STEGE SANITARY DISTRICT

SANITARY SEWER
MASTER PLAN

MARCH 2023

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1. INSPECTION AND ASSESSMENT PROTOCOLS

The District maintains a program to inspect its sanitary sewer mains using Closed Circuit Television (CCTV). The goal is to CCTV inspect every line in the District on at least a five year schedule. Inspections of line segments before the five year schedule will be conducted when determined necessary by Maintenance or Engineering staff due to service calls and/or overflows.

EVALUATION OF INSPECTION FINDINGS

A review of the CCTV assessment ratings is made by the Engineering staff every quarter to ensure that ratings are accurately assessed and to evaluate the findings for scheduling required repairs or rehabilitation in Capital Improvement Projects or, if needed, cleaning and/or a repeat CCTV inspection. Engineering staff reviews all CCTV assessments with a DSI rating greater than 10 or a total rating greater than 1000. Engineering staff meets periodically with maintenance staff to go over these findings and make adjustments if and when necessary.

The CCTV assessments with a DSI rating greater than 10 or a total rating greater than 1000 are ranked by Engineering staff into ratings of "HIGH PRIORITY, MEDIUM-HIGH, MEDIUM, & LOW" using visual assessment, maintenance history, and Engineering judgment.

2. REPAIR, REHABILITATION, AND REPLACEMENT PLAN

SHORT TERM (ACUTE DEFECTS)

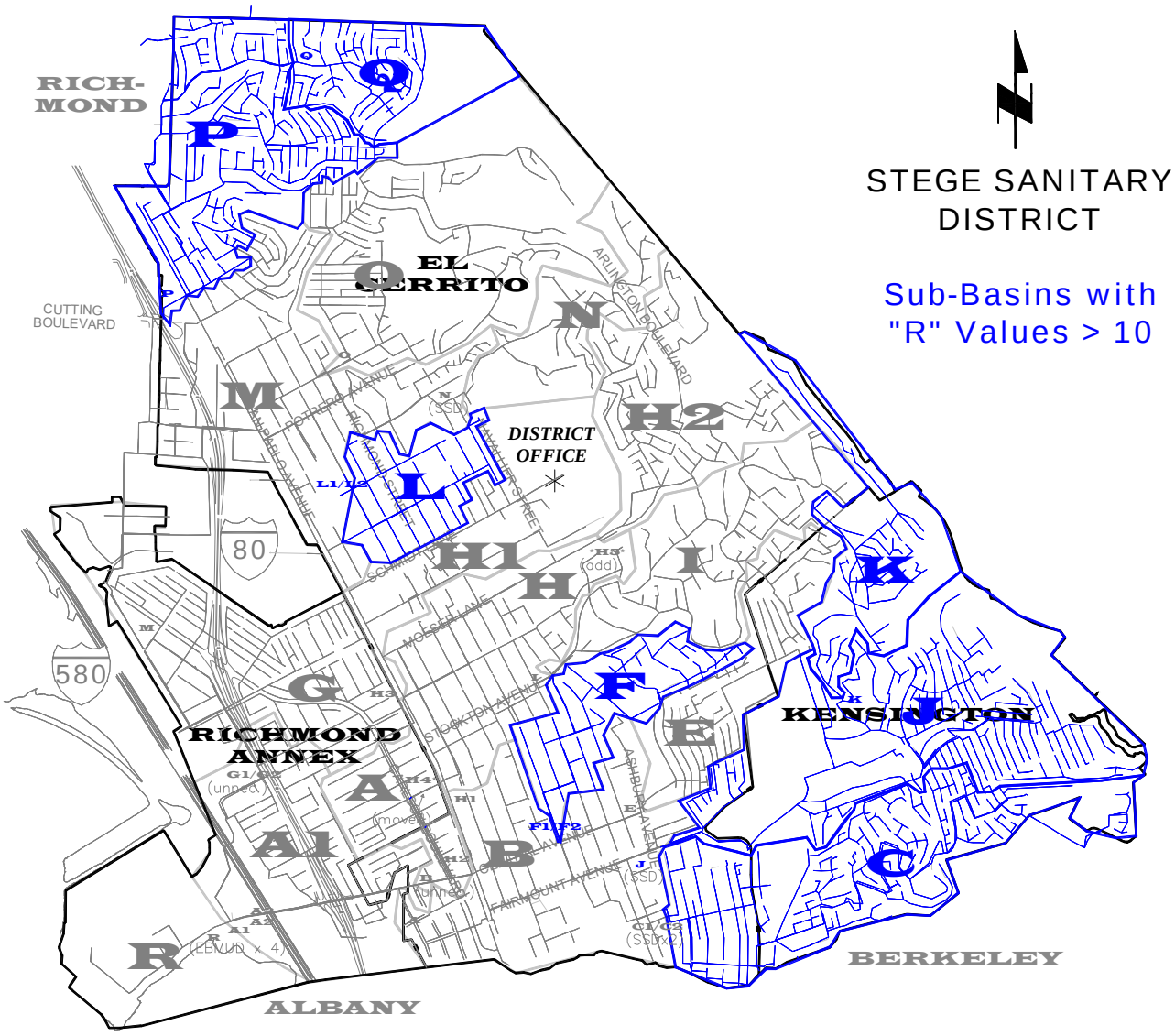
The project priority list is regularly updated as staff continually performs CCTV assessments and ratings as part of its routine maintenance work throughout the year. Any acute defects, defined as "a failing in a sewer pipe in need of an urgent response to address an imminent risk of an SSO", will be included as a high priority for corrective action as soon as they are assessed. These segments will be repaired or rehabilitated no later than one year after the assessment is completed.

LONG TERM (USING PEAK FLOW RATE DATA)

The District further prioritizes line segments utilizing information gathered from its Sub Basin Flow Monitoring Plan. Projects target line segments with the highest Damage Severity Index (DSI) ratings that are located in District sub-basins that have high I/I contribution rates ("R" values) in order to maximize and accelerate I/I reduction. This is the "worst lines in the worst areas" priority. Historically, the focus

was typically on the highest DSI ratings (worst structural condition and/or require more maintenance) as determined by CCTV assessment. Lines with significant structural issues that may cause an SSO will still be included for repair/rehabilitation but this adjustment is a purposeful shift to focus more on rehabilitation of the high I/I areas. A map indicating sub-basins that have an I/I contribution rate "R" value of 10 or more is shown in Figure 1.1.

Figure 1.1 – District sub-basins with "R" Values of 10 or more



PROJECT LIST PRIORITY

The assessments 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.

The sanitary sewer lines to be repaired, rehabilitated, and replaced are given to the District's Contractor in small batches based on available budget and schedule.

3. TEN YEAR FINANCIAL PLAN

The District works regularly with public financial advisors to assess budget sustainability and to assist with appropriate rate setting. The most recent effort occurred in 2019 and a ten year plan was developed, as well as a projection of service rates required to fund operating expenses, the 10-Year Capital Improvements Plan, debt service costs, and to meet fund balance targets. Service rates were subsequently approved for the following five fiscal years. A summary of the ten (10) year financial plan for the Capital Improvements Plan and Contracted Repairs is included in Figure 1.2.

Figure 1.2 – 10 Year Financial Plan

FISCAL YEAR	CAPITAL IMPROVEMENTS PLAN (CIP) BUDGET	CONTRACTED REPAIRS BUDGET
2019-20	$2,689,000	$64,000
2020-21	$2,867,000	$66,000
2021-22	$3,057,000	$68,000
2022-23	$3,259,000	$70,000
2023-24	$3,473,000	$72,000
2024-25	$3,593,000	$74,000
2025-26	$3,719,000	$76,000
2026-27	$3,850,000	$79,000
2027-28	$3,943,000	$81,000
2028-29	$4,122,000	$83,000

4. CAPITAL IMPROVEMENT PLAN (CIP)

The District's Capital Improvement Plan totals ~$39 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.

Figure 1.3 below shows the required footage (linear feet) of sanitary sewer main that must be rehabilitated each year in order to comply with the USEPA Consent Decree.

Figure 1.3 – CIP 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

5. CONSTRUCTION METHODS AND STANDARDS

The Stege Sanitary District is responsible for the rehabilitation and replacement of the sanitary sewer main and the property owner is responsible for the entire sanitary sewer lateral up to and including the connection to the sanitary sewer main (SSD Standard Specifications and Details Section 2, page 2-4). When the sanitary sewer main is replaced by the District during its capital improvement program, as a courtesy to the property owner, the District will replace the sewer lateral connection. All other times, the property owner is responsible for the sanitary sewer main connection and maintenance.

The District predominantly specifies pipe-bursting with SDR17 HDPE pipe as its preferred method of pipe replacement. However, the District may use a combination of open trenching or cured-in-place pipe in lieu of pipe bursting in limited circumstances due to challenging alignments or where significant conflicts exist that preclude the safe and effective use of pipe-bursting.

As of July 1, 2016, per the U.S. Environmental Protection Agency Consent Decree Case Nos. C 09-00186-RS and C 09-05684-RS, all District capital improvement projects are in compliance with the latest 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.

6. 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 all new connections and increased discharges in the SPASPA, both residential and nonresidential developments will pay a fee per fixture unit 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 construction was completed in 2021.