be done prior to measurable rainfall in the previous 48-hours and half-way between reoccurring control measures.

3.0 FULL CAPTURE SYSTEM EQUIVALENCY ATTAINMENT

A combination of institutional and source controls is anticipated to reduce trash loadings for Category B and C trash level areas and achieve the same removal rate as full-capture systems. Progress reports will be created to analyze effectiveness of these controls. An adaptive management approach will be utilized.

3.1 BEST MANAGEMENT PRACTICES

Best Management Practices (BMP), such as improved dumpster container management and additional cleanup will be administered.

3.2 EMPLOYEE TRAINING

Employee training will be amended to include topics on trash reduction strategies, specifically focusing on trash hotspot locations.

3.3 ON-LAND CLEANUPS

The University, through Associated Students Sustainability, executes eight (8) creek cleanups a year focusing on the portion of the Big Chico Creek that lies within the University's jurisdiction. The amount of trash removed in creek cleanups is recorded.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

J. Marvin Pratt, MPA CHMM
Director of Environmental Health and Safety
California State University, Chico