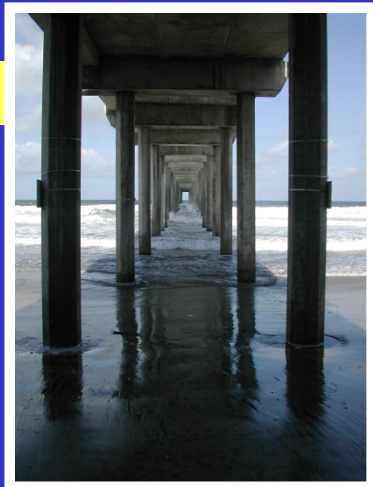
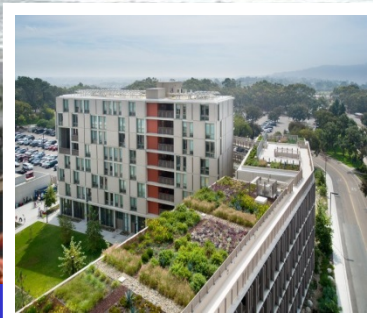


STORM WATER MANAGEMENT PLAN



for

UNIVERSITY OF CALIFORNIA
SAN DIEGO

Updated October 2016

UC San Diego

**University of California,
San Diego**

UC San Diego

**Storm Water
Management Plan**

Updated October 21, 2016

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ACRONYMS

| | |
|-----------------|---|
| BAS | Birch Aquarium at Scripps |
| BMP | Best Management Practice |
| CEQA | California Environmental Quality Act |
| COC | Constituent of Concern |
| CWA | Clean Water Act |
| EH&S | Environment, Health & Safety |
| EPA | Environmental Protection Agency |
| FD&C | Facilities Design & Construction |
| FLIP | Floating Instrument Platform |
| FM | Facilities Management |
| HDH | Housing, Dining & Hospitality |
| HS | Health Systems |
| LID | Low Impact Development |
| MC | UC San Diego Medical Center |
| MEP | Maximum Extent Practicable |
| MS4 | Municipal Separate Storm Sewer System |
| NPDES | National Pollutant Discharge Elimination System |
| PAHs | Polycyclic Aromatic Hydrocarbons |
| PEAIP | Program Effectiveness Assessment and Improvement Plan |
| P&CP | Physical and Community Planning |
| QSP | Qualified SWPPP Practitioner |
| RWQCB | Regional Water Quality Control Board |
| SIO | Scripps Institution of Oceanography |
| SF | Sports Facility |
| SWMP | Storm Water Management Plan |
| SWPPP | Storm Water Pollution Prevention Plan |
| UC | University of California |
| UCtr | University Center |

1.0 Introduction

1.01 Regulatory Background

This Storm Water Management Plan (SWMP) was prepared in accordance with the federal Environmental Protection Agency (EPA) Phase II storm water regulations, promulgated under the Clean Water Act (CWA) and incorporated into the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Order No. 2013-0001-DWG, NPDES No. CAS000004. UC San Diego obtained coverage under the revised Phase II Small MS4 General Permit as a Non-Traditional Permittee on July 1, 2013.

Section F of the Phase II Small MS4 General Permit establishes requirements for a storm water management program for non-traditional MS4s, such as universities and state and federal agencies, that are intended to improve the nation's waterways by reducing the quantity of pollutants that are picked up by storm water runoff and carried into storm water conveyance systems during storm events. Urban runoff is a leading cause of pollution of California's rivers, lakes, bays, and ocean. Common pollutants include: oil and grease from roadways and parking lots; pesticides and herbicides from landscaping; sediment from construction sites and erosion; metals and polycyclic aromatic hydrocarbons (PAHs) from vehicles; and litter and trash, such as cigarette butts, paper wrappers, and plastic bags/bottles. These pollutants can be carried into nearby waterways by storm water runoff, discouraging recreational use and negatively impacting natural ecosystems.

The Phase II Small MS4 General Permit requires operators of small MS4s to develop, implement, and enforce a storm water management program designed to:

- Reduce the discharge of pollutants to the "Maximum Extent Practicable" (MEP);
- Protect water quality; and
- Satisfy the appropriate water quality requirements of the CWA and Regional Water Quality Control Board (RWQCB) Basin Plans.

Minimum control measures required under the Phase II program include:

1. Public education and outreach on storm water pollution prevention;
2. Public involvement/participation;
3. Illicit discharge detection and elimination (discharges to storm water systems that are not composed entirely of rain water);
4. Pollution prevention/good housekeeping for municipal operations (e.g., source controls);
5. Construction site storm water runoff control; and
6. Post-construction site storm water management (e.g., Low Impact Development treatment controls)

In addition to the Phase II program described above, the western portion of the main UC San Diego campus (Scripps Institution of Oceanography) discharges seawater and storm water into a marine area that has been designated by the State Water Resources Control Board (SWRCB) as an “Area of Special Biological Significance” (ASBS 31). There are 34 ASBS along the coastline in California, two of which are in San Diego. The California Ocean Plan prohibits the discharge of waste into ASBS. This includes storm water runoff that contains pollutants. As a result, UC San Diego worked with the SWRCB to obtain an Exception to this Ocean Plan prohibition with conditions designed to protect the ASBS. An NPDES Industrial Wastewater permit was issued by the San Diego Regional Water Quality Control Board in February 2005 and renewed in November 2015 that incorporates these conditions for the seawater and storm water discharges at Scripps Institution of Oceanography (SIO).

This SWMP plan is intended to meet the requirements of this NPDES Industrial Wastewater permit. Under this program, a storm water outfall pipe that discharges onto the beach is monitored and analyzed for the California Ocean Plan constituents in the permit as well as for bacterial indicators and toxicity. In addition, the receiving water (Pacific Ocean) and sediment are monitored to determine if runoff from the campus is altering natural water quality. The analytical results are compared to the water quality objectives in the permit. Constituents that exceed the permit water quality objectives are further evaluated to identify potential sources (natural or anthropogenic). UC San Diego then evaluates existing source controls and/or treatment controls to determine if changes or additional controls can be implemented to reduce these constituents. The permit also specifically prohibits the discharge of dry weather flows (also referred to as “non-storm water discharges”) into the ASBS.

UC San Diego’s Nimitz Marine Facility in Point Loma and the Fleet Services Facility at the Campus Services Complex on the main campus must comply with the State General Industrial Stormwater Permit (revised IGP permit became effective on July 1, 2015). These facilities implement facility specific Storm Water Pollution Prevention Plans

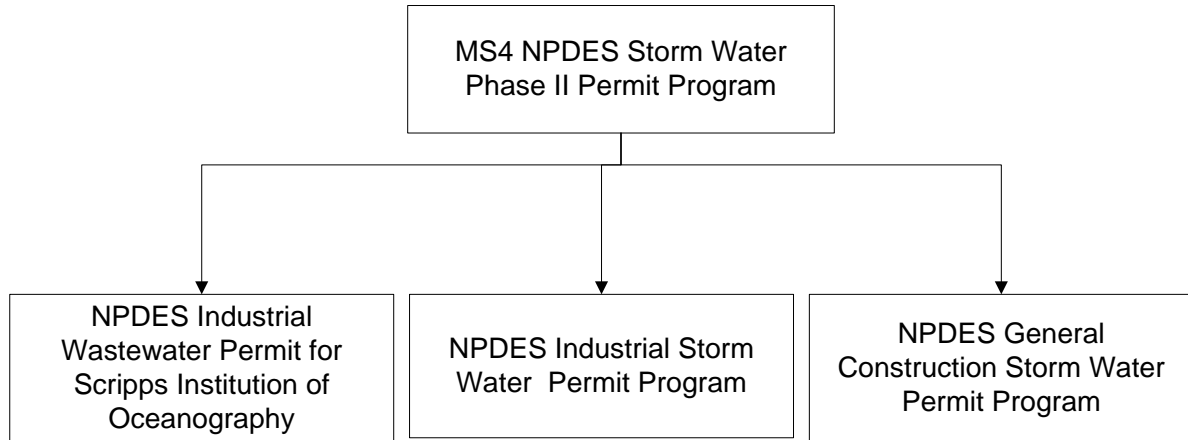
(SWPPP) and management measures to keep pollutants such as sediment, metals, oil and grease, trash, and non-storm water discharges (e.g., irrigation runoff and wash water, etc.) out of the storm water system. These programs include inspections and storm water monitoring (analyze storm water runoff for selected pollutants) to verify that the management measures are effective.

Lastly, construction projects at UC San Diego that disturb more than one acre must comply with the State Construction Storm Water Program requirements identified in the General Permit. This includes developing and implementing a site specific SWPPP which emphasizes the use of appropriately selected, correctly installed and maintained pollution reduction Best Management Practices (BMPs) that will prevent construction pollutants from contacting storm water and leaving the project site. The SWPPP for each project must:

- Identify pollutant sources associated with construction activities that may affect the quality of storm water discharges.
- Identify and prevent non-storm water discharges.
- Identify, construct, and implement storm water pollution prevention BMPs to reduce or eliminate pollutants in storm water discharges from the construction site, both during construction and after construction is completed.

Storm water runoff from the construction site must be monitored and analyzed based on the calculated risk level of the project.

Throughout the construction period, a qualified SWPPP Practitioner (QSP) conducts inspections and evaluations as detailed in the SWPPP, including but not limited to: weekly site inspections, quarterly site inspections, pre-rain event inspections within 24 hours prior to a rain event, post-rain event inspections within 24 hours after a rain event, every 24 hours during an extended rain event (lasting longer than one day), and maintenance inspections.



1.02 Purpose of the SWMP

This document has been developed to comply with the Phase II Small MS4 General Permit requirements and the SWMP requirements in the UCSD/SIO NPDES Industrial Wastewater permit.

The purpose of the SWMP is to:

- (1) Identify pollutant sources potentially affecting the quality and quantity of storm water discharges
- (2) Develop BMPs for operation and construction activities implemented by UC San Diego staff and contractors
- (3) Prevent non-storm water discharges throughout the MS4
- (4) Detect and eliminate illicit discharges and illegal connections to the MS4
- (5) Implement the management measures identified in the SWMP

This SWMP covers UC San Diego's main campus and its off-site facilities situated in urban areas.

1.03 SWMP Development Committee

The SWMP was developed with input from representatives from the following UC San Diego campus departments. The campus committee members ranged from departmental directors to operations personnel.

- Birch Aquarium at Scripps (BAS)
- Environment, Health, and Safety (EH&S)
- Facilities Design & Construction (FD&C)

- Facilities Management (FM)
- Housing, Dining, and Hospitality (HDH)
- UC San Diego Health Services (HS)
- Physical and Community Planning (P&CP)
- Scripps Institution of Oceanography (SIO)

2.0 Site Information

2.01 Facility Description

UC San Diego is one of ten UC campuses governed by the Regents of the University of California and is an internationally recognized public teaching and research institution.

The total average daily campus population for the main campus in La Jolla for 2015-2016 is approximately 47,300 (includes students, faculty, researchers and staff). There are an additional 15,000 (est.) including the off-site facilities.

This SWMP covers all facilities in urbanized areas owned and operated by UC San Diego. Facility operations vary widely and not all BMPs in this SWMP apply at each facility. Specific facility information is attached in Appendix A. In addition to UC San Diego's main campus, the following off-site facilities are situated in urban areas:

- UC San Diego Medical Center, Hillcrest
- Trade Street (UC San Diego Storehouse and Surplus Sales)
- Nimitz Marine Facility
- Elliott Field Station
- Mt. Soledad Research Laboratory

2.02 Facility Operation

UC San Diego employs maintenance, custodial, and grounds staff for daily operations. This includes building maintenance (cleaning, painting, and repairs), completion of departmental work requests, daily cleaning of buildings, grounds maintenance, small construction jobs, and various repair and maintenance activities. UC San Diego FM, HDH, and outside contractors perform electrical, plumbing, roofing, asphalt, exterior building painting, sewer line cleaning, utility repairs, and janitorial activities.

2.03 Climate and Rainfall

The prevailing winds and weather at the UC San Diego facilities are tempered by the Pacific Ocean, with the result that summers are cool and winters are mild. Daily temperatures for San Diego range between 70 and 85 degrees Fahrenheit (°F) in the summer and 55 to 65°F in the winter. Average total precipitation for San Diego is 10 inches annually. Eighty-five percent of the rainfall occurs from November through March.

3.0 Description of Potential Sources of Pollution

Information on past spills as well as knowledge of the daily operations on campus was used to identify potential sources of pollution.

BMPs developed to address these pollutant sources and activities are summarized below and described in the Minimum Control Measures.

Potential Pollutant Activity or Sources List

| Activity/Source | Potential Pollutants | BMP |
|--|--|-----|
| Outdoor material storage and outdoor work areas | Oil and grease, metals, sediment, dry weather flows, bacteria, trash and debris | A01 |
| Outdoor spills | Dry weather flows, cleaning products, oil and grease, hazardous materials, and vehicle fluids | A02 |
| Marine activities | Dry weather flows, oil and grease, metals, bacteria, paint, and sediment | A03 |
| Loading dock management | Hazardous materials, dry weather flows, metals, oil and grease, trash and litter, equipment fluids | A04 |
| Outdoor washing/cleaning. Includes equipment, vehicle, and boat washing/cleaning | Dry weather flows, total residual chlorine, various- cleaning compounds, oil and grease, equipment fluids, bacteria, paint chips, trash and debris, and sediment | B01 |
| Fueling operations | Oil and grease and fuel | B02 |
| Equipment, vehicle, and boat maintenance | Oil and grease, metals, paint, equipment fluids, and sediment | B03 |
| Trash management | Bacteria, oil and grease, and trash and debris | C01 |
| Hazardous materials management | Oil and grease, solvents, metals, and trash and debris | C02 |
| Hazardous waste management | Oil and grease, solvents, metals, and trash and debris | C03 |
| Onsite transportation of materials/waste | Metals, oil and grease, equipment fluids, solvents, and trash and debris | C04 |
| Food service management | Bacteria, oil and grease, dry weather flows, total residual chlorine, and trash and debris | C05 |
| Sanitary sewer overflows/ sewer line blockages | Bacteria and dry weather flows | C06 |
| Improper discharge into storm drains | Bacteria, oil and grease, sediment, dry weather flows, total residual chlorine, and trash and debris | D01 |
| Landscape management: irrigation runoff, erosion, | Dry weather flows, total residual chlorine, bacteria, metals, nutrients, pesticides, | D02 |

| Activity/Source | Potential Pollutants | BMP |
|---|---|--|
| green waste | fertilizers, sediment, and trash and debris | |
| Surface cleaning/pressure washing | Dry weather flows, total residual chlorine, bacteria, oil and grease, sediment, and trash and debris | D03 |
| Water utility line maintenance and repairs, fire hydrant and fire suppression system testing, water system flushing, and outdoor fountain, water tank, and emergency eyewash/shower maintenance | Dry weather flows and total residual chlorine, and bacteria | D04 D10 D11 D12 |
| Outdoor painting and sandblasting | Metals and paint chips | D05 |
| Non-storm water discharges / dry weather flows | Oil and grease, sediment, bacteria, total residual chlorine, various-cleaning products, fertilizers, and pesticides | D06 |
| Integrated pest management | Pesticides and dry weather flows | D07 |
| Building maintenance, repair or remodeling | Dry weather flows, hazardous materials, oil and grease, and trash and debris | D08 |
| Parking lot and storage area maintenance | Oil and grease, metals, vehicle fluids, sediment, and trash and debris | D09 |
| Construction activities | Dry weather flows, sediment, trash and debris | UC San Diego Division 1 specifications and/or project SWPPP BMPs |

| BMP | | Pollutants Addressed | | | | | | | | | | | | | | |
|-----|---|----------------------|--------|----------|----------------|--------------|----------|-------------------|---------------------|-------------------|--------------------|-------------------------|------------------|-----------|------------|-------------|
| | | Sediment | Metals | Bacteria | Trash & Debris | Oil & Grease | Solvents | Dry Weather Flows | Hazardous Materials | Cleaning Products | Paint/ Paint chips | Total Residual Chlorine | Equipment Fluids | Nutrients | Pesticides | Fertilizers |
| A01 | Housekeeping | Y | Y | Y | Y | Y | | Y | | | | | | | | |
| A02 | Spill Control & Clean up | | | | | Y | | Y | Y | Y | | Y | | | | |
| A03 | Marine Activities | Y | Y | Y | | Y | | Y | | | Y | | | | | |
| A04 | Loading Dock Management | | Y | | Y | Y | | Y | Y | | | Y | | | | |
| B01 | Outdoor Washing/ Cleaning | Y | Y | Y | Y | Y | | Y | | Y | Y | Y | | | | |
| B02 | Fueling Operations | | | | | Y | | | | | | Y | | | | |
| B03 | Equipment, Vehicle, & Boat Maintenance | Y | Y | | | Y | | | | | Y | Y | | | | |
| C01 | Trash Management | | | Y | Y | Y | | | | | | | | | | |
| C02 | Hazardous Materials Management | | Y | | Y | Y | Y | | | | | | | | | |
| C03 | Hazardous Waste Management | | Y | | Y | Y | Y | | | | | | | | | |
| C04 | Onsite Transportation of Materials/ Waste | | Y | | Y | Y | Y | | | | | Y | | | | |
| C05 | Food Service Management | | | Y | Y | Y | | Y | | | | Y | | | | |
| CO6 | Sanitary Sewer Overflows and Cleanup | | | Y | | | | Y | | | | | | | | |
| D01 | Storm Water Conveyance System Management | Y | | Y | Y | Y | | Y | | | | Y | | | | |
| D02 | Landscape Management | Y | Y | Y | Y | | | Y | | | | Y | | Y | Y | Y |
| D03 | Surface Cleaning/ Pressure Washing | Y | Y | Y | Y | Y | | Y | | | | Y | | | | |
| D04 | Fire Sprinkler and Hydrant Testing/ Flushing | | | Y | | | | Y | | | | Y | | | | |
| D05 | Outdoor Painting & Sandblasting | | Y | | | | | | | | Y | | | | | |
| D06 | Non-Storm Water Discharges/ Dry Weather Flows | Y | | Y | | Y | | | | | Y | | | | Y | Y |
| D07 | Integrated Pest Management | | | | | | | Y | | | | | | | Y | |
| D08 | Building Maintenance, Repairs, or Remodeling | | | | Y | Y | | Y | Y | | | | | | | |
| D09 | Parking Lot and Storage Area Management | Y | Y | | Y | Y | | | | | | Y | | | | |
| D10 | Maintenance on Equipment Containing Water | | | Y | | | | Y | | | | Y | | | | |
| D11 | Portable Water System Flushing | | | | | | | Y | | | | Y | | | | |
| D12 | Pools, Decorative Fountains, and Other Water Features | | | Y | | | | Y | | | | Y | | | | |

4.0 Minimum Control Measures

“Minimum Control Measures” is the term used by the EPA for the six MS4 program elements aimed at achieving improved water quality through NPDES Phase II requirements listed below:

1. Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Pollution Prevention / Good Housekeeping for Operations
5. Construction Site Storm Water Runoff Control
6. Post-construction Storm Water Management

The goal of the SWMP is to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) and to identify activities or structural improvements that help prevent or reduce pollutants and improve the quality of the storm water runoff. BMPs have been developed for the SWMP to reduce the discharge of pollutants to the storm drain system to the MEP. BMPs include source and treatment controls, operating procedures, and practices to prevent storm water pollution and protect the ocean and ASBS located adjacent to the UC San Diego campus.

The BMPs described in the Minimum Control Measures in this SWMP and the source control BMPs provided on UC San Diego’s storm water management program webpage “<http://blink.ucsd.edu/go/stormwater>” are to be implemented by UC San Diego staff, faculty, students, and outside contractors when they are performing the activities covered by these BMPs at UC San Diego. The steps outlined in each relevant BMP, or other proven techniques that reach the same goal, must be used to comply with storm water discharge regulations. These practices are applicable to outdoor work and storage area management; vehicle, equipment, and boat management; material and waste management (including food service management); and facilities and grounds management. For construction projects less than one acre at a UC San Diego facility, the management measures identified in UC San Diego’s Division 1 Specifications must be implemented. For construction projects greater than one acre, the BMPs in the project SWPPP must be implemented and the requirements of the General Construction Permit must be met.

UC San Diego’s SWMP is designed to be an adaptive program that evaluates the effectiveness of the six minimum control measures, on a recurring basis. This evaluation is critical to the storm water program framework, which uses the iterative approach of implementing controls, conducting assessments, and revising controls as necessary to improve the effectiveness of the program.

4.01 Education and Outreach Program

The goal of this program is to develop and distribute educational materials and to perform outreach to students, faculty, and staff to inform them about the causes of storm water pollution, the impact of urban runoff on the receiving waters (e.g., the ocean), and what they can do to prevent storm water pollution and dry weather flows.

The following management measures will be implemented to meet the Public Education and Outreach Program requirements in Section F.5.b of the Phase II Small MS4 General Permit.

Table 4.01. Education and Outreach Management Measures

| F.5.b. Education and Outreach Program | | Implementation Year | Responsible Department |
|--|--|----------------------------|-------------------------------|
| F.5.b.2 | Develop and begin implementation of storm water public education and outreach program. | 2 (FY 14/15) | EH&S |
| F.5.b.2 | Develop and implement a public education strategy that establishes education tasks based on water quality problems, target audiences and anticipated task effectiveness. This shall include the following: | 2 (FY 14/15) | EH&S |
| a. | Develop and implement a comprehensive education and outreach program. | 2 (FY 14/15) | EH&S |
| b. | Gauge level of awareness in target audiences and effectiveness of education tasks. | 2 (FY 14/15) | EH&S |
| c. | Develop and convey a storm water message that considers pollutants of concern, target audience, and water quality issues. | 2 (FY 14/15) | EH&S |
| d. | Develop and disseminate education materials to target audiences and translate as appropriate. | 2 (FY 14/15) | EH&S |

| F.5.b. Education and Outreach Program | | Implementation Year | Responsible Department |
|--|---|----------------------------|--|
| e. | Distribute educational materials. | 2 (FY 14/15) | EH&S, BAS |
| f. | Provide guidance to staff about water-friendly landscape. | 2 (FY 14/15) | EH&S, FD&C, FM |
| g. | Utilize information from storm water-friendly landscaping programs (if appropriate). | 2 (FY 14/15) | EH&S, FD&C, FM, HDH, P&CP, SIO |
| h. | Provide guidance to staff about reducing illicit discharges. | Ongoing | EH&S |
| i. | Provide guidance to staff about pesticide and fertilizer use. | 2 (FY 14/15) | EH&S, FM |
| j. | Provide materials to school children (if applicable). | 2 (FY 14/15) | BAS |
| k. | Provide guidance to staff about pressure washing and landscape irrigation. | 2 (FY 14/15) | EH&S, FM, HDH, HS, SF U _{ctr} |
| l. | Provide guidance about community car washes (if applicable). | 2 (FY 14/15) | EH&S, HDH |
| m. | Provide guidance to staff in illicit discharge flow areas. | 2 (FY 14/15) | EH&S |
| F.5.b.3 | Develop and implement a training program for all Permittee staff, who, as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe an illicit discharge or illegal connection to the storm drain system. This training must include: | 3 (FY 15/16) | EH&S |
| a. | Identification of an illicit discharge or illegal connection. | 3 (FY 15/16) | EH&S |
| b. | Procedures for reporting and responding to an illicit discharge. | 3 (FY 15/16) | EH&S |
| c. | As needed follow-up training to review changes in procedure, techniques or staffing. | 3 (FY 15/16) | EH&S |
| d. | Annual assessment of trained staff knowledge of illicit discharge response. Provide refresher training as needed. | 3 (FY 15/16) | EH&S |

| F.5.b. Education and Outreach Program | | Implementation Year | Responsible Department |
|--|--|----------------------------|-------------------------------|
| e. | Training new staff who as part of their normal job responsibilities may be notified of, come into contact with, or otherwise observe an illicit discharge or illegal connection. | 3 (FY 15/16) | EH&S, FD&C, FM |
| f. | Include contact information for reporting illicit discharges in each fleet vehicle used by field staff. | 3 (FY 15/16) | EH&S |
| F.5.b.4 | Provide a biennial training program for appropriate employees involved in implementing pollution prevention and good housekeeping practices. This training must include: | 2 (FY 14/15) | EH&S |
| a. | General storm water education including permit requirements and appropriate BMPs to be implemented during Operations and Maintenance (O&M) activities. | 2 (FY 14/15) | EH&S |
| b. | An assessment of trained staff's knowledge of pollution prevention and good housekeeping. Information to be used to revise and target training as needed. | 2 (FY 14/15) | EH&S |
| c. | Requirement that any contractors responsible for O&M activities be contractually required to comply with all applicable BMPs. | 2 (FY 14/15) | EH&S, FM, HS, |
| d. | Oversight to be provided to ensure O&M contractors are implementing appropriate BMPs. | 2 (FY 14/15) | EH&S, FM, HDH, HS, SF, UCtr |

BAS = Birch Aquarium at Scripps
 FD&C = Facilities Design & Construction
 HDH = Housing, Dining, and Hospitality
 P&CP = Physical and Community Planning
 SF = Sports Facility

EH&S = Environment, Health & Safety
 FM = Facilities Management
 HS = Health Systems
 UCtr = University Center
 SIO = Scripps Institution of Oceanography

4.02 Public Involvement and Participation

The purpose of this program is to provide opportunities for the campus community (students, faculty, and staff) to participate in storm water pollution prevention outreach events and increase awareness about storm water pollution and steps that can be taken to protect water quality.

The following management measures will be implemented to meet the Public Involvement and Participation requirements in Section F.5.c of the Phase II Small MS4 General Permit.

Table 4.02. Public Involvement and Participation Management Measures

| F.5.c. | Public Involvement and Participation Program | Implementation Year | Responsible Department |
|---------------|--|----------------------------|-------------------------------|
| F.5.c. | Involve the public in the development and implementation of activities related to the program. | 3 (FY 15/16) | EH&S |
| a. | Label high priority storm drain inlets. | 3 (FY 15/16) | EH&S, HS |
| b. | Integrate storm water awareness information on a publicly accessible website: http://blink.ucsd.edu/go/stormwater | 3 (FY 15/16) | EH&S |

EH&S = Environment, Health & Safety

HS = Health Systems

4.03 Illicit Discharge Detection and Elimination

The goal of the Illicit Discharge Detection and Elimination program is to identify, investigate and eliminate non-storm water discharges (illicit discharges) such as process water, wash water, irrigation runoff, and other non-rainwater discharges to the storm drain system. UC San Diego's Illicit Discharge Detection and Elimination Program, included in Appendix B, summarizes the procedures and corrective actions that will be implemented to address identified illicit discharges.

All discharges of non-storm water urban runoff (i.e., any discharge of urban runoff to a storm drain that is not composed entirely of storm water), except those associated with emergency firefighting, are prohibited for the western portions of campus that discharge to the Area of Special Biological Significance (ASBS 31) adjacent to Scripps Institution of Oceanography (SIO). The map of the storm water conveyance system at SIO in Appendix C shows the storm water outfalls and areas that discharge into ASBS 31 where dry weather flows are prohibited.

For the portions of the main campus that do not drain to the ASBS (see Figures 1 and 2 in Appendix A) and the offsite facilities, the following categories of non-storm water discharges or flows will not be considered illicit discharges unless they are determined to be significant contributors of pollutants: ground water, foundation drains, air conditioning condensation, water from crawl space pumps, footing drains, and discharges or flows from firefighting activities.

The following management measures will be implemented to meet the Illicit Discharge Detection and Elimination requirements in Section F.5.d of the Phase II Small MS4 General Permit.

Table 4.03. Illicit Discharge Detection and Elimination Management Measures

| F.5.d. | Illicit Discharge Detection and Elimination | Implementation Year | Responsible Department |
|---------|--|---------------------|------------------------|
| F.5.d. | Develop an Illicit Discharge Detection and Elimination program to detect, investigate, and eliminate illicit discharges, including illegal dumping into its system, to the extent allowable under law. See Appendix B | 2 (FY 14/15) | EH&S |
| F.5.d.1 | Create and maintain an outfall map. See Appendix C | 2 (FY 14/15) | EH&S |
| F.5.d.1 | Include in the outfall map, the location of all outfalls and drainage areas within the urbanized area that are operated by the Permittee and that directly discharge within the Permittee's jurisdiction to a receiving water. | 2 (FY 14/15) | EH&S |
| F.5.d.1 | Include in the outfall map, the location (and name, where known to the Permittee) of all water bodies receiving direct discharges from those outfall pipes. | 2 (FY 14/15) | EH&S |
| F.5.d.2 | Conduct field sampling of any outfalls that were flowing or ponding when it has been more than 72 hours after the last rain event (i.e., were suspected of illicit discharges) during outfall mapping inventory (under section F.5.d.1., page 81). | 2 (FY 14/15) | EH&S |
| F.5.d.2 | Conduct monitoring for the parameters listed in Table 1 (page 83), or for parameters selected by Permittee based on local knowledge of pollutants of concern. | 2 (FY 14/15) | EH&S |

| F.5.d. | Illicit Discharge Detection and Elimination | Implementation Year | Responsible Department |
|---------------|---|----------------------------|-------------------------------|
| F.5.d.2 | Verify that indicator parameter action levels in Table 2 (page 83), or tailored parameter action levels were not exceeded. | 2 (FY 14/15) | EH&S |
| F.5.d.2 | Conduct follow-up investigations per Section F.5.d.3. if the action level concentrations were exceeded. | 2 (FY 14/15) | EH&S, FD&C, FM |
| F.5.d.3 | Develop written procedures for conducting investigations into the source of all suspected illicit discharges. See Appendix B. | 2 (FY 14/15) | EH&S |
| F.5.d.3 | Report immediately the occurrence of any flows believed to be an immediate threat to human health or the environment to local Health Department. | 2 (FY 14/15) | EH&S, HS |
| F.5.d.3 | Determine and document through investigations the source of all non-storm water discharges. | 2 (FY 14/15) | EH&S, HS |
| F.5.d.3 | Once the source of an illicit discharge has been determined, immediately notify the responsible party of the problem. | 2 (FY 14/15) | EH&S, HS |
| F.5.d.3 | Report immediately to the owners/operators of the downstream MS4 any non-storm water discharge suspected of being a sanitary sewage and/or significantly contaminated material. | 2 (FY 14/15) | EH&S, HS |
| UCSD | Maintain an email link on UC San Diego's Storm Water Pollution Prevention Program webpage to report storm water pollution (non-storm water discharges): http://blink.ucsd.edu/go/stormwater | Ongoing | EH&S |
| UCSD | Educate UC San Diego Staff and faculty on the proper disposal of waste at UC San Diego and notification procedures for abandoned waste. | Ongoing | EH&S |
| UCSD | Educate appropriate UC San Diego Staff on proper notification procedures for sanitary sewer overflows and spills into storm drains: http://blink.ucsd.edu/go/sewerplan | Ongoing | EH&S |
| UCSD | Implement UC San Diego's Sanitary Sewer Management Program: http://blink.ucsd.edu/go/sewerplan | Ongoing | EH&S |

| F.5.d. | Illicit Discharge Detection and Elimination | Implementation Year | Responsible Department |
|--------|---|---------------------|------------------------|
| UCSD | Visually inspect Outfall 2, a storm water outfall at SIO, on a daily basis for evidence of dry weather flows into the ASBS. | Ongoing | FM, EH&S |
| UCSD | Visually inspect Fleet Services and the Nimitz Marine Facility for evidence of dry weather discharges into the storm water conveyance system on a monthly basis in accordance with the Industrial General Permit. | Ongoing | EH&S |
| UCSD | Investigate reports of spills and other dry weather flows into the campus storm water conveyance system and take appropriate measures to mitigate the discharge (e.g., clean up spill and/or repair leaking line, etc.) as appropriate. | Ongoing | FM, FD&C, EH&S |

EH&S = Environment, Health & Safety
 FM = Facilities Management

FD&C = Facilities Design and Construction
 HS = Health Systems

4.04 Pollution Prevention / Good Housekeeping for Permittee Operations

The goal of this program is to prevent or reduce pollutant runoff from facility operation and maintenance activities. The program must also include training to relevant staff on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides, or frequent catch-basin cleaning).

The following management measures will be implemented to meet the Pollution Prevention/Good Housekeeping for Permittee Operations requirements in Section F.5.f of the Phase II Small MS4 General Permit.

Table 4.04. Pollution Prevention/Good Housekeeping Management Measures

| F.5.f. | Pollution Prevention/Good Housekeeping For Permittee Operations Program | Implementation Year | Responsible Department |
|--------|--|---------------------|---|
| F.5.f. | Develop and implement a program to prevent or reduce the amount of pollutant runoff from Permittee operations. | 2 (FY 14/15) | EH&S, FD&C, FM, HDH, HS, P&CP, SF, Uctr |

| Pollution Prevention/Good Housekeeping For Permittee Operations Program | | Implementation Year | Responsible Department |
|--|--|----------------------------|-------------------------------|
| F.5.f.1 | Develop and maintain an inventory of facilities that may impact storm water. | 2 (FY 14/15) | EH&S |
| F.5.f.2 | Develop and make available a map that identifies the storm water drainage system corresponding to each of the facilities as well as the receiving waters to which these facilities discharge. The map must also include the facility location and the name of the facility manager, including contact information. | 2 (FY 14/15) | EH&S |
| F.5.f.3 | Conduct an annual review and assessment of all Permittee-owned or operated facilities to determine their potential to impact surface waters. | 3 (FY 15/16) | EH&S |
| F.5.f.4 | Develop and implement SWPPPs for hotspots. | 4 (FY 16/17) | EH&S |
| F.5.f.5 | Conduct quarterly visual inspection of hotspots and hotspot discharge locations. | 5 (FY 17/18) | EH&S |
| F.5.f.5 | Conduct quarterly comprehensive hotspot inspection. | 5 (FY 17/18) | EH&S |
| F.5.f.5 | Inspect each inventoried facility that is not a hotspot once during permit term. | 5 (FY 17/18) | EH&S |
| F.5.f.6 | Implement procedures to assess and prioritize maintenance of storm drain system infrastructure and assign a high priority to each catch basin meeting any of the criteria listed in section F.5.f.6(ii) | 2 (FY 14/15) | FM, FD&C |
| F.5.f.7 | Begin maintenance of storm drain systems according to the procedures and priorities developed according to section F.5.f.7(ii)(a-d). | 3 (FY 15/16) | FM |
| F.5.f.7 | Develop and implement a strategy to inspect storm drain systems, based on the priorities assigned in section F.5.f.6(ii). | 3 (FY 15/16) | FM |
| F.5.f.7 | Develop and implement a schedule to clean high priority catch basins and other systems. | 3 (FY 15/16) | FM |
| F.5.f.8 | Develop and implement an O & M activity assessment including the potential to discharge pollutants in storm water. | 3 (FY 15/16) | EH&S |

| Pollution Prevention/Good Housekeeping For Permittee Operations Program | | Implementation Year | Responsible Department |
|--|--|----------------------------|-------------------------------|
| F.5.f.8 | Identify all materials that could be discharged from each of these O&M activities, and which materials contain pollutants. | 3 (FY 15/16) | EH&S |
| F.5.f.8 | Develop and identify a set of BMPs that, when applied during Permittee O&M activities, will reduce pollutants in storm water and non-storm water discharges. UC San Diego Source Control BMPs are posted at: http://blink.ucsd.edu/go/stormwater | 3 (FY 15/16) | EH&S |
| F.5.f.8 | Evaluate all BMPs implemented during O&M activities annually. | 3 (FY 15/16) | EH&S |
| F.5.f.9 | Implement a landscape design and maintenance program to reduce the amount of water, pesticides, herbicides and fertilizers used by Permittee. UC San Diego's Integrated Pest Management Program is included in Appendix D. | 2 (FY 14/15) | FM, HDH, HS, SF |
| F.5.f.9 | Evaluate pesticides, herbicides and fertilizers used and application activities performed and identify pollution prevention and source control opportunities. | 2 (FY 14/15) | FM |
| F.5.f.9 | Implement practices that reduce the discharge of pesticides, herbicides and fertilizers. | 2 (FY 14/15) | FM, HDH, HS, SF |
| F.5.f.9 | Implement integrated pest management measures that rely on non-chemical solutions, including the measures specified in section F.5.f.9(ii)(b)(2)(a-f). See Appendix D for UC San Diego's Integrated Pest Management Program | 2 (FY 14/15) | EH&S, FM, HDH, HS, SF |
| F.5.f.9 | Collect and properly dispose of unused pesticides, herbicides and fertilizers. | 2 (FY 14/15) | EH&S, FM |
| F.5.f.9 | Minimize irrigation runoff. | 2 (FY 14/15) | EH&S, FM, HDH, HS, SF |
| UCSD | Using a street sweeper, clean the streets and parking lots on UC San Diego's main campus and at SIO on a weekly basis. | Ongoing | FM |
| UCSD | Identify and prioritize storm water pollution prevention projects and conveyance system retrofits and repairs through the UC San Diego Clean Water | Ongoing | EH&S, FD&C, FM |

| F.5.f. | Pollution Prevention/Good Housekeeping For Permittee Operations Program | Implementation Year | Responsible Department |
|--------|---|---------------------|------------------------|
| | Utility Program. | | |

- | | | | |
|------|-----------------------------------|------|-------------------------------------|
| EH&S | = Environment, Health & Safety | FD&C | = Facilities, Design & Construction |
| FM | = Facilities Management | HDH | = Housing, Dining, and Hospitality |
| HS | = Health Systems | SF | = Sports Facility |
| P&CP | = Physical and Community Planning | UCtr | = University Center |

4.05 Construction Site Storm Water Runoff Control

The goal of this program is to develop, implement, and enforce a program for construction activities to control erosion and sediment, properly manage site materials and wastes, and prevent dry weather flows.

The following management measures will be implemented to meet the Construction Site Storm Water Runoff Control requirements in Section F.5.e of the Phase II Small MS4 General Permit.

Table 4.05. Construction Site Storm Water Runoff Control Management Measures

| F.5.e. | Construction Site Runoff Control Program | Implementation Year | Responsible Department |
|--------|--|---------------------|------------------------|
| F.5.e. | Develop and implement contract language ensuring all outside contractors comply with the CGP and implement appropriate BMPs. Contract language shall apply to all projects that result in a total land disturbance of either one acre or more or that result in a total land disturbance of less than one acre if part of a larger common plan or development or sale. | 1 (FY 13/14) | FD&C |
| UCSD | Implement UC San Diego Division 1 Specifications (or equivalent) for construction contract sediment and erosion control BMP specifications and site pollution control requirements. | Ongoing | FD&C |
| UCSD | Administer existing contract provisions for enforcement of control measures | Ongoing | FD&C |
| UCSD | Implement the construction storm water management requirements process summarized at: http://blink.ucsd.edu/go/stormwater for projects that create and/or replace | Ongoing | FD&C, FM |

| F.5.e. | Construction Site Runoff Control Program | Implementation Year | Responsible Department |
|--------|--|---------------------|-------------------------------------|
| | 2,500 square feet or more of impervious surface. | | |
| UCSD | For construction projects >1 acre, review SWPPPs prior to filing Notice of Intent (NOI) | Ongoing | FD&C and authorized representatives |
| UCSD | Conduct inspections of SWPPP BMPs for construction projects greater than one acre in accordance with the Construction General Permit. Coordinate findings with project contractor and FD&C staff. | Ongoing | FD&C and authorized representatives |
| UCSD | For construction projects greater than one acre, review storm water issues with all project affiliated personnel at SWPPP kick-off meetings prior to construction commencement. | Ongoing | FD&C and authorized representatives |
| UCSD | For construction projects greater than one acre, a qualified SWPPP Practitioner (QSP) will conduct construction site inspections in accordance with the procedures identified in the current Construction General Permit. This includes: weekly site inspections; rain event action plans; pre-rain, rain, and post-rain event inspections; and maintenance inspections. | Ongoing | FD&C and authorized representatives |

FD&C = Facilities Design and Construction

FM = Facilities Management

4.06 Post-construction Storm Water Management Program

The purpose of this program is to develop, implement, and enforce a program to address discharges of post-construction storm water runoff from new development and redevelopment areas.

Post-construction storm water management controls include permanent structural (e.g., rooftop runoff infiltration galleries) and non-structural BMPs (e.g. conservation of natural and permeable areas) that remain in place after the project is completed and prevent pollution from the new development over time.

New development and redevelopment construction projects that create and/or replace 2,500 square feet or more of impervious surface are subject to the requirements for post-construction storm water management measures. If the project site does not accommodate

the required management measures, UC San Diego may propose alternative post-construction management measures that achieve multiple-benefits (alternative compliance must be approved by the Regional Water Quality Control Board).

The following management measures will be implemented to meet the Post-construction Storm Water Management requirements in Section F.5.g of the Phase II Small MS4 General Permit.

Table 4.06. Post-construction Site Storm Water Runoff Control Management

| F.5.g | Post Construction Storm Water Management Program | Implementation Year | Responsible Department |
|--------------|--|---|-------------------------------|
| F.5.g. | Develop and implement a post-construction storm water management program to comply with Section F.5.g. | 2 (FY 14/15) | FD&C, FM EH&S, P&CP |
| F.5.g. | Regulate development to comply with sections F.5.g.1. through F.5.g.4.of permit. | 2 (FY 14/15) | FD&C, FM, P&CP |
| F.5.g.1 | Require implementation of site design measures for all projects that create and/or replace 2,500- 5,000 square feet of impervious surface. | 2 (FY 14/15) | FD&C, FM, P&CP |
| F.5.g.2 | Implement standards, including measures for site design, source control, runoff reduction, storm water treatment and baseline hydromodification management, on projects that create and/or replace more than 5,000 square feet of impervious surface (Regulated Projects). | 2 (FY 14/15) | FD&C, FM, P&CP |
| F.5.g.3 | Propose alternative post-construction requirements that achieve multiple-benefits. | No Date Provided- Permittee may Propose if Desired | FD&C |
| F.5.g.4 | Implement an O&M verification program for new development projects. UC San Diego Storm Water Treatment Control BMP Inventory is posted at: http://blink.ucsd.edu/go/stormwater | 3 (FY 15/16) | EH&S, FD&C, FM |

| F.5.g | Post Construction Storm Water Management Program | Implementation Year | Responsible Department |
|-------|--|---------------------|------------------------|
| UCSD | Review and update UC San Diego design standards as needed to ensure the following: <ul style="list-style-type: none"> • New development is designed to conform to the storm water treatment standards of the time, as listed in the County of San Diego Standard Urban Storm Water Mitigation Plan (SUSMP), including the Hydromodification Management Plan (HMP) requirements or equivalent UC San Diego requirements. • Low Impact Development (LID) requirements are evaluated for each project and implemented as appropriate. | Ongoing | FD&C, P&CP |
| UCSD | Inspect and maintain the LID treatment control BMPs on the inventory in accordance with the maintenance schedule. | Ongoing | EH&S, FD&C, FM |

EH&S = Environment, Health & Safety
 FM = Facilities Management

FD&C = Facilities Design and Construction
 P&CP = Physical and Community Planning

5.0 Monitoring Program

Monitoring and assessment are critical components of UC San Diego's SWMP. Because the data collected drives many of the program management decisions, adaptive management is predicated on an effective monitoring and assessment program.

5.01 Dry Weather Monitoring

In accordance with NPDES Permit No. CA0107239 (Order No. R9-2015-0070), UC San Diego performs dry weather monitoring of the Area of Special Biological Significance (ASBS) located adjacent to the UCSD/SIO campus as summarized below.

UC San Diego samples the surf zone of the ASBS on a weekly basis for indicator bacteria (total coliform, fecal coliform, and enterococcus).

Once a year, the permitted seawater outfalls at SIO and the receiving water are sampled for 24 hours and analyzed for the constituents listed on UC San Diego's storm water management program webpage: <http://blink.ucsd.edu/go/stormwater>. The results are compared to the permit limitations and California Ocean Plan water quality objectives to ensure that the seawater discharges from UCSD/SIO are not altering natural water quality in the ASBS.

If outfall monitoring results are above the permit limitations (seawater discharge), and/or receiving water samples exceed California Ocean Plan water quality objectives, UC San Diego will attempt to identify the source of the pollutant(s) and review the non-structural and structural BMPs that have been implemented to address the pollutant(s) and determine if changes need to be made to existing BMPs or if new BMPs are needed to address the constituents of concern.

A map showing the sampling locations is provided in Appendix E and is also at: <http://blink.ucsd.edu/go/stormwater>

5.02 Storm Water Monitoring

Storm water runoff at UC San Diego is monitored at the following three locations:

1. Scripps Institution of Oceanography: Outfall 2 and the receiving water (See Appendix E). NPDES Permit No. CA0107239 (Order No. R9-2015-0070).
2. Fleet Services located at the Campus Services Complex (State General Industrial Storm Water Permit)
3. Nimitz Marine Facility in Point Loma (State General Industrial Storm Water Permit)

The monitoring locations at each of these sites are shown in drawings in Appendix E. The storm water runoff at each location is monitored for the constituents listed in their respective permits (summarized at: <http://blink.ucsd.edu/go/stormwater>).

If results are above the permit limitations and/or water quality objectives, UC San Diego will attempt to identify the source of the pollutant(s) and review the non-structural and structural BMPs that have been implemented to address the pollutant(s) and determine if changes need to be made to existing BMPs or if new BMPs are needed to address the constituents of concern.

5.03 Ecosystem Assessment Monitoring

UC San Diego is performing bioaccumulation studies and benthic marine surveys of ASBS 31 in accordance with the conditions in NPDES Permit No. CA0107239 (Order No. R9-2015-0070). UC San Diego has partnered with the City of San Diego to perform several ecosystem assessment studies of the two ASBS in San Diego using Proposition 84 grant funding.

5.04 Regional Monitoring

UC San Diego is participating in the Southern California Bight Regional Monitoring Program as part of the ASBS workgroup to develop and implement long term storm water and biological monitoring programs to better assess the ASBS in the region (southern Bight) and the impacts from storm water discharges.

5.05 La Jolla Shores Integrated Coastal Watershed Management Plan

Using Proposition 50 planning grant funding, UCSD/SIO, the City of San Diego and San Diego Coastkeeper partnered together to develop the La Jolla Shores Integrated Coastal Watershed Management Plan. This plan was finalized in February 2008 and approved by the State Water Resources Control Board. The plan includes an ASBS Protection Model that integrates water quality data from the watershed with other ecosystem assessment findings to identify the watershed pollutants, or constituents of concern (COCs), most likely to negatively impact the ASBS. A tiered approach was then used to develop BMPs to address these COCs:

- Tier 1 = non-structural BMPs and activities;
- Tier 2 = structural BMPs and activities; and
- Tier 3 = treatment BMPs and activities.

These BMPs were then prioritized using a phased management approach (Phase 1: 3-5 years; Phase 2: 5-10 years; Phase 3: 10+ years). UCSD/SIO and the City of San Diego have implemented many of the high priority Phase 1 BMPs. As State and grant funding

becomes available, UC San Diego will continue to apply for funds to implement BMPs identified in the plan.

5.06 California Environmental Quality Act Monitoring

The California Environmental Quality Act (CEQA) requires that each UC adopt objectives, criteria, and specific procedures to administer its responsibilities under the Act and the CEQA Guidelines (Section 21082). The task of designing monitoring and reporting programs is the responsibility of the UC which is approving the project. Although UC may delegate this work, UC must ensure the adequacy of the program. "Reporting" may be defined as a written review of mitigation activities. A report may be required at various stages during project implementation and upon completion of the project. "Monitoring" can be described as a continuous, ongoing process of project oversight. Monitoring, rather than simply reporting, is suited to projects with complex mitigation measures, such as wetlands restoration or archeological protection, which may exceed the expertise of the local agency to oversee, which are expected to be implemented over a period of time, or which require careful implementation to assure compliance. UC has enacted a program which reflects adopted mitigation pursuant to AB 3180. Project level hydrology and water quality issues are routinely addressed for UCSD's capital improvement projects pursuant to the foregoing regulations.

5.07 Program Effectiveness Assessment and Improvement Plan

UC San Diego has developed a Program Effectiveness Assessment and Improvement Plan (PEAIP) to track the short and long-term progress of the storm water (see Appendix F). The PEAIP is used as a tool to adaptively manage the SWMP and make necessary modifications to the program to improve program effectiveness, reduce pollutants of concern, achieve the MEP standard, protect water quality, and to document UC San Diego's compliance with permit conditions.

6.0 Record Keeping

6.01 SWMP Updating

The SWMP and storm water systems map (including outfall map) will be reviewed annually. UC San Diego will update BMPs when storm water monitoring results or facility assessments indicate a revision in source or treatment controls is needed or when a change in activities or operations occurs that may significantly affect the discharge of storm water pollutants. The storm water maps (found in Appendix C) will be updated when a change in the storm water conveyance system is identified (e.g. when entry points are discovered or new systems are added).

6.02 SWMP Public Access

This SWMP is meant for use by UC San Diego staff and is a public document. An electronic copy of the SWMP will be maintained at:

<http://blink.ucsd.edu/go/stormwater>

6.03 SWMP Annual Reports

EH&S (in conjunction with the storm water working group) will complete and submit annual reports regarding the implementation of the SWMP in the State Water Resources Control Board's Storm Water Multiple Application and Report Tracking System (SMARTS) database.

6.04 Training

EH&S will track the number of training classes provided each year that include the topic of storm water pollution prevention. Staff and faculty training records are maintained by the UC Learning Center and are available upon request.

7.0 Enforcement Program

For day to day activities on campus, UC San Diego enforces storm water pollution prevention requirements primarily through education and training. Unlike a municipality, UC San Diego has oversight and control of all operation and maintenance activities on the campus. When an activity is observed that could result in the discharge of a pollutant(s), including dry weather flows, into the storm water conveyance system, staff from EH&S or FM are typically notified and will first try to correct the issue through education. If a department repeats the activity, the director or dean responsible for that department will be notified.

Housing, Dining, and Hospitality includes storm water pollution prevention specifications in the housing contracts that students must sign to live on campus. This includes the prohibition of car washing, vehicle maintenance, and improper outdoor storage. Violations of a housing contract condition can be reported to the customer service center and are then reported to resident deans for corrective action.

For construction projects less than one acre in size, UC San Diego inspectors from FD&C, FM, or HDH inspect the project site on a regular basis and notify the contractor if an issue is identified. These issues are documented in daily reports. Provisions in the construction contract hold contractors accountable for any violations of storm water regulations.

For construction projects greater than one acre, UC San Diego, FD&C, engages a Qualified Stormwater Practitioner (QSP) to inspect the project sites on a monthly basis to verify that the project is complying with its SWPPP. The inspection results are memorialized in a report to FD&C and the contractor. Any deficiencies are noted for the contractor to correct. Provisions in the construction contract hold contractors accountable for any violations of storm water regulations.

For construction projects on undeveloped land sites regardless of size, biological monitors are on site at least weekly during initial earth moving activities and periodically thereafter. The contractor is notified if any storm water/water quality related issues are identified that could affect offsite resources. These issues are documented in daily reports and moved forward for corrective action.

8.0 Appendices

| | |
|-------------------|--|
| Appendix A | Main Campus and Off-site Facility Information |
| Appendix B | Illicit Discharge Detection and Elimination Program |
| Appendix C | UC San Diego Storm Water Map and Outfall Map |
| Appendix D | UC San Diego Integrated Pest Management Program |
| Appendix E | Storm Water Monitoring Program |
| Appendix F | Program Effectiveness Assessment and Improvement Plan |

Appendix A

Main Campus and Off-site Facility Information

Appendix A

Main Campus and Off-site Facility Information

UC SAN DIEGO FACILITY INFORMATION

Main Campus

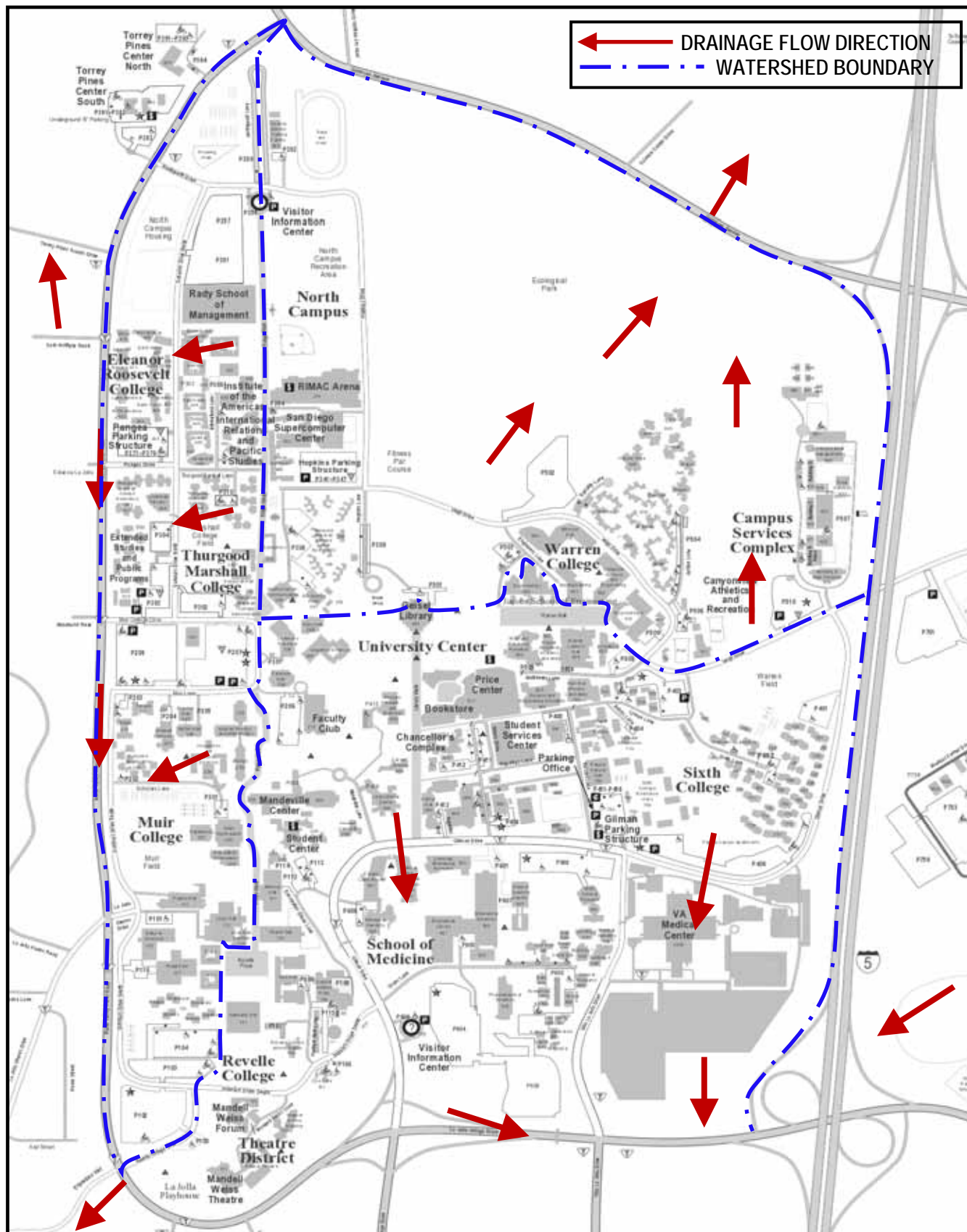
As shown in Figures 1, 2, and 3, the main UC San Diego campus is composed primarily of three distinct, but contiguous, geographical entities: the western portion of the campus (668 acres), the eastern portion of the campus (267 acres), and the Scripps Institute of Oceanography (SIO) portion of the campus (160 acres) as described below:

- The western area of the campus (Figure 1) is bordered by Genesee Avenue on the north, La Jolla Village Drive on the south, North Torrey Pines Road and City of San Diego property on the west, and Interstate 5 on the east.
- The eastern area of the campus (Figure 2) is separated from the western area by Interstate 5. In addition to Interstate 5 on the west, the approximate boundaries of the eastern area consist of Voight Drive and Genesee Avenue on the north, privately owned condominiums along La Jolla Village Drive to the south, and Regents Road on the east.
- The SIO portion of the campus (Figure 3) lies along the coast immediately southwest of the bulk of the campus and includes a span of approximately 3,000 feet of ocean frontage.

The following properties are also part of the Main Campus:

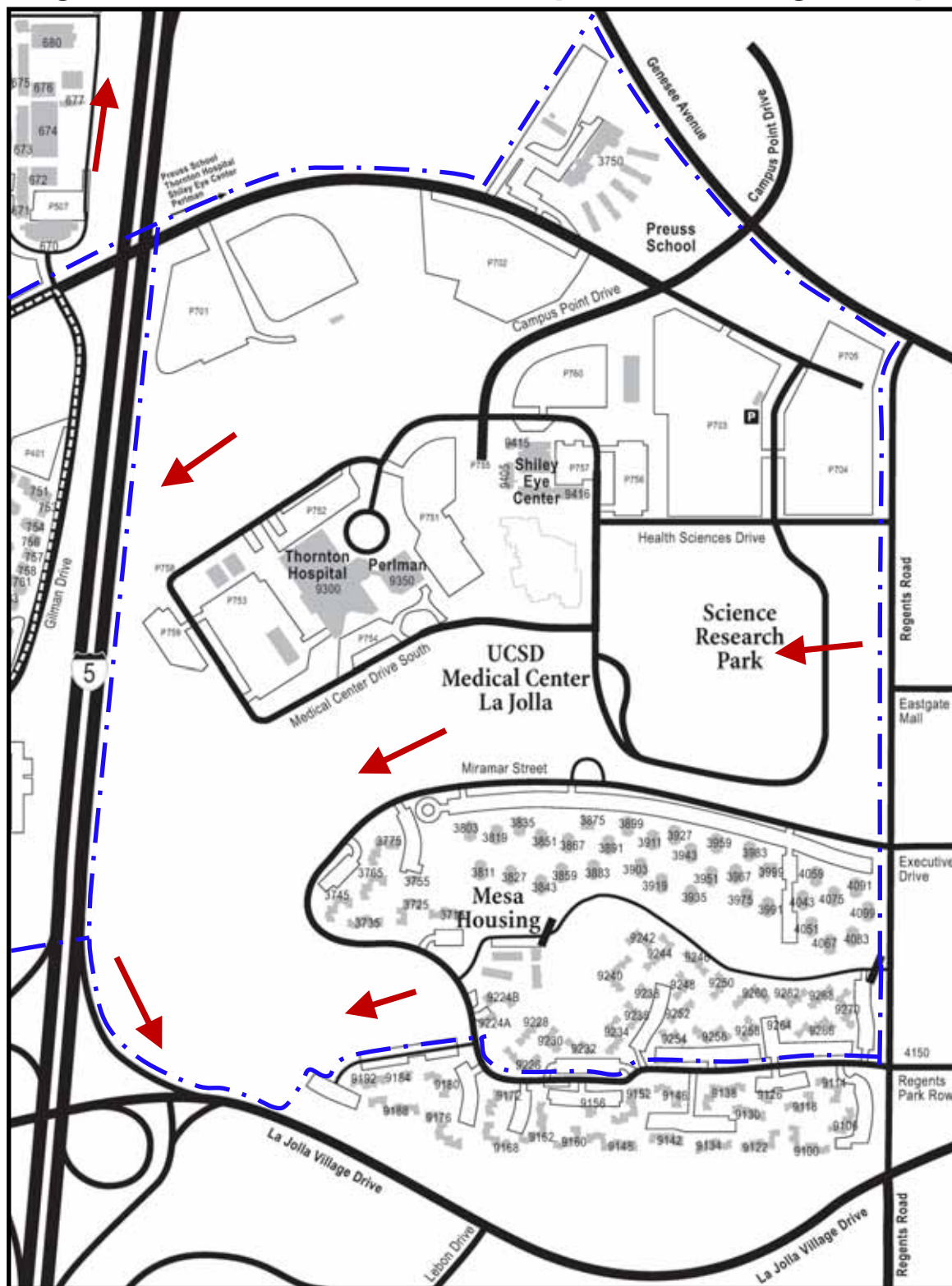
- La Jolla Del Sol, a housing development located southeast of these larger geographical areas (12 acres)
- University House (seven acres)
- A parcel adjacent to University House consisting of coastal canyon and beachfront (19 acres)
- Glider Port (30 acres)
- Torrey Pines Center North (2.3 acres) and Torrey Pines Center South (just the building — the land is not owned by the University)

Figure 1. UCSD West Campus Drainage Map



Note: UCSD West Campus drainage flows towards Pacific Ocean, Los Penesquitos Creek, Los Penesquitos Lagoon, Rose Canyon Creek, and Mission Bay.

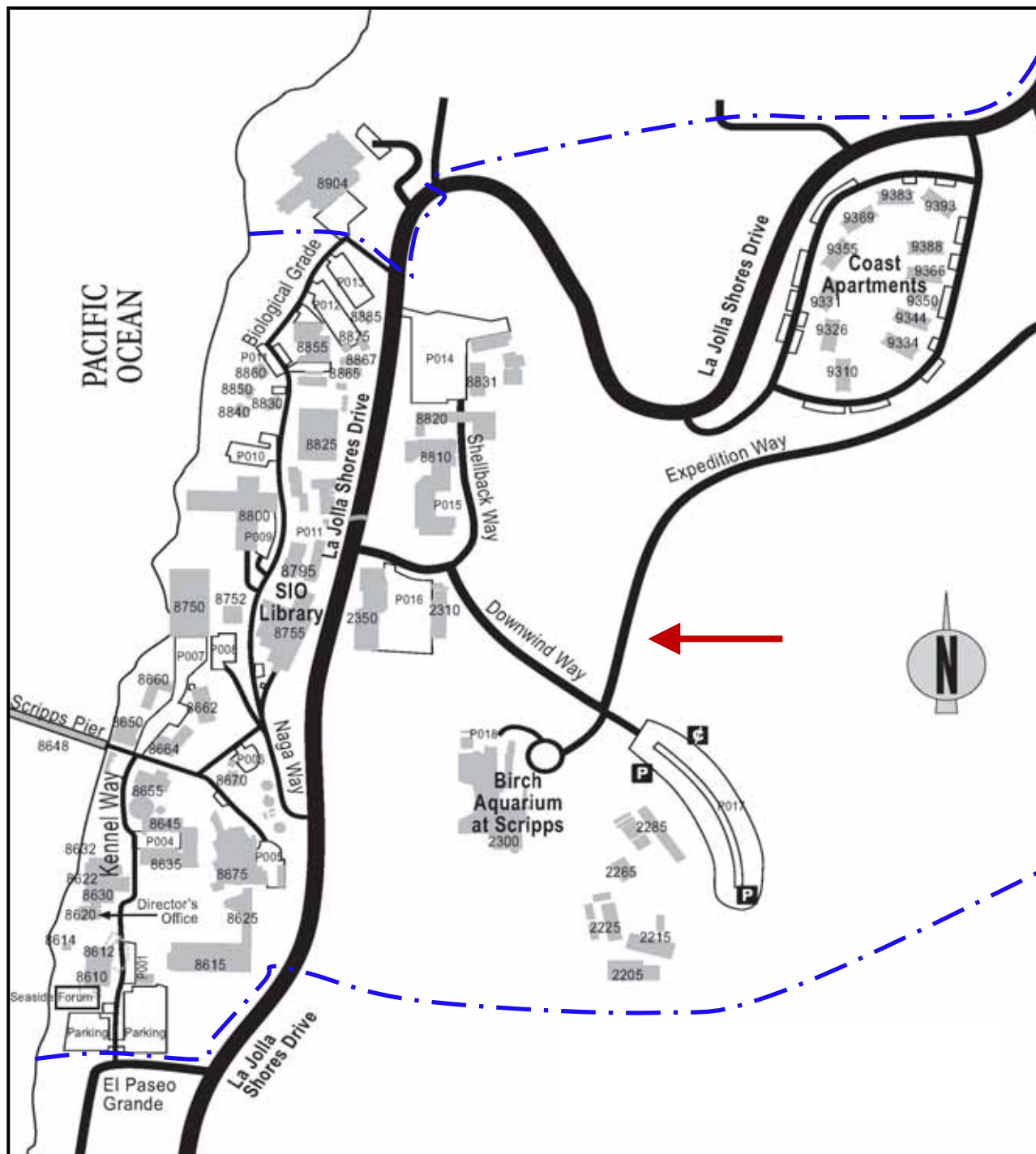
Figure 2. UCSD East Campus Drainage Map



Note: UCSD East Campus drainage flows towards Rose Canyon Creek and Mission Bay.



Figure 3. Scripps Institution of Oceanography Drainage Map



Note: Scripps Institution of Oceanography (SIO) drainage flows towards Pacific Ocean.

| | |
|---|-------------------------|
|  | DRAINAGE FLOW DIRECTION |
|  | WATERSHED BOUNDARY |

Land Use

Of the total 1,165-acres that make up the main campus, approximately 44 percent consists of open space, habitat areas, eucalyptus groves, landscaped buffer areas, landscaped courtyards and plazas, gardens, and recreational areas. The remaining 56 percent consists of buildings totaling approximately 10 million ground square feet, two parking structures, surface parking lots, and other paved areas, walkways, and roadways.

Facility Drainage

The general flow of storm water discharge off east campus, west campus, and SIO is summarized in the following three figures. More detailed information on the storm water conveyance system at UC San Diego is available from EH&S.

OFF-SITE FACILITIES

UC San Diego Hillcrest Medical Center

UC San Diego has located a number of medical activities, including patient care and some of the School of Medicine's instruction and research programs, at the UC San Diego Medical Center (MC) in Hillcrest. The MC in Hillcrest is the only academic medical center in the greater San Diego Region.

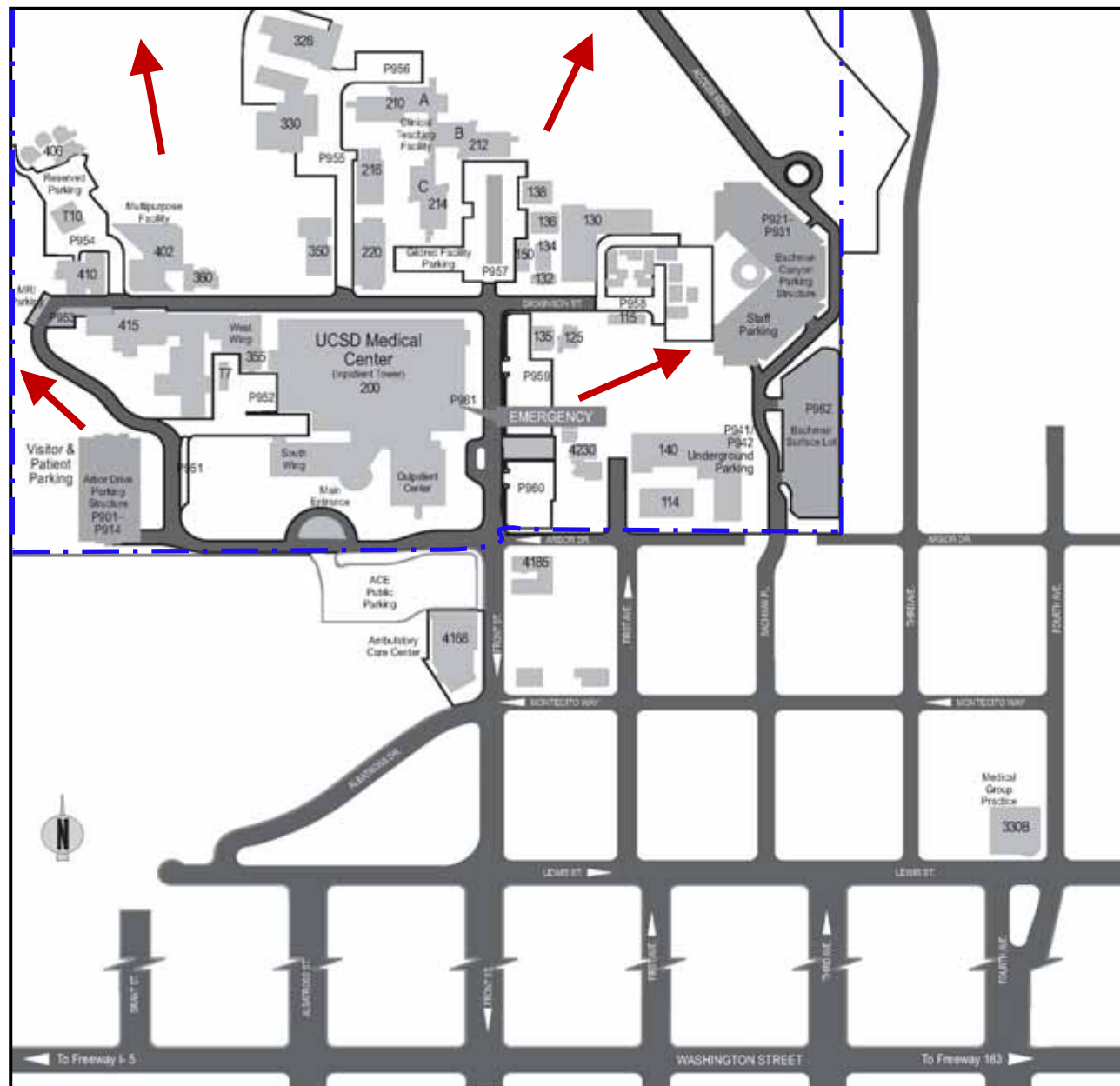
UC San Diego MC Hillcrest is situated on approximately 56 acres of steep slopes and level mesas overlooking Mission Valley to the north. Located in the northeastern corner of the Uptown community of San Diego, southwest of the intersection of Interstate 8 (I-8) and State Route 163 (SR-163), the campus is located 13 miles south of the main campus in La Jolla.

The south rim of Mission Valley forms the practical limits of development to the north, leaving approximately 26 of the campus's existing 56 acres suitable for building. Virtually all of these 26 acres are currently occupied by buildings and parking facilities. The valley topography limits expansion to the north and west. Nearly one-half of the southern boundary of the campus is formed by property owned by the Unitarian Church. The remainder of the southern edge is formed by the residential neighborhood extending south to Washington Street. To the east is Vauclain Point and residential development. Thus, the open space to the north and west and the neighborhood to the south and east form the primary context for the campus.

Facility Drainage

The general flow of storm water discharge off MC in Hillcrest is summarized in Figure 4.

Figure 4. UC San Diego Medical Center Hillcrest Drainage Map



Note: UCSD Medical Center Hillcrest drainage flows towards San Diego River and Pacific Ocean.



Nimitz Marine Facility

UC San Diego maintains the Nimitz Marine Facility that consists of two facilities on Point Loma operated under the auspices of SIO, the Marine Facility (MarFac), and the Marine Propulsion Lab (MPL). The Nimitz Marine Facility is the support and management center for the Scripps fleet of five research vessels and the platform FLIP.

The Nimitz Marine Facility covers 5.7 acres of land on the bay side of Point Loma at the mouth of the Shelter Island yacht basin. The facility includes four buildings and a pier operated by SIO. There are no residences, businesses, recreational facilities, or community services on the property. The site is bordered by private land in the City of San Diego to the north, U.S. Navy land to the west, and Shelter Island, North Island, San Diego Bay, and the San Diego main navigation channel on the north, east, and south.

Facility Drainage

Drainage at the Nimitz Marine Facility is generally to the east towards San Diego Bay as shown in Figure 5.

Elliott Field Station

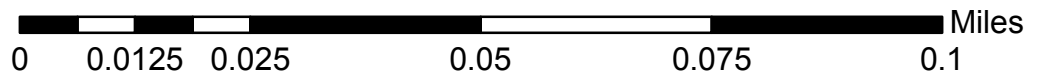
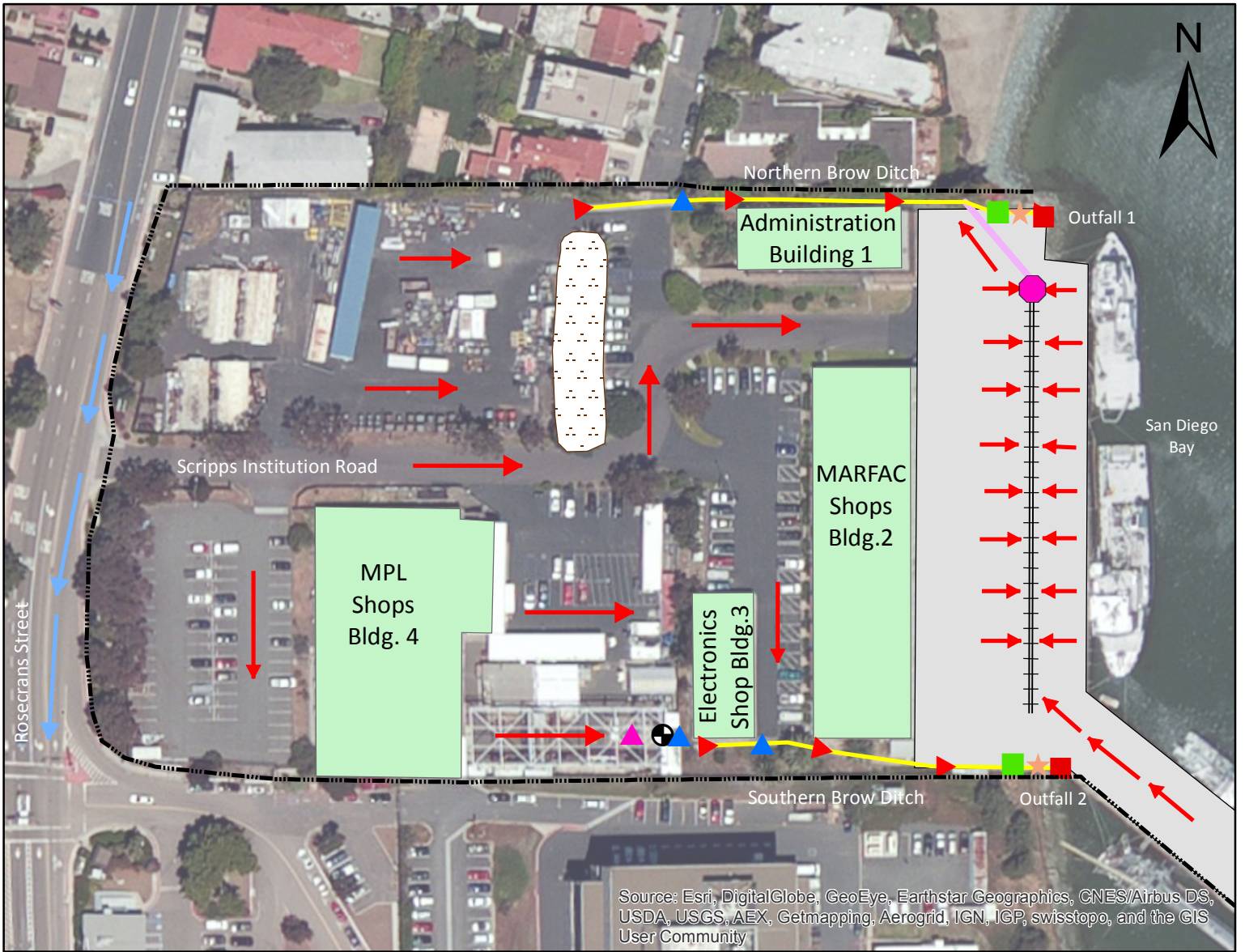
Elliott Field Station occupies approximately 324 acres of land east of Interstate 15 (I-15) and just south of Pomerado Road in the City of San Diego. It is approximately 10 miles northeast of the main campus. Elliott Field Station provides opportunities for outdoor research activities not available on the main campus.

Elliott Field Station is bordered on the northeast by the Alliant International University (AIU), on the east by the UC Elliot Chaparral Reserve, and on the south and west by the U.S. Marine Corps Air Station, Miramar (MCAS).

Facility Drainage

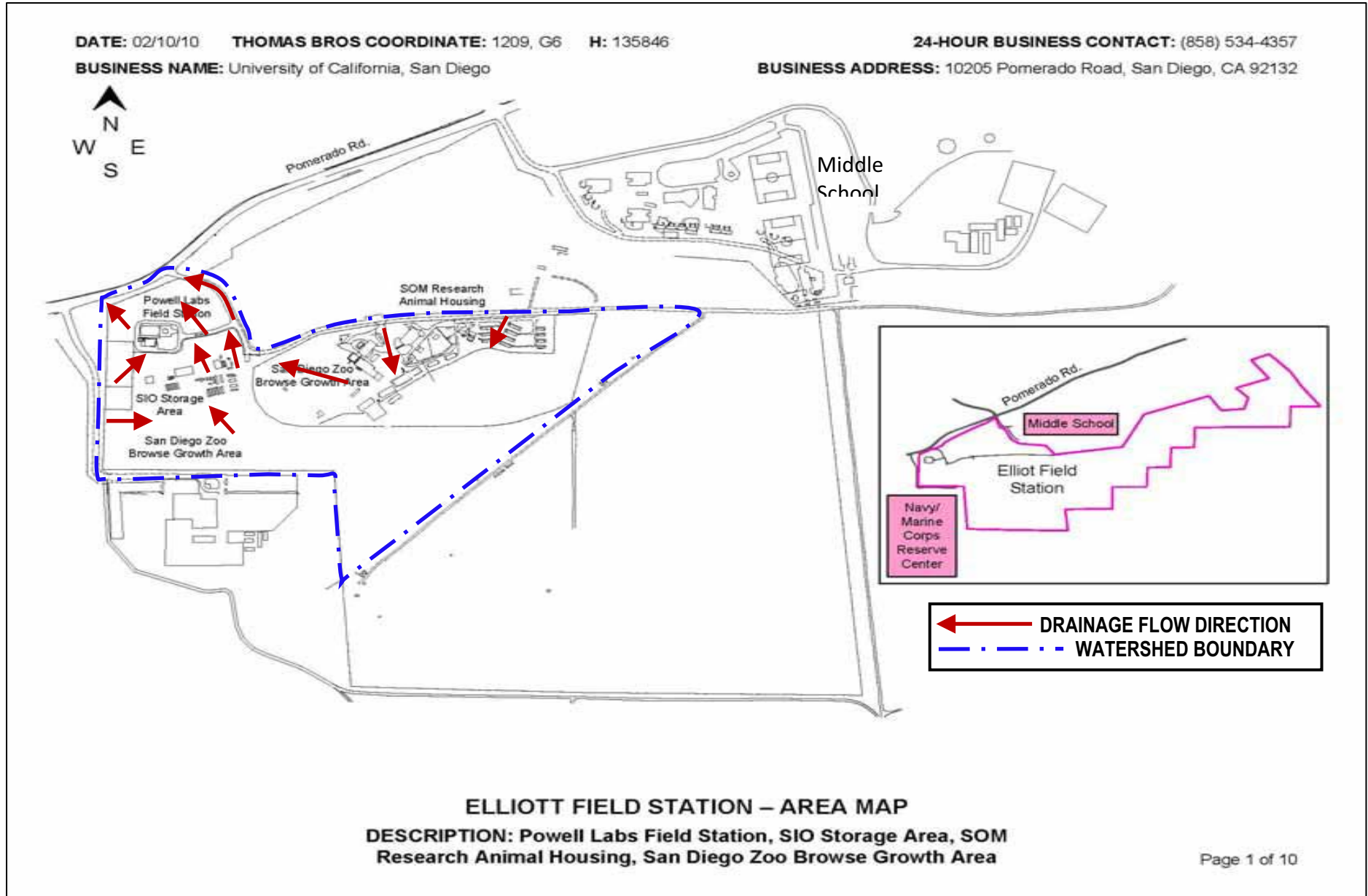
In general, storm water from the site drains northerly towards Pomerado Road and southwesterly based on the varying topography as shown in Figure 6.

Figure 5. Nimitz Marine Facility Stormwater Drainage Map



- | | | | |
|--|--|--|--|
| | Grate Inlet Stormwater Treatment System | | Facility Boundary |
| | Modular Wetland Stormwater Treatment System | | Trench Drain |
| | Flume Filters | | Stormwater Culvert |
| | Inlet | | Pipe (Runoff Pumped to North Brow Ditch) |
| | Monitoring Location | | Offsite Stormwater Flow |
| | Outfall | | New Wharf and Pier |
| | Direction of Stormwater Flow | | First Flush Treatment System |
| | Vegetated Area with the Potential for Soil Erosion | | |

Figure 6. Elliot Field Station



Mount Soledad Research Station

The Mount Soledad property in La Jolla, located near the crest of the mountain on Via Capri, supports two research laboratories on approximately 10 acres. These laboratories operate under the auspices of SIO.

Facility Drainage

The general flow of storm water discharge from the Mount Soledad Research Station is shown in Figure 7.

Trade Street

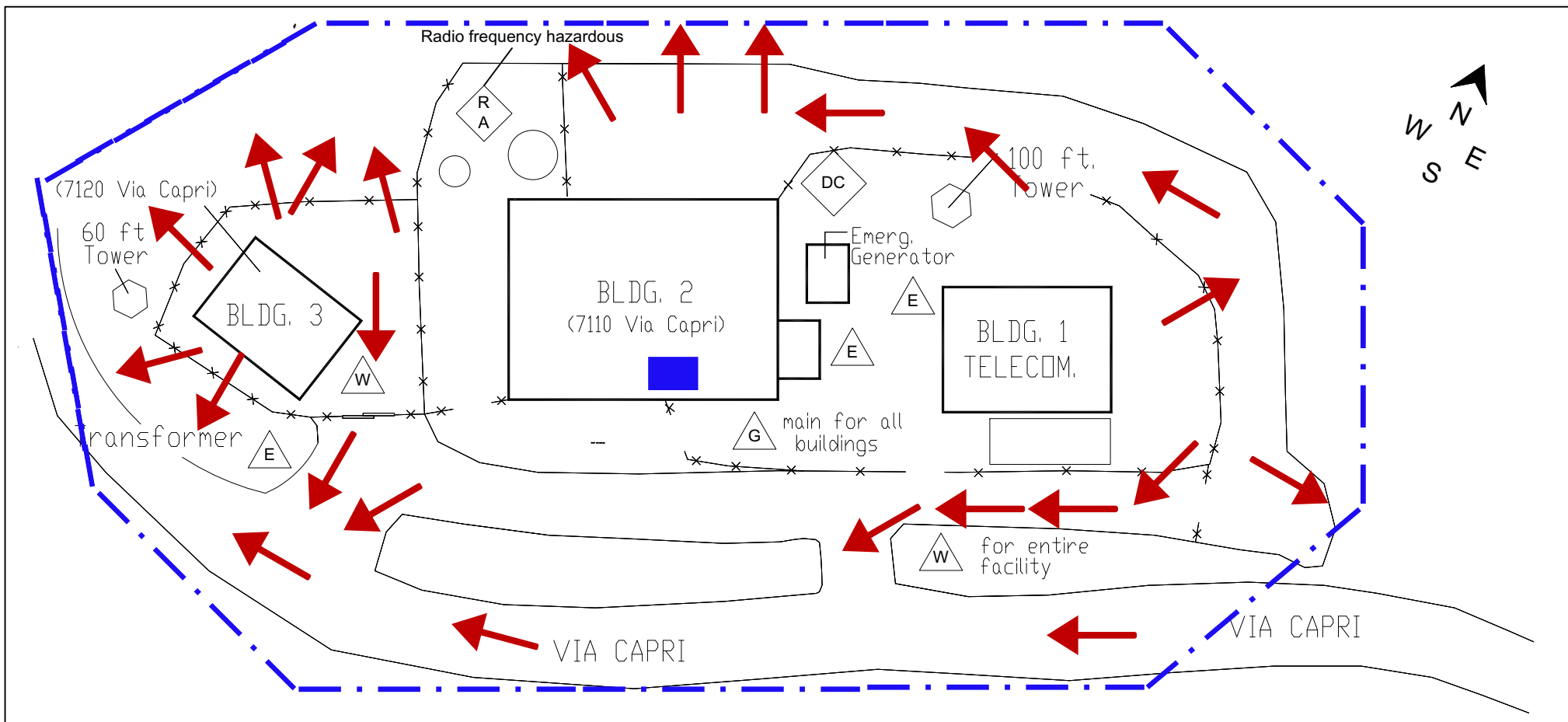
The Trade Street storage facility is located approximately four miles east of the main campus. The facility covers eight acres east of Interstate 805, north of Miramar Road, at the north end of Trade Street in the City of San Diego. UC San Diego Materials Management Office uses the facility for warehousing and distribution operations. The UC San Diego Storehouse, Shipping/Receiving, Surplus Sales, Self-Storage, Bookstore, and the Library Annex are the primary users.

The Trade Street facility is bordered on all sides by light industrial and commercial facilities.

Facility Drainage

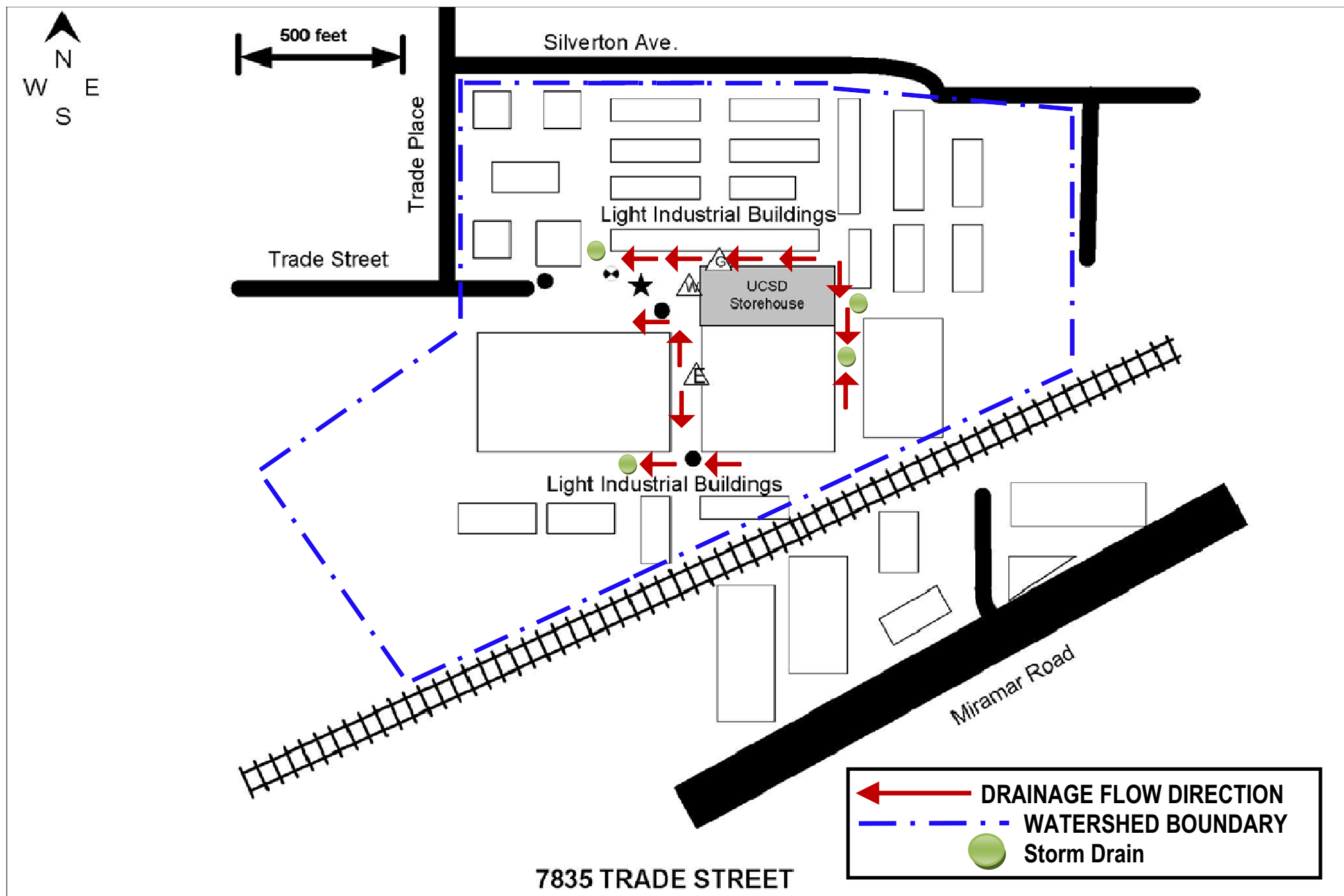
The general flow of storm water discharge from the Trade Street storage facility is shown in Figure 8.

FIGURE 7. MOUNT SOLEDAD RESEARCH STATION Drainage Map



← DRAINAGE FLOW DIRECTION
- . - . WATERSHED BOUNDARY

FIGURE 8. TRADE STREET DRAINAGE MAP



Appendix B

Illicit Discharge Detection and Elimination Program

UC SAN DIEGO ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

SCOPE

The purpose of UC San Diego's Illicit Discharge Detection and Elimination Program is to prevent non-storm water discharges (NSWDs) into the storm drain system on campus. An NSWD is any discharge to a storm drain or storm water conveyance system that is not composed entirely of storm water such as irrigation runoff. Some types of NSWDs are referred to as "illicit" discharges. These are NSWDs that are specifically prohibited by UC San Diego's Phase II Small MS4 General Permit because they contain pollutants that can impact downstream waterways. Examples of illicit discharges into a storm drain that are prohibited include sanitary sewer wastewater (e.g., sewer overflows), spills or releases of hazardous materials or waste, wash water, and improper waste disposal. Investigations of NSWDs suspected to be "illicit discharges" such as sanitary sewage and/or significantly contaminated are to be conducted immediately following discovery as described below.

PROCEDURES FOR ILLICIT DISCHARGE DETECTION AND ELMINATION

1. Education and Outreach

- a. EH&S will mark storm drains on campus with "No Dumping" labels to prevent people from dumping water or other pollutants into them.
- b. EH&S provides training on NSWDs and Illicit Discharges in the Annual Shop & Studio Environmental Compliance & Hazards Training. In addition, students, faculty, and staff are educated on the water quality impacts of NSWDs during outreach events on campus.

2. NSWD Prevention

- a. Look for evidence of NSWDs during routine outdoor work activities.
 - i. If water is observed going into a storm drain and it isn't raining, try to identify the source and report it (see reporting procedures below). Stop the source of the NSWD if possible.
 - ii. Evidence of a NSWD might include staining on pavement, ponding, the sound of water in a storm drain, etc.
- b. Monitor irrigation systems at least once a year for discharges into the storm water conveyance system. Adjust irrigation system as needed.
- c. Maintain equipment to prevent leaks and spills.

3. Reporting a NSWD

- a. Report an outdoor hazardous material spill (e.g., oil or fuel), a sanitary sewer overflow, or any other contaminated discharge that gets into an outdoor storm drain to EH&S at(858) 534-3660, or if after hours, call UC San Diego Police Department at(858) 534-HELP (4357)

- b. For a water leak, broken pipe or sprinkler, or irrigation problem, call Facilities Management Customer Relations help desk at (858) 534-2930 or email wsc@ucsd.edu. Please include detailed location information and pictures if available.
- c. For all other NSWDS, email ehsea@ucsd.edu or call EH&S Environmental Affairs at (858) 246-1148
- d. **EH&S Reporting:** Any non-storm water discharge believed to be an immediate threat to human health or the environment or suspected of being sanitary sewage and/or significantly contaminated material shall be reported immediately to the San Diego Regional Water Quality Control Board and to the San Diego Department of Environmental Health. If the discharge continues offsite, the City of San Diego (downstream MS4) will also be notified.

4. NSWSD and Illicit Discharge Investigations, Response, and Corrective Actions

- a. When a NSWSD is observed or reported, EH&S, FM, or FD&C staff will conduct a field investigation to determine if the source of the NSWSD can be identified.
 - i. If the source of the NSWSD is identified, corrective actions will be implemented to address the NSWSD. Corrective actions may include but are not limited to:
 - 1. Addressing NSWSD caused by behavior (e.g., dumping) by educating the responsible party on the water quality impacts of NSWDS. Disciplinary or enforcement actions will be taken if necessary
 - 2. Irrigation system adjustments/repairs;
 - 3. Water pipe repairs;
 - 4. Sanitary sewer system repairs;
 - 5. Equipment adjustments/repairs.
 - ii. If the source of the NSWSD cannot be located, arrangements will be made with FM or FD&C for the storm water conveyance system upstream of the observed NSWSD to be inspected (e.g., CCTV) to identify the source.
- b. If the NSWSD is suspected to be an illicit discharge, UC San Diego will conduct an investigation to identify and locate the source of any suspected illicit discharge within 72 hours of becoming aware of the suspected illicit discharge. For investigations that require more than 72 hours, EH&S shall identify the actions being taken to identify and locate the source of the suspected illicit discharge.

- i. Non-storm water discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated within 24 hours.
 - ii. Investigations of suspected sanitary sewage and/or significantly contaminated discharges shall be prioritized over investigations of NSWDS suspected of being cooling water, wash water, or natural flows.
 - iii. If the investigation reveals an illicit discharge into UC San Diego’s storm water conveyance system, mitigation measures will be implemented to remove the contamination. A spill mitigation contractor will be used if necessary to ensure the illicit discharge is contained and cleaned.
- c. Identify and document the source of all non-storm water discharges. If the source of the non-storm water discharge is found to be a discharge authorized under UC San Diego’s Phase II Small MS4 General Permit, or authorized under another National Pollutant Discharge Elimination System (NPDES) permit, no further action is required.

5. Monitoring

- a. If the source of the NSWDS cannot be located through investigative procedures, samples will be collected and analyzed for the following: ammonia, color, conductivity, detergents-surfactants, fluoride, hardness, pH, potassium, and turbidity.
- b. EH&S will review laboratory results to verify that the action level concentrations for indicator parameters shown in the table below are not exceeded.

| Indicator Parameter | Action Level Concentration |
|----------------------------|--|
| Ammonia | >= 50 mg/L |
| Color | >= 500 units |
| Conductivity | >= 2,000 µS/cm |
| Hardness | <= 10 mg/L as CaCO ₃ or >= 2,000 mg/L as CaCO ₃ |
| pH | <= 5 or >=9 |
| Potassium | >= 20 mg/L |
| Turbidity | >= 1,000 NTU |

- c. If action levels are exceeded, and/or visual observations indicate a suspected illicit discharge to any of the storm water outfalls at UC San Diego identified in the attached map, additional investigations will be conducted and notifications will be made.

6. Record of Investigation

- a. EH&S will fill out the Non-Storm Water Discharge Log and maintain it electronically.
- b. EH&S will report NSWDS that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board, the Department of Environmental Health, and the City of San Diego.

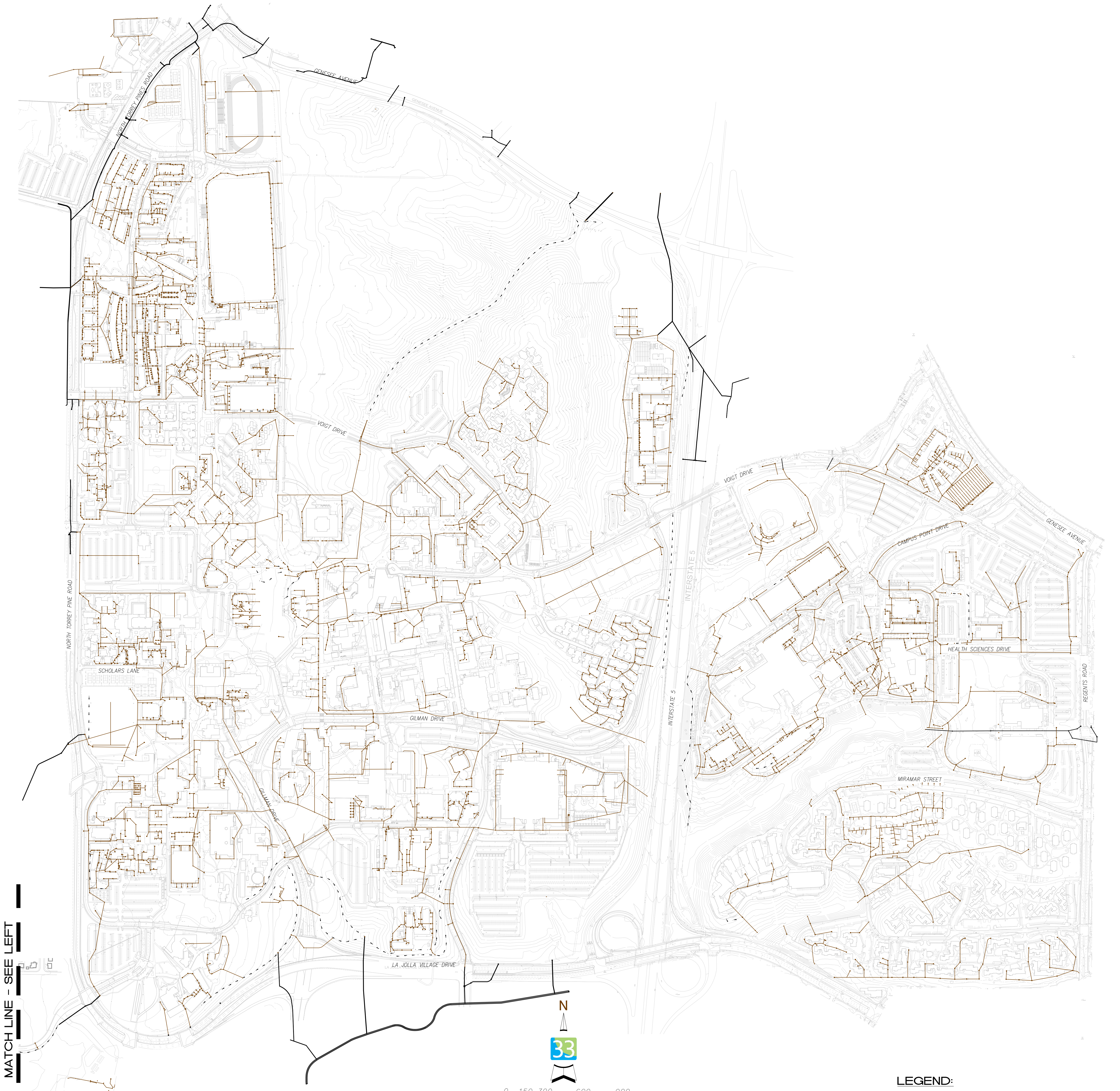
Appendix C

UC San Diego Storm Water Map and Outfall Map

UC San Diego Storm Water Conveyance System



MATCH LINE - SEE RIGHT



MATCH LINE - SEE LEFT

LEGEND:
 STORM DRAIN _____
 CITY STORM DRAIN _____

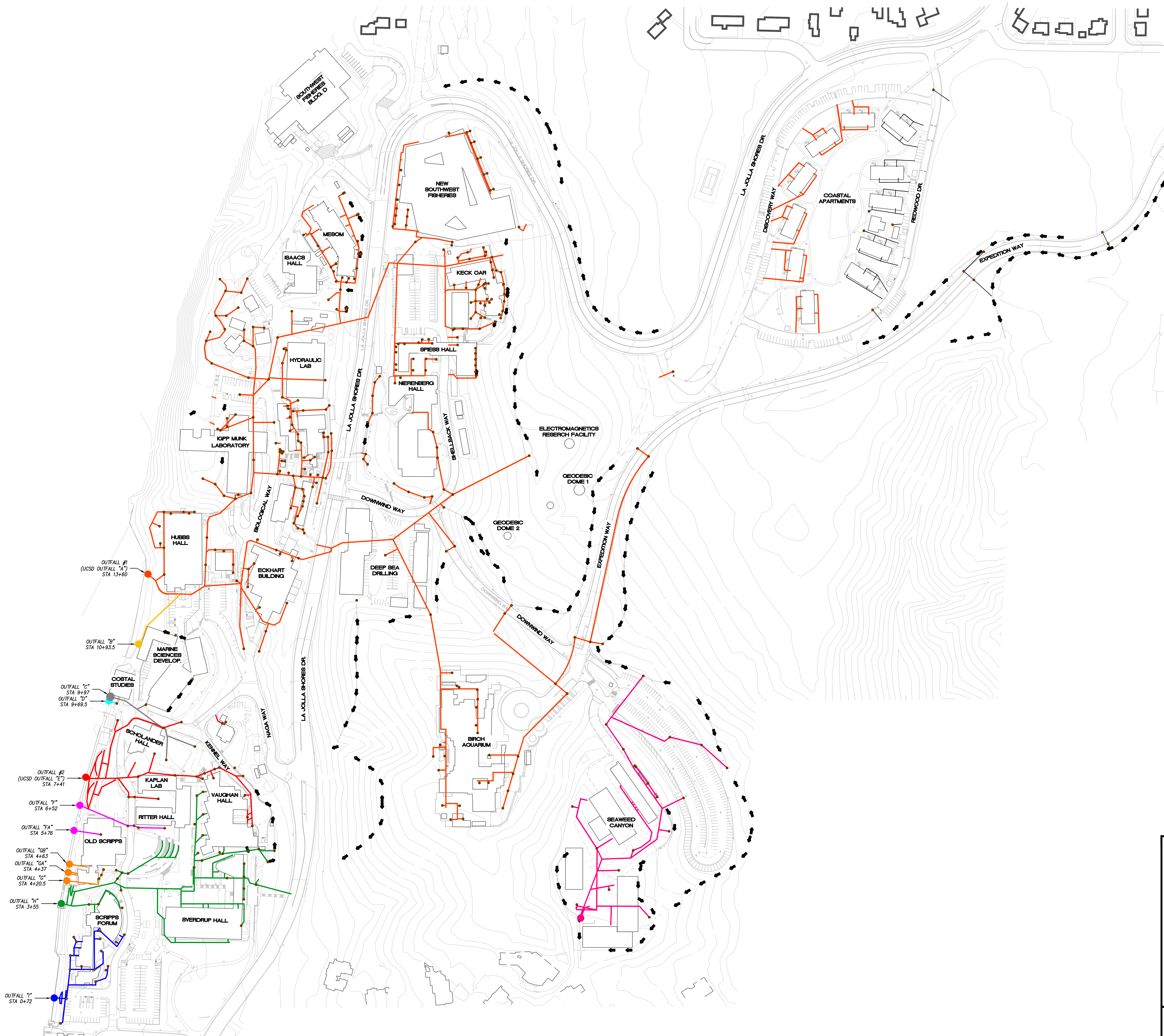
W4552 CAMPUS WIDE STORM DRAIN SYSTEM

| | | | |
|----------|-----------|---|-----|
| SCALE: | NOTED | DRAWN BY: | BSS |
| DATE: | 12-9-2015 | CHECKED BY: | |
| JOB NO.: | 1650.00 |   | |
| SHEET: | | <small>PLANNING & ENGINEERING 9500 Hillcrest Drive, #7 Floor, San Diego, CA 92131 Tel 619.757.0233</small> | |

\\s12011\geograpy\1020\04510 - UC San Diego Engineering\Engineering\Storm\W4552 - 01\W4552 Campus Wide Storm Drain System.dwg
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PACIFIC OCEAN

ASBS 31



| LEGEND | |
|---------------------------|--|
| OUTFALL "A" DRAINAGE AREA | |
| OUTFALL "B" DRAINAGE AREA | |
| OUTFALL "C" DRAINAGE AREA | |
| OUTFALL "D" DRAINAGE AREA | |
| OUTFALL "E" DRAINAGE AREA | |
| OUTFALL "F" DRAINAGE AREA | |
| OUTFALL "G" DRAINAGE AREA | |
| OUTFALL "H" DRAINAGE AREA | |
| OUTFALL "I" DRAINAGE AREA | |
| SWALE | |
| INLET | |

THE UNIVERSITY OF CALIFORNIA
 SAN DIEGO
 STORM WATER OUTFALL MAP

UC San Diego

| | |
|-----------|-------|
| REVISION: | _____ |
| REVISION: | _____ |
| REVISION: | _____ |
| REVISION: | _____ |

Scripps Institution of Oceanography

U:\000\04122 - 020 Executive Engineering\John\2014-05-03 SD Storm Drain Outfall\SD Outfall map - Steve Lablanc
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Appendix D

UC San Diego Integrated Pest Management Program

UC SAN DIEGO INTEGRATED PEST MANAGEMENT PROGRAM

The University of California performs research on Integrated Pest Management (IPM) and provides information to the public at: www.ipm.ucdavis.edu

UC San Diego implements IPM through a combination of techniques such as biological controls, use of pest resistant varieties, and modification of irrigation or pruning to make the habitat less conducive to pest development. The campus Storm Water Management Program includes an Integrated Pest Management Best Management Practice. If pesticides are used, the least toxic, most effective, and most specific product is used. Organic based products are used whenever possible. Mulch is used for weed prevention and moisture retention to reduce irrigation and use of chemical controls. The campus also monitors and repairs or replaces irrigation equipment as needed to conserve water and prevent irrigation run-off.

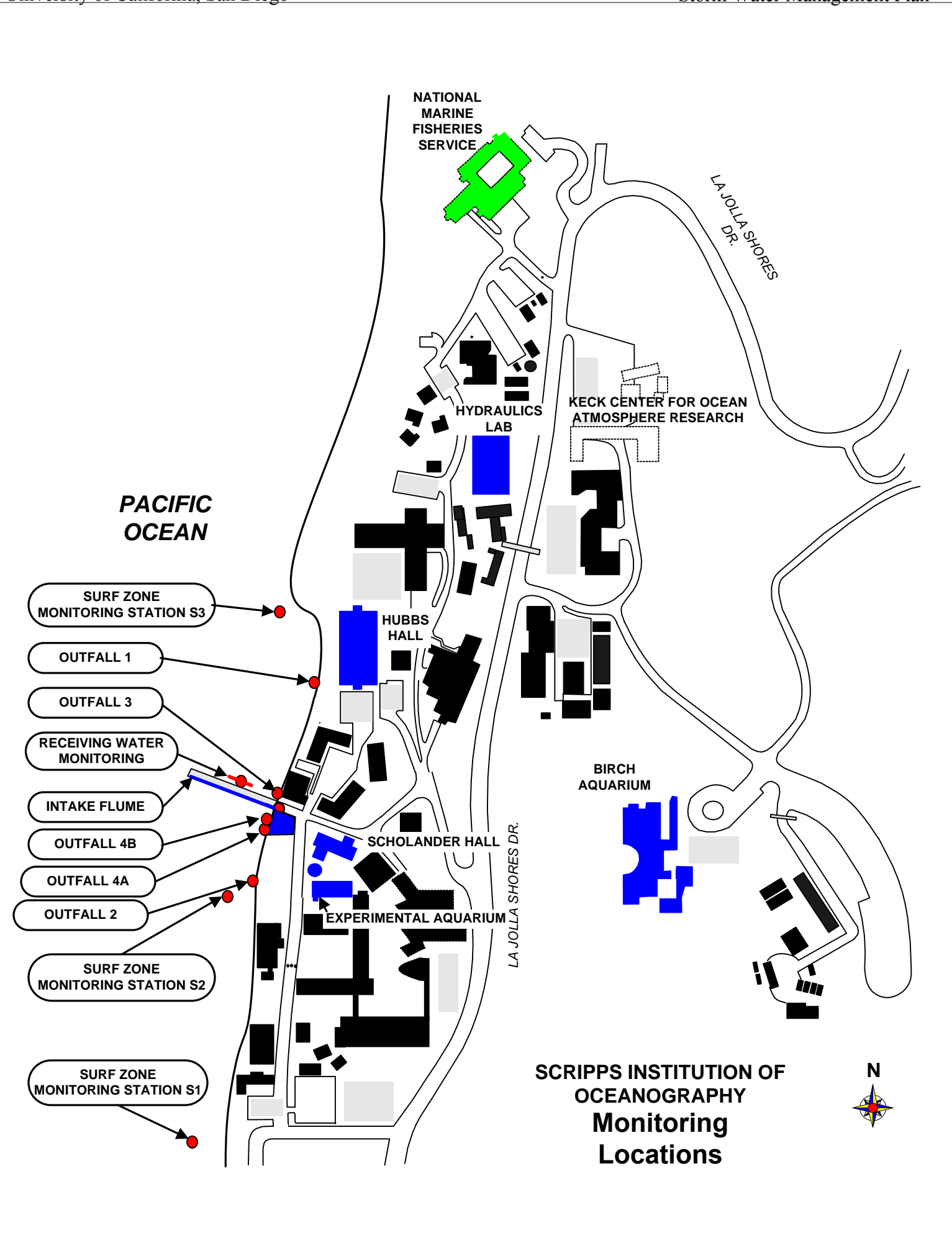
Pesticide and herbicide application on campus is limited to the following applicators:

- Two licensed and trained applicators from Corky's Pest Control (for services campus-wide)
- Two licensed and trained UC San Diego Groundskeepers with Housing, Dining, and Hospitality Services (for services around campus housing and dining facilities)
- Three licensed and trained applicators from UC San Diego EH&S (for services inside buildings and 3 feet from building exteriors)

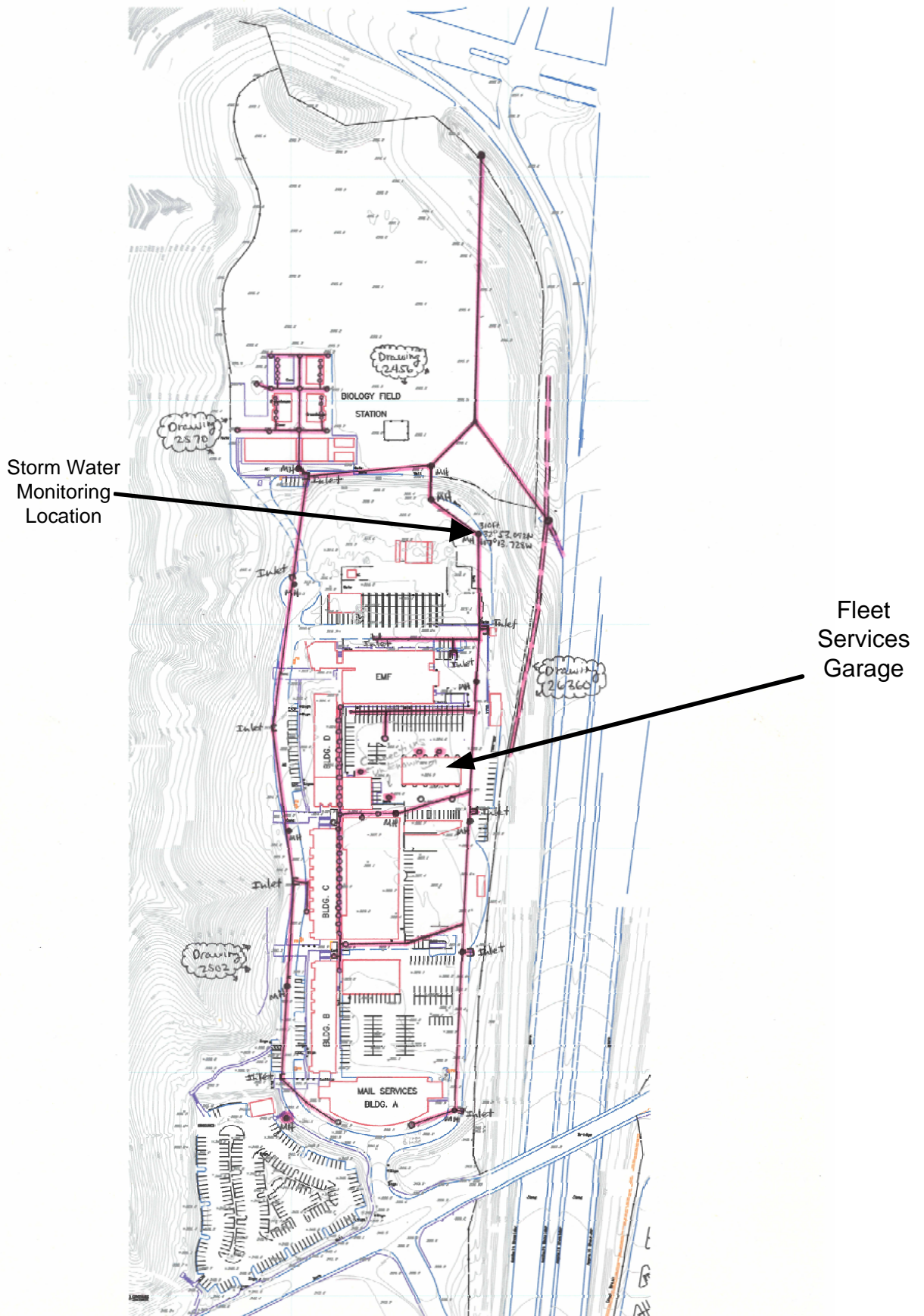
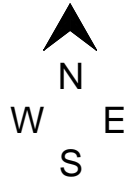
These applicators all follow IPM principles and only use pesticides or herbicides when mechanical removal or other controls are not practical. Pesticides and herbicides are not applied before a forecasted storm and are not applied in proximity to storm drains. Unused pesticides and herbicides are managed in accordance with manufacturer specifications, product labels, and State regulations.

Appendix E

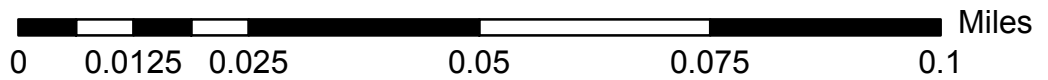
Storm Water Monitoring Locations



Fleet Services Storm Water Collection System, Discharge Points, and Monitoring Location



Nimitz Marine Facility Monitoring Locations

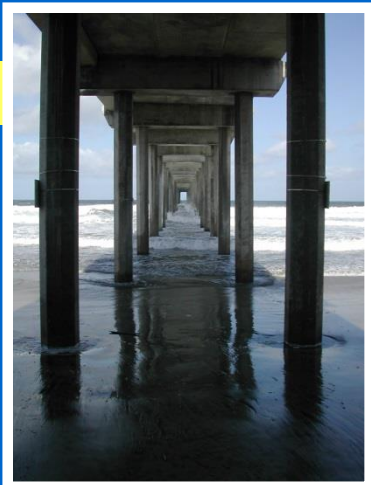
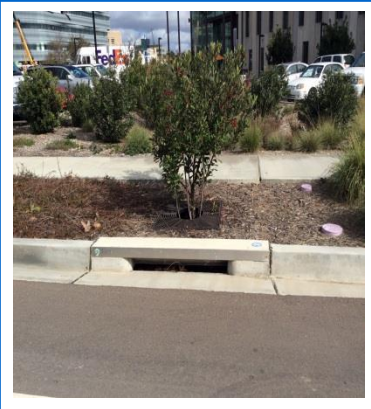


- ▲ Grate Inlet Stormwater Treatment System
- Modular Wetland Stormwater Treatment System
- ▲ Flume Filters
- ⊕ Inlet
- ★ Monitoring Location
- Outfall
- Direction of Stormwater Flow
- ⋯ Vegetated Area with the Potential for Soil Erosion
- Facility Boundary
- Trench Drain
- ▶▶▶ Stormwater Culvert
- Pipe (Runoff Pumped to North Brow Ditch)
- Offsite Stormwater Flow
- New Wharf and Pier

Appendix F

Program Effectiveness Assessment and Improvement Plan

STORM WATER MANAGEMENT PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT PLAN



**UNIVERSITY OF CALIFORNIA
SAN DIEGO**

Updated June 2016

UC San Diego

JUNE 2015, UPDATED JUNE 2016

UNIVERSITY OF CALIFORNIA SAN DIEGO

Storm Water Management Program Effectiveness Assessment and Improvement Plan

Prepared by

UNIVERSITY OF CALIFORNIA SAN DIEGO
ENVIRONMENT, HEALTH, AND SAFETY

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1 PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT PLAN OVERVIEW

The University of California, San Diego (University) has developed this Program Effectiveness Assessment and Improvement Plan (PEAIP) to meet the requirements of the Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4) Order No. 2013-001-DWQ (referred to as the Phase II MS4 Permit).

1.1 GOALS OF THE PROGRAM EFFECTIVE ASSESSMENT AND IMPROVEMENT PLAN

The PEAIP provides a process for:

1. Identifying storm water runoff pollutants of concern on campus;
2. Determining priority Best Management Practices (BMPs) and/or campus policies/ procedures to address these pollutants of concern; and
3. Identifying assessment tools that can provide data to be used to evaluate the effectiveness of the priority BMPs and/or campus policies/procedures at protecting storm water runoff water quality.

The goals of the PEAIP are to:

- ❖ Improve the implementation and effectiveness of campus storm water program elements
- ❖ Improve management of limited resources and support decisions associated with allocation of funds
- ❖ Establish links between program implementation, pollutant load reduction, and water quality improvements
- ❖ Use findings to focus/modify program (adaptive management)
- ❖ Identify implementation gaps

The successful operation of the University's Storm Water Program relies on the implementation of program elements and the effectiveness of those elements at achieving the program water quality goals. Due to the complexity of storm water, a combination of metrics will be used to evaluate the effectiveness of the program. The University will use the six outcome levels from the California Stormwater Quality Association (CASQA)'s guidance document *A Strategic Approach to Planning for and Assessing the Effectiveness of Stormwater Programs* to evaluate program policies and procedures:

- | | |
|----------|--|
| Level 1: | Implementation of program activities (no effectiveness assessment) |
| Level 2: | Knowledge and awareness of target audiences |
| Level 3: | Behavior of target audiences |
| Level 4: | Pollutant load reductions achieved |
| Level 5: | MS4 storm water runoff quality |
| Level 6: | Receiving water conditions |

The outcome levels range from implementation of storm water program elements (i.e. storm water outreach website was made available) at Outcome Level 1 to improving receiving water quality at Outcome Level 6. In this PEAIIP, the goal is to link Outcome Levels 4, 5, and 6 results with Outcome Level 1 program elements by targeting the correct audience (Outcome Level 3) and addressing barriers and bridges to action (Outcome Level 2). Therefore while it can be difficult to isolate the impacts of changes in receiving water conditions, the University can determine if the program is effective by evaluating Outcome Levels 1, 2, and 3.

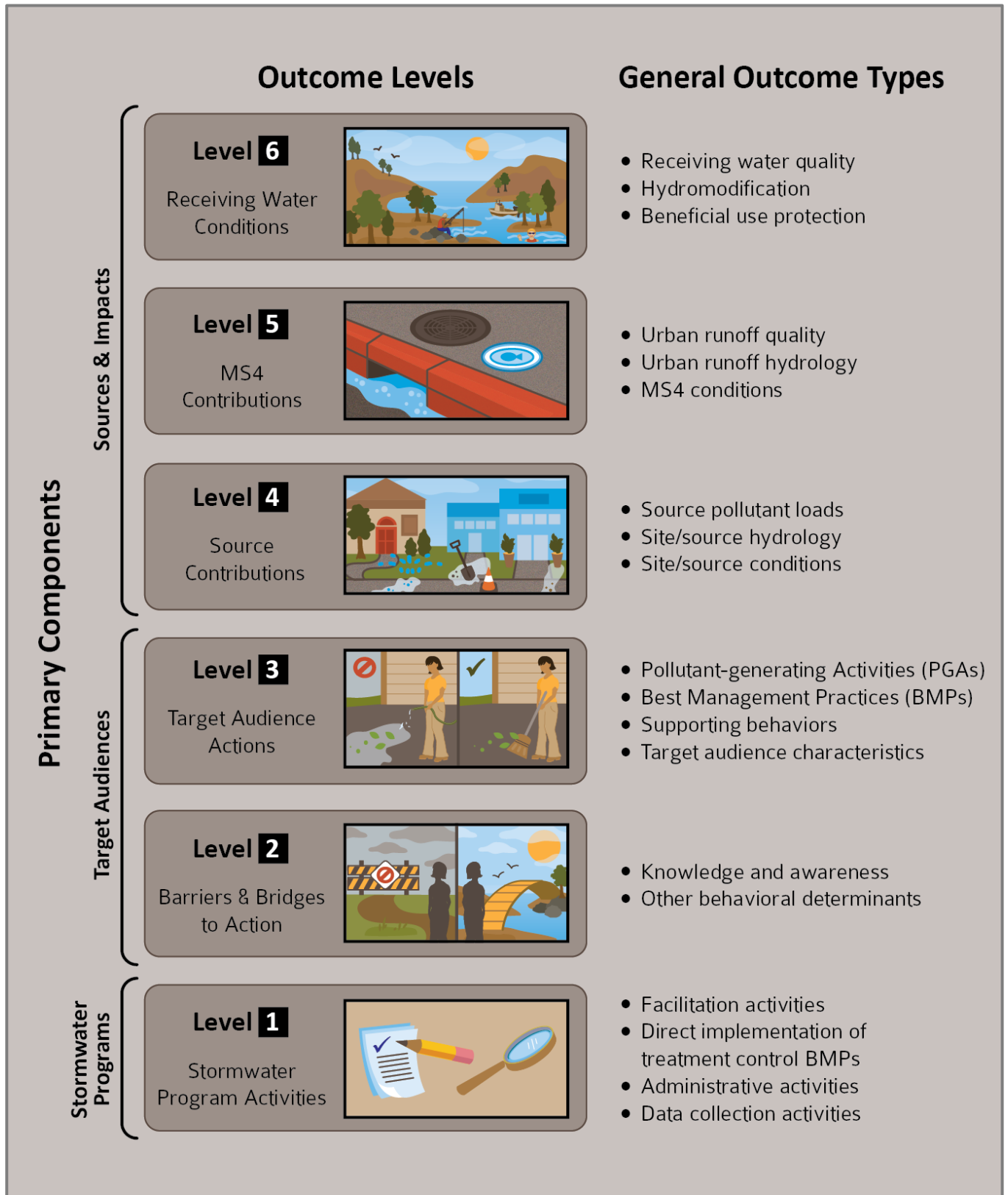
Based on the effectiveness assessment, modifications can be made to program elements, BMPs, and policies as needed to better meet water quality objectives.

1.2 PROGRAM EFFECTIVE ASSESSMENT AND IMPROVEMENT PLAN PROCESS

The following steps, based on CASQA's guidance, are the foundation for the University's process to evaluate and modify the program to improve effectiveness. Figure 1-1, shown below, illustrates the relationship between the program components, outcome levels, and outcome types for evaluation purposes.

1. Collect and evaluate the identified data
2. Use data collected to identify if priority elements have been implemented and identify behavior determinants
3. Answer management questions to determine if pollutant-generating activities are being reduced and BMPs are effective
4. Evaluate if MS4 contributions have changed and if receiving water conditions have changed
5. Identify effectiveness of priority BMPs, data gaps, and recommend changes based on data collected.

Figure 1-1: CASQA Outcome Levels



2 STORM WATER PROGRAM OVERVIEW

2.1 STORM WATER PROGRAM SUMMARY

UC San Diego is one of ten UC campuses governed by the Regents of the University of California. UC is the only landowner for residential, commercial and institutional uses. UC San Diego employs staff or contracts for the services of activities that might impact storm water quality such as construction activities, new development activities, building maintenance, landscape maintenance, vehicle maintenance, etc. UC San Diego is the landlord for all campus housing and the owner of all campus buildings. Because the entire MS4 is the property of UC San Diego, certain controls that do not exist in a traditional MS4 community are present. For instance: potentially polluting activities such as landscape maintenance, building maintenance, and food facility operation are performed by a relatively small number of departments and/or people all under employment or contract to the University. As a result, reaching these influential staff or contractors and obtaining desired outcomes is made easier. Reducing unwanted impacts from herbicide and pesticide use, as another example, does not require education and behavior modification for the entire campus community. Rather, it involves outreach to a select group of trained staff or contractors involved in landscape and building maintenance that can be expected to implement an effective program. Vehicle maintenance on campus is prohibited in all locations except the Fleet Services facility. This eliminates the need to conduct outreach, inspection and enforcement at numerous vehicle repair facilities. It changes residential outreach. Residents are not generating waste automotive fluids that must be properly collected. However, they must know about the UC San Diego vehicle maintenance prohibition and that prohibition must be enforced.

In compliance with the Phase II MS4 permit requirements, the University has developed a set of programs that are designed to reduce the discharge of pollutants and to protect water quality. All program elements will be evaluated in the PEAIP. The following programs are being implemented to accomplish the listed objectives:

- ◆ **Education and Outreach Program:**

The Education and Outreach Program objectives are to inform University faculty, students, staff, and visitors about storm water pollution and steps that can be taken to reduce storm water pollution. The purpose of this program is to increase the campus community's knowledge regarding the storm drain system, impacts of urban runoff and illicit discharges on receiving waters, and potential BMP solutions for the target audiences. The Education and Outreach Program includes public outreach and staff pollution prevention and good housekeeping training.

- ◆ **Public Involvement and Participation Program:**

The goal of the Public Participation and Involvement Program is to encourage the campus community to volunteer and participate in storm water pollution prevention activities on campus and to provide public comment and input on campus policies and activities related to storm water management. This will be accomplished by increasing storm water awareness in the campus community.

- ◆ **Illicit Discharge Detection and Elimination Program:**

The goal of the Illicit Discharge Detection and Elimination (IDDE) Program is to detect, investigate, and eliminate illicit discharges, including illegal dumping. This will be accomplished by outfall mapping to understand where storm drains from the MS4 discharge to receiving water bodies, field investigations to identify illicit discharges, and implementing IDDE procedures for source investigations and corrective actions.

- ◆ **Construction Site Storm Water Runoff Control:**

The Construction Site Storm Water Runoff Control Program is implemented to prevent construction site discharges of pollutants and impacts on beneficial uses of receiving waters. The Construction Site Storm Water Runoff Control Program will be implemented through adoption of contract language for

construction with land disturbance that require appropriate BMPs and coverage under the Construction General Permit.

◆ **Pollution Prevention/Good Housekeeping for Permittee Operations Program:**

The Pollution Prevention/Good Housekeeping Program shall prevent or reduce the amount of pollutant runoff from University operations. This will be accomplished by identifying University operations with the potential to contribute to storm water pollution, training staff responsible for operations that may impact storm water, implementing BMPs, routine operation and maintenance (O&M) of the storm water conveyance system, and source control measures.

◆ **Post Construction Storm Water Management Program:**

The objective of the Post Construction Storm Water Management Program is to control hydromodification and prevent pollutant runoff from new development and redevelopment projects. The Post Construction Storm Water Management Program includes required site design measures, source control measures, and low impact development design criteria. The program also includes the processes for review and approval of construction plans, documentation of treatment measures, and O&M requirements for storm water treatment measures.

These programs work together to comprise a well-rounded and multi-faceted approach to reducing urban runoff pollution within the University.

2.2 STORM DRAINAGE SYSTEM

The campus's storm water conveyance system is comprised of a variety of systems including: bioretention, engineered storm water detention systems, underground pipes, catch basins, small open drainage channels, surface run-off, and swales that discharge storm water to natural drainage channels.

The campus is situated on hilly terrain with steep natural drainage channels which include gulches and coastal canyons. The ravines separate the clusters of buildings grouped into colleges. UC San Diego relies heavily on natural drainages to manage storm water on its campus.

Maintenance and repair of the University's storm drain system is overseen by UC San Diego Facilities Management Department and Facilities, Design, and Construction Department.

2.3 WATERSHEDS AND LAND USE

UC San Diego is located with the Peñasquitos Hydrologic Unit (Unit 6.00) of the San Diego Region. The Peñasquitos Hydrologic Unit is relatively dry with annual precipitation at UC San Diego averaging approximately 8 to 10 inches per year. The Peñasquitos Hydrologic Unit is comprised of five hydrologic areas (HAs) and UC San Diego is located within three of them: the Scripps HA; the Miramar HA; and the Miramar Reservoir HA.

The drainage areas on campus can be divided into three general areas: those that drain directly west into the Pacific Ocean (located in the Scripps HA); those that drain to the south towards Rose Canyon Creek (located in the Miramar HA); and those that drain north towards Los Peñasquitos Creek (located in the Miramar Reservoir HA). Figures A-1, A-2, and A-3 in Appendix A depicts the campus drainage and sub-drainage boundaries.

Land use at the UC San Diego campus includes the following:

- High-Density Academic/Administrative Use (includes Science Research Parks)
 - *Areas for large, multi-story facilities that facilitate teaching, research, and public service operations. These include classrooms, research laboratories, research support areas, offices,*

libraries, and meeting rooms. Most of this area is occupied by University programs; however, some are occupied by University-related public or private partnerships.

- Low Density Academic Use (includes Science Research Parks)
 - *These areas are similar to high-density academic/administrative use, but have buildings typically only one-story in height and have less impervious surface area.*
- Residential (Faculty/Staff Housing, Student Housing, Mixed Use Housing)
 - *University-owned housing which includes residence halls with dining commons, mixed-use residential housing, single-unit detached, multi-family units, and apartments. This category includes ancillary services to support housing such as on-campus child care.*
- Medical Centers
 - *Clinical and medical research, and teaching facilities associated with the UC San Diego Medical Center.*
- Teaching and Research Field Station (Biology Field Station)
 - *Open land used for teaching, research and support of academic programs. Land is typically free of large buildings, but may include research-related buildings and facilities.*
- Open Space / Park (Natural Reserves, Recreation, Community Gardens, Canyons)
 - *Open space includes land for outdoor athletic facilities and fields, landscaped spaces, community gardens, Natural Reserves, groves, restoration lands, canyons, and bluffs.*
- General Services
 - *Support services systems include operational facilities related to the operations, security and safety, and maintenance of University Facilities such as Fleet Services; shops supporting general maintenance activities, Police, utility plants, service yards, recycling areas, storage,; and parking.*

Approximately 73% of the campus is developed (840 acres) and 27% is open space/park (312 acres).

The portion of the campus in the Scripps HA drains towards the Pacific Ocean and consists of Torrey Pines, Scripps Institute of Oceanography (SIO), and the western edge of the main campus. The drainage basins that are included in this area are approximately 480 acres.

The portion of campus in the Miramar Reservoir HA drains north to the Los Peñasquitos Creek consists of the northern part of the campus west of the Scripps HA. This portion of campus contains two undeveloped canyons which some of the storm water drains into. Approximately 290 acres of UC San Diego drains towards Los Peñasquitos Creek which flows to Los Peñasquitos Lagoon.

The portion of campus that is in the Miramar HA drains south to Mission Bay includes the remainder of the west campus, all of east campus, and La Jolla del Sol. Storm water in this area flows through campus storm drains to off campus Caltrans and City storm drains which eventually discharge to Rose Creek in Rose Canyon and then to Mission Bay. Drainage basins delineated for the UC San Diego campus portions that drain to Mission Bay total approximately 380 acres.

3 RECEIVING WATER QUALITY AND SOURCE ASSESSMENT

This section presents an evaluation of the water quality of the receiving water body, the identified pollutants of concern (POCs), and the source assessment for the POCs.

3.1 PACIFIC OCEAN / SAN DIEGO – SCRIPPS AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE

UC San Diego has multiple storm water outfalls that discharge into the San Diego – Scripps Area of Special Biological Significance (ASBS 31). The California Ocean Plan requires that the following beneficial uses of the ocean waters of the State be protected:

- Industrial water supply
- Water contact and non-contact recreation, including aesthetic enjoyment;
- Navigation
- Commercial and sport fishing
- Mariculture
- Preservation and enhancement of ASBS
- Rare and endangered species
- Marine habitat;
- Fish migration;
- Fish spawning and shellfish harvesting

The California Ocean Plan prohibits the discharge of waste into ASBS. Because UC San Diego discharges seawater from Scripps Institution of Oceanography and storm water into ASBS 31, the University has an Exception to the Ocean Plan that was adopted by the State Water Resources Control Board (SWRCB) in July 2004 and renewed in April 2015. The exception includes conditions that were incorporated into Order No. R9-2005-008, NPDES Permit No. CA0107239. The purpose of these conditions is to ensure that the discharges into ASBS 31 from UC San Diego do not adversely impact the biological communities in the ASBS or compromise protection of ocean waters for beneficial uses.

3.2 LOS PEÑASQUITOS CREEK

Storm water runoff from the portion of campus in the Miramar Reservoir HA discharges first to two undeveloped canyons on campus and then north into the Soledad Canyon drainage where, after 1.5 miles, it discharges to Los Peñasquitos Creek. Los Peñasquitos Creek has 303(d) listings for the following pollutants:

- Enterococcus
- Fecal Coliform
- Selenium
- Total Nitrogen as N
- Total Dissolved Solids
- Toxicity

No Total Maximum Daily Loads (TMDLs) have been adopted for Los Peñasquitos Creek; however there is a draft TMDL for sediment and bacteria.

3.3 ROSE CANYON CREEK

Storm water runoff from the portion of campus in the Miramar HA discharges into Caltrans and City storm drains that eventually flow to Rose Creek in Rose Canyon. Rose Canyon Creek flows south and into Mission Bay. Water quality protections for Rose Canyon Creek, therefore, also benefit the water quality of Mission Bay. Mission Bay has 303(d) listings for the following pollutants:

- Bacteria
- Eutrophic substances
- Lead

3.4 POLLUTANTS OF CONCERN

The University conducts monitoring of storm water runoff and the receiving water in ASBS 31 in accordance with the UCSD/SIO NPDES permit monitoring requirements for the discharge of seawater and storm water. Metals (e.g., copper and zinc), sediment, and bacteria have been identified as POCs in storm water runoff. In addition, the University has included trash as a pollutant of concern based on the Amendment to the California Ocean Plan to Control Trash that was adopted by the SWRCB on April 15, 2015.

3.5 SOURCE ASSESSMENT

The University identified sources for each of the POCs in storm water is based on the understanding of University operations and land use.

- Sediment
 - Construction sites
 - Infrastructure (streets and storm drains)
 - Open spaces
 - Corridors and connections
- Metals (copper and zinc)
 - Roads (brake dust and tire wear from vehicles)
 - Outdoor metal storage
- Pathogens (bacteria)
 - Turf and Vegetative waste
 - Animal waste in open spaces
 - Litter
- Trash
 - Litter (colleges, housing, large gathering sites, large parking areas, construction sites, etc.)
 - Trash collection areas

Storm water pollutant sources such as those summarized in Table 3.1 are managed by various campus departments through programs and policies in place such as:

- Leases/Licenses
- Purchase Order Terms and Conditions
- Construction Contracts

- Volunteers and Internships
- Storm Water Inspections
- Storm Water Webpage with Non-Storm Water Discharge Reporting Guidance
- Source Control BMPs
- Landscape and Turf Management
- Irrigation Management
- Refuse and Recycling Program
- Street Sweeping
- Storm Drain Inspection and Preventative Maintenance

TABLE 3-1: PROGRAM WATER QUALITY OBJECTIVES

| POLLUTANT OF CONCERN | SOURCE | TARGET AUDIENCE | PROGRAM WATER QUALITY OBJECTIVES (CASQA OUTCOME LEVEL) |
|-----------------------------|--|---|--|
| Sediment | Construction sites | Contractors Staff | <ul style="list-style-type: none"> • Awareness of construction BMPs (2) • Proper design and implementation of construction BMPs (3) • Minimize sediment runoff from construction (4) |
| | Open space | Students Staff Faculty | <ul style="list-style-type: none"> • Awareness of sediment generated from ad-hoc trails (2) |
| | Infrastructure: streets and storm drains | Staff | <ul style="list-style-type: none"> • Awareness of Maintenance BMPs (2) • Reduce sediment load and associated pollutants going into storm drain from streets (4) |
| Metals | Roads | Staff | <ul style="list-style-type: none"> • Street sweeping (3) |
| | Outdoor storage | Staff Contractors | <ul style="list-style-type: none"> • Cover outdoor metal storage |
| Trash | Litter | Students Staff Faculty | <ul style="list-style-type: none"> • Increase awareness of trash impacts on environment (2) • Reduce littering (3) |
| | Trash Collection Areas | Staff | <ul style="list-style-type: none"> • Retrofit trash collection bins to types that birds and animals cannot get into (3) |
| Pathogens (Bacteria) | Turf and vegetative waste | Staff | <ul style="list-style-type: none"> • Increased awareness of landscape and turf management (4) |
| | Litter | Students Staff Faculty Contractors | <ul style="list-style-type: none"> • Increase awareness of trash impacts on environment (2) • Reduce littering (3) • Retrofit trash collection bins to types that birds and animals cannot get into (3) |
| | Animal waste in open spaces | Students Staff Faculty | <ul style="list-style-type: none"> • Increase awareness of pet waste impacts on water quality (2) |

4 PRIORITY BEST MANAGEMENT PRACTICES (BMP) IDENTIFICATION AND ASSESSMENT

4.1 PRIORITY BMPs

The University evaluated the program elements to determine which BMPs target the Pollutant of Concern (POC) sources from the University operations to compile a list of Priority BMPs. The Priority BMPs are presented in the Program Effectiveness Assessment and Improvement Plan (PEAIP) Matrix in Appendix B as Table B-1. PEAIP Matrix includes the Priority BMPs, the targeted audience, the targeted POC, the associated program element, and the year of implementation. The Priority BMPs will be assessed each year to evaluate effectiveness. Non-priority BMPs will be implemented, but data will not be gathered to assess effectiveness on non-priority BMPs. This process acknowledges that it is beneficial to focus on objectives and to ensure that resources are used effectively.

4.2 PRIORITY BMP ASSESSMENT

Priority BMPs will be assessed using the following criteria:

- **Level of Implementation** is an evaluation of whether implementation achieved program goal. Ranked “None” if the BMP was not implemented at all, “Ongoing” if the BMP requires ongoing implementation to achieve program goals, or “Completed” if the BMP was fully implemented and achieved the program goals.
- **Effectiveness** is a measure of the impact of a BMP in terms of reducing a priority pollutant’s load or reaching a target audience. Ranked from “Low” if a BMP is not effective to “High” if the BMP achieves a significant impact. Effectiveness will be evaluated based on the targeted management questions developed for each Priority BMP. Management questions target what was the intended goal of the BMP, and whether that goal was achieved by the implementation of the BMP. If effectiveness is determined to be low, modifications will be proposed to the BMP to increase effectiveness.

4.3 MANAGEMENT QUESTIONS FOR PRIORITY BMPs

Management questions form the basis for the types of data that must be gathered and evaluated. Management questions seek to understand relationships which will help improve BMP effectiveness. As a part of the evaluation, the University will develop management questions which will guide what modifications to the program should be implemented.

To develop management questions, the University identified the target audiences for each and source which was presented in Table 3-1. For each POC and identified source, the University linked Priority BMPs that are aimed at reducing pollutant loads and then identified targeted management questions. A list of general Management Questions and the associated outcome levels are presented in Table 4-1. The general Management Questions will be used to develop targeted management questions.

Table 4-1: Management Questions

| OUTCOME LEVEL | MANAGEMENT QUESTIONS |
|---------------|--|
| 1 | Are program elements being fully implemented? |
| 2 | Are BMPs increasing knowledge and awareness? |
| 2 | Have barriers and bridges been addressed to effectively change behavior contributing to storm water pollution? |
| 3 | Are implemented BMPs resulting in a reduction of pollutant generating activities? |
| 3 | Are target audiences being identified and addressed? |

Based on the review of data gathered to answer management questions, modifications may be proposed to increase the effectiveness of the Priority BMP or to redirect resources in a more effective manner.

4.4 ASSESSMENT TOOLS

The University will use a diverse set of tools to evaluate the level of implementation, the effectiveness of priority BMPs, and answer Management Questions. The assessment tools which will be used by the University include, but are not limited to the following:

- Staff, Visitor, and Student Surveys
- Training Quiz Results
- Evaluation of BMP implementation
- Site Inspections
- Reports of pollutant-generating activities
- Illicit Discharge Reports
- Follow-up Investigations
 - Illicit Discharge Detection and Elimination
- Receiving Water Quality
 - Sample results from NPDES monitoring

Annually, data will be collected from the above activities and reports to track both short and long-term effectiveness of the storm water program.

4.5 ANNUAL REPORTING AND PROGRAM ASSESSMENT

The BMP effectiveness assessment matrix (Table B-1) will be used to annually assess the level of implementation and the effectiveness of Priority BMPs. The matrix will provide a summary of the results of program evaluation activities in a useable format for program review purposes. The implementation level and effectiveness level will be determined based on the review of the data collected to answer management questions. The University will submit the summary annually as a part of the Annual Report with proposed modifications as needed to improve BMP and program effectiveness. Modifications may also include the need to collect additional data to better determine effectiveness. The management questions and the data collected will be retained by the University and will be provided to the Regional Water Quality Control Board when requested.

The program effectiveness assessment report at the end of Permit Year 5 (FY 2017-18) will combine the results of the annual BMP effectiveness assessment matrix to conduct a long-term effectiveness assessment that evaluates the program holistically. The program effectiveness assessment will include an assessment to

determine whether Outcome Levels 4 through 6 were achieved. This assessment will also include an evaluation of MS4 contributions, available water quality data of the receiving water body, and identification of data gaps.

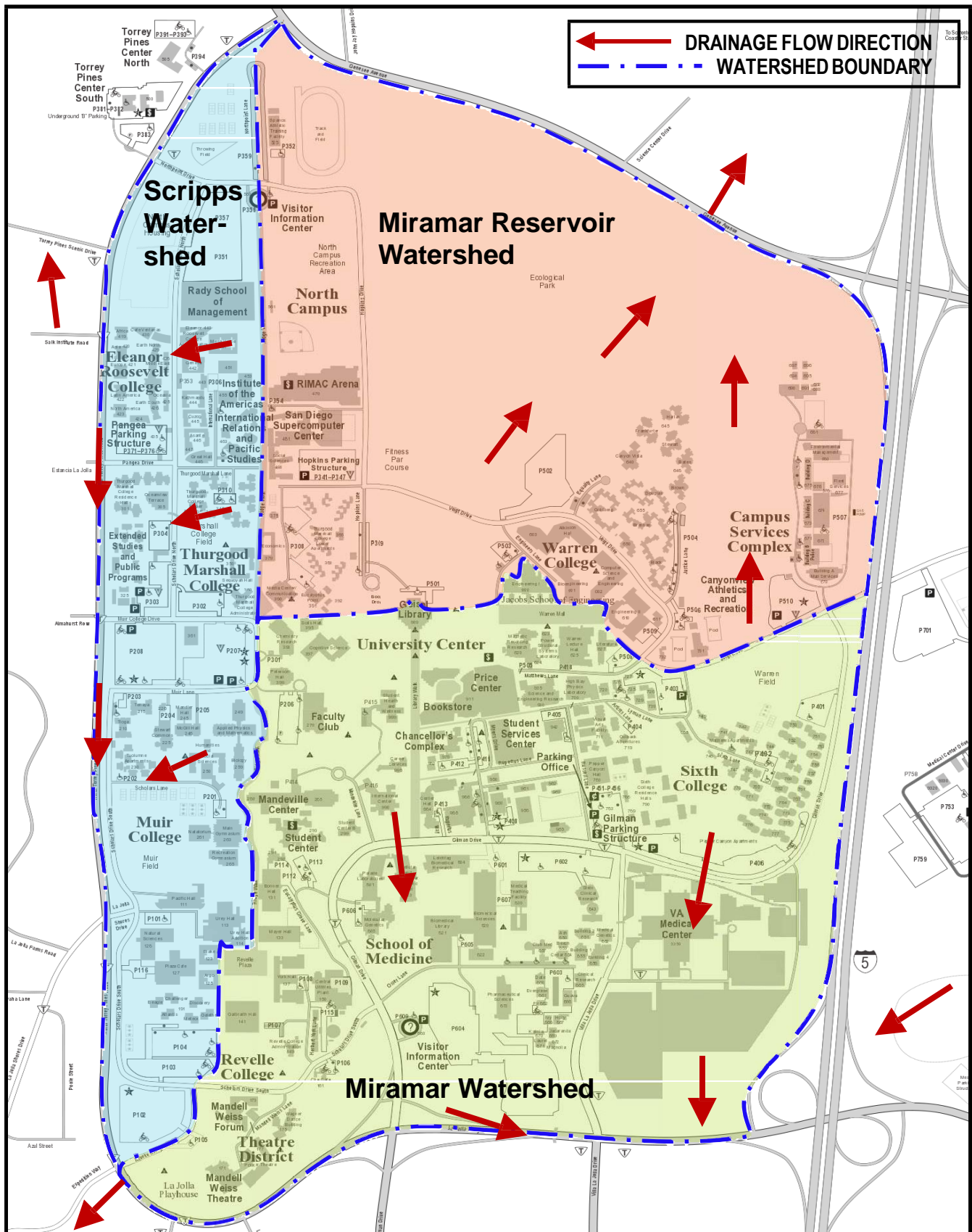
By the end of Permit Year 5 as required in the Phase II MS4 permit, the University will identify modifications that will:

- Improve upon BMPs that did not accomplish goals;
- Continue and expand upon BMPs that proved to be effective, including identifying new BMPs or modifications to existing BMPs designed to increase pollutant load reductions;
- Discontinue BMPs that may no longer be productive and replacing with more effective BMPs; and
- Shift priorities to make more effective use of resources required

The University will include the PEAIIP with proposed modifications with the FY 2017-18 Annual Report.

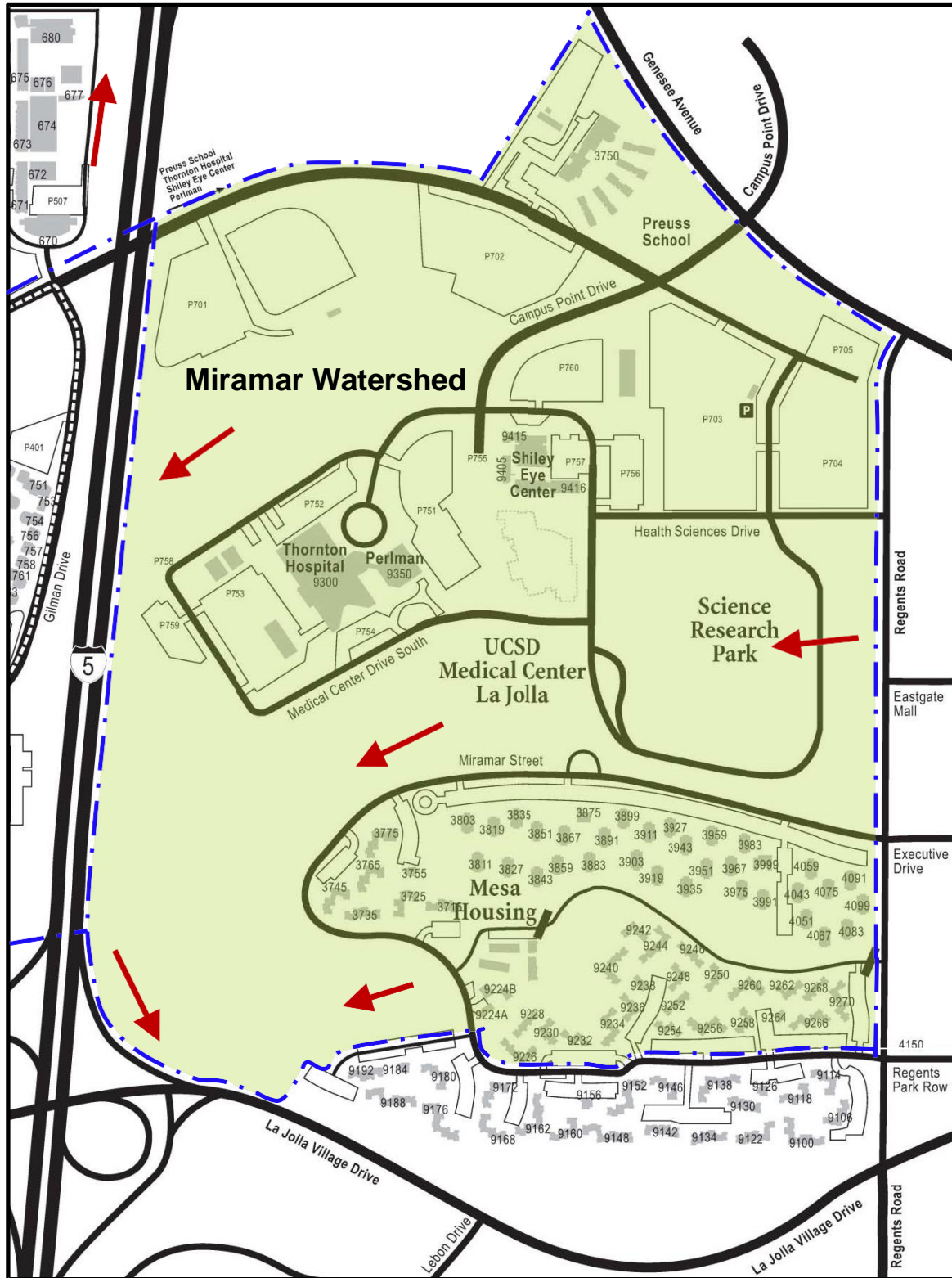
Appendix A
Campus Drainage and Watershed Maps

Figure A-1: UCSD West Campus Drainage Map



Note: UCSD West Campus drainage flows towards Pacific Ocean, Los Penesquitos Creek, Los Penesquitos Lagoon, Rose Canyon Creek, and Mission Bay.

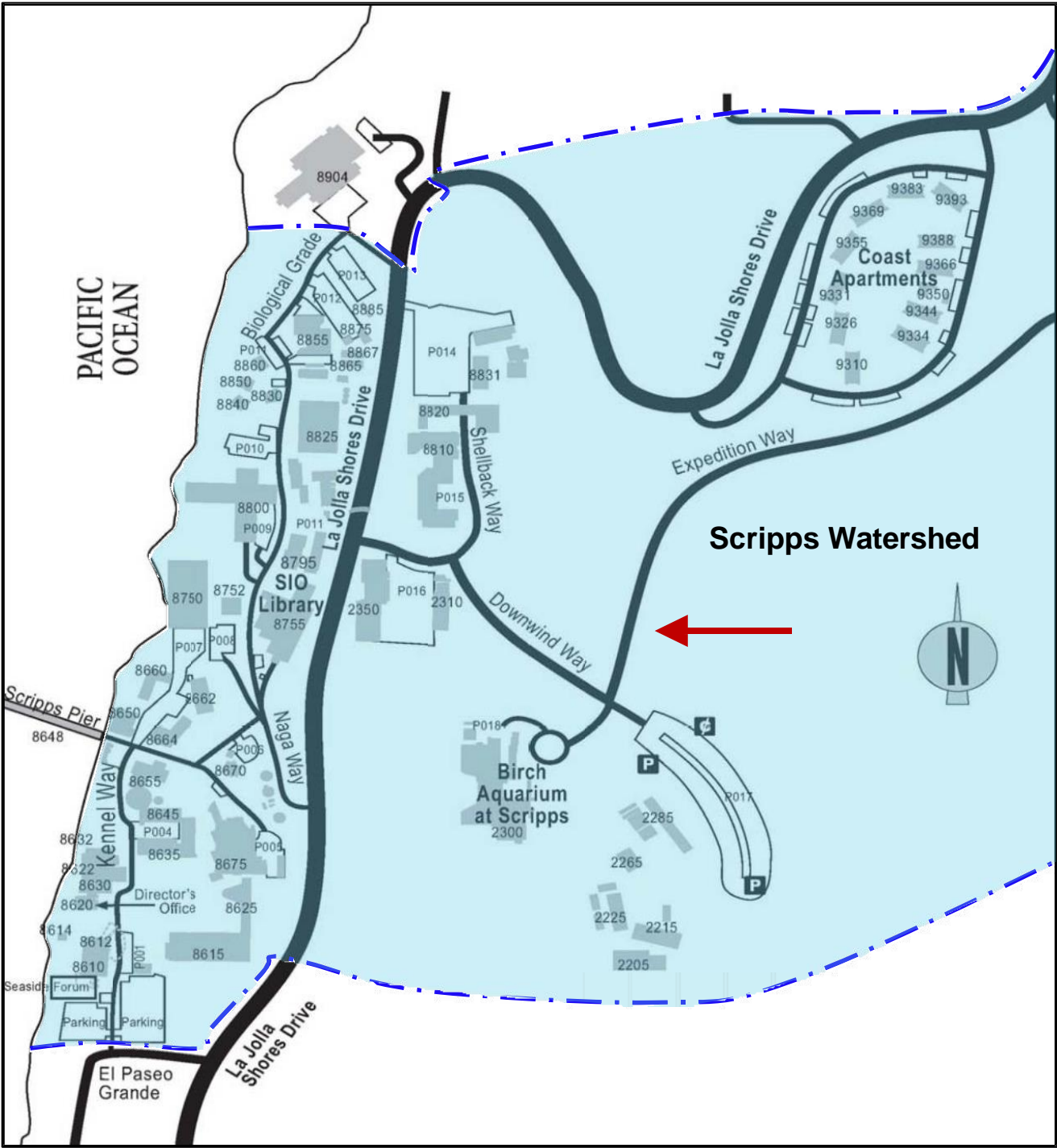
Figure A-2: UCSD East Campus Drainage Map



Note: UCSD East Campus drainage flows towards Rose Canyon Creek and Mission Bay.



Figure A-3: Scripps Institution of Oceanography Drainage Map



Note: Scripps Institution of Oceanography (SIO) drainage flows towards Pacific Ocean.

| | |
|---|--------------------------------|
|  | DRAINAGE FLOW DIRECTION |
|  | WATERSHED BOUNDARY |

Appendix B
Priority BMP Assessment

University of California San Diego

Storm Water Management Program Effectiveness Assessment and Improvement (PEAIP) Matrix

| PERMIT SECTION AND ELEMENT | Policy/ Procedure/ BMP Description | Permit Compliance Year for Implementation | Target Audience | Pollutant of Concern (POC) | CASQA Outcome Level (1-6) | Implementation Level (None, Ongoing, Completed) | Effectiveness Level (Low, Medium, High) | Proposed Modifications | Summary |
|--|---|---|-----------------|---------------------------------------|---------------------------|---|---|------------------------|---|
| F.5.b. EDUCATION AND OUTREACH PROGRAM | | | | | | | | | |
| F.5.b.2 | Public Outreach and Education | | | | | | | | |
| | Disseminate education materials to target audiences and translate as appropriate | Storm water education and outreach program has been developed and is implemented on an ongoing basis. Storm water website is available to the public: http://stormwater.ucsd.edu . | 2 (2015) | Staff, Faculty, Students, Contractors | All POCs | 2 | Ongoing | High | <p>Storm Water Pollution Prevention educational materials have been developed for students, faculty, and staff and are used at outreach events on campus each year. Storm water surveys are distributed at outreach events and the results are evaluated to assess campus community awareness of storm water pollution and to adjust outreach information accordingly.</p> <p>Stormwater Pollution Prevention Training was provided in English and Spanish to UCSD Custodial Staff on December 10, 2015, with approximately 265 attendees between four classes.</p> <p>Campus community storm water pollution prevention outreach events during the 2013/14 fiscal year included: You, Me, and Sustainability Outreach Event on 11/20/2013 had 171 people in attendance. EcoFaire on 4/23/2014 had 67 storm water surveys filled out by students, faculty, and staff.</p> <p>Campus community storm water pollution prevention outreach events during the 2014/15 fiscal year included: Annual Staff Picnic on 8/25/2014 (70 storm water surveys completed by students, staff, and faculty). The Green Labs Sustainability Fair on 3/11/2015 (31 storm water surveys completed). Earth Day on 4/22/2015 (28 storm water surveys completed). ESYS 103 Lecture on 5/8/2015 (146 surveys completed).</p> <p>Campus community storm water pollution prevention outreach events for the 2015/16 fiscal year included: All Staff Picnic on 8/14/2015 had 105 surveys filled out by students, staff, and faculty. ESYS 90 Seminar on 10/6/2015 had 25 surveys filled out by students, staff, and faculty. Women's Conference on 3/18/2016 had 17 surveys filled out by students, staff, and faculty. HDH Wellness Fair on 3/23/2016 had 131 surveys filled out by students, staff, and faculty. Sustainability Fair on 4/21/2016 had 24 surveys filled out by students, staff, and faculty. Life Science Fair on 4/22/2016 had 11 surveys filled out by students, staff, and faculty. Triton Day on 5/7/2016 had 102 surveys filled out by mostly visitors and prospective students.</p> |
| | Promote reporting of illicit discharges | <p>UC San Diego's Illicit Discharge Detection and Elimination Program</p> <p>UC San Diego Blink Storm Water Management Program page at the website: http://stormwater.ucsd.edu. Website includes an email link to report non-storm water discharges to storm drains.</p> <p>BMP D02 Landscape Management BMP D06 Non-Storm Water Discharges / Dry Weather Flows</p> | 2 (2015) | Staff, Faculty, Students | All POCs | 3 | Ongoing | High | <p>The campus community is educated on the prohibition of illicit discharges and non-storm water discharges into the campus storm water system during outreach events on campus. Storm water surveys are distributed at outreach events to increase awareness of non-storm water discharges being a pollutant.</p> <p>The UC San Diego stormwater website includes an email link to report non-storm water discharges to storm drains.</p> <p>The "Annual Shop & Studio Environmental Compliance & Hazards" training for operations and maintenance staff identifies sources of non-storm water discharges, how to report them, and how to reduce/eliminate them.</p> <p>IDDE Vehicle Information Cards with information on how to identify and report NSWDs have been distributed to UC San Diego Departments with vehicles for field staff. A total of 467 cards have been distributed to the following departments: 50 to HDH, 30 to Transportation/Parking, 12 to FD&C, 106 to FM, 200 to Transportation/Fleet Services, 30 to UCPD, and 39 to EH&S.</p> |
| F.5.b.3 | Staff and Site Operator Training and Education: Illicit Discharge Detection and Elimination Training | <p>The "Annual Shop & Studio Environmental Compliance & Hazards" training for Operations and Maintenance staff identifies sources of non-storm water discharges, how to report them, and how to reduce/eliminate them.</p> <p>UC San Diego's Illicit Discharge Detection and Elimination Program</p> <p>BMP D02 Landscape Management BMP D06 Non-Storm Water Discharges / Dry Weather Flows</p> | 3 (2016) | Staff | All POCs | 3 | Ongoing | High | <p>The "Annual Shop & Studio Environmental Compliance & Hazards" training for operations and maintenance staff, the Environmental Compliance/Pollution Prevention training for custodial staff, and the Environmental Stewardship Training for Department Safety Officers identify sources of non-storm water discharges, how to report them, and how to reduce/eliminate them. These trainings include questions to test the participants knowledge.</p> |
| F.5.b.4 | Staff Pollution Prevention and Good Housekeeping | <p>The "Annual Shop & Studio Environmental Compliance & Hazards" training for Operations and Maintenance staff covers UC San Diego's storm water pollution prevention program and identifies pollution prevention source control BMPs to be implemented for specific campus O&M activities.</p> <p>BMP A01 Good Housekeeping BMP A02 Spill Control and Cleanup BMP A04 Loading Dock Management BMP C01 Trash Management</p> | 2 (2015) | Staff | All POCs | 3 | Ongoing | High | <p>The "Annual Shop & Studio Environmental Compliance & Hazards" training for operations and maintenance staff, the Environmental Compliance/Pollution Prevention training for custodial staff, and the Environmental Stewardship Training for Department Safety Officers cover UC San Diego's storm water pollution prevention program and identify pollution prevention BMPs to be implemented for specific campus O&M activities. These trainings include questions to test the participants knowledge.</p> |

University of California San Diego

Storm Water Management Program Effectiveness Assessment and Improvement (PEAIP) Matrix

| PERMIT SECTION AND ELEMENT | Policy/ Procedure/ BMP Description | Permit Compliance Year for Implementation | Target Audience | Pollutant of Concern (POC) | CASQA Outcome Level (1-6) | Implementation Level (None, Ongoing, Completed) | Effectiveness Level (Low, Medium, High) | Proposed Modifications | Summary | |
|--|--|--|---------------------------------------|----------------------------|---------------------------|---|---|--|--|--|
| F.5.c PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM | | | | | | | | | | |
| High Priority Storm Drains Labels | More than 95% of storm drains have been labeled on campus. Labeling of campus storm drains is ongoing. | 3 (2016) | EH&S and HDH | All POCs | 1 | Ongoing | High | None at this time | More than 95% of storm drains have been labeled on campus. Labeling of campus drains is ongoing. As EH&S does facility inspections, labels are added/replaced as needed. | |
| Storm Water Awareness messages on a publicly available website | UC San Diego Storm Water Management website: http://stormwater.ucsd.edu . | 3 (2016) | Staff, Faculty, Students, Contractors | All POCs | 2 | Completed | High | Storm Water Management Plan on website was updated in May 2016 | Storm water pollution prevention awareness information is included on the UC San Diego Storm Water Management Program website at: http://stormwater.ucsd.edu . | |
| Staff Outreach | Participation at the annual Staff Picnic and at Earth Day events by staff volunteers who conduct outreach and surveys on storm water awareness | 3 (2016) | Staff | All POCs | 2 | Ongoing | High | None at this time | EH&S staff volunteers conduct outreach and give surveys on storm water pollution prevention awareness at events such as the Annual Staff Picnic and at Earth Day events. The surveys are evaluated to assess the effectiveness of outreach efforts at increasing storm water pollution prevention awareness. | |
| Volunteer/Intern Program | EH&S has a volunteer/internship program with Environmental System (ESYS) students and Engineering students to do a project related to storm water. | 3 (2016) | Students | All POCs | 2 | Ongoing | High | None at this time | EH&S works with ESYS students to complete projects related to storm water pollution prevention and involves students in campus community outreach events. Projects have included construction of a rain barrel on campus, updating the inventory of campus treatment control BMPs and mapping them on GIS, and evaluating trash capture device options for campus, etc. On Saturday April 12th 2014, 65 volunteers participated in the Second Annual Cigarette Butt Clean-Up. The event took place on UC San Diego Main Campus and resulted in the collection of 26,770 butts. | |
| F.5.d Illicit Discharge Detection and Elimination Program | | | | | | | | | | |
| F.5.d.2 | Field Sampling to Detect Illicit Discharges | UC San Diego Illicit Discharge Detection and Elimination Program includes procedures for field sampling. | 2 (2015) | EH&S | Bacteria, Sediment | 1 | Ongoing | High | None at this time | Field sample procedures for non-storm water discharges are included in the UC San Diego Illicit Discharge Detection And Elimination Program. If the source of a non-storm water discharge can not be identified, EH&S collects samples to verify the water does not contain pollutants or exceed the Indicator Parameter Action Level Concentrations in the permit. Section 4. NSWD and Illicit Discharge Investigations and Response and Corrective Actions. Section 5. Monitoring Part A. If the source of the NSWD cannot be located through investigative procedures, samples will be collected and analyzed for: ammonia, color, conductivity, detergents-surfactants, fluoride, hardness, pH, potassium, and turbidity. Section 5. Monitoring Part B. EH&S will review laboratory results to verify that the action level concentrations for indicator parameters are not exceeded. Indicator Parameter Action Level Concentration Ammonia >= 50 mg/L Color >= 500 units Conductivity >= 2,000 µS/cm Hardness <= 10 mg/L as CaCO3 or >= 2,000 mg/L as CaCO3 pH <= 5 or >=9 Potassium >= 20 mg/L Turbidity >= 1,000 NTU EH&S maintains a Non-Storm Water Discharge Log for reported NSWDs on campus that includes responses/corrective actions taken. |
| F.5.d.3 | Illicit Discharge Detection and Elimination Source Investigations and Corrective Actions | | | | | | | | | |
| Illicit Discharge Detection and Elimination Program | The UC San Diego Illicit Discharge Detection And Elimination Program details how to identify and report illicit discharges and includes procedures for investigations and corrective actions. A link for reporting non-storm water discharges (NSWD) is on the UC San Diego Storm Water Management Website: http://stormwater.ucsd.edu | 2 (2015) | Staff, Contractors, EH&S | All POCs | 4 | Ongoing | High | None at this time | EH&S Investigates reports of spills and other dry weather flows into the campus storm water conveyance system and takes appropriate measures to mitigate the discharge (e.g., clean up spill and/or repair leaking line, etc.). Inspection records are documented and saved. Once the source of an NSWD or illicit discharge has been identified, EH&S works with the responsible party to implement corrective actions. EH&S will report to the City of San Diego (downstream MS4), the San Diego RWQCB, and the San Diego Department of Environmental Health any non-storm water discharge suspected of being sanitary sewage and/or significantly contaminated material as outlined in Section 4. NSWD and Illicit Discharge Investigations and Response and Corrective Actions. IDDE Vehicle Information Cards with information on how to identify and report NSWDs have been distributed to UC San Diego Departments with vehicles for field staff. A total of 467 cards have been distributed to the following departments: 50 to HDH, 30 to Transportation/Parking, 12 to FD&C, 106 to FM, 200 to Transportation/Fleet Services, 30 to UCPD, and 39 to EH&S. | |

University of California San Diego

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|--|--|---|-------------------------|----------------------------|---------------------------|---|---|------------------------|--|
| F.5.e CONSTRUCTION SITE STORM WATER RUNOFF CONTROL PROGRAM | | | | | | | | | |
| Implement Construction Contracts | Construction projects greater than or equal to one acre are required to have Construction General Permit coverage and to implement CGP requirements. | 1 (2014) | FD&C, FM | Sediment, Trash | 1 | Ongoing | High | None at this time | UC San Diego implements the following for construction projects greater than or equal to 1 acre: Review SWPPPs prior to filing Notice of Intent (NOI). Conduct inspections of SWPPP BMPs in accordance with the Construction General Permit, Coordinate findings with project contractor and FD&C staff, and Review storm water issues with all project affiliated personnel at SWPPP kick-off meetings prior to construction commencement. |
| Construction Inspection Program | For construction projects >1 acre, a qualified SWPPP Practitioner (QSP) conducts construction site inspections in accordance with the procedures identified in the Construction General Permit. | 1 (2014) | FD&C | Sediment, Trash | 3 | Ongoing | High | None at this time | For construction projects greater than or equal to 1 acre in size, a qualified SWPPP Practitioner (QSP) conducts construction site inspections in accordance with the procedures identified in the Construction General Permit. This includes: weekly site inspections; rain event action plans; pre-rain, rain, and post-rain event inspections; and maintenance inspections. |
| Plan Review for storm water quality impacts | Project SWPPPs and water quality technical reports are reviewed by FD&C or a designated University Representative. | 1 (2014) | FD&C | Sediment, Trash | 4 | Ongoing | High | None at this time | Project SWPPPs and water quality technical reports are reviewed by FD&C staff or a designated University Representative to confirm compliance with CGP and University policy requirements. |
| F.5.f POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR PERMITTEE OPERATIONS PROGRAM | | | | | | | | | |
| F.5.f.3. Facility Assessment | EH&S staff conduct an annual review of UC San Diego facilities with a potential to impact surface waters. | 3 (2016) | EH&S | All POCs | 1 | Ongoing | High | None at this time | As storm water inspections are conducted by EH&S staff (quarterly for hotspots, annually for medium priority facilities, and permit cycles for low priority facilities), an inventory is kept for each facility including the date and the identified priority level (high, medium, or low) based on the inspection. The facility inventory and inspection checklists are kept on file by EH&S. |
| F.5.f.4 Storm Water Pollution Prevention Plans | EH&S maintains a Spill Prevention, Control, and Countermeasures Plan and Hazardous Materials Business Plans for the campus. | 4 (2017) | EH&S, Facility Managers | All POCs | 1 | Ongoing | | | UC San Diego has developed and implemented Storm Water Pollution Prevention Plans (SWPPPs) for the Nimitz Marine Facility and for Fleet Services which are both regulated under the Industrial General Permit (IGP) and are high priority sites. EH&S maintains a Spill Prevention, Control, and Countermeasures Plan and Hazardous Materials Business Plans for the campus. |
| F.5.f.5 Inspections, Visual Monitoring and Remedial Action | EH&S will conduct quarterly inspections of high priority facilities (hotspots) and inspections of low priority facilities once per permit term. | 5 (2018) | EH&S | All POCs | 4 | Ongoing | | | Visual inspections are performed monthly at Fleet Services and at the Nimitz Marine Facility (high priority sites) through the Industrial General Permit program. Storm water pollution prevention inspections of high priority campus facilities identified as "hot spots" (e.g., Campus Services Complex) are being done quarterly by EH&S. Visual inspections of the outfalls at SIO (discharge into a receiving water) are done weekly by EH&S as part of the SIO NPDES Permit program. Storm water pollution prevention inspections of campus facilities that have been identified as low priority based on visual inspections are being done once per permit cycle. |
| F.5.f.6 Storm Drain System Assessment and Prioritization | As part of the storm drain catch basin cleaning process, UC San Diego is assessing storm drains with CCTV. As catch basins and underground pipes are inspected and cleaned, the storm drain systems are identified as high or low priority and put on the corresponding cleaning/maintenance schedule. | 2 (2015) | FD&C, FM, HDH | All POCs | 1 | Ongoing | High | None at this time | UC San Diego is assessing storm drain pipes on campus with CCTV, starting with main pipes and working outward. As lines are inspected and cleaned, high priority areas are identified and logged. As "High Priority" storm drains are identified, increased cleaning for these areas will be scheduled with FM. High Priority Determination for a Catch Basin: (1) catch basin is known to accumulate a significant amount of sediment, trash, and/or debris; (2) catch basin collects a large volume of runoff; (3) catch basin collects runoff from an area that does not receive regular street sweeping; (4) catch basin collects runoff from drainage areas with exposed or disturbed soil; and/or (4) catch basin receives complaints/reports from staff, students, faculty, visitors, etc. FM and HDH Grounds and Landscaping staff visually inspect above ground storm water conveyance systems and inlets for accumulated sediment and debris and clean as needed. Conveyance systems in high pollutant load areas are cleaned before the rainy season. |
| F.5.f.7 Maintenance of Storm Drain System | High priority storm drain systems are inspected and cleaned on an annual basis as described in BMP D01 Storm Water Conveyance System Management | 3 (2016) | FM, FD&C, HDH | All POCs | 4 | Ongoing | High | None at this time | UC San Diego is assessing storm drain pipes on campus with CCTV, starting with main pipes and working outward. As lines are inspected and cleaned, high priority areas are identified and logged. As "High Priority" storm drains are identified, increased cleaning for these areas will be scheduled with FM. FM and HDH Grounds and Landscaping staff visually inspect above ground storm water conveyance systems and inlets for accumulated sediment and debris and clean as needed. Conveyance systems in high pollutant load areas are cleaned before the rainy season. |

University of California San Diego

Storm Water Management Program Effectiveness Assessment and Improvement (PEAIP) Matrix

| PERMIT SECTION AND ELEMENT | Policy/ Procedure/ BMP Description | Permit Compliance Year for Implementation | Target Audience | Pollutant of Concern (POC) | CASQA Outcome Level (1-6) | Implementation Level (None, Ongoing, Completed) | Effectiveness Level (Low, Medium, High) | Proposed Modifications | Summary |
|---|---|---|---------------------------------------|----------------------------|---------------------------|---|---|---|--|
| Clean high priority storm drains | BMP D01 Storm Water Conveyance System Management. High priority areas will be cleaned annually before the rainy season. | 3 (2016) | FD&C, FM, HDH | All POCs | 4 | Ongoing | High | None at this time | As "High Priority" storm drains/catch basins are identified, increased cleaning will be scheduled. FM and HDH Grounds and Landscaping staff visually monitor open channels, detention basins, and other aboveground storm water conveyance systems and clean high pollutant load areas before the rainy season to remove accumulated sediment and debris. |
| Maintain surface drainage structures | UCSD Storm Water Conveyance System Management BMP D01: 1. Conduct visual storm drain inspections annually in high pollutant load areas where sediment, trash, or other pollutants accumulate more often. 2. Clean storm drain conveyance system at least once before the wet season (October – May). 3. Maintain records of inspections and maintenance | 3 (2016) | FM, HDH | Sediment, Trash, Bacteria | 4 | Ongoing | High | None at this time | FM and HDH Grounds and Landscaping staff visually monitor all aboveground open channels, detention basins, and other drainage structures for debris and prioritize problem areas as described in BMP D01 Storm Water Conveyance System Management. |
| Develop procedure to dispose of waste materials removed from catch basins | Storm Water Conveyance System Management BMP D01 includes procedures for proper disposal of waste materials from catch basins. | 3 (2016) | EH&S | Sediment, Trash, Bacteria | 3 | Completed | High | None at this time | UCSD Storm Water Conveyance System Management BMP D01 has been updated to include procedures to properly remove and dispose of waste materials removed from catch basins. BMP D01 is in the UC San Diego Storm Water Management Plan and is posted on the website. |
| F.5.f.8 | Permittee Operations and Maintenance Activities (O&M) | | | | | | | | |
| O&M activity assessment and BMP Handbook | EH&S developed the UC San Diego Storm Water Pollution Prevention Source Control Best Management Practices Handbook for outdoor operations and maintenance activities that have the potential to discharge pollutants to storm water. The BMP handbook identifies the pollutants that can be discharged from these activities and the procedures to reduce the discharge of pollutants to storm water. | 3 (2016) | EH&S | All POCs | 3 | Completed | High | Updated as new activities or procedures are identified during O&M BMP evaluations | UC San Diego implements source control Best Management Practices (BMPs) to prevent or reduce pollutants in storm water runoff. These BMPs include: Good Housekeeping; Spill Prevention, Control, and Cleanup; Marine Activities; Loading Dock Management; Outdoor Washing/Cleaning; Fueling Operations; Equipment and Vehicle Maintenance; Trash Management; Hazardous Material Management; Hazardous Waste Management; Materials and Waste Transportation; Food Service Management; Sanitary Sewer Overflows; Storm Drain Management; Landscape Management; Surface Cleaning; Fire Sprinkler and Hydrant Testing/Flushing; Outdoor Painting and Sandblasting; Non-Storm Water Discharges (NSWD); Integrated Pest Management; Building Repair and Remodeling; Parking and Storage Area Maintenance; Maintenance on Equipment Containing Water (e.g., eyewash showers, boilers, condensate drains, rooftop HVAC equipment, and drainage sumps); Potable Water System Flushing; and Pools, Decorative Fountains, and Other Water Features. |
| O&M Priority BMPs | Based on the priority pollutants of concerns (sediment, trash, bacteria, metals), the following are high priority BMPs, policies, and procedures: 1) Street sweeping 2) IDDE Program 3) BMP A01 Housekeeping for Outdoor Material Storage and Outdoor Work Areas 4) BMP A02 Spill Control and Cleanup for Outdoor Spills or Leaks 5) BMP A04 Loading Dock Management 6) BMP C01 Trash Management 7) BMP D01 Storm Water Conveyance System Management 8) BMP D03 Landscape Management (includes irrigation runoff, erosion, and green waste) 9) BMP D06 Non-Storm Water Discharges 10) BMP D09 Parking Lot and Storage Area Management | 3 (2016) | FM, HDH, FD&C, O&M Staff, Contractors | All POCs | 4 | Completed | High | None at this time | Based on the priority pollutants of concerns (sediment, trash, bacteria, metals), the following are high priority BMPs, policies, and procedures: 1) Street sweeping 2) IDDE Program 3) BMP A01 Housekeeping for Outdoor Material Storage and Outdoor Work Areas 4) BMP A02 Spill Control and Cleanup for Outdoor Spills or Leaks 5) BMP A04 Loading Dock Management 6) BMP C01 Trash Management 7) BMP D01 Storm Water Conveyance System Management 8) BMP D03 Landscape Management (includes irrigation runoff, erosion, and green waste) 9) BMP D06 Non-Storm Water Discharges 10) BMP D09 Parking Lot and Storage Area Management |

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|---|---|--|-----------------|----------------------------|---------------------------|---|---|------------------------|-------------------|--|
| F.5.f.9 | Landscape Design and Maintenance | | | | | | | | | |
| | Implement practices that reduce the discharge of pesticides, herbicides and fertilizers. | UC San Diego Integrated Pest Management Program Integrated Pest Management Source Control BMP D07 Landscape Management Source Control BMP D02 Pesticide and herbicide application on campus is limited to licensed and trained staff and contractors | 2 (2015) | EH&S, FM, HDH, Contractors | Bacteria, Sediment | 4 | Ongoing | High | None at this time | Pesticide and herbicide application on campus is limited to licensed and trained staff and contractors UC San Diego implements IPM strategies on campus through a combination of techniques such as biological controls; use of pest resistant, climate appropriate plant varieties; and modification of irrigation or pruning to make the habitat less conducive to pest development. If pesticides are used, the least toxic, most effective, and most specific product is used. Organic based products are used whenever possible. Mulch is used for weed prevention and moisture retention to reduce irrigation and use of chemical controls. The campus is also in the process to replacing irrigation equipment to conserve water and prevent irrigation run-off. Clippings, leaves, and other vegetative debris is collected to keep it out of the storm drain system and is properly disposed of or used as mulch. Unused pesticides and herbicides are managed in accordance with manufacturer specifications, product labels, and State regulations. |
| | Minimize irrigation run-off. | FM and HDH monitor and repairs or replaces irrigation equipment as needed to conserve water and prevent irrigation run-off. | 2 (2015) | FM, HDH | Bacteria, Sediment | 4 | Ongoing | High | None at this time | The campus monitors and repairs or replaces irrigation equipment as needed to conserve water and prevent irrigation run-off. |
| F.5.g POST CONSTRUCTION STORM WATER MANAGEMENT PROGRAM | | | | | | | | | | |
| F.5.g.1 | Site Design Measures | UC San Diego requires the implementation of site design measures for regulated projects that create or replace 2,500 SF or more of impervious area. These requirements are summarized on the UC San Diego Storm Water Management Website: http://stormwater.ucsd.edu | 2 (2015) | P&CP, FD&C, FM, HDH | Sediment | 5 | Ongoing | High | None at this time | A Post-Construction BMP Checklist is required to be completed for regulated projects that create or replace 2,500 SF or more of impervious area. Site Design Measures that will be implemented for the project are identified in the checklist. EH&S collects completed Post-Construction BMP Checklists from FD&C. |
| F.5.g.2. | Low Impact Development (LID) Design Standards | UC San Diego requires the implementation of Low Impact Development (LID) Design Standards for regulated projects that create or replace 5,000 SF or more of impervious area. These requirements are summarized on the UC San Diego Storm Water Management Website: http://stormwater.ucsd.edu | 2 (2015) | P&CP, FD&C, FM, HDH | Sediment | 5 | Ongoing | High | None at this time | A Post-Construction BMP Checklist is required to be completed for regulated projects that create or replace 5,000 SF or more of impervious area. LID Design Standards and hydromodifications that will be implemented for the project are identified in the checklist. EH&S collects completed Post-Construction BMP Checklists from FD&C and adds the BMPs to the BMP inventory when the project is completed. |
| F.5.g.4 | Operation and Maintenance of Post-Construction Storm Water Management Measures | | | | | | | | | |
| | The Permittee shall ensure that systems and hydromodification controls installed at projects are properly operated and maintained for the life of the projects. | EH&S works with FM, FD&C, HDH and vendors to verify that storm water management systems are being properly operated and maintained through routine inspections. | 3 (2016) | EH&S, FD&C, FM, HDH | Sediment, Trash | 4 | Ongoing | High | None at this time | EH&S maintains an inventory of storm water treatment control BMPs on campus. The UC San Diego Storm Water Treatment Control BMP Inventory is posted at: http://stormwater.ucsd.edu EH&S works with FM, HDH, FD&C, and vendors to inspect and maintain the treatment control BMPs on the inventory in accordance with the maintenance schedule. |