STEGE SANITARY DISTRICT

SEWER SYSTEM MANAGEMENT PLAN

(SSMP)

MARCH 2023

WDID: 2SSO10198

ADOPTED: AUGUST 2009

RE-CERTIFIED: AUGUST 2019

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STEGE SANITARY DISTRICT
Sewer System Management Plan (SSMP)

(Attachments shown in parentheses)

ELEMENT I – INTRODUCTION AND GOALS

Introduction

During the past several decades, the Stege Sanitary District (District) has successfully developed, refined, and implemented numerous processes and practices to improve the management of its sanitary sewer collection system. The actual processes and procedures are voluminous, so the District uses this document to summarize its activities and core documents as they relate to each of the elements required to be addressed in the Sewer System Management Plan (SSMP).

Regulatory Context

On December 6, 2022, the California State Water Resources Control Board (State Water Board) adopted the Statewide Sanitary Sewer Systems General Waste Discharge Requirements Order Reissuance (SSS WDR), State Water Board Order No. 2022-0103-DWQ, to take effect on June 5, 2023. The SSS WDR regulates sanitary sewer collection systems and addresses reporting and other requirements in response to Sanitary Sewer Overflows (SSOs). The renewed version of the SSS WDR serves as the newest regulatory mandate for operation and maintenance of sanitary sewer collection systems longer than one mile and supersedes the State Water Board's previous 2006 order, State Water Board Order No. 2006-0003-DWQ.

Sewer System Management Plan (SSMP) Update Schedule

A requirement of the SSS WDR is for enrollees to develop, implement, and update its SSMP which includes procedures for the management, operation, and maintenance of its sanitary sewer collection system. Enrollees are required to conduct an internal audit of its SSMP and implementation of its SSMP, at a minimum frequency of once every three (3) years, and shall update its SSMP every six (6) years with formal approval by the enrollee's governing body.

3-yr. SSMP Audit Due Date: **8/2/2024** 6-yr. SSMP Update Due Date: **8/2/2025**

Sewer System Asset Overview

The District was organized in 1913 to provide for the collection, treatment, and disposal of wastewater from the developed area in southwest Contra Costa County. The area remained relatively rural until experiencing significant residential growth in the late 1920s and 1930s. Extensive development took place again following the end of World War II. The original District boundaries were similar to those of today, but service within the boundaries expanded such that the District currently serves about 35,000 people with a total of about 13,000 sewer connections of which ~95% are residential and ~5% are commercial. The present service area of the District comprises 5.3 square miles and includes the communities of El Cerrito, Kensington, and the portion of Richmond Annex west of El Cerrito and south of Potrero Avenue. The sewage collection system includes 148 miles of gravity mainlines, less than one mile of pressurized force mains, two small pump stations, and one siphon, all of which are digitized as part of the Geographical Information System (GIS) mapping system as further described in *ELEMENT IV - OPERATION AND MAINTENANCE PROGRAM, Collection System Maps.*

The primary elements of this collection system are the public main sewers and the private sewer laterals. The District owns and has maintenance responsibility for the main sewers located in the public right-of-way and in easements on private property. Individual property owners own and have maintenance responsibility for their private sewer laterals that connect the plumbing in a home or business up to and including the connection at the main sewer.

Wastewater collected in the District system flows to the Special District #1 Interceptor sewer and is then conveyed to the East Bay Municipal Utility District (EBMUD) Wastewater Treatment Facility in Oakland, CA. The only areas of expected growth within the District are through San Pablo Avenue Specific Plan Area Development and on the few remaining vacant parcels. Average annual rainfall is 22.5 inches and generally occurs between November through April.

The average age of the collection system is about 60 years. The oldest lines in the District are about 100 years old. Older District main lines are predominantly vitrified clay pipe (VCP) with cement mortar joints, and six inches in diameter. Over 90% of the VCP sewers were installed prior to the introduction of modern pipe joints such as compression gaskets, which were not available until the 1960's and the introduction of improved VCP

manufacturing standards initiated in the mid 1950's. Twenty-six percent (26%) of the District main lines are located within easements.

The District has had a very active collection system management program since the 1990s, and has had a significant reduction in sanitary sewer overflows (SSOs) since that time. Stoppages and overflows have been on a steady decline since 1992 when the District focused its efforts on aggressive line cleaning, continuous video inspection (implemented in 1997), and began to dedicate funds to repair or rehabilitate every line defect that could potentially result in a service interruption.

A significant challenge for the District is ground movement caused by several active earthquake faults, including the Hayward Fault that essentially bisects the District. Frequent seismic movement and periodic earthquakes can crack pipes and loosen joints, particularly with clay pipe. In a severe earthquake, major pipelines can be sheared and/or severely offset. There is also a significant, well-known active slide area in the District known as the Blakemont Slide. There is continuous land movement in this region that impacts all utilities including District main sewer lines.

Goals

The goals of the District's SSMP are as follows:

- Employ best practices to properly manage, operate, and maintain all parts of the wastewater collection system
- Reduce and prevent sanitary sewer overflows (SSOs) and mitigate their impact
- Provide adequate capacity to convey peak flows associated with the design storm identified in the 1986 East Bay I/I Correction Program
- Comply with all applicable state and federal regulations, including its National Pollutant Discharge Elimination System (NPDES) permit and the California General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems.

The District will also meet or exceed the minimum requirements of the United States Environmental Protection Agency (USEPA) Consent Decree as follows:

- Rehabilitation of sewer main and maintenance holes on a cumulative total of no less than the feet of Sewer Main as indicated in Appendix E of the USEPA Consent Decree (e.g., 29,040 feet by June 30, 2016; 39,707 feet by June 30, 2017; 50,700 feet by June 30, 2018; etc.)
- CCTV sewer main and maintenance holes at a cumulative total of 77,616 feet per Fiscal Year

- Repair acute defects as soon as possible but no later than within one (1) year of identification
- Clean a total of at least 211,200 feet of sewer main per fiscal year, including repeats
- Chemically treat with foam a minimum of 6,059 feet of sewer main annually on a three (3) year rolling fiscal year average
- Clean hot spot sewer main lines of six-month or less interval a minimum of 100,000 feet annually, including repeats

(State Water Resources Control Board - Waste Discharge Requirements)
(Resolution 2128-0819 Approving the Updated Sewer System Management Plan (SSMP))
(District Boundary Map)
(Map of Hayward Fault and Blakemont Slide)
(National Pollutant Discharge Elimination System (NPDES) Permit)
(USEPA Consent Decree)

ELEMENT II - ORGANIZATION

District Manager

The District Manager is the primary Legally Responsible Official (LRO) and ultimately responsible for all District operations and activities, including reporting to regulatory agencies and other external organizations. The District Manager is a Professional Engineer registered through the California Department of Consumer Affairs.

Senior Civil Engineer

The Senior Civil Engineer is the secondary LRO and responsible for the planning, design, construction, and inspection of District lines, as well as the inspection and permitting of private sewer lines within District boundaries. The Senior Civil Engineer is a Professional Engineer registered through the California Department of Consumer Affairs.

Engineering Technician/Inspector

The Engineering Technician/Inspector is responsible for permitting and inspection of both District and private sewer lines within District boundaries.

Collection System Maintenance Superintendent

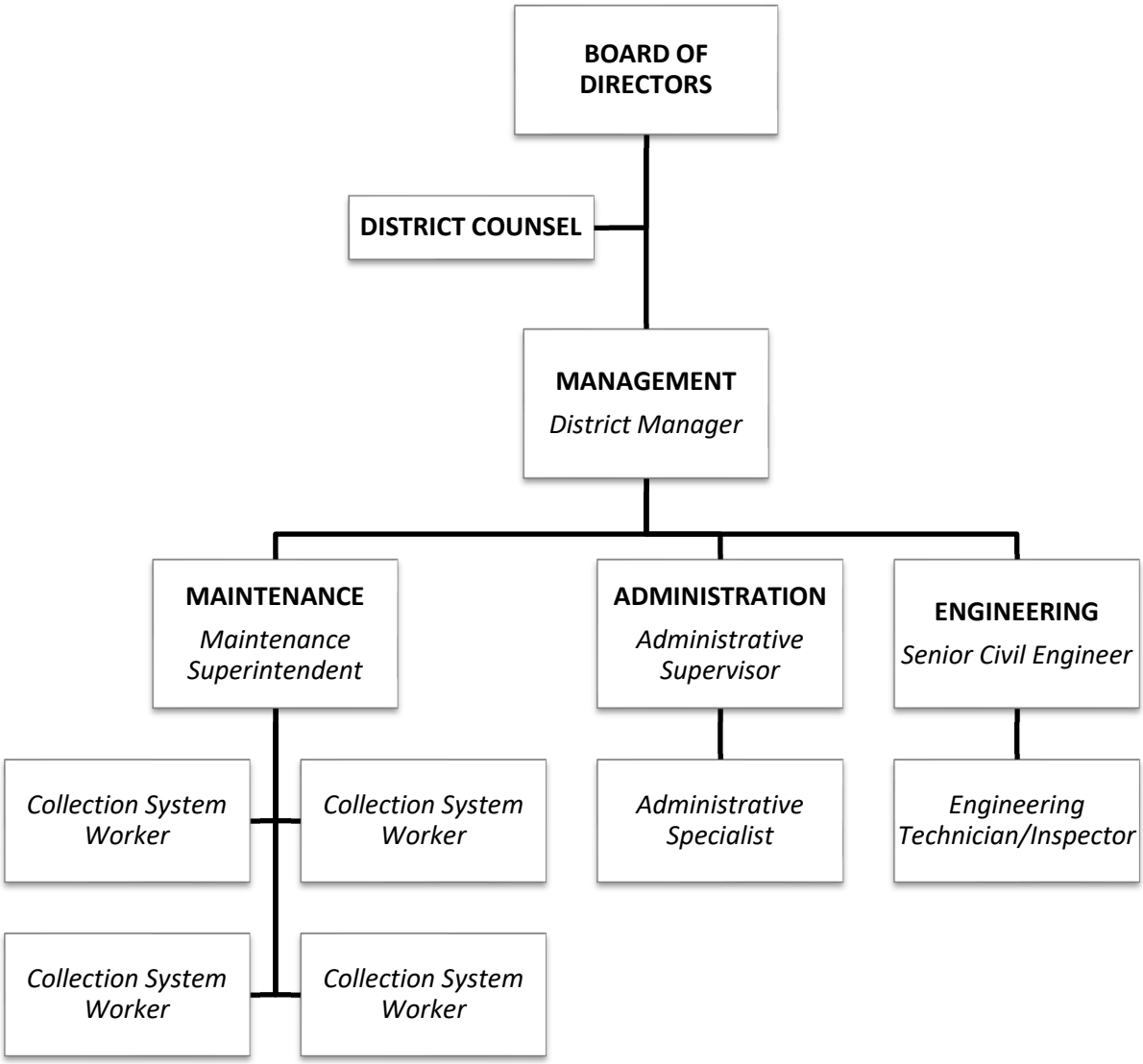
The Collection System Maintenance Superintendent is responsible for all field maintenance work and activities including line cleaning, video work, SSO and emergency response, immediate reporting (when necessary) to regulatory agencies, and recordkeeping of all maintenance activities. The Collection System Maintenance Superintendent is a Grade IV Certified Collection System Operator through the California Water Environment Association.

Collection System Workers

The Collection System Workers are responsible for the maintenance and cleaning of District main lines and recordkeeping of all maintenance activities. All Collection System Workers are Certified Collection System Operators through the California Water Environment Association.

Reporting Structure

The administrative, engineering, and maintenance supervisory personnel report directly to the District Manager to ensure the Manager receives an unfiltered flow of information from each group. The District Manager reports directly to the five member elected Board of Directors.



STAFF RESPONSIBLE FOR IMPLEMENTING SSMP ELEMENT

ELEMENT	NAME	TITLE	EMAIL	PHONE
I. Introduction and Goals	Rex Delizo	District Manager	rex@stegesan.org	(510) 524-4668
II. Organization	Rex Delizo	District Manager	rex@stegesan.org	(510) 524-4668
III. Legal Authority	Rex Delizo	District Manager	rex@stegesan.org	(510) 524-4668
IV. Operation and Maintenance Program	Rex Delizo	District Manager	rex@stegesan.org	(510) 524-4668
V. Design and Performance Provisions	Paul Soo	Senior Civil Engineer	paul@stegesan.org	(510) 524-4668
VI. Spill Emergency Response Plan	Dennis Wright	Collection System Maintenance Superintendent	dennis@stegesan.org	(510) 524-4668
VII. Sewer Pipe Blockage Control Program	Paul Soo	Senior Civil Engineer	paul@stegesan.org	(510) 524-4668
VIII. System Evaluation, Capacity Assurance, and Capital Improvements	Paul Soo	Senior Civil Engineer	paul@stegesan.org	(510) 524-4668
IX. Monitoring, Measurement, and Program Modifications	Rex Delizo	District Manager	rex@stegesan.org	(510) 524-4668
X. Internal Audits	Rex Delizo	District Manager	rex@stegesan.org	(510) 524-4668
XI. Communication Program	Rex Delizo	District Manager	rex@stegesan.org	(510) 524-4668

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ELEMENT III - LEGAL AUTHORITY

District Ordinance Code

The District Ordinance Code (Code) regulates the use of District wastewater facilities, their construction, permits required for work on these facilities, easements, charges, what can be discharged into sewers, and the enforcement of these requirements. In order to protect the wastewater treatment plant, EBMUD operates a pretreatment program within District boundaries and regulates discharge of wastewater into the system through EBMUD Wastewater Control Ordinance No. 311. Both the District and EBMUD staff work together to coordinate these independent efforts.

Control of Inflow and Infiltration (I/I)

The Code prohibits the discharge of unpolluted water, I/I, to District sewers, either directly or indirectly. (Code Section 3.9 Unpolluted Water)

Proper Design & Construction, Installation & Testing of Facilities

The Code requires that District standards are followed in the design, construction and testing of all wastewater facilities. This includes private sewer laterals as well as District main lines and facilities. (Code Section 4.2 Standard Specifications and Other Regulations)

Responsibility of Sewer Laterals

The property owner is responsible for the operation and maintenance of the sewer lateral from the building plumbing to and including the connection at the main sewer. (Code Section 4.4.7 Responsibility for the Maintenance and Operation of the Laterals)

Fats, Oils and Grease (FOG)

As discussed in *ELEMENT VII – SEWER PIPE BLOCKAGE CONTROL PROGRAM*, the District has the legal authority to control the discharge of fats, oils, grease and other substances and participates in the Regional FOG Control Program operated by the EBMUD pretreatment group. (Code Section 3.11 Grease Device Required)

Backflow Prevention Devices

Backflow prevention devices (BPDs) are required to be installed on all new construction and on all existing buildings having plumbing drain outlet elevations of 12” or less above the ground surface elevation of the next upstream manhole. Building permit applicants are referred to the District for BPD and general Code compliance as part of the preliminary

plan check review of the City of El Cerrito, City of Richmond and Contra Costa County (for Kensington) building permit process. (Code Section 4.4.5 Backflow Protective Device)

Testing of Laterals Upon the Sale of Property, and Other Regional Private Sewer Lateral Program Triggers

In September 2005, the District implemented lateral testing requirements upon the sale of property. All laterals found to be defective were required to be repaired or rehabilitated. On October 17, 2011, the District transitioned from implementation of this program into participation in EBMUD's Regional Private Sewer Lateral (PSL) Program. The regional PSL program triggers include buying or selling a property, remodeling in excess of $100,000, or changing the size of the water meter. District staff currently works with EBMUD to coordinate efforts of the regional PSL program. (Code Section 4.6 Testing Existing Laterals)

Enforcement

The District has several avenues of enforcement available through its Code including levying of fines, revocation of Permits, correction of violations, cease and desist orders, termination of service, assessment of civil and criminal penalties, and civil and criminal court actions. (Code Section 9 Enforcement)

Easements

Most District easements are recorded with the Contra Costa County Recorder's Office. For those not formally recorded, the District makes use of prescriptive easements as the use of the easements are typically open, notorious, continuous, and uninterrupted for a period of at least five years. (Code Section 6 Easements)

Storm Drain Systems and Creeks

Storm drain system and creek geospatial information obtained from local agencies is provided as a layer on the District's sanitary sewer system map to aid in spill mitigation, containment, and recovery efforts. The information also helps to prevent unintentional cross connections between sanitary sewer and storm sewer infrastructure.

(District Ordinance Code)
(EBMUD Ordinance No. 311)

ELEMENT IV - OPERATION AND MAINTENANCE PROGRAM

Updated Map of Sanitary Sewer System

The District maintains a map of its service area that is digitized and formatted into a Computer Aided Drafting (CAD) system known as AutoCAD Map. The maps and associated database include information on all District manholes, which are given a code identification number, line segments, which are identified by the upstream manhole number, and other items like pipe size, length, and year of construction/rehabilitation. These items are part of the Geographical Information System (GIS) mapping system, which is linked to the other District databases that include information on service calls, repairs, rehabilitation, video inspections, and permitting. Maps are updated by engineering staff as facilities are constructed or modified by the District. Map corrections are also submitted by Maintenance staff when discovered during routine maintenance. Engineering staff provides updated map books on a regular basis. State and Regional Water Board staff access to the map is available upon request.

Preventive Operation and Maintenance Activities

The District maintains its collection system with one (1) Collection System Maintenance Superintendent and four (4) Collection System Workers. This group is typically split into two crews of two workers, but a three person crew may be used in easement areas or in other special situations. The Superintendent often acts as an additional (fifth) crew member, as needed. Maintenance crews utilize several types of equipment including combination hydro flush/vacuum trucks, a rodding truck, a CCTV van, pickups, and a flatbed dump truck. The Maintenance crew provides emergency standby service on a continuous, twenty-four (24) hour per day basis, so that all emergency calls can be handled with a sixty (60) minute response time goal.

Inspection and Maintenance Activities

The Maintenance staff maintains an average of approximately 100,000 feet of pipe per month through a combination of CCTV, hydro-flushing, and/or rodding activities. Cleaning is followed by CCTV inspection to ensure that crews perform cleaning activities properly and thoroughly. Maintenance staff notes the condition of every line segment they maintain on a cleaning report form and schedule future line cleaning depending upon what they find along with the history of the line. Frequencies are generally on a 1 to 36 month basis, as follows:

High Frequency (Hot Spot)	up to 6 Months
Regular Frequency	9 to 36 Months

Maintenance staff are instructed to include all observations about unusual or irregular items associated with District assets on their cleaning report form. Maintenance staff are also instructed to bring these items up in direct conversation with Engineering staff and the Manager, particularly if the items may be significant or need attention or correction in the near future. Included in the cleaning report is a section at the bottom of the form where field crews can record recommended future actions including rodding, hydro flushing, CCTV inspection, chemical root foaming, "fats, oils, and grease" (FOG) enforcement, proper "flushable" wipe disposal notice, repair and/or rehabilitation. This information is typically communicated to appropriate staff on a daily basis but can also be queried from the data and reports produced as needed.

The "work order" used by collection system workers is a District system map printed by the Engineering group. The map indicates the lines to be maintained and is color-coded by the cleaning frequency set by the crews. These maps are published quarterly and provided to the crews at the beginning of each quarter.

High frequency "hot spot" cleaning

High frequency "hot spot" cleaning is line cleaning that is done at a 6 month interval or less in areas with an increased potential for an SSO. Cleaning is done as described in the Preventive Operation and Maintenance Activities section above. The cleaning schedules change as Maintenance staff are continuously evaluating line conditions and updating frequencies as they clean and inspect lines. Also, lines in this high frequency category can be on a priority list to be repaired or rehabilitated and subsequently move off this list once the work is completed.

Scheduled Inspections and Condition Assessment

Condition assessment is performed daily by Maintenance staff, through visual observation of manholes and other facilities as part of the proactive and preventive maintenance activities. The most significant assessment or inspection activity in terms of time and expense is the closed-circuit television (CCTV) inspection of District main lines and manholes. All main lines throughout the District were CCTV inspected over a six year contract period from 1997-2002. Inspection work continued on a contract basis until late 2005, when the District purchased a van and CCTV system. District staff now performs

this task as part of its routine maintenance work. The consistency and quality of CCTV work has improved now that District staff controls this work closely.

Pipe line segments are rated using the District-developed CCTV rating system. This system is very similar to the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment & Certification Program (PACP) system, but has a more detailed scoring criterion. A "damage severity index" (DSI), which is the total rating for a line segment divided by the line length, is calculated for each segment and is very similar to a PACP rating. The DSI is used to rank line segments in order of the severity of their defects and serves to help prioritize which lines will be repaired or rehabilitated in Capital Improvement Projects.

Chemical Root Control

The District chemically treats with foam about 40,000 feet of lines annually to control excessive roots on a three year cycle for a total of ~120,000 feet. The lines that receive this foaming treatment are determined by the field crews based on recent SSOs, field observations, and CCTV inspection work. The root control treatment is done on a contractual basis and accomplished every year typically in July and August. This program has proven to be very effective in that SSOs due to roots have been reduced in these areas where root control treatment has occurred.

Smoke Testing Program

An annual smoke testing program was initiated in fiscal year 2004-05, with the intent to smoke test about 10% of the system each year. A proposed Inflow Identification and Reduction plan was submitted for approval to the USEPA in July 2010 and approved in December 2010. In August 2011, the USEPA approved the proposed schedule for the Inflow Identification and Reduction plan which was followed until 2014. As required by the USEPA Consent Decree beginning in 2014, in lieu of further implementation of the Inflow Identification portions of the District's Inflow Identification and Reduction Plan, the District began cooperating with the EBMUD implementation of the Regional Technical Support Program (RTSP) to identify and characterize sources of Inflow and Rapid Infiltration and eliminate the High Priority Sources.

Training

The District is a member of the California Sanitation Risk Management Authority (CSRMA), a risk pool with 62 other sanitary districts. One of the services provided by CSRMA is an extensive set of on-line training modules and continuing education courses known as

TargetSolutions that fulfill both the safety and technical recertification requirements for wastewater professionals. In addition, collection system workers participate in bi-monthly tailgate safety trainings, as well as on-going "on-the-job" training efforts. District staff regularly train on standard procedures and other special programs on an ongoing basis including spill response, spill volume estimation, traffic safety, bypass pumping, CPR/First Aid, and confined space entry. Collection System and Engineering staff also participate in California Water Environment Association (CWEA) programs and vendor-sponsored training courses.

Contingency and Replacement Equipment Inventories

The District maintains two trailer-mounted portable electric generators and an emergency Gorman-Rupp bypass pump. The District also maintains an emergency response trailer that contains pumps, hose, plugs, portable generators, shop-vacs, lights, confined space entry equipment, and various other equipment and items that are used in response to SSOs and other emergency situations. This allows staff to respond to SSOs quickly and, if needed, contain and recover spills from storm drains or ditches. An inventory of clay pipe, fittings and couplings is maintained at the District storage yard to allow for timely and efficient emergency repairs. Contractors are hired to make routine and emergency repairs and rehabilitation on an ongoing basis.

(Stege Sanitary District Map Book)
(Quarterly Cleaning Map Book)
(Chemical Root Foaming Map Book)

ELEMENT V - DESIGN AND PERFORMANCE PROVISIONS

Updated Design Criteria and Construction Standards and Specifications

Engineering staff maintains and enforces the Stege Sanitary District Construction Specifications and Details (Standard Specifications). The Standard Specifications govern the requirements, design, and the manner in which all work in connection with sewer construction within the jurisdiction of the Stege Sanitary District are performed. The Standard Specifications are required by the District's Ordinance Code for use in both new installations and replacement of existing facilities. They are available online to contractors and citizens at no charge and are updated periodically, as necessary.

The District has certain required standards that are of special interest such as the installation of backflow prevention devices (BPDs), the testing and potential replacement of private laterals upon the sale of property through the EBMUD's Regional PSL Program, and the requirements for grease interceptors for food service establishments.

Procedures and Standards for Inspection and Testing of New and Rehabilitated Facilities

The District employs a full-time inspector (Engineering Technician/Inspector) who inspects construction and repairs. The inspector ensures that all construction is safe and meets the District's Standard Specifications and other applicable codes. The Engineer fulfills this role in the absence of the inspector. Permits are required for all work on wastewater facilities in the District. No facility is accepted unless it is permitted, inspected, and tested in accordance with the Standard Specifications.

Regional Standards

As of July 1, 2016, per the USEPA Consent Decree, all District capital improvement projects are in compliance with the collection of details, specifications, and practices known as the "Regional Standards" which prescribes how work on sewer mains, manholes, and sewer laterals is to be performed to optimize I&I reductions.

(Stege Sanitary District Construction Specifications and Details)
(Regional Standards)

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ELEMENT VI - SPILL EMERGENCY RESPONSE PLAN (SERP)

Spill Response

In response to the USEPA's November 18, 2009 Administrative Order (AO), the District revised its overflow response procedures and submitted an Overflow Emergency Response Plan (OERP), now known as a Spill Emergency Response Plan (SERP), to the USEPA on April 15, 2010 for review and approval. The plan outlines policies and procedures for handling service calls and SSOs caused by problems in District facilities and sewer main lines. The USEPA approved the revisions on July 15, 2010. Over the years, this plan has been reviewed and updated as needed. The plan includes procedures for overflow mitigation, emergency response, clean-up, spill recovery, and remediation of damaged dwellings and buildings. The plan also includes internal resources, external resources, and provisions for state regulatory agency notification/reporting. Public notification and contamination testing procedures, when necessary, are also outlined

Spill Reporting Policy

The SERP includes a system to notify responders and appropriate regulatory agencies, a response time goal of sixty (60) minutes, instructions to determine overflow start time, methods of overflow volume estimation, and training record documentation. The District defines an overflow as untreated sewage escaping from the sewer system onto public or private property due to a problem in District main sewer lines. All SSOs are reported electronically in the California Integrated Water Quality System (CIWQS) by the deadlines established in the Statewide Sanitary Sewer Systems General Waste Discharge Requirements Order Reissuance (State Water Board Order No. 2022-0103-DWQ). All overflows are investigated as to cause and corrective action required to prevent future incidents. All information related to SSOs is documented on comprehensive service call/overflow report forms and the information archived in District databases.

Service Calls

District offices are open Monday through Thursday, from 8:00 a.m. to 5:00 p.m., and Friday, from 8:00 a.m. to 4:00 p.m. During these working hours, service calls are referred directly to Maintenance staff. After working hours, service calls are taken by a 24-hour answering service that relays the information to the primary standby Collection System Worker by telephone or text. The standby Collection System Worker makes a determination about the service call, and, if necessary, summons the other worker who is scheduled on standby duty with the primary Collection System Worker. These two

workers summon additional help if necessary. The ability of the police, fire department, or citizen to be able to talk to a live person 24 hours per day adds the positive benefits of human interaction and significantly reduces the possibility of a missed call or a misunderstanding about the nature of a problem. All Collection System Workers are provided funding for a mobile phone and the Collection System Maintenance Superintendent is provided a personal District truck. All other District vehicles and equipment are stored and ready for use at the District Office.

Service Call/Overflow Reports

Collection System Workers prepare reports for every SSO. The Service Call/Overflow Report form documents the probable cause of the SSO and any steps taken by the District to correct or prevent subsequent SSOs in that location. All reports are reviewed by the District Manager who reports it to the appropriate regulatory agencies in accordance with applicable regulations and to the District Board of Directors on a monthly basis (Monthly Manager's Report).

Emergency Operations Plan

The District follows an emergency operations plan, or contingency plan, that summarizes how the District responds to major emergencies.

(July 15, 2011 USEPA Approval of Overflow Response Procedures)
(Spill Emergency Response Plan)
(Service Call/Overflow Report Form)
(Example of Monthly Manager's Report)
(Emergency Operations Plan)

ELEMENT VII – SEWER PIPE BLOCKAGE CONTROL PROGRAM

District staff assess each SSO blockage to determine the cause in order to take the necessary steps to prevent a reoccurrence. Different causes result in different responses including increasing maintenance frequency, adaptive cleaning, point repairs, line rehabilitation, increasing pipe size, and/or targeted public education, outreach and/or enforcement.

Fats, Oils, and Grease (FOG) Control Program

The Regional FOG Control Program is operated by the EBMUD pretreatment group in conjunction with District management. The program was established to reduce FOG related blockages and consists of FOG hotspot investigations, food service establishment (FSE) reviews, gravity grease interceptor (GI) inspections, enforcement support, hotspot reporting, FOG information database management, and outreach. The District Ordinance Code (Code) requires FSEs to install grease interceptors under certain circumstances, and maintain such grease removal devices at their facilities including the retention of records for certain maintenance activities.

A key element of the program includes hotspot response which is a targeted response to grease-related blockages and consequent SSOs. Response activities include facility inspections at FSEs upstream of the problem area, camera investigations, recommendations for corrective actions and enforcement procedures, as needed. Similar response activities are also undertaken by EBMUD for residential hotspots.

Program Elements

The following program elements are outlined below:

- Source Identification
- Legal Authority
- Program Structure/requirements
- Grease Removal Device Technology for FSEs
- Inspections and Monitoring for FSEs
- Enforcement for FSEs
- FOG Disposal
- Public Education and Outreach

Source Identification

investigates and locates the origin of any FOG related event that causes a maintenance issue or event within the District sewer system. Sources typically include:

- Food Service Establishments (FSEs) (includes restaurants, hospitals, nursing homes, grocery stores, caterers & commissaries)
- Residential Properties
- Food Manufacturing Facilities

Sources are categorized as "Hotspots" (FSEs causing or contributing to grease-related SSOs or blockages) and "Non-hotspots".

Legal Authority

EBMUD Wastewater Control Ordinance 311A-03 includes the following provisions:

- Prohibited substances – those that cause or threaten to cause obstruction of flows in community sewers or interceptors
- Authority to require pretreatment prior to discharge to the community sewer
- Authority to inspect dischargers and sample discharge
- Enforcement and penalties for failure to adhere to the Ordinance

The District has similar provisions in Code Chapter 3 – Regulations Governing the Use of Wastewater Facilities. The Uniform Plumbing Code (UPC) also contains provisions related to grease, such as the sizing of interceptor facilities. The District has adopted the UPC by reference through its Code. Additionally, there are local health codes that may be applicable in cases where FOG blockages cause overflows that might affect public health.

Program Structure/Requirements

The Code has the following requirements for FSEs:

- Installation of grease interceptors for all new FSEs, remodels of $75,000 or greater, and for all FSEs causing or contributing to an SSO or blockage (hotspot).
- Maintenance is required, at a minimum of every three months, or more frequently as necessary, to ensure FSE discharges do not cause or contribute to SSOs or blockages. Also, a complete pump out of grease interceptor is required each time an interceptor is pumped.

- Maintenance records are required to be kept on site, and only EBMUD-approved grease haulers shall be used.
- A residential FOG program has been developed which includes educational outreach efforts by EBMUD staff to inform customers about best practices for the disposal of household grease.

Grease Removal Device Technology for FSEs

Grease interceptor installation, design and sizing shall be as per the Uniform Plumbing Code. Grease interceptor waivers and variances may be considered depending upon the business type, the grease generating capability (and/or probability) of a FSE, and difficulties with interceptor installations due to conflicts with site conditions.

Grease removal device installation, design and sizing may be used as an alternative to grease interceptors in instances where a grease interceptor cannot be installed (ex: space and slope restrictions). The installation of these shall be coordinated with local health authorities and building/planning departments.

Inspections/Monitoring for FSEs

EBMUD staff monitors "Non-hotspot" areas as follows:

- All FSEs are inspected periodically.
- Grease interceptors are inspected – a measurement of grease/water/solids is done and maintenance documentation is reviewed.
- Educational materials are distributed to managers/employees.

Follow-up tasks (as needed) are performed by EBMUD to determine if the grease interceptor pumping frequency needs to be increased and/or if grease interceptor repairs are required.

EBMUD staff monitors "Hotspot" areas (identified by District staff) that have a history of grease-related SSOs and blockages, based upon field experience and maintenance records. EBMUD also investigates conditions in these areas in an effort to determine the origin of any FOG discharges. Actions in these investigations may include:

- Targeted inspections of FSEs upstream of a reported hotspot.
- Video inspections of main lines.
- Video inspections of laterals.

- Distribution of educational outreach materials.

Follow-up tasks may be done as a result of these inspections. If it is determined that an FSE is the source of the grease related SSO or blockage, then EBMUD shall determine if the grease interceptor pumping frequency needs to be increased and/or if grease interceptor repairs are required. If it is determined that the source is a residential property, then educational outreach materials may be distributed or targeted meetings with property owners and/or homeowners' associations may be scheduled.

Enforcement for FSEs

EBMUD will assist the District to utilize an escalating (progressive) enforcement structure.

FOG Disposal (grease trap and grease interceptor waste)

The EBMUD wastewater treatment plant is a receiving facility for waste grease from both inside and outside of the EBMUD service area. All approved haulers are informed about EBMUD's FOG disposal policies.

Public Education and Outreach

Program brochures that describe best management practices (BMP) and include a BMP chart are distributed to FSEs in English, Chinese, Spanish, Vietnamese, and Korean. Brochures and other literature for FSEs include a "How to Maintain a Grease Interceptor" flyer, a "Do Not Pour" poster, and BMP posters and charts.

Materials for use in residential situations include informational brochures, scrapers that can be used to clean cooking ware, and informational flyers. Staff and Board members also present FOG materials and information at public events and fairs.

EBMUD also hosts a web site (http://www.ebmud.com/fog) related to FOG that contains useful FOG information, including the location of residential cooking oil and grease drop-off locations.

Chemical Root Control

As stated in *ELEMENT IV - OPERATION AND MAINTENANCE PROGRAM*, main lines that experience a blockage due to roots are added to our chemical root control program to

prevent a reoccurrence. The maintenance frequency of the main line may also be increased.

"Flushable" Wipes Outreach

For blockages due to excessive "flushable" wipes, targeted notices are mailed to educate all the residents upstream of the SSO that only human waste and toilet paper should be disposed in the sanitary sewer system. The maintenance frequency of the main line may also be increased.

Defective Lateral Outreach

For "lateral caused" blockages caused by defective laterals and/or property owners pushing roots, wipes, and/or other debris into the main sewer causing a stoppage, targeted notices are mailed to educate all the residents upstream of the SSO on best practices to prevent overflows including calling us to have the main line checked after cleaning the private sewer lateral of roots and debris.

Legal Authority

As stated in *ELEMENT III - LEGAL AUTHORITY*, the District Ordinance Code (Code) regulates the use of District wastewater facilities, their construction, permits required for work on these facilities, easements, charges, what can be discharged into sewers, and the enforcement of these requirements. In order to protect the wastewater treatment plant, EBMUD operates a pretreatment program within District boundaries and regulates discharge of wastewater into the system through EBMUD Wastewater Control Ordinance No. 311. Both the District and EBMUD staff work together to coordinate these independent efforts.

(FOG Outreach Brochure)
(FOG Sanitary Sewer Overflow (SSO) and Blockage Report Form)
(FOG Annual Report)
("Flushable" Wipes Outreach)
(Defective Lateral Outreach)

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ELEMENT VIII - SYSTEM EVALUATION, CAPACITY ASSURANCE, AND CAPITAL IMPROVEMENTS

System Evaluation and Condition Assessment

The original hydraulic model of the District's collection system was developed using HYDRA Sanitary Sewer Modeling software. The model was established based on extensive flow monitoring of all District sub-basins and makes use of a 5-year design storm which was defined in the East Bay Inflow/Infiltration (I/I) Study as a rainfall event with 1.57 inches of precipitation over a 7 hour event. The East Bay I/I Study used this storm for its design purposes because it fit with the area's topography and collection system characteristics.

In 2010, the District contracted with AECOM Engineering for the development of a revised and updated system model. The hydrologic/hydraulic model was developed using Innovyze's InfoWorks CS 11.0 software, a fully dynamic, hydrologic and hydraulic modeling software package. Development efforts included dry and wet weather flow inputs, data and model assumptions, and model calibration and validation against historical (November 2005 – January 2006 and October 2010 – April 2011) flow monitoring data.

The District's system evaluation and capacity assurance efforts are based on the latest system hydraulic model and continually monitored as described in the requirements of USEPA Consent Decree Paragraph 13. Further efforts are outlined in the District's Sewer System Master Plan.

Capacity Studies

Developers are required to hire an independent engineer to conduct a hydraulic capacity study for residential developments of ten units or more, and for commercial developments of 10,000 square feet or more. This is also required for restaurants over 1000 square feet and for all laundromats and industrial laundries. These studies are required to examine both existing downstream line capacity and capacity at projected build-out. The capacity study requirement is outlined in the handout *Sanitary Sewer Capacity Study Criteria* which is distributed by the District to interested applicants.

San Pablo Avenue Specific Plan Area (SPASPA)

In September 2017, a special study was completed to help plan for planned developments in the San Pablo Avenue Specific Plan Area (SPASPA) in the City of El Cerrito. Without the required pipe upsizing, the anticipated development in the SPASPA would surcharge existing facilities.

In October 2017, the Board approved an impact fee to fund sewer capacity improvements needed to serve the projected growth within the SPASPA. The Board has since approved updates to the impact fee based on knowledge of additional developments and updated construction costs. For any new connections and increased discharges in the SPASPA, both residential and nonresidential developments will pay the per fixture unit impact fee in addition to the existing District-wide sewer connection/capacity charge. The sewer capacity improvements shall be performed by the Stege Sanitary District and exclusively funded by the SPASPA sewer connection/capacity impact fee. District staff will determine the priority of the sewer capacity improvements based on the sewer capacity demand and timing of the proposed developments as they are approved and as funding allows. The first phase of the SPASPA sewer upgrades was completed in 2021.

Permit Activity

The Engineer can use the model information to check downstream line capacity anytime a permit is written for new residential or commercial connections, except for the situations noted above when developers are responsible for this study. The permittees are responsible for the construction of any necessary capacity increases outlined by the Sanitary Sewer Capacity Study results.

Prioritization of Corrective Action

Engineering staff rank condition assessments into corrective action ratings of “HIGH PRIORITY, MEDIUM-HIGH, MEDIUM, & LOW” using visual assessment, maintenance history, and Engineering judgment. Corrective actions are ranked as follows:

Priority 1:

- Structural defects and capacity related issues that have previously caused or contributed to a Sanitary Sewer Overflow (SSO) or will likely cause or contribute to an SSO in the near future.
- Structural defects classified as “Acute Defects”.
- Defects ranked as HIGH PRIORITY in a HIGH I/I location.

Priority 2:

- Defects ranked as HIGH PRIORITY, but not in a HIGH I/I location.

Priority 3:

- Defects ranked as MEDIUM-HIGH, in a HIGH I/I location.

Priority 4:

- All other defects.

Capital Improvement Plan

The District's Capital Improvement Plan totals ~$35 million in expenditures over the course of fiscal year 2020 to fiscal year 2029. The plan is organized into funding groups: System Rehabilitation, Capital Equipment, and Other Capital.

The System Rehabilitation funding group was developed to comply with the USEPA Consent Decree and is comprised of the annual pipe-bursting project. The latest financial plan estimates costs to be $200 per linear foot with increases at 3.0% per year. Over the next 10 years, approximately 28 miles of pipeline are projected to be replaced at a total cost of $34.6 million. The pipe-bursting project represents 89% of projected capital improvement projects over the next 10 years.

The Capital Equipment funding group includes smaller value capital items including flow meters, vehicle replacement, manhole "smart" covers, and other miscellaneous items. The Other capital funding group includes manhole adjustments, administration building repairs, pump station rehabilitation, and interceptor cleaning.

The budget and required footage (linear feet) of sanitary sewer main that must be rehabilitated each year in order to comply with the USEPA Consent Decree is as shown:

CIP Required Footage Goals

FISCAL YEAR	REHABILITATION FOOTAGE REQ.	CAPITAL IMPROVEMENTS PLAN (CIP) BUDGET
2019-20	11,320	$2,689,000
2020-21	11,660	$2,867,000
2021-22	12,013	$3,057,000
2022-23	12,373	$3,259,000
2023-24	12,740	$3,473,000
2024-25	12,738	$3,594,000
2025-26	12,738	$3,719,000
2026-27	12,739	$3,850,000
2027-28	12,735	$3,983,000
2028-29	12,732	$4,122,000

(Sanitary Sewer Master Plan)
(Hydraulic Model Output)
(Stege Sanitary District Sanitary Sewer Capacity Study Criteria)
(Stege Sanitary District Connection Charge and SPASPA Impact Fee Study 2019)

ELEMENT IX - MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

District administrative staff monitors the effectiveness and implementation of its SSMP through various measures and activities. Effectiveness is measured by tracking performance indicators on a regular basis. A "Manager's Report" is prepared and reviewed by the District Board of Directors each month. This report provides detailed information on overflows, service calls, footage of main lines cleaned and videoed, and amount of lines repaired and/or replaced.

The data used for these summary reports is obtained from a maintenance management system comprised of a network of Microsoft Access databases that are used to electronically store and manage all maintenance system data such as cleaning reports, line conditions, repairs, service calls, and cleaning schedules. The summary reports on system performance are reviewed by Management, Engineering, and Maintenance staff to determine the effectiveness of district activities and operations. Staff uses this information on a "real-time" basis to assess its operations and make changes to maintenance practices and capital activities, as determined from the results of its programs.

At the beginning of each calendar year, a Performance Report is presented to the District Board of Directors which gives a good sense of how well the District is performing its mission to "plan and operate a safe, efficient and economical wastewater collection and transfer system for the present and future customers of the District." The Report includes sections on Awards & Recognition, Sanitary Sewer Overflows (SSOs), Sanitary Sewer Maintenance, Condition Assessment & Rehabilitation, Service Call Response, Employee Retention/Longevity and Finances. The report is prepared by management for use by the District's Board of Directors to help evaluate the value and effectiveness of the service being delivered to the customers of the District.

(Monthly Manager's Report)
(Performance Report)

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ELEMENT X. INTERNAL AUDITS

The District will conduct an internal audit of its SSMP, and implementation of its SSMP, at a minimum frequency of once every three years. The audit will identify any deficiencies and document the subsequent actions to correct them. This audit will be performed early in the calendar year and generally follow the format of the SSMP Annual Audit Report form developed by BACWA.

LAST SSMP AUDIT COMPLETED: MARCH 2022

(Sewer System Management Plan Audit Report)

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ELEMENT XI. COMMUNICATION PROGRAM

The District has an active communication program to inform the public about its SSMP, as well as other District activities. The District publishes newsletters twice a year on various District activities and mails the letters to every property owner in the District's service area. The District also has a web site (www.stegesan.org) to inform its customers about District business, events, meetings, regulations, and programs. The SSMP is available for all to read and review through a link on the web site. Similarly, there are links to the latest Board meeting agenda, meeting minutes (archived for about three years), and many of the components that comprise the SSMP such as the Code and District Standard Specifications and Details. All Board meetings are open to the public and the public is invited to comment on any District business issue, including the SSMP.

District staff routinely informs customers and citizens in affected areas about future work activities. For example, letters and notices are provided to residents of affected properties prior to repair or replacement of District main lines and lateral connections. The initial notice is provided about four weeks in advance of work, and a second notice and/or door hanger is given a few days prior to the work.

New homeowners are all mailed a new owner welcome packet that introduces the District and provides helpful materials such as backflow prevention device (BPD) information, what not to flush down the toilet, and a "CALL US FIRST" refrigerator magnet.

The District developed an outreach brochure that is distributed to plumbing contractors that provide services to District customers. The brochure explains the potential impact of their work on District sewers. This includes likely causes of SSOs, if plumbing contractors do not follow appropriate practices when cleaning sewers, repairing sewers and/or otherwise performing work in close proximity to District maintained facilities. The brochure is provided to plumbing contractors at the District front counter and is also mailed to all plumbers registered to work in the District on a regular basis.

Every customer that places a call for service is provided a customer feedback form and asked to return it with a rating for various items and any comments they may have about the District's response to their call.

For over a decade, the District has been a financial supporter of the educational program, KIDS for the BAY. The District supported two classes of watershed education in a local elementary school each school year since 2009-10. The program has both classroom and field sessions, and includes issues specific to wastewater collection systems.

At the 50th Anniversary Annual Conference of the California Special Districts Association (CSDA) held in September 2019, the District received the CSDA Exceptional Public Outreach & Advocacy Award (Small District Category) for its 10 year partnership with KIDS for the BAY inspiring new generations of environmentalists with an increased awareness of watershed stewardship.

The District hosts a booth each year at the El Cerrito Fourth of July community fair. Board members take shifts at the booth and are available to answer questions or concerns, as well as explain District activities and programs with the thousands of fair attendees that attend each year.

The Stege Sanitary District is a current holder of the SDLF District Transparency Certificate of Excellence. The certificate, covering three main subject areas including basic transparency, website access, and outreach activities, highlights the core components necessary to engage and make information available to the public. The certificate demonstrates the District's commitment to engaging the public and creating greater awareness of District activities. The District has been a holder of this certificate since 2013.

(Endeavor Newsletter)
(Sample Construction Notice to Residents)
(Door Hanger)
(New Owner Welcome Packet Letter)
(Customer Feedback Form)
(Kids for the Bay Report)
(Plumbers and Building Contractors Outreach)

CHANGE LOG

DATE	DESCRIPTION	SSMP Element	BY
MAR 2023	Updated and revised entire document to comply with Statewide Sanitary Sewer Systems General Waste Discharge Requirements Order Reissuance (SSS WDR), State Water Board Order No. 2022-0103-DWQ, effective on June 5, 2023.	All	Delizo
MAR 2022	Update and revised language and attachments throughout.	All	Delizo
MAR 2020	Updated with latest NPDES Permit	intro	Delizo
	Updated USEPA Consent Decree minimum requirement for chemical root foam treatment.	I	
	Updated with latest Organizational Chart	II	
	Updated with latest Ordinance Code	III	
	Updated with latest Budget, List of Registered Plumbing Contractors, and added District of Distinction Accreditation	IV	
	Updated with latest Sewer System Master Plan.	IV and VIII	
	Updated with latest Managers Report	VI and IX	
	Updated with latest Annual FOG Report	VII	
	Updated with latest 2019 Performance Report	IX	
	Updated with latest SSMP Audit	X	
	Updated with latest Endeavor Newsletter and added CSDA Exceptional Public Outreach & Advocacy Award and SDLF District Transparency Certificate of Excellence	XI	
AUG 2019	Update and revised language throughout.	All	Delizo
	Updated SSMP re-approved by the Board by Resolution 2128-0819 on August 15, 2019.		
JUN 2019	Updated USEPA Consent Decree minimum requirement for chemical root foam treatment.	I	Delizo
	Updated budget amounts with fiscal year 2019-20 figures.	IV	
	Updated with latest 2018 Performance Report.	IX	
	Update and revised language throughout.	All	
MAR 2018	Updated USEPA Consent Decree minimum requirement for chemical root foam treatment.	I	Delizo
	Updated maximum cleaning frequency interval to 36 months (down from 60 months).	IV	
	Updated to include reference to the District Sewer System Master Plan.	IV and VIII	
	Updated with latest 2017 Performance Report.	IX	
	Update and revised language throughout.	All	
AUG 2017	Updated budget amounts with fiscal year 2017-18 figures.	IV	Delizo

	Added 2016 Performance Report.	IX	
AUG 2016	Updated USEPA Consent Decree minimum requirement for chemical foam treatment.	I	Delizo
	Updated organizational chart.	II	
	Updated budget amounts with fiscal year 2016-17 figures.	IV	
	Update and revised language throughout.	All	
MAR 2016	Updated budget amounts with fiscal year 2015-16 figures.	IV	Delizo
	Added 2015 Performance Report.	IX	
AUG 2014	Updated and revised to include changes due to implementation of the USEPA Consent Decree signed on July 28, 2014.	I	Delizo
	Updated budget amounts with fiscal year 2014-15 figures.	IV	
	Rearranged and renamed sections to be consistent with State Water Resources Control Board SSMP elements.	All	
	Updated SSMP re-approved by the Board by Resolution 2033-0814 on August 14, 2014.	All	
OCT 2013	Updated and revised to reflect the amended Statewide Monitoring and Reporting Program (MRP) requirements of the Statewide General Waste Discharge for Sanitary Sewer Systems that took effect on September 9, 2013 and the District's Asset Management Implementation Plan (AMIP) approved by the USEPA on May 14, 2013.	All	Delizo