



**UNIVERSITY OF CALIFORNIA, BERKELEY  
COLLECTION SYSTEM**

**Sewer System  
Management Plan**

**August 2023**

**WDID #: 2SSO10210**

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**APPENDIX B: BEST MANAGEMENT PRACTICES FOR FATS, OILS, AND GREASE**

## 1.0 INTRODUCTION

### 1.1 Regulatory Background

The Waste Discharge Requirements (WDR) Order No. 2022-0103-DWQ (“General Order No. 2022-0103-DWQ”), adopted by the State Water Resources Control Board (SWRCB) on December 6, 2022, regulates sanitary sewer systems conveying sewage. As a public entity that owns and/or operates one or more sanitary sewer systems greater than one mile in length (each individual sanitary sewer system), University of California, Berkeley (UC Berkeley) maintains regulatory coverage under the General Order No. 2022-0103-DWQ for the UC Berkeley Collection System (CS).

Enrollees must develop and implement a Sewer System Management Plan (SSMP). The UC Berkeley CS is currently required to meet the SSMP requirements outlined in the previous SWRCB order, WDR Order No. 2006-0003-DWQ (“General Order No. 2006-0003-DWQ”). The required SSMP update due date for the UC Berkeley CS is August 2, 2025, at which time the SSMP shall be updated to meet requirements outlined in the General Order No. 2022-0103-DWQ.

### 1.2 Purpose and Goals of the SSMP

This document was developed to comply with WDR Order No. 2006-0003-DWQ, which sets specific wastewater collection system requirements for all Enrollees. The General Order No. 2006-0003-DWQ requires Enrollees to prepare and implement a SSMP to:

- Provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system to provide reliable service in the future;
- Minimize infiltration/inflow (I/I);
- Reduce and prevent sanitary sewer overflows (SSOs)<sup>1</sup>;
- Help mitigate any SSOs that do occur.

Many spills can be prevented with adequate and appropriate facilities, source control measures, and operation and maintenance of the sanitary sewer system.

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<sup>1</sup> The General Order No. 2022-0103-DWQ required preparation of the SERP by June 5, 2023 (plan formerly referred to as the Overflow Emergency Response Plan). As such, this SSMP dated July 2023 includes the SERP as an attachment. Consistent with WDR Order No. 2006-0003-DWQ terminology, this SSMP continues to use “SSO” to refer to a sanitary sewer spill.

## 2.0 ORGANIZATION

### 2.1 Administration and Maintenance Organization

The administrative responsibility for the UC Berkeley CS is shared among several departments including Facilities Services (FS), Residential and Student Service Programs (RSSP), Intercollegiate Athletics (IA), Associate Students of the University of California, Berkeley (ASUC), Environment, Health & Safety (EH&S) and Capital Projects. The responsibilities of each department are summarized below and an organizational chart is included in [Figure 2-1](#).

**FS:** FS is responsible for the overall operation and maintenance of the sanitary sewer system, implementation of the SSMP, and certifications to regulatory agencies. FS also maintains drawings of new design and construction to the sanitary sewer system.

**EH&S:** The implementation of permit requirements and collection and submittal of data/reports to regulatory agencies is the responsibility of EH&S, including tracking and reporting of all SSOs, notifying agencies by phone about spills, and development and implementation of the SSMP. EH&S also provides support to all parts of operation and oversees enforcement actions.

**RSSP, IA, ASUC and non-affiliates:** Grease control devices are located within some housing and dining facilities and food service facilities. The managers of RSSP, IA and ASUC are responsible for the maintenance of the grease traps or interceptors located at their respective facilities.

**Capital Projects:** Capital Projects is responsible for the management of the design and construction of additions, rehabilitations or modifications to the sanitary sewer system.

### 2.2 Monitoring System and Reporting SSOs

UC Berkeley utilizes a variety of methods to monitor the status of the sanitary sewer system, including: SmartCover monitoring system, dye testing, Closed-Circuit Television (CCTV) inspections and visual/lamping examinations. Any tests and all preventative maintenance are documented through FS's and RSSP's work order tracking systems.

Reporting and certification reminders are placed on the EH&S Environmental Compliance Calendar which is a part of the university-wide calendaring system (bCal). Reminders and other notifications are sent out to the Legally Responsible Officials and members of the EH&S Environmental Protection (EP) team, which consists of Environmental Specialists and the and the Environmental Programs Manager.

Members of the University community who observe an SSO may call the following departments to report SSOs:

- FS at (510) 642-1032

- RSSP at (510) 642-2828
- EH&S at (510) 642-3073
- Campus Emergency Dispatch Phone Line at (510) 642-3333.

The Chain of Communication for Sanitary Sewer Spills is outlined in [Figure 2-2](#). Emergency response procedures for sanitary sewer spills are described in **Appendix A**, the Spill Emergency Response Plan (SERP).

### 2.3 Facility Description

The UC Berkeley campus is one of 10 University of California campuses governed by the Regents of the University of California. Based on University of California, Office of Planning and Analysis (OPA) Campus Data<sup>2</sup> and OPA Staff Headcount<sup>3</sup>, the student enrollment population was 45,307 (Fall 2022) and faculty and staff workforce was 15,136 (October 2022), respectively.

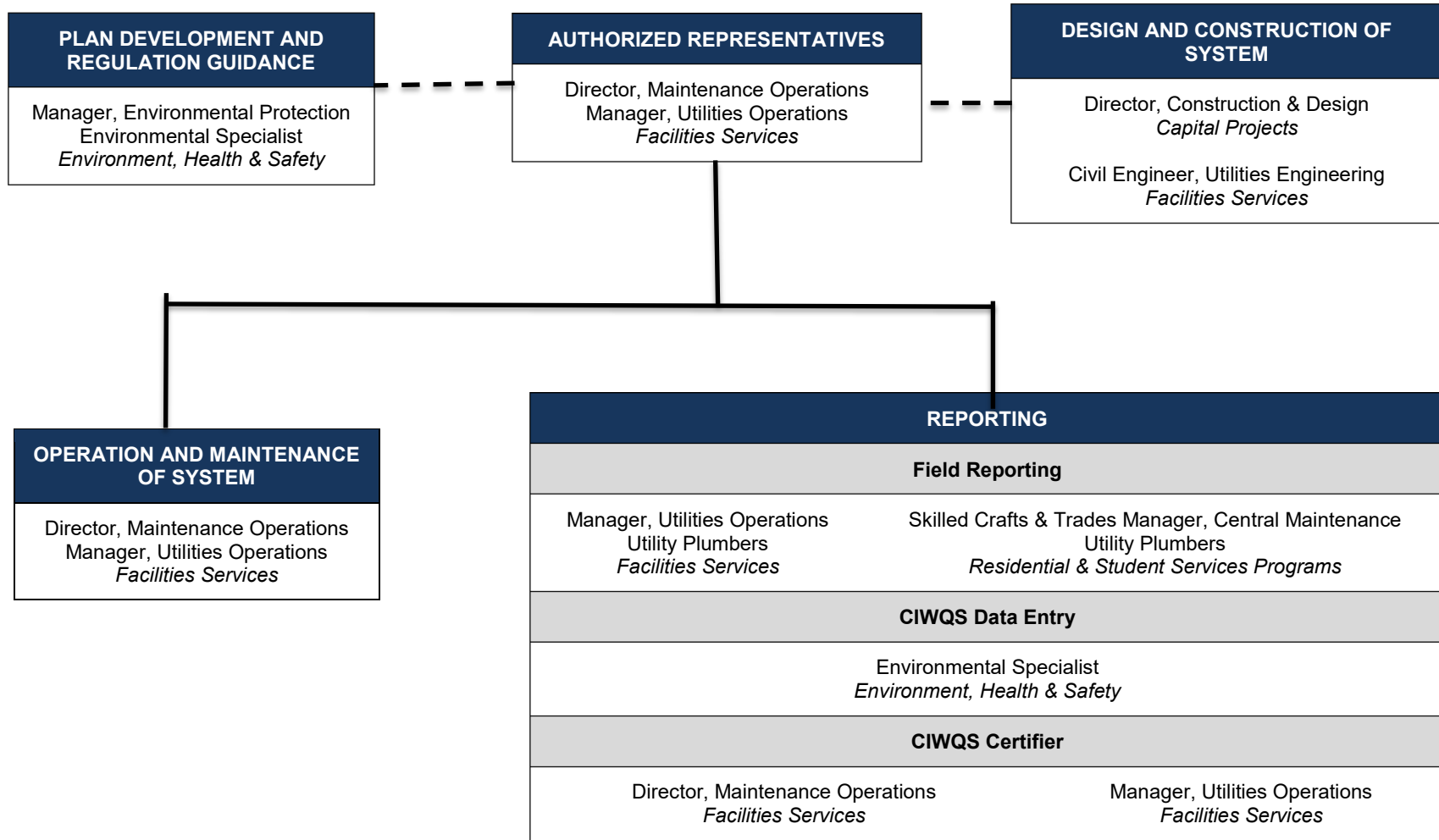
The UC Berkeley CS covers the Campus Park and portions of Hill Campus West and Hill Campus East (i.e., areas connected to a UC Berkeley CS main sewer line for which the laterals and mains are 1 mile or longer in total). The latest version of sewer maps is maintained by FS. The UC Berkeley CS connects to the City of Berkeley sanitary sewer system. Soils at UC Berkeley are classified primarily as silty clay and the average annual rainfall for the area is approximately 24 inches.

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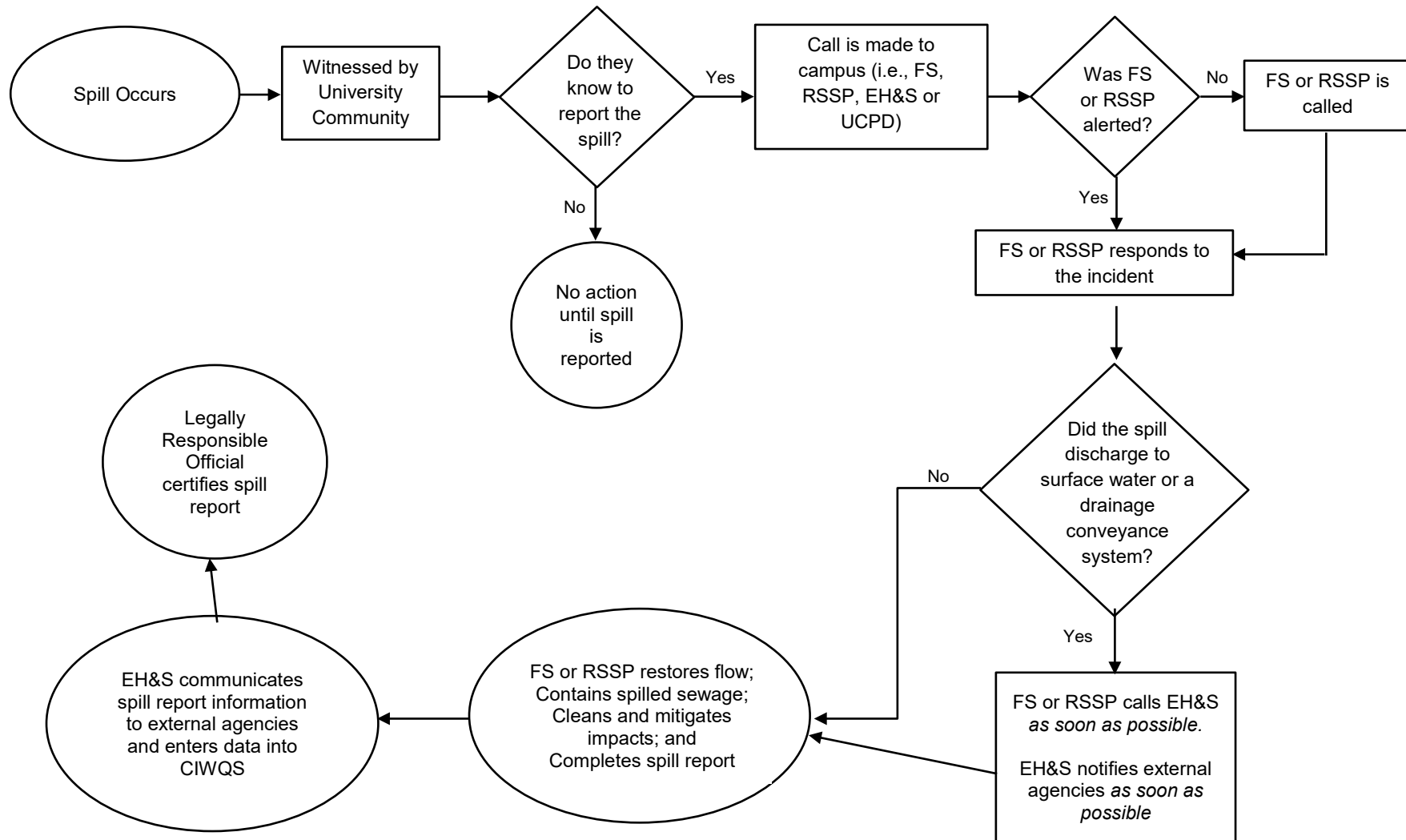
<sup>2</sup> <https://opa.berkeley.edu/campus-data/uc-berkeley-quick-facts>

<sup>3</sup> <https://pages.github.berkeley.edu/OPA/our-berkeley/staff-headcount.html>

**Figure 2-1 Administrative and Maintenance Responsibilities of UC Berkeley CS**



**Figure 2-2 Chain of Communication for Sanitary Sewer Spills, UC Berkeley CS**





## 2.4 Sanitary Sewer System Description

The UC Berkeley CS serves the majority of the campus, stretching from the western boundary of Campus Park to portions of Hill Campus West and Hill Campus East.

The sanitary sewer system at UC Berkeley has been in use since approximately 1867 and comprises of over 8 miles of gravity sewers. Original pipe has been replaced as upgrades or repairs have been required or new facilities have been constructed. The piping consists of a combination of vitrified clay, cast iron, polyvinyl chloride, and high-density polyethylene, among other materials. Sanitary sewage is collected from campus buildings that house administration, research, residential and dining hall facilities. The UC Berkeley CS connects to the City of Berkeley CS, which routes sewage to the East Bay Municipal Utility District (EBMUD) wastewater treatment plant.

Several lift stations/pump stations are located at the Campus Park, Hill Campus West, and Hill Campus East. [Table 2-3](#) details the pump station inventory for stations outside of the building footprint. The Campus Park has multiple pump stations that are within building footprints but are not included in the inventory. Pump stations within building footprints are not reported in the California Integrated Water Quality System (CIWQS). This is to provide consistency in reporting methodology since sewer laterals are calculated from the building footprint to the manhole. However, some sewer pump stations within the building footprint are inventoried in [Table 2-4](#).

**Table 2-3 Pump Station Inventory (Outside of the Building Footprint)**

Location	# of Pumps and Capacity	Alarm
<b>Campus Park</b>		
The Faculty Club	2 pumps, 5,000 gallons	Audible; Smart Cover installed
Women’s Faculty Club	2 pumps, 2,000 gallons	Audible
<b>Hill Campus East</b>		
UC Botanical Garden, Tropical House (PS 09)	2 pumps, 2,000 gallons	Audible; Smart Cover to be installed in 2023
UC Botanical Garden, Julia Morgan Hall (PS 08)	2 pumps, TBD	Audible
UC Botanical Garden, Arid House (PS 07)	1 pump; groundwater	TBD
Animal Behavior Research Station (ABRS), near Building 7C (PS 03)	TBD	TBD
ABRS, near Building 5 (PS 04)	TBD	TBD
ABRS, near Building 1 (PS 05)	TBD	TBD

Location	# of Pumps and Capacity	Alarm
ABRS, near Building 7B (PS 06)	TBD	TBD
Notes: 1) Updated August 2023 2) Type and configuration of each pump station is wet well, in parallel, unless otherwise noted		

**Table 2-4 Pump Station Inventory (within the Building Footprint)<sup>1</sup>**

Buildings with Pump Stations			
Blum Center for Developing Economies	Birge Hall	Doe Library	Koshland Hall
Latimer Hall	Li Ka Shing Center	Moffitt Library	Northwest Animal Facility
Pimentel Hall	Sproul Hall	Stanley Hall	Sutardja Dai Hall
UC Berkeley Art Museum and Pacific Film Archive (BAMPFA) <sup>2</sup>	Weill Hall (former Life Sciences Addition or LSA)	Women's Faculty Club	Zellerbach Hall
Notes: 1) The list is not inclusive of all pump stations within the building footprint (updated October 2017) 2) BAMPFA is adjacent to the UC Berkeley CS; not within the permitted footprint as this building discharges directly to the City of Berkeley sanitary sewer collection system.			

There are numerous grease control devices located within the UC Berkeley CS on Campus Park and portions of Hill Campus West and Hill Campus East ([Table 2-5](#)). Grease control devices located outside the boundary of the UC Berkeley CS (i.e., City Environs, Clark Kerr Campus, portion of Hill Camps West) are also included in the table for inventory purposes.

**Table 2-5 Grease Control Devices<sup>1</sup>**

Doing Business As (DBA)	Location	Department or Operator	Description
<b>Campus Park</b>			
Bear's Lair Tavern	Eshleman Hall	ASUC	Two below-grade, three-chamber interceptors in the driveway (1,250-gal)
Brown's	Genetics & Plant Biology Building	RSSP	Above-floor trap
Café Press	Moffitt Library 4th Floor Patio	Strada Group	Above-floor Hydromechanical Trap

Doing Business As (DBA)	Location	Department or Operator	Description
Café Think	Haas School of Business, Chou Hall	Strada Group	Interceptor at loading dock
Café Zeb	Berkeley Law Building	Strada Group	In-Ground trap
Free Speech Café	Moffitt Library	Strada Group	Future remodeling; will be in-floor trap
Golden Bear Café	Cesar Chavez Student Center	RSSP	Above-floor trap (50-gal)
Haas Pavilion Kitchen & Concessions	Haas Pavilion	IA	In-floor trap
The Faculty Club	The Faculty Club	The Faculty Club	Above-floor trap
Vacant	Wurster Hall	Operator	Above-floor trap
Women's Faculty Club	Women's Faculty Club	Women's Faculty Club	Above-floor trap
UC Food Pantry	MLK Student Union	ASUC	Five 750-gallon aboveground interceptors in Lower Sproul Parking Garage
Goldie's Coffee	MLK Student Union, 2nd floor	ASUC	
Pauley Ballroom Catering Kitchen	MLK Student Union	ASUC	
Eateries at Student Union	MLK Student Union	ASUC	
<b>Hill Campus West</b>			
Bowles Hall Dining Commons	Bowles Hall	Bowles Hall Foundation	Interceptor
Foothill Dining Commons	Foothill, 2700 Hearst Avenue	RSSP	Interceptor
Memorial Stadium	Loading Dock	IA	Interceptor (2,500-gal)
Memorial Stadium	Room 146	IA	In-floor Hydromechanical Trap (100-gal)
Memorial Stadium	Room 120E (Mechanical Room)	IA	Above-floor Hydromechanical Trap (25-gal)
Memorial Stadium	Room 131 (Shell Space)	IA	Above-floor Hydromechanical Trap (25-gal)
Memorial Stadium	Room 135 (Trash Room)	IA	Above-floor Hydromechanical Trap (25-gal)

Doing Business As (DBA)	Location	Department or Operator	Description
Memorial Stadium	Room 146 (Hallway)	IA	In-floor Hydromechanical Trap (25 or 50-gal)
Memorial Stadium	Room 148 (Hallway)	IA	In-floor Hydromechanical Trap (25 or 50-gal)
Memorial Stadium	Room 149 (Hallway)	IA	In-floor Hydromechanical Trap (25 or 50-gal)
Memorial Stadium	Concession 303	IA	In-floor Hydromechanical Trap (25-gal)
Memorial Stadium	Concession 377	IA	In-floor Hydromechanical Trap (25-gal)
Memorial Stadium	Concession 386	IA	In-floor Hydromechanical Trap (25-gal)
Memorial Stadium	Room 742 (Women's Restroom)	IA	Above-floor Hydromechanical Trap (25-gal)
Simpson Center	2227 Piedmont Ave	IA	Interceptor
<b>Hill Campus East</b>			
Bay View Café	Lawrence Hall of Science 1 Centennial Dr	Cal Dining	Above-floor trap
<b>Hill Campus West (not within the UC Berkeley CS)<sup>2</sup></b>			
I-House Dining Commons	International House 2299 Piedmont Ave	I-House	Interceptor (500-gal) / Trap (30-gal)
<b>Clark Kerr Campus (not within the UC Berkeley CS)<sup>2</sup></b>			
Clark Kerr Dining Commons	Clark Kerr, 2601 Warring Street	RSSP	Interceptor
<b>City Environs (not within the UC Berkeley CS)<sup>2</sup></b>			
Blaze Pizza	Blackwell Hall 2400 Bancroft Way	Blaze Pizza	Interceptor
Café 3 (Unit 3) Dining Commons	Residence Hall, Unit 3, 2400 Durant Avenue	RSSP	Interceptor
Crossroads Dining Commons	2415 Bowditch Street	RSSP	Interceptor
The Den (Peet's Coffee, Pizzeria 1868)	2415 Bowditch Street	RSSP	Interceptor
Maragume Udon	1919 Shattuck Ave, Ste 103	Maragume Udon	Interceptor

Doing Business As (DBA)	Location	Department or Operator	Description
Simply Bowl	2156 University Ave	Simply Bowl	Above-floor trap
Wiki Wiki	2417 Shattuck Ave.	Wiki Wiki	Above-floor trap
Vacant	BAMPFA (Center Street)	Operator	Trap in basement
Vacant	2160 University Ave.	Operator	Above-floor trap
Notes: 1) Inventory updated July 2023 2) Grease control devices associated with campus buildings. Buildings discharges sanitary sewage to the City of Berkeley and not to the UC Berkeley CS.			

## 3.0 LEGAL AUTHORITY

The Regents of the University of California is a Constitutional Corporation, organized under Article IX, Section 9 of the California Constitution, with full authority over governance and management of the University operations. Under this authority, the University of California has legal authority to:

- Control infiltration and connections from inflow sources, including satellite systems.
- Require that sewers and connections be properly designed and constructed.
- Ensure proper installation, testing and inspection of new and rehabilitated sewers (such as new or rehabilitated collector sewers and new or rehabilitated laterals).
- Limit fats and greases and other debris that may cause blockages in the collection system.
- Prevent illicit discharges into its system (e.g., stormwater or chemical dumping).
- Ensure access for maintenance, inspection or repairs of all portions of the system operated by UC Berkeley.
- Implement the national pretreatment program authorities specified under 40 CFR 403.8(f)(1).

## 4.0 OPERATION AND MAINTENANCE PROGRAM

In order to reduce and prevent SSOs the SSMP establishes measures and activities to facilitate the proper management, operation and maintenance of all parts of the sanitary sewer system. Measures and activities include maintaining system maps, scheduling routine maintenance in areas that are historically “hot spots”, identifying, and addressing system deficiencies, providing public education, and describing fiscal resources and training.

**Table 4-1** presents the required elements for the SSMP. The table identifies each element and the person and position at UC Berkeley who is responsible for that element.

**Table 4-1: Operation and Maintenance Program**

UC Berkeley CS: Operation and Maintenance Program	Responsible Party	Point of Contact
<b>A. Operations and Maintenance</b>		
<p><i>"Provide adequate operations and maintenance of facilities and equipment"</i></p> <p>Operation and maintenance of the sanitary sewer is the responsibility of Facilities Services (FS) and Residential Student Services Programs (RSSP). This includes maintaining all lines, lift stations, force mains, and alarm systems. These departments are also the first responder to sanitary sewer overflows.</p>	<p>FS Director-Facilities Services Maintenance &amp; Operations</p> <p>RSSP Director of Trades, Maintenance, &amp; Grounds</p>	<p>Karen Lobo k_lobo@berkeley.edu (510) 812-0877</p> <p>Francisco Armenta-Gutierrez armenta_gutierrez@berkeley.edu (510) 520-5735</p>
<b>B. Update Maps</b>		
<p><i>"Maintain an up-to-date map of the collection system showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and storm water conveyance systems."</i></p> <p>The maps of the sanitary sewer system are either in AutoCAD, ArcGIS, Google Earth or hard copy format.</p> <ul style="list-style-type: none"> <li>Sanitary sewer maps are in AutoCAD (kept on the FS server), ArcGIS (user-specific access), Google Earth (kept on Box) and hard copy format (in FS offices). Maps are being updated to show line size and material type. The current map has partial details regarding manholes including manhole identification numbers and pump stations.</li> </ul>	<p>FS GIS, Mapping, &amp; Drawing Supervisor</p> <p>FS Director of Engineering and Technical Services</p> <p>RSSP Executive Director of Housing Facilities</p>	<p>Maianna Voge mvoge@berkeley.edu (510) 812-3403</p> <p>Diane Coppini dmcoppini@berkeley.edu (510) 812-0059</p> <p>Makoto Ushihara ushihara@berkeley.edu (510) 642-0582</p>
<b>C. Maintain Information for Establishing Priorities</b>		
<p><i>"Maintain relevant information to establish and prioritize appropriate SSMP activities such as the elimination of overflows and identify and illustrate trends in overflows."</i></p>	<p>EH&amp;S Environmental Programs Manager</p>	<p>Alicia Bihler abihler@berkeley.edu</p>



UC Berkeley CS: Operation and Maintenance Program	Responsible Party	Point of Contact
<p>EH&amp;S is responsible for maintaining records regarding SSOs. All records are kept on the EH&amp;S server and an additional copy may be kept in the EH&amp;S hard copy files. Overflows of any amount of wastewater are reported to EH&amp;S. EH&amp;S tracks overflows and assesses the frequency and volume of overflows and works with campus departments to reduce and prevent overflows.</p>		(510) 725-2528
<b>D. Preventative Maintenance</b>		
<p><i>"Routine preventative maintenance O&amp;M activities by staff and contractors."</i></p> <p>UC Berkeley has measures in place in order to keep the system in good repair and prevent excessive infiltration/inflow, service interruptions and system failures. This is done through scheduled regular maintenance and cleaning of the collection system, which is summarized below.</p> <p><b>Routine Inspections:</b></p> <ul style="list-style-type: none"> <li>• Pump Stations: Inspections conducted periodically, at least annually.</li> <li>• Manholes: Manholes are regularly inspected monthly on a 3-year schedule.</li> <li>• Hot spots: Hot spots are visually inspected quarterly. When applicable, hot spots are routinely assessed using CCTV at least semi-annually.</li> </ul> <p><b>Routine Maintenance:</b></p> <ul style="list-style-type: none"> <li>• Root control: Maintenance from root intrusion is conducted on an as-needed basis, documented in the FS work order system.</li> <li>• Lower Sproul: At minimum, the sanitary sewer is flushed twice a month in targeted areas. This maintenance is documented through the FS work order system.</li> <li>• Hot Spots Map: Those that need routine maintenance are in the FS work order system.</li> </ul>	<p>FS Utilities Operations Manager</p> <p>FS Utilities Engineering Civil Engineer</p> <p>RSSP Skilled Crafts &amp; Trades Manager, Central Maintenance</p>	<p>Jimmy Manibusan fjimmy@berkeley.edu (510) 643-4026 (office) (510) 812-0921 (cell)</p> <p>Karen Bennett kben@berkeley.edu (510) 812-0797</p> <p>Karla Robbins ksrobbins@berkeley.edu (510) 642-5399 (office) (510) 610-8978 (cell)</p>
<b>E. Scheduled Inspections and Condition Assessment</b>		
<p><i>"Identify and prioritize structural deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency."</i></p> <p><b>Long-term planning:</b></p>	<p>Capital Projects Director</p>	<p>Shannon Holloway shannonholloway@berkeley.edu (510) 642-1954</p>

UC Berkeley CS: Operation and Maintenance Program	Responsible Party	Point of Contact
<p>UC Berkeley is continually updating the infrastructure of the campus over time, including the sanitary sewer.</p> <p>UC Berkeley hired West Yost Associates to produce the Campus Infrastructure Master Plan and Renewal Investment Strategy, which was completed in November 2015. The Master Plan developed a prioritized capital improvement program for long-term recommended infrastructure improvements, and an assessment of the condition of the existing system facilities and inventory.</p> <p>The maintenance approach is to perform full CCTV inspections of the system on a repeating cycle of 5-10 years. The university has a multi-year contract with Pipe &amp; Plant to clean and inspect approximately 15% of the campus system every year. The University tracks and prioritizes major system upgrades, within budget constraints, on a statewide basis. Any urgently needed repairs disclosed by the inspections are addressed on an as-needed basis, pending available funds.</p> <p><b>Short-term actions:</b>            Short-term actions are taken on an as-needed-basis depending on information gathered during inspections. FS Utilities Operations will work with C&amp;D and EH&amp;S as necessary to develop short-term project scope and subsequently implement the project, all to be documented in the FS work order system. Short term actions implemented through this method include the following:</p> <ul style="list-style-type: none"> <li>• Grease interceptor or trap installation</li> <li>• Identification and replacement of laterals</li> <li>• Manhole replacement</li> <li>• Reverse grade and root intrusion corrections</li> </ul>	<p>FS Director of Engineering and Technical Services</p> <p>RSSP Executive Director of Housing Facilities</p>	<p>Diane Coppini            dmcoppini@berkeley.edu            (510) 812-0059</p> <p>Makoto Ushihara            ushihara@berkeley.edu            (510) 642-0582</p>
<b>F. Training</b>		
<p><i>"Provide training on a regular basis for staff collection system operations, maintenance and monitoring and determine if contractors' staffs are properly trained."</i></p> <p>Training is conducted by EH&amp;S, FS and RSSP or a third-party provider. The three departments (EH&amp;S, FS and RSSP) are responsible for training staff in the following areas:</p> <p><b>EH&amp;S:</b></p>	<p>EH&amp;S Environmental Programs Manager</p> <p>EH&amp;S Environmental Specialist</p>	<p>Alicia Bihler            abihler@berkeley.edu            (510) 725-2528</p> <p>Sharon Harichandran            sharon.harichandran@berkeley.edu</p>

UC Berkeley CS: Operation and Maintenance Program	Responsible Party	Point of Contact
<ul style="list-style-type: none"> <li>Provides bloodborne pathogen awareness training for FS Utilities Operations and RSSP Central Maintenance staff. EH&amp;S training is documented through the UC Learning Center.</li> <li>Provides in-person sewer spill response training for utility plumbers responding to sewer spills. This training is documented through bCal Sewer Summit attendance and other training events, with additional documentation maintained on the EP(V) drive or the UC Learning Center.</li> </ul> <p><b>FS and RSSP:</b></p> <ul style="list-style-type: none"> <li>Provides regular technical training for staff; most training is on the job and is not formally documented.</li> <li>Provides technical training when new systems are installed to operators of the system. Training on new systems is documented.</li> <li>Responsible for overseeing operations of contractors. UC Berkeley utilizes a service agreement for outside contractors to perform maintenance on the sewer system. The service agreement contract stipulates that contractor’s staff must be properly trained; this is documented through the language in the contract.</li> </ul>		<p>(510) 812-1541</p> <hr/> <p>FS Utilities Operations Manager Jimmy Manibusan fjimmy@berkeley.edu (510) 643-4026 (office) (510) 812-0921 (cell)</p> <p>RSSP Skilled Crafts &amp; Trades Manager, Central Maintenance Karla Robbins ksrobbins@berkeley.edu (510) 642-5399 (office) (510) 610-8978 (cell)</p>
<b>G. Equipment</b>		
<p><i>“Provide equipment and replacement parts inventories, including identification of critical replacement parts.”</i></p> <p>FS and RSSP stocks parts and equipment, including emergency pumps, lights and generators. Repairs that require equipment or materials beyond existing capabilities are executed by an outside contractor via a service agreement contract. Currently, a service agreement is maintained with Roto-Rooter.</p>		<p>FS Utilities Operations Manager Jimmy Manibusan fjimmy@berkeley.edu (510) 643-4026 (office) (510) 812-0921 (cell)</p> <p>RSSP Skilled Crafts &amp; Trades Manager, Central Maintenance Karla Robbins ksrobbins@berkeley.edu (510) 642-5399 (office) (510) 610-8978 (cell)</p>
<b>H. Public Education Outreach Program</b>		
<p><i>“Establish an implementation plan and schedule for public education outreach program that promotes the proper disposal of grease and fats.”</i></p>		<p>EH&amp;S Environmental Programs Manager Alicia Bihler abihler@berkeley.edu (510) 725-2528</p>

UC Berkeley CS: Operation and Maintenance Program	Responsible Party	Point of Contact
<p>The university has direct control over any facility, within our property line, which disposes of grease and fats into the sanitary sewer system since UC Berkeley owns and operates all of the laterals and mains. Policies adopted in this plan, specifically Section 8, Source Control Program, are adopted by all entities at UC Berkeley. The additional items below comprise the outreach program to the community.</p> <p>The following measures are adopted in order to foster the successful implementation of the SSMP and disposal of grease and fats by those that use the sanitary sewer system:</p> <ul style="list-style-type: none"> <li>• A copy of the UC Berkeley CS SSMP is posted on the UC Berkeley EH&amp;S website (<a href="https://ehs.berkeley.edu/safety-subjects/environmental-protection/sewer-system-management-plans">https://ehs.berkeley.edu/safety-subjects/environmental-protection/sewer-system-management-plans</a>).</li> <li>• Signs listing the best management practices (BMPs) for working with fats, oils and grease will be posted in the work areas of employees who use the grease traps or interceptors.</li> <li>• Inspections for proper disposal of grease and fats as well as regular maintenance on grease traps will be included in routine inspections by the campus sanitarian and EP team. These inspections are documented by EH&amp;S and maintained in electronic format on the EH&amp;S server.             <ul style="list-style-type: none"> <li>○ Contractual language in third party food providers lease agreements stipulate that vendors maintain adequate grease controls.</li> </ul> </li> </ul>	EH&S Environmental Specialist	Sharon Harichandran sharon.harichandran@berkeley.edu (510) 812-1541
<b>I. Private Property Overflow Plan</b>		
<p><i>"Establish a plan for responding to overflows from private property that discharge to public right of ways and storm drains, to prevent discharges from overflows to surface waters and storm drains."</i></p> <p>Public-private partnerships (P3) properties that are on UC Berkeley land have contractual agreements on responsibilities for management of the sanitary sewer systems. Memorandums of understanding also identify maintenance and operations responsibilities.</p> <p>For private property overflows that enter UC Berkeley property, UC Berkeley will alert the entity who owns the sewer lines involved and assist in coordinating response, as necessary.</p>	<p>FS Director-Facilities Services Maintenance &amp; Operations</p> <p>RSSP Director of Trades, Maintenance, &amp; Grounds</p> <p>EH&amp;S Environmental Programs Manager</p>	<p>Karen Lobo k_lobo@berkeley.edu (510) 812-0877</p> <p>Francisco Armenta-Gutierrez armenta_gutierrez@berkeley.edu (510) 520-5735</p> <p>Alicia Bihler abihler@berkeley.edu</p>

UC Berkeley CS: Operation and Maintenance Program	Responsible Party	Point of Contact
		(510) 725-2528
<b>J. Staffing for System Operations</b>		
<p><i>"Describe staffing available to ensure system operation including developing, implementing and revising the SSMP."</i></p> <p>The responsibility for system operation is shared among several departments and is summarized in <a href="#">Figure 2-1</a>, Administrative Responsibilities for UC Berkeley CS.</p> <p>Staff are available 24 hours a day, 365 days a year, to operate the system.</p> <p>The SSMP revision and implementation will be accomplished by EH&amp;S Environmental Protection Team, in cooperation with FS, RSSP and C&amp;D. Together, these departments ensure the operation of the sanitary sewer system.</p>	<p>FS Director-Facilities Services Maintenance &amp; Operations</p> <p>RSSP Director of Trades, Maintenance, &amp; Grounds</p> <p>EH&amp;S Environmental Programs Manager</p>	<p>Karen Lobo k_lobo@berkeley.edu (510) 812-0877</p> <p>Francisco Armenta-Gutierrez armenta_gutierrez@berkeley.edu (510) 520-5735</p> <p>Alicia Bihler abihler@berkeley.edu (510) 725-2528</p>

## 5.0 DESIGN AND PERFORMANCE PROVISIONS

The University of California, Berkeley has established [Campus Design Standards](#) (CDS) for construction projects on campus. Standards for sanitary sewer installation, rehabilitation and repair are included in CDS Division 2-Site Work.

Capital Projects is responsible for ensuring the design standards are implemented on campus. There are two categories of design and performance provisions specified in General Order No. 2006-0003-DWQ, discussed below.

### 5.1 Standards for Installation, Rehabilitation and Repair

The CDS outlines construction specifications for installing new sewer systems and for rehabilitation and repair of existing sewer systems. Design criteria include specifications for items such as pipe materials, minimum sizes, minimum cover, strength, minimum slope, trench and backfill, structure standards, and other factors. Any new construction, rehabilitation or repair of the sanitary sewer system will adhere to the CDS.

### 5.2 Standards for Inspection and Testing of New and Rehabilitated Facilities

Inspection and testing of new or rehabilitated facilities ensures that the established standards are being implemented in the field. Acceptance testing for gravity sewers can include low pressure air test or water test to identify leakage, mandrel test to identify deflection of flexible pipe, water or vacuum test of manholes to identify leakage, and television inspection to identify grade variations or other construction defects.

## 6.0 SPILL EMERGENCY RESPONSE PLAN

### 6.1 Objective and Purpose

The SERP (formerly the Overflow Emergency Response Plan) is attached as **Appendix A** to this SSMP and has the purpose of establishing guidelines and measures to protect public health and the environment in case of an accidental sewer spill.

In the case of a sewer spill, UC Berkeley shall dispatch the appropriate crews to investigate, identify the cause, and provide appropriate service to minimize the effects of the spill on public health and quality of surface waters. The SERP further specifies the required notification and reporting that is necessary for local and state agencies.

All utility personnel should be required to read the SERP and familiarize themselves with the procedures. Training is made available for all utility personnel on the SERP. The plan is also posted on the EH&S website to allow easy access for all utility personnel and the general public.

### 6.2 Plan Update

The effectiveness of the SERP is reviewed on an annual basis by EH&S with feedback requested from First Responders, Designated Urgent Response Team (DURT), and Legally Responsible Officials. The plan is updated, as necessary, following the review.

## 7.0 FOG CONTROL PROGRAM

This fats, oils and grease (FOG) control program has been developed as part of the UC Berkeley CS SSMP, and buildings upon the on-going FOG Best Management Practices Fact Sheet that UC Berkeley has in place (**Appendix B**). The purpose of the program is to reduce the amount of fats, oils and grease discharged to the wastewater collection system.

### 7.1 Current Infrastructure

There are many grease control devices located within the Campus Park, Hill Campus West, and Hill Campus East ([Table 2-5](#)).

There are other food service facilities within the UC Berkeley CS that are not equipped with grease control devices. During future renovations or additions, UC Berkeley plans to install grease control devices, as necessary. Current food service facilities are required to follow the Fats, Oils, and Grease Best Management Practices Fact Sheet, posted on the EH&S website.

### 7.2 Elements of FOG Control Program

The elements of the FOG control program include identification of grease blockages, maintenance, BMPs, record keeping practices and inspections. The details are provided in [Table 7-1](#).



**Table 7-1 FOG Control Program**

FOG Control Measures	Responsible Party	Point of Contact
<b>A. Identification of Grease Blockages and Maintenance Requirements</b>		
<p>Grease blockages are identified through routine inspections of the sanitary sewer system. The inspections are conducted as part of the regular scheduled maintenance and cleaning of the system, which is outlined in <a href="#">Table 4-1</a>, Measures and Activities, Parts D and E.</p> <p>System maintenance includes both preventative maintenance and maintenance of parts of the system determined to be in need of cleaning during routine inspections. Preventive maintenance procedures are outlined in <a href="#">Table 4-1</a>, Part D.</p> <p>Blockages, sanitary sewer overflows or increased maintenance of laterals/mains that are caused by fats, oils and grease are reported to EBMUD. UC Berkeley and EBMUD are part of a joint enforcement program that was established in 2016, which includes hot spot investigation.</p>	<p>FS Utilities Operations Manager</p> <p>FS Utilities Engineering Civil Engineer</p> <p>RSSP Skilled Crafts &amp; Trades Manager, Central Maintenance</p>	<p>Jimmy Manibusan fjimmy@berkeley.edu (510) 812-0921</p> <p>Karen Bennett kben@berkeley.edu (510) 812-0797</p> <p>Karla Robbins ksrobbins@berkeley.edu (510) 642-5399 (office) (510) 610-8978 (cell)</p>
<b>B. Installation of New Grease Traps or Interceptors</b>		
<p>Installation of a new grease trap or interceptor may be recommended based on inspection and maintenance of the system, construction of new food service facilities that may tie into the collection system, and/or renovation of additions to existing buildings. Installation of new grease traps or interceptors will conform to current California Plumbing Code design standards.</p> <p>Design plans for new grease traps and interceptors will be reviewed by FS, RSSP and/or EH&amp;S during Design Development Documents and Construction Documents review.</p>	<p>FS Utilities Engineering Civil Engineer</p> <p>FS Utilities Operations Manager</p> <p>RSSP Director of Trades, Maintenance, &amp; Grounds</p> <p>EH&amp;S Environmental Programs Manager</p>	<p>Karen Bennett kben@berkeley.edu (510) 812-0797</p> <p>Jimmy Manibusan fjimmy@berkeley.edu (510) 812-0921</p> <p>Francisco Armenta-Gutierrez armenta_gutierrez@berkeley.edu (510) 520-5735</p> <p>Alicia Bihler abihler@berkeley.edu</p>

FOG Control Measures	Responsible Party	Point of Contact
		(510) 725-2528
<b>C. Best Management Practices (BMPs)</b>		
<p>Source control BMPs are in place to prevent the introduction of FOG into the sanitary sewer and consist of training and signage. Training occurs upon hiring by kitchen managers.</p> <ul style="list-style-type: none"> <li>• Kitchen staff are trained upon hire on BMPs to ensure that they are implemented. Because many employees are students, there is high turnover. Regular training is conducted to address high turnover.</li> <li>• Kitchen staff are trained upon hire on bulk grease management practices. Bulk grease is not washed into the sanitary sewer. Additionally, grease from fryers or pans is not washed down the drain.</li> <li>• Excess grease that is generated from grilling or frying is collected in a dedicated container. The grease is disposed of by a grease hauler.</li> <li>• Grease traps are cleaned once per three-month period, at a minimum, by an approved grease hauler.</li> <li>• FOG management signs are posted in kitchens to remind kitchen staff.</li> </ul>	<p>EH&amp;S Environmental Programs Manager</p> <p>EH&amp;S Environmental Specialist</p> <p>RSSP Executive Director, Cal Dining</p>	<p>Alicia Bihler abihler@berkeley.edu (510) 725-2528</p> <p>Sharon Harichandran sharon.harichandran@berkeley.edu (510) 812-1541</p> <p>Christopher R. Henning chenning@berkeley.edu (510) 642-7279</p>
<b>D. Recordkeeping</b>		
<p>Service records for pumping, maintenance and repair of grease control devices are kept by the department or the operator of the food service establishment. They are made available upon request to ensure the contractor is maintaining the inspection schedule and pumping out the grease control devices when necessary.</p>	<p>ASUC Facilities Coordinator</p> <p>RSSP Skilled Crafts &amp; Trades Manager, Central Maintenance</p>	<p>Amanda Johnson ajohnson88@berkeley.edu (510) 664-5504</p> <p>Karla Robbins ksrobbins@berkeley.edu (510) 642-5399 (office) (510) 610-8978 (cell)</p>

FOG Control Measures	Responsible Party	Point of Contact
	IA Senior Associate Athletics Director, Facilities, Events and Capital Projects	Joshua Hummel johummel@berkeley.edu (510) 643-3480 (office) (510) 409-7433 (cell)
	Non-affiliate Operators	Varies
<b>E. Inspection</b>		
<p>Routine preventative maintenance would identify any grease blockages in the collection system. This preventative maintenance is tracked in the FS and RSSP work order systems.</p> <p>Each department or non-affiliate operator is responsible for routine inspections of their grease control device(s) to ensure proper operation and maintenance of the grease control devices. The EH&amp;S Campus Sanitarian has an inspection program for restaurants, cafes, and other food service establishments within UC Berkeley. The inspections for sanitation compliance include checking food handling practices, as well as proper sewage and wastewater management. The EH&amp;S Campus Sanitarian relays FOG concerns to EH&amp;S, FS, RSSP, ASUC, and IA, as needed.</p>	FS Utilities Engineering Civil Engineer	Karen Bennett kben@berkeley.edu (510) 812-0797
	FS Utilities Operations Manager	Jimmy Manibusan fjimmy@berkeley.edu (510) 643-4026 (office) (510) 812-0921 (cell)
	RSSP Skilled Crafts & Trades Manager, Central Maintenance	Karla Robbins ksrobbins@berkeley.edu (510) 642-5399 (office) (510) 610-8978 (cell)
	ASUC Facilities Coordinator	Amanda Johnson ajohnson88@berkeley.edu (510) 664-5504
	IA Senior Associate Athletics Director, Facilities, Events and Capital Projects	Joshua Hummel johummel@berkeley.edu (510) 643-3480 (office) (510) 409-7433 (cell)

## 8.0 SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

UC Berkeley has an on-going long range infrastructure rehabilitation initiative that will address shortfalls and deficiencies within the sanitary sewer system and upgrade key components as necessary to meet loads associated with future growth expectations.

### 8.1 System Evaluation and Capacity Enhancement Measures

UC Berkeley is continually updating the infrastructure of the campus, including the sanitary sewer. The sanitary sewer system was evaluated and long-term planning recommendations made by CS Young Engineers, Inc. in 1993, presented in *University of California, Berkeley, Utility Infrastructure Assessment, Sanitary Sewer System Study, Final Report* (CS Young Engineers, Inc. 1993). In addition, Winzler and Kelley Consulting have been contracted to complete a capacity and system evaluation of the sanitary sewer lines serving Memorial Stadium and the Chemistry Complex on Campus.

The Campus Infrastructure Master Plan and Renewal Investment Strategy, was published November 2015, which evaluated each utility system, including the sanitary sewer system. Multiple capital improvement projects came from this study and are listed in Table 8-1.

In 2015, UC Berkeley hired a third party to begin collection system evaluation. CCTV inspections are being conducted by Roto Rooter using the National Association of Sewer Service Companies (NASSCO) evaluation standard – Pipeline Assessment & Certification Program (PACP). As of 2016, Roto Rooter has completed evaluated all gravity mains on the Campus Park. Once all sanitary sewer lines are cleaned and videotaped, we will create a 5 to 10 year cleaning/videotaping schedule based on the evaluation.

By 2025, UC Berkeley will perform a current condition assessment of all sanitary sewer laterals for properties where UC Berkeley owns and maintains the sanitary sewer lateral.

By 2035, UC Berkeley will rehabilitate any sanitary sewer laterals that have deficiencies and will certify that each lateral is water or airtight, free of roots, structural defects and inflow/infiltration.

### 8.2 Design Criteria

FS, RSSP and EH&S are involved in plan review for projects on campus involving infrastructure upgrades and construction projects which may have an environmental or infrastructure impact. During plan review, FS, RSSP and EH&S ensure that sanitary sewer design meets best practices and campus design standards.

### 8.3 Schedule

UC Berkeley is implementing sanitary sewer upgrades as budget allows and in conjunction of new building projects. Over time, the sanitary sewer infrastructure

renewal will address rehabilitation and replacement of sewer pipes which are at risk of collapse or are prone to more frequent blockages due to pipe deficiencies.

A list of projects is available on the EH&S website at [ehs.berkeley.edu/ssmp](https://ehs.berkeley.edu/ssmp).

## **9.0 MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS**

EH&S will monitor the effectiveness and implementation of the SSMP. Members of the EP team will communicate with each other mid-year in order to monitor plan implementation. This can occur with a meeting or by e-mail. The purpose of the mid-year communication is to monitor how effectively the SSMP is working and is being implemented.

Every two years, the EP Team and members of FS and RSSP will evaluate the effectiveness of each element of the SSMP. The EP Team created a checklist of the SSMP requirements during the first review cycle, which will be utilized in reviews going forward. The Checklist will assist in determining if all elements of the SSMP are effective and are being implemented. Program elements will be updated, as appropriate, based upon monitoring or performance evaluation.

## 10.0 SSMP AUDITS

The EP team will assess the effectiveness of the SSMP, complete an audit, and will make updates in accordance with the General Order No. 2022-0103-DWQ. The current 3-year audit period is from August 3, 2021, to August 2, 2024, and the audit report is due within six months on February 2, 2025.

The EP team will evaluate any sanitary sewer spills and make recommendations to prevent them from reoccurring. As part of the first annual plan update, the EP team will create a checklist of the SSMP requirements, which will be utilized in annual reviews going forward. The checklist will assist the EP Team in evaluating all the components of the Plan. Through this review, the EP Team will evaluate the SSMP, including its deficiencies, and recommend steps to correct them.

## 11.0 COMMUNICATION PROGRAM

### 11.1 Communicating Plan Information and Updates

EH&S will communicate with the campus community regarding the development, implementation and performance of the SSMP. The SSMP is posted on the UC Berkeley EH&S website for the campus community to review and comment.

The SSMP will be updated as needed to describe any significant changes in proposed actions or implementation schedules. The update will include available information on the performance of measures that have been implemented. UC Berkeley will communicate with campus stakeholders regarding implementation and performance of the SSMP.



## 12.0 ACRONYMS

<b>ABRS</b>	Animal Behavioral Research Station
<b>ASUC</b>	The Associated Students of University of California
<b>BMP</b>	Best Management Practice
<b>CCTV</b>	Closed-Circuit Television
<b>CDS</b>	Campus Design Standards
<b>CFR</b>	Code of Federal Regulations
<b>CIWQS</b>	California Integrated Water Quality System
<b>CP</b>	Capital Projects
<b>EBMUD</b>	East Bay Municipal Utility District
<b>EH&amp;S</b>	Environment, Health & Safety
<b>EP</b>	Environmental Protection
<b>EPA</b>	Environmental Protection Agency
<b>FOG</b>	Fats, Oils and Grease
<b>FS</b>	Facilities Services
<b>I/I</b>	Inflow and Infiltration
<b>IA</b>	Intercollegiate Athletics
<b>I-House</b>	International House
<b>LF</b>	Linear feet
<b>LRDP</b>	Long Range Development Plan
<b>LRO</b>	Legally Responsible Official
<b>MOU</b>	Memorandum of Understanding
<b>MS4</b>	Municipal Separate Storm Sewer System

<b>O&amp;M</b>	Operations and Maintenance
<b>P3</b>	Public-Private Partnership
<b>PLSD</b>	Private Lateral Sewage Discharges
<b>RSSP</b>	Residential and Student Services Programs
<b>RWQCB</b>	Regional Water Quality Control Board
<b>SD</b>	Storm Drain
<b>SERP</b>	Spill Emergency Response Plan
<b>SS</b>	Sanitary Sewer
<b>SSO</b>	Sanitary Sewer Overflow
<b>SWRCB</b>	State Water Resources Control Board
<b>UC Berkeley</b>	University of California, Berkeley
<b>UC Berkeley CS</b>	University of California, Berkeley Collection System
<b>UCOP</b>	University of California, Office of the President
<b>UCPD</b>	University of California, Police Department
<b>WDR</b>	Waste Discharge Requirements

## 13.0 UPDATES TO THE SEWER SYSTEM MANAGEMENT PLAN

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
12/2012	Various	Updated staff contacts	Bernadette Dugtong / Greg Haet
8/2013	Title; Section 2; Section 4; Section 8	Changed Title to include Central and East campus; Section 2 was revised to include an updated description of the sewer system and monitoring program; Section 4 was updated to include updated details on current preventative maintenance procedures (inspections / routine maintenance); Section 8 was updated to include a description of the Master Infrastructure Plan and proposed date of publication. In addition, small grammar revisions and updates to staff were made.	Bernadette Dugtong / Greg Haet
9/2013	Appendix D	Added Central Campus Hot Spots map	Bernadette Dugtong / Greg Haet
11/2013	Section 2; Section 4	Updated Figure 2.2 to include new MRP requirements; added preliminary pump station inventory; Section 4 was updated to include details about SewerGEMS software	Bernadette Dugtong / Greg Haet
03/2014	Section 1; Section 6	<b>General Revisions</b> <ul style="list-style-type: none"> <li>• Grammar corrected</li> <li>• Changed title of Emergency Response plan to "Overflow Emergency Response Plan (OERP)"</li> <li>• Added LRO backup</li> <li>• Updated Fig 2.2</li> </ul>	Bernadette Dugtong / Greg Haet
05/2014	Various	<b>General Revisions</b> <ul style="list-style-type: none"> <li>• Minor revision to Table/Figure numbering</li> <li>• Minor revision to Appendices numbering</li> <li>• Reformatted document for electronic viewing</li> <li>• Staff changes</li> </ul>	Bernadette Dugtong / Greg Haet

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
		<ul style="list-style-type: none"> <li>Grammar corrected</li> </ul> <p><b>Tables/Figures</b></p> <ul style="list-style-type: none"> <li>Added additional grease control devices</li> <li>Added additional in progress/completed capital improvement projects</li> </ul> <p><b>Sections</b></p> <ul style="list-style-type: none"> <li>Added Acronyms section</li> <li>Added new pump station (Le Conte) to Table 2-3</li> <li>Updated Table 8-1: Schedule of Capital Improvement Projects</li> </ul> <p><b>Appendices</b></p> <ul style="list-style-type: none"> <li>Removed Appendix containing EBMUD Sample FOG Permit since EBMUD FOG Permit Program has been discontinued.</li> <li>Updated Fact Sheet (FOG BMPs)</li> </ul>	
09/2014	Section 2.0	<p><b>Tables/Figures</b></p> <ul style="list-style-type: none"> <li>Figure 2-2: Fixed dead link referencing to Figure 2-1 in Category SSO boxes</li> <li>Table 4-1: Updated contact for Section A – Operation and Maintenance. (Interim) Associate Director is Karen Lobo. Previous contact retired.</li> </ul>	Bernadette Dugtong / Greg Haet
12/2014	Various	<p><b>General Revisions</b></p> <ul style="list-style-type: none"> <li>Replaced “Physical Plant-Campus Services (PP-CS)” with new department name “Facilities Services (FS)” throughout SSMP</li> <li>Replaced “Capital Projects (CP)” with new department name “Construction &amp; Design” throughout SSMP</li> </ul> <p><b>Tables</b></p> <ul style="list-style-type: none"> <li>Table 4-1: Updated contact for Section E. Director of Construction &amp; Design is Brian Main. Previous contact moved to a different position.</li> <li>Table 7-1: Updated contact for Section D – Recordkeeping. Trades Manager is Michael Cupp. Previous contact no longer with UC Berkeley.</li> <li>Table 8-1: Updated cost figures for Haas School of Business Expansion</li> <li>Table 8-2: Updated cost figures for Bowles Hall Lateral Replacement</li> </ul> <p><b>Section 9</b></p> <ul style="list-style-type: none"> <li>Changed audit cycle to every two years as required by SWRCB Order No. 2006-0003-DWQ</li> </ul>	Bernadette Dugtong / Greg Haet

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
09/2015	Various	<p><b>Revisions:</b></p> <ul style="list-style-type: none"> <li>• Section 2.2:             <ul style="list-style-type: none"> <li>○ Added sentence: <i>"In addition, the campus public (defined as staff, faculty and students) are always on campus and can notify facilities maintenance staff of any issues with the sanitary sewer system."</i></li> <li>○ Revised the sentence <i>"Monitoring tests are conducted when an abnormality appears in the system and are documented <b>through the employee timecards through SPAN</b>, FS work-order tracking system and/or on DVD."</i></li> </ul> </li> <li>• Figure 2-1: Added Roto-Rooter to the Figure under Operation and Maintenance of System.</li> <li>• Section 2-4: Fix spelling error in sentence: <i>"There are several <b>lift</b> stations/pump stations on the central and east campus."</i></li> <li>• Table 2-3:             <ul style="list-style-type: none"> <li>○ Added "Audible Alarm" to Men's Faculty Club and Women's Faculty club listings</li> <li>○ Removed LeConte Pump Station since UC Berkeley Construction &amp; Design decided to not to go forward with the installation of the station.</li> </ul> </li> <li>• Table 3-5:             <ul style="list-style-type: none"> <li>○ Removed Healthy Heavenly Foods, Taqueria El Tacontento and The Bear's Lair grease control devices from the inventory.</li> <li>○ Added 6 new devices for the new grease interceptors located at Lower Sproul</li> </ul> </li> <li>• Table 4-1:             <ul style="list-style-type: none"> <li>○ Section D: Revised sentence: <i>"<b>When applicable</b>, hot spots are routinely assessed using CCTV at least semi-annually."</i></li> <li>○ Section I: Added text: <i>"<b>Public-partnerships (P3) properties that are on UC Berkeley land have contractual agreements on responsibilities for management of the sanitary sewer systems. Memorandums of understandings also identify maintenance and operations responsibilities.</b>"</i> and removed text: <i>"All of UC Berkeley's sanitary sewer system is located on campus property and owned by the Regents. There are no private laterals on the UC Berkeley property."</i></li> <li>○ Section J: Changed "five" to "several" in the following sentence: <i>"The responsibility for system operation is shared among <b>several</b> departments..."</i></li> <li>○ Section J: Updated 4 FS staff members to 2 due to retirement of staff.</li> </ul> </li> <li>• Table 8-1:</li> </ul>	Bernadette Dugtong / Greg Haet

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
		<ul style="list-style-type: none"> <li>○ Removed Stephens Hall Project from Table 8-1 and moved to Table 8-2</li> <li>○ Removed LeConte sewer project from list due to cancellation of project</li> <li>○ Added Dwinelle Annex and Moffitt Library projects to the list</li> <li>● Section 12: Added P3 – Public-Private Partnerships</li> <li>● Section 13: Added column for “Change Written...”</li> </ul>	
12/2015	Table 2.5; Section 8.1	<ul style="list-style-type: none"> <li>● <b>Table 2.5:</b> <ul style="list-style-type: none"> <li>○ Added new grease interceptors to list for Lower Sproul Redevelopment Project               <ul style="list-style-type: none"> <li>▪ Kitchen 1</li> <li>▪ Kitchen 3</li> <li>▪ True Blue Burgers &amp; Kitchen 4</li> <li>▪ Bear’s Lair Pub &amp; Catering</li> <li>▪ Route 150</li> <li>▪ House of Pi &amp; Asado</li> </ul> </li> <li>○ Removed “Healthy Heavenly Foods” from grease interceptor list</li> </ul> </li> <li>● Section 5           <ul style="list-style-type: none"> <li>○ Updated Construction &amp; Design webpage to <a href="http://realestate.berkeley.edu/design">realestate.berkeley.edu/design</a></li> </ul> </li> <li>● Section 8.1           <ul style="list-style-type: none"> <li>○ Added text to note that third party CCTV inspections will be conducted by Roto-Rooter</li> </ul> </li> </ul>	Bernadette Dugtong / Greg Haet
06/2016	Table 7-1; Table 8-1; Table 8-2	<ul style="list-style-type: none"> <li>● <b>Table 7-1:</b> <ul style="list-style-type: none"> <li>○ Part A: Added text describing EBMUD and UC Berkeley joint FOG program – “Blockages, sanitary sewer overflows or increased maintenance of laterals/mains that are caused by fats, oils and grease are reported to EBMUD. UC Berkeley and EBMUD are part of a joint enforcement program that was established in 2016, which includes hot spot investigation.”</li> <li>○ Part A: Added Greg Haet to list of contacts</li> </ul> </li> <li>● <b>Section 8.1:</b> <ul style="list-style-type: none"> <li>○ Revised summary of Campus Infrastructure Master Plan with publication date</li> </ul> </li> </ul>	Bernadette Dugtong / Greg Haet

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
		<ul style="list-style-type: none"> <li>○ Revised summary of NASSCO evaluations and added summary of current status; which includes implementation schedule for video inspection and gravity main sewer cleaning</li> <li>○ Added 2025 and 2035 goals for sewer lateral assessment and replacement</li> <li>● <b>Table 8-1:</b> <ul style="list-style-type: none"> <li>○ Added the following sub-sections to identify project source: Previously Identified Campus Projects, Projects Identified in Campus Infrastructure Master Plan; and Projects Identified via NASSCO Evaluation</li> <li>○ Removed Hellman Tennis Court upgrades from Capital Improvement Project list</li> <li>○ Removed Campbell Hall Replacement Building upgrades and moved to Table 8.2 with updated details</li> <li>○ Removed Dwinelle Annex Capital Improvement Project and moved to Table 8.2 with updated details</li> <li>○ Removed Moffitt Library project due to difficult site conditions for replacement of sewer; large deep holes were required near some mature redwood trees; project was abandoned and instead added to preventative maintenance list</li> <li>○ Added projects from Campus Infrastructure Master Plan</li> <li>○ Added Piedmont project from NASSCO Evaluation</li> </ul> </li> <li>● <b>Table 8-2:</b> <ul style="list-style-type: none"> <li>○ Added projects to the completion list:               <ul style="list-style-type: none"> <li>▪ Campbell Hall Replacement</li> <li>▪ Dwinelle Annex</li> </ul> </li> </ul> </li> </ul>	
10/2017	Section 2.2	<ul style="list-style-type: none"> <li>● <b>Section 2.2:</b> <ul style="list-style-type: none"> <li>○ Updated text: "Monitoring tests are conducted when an abnormality appears in the system and are documented through the employee timecards through SPAN, FS work-order tracking system <b><i>Maximo (Facilities Services work order tracking system)</i></b> and/or on DVD/<b><i>MicroSD</i></b>."</li> </ul> </li> <li>● <b>Section 2.3:</b> <ul style="list-style-type: none"> <li>○ Revised population data: "<b><i>Based on University of California, Institutional Research and Academic Planning (<a href="http://ucop.edu/institutional-research-academic-planning/content-analysis/index.html">http://ucop.edu/institutional-research-academic-planning/content-analysis/index.html</a>), the staff workforce was 14,146 (October 2016), and student enrollment population was 40,173 (Fall 2016).</i></b>" The 2012-2013</li> </ul> </li> </ul>	Bernadette Dugtong / Greg Haet

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
		<p>population, which included students, faculty, staff, visiting scholars, researchers, visitors and vendors, was approximately 57,708 (based on University of California, Office of the President (UCOP) Statistical Summary and Data on UC Students, Faculty and Staff [<a href="http://www.legacy-its.ucop.edu/uwnews/stat">http://www.legacy-its.ucop.edu/uwnews/stat</a>]).</p> <ul style="list-style-type: none"> <li>• <b>Figure 2-1: Operation and Maintenance</b> <ul style="list-style-type: none"> <li>○ Removed "Roto-Rooter" and replaced with "<b><i>various contractors</i></b>" and added RSSP department.</li> </ul> </li> <li>• <b>Table 4-1:</b> <ul style="list-style-type: none"> <li>○ <b>Section A:</b> <ul style="list-style-type: none"> <li>▪ Added <b><i>Residential Student Services Programs (RSSP)</i></b> department to Operation and Maintenance.</li> </ul> </li> <li>○ <b>Section A:</b> <ul style="list-style-type: none"> <li>▪ Removed "Interim" designation from Karen Lobo's title.</li> </ul> </li> <li>○ <b>Section C:</b> <ul style="list-style-type: none"> <li>▪ Updated text with most recent 2016 mapping efforts</li> </ul> </li> <li>○ <b>Section D:</b> <ul style="list-style-type: none"> <li>▪ UC Berkeley has has measures in place in order to keep the system in good repair and prevent excessive infiltration/inflow, service interruptions and system failures.</li> <li>▪ Added "<b><i>Michael Cupp, Residential Student Services Program</i></b>" contact.</li> <li>▪ Revised Routine Maintenance Section to summarize up-to-date maintenance at the Lower Sproul area.</li> <li>▪ Added text: "<b><i>Hot Spots Map: Appendix C shows hot spots on campus that need routine maintenance.</i></b>"</li> </ul> </li> <li>○ <b>Section E:</b> Revised West Yost/Campus Infrastructure Master Plan section: "<b><i>UC Berkeley hired West Yost Associates to produce the Campus Infrastructure Master Plan and Renewal Investment Strategy, which was completed in November 2015. The Master Plan developed a prioritized capital improvement program for long-term recommended infrastructure improvements, and an assessment of the condition of the existing system facilities and inventory.</i></b>"</li> <li>○ <b>Section E:</b> Updated contact from "Brain Main" to "<b><i>Shannon Holloway</i></b>"</li> <li>○ <b>Section F:</b> Added third party provider training reference.</li> </ul> </li> </ul>	



DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
		<ul style="list-style-type: none"> <li>• <b>Section 5.0:</b> <ul style="list-style-type: none"> <li>○ Revised text: "The Construction Design Standards are currently undergoing revision in 2014 <del>were revised in 2016</del>. <b><u>By policy, the University follows eleven parts of CCR, Title 24, California Building Standards Code, for code compliance. Some codes are based on nationally recognized model codes, while others are California's own codes. California adds its requirements, called "amendments," to the model codes. Codes also reference national standards developed by organizations (<a href="http://www.ucop.edu/construction-services/facilities-manual/volume-3/vol-3-chapter-4.html">http://www.ucop.edu/construction-services/facilities-manual/volume-3/vol-3-chapter-4.html</a>).</u></b>"</li> </ul> </li> <li>• <b>Table 8-1 and Table 8-2:</b> <ul style="list-style-type: none"> <li>○ Removed Anna Head Alumni House from Previously Identified Project Section in Table 8-1 and added/renamed it to Anna Head Building A in Table 8-2.</li> <li>○ Removed Piedmont Ave from Table 8-1: Previously Identified via NASSCO Evaluation project to Table 8-2.</li> <li>○ Added Wheeler Hall to Table 8-2.</li> <li>○ Added Dwinelle Hall to Table 8-2.</li> <li>○ Moved Anna Head Complex from Table 8-1 to Table 8-2.</li> <li>○ Revised cost estimate for crossroads interceptor.</li> </ul> </li> <li>• <b>Table 2-3:</b> <ul style="list-style-type: none"> <li>○ Updated Pump Station inventory</li> </ul> </li> <li>• <b>Table 2-4:</b> <ul style="list-style-type: none"> <li>○ Added to Pump Station list (Sutardja Dai, Moffitt, Blum, New Berkeley Art Museum and Women's Faculty)</li> </ul> </li> <li>• <b>Table 2-5:</b> <ul style="list-style-type: none"> <li>○ Revised table column "Responsible Department" to include "Responsible Department <b><u>(and/or Contractor)</u></b>" For grease control devices owned by Intercollegiate Athletics (IA), added their contractor "Bay Area Restaurant Services, LLC"</li> <li>○ Updated "December 2015" to "October 2017"</li> </ul> </li> </ul>	

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
5/2019	Various	<ul style="list-style-type: none"> <li>• <b>Title Page:</b> Change title to “UC BERKELEY CS” instead of “UNIVERSITY OF CALIFORNIA, BERKELEY – UC BERKELEY COLLECTION SYSTEM” to simplification and to match CIWQS database</li> <li>• <b>Title Page:</b> Added WDID Number</li> <li>• <b>Various Sections:</b> Minor grammatical revisions</li> <li>• <b>Section 2.0:</b> <ul style="list-style-type: none"> <li>○ <b>Figure 2-2:</b> <ul style="list-style-type: none"> <li>▪ Remove footnote “There are no private laterals in the UC Berkeley Collection System since UC Berkeley is a public agency and owns all the laterals on the campus.” (P3s have contractual agreements to operate and maintain their own lateral system.)</li> <li>▪ Change “responsible” to “response” in Private Lateral Sewage Discharge box.</li> </ul> </li> </ul> </li> <li>• <b>Table 4-1:</b> <ul style="list-style-type: none"> <li>○ <b>Section B:</b> Update contact from “Al Vera” to “Carolyn Knight”</li> <li>○ <b>Section J:</b> Remove sentence “There are approximately 4 FS staff members that operate the sanitary sewer system as a whole and 6 FS staff members which assist in the operation of the sewer system inside University buildings. There are approximately 2 RSSP plumbers.” to simplify updates in the future.</li> </ul> </li> <li>• <b>Section 5.0:</b> <ul style="list-style-type: none"> <li>○ Update link to Campus Design Standards webpage – “facilities.berkeley.edu/design”</li> </ul> </li> <li>• <b>Section 7.0:</b> <ul style="list-style-type: none"> <li>○ <b>Section 7.1:</b> Removed paragraph regarding exclusion of off-site RSSP facilities, as these facilities are now included in the SSMP.</li> </ul> </li> <li>• <b>Section 8.0</b> <ul style="list-style-type: none"> <li>○ <b>Section 8.3:</b> Removed tables with project data and incorporated a link to the EH&amp;S website that details all up-to-date Capital Improvement Projects (ehs.berkeley.edu/ssmp)</li> </ul> </li> </ul>	Bernadette Dugtong / Greg Haet
12/1/2020	Various	<ul style="list-style-type: none"> <li>• Updated Date of SSMP to December 2020</li> <li>• <b>Section 2.0</b> <ul style="list-style-type: none"> <li>○ <b>Section 2.1:</b> Added FS Responsibility (Rehabilitation Assessment) due to new Civil Engineering position</li> <li>○ <b>Section 2.2:</b> Revised paragraph to include SmartCover Monitoring systems and Balance Hydrologics to the list of methods used to monitor the system</li> </ul> </li> </ul>	Bernadette Dugtong / Greg Haet

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		<ul style="list-style-type: none"> <li>• <b>Section 4.0</b> <ul style="list-style-type: none"> <li>○ <b>Table 4-1 – Section B:</b> Added Google Earth as type of map that is available. Updated contact information to include FS Engineering and Technical Services, Diane Coppini. Revised description of modeling from SewerGEMS to EPA SWMM Modeling and future mapping goals (ArcGIS).</li> <li>○ <b>Table 4-1 – Sections C, H, I and J:</b> Updated contact from Greg Haet to Alicia Bihler (title and phone number)</li> <li>○ <b>Table 4-1 – Section E:</b> Added FS Engineering and Technical Services contact, Diane Coppini.</li> </ul> </li> <li>• <b>Section 8.0</b> <ul style="list-style-type: none"> <li>○ <b>Section 8.1 –</b> Removed sentence with a timeline of 2020 to clean all sanitary sewer lines. Due to the coronavirus pandemic and other challenges, UC Berkeley is re-evaluating a timeline for completing the Hill Campus cleaning and videotaping.</li> </ul> </li> <li>• <b>Section 7.0</b> <ul style="list-style-type: none"> <li>○ <b>Table 7-1 – Sections A, B, C and E:</b> Updated contact from Greg Haet to Alicia Bihler (title and phone number)</li> <li>○ <b>Section C:</b> Fix typo from “but” to “<b>by</b>” in second to last bullet.</li> </ul> </li> <li>• <b>Section 9.0</b> <ul style="list-style-type: none"> <li>○ Updated text to clarify review cycles</li> </ul> </li> </ul>	
8/2023	All	<ul style="list-style-type: none"> <li>• Global updates to update personnel positions, names, contact information, and departments; and descriptors of campus (i.e., Campus Park, Hill Campus West, Hill Campus East).</li> <li>• <b>Sections 1.0, 2.0, and 6.1</b> updated to include the reissued permit language around the SERP.</li> <li>• Facility description updated in <b>Section 2.3</b> to reflect 2023 population served.</li> <li>• Revised <b>Figure 2-2</b> with updated chain of communication for sanitary sewer spills.</li> <li>• <b>Table 2-5</b> updated with available information for sizes and operators of grease control devices; and re-organized by area of campus.</li> <li>• Removed references to <b>Appendix A: Regulatory Language</b> and replaced with a link.</li> <li>• Changed SERP from <b>Appendix B</b> to <b>Appendix A</b>.</li> <li>• Changed <b>Appendix D: Resources</b> to <b>Appendix B: Best Management Practices for FOG</b></li> <li>• Removed references to Appendix C: Maps as figures/maps are GIS-based and housed with FS, with supplemental hard copies maintained by FS and RSSP staff.</li> </ul>	Sharon Harichandran / Alicia Bihler

DATE UPDATED	SECTIONS REVISED	NOTES	CHANGE WRITTEN BY / AUTHORIZED BY (EH&S)
		<ul style="list-style-type: none"><li>• Revised inspections/audits; complies with the regulation.</li><li>• <b>Section 10.0</b> updated to reflect the next audit timelines.</li></ul>	