

**University of California,
San Diego**

UC San Diego

**Storm Water
Management Plan**

December 12, 2011

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ACRONYMS

A&PS	Auxiliary & Plant Services
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
FM	Facilities Management
HDH	Housing, Dining & Hospitality
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
P&CP	Physical and Community Planning
QSP	Qualified SWPPP Practitioner
RWQCB	Regional Water Quality Control Board
SIO	Scripps Institution of Oceanography
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
UC	University of California

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). These regulations require the University of California, San Diego (UC San Diego) to apply for a National Pollutant Discharge Elimination System (NPDES) permit and develop a SWMP.

The EPA Storm Water Phase II Rule establishes a storm water management program for small and non-traditional municipal separate storm sewer systems (MS4s), such as Universities and State and Federal agencies, that is 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.

In 1990, EPA promulgated rules establishing Phase I of the NPDES storm water program. UC San Diego has existing Phase I permits for the Nimitz Marine Facility in Point Loma and the Fleet Maintenance Garage at the Central Campus Services Complex on the main campus. Under the State General Industrial Stormwater Permit, these facilities developed and implement a Storm Water Pollution Prevention Plan (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.

NPDES Phase II regulations require 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 I and II programs described above, the western portion of the main UC San Diego campus 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 that incorporates these conditions for the seawater and storm water discharges at Scripps Institution of Oceanography (SIO).

In accordance with this NPDES Industrial Wastewater permit, a SWMP plan was developed specifically for SIO in August 2005. 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 bacteria 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 into the ASBS.

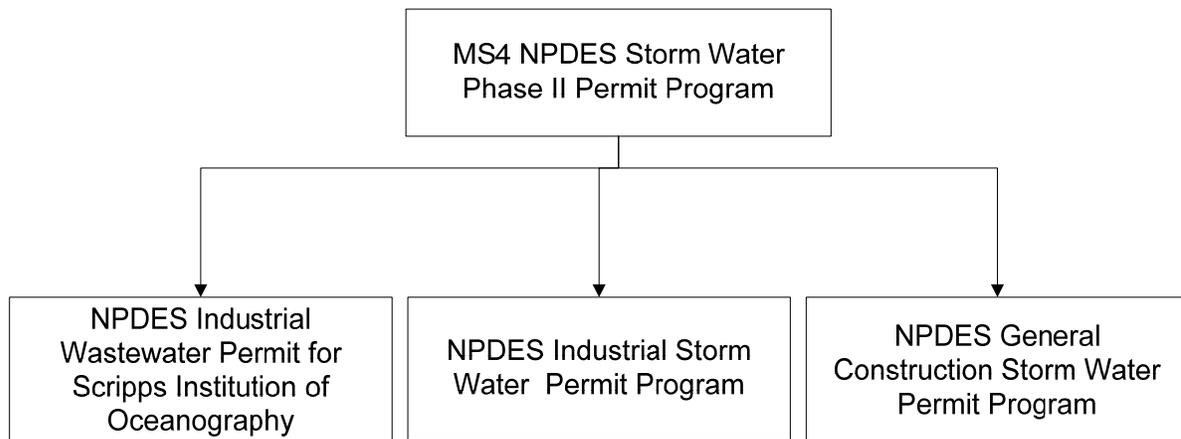
Lastly, construction projects at UC San Diego that disturb more than one acre must comply with the State Construction Storm Water Program requirements identified in the General Permit. This includes developing and implementing a site specific SWPPP which emphasizes the use of appropriately selected, 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 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 EPA Phase II NPDES requirements promulgated under the CWA.

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 municipal and construction activities implemented by UC San Diego staff and contractors and;
- (3) Provide measurable goals for the implementation of this SWMP to reduce the discharge of the identified pollutants into the storm drain system and associated waterways.

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.

- Auxiliary & Plant Services (A&PS)
- 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 Medical Center (MC)
- 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 campus population for 2010-2011, which includes students, faculty, researchers, and staff, is approximately 50,000 (41,000 of which are on the main campus in La Jolla).

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, organics, 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, organics, paint, and sediment	A03
Outdoor washing/cleaning. Includes equipment, vehicle, and boat washing/cleaning	Dry weather flows, total residual chlorine, various- cleaning compounds, oil and grease, metals, bacteria, paint chips, equipment fluids, organics, trash and debris	B01
Fueling operations	Oil and grease and organics	B02
Equipment, vehicle, and boat maintenance	Oil and grease, metals, organics, paint, and sediment	B03
Trash management	Bacteria, oil and grease, and trash and debris	C01
Hazardous materials management	Oil and grease, organics, metals, and trash and debris	C02
Hazardous waste management	Oil and grease, organics, metals, and trash and debris	C03
Onsite transportation of materials/waste	Spills, metals, oil and grease, organics, 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	Raw sewage	C06
Improper discharge into storm drains	Bacteria, metals, nutrients, oil and grease, organics, pesticides, 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, oil and grease,	D02

Activity/Source	Potential Pollutants	BMP
green waste	organics, pesticides, fertilizers, sediment, and trash and debris	
Surface cleaning/pressure washing	Dry weather flows, total residual chlorine, bacteria, metals, oil and grease, organics, 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, total residual chlorine, bacteria, metals, and sediment	D04
Outdoor painting and sandblasting	Metals, oil and grease, paint chips, organics, sediment, and trash and debris	D05
Parking lot runoff	Oil and grease, metals, and vehicle fluids	Street Sweeping
Construction activities	Dry weather flows, sediment, trash and debris	UC San Diego Division 1 specifications and/or project SWPPP BMPs

LID = Low Impact Development
 SSMP = Sanitary Sewer Management Program

BMP		Pollutants Addressed													
		Sediment	Metals	Bacteria	Trash & Debris	Oil & Grease	Organics	Dry Weather Flows	Hazardous materials	Cleaning Products	Paint/ Paint chips	Total Residual Chlorine	Equipment Fluids	Nutrients	Pesticides
A01	Housekeeping	Y	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			Y				
B01	Outdoor Washing/ Cleaning	Y	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								
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	Y				Y	Y	Y	
D02	Landscape Management	Y	Y	Y	Y	Y	Y	Y			Y		Y	Y	Y
D03	Surface Cleaning/ Pressure Washing	Y	Y	Y	Y	Y	Y	Y			Y				
D04	Water System Testing, Flushing & Maintenance	Y	Y	Y				Y			Y				
D05	Outdoor Painting & Sandblasting	Y	Y		Y	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. Public Education and Outreach on Storm Water Impacts
2. Public Involvement / Participation
3. Illicit Discharge Detection and Elimination
4. Pollution Prevention / Good Housekeeping for Municipal Operations
5. Construction Site Storm Water Runoff Control
6. Post-construction Storm Water Management in New Development and Redevelopment

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 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); facilities and grounds management, and HDH service dock cleaning. 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.

UC San Diego’s SWMP is designed to be a dynamic 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 Public Education and Outreach on Storm Water Impacts

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.

Maximum Extent Practicable (MEP) Standards

- Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on local waterbodies and the steps that can be taken to reduce pollutants in storm water runoff; and
- Determine the appropriate BMPs and measurable goals for this minimum control measure.

Table 4.01. Public Education and Outreach Management Measures to Meet MEP Requirements

Schedule	Public Education and Outreach on Storm Water Pollution Prevention	Dept.
Ongoing	Develop storm water pollution prevention educational materials for students, faculty, and staff	EH&S, A&PS
Ongoing	Label storm drains with “No Dumping, Drains to Ocean” markers	EH&S
Ongoing	Maintain storm water pollution prevention information on UC San Diego BLINK website: http://blink.ucsd.edu/go/stormwater	EH&S
Ongoing	Maintain storm water pollution prevention education and outreach materials at the UC San Diego Sustainability Resource Center.	A&PS
Ongoing	Participate in at least one campus event each year to perform outreach on storm water pollution prevention and distribute educational material to students, faculty, and staff.	EH&S
Ongoing	Include storm water pollution prevention in UC San Diego Environmental Compliance/Pollution Prevention training classes and Environmental Stewardship training classes.	EH&S
Ongoing	Provide educational signage at selected Low Impact Development (LID) treatment control BMP sites for public awareness.	EH&S, HDH
Ongoing	Develop storm water pollution prevention outreach materials/programs for the public for one event each year.	BAS

A&PS = Auxiliary & Plant Services
EH&S = Environment, Health & Safety

BAS = Birch Aquarium at Scripps
HDH = Housing, Dining, and Hospitality

4.02 Public Involvement / 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 to develop and implement source and treatment controls to prevent pollution.

MEP Standards

- Comply with applicable State and local public notice requirements; and
- Determine the appropriate BMPs and measurable goals for this minimum control measure.

Table 4.02. Public Involvement/Participation Management Measures to Meet MEP Requirements

Schedule	Public Involvement / Participation Goals	Dept.
Ongoing	Maintain an electronic copy of the SWMP on UC San Diego's Storm Water Pollution Prevention Program webpage: http://blink.ucsd.edu/go/stormwater	EH&S
Ongoing	Maintain e-mail 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	EH&S
Ongoing	Work with students and staff from the UC San Diego Sustainability Resource Center on outreach events.	EH&S
Ongoing	Participate in storm water pollution prevention event(s) with San Diego Coastkeeper	EH&S, BAS
Ongoing	Use campus media and publications to promote storm water pollution prevention programs and participation	EH&S
Ongoing	Mentor student storm water pollution prevention projects	EH&S

BAS = Birch Aquarium at Scripps

EH&S = Environment, Health & Safety

4.03 Illicit Discharge Detection and Elimination

The goal of this program is to develop and implement a plan to detect 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. 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 fire fighting activities.

MEP Standards

- Develop and maintain a storm sewer system map, showing outfall locations and the names and locations of waters of the United States that receive discharges from those outfalls;
- Prohibit through management, contracting, or other mechanisms non-storm water discharges into the MS4, and appropriate enforcement procedures and actions;
- Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, into the MS4;
- Inform public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
- Determine the appropriate BMPs and measurable goals for this minimum control measure.

Table 4.03. Illicit Discharge Detection and Elimination Management Measures to Meet MEP Requirements

Schedule	Illicit Discharge Detection and Elimination Goals	Dept.
Ongoing	Maintain and update campus storm water conveyance system and drain maps including outfalls.	P&CP, FM, FD&C
Ongoing	Educate the campus community (students, staff, and faculty) on the prohibition of dry weather flows (anything that is not composed entirely of rain water) into UC San Diego's storm water system.	A&PS, BAS, EH&S, FD&C, FM, HDH, MC, SIO
Ongoing	Maintain e-mail link on UC San Diego's Storm Water Pollution Prevention Program webpage to report non-storm water discharges into storm drains: http://blink.ucsd.edu/go/stormwater	EH&S
Ongoing	Educate UC San Diego staff and faculty on the proper disposal of waste at UC San Diego and notification procedures for abandoned waste.	EH&S, HDH
Ongoing	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	EH&S
Ongoing	Implement UC San Diego's Sanitary Sewer Management Program. Program includes ongoing electronic evaluations (camera and video) of sanitary sewer lines and system rehabilitation and repair to prevent sanitary sewer overflows. http://blink.ucsd.edu/go/sewerplan	FD&C, FM, EH&S, HDH

Table 4.03. Illicit Discharge Detection and Elimination Management Measures to Meet MEP Requirements (Cont.)

Schedule	Illicit Discharge Detection and Elimination Goals	Dept.
Ongoing	Visually inspect Outfall 2, a storm water outfall at SIO, on a daily basis for evidence of dry weather flows into the storm drain system.	FM, EH&S
Ongoing	Visually inspect Fleet Services at the Campus Services Complex and the Nimitz Marine Facility in Point Loma for evidence of dry weather discharges into storm drains on a quarterly basis in accordance with the Industrial Storm Water General Permit.	EH&S
Ongoing	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.	FM, FD&C, EH&S
Ongoing	Investigate reports of spills and other dry weather flows from construction projects on campus and ensure appropriate measures are implemented to mitigate the discharge (e.g. clean up spill and/or repair leaking line, etc) as appropriate.	FD&C

A&PS	=	Auxiliary and Plant Services	BAS	=	Birch Aquarium at Scripps
EH&S	=	Environment, Health & Safety	FD&C	=	Facilities Design and Construction
FM	=	Facilities Management	HDH	=	Housing, Dining, and Hospitality
MC	=	UC San Diego Medical Center	P&CP	=	Physical and Community Planning
SIO	=	Scripps Institution of Oceanography			

4.04 Pollution Prevention / Good Housekeeping for Municipal Operations

The goal of this program is to prevent or reduce pollutant runoff from facility operation and maintenance activities. The program must 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).

MEP standards

- Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer system;
- Provide employee training on how to incorporate pollution prevention/good housekeeping techniques into operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. To minimize duplication of effort and conserve resources,

the MS4 operator can use training materials that are available from EPA, the State, or relevant organizations;

- Determine the appropriate BMPs and measurable goals for this minimum control measure.

Table 4.04. Pollution Prevention/Good Housekeeping Management Measures to Meet MEP Requirements

Schedule	Pollution Prevention / Good Housekeeping (PP/GH) for Municipal Operation Goals	Dept.
Ongoing	Educate appropriate UC San Diego staff on the source control BMPs on UC San Diego's Storm Water Pollution Prevention Program webpage: http://blink.ucsd.edu/go/stormwater	EH&S
Ongoing	Maintain electronic copy of source control BMPs on UC San Diego's Storm Water Pollution Prevention Program webpage: http://blink.ucsd.edu/go/stormwater	EH&S
Ongoing	Conduct annual inspections to determine if the source control BMPs listed in the SWPPPs for Fleet Services and the Nimitz Marine Facility are being fully implemented in accordance with the Industrial Storm Water General Permit.	EH&S
Ongoing	Implement developed source control BMPs for Outdoor Work Area Management; Vehicle, Equipment, and Boat Management; Materials and Waste Management; and Facilities and Grounds Management.	A&PS, BAS, EH&S, FD&C, FM, HDH, MC, SIO
Ongoing	Using a street sweeper, clean the streets and parking lots on UC San Diego's main campus and at SIO on a weekly basis.	FM
Ongoing	Review storm water monitoring data for SIO, Fleet Services, and Nimitz Marine Facility on an annual basis. For constituents detected above effluent water quality objectives, evaluate applicable source control BMPs and make changes as appropriate.	EH&S, FM, SIO
Ongoing	Review source control BMPs on UC San Diego's Storm Water Pollution Prevention Program webpage on an annual basis and update/revise as needed: http://blink.ucsd.edu/go/stormwater	A&PS, BAS, EH&S, FD&C, FM, HDH, MC, SIO

Table 4.04. Pollution Prevention/Good Housekeeping Management Measures to Meet MEP Requirements (Cont.)

Schedule	Pollution Prevention / Good Housekeeping (PP/GH) for Municipal Operation Goals	Dept.
Ongoing	Identify and prioritize storm water pollution prevention projects and conveyance system retrofits and repairs through the UC San Diego Clean Water Utility workgroup and request funding.	A&PS, EH&S, FD&C, FM, HDH, MC, SIO

A&PS	=	Auxiliary and Plant Services	BAS	=	Birch Aquarium at Scripps
EH&S	=	Environment, Health & Safety	FD&C	=	Facilities Design and Construction
FM	=	Facilities Management	HDH	=	Housing, Dining, and Hospitality
MC	=	UC San Diego Medical Center	P&CP	=	Physical and Community Planning
SIO	=	Scripps Institution of Oceanography			

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.

MEP Standards

- Through management, contracting, or other mechanisms, require the implementation of proper erosion and sediment controls on applicable construction sites and develop sanctions to ensure compliance;
- Establish requirements for construction site operators to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary wastes at the construction site that may cause adverse impacts to water quality;
- Establish procedures for site plan review of construction plans that ensure potential water quality impacts are considered;
- Establish procedures for site inspection and enforcement of control measures;
- Establish procedures for the receipt and consideration of information submitted by the public; and
- Determine the appropriate BMPs and measurable goals for this minimum control measure.

Table 4.05. Construction Site Storm Water Runoff Control Management Measures to Meet MEP Requirements

Schedule	Construction Site Storm Water Runoff Control Goals	Dept.
Ongoing	Implement UC San Diego Division 1 Specifications (or equivalent) for construction contract sediment and erosion control BMP specifications and site pollution control requirements.	FD&C, FM, HDH, MC, P&CP, SIO
Ongoing	Administer existing contract provisions for enforcement of control measures	FD&C
First year of permit adoption	Using UC San Diego Division 1 Specifications, develop a storm water guideline/design specification checklist for smaller projects (less than one acre) including Capital Projects and other departments' minor construction activities that include: runoff control, erosion control, and outdoor material/waste management.	A&PS, EH&S, FD&C, FM, HDH, MC, P&CP, SIO
Ongoing	Implement the public review process for large capital improvement projects pursuant to CEQA requirements.	A&PS, EH&S, FD&C, FM, HDH, MC, P&CP
Ongoing	For construction projects <1 acre, inspect the project site on a regular basis and notify the contractor if an issue is identified.	FD&C, FM, HDH, MC, P&CP, SIO
Ongoing	For construction projects >1 acre, review SWPPPs prior to filing Notice of Intent (NOI)	FD&C and authorized representatives
Ongoing	Conduct inspections of SWPPP BMPs for construction projects >1 acre in accordance with the Construction General Permit. Coordinate findings with project contractor and FD&C staff.	FD&C and authorized representatives
Ongoing	For construction projects >1 acre, review storm water issues with all project affiliated personnel at SWPPP kick-off meetings prior to construction commencement.	FD&C and authorized representatives
Ongoing	For construction projects >1 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.	FD&C and authorized representatives

A&PS = Auxiliary and Plant Services
 EH&S = Environment, Health & Safety
 FM = Facilities Management
 MC = UC San Diego Medical Center
 SIO = Scripps Institution of Oceanography

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

4.06 Post-construction Storm Water Management in New Development and Redevelopment

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.

Projects subject to the new standards are new development projects that disturb more than one acre of land and redevelopment projects involving more than one acre of land. If the site does not accommodate treatment controls, or the University determines that they are too costly, the equivalent volume of water may be treated at an alternative site.

MEP standards

- Develop and implement strategies which include a combination of structural and/or non-structural BMPs;
- Through management, contracting, or other mechanisms, require the implementation of post-construction runoff controls,
- Ensure adequate long-term operation and maintenance of controls;
- Determine the appropriate BMPs and measurable goals for this minimum control measure.

Table 4.06. Post-construction Site Storm Water Runoff Control Management Measures to Meet MEP Requirements

Schedule	Post-construction Site Storm Water Runoff Control Goals	Dept.
Ongoing	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. 	EH&S, FD&C, FM, HDH, MC, P&CP
Ongoing	Maintain inventory of storm water treatment control BMPs. UC San Diego Storm Water Treatment Control BMP Inventory is posted at: http://blink.ucsd.edu/go/stormwater	EH&S, FD&C, FM, HDH, MC, P&CP
Ongoing	Inspect and maintain the LID treatment control BMPs on the inventory in accordance with the maintenance schedule.	EH&S, FD&C, FM, HDH, SIO
Ongoing	Review storm water monitoring data for SIO, Fleet Services, and Nimitz Marine Facility on an annual basis. For constituents detected above effluent water quality objectives, evaluate applicable structural and non-structural BMPs and make changes as appropriate.	EH&S, FM, FD&C, SIO
Ongoing	Review and evaluate new options/technology for structural and non-structural BMPs	EH&S, FD&C, FM, HDH, MC, P&CP, SIO

A&PS = Auxiliary and Plant Services
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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. R9-2005-0008), 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 surfzone 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, the receiving water, and the sediment 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 water quality objectives to ensure that the discharges from UCSD/SIO are not altering natural water quality in the ASBS.

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.

A map showing the sampling locations is provided in Appendix B 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, receiving water and sediment (see attached drawing). NPDES Permit No. CA0107239 (Order No. R9-2005-0008).
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 B. 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. R9-2005-0008). UC San Diego is partnering with the City of San Diego to perform 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 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.

6.0 Record Keeping

6.01 SWMP Updating

The SWMP will be reviewed annually. UC San Diego will update the SWMP 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 SWMP is designed to be a dynamic program that evaluates the effectiveness of the six minimum control measures on a recurring basis.

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 approved 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 and management measures to the San Diego Regional Water Quality Control Board.

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	Storm Water Monitoring Locations

Appendix A

Main Campus and Off-site Facility Information

UC SAN DIEGO FACILITY INFORMATION

Main Campus

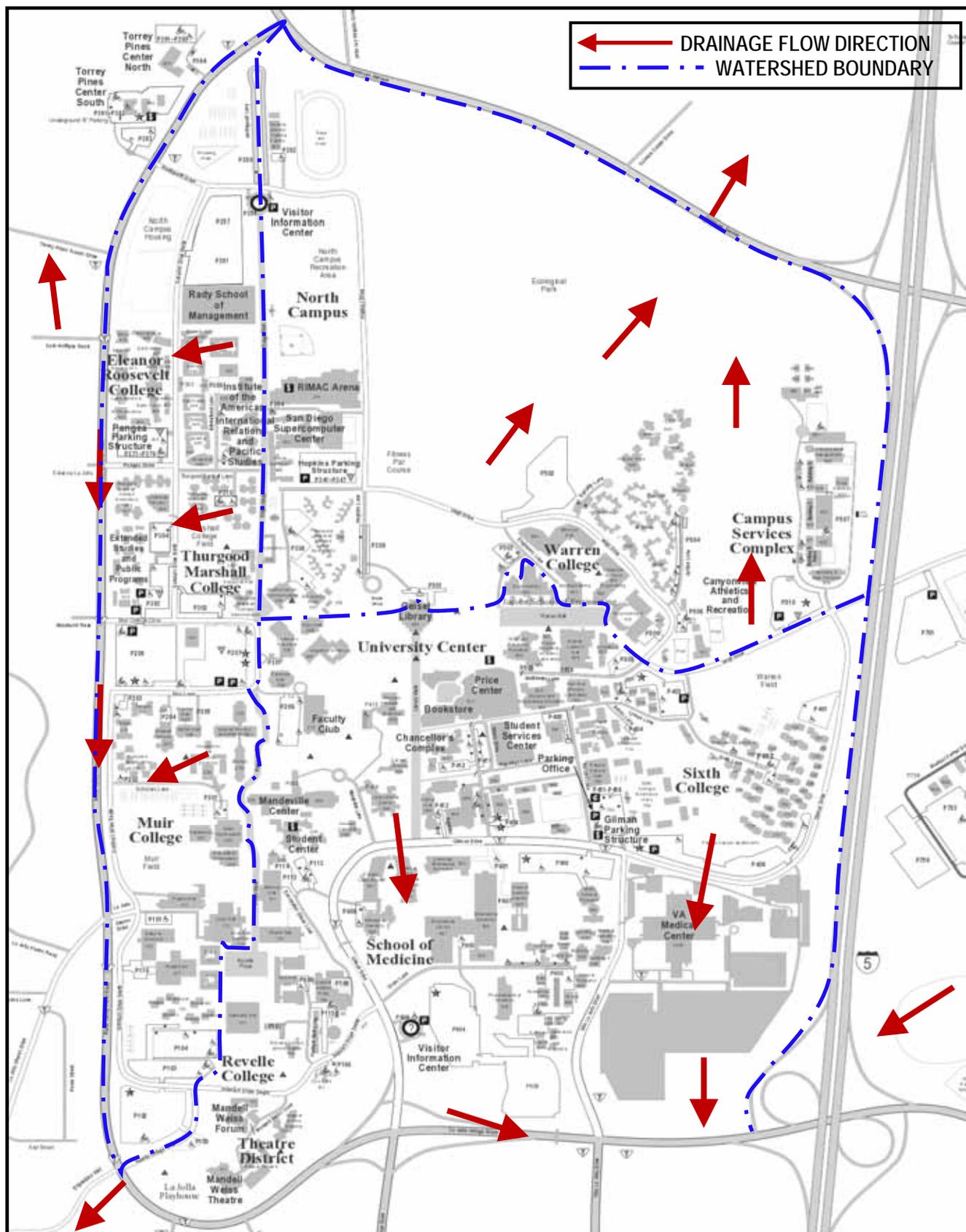
As shown in Figures 1, 2, and 3, the main UC San Diego campus is composed primarily of three distinct, but contiguous, geographical entities: the western portion of the campus (668 acres), the eastern portion of the campus (267 acres), and the Scripps Institute of Oceanography (SIO) portion of the campus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

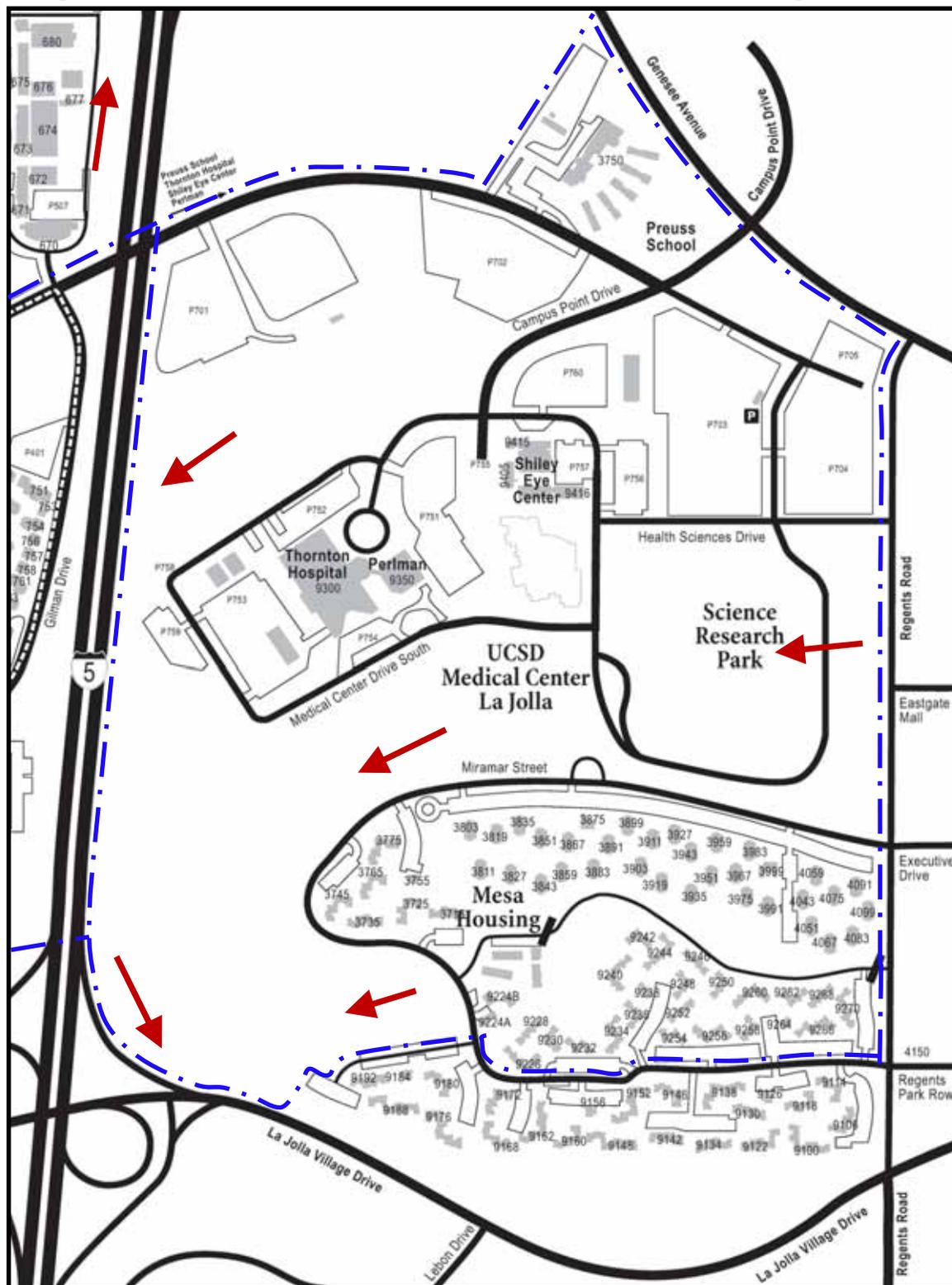
- La Jolla Del Sol, a housing development located southeast of these larger geographical areas (12 acres)
- University House (seven acres)
- A parcel adjacent to University House consisting of coastal canyon and beachfront (19 acres)
- Glider Port (30 acres)
- Torrey Pines Center North (2.3 acres) and 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.

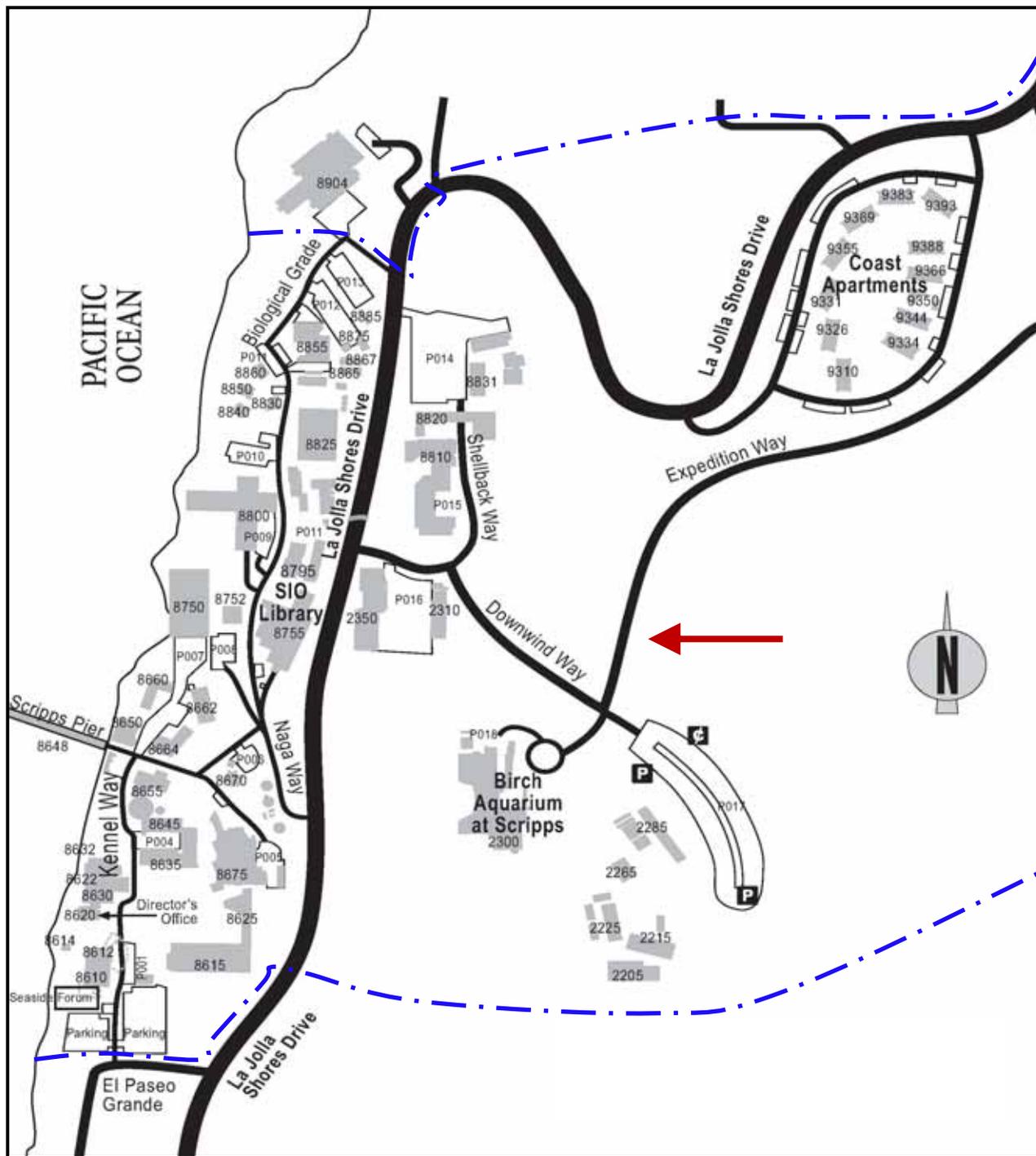
Figure 2. UCSD East Campus Drainage Map



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

	DRAINAGE FLOW DIRECTION
	WATERSHED BOUNDARY

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.

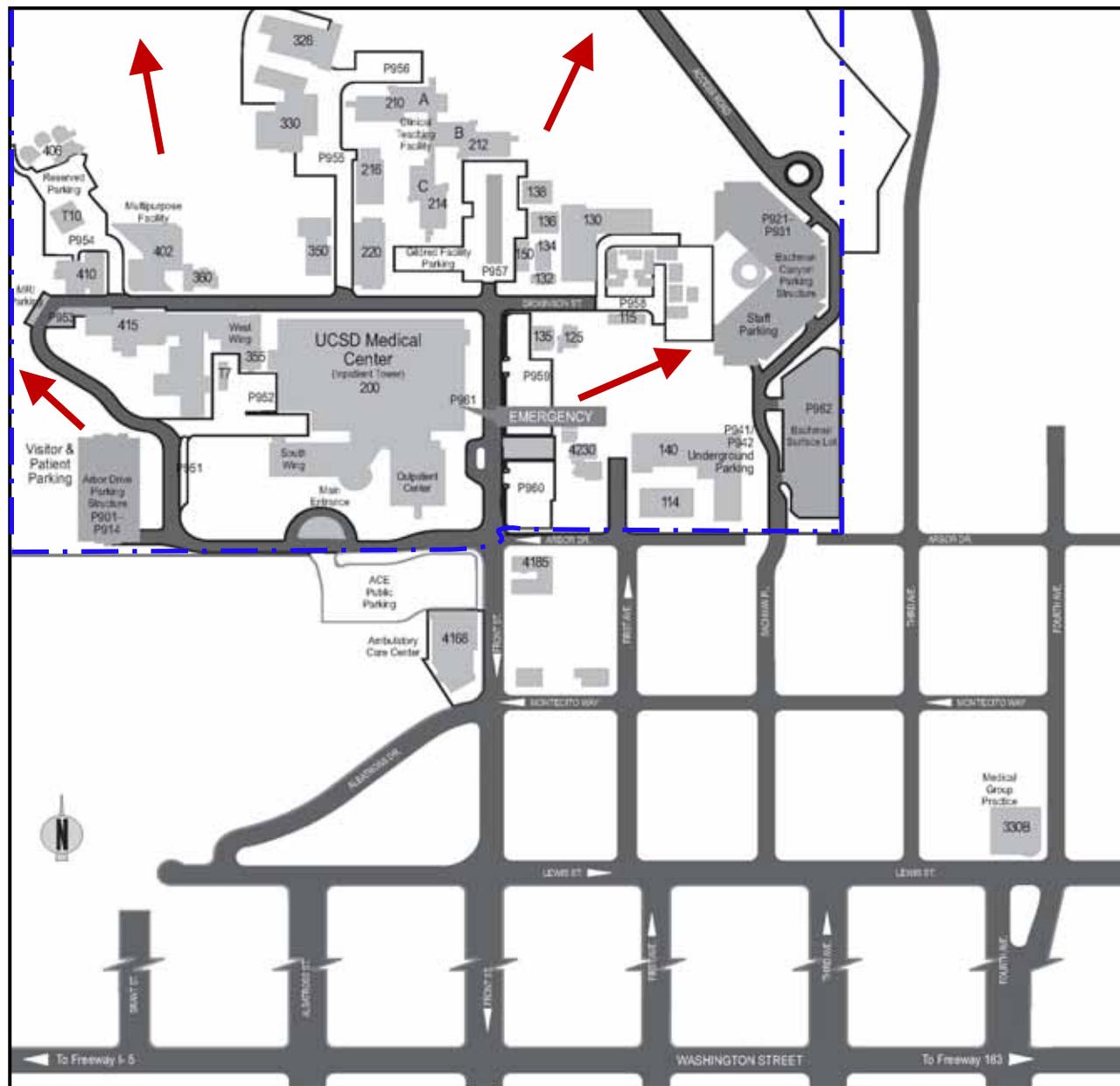
UC San Diego MC Hillcrest is situated on approximately 56 acres of steep slopes and level mesas overlooking Mission Valley to the north. Located in the northeastern corner of the Uptown community of San Diego, southwest of the intersection of Interstate 8 (I-8) and State Route 163 (SR-163), the campus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

	DRAINAGE FLOW DIRECTION
	WATERSHED BOUNDARY

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

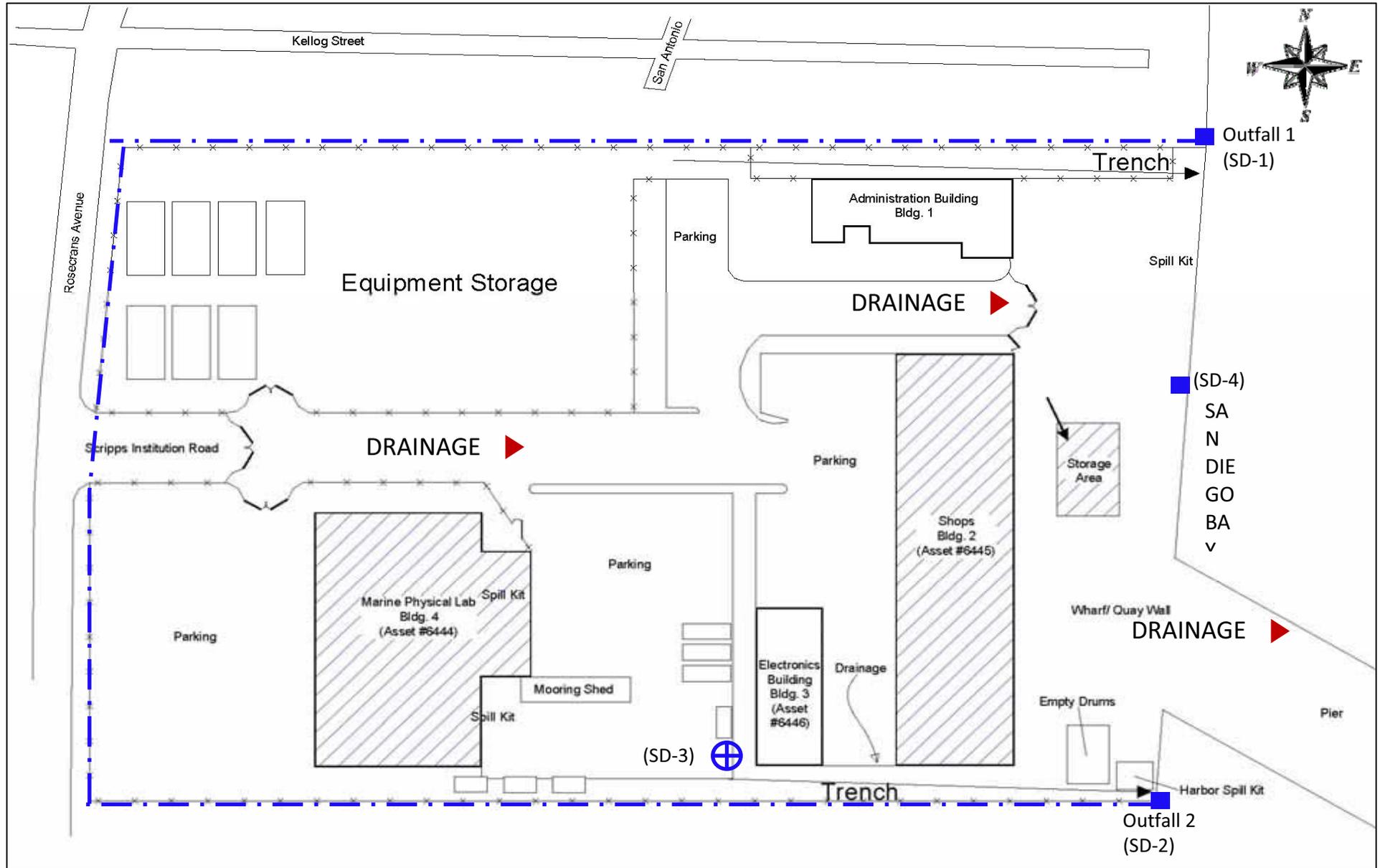
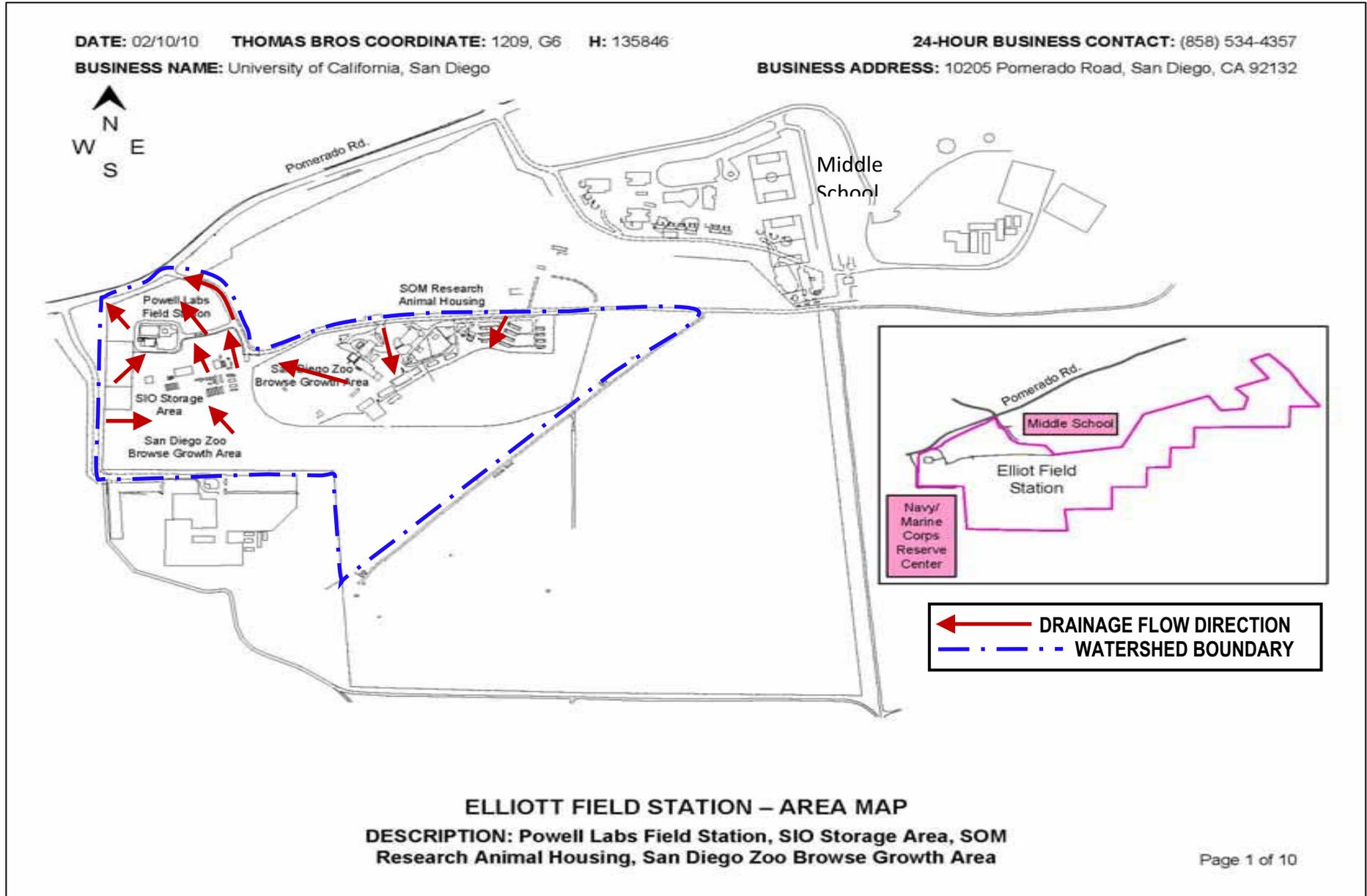


Figure 6. Elliot Field Station



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

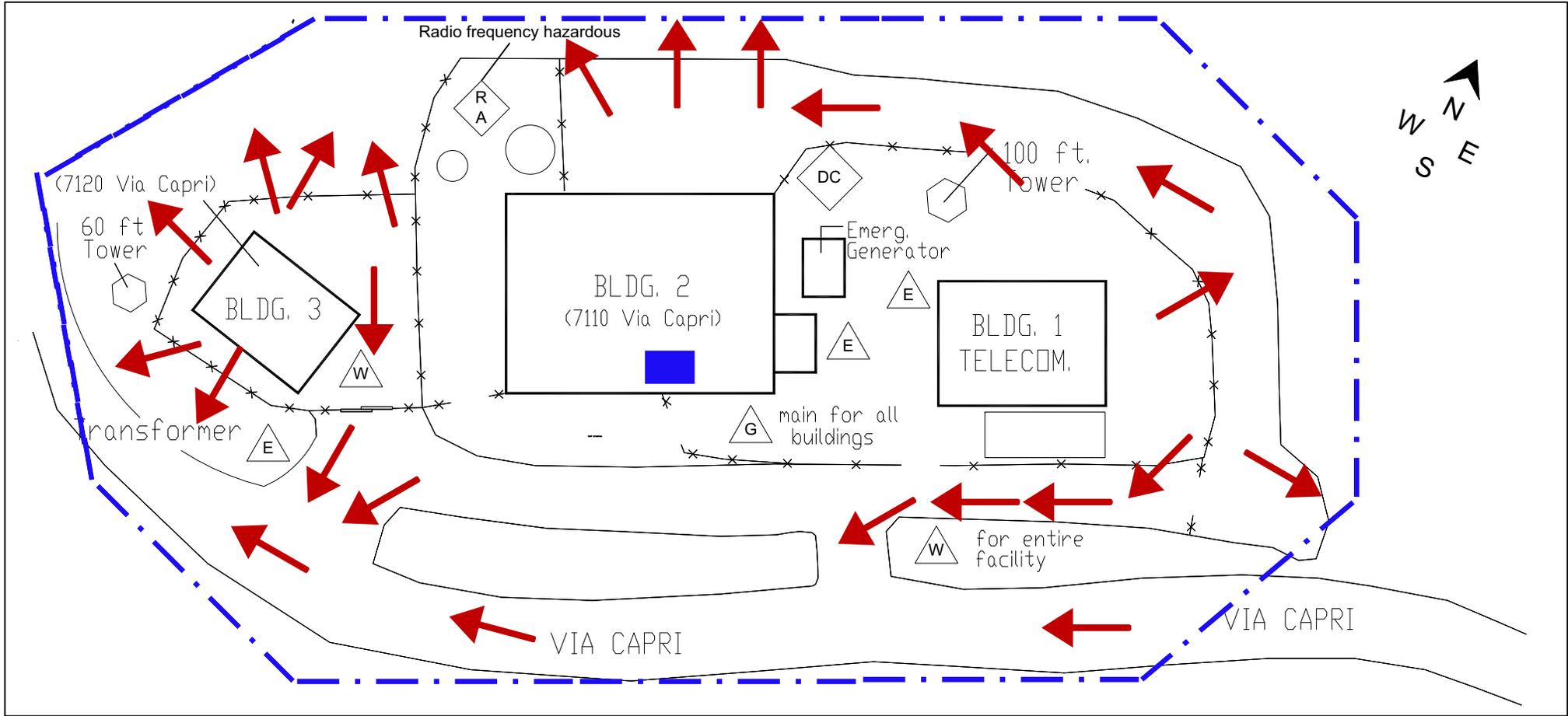
The Trade Street storage facility is located approximately four miles east of the main campus. The facility covers eight acres east of Interstate 805, north of Miramar Road, at the north end of Trade Street in the City of San Diego. UC San Diego Materials Management Office uses the facility for warehousing 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

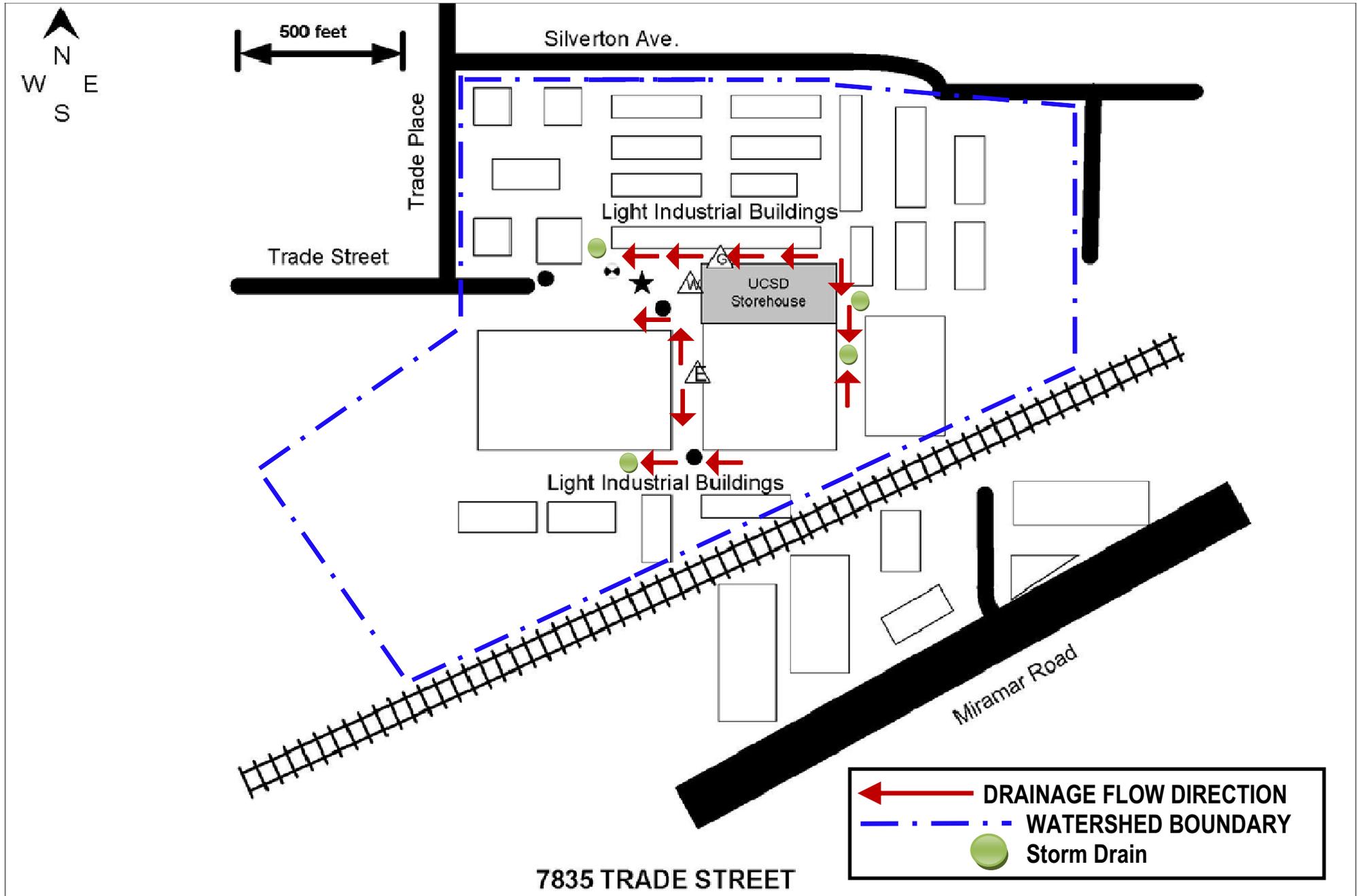
The general flow of storm water discharge from the Trade Street storage facility is shown in Figure 8.

FIGURE 7. MOUNT SOLEDAD RESEARCH STATION Drainage Map



← DRAINAGE FLOW DIRECTION
- . - . WATERSHED BOUNDARY

FIGURE 8. TRADE STREET DRAINAGE MAP



Appendix B

Storm Water Monitoring Locations

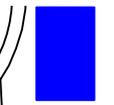
NATIONAL MARINE FISHERIES SERVICE

LA JOLLA SHORES DR.



HYDRAULICS LAB

KECK CENTER FOR OCEAN ATMOSPHERE RESEARCH



PACIFIC OCEAN

SURF ZONE MONITORING STATION S3

OUTFALL 1

OUTFALL 3

RECEIVING WATER MONITORING

INTAKE FLUME

OUTFALL 4B

OUTFALL 4A

OUTFALL 2

SURF ZONE MONITORING STATION S2

SURF ZONE MONITORING STATION S1

HUBBS HALL

SCHOLANDER HALL

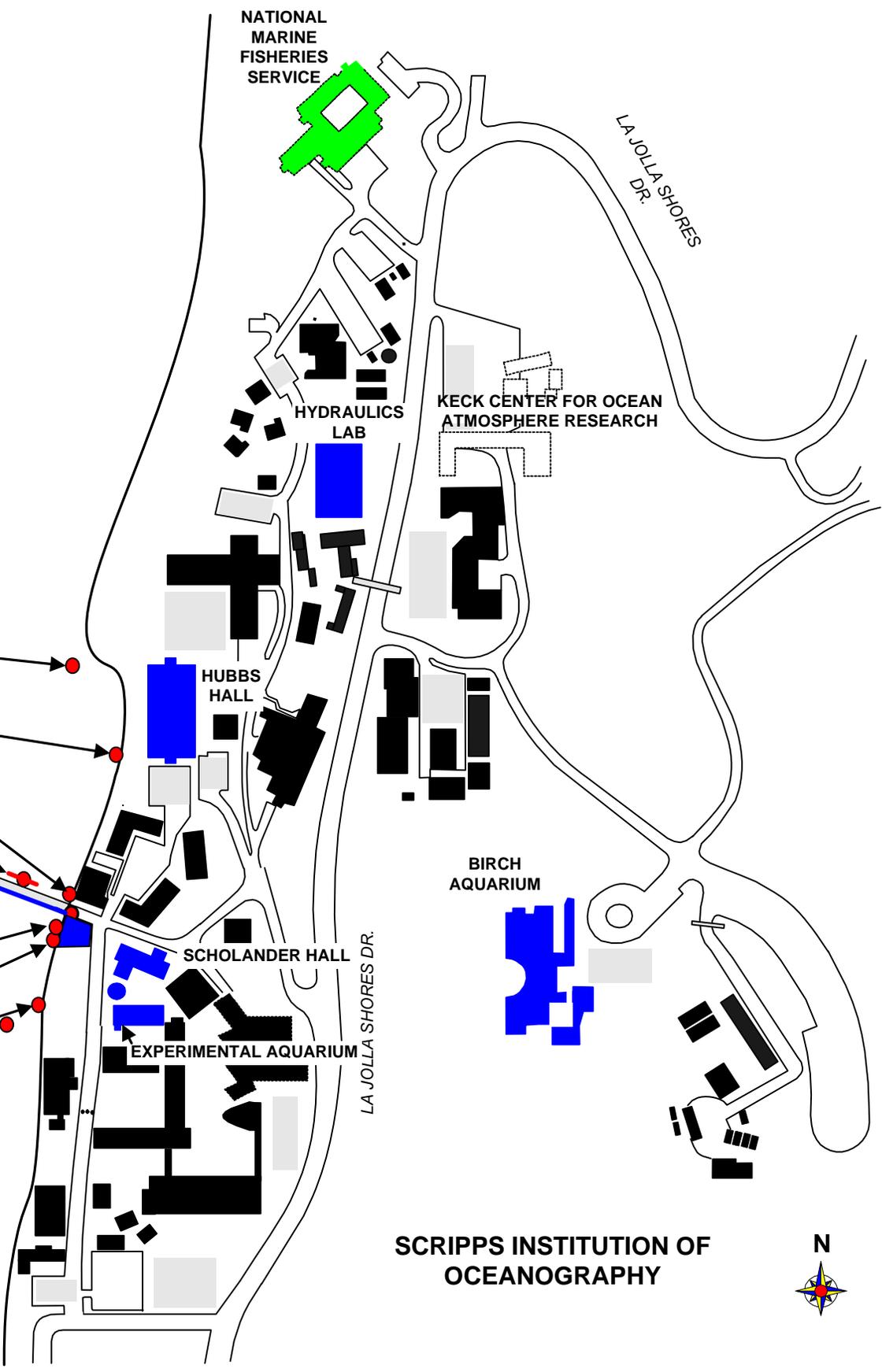
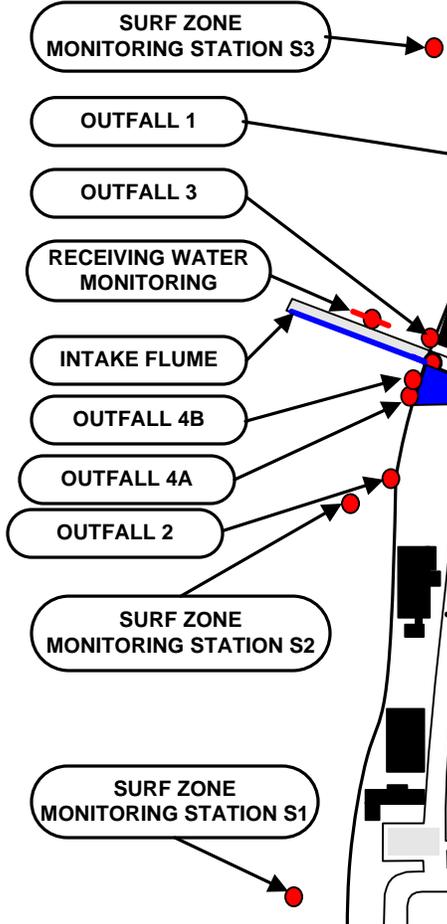
EXPERIMENTAL AQUARIUM

LA JOLLA SHORES DR.

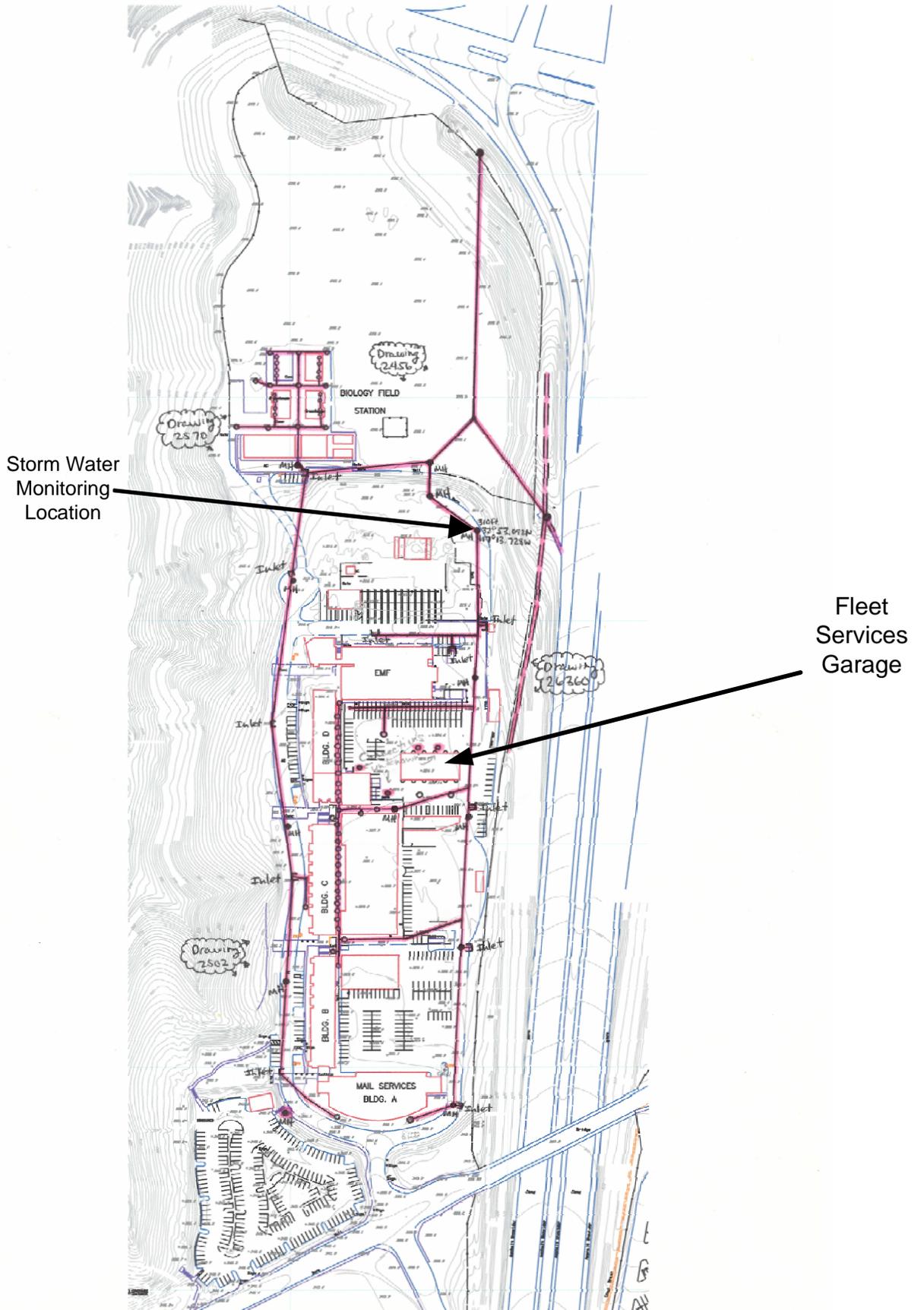
BIRCH AQUARIUM

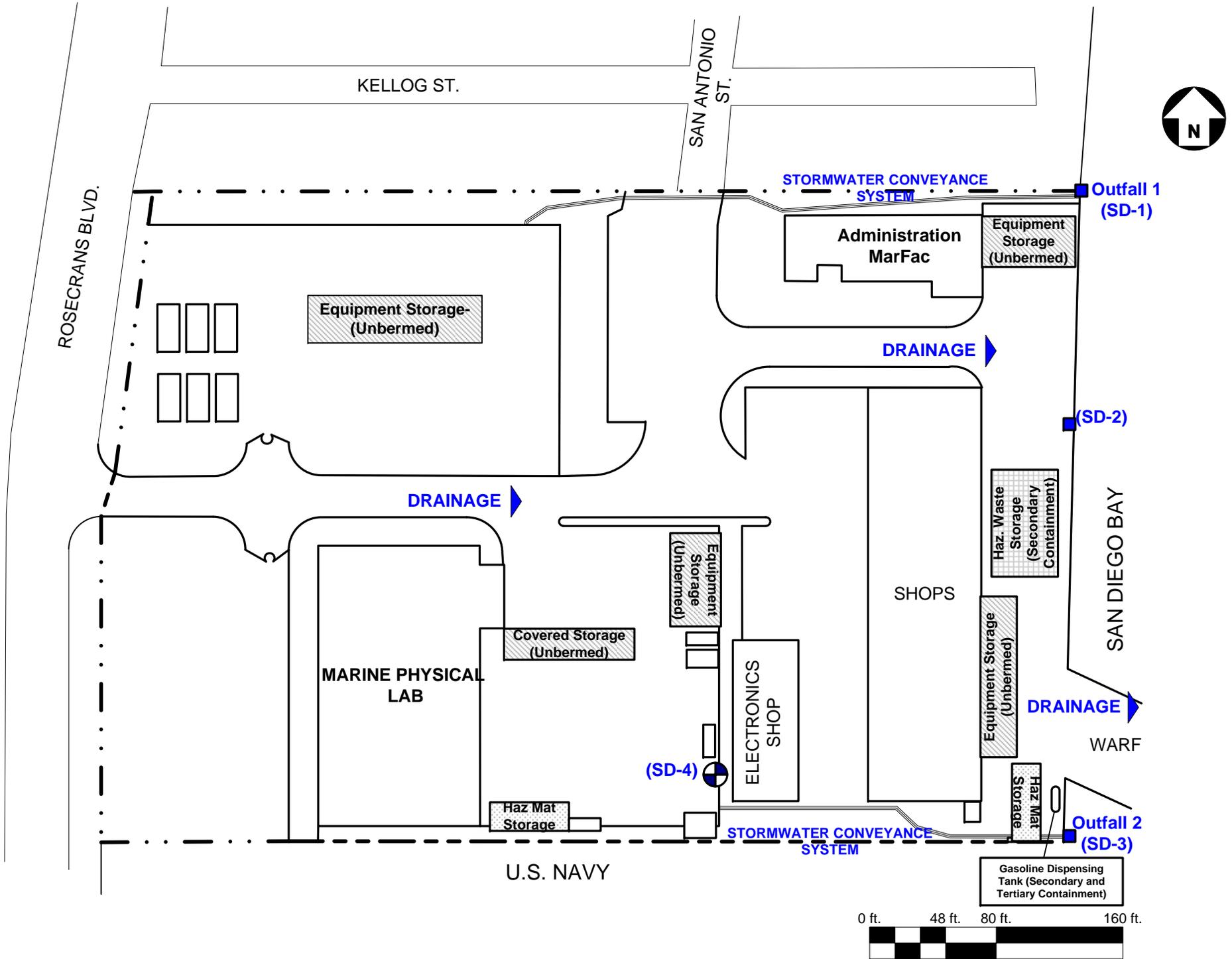


SCRIPPS INSTITUTION OF OCEANOGRAPHY



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





Nimitz Marine Facility Storm Water Monitoring Locations