SEWAGE COLLECTION SYSTEM INSPECTION FORM
Stege Sanitary District

GENERAL INFORMATION

Inspection Date: **March 30 – 31, 2009**

Utility Name: Stege Sanitary District (SSD)
Address: 7500 Schmidt Lane El Cerrito, CA 94530
Contact Person: Douglas Humphrey
Phone: 510/524-4667 Cell: Fax: 510/524-4697
Email: doug@stegesd.dst.ca.us

Inspectors Names	Agency/Contractor
Michelle Moustakas	EPA Region 9
Michael Chee	RWQCB 2
Robert Schlipf	RWQCB 2
Bill Hahn	SAIC
Dianne Stewart	SAIC

Utility personnel who accompanied inspectors

Name	Title
Douglas Humphrey	District Manager
Walter Lunn	Collection System Superintendent
Rex Delizo	Sr. Civil Engineer

SYSTEM OVERVIEW

Population: 40,000 (estimate) Service Area (Sqr miles): 5.65

	Residential	Commercial	Industrial	Total
Number of service connections	12,331	689	23	13,043

Combined Sewers (% of system): 0

Does system include a WWTP? (Y/N) N (If so add WWTP form)

Does the system receive inflows from satellite systems? (Y/N) Y

System names City Of Richmond

_____

_____

_____

Does system effluent flow to another agency? Yes
Receiving agencies name: East Bay Municipal Utility District (EBMUD)
Do any interagency agreements exit? Yes

Does the agency maintain the legal authority to limit the flow contribution of the satellite systems? No

Utility responsibility for laterals (none, whole, lower) None

Does system have constructed relief points? No

Relief Point	Location

Comments:

SSD is unique among the EBMUD agencies in that it does not own the right-of-way. SSD provides sanitary sewer services to the cities of Kensington, El Cerrito and a portion of Richmond known as the Richmond Annex.

Wastewater from 97 houses served by the City of Richmond's collection system is pumped into the SSD system. There is a contract with Richmond, but it does not contain flow requirements.

Homeowners served by SSD own their laterals from the house to the main, including the connection to the main. In September 2005, the District revised its Ordinance Code and Standard Specifications, and now requires property owners to obtain a "Certificate of Compliance" for their sanitary sewer laterals upon the sale of property, prior to the close of escrow. There is about a 90% compliance rate for lateral replacement, and about 400 per year are replaced. House remodel does not trigger lateral replacement. Some contractors will televise (TV) the laterals for free to get the repair business, or take the cost of the TV work off the repair bill. If the homeowner chooses to replace the lateral at the same time as a main is being replaced, the cost is lower because the street doesn't have to be dug up. Their data indicate that it costs about $4,000 to replace a lateral including the street work. SSD believes that I/I from laterals contributes a large part of the excess flow because the laterals are mostly older, made of terra cotta pipe (TCP) and much of the area is in an active fault zone.

In 1986, SSD took over temporary ownership of all the laterals in Subbasin N, and replaced all the mains and laterals in this subbasin. They found that flow was reduced by 86% as a result of this work. However, they concluded that it was less expensive to provide relief capacity, so they installed relief pipes in other areas where capacity was a problem.

The service area is nearly completely built out. About one or two connection permits are issued annually.

SYSTEM INVENTORY ***(list only assets owned by utility)***

Miles of gravity main	Miles of force main	Miles of Laterals	Number of maintenance access structures	Number of pump stations	Number of siphons
147	0.3	0	4,430	2	1

Size Distribution of Collection System

Diameter in inches	Gravity Sewer (miles)	Force Mains (miles)
6 inches or less	107.0	.16
8 inches	13.6	.15
9 - 18 inches	20.4	.00
19 - 36 inches	4.3	.00
> 36 inches	1.7	.00

Age Distribution of Collection System

Age	Sewer Mains, miles	# of Pump Stations
0 - 25 years	26.0	
26 - 50 years	1.5	
51 - 75 years	92.0	1
> 76 years	27.5	1

SYSTEM FLOW CHARACTERISTICS

Collection System (flow measurement location: flow data from EBMUD ; or estimate)		
Average Daily Dry Weather Flow (MGD)	Peak Daily Wet Weather Flow (MGD)	Peak Instantaneous Wet Weather Flow (MGD)
3.0	15.0 (estimate)	47.0 (estimate)

Wastewater Treatment Plant		
Average Daily Dry Weather Flow (MGD)	Peak Daily Wet Weather Flow (MGD)	Peak Instantaneous Wet Weather Flow (MGD)
NA		

Satellite Name	Avg. Dry Weather Flow		Peak Flow (MGD)	Flow based on meter or estimate?
	(MGD)	% of total flow		
NA				

Comments

SSD has no flow data for the 97 houses outside the district.

REGULATORY BACKGROUND

Does the system operate under the provisions of an NPDES permit (either their own or under provisions of another agencies permit)? Yes

Permit holder Stege Sanitary District Permit # CA 0038482

List provision of the permit that apply (If permit holder is other than the agency being inspected)

_____
_____
_____
_____

Does the system operate under a state permit? Yes
Are there any spill reporting requirements? Yes
Which agency promulgates the spill reporting requirements?
State Water Resource Control Board (SWRCB)

Outline the spill reporting requirements:
All SSOs must be reported. Reported within 3 days if SSO reaches drainage channel or waters. Reported by end of the following month for other SSOs. Two hour notification to local Regional Board for SSOs that reach drainage or waters, and contact Emergency Service and local health agency, too.

Comments:

In February 2008, SWRCB issued new SSO notification requirements in Order No. WQ 2008-0002-EXEC. On May 1, 2008, RWQCB 2 sent a letter to permitted dischargers explaining the new reporting requirements. The letter contains the following summary table showing these requirements:

Communication Type (all are required)	**Agency Being Contacted**	**Timeframe Requirements**	**Method for Contact**
1. Notification	Office of Emergency Services	As soon as possible, but not later than **2 hours** after becoming aware of the SSO.	Telephone – (800) 852-7550 (obtain a control number from OES)
	Local health department	As soon as possible, but not later than **2 hours** after becoming aware of the SSO.	Depends on local health dept.
	Regional Water Board	As soon as possible, but not later than **2 hours** after	Electronic www.r2esmr.net/

Communication Type (all are required)	Agency Being Contacted	Timeframe Requirements	Method for Contact
		becoming aware of the SSO.	sso_login2.asp
2. Certification	Regional Water Board	As soon as possible, but not later than **24 hours** after becoming aware of the SSO.	Electronic www.r2esmr.net/ sso_login2.asp
3. Reporting State Water Board	State Water Board (CIWQS)	Category 1 SSO: initial report within **3 business days**, final report within **15 calendar days** after response activities have been completed.	Electronic (only) to CIWQS
		Category 2 SSO: within **30 calendar days** after the end of the calendar month in which the SSO occurs.	Electronic (only) to CIWQS

SPILLS

Spill rate= # spills/100 miles pipe/year

Year	***Mains (Miles of Mains 147)***			***Laterals (Miles of Laterals 0)***			***Totals (Total Miles 147)***		
	#SSO's	Spill Rate	Volume	#SSO's	Spill Rate	Volume	Total SSO's	Total SSO's to waters	Total Spill Rate
2008	19	12.9	16,145				19	8	12.9
2007	20	13.6	5,690				20	6	13.6
2006	19	12.9	1,560				19	2	12.9
2005	43	29.2	4,080				43	5	29.2
2004	52	35.4	21,742				52	12	35.4
Total	**137**		**49,217**				**137**	**33**	

Spill Cause

Time Period	*Blockage*								*Gravity Pipe Break*		*Force Main Break*		*Pump Station*		*Capacity*	
	Grease		Roots		Debris		Multiple									
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2008	4	21	2	11	3	16	4	21	1	5	0	0	0	0	5	26
2007	1	5	6	30	6	30	6	30	1	5	0	0	0	0	0	0
2006	2	11	5	26	5	26	4	21	3	16	0	0	0	0	0	0
2005	1	2	22	51	3	7	8	19	2	5	0	0	0	0	7	16
2004	4	8	20	38	4	8	6	12	6	12	0	0	0	0	9	17
Total	**12**		**55**		**21**		**28**		**13**		**0**		**0**		**21**	

BUILDING BACKUPS (list only backups caused by problems in sewer mains)		
Year	Number of backups	Cost of Settled Claims
2008	3	$26,507 + $5,203 (open)
2007	3	$59,908 + $6,673 (open)
2006	0	$2,078
2005	0	$23,476
2004	5	$89,639
TOTAL	11	

Comments

Since SSD does not own any portion of the lateral, they do not report spills from laterals, unless such a spill is due to a problem in the District's pipes.

SSD provided information in the checklist they originally filled out that did not agree with what was in the paper copies of spill lists and an Excel file that they provided for 2004 and 2005. This may have been due to their lack of time to pull all the information together from the time that they received this inspection checklist. SAIC has substituted our count of the number of overflows in the paper copies for the number originally provided in this form by SSD. The numbers of spills originally given were 36 for 2005 and 43 for 2004. The data in the table "Spill Cause" add up correctly for all years except 2004, where three spills are missing. SAIC also calculated the percentages in the "Spill Cause" table.

SSD staff stated that the five capacity-related spills that occurred on 1/4/08 were during a period of locally heavy rainfall, even though the rainfall across the region was not exceptional. The design storm is the 5-year, 7-hour storm, and it was exceeded on 1/4/08. However, they believe that some of these spills were due to flow restrictions (a maintenance issue). SSD staff stated that they have corrected some sites where capacity spills occurred in 2004 and 2005.

The 2008 capacity spills occurred at the following locations:

DATE	ADDRESS	OVERFLOW LOCATION	FLOW TO	TOTAL GALS	GALS REMOVED	NET GALS	LAST MAINT
1/4	5705 MacDonald	MH	Storm drain	1000	None	1000	??[1]
1/4	5355 Poinsett	MH	Storm drain	500	None	500	9/10/2007
1/4	8250 Terrace	MH	Storm drain	2600	None	2600	8/30/2007
1/4	4 Pomona	MH	Storm drain	850	None	850	4/5/2007
1/4	190 Sanford	MH	Storm drain	10000	None	10000	4/4/2007

The inspection team visited the "4 Pomona" spill site (see Photo 10). This site also overflowed in 2004 and 2005. The manhole here is only two feet deep. SSD believes the spills occur because of an obstruction, but they have televised the pipes and not found an obstruction. SSD is continuing to investigate.

The inspection team also visited capacity spill sites at Stanford & Wellesley (Photos 7 and 8) and Ocean View & Coventry (Photo 9) where spills occurred in 2005. SSD performed work at these locations to prevent further spills. This may not have completely resolved the situation, however. SSD continues to look for ways to address these situations. They smoke tested the Stanford & Wellesley area last fall and found that laterals contribute heavily to I/I in this area. SSD tells the homeowner about the problem but can't make them replace the laterals (outside of a change of ownership). They haven't found many connected roof leaders or sump pumps. They believe that the problem is made worse by holes in the corrugated metal storm drain pipes, which allows storm water to seep into the sanitary sewer.

STAFFING

Indicate Number of Staff

Management and Administrative: 2

Maintenance: 5
Electricians and Mechanical Technicians: 0
Operators: 0

Engineering: 3

Number of Sewer Cleaning Crews: 2

Sewer Cleaning Crew Size: 2

[1] Data provided by the District contains a typo: 6/5/5006.

Contractor Services	Y/N	Cost ($/year)
Sewer Cleaning	N	
Chemical Root Control	Y	$60,000
Spot Repairs	Y	$50,000
CCTV	N	
Spill Response	N	

EQUIPMENT

List Major Equipment Owned by the Utility:

Equipment	Number	Number in Service
Combination Trucks (hydroflush and vactor)	0	
Hydroflusher	1	1
Mechanical Rodder	2	2
CCTV Truck	1	1
Utility Truck	4	4
Portable Pumps	2	2
Portable Generator	2	2

Comments

Electrical work on the pump stations is contracted out. They estimate $10,000 to 15,000 annually for this.

SSD considers the chemical root control program to be a success. The chemical is reapplied every three years. They report fewer spills due to roots since they began the program. They identified 180,000 feet of pipe with root problems. In addition to chemicals, some pipe is cleaned with a mechanical rodder. SSD plans to transition to using CCTV to assess the maintenance needs of the pipe prior to using a rodder to clean it.

FINANCIAL

REVENUES	
Revenue Source	**Annual Revenue ($/year)**
User Fees	$2,380,000
Connection Fees	$10,000
Grants	$0
Bonds	$0
SRF Loans	$0
Property Tax	$300,000
Permits, Inspections, Fees, Misc. Interest	$210,000
TOTAL	$2,900,000

EXPENSES		
Expense	**Annual Cost ($/year)**	**Cost / Mile of Pipe** (Total Pipe Mileage: 147)
Maintenance & Operations	$542,400	$3,680
~~Operations (electric, fuel, etc.)~~		
Salaries and Benefits	$1,249,000	$8,497
Capital Improvements	$1,000,000	$6,802
Debt payments	$308,600	$2,099
TOTAL	$3,100,000	$21,088

Average Monthly Household User Fee: $10.25

Sewer Fee Rate Basis (i.e. water consumption, flat rate, etc.): Flat Rate

Last Fee Increase (Date): June 1, 2008

Planned Fee Increases: None – waiting for new permit, anticipate need to increase rates by 40-50% after permit renewal.

Capital Improvement Fund: ~ $2,000,000 annually for 5 years (estimate)

Comments:

The $1 million indicated in the “Expenses” table for capital improvements is for a pipebursting contract and interceptor cleaning. SSD is building a new administration building at an estimated cost of $2.1 million. This is not included in the “Expenses” table. The $1 million for capital doesn't include the new HQ building, but is in the future CIP.

The current cost of pipebursting is about $85 to $90 per foot (including the manhole connections). They estimate it would probably cost about 50% more to include the lower laterals.

The sewer use fee does not include the cost of wastewater treatment, which would bring the annual cost to around $300. Homeowners are billed for the sewer use fee annually through the county property tax. SSD receives the entire amount from the county regardless of whether some accounts are delinquent.

SSD also has a reserve fund.

SPILL RESPONSE, NOTIFICATION AND REPORTING

Does the Utility Have a Written Spill Response Plan? Yes
Is the Plan Carried by Maintenance/Spill Response Crews? Yes

Indicate Elements Included In the Spill Response Plan		
Element	Y/N	Comment
Identification of Responsible Staff	Y	
DISPATCH		
System for Becoming Aware of Spills	N	
System for Receiving Public Calls	N	
Dispatch Procedures – Normal Hours	N	
Dispatch Procedures – After Hours	N	
Coordination with First Responders (police, fire department)	N	
Response Time Goal	Y	
SPILL CONTROL/MTIGATION		
Spill Response Activity Sequence	Y	
Spill Site Security	Y	
Procedures for Stopping Spills	Y	
Spill Containment	Y	
Protection of Storm Drains	Y	
Cleanup/Mitigation	Y	
DOCUMENTATION		
Spill Volume Estimation	N	
Determination of Spill Start Time	N	
Spill Sampling	Y	
Receiving Water Sampling	Y	
Photographing Spill Site	Y	
Field Notes Form	Y	
Spill Report Form	Y	
NOTIFICATION		
Notification of Affected Public (schools, recreational users, etc.)	Y	
Posting Warning Signs	Y	
Sanitation Information re: building backups	Y	
REPORTING		
Reporting Procedures	Y	

Indicate Elements Included In the Spill Response Plan		
Spill Report Forms	Y	
Persons Responsible of Filing Reports	Y	

Are all spills reported regardless of volume? Yes
Are Contractors Required to Follow Spill Response Procedures? No
Average Spill Response Time (normal work hours): 0.33 hours
Average Spill Response Time (after hours/holidays): 0.48 hours
Does the Utility CCTV Pipes Following Spill? Yes
Are Cleaning Schedules Adjusted in Response to Spills? Yes

Comments:

SSD has a dispatch system, but it is not described in the SSO response plan (Maintenance Procedure No. M103-0995). They estimate they receive about 25 to 30 calls per month, most of which are not SSOs. Most SSOs are found through complaints from residents, but some also come from police, fire, and public works. Newsletters mailed to property owners twice per year contain information about who to call in the event of a sewer problem or water in the street. This information is also publicized during an annual Board fair. The phone is answered by a live person during business hours, and by a dispatch service after hours. The dispatch service calls Mr. Lunn, who responds personally or calls out a crew. SSD prefers that residents call them first, so that they can rule out whether the problem is an SSO. Two employees are on stand-by service at all times outside normal business hours. SSD crews responding to a call may be assisted by City public works crews, who are paid by SSD if their response is needed for non-business hours. Crews have copies of the sanitary sewer GIS maps at home so that if they are called out, they can look up the location.

SSD crews use the San Diego method and photographs to determine spill volumes. Crews are trained in volume estimation onsite and also in CWEA training. Historically, they have calculated volume based on the time that the call came in. The District is now considering other factors in this calculation. They plan to modify the response plan to include volume estimation procedures.

Dechlorinated water is used for cleanup. All recovered water is pumped back into the sanitary sewer.

SEWER CLEANING AND MAINTENANCE

Does the Utility Have Detailed Sewer System Maps? Yes
Are Maps on GIS Database? Yes
Are Maps Available to Maintenance Crews? Yes

Does the Utility Have a Written Maintenance Management System? No
Does the Utility Have a Computerized Maintenance Management System? Yes (GIS System)

ANNUAL SEWER CLEANING – Include hydroflushing, mechanical and hand rodding		
Pipe Cleaning excluding repeats		Pipe Cleaning Including Repeats
(miles/year)	% of system/year	(miles/year)
111.81	76.1	198

System Cleaning Frequency (years to clean entire system): less than two

Hot Spots subject to more frequent cleaning: 75 locations; 3.14 miles of pipe
Types of problems subject to hot spot cleaning? Roots, grease and sags

HOT SPOT CLEANING SCHEDULE			
Cleaning Frequency	Number of Locations	Pipe length excluding repeats (miles)	Pipe length including repeats (miles)
1/month	24	0.88	10.56
6/year	0	0	0
4/year	51	2.26	9.04

Chemical Root Treatments
Length of pipe subject to chemical root treatments (miles/year): 12
Chemical treatment frequency: 3 years
Root treatment chemicals used: Duke's (Metamsodium phosphate)

Spot Repairs
Spot repairs completed annually: 37 (#/year); NA (miles/year)
Spot repair budget ($/year): $50,000
Spot repair expenditures last year: $111,368; year: 2008

Odors
Annual number of complaints: 0-1 (due to Stege lines)
Odor hot spot locations: Rifle Range Road
Odor treatment facilities: City of Richmond responsible for pump stations

Easement Pipe Cleaning
Total length of easement pipes (miles): 39
Annual easement pipe cleaning (miles/year): 85.72
Do maintenance workers have access to all easements? Yes

Comments

SSD uses CCTV to check whether chemical root control is working, and after all contract work.

Crews have maps showing locations of El Cerrito storm drains, but not those in Kensington or Richmond.

SSD can borrow equipment from Albany, Richmond, or Veolia Water if it is needed for scheduled maintenance. Cleaning schedules are adjusted in response to spills. Some locations are

cleaned as frequently as every two weeks. SSD cleans 10 grease interceptors monthly in a large restaurant/shopping area. This area is immediately upstream from a siphon that has experienced SSOs. There have been no SSOs in this area since 1999.

Crews average about 7,000 feet/day of cleaning and 3,000 feet per day of CCTV. Each crew does about 100 miles per year of cleaning. All manholes are inspected at least once per year. GIS maps of pipes scheduled for inspections and maintenance are printed out for the crews, showing the type of maintenance or inspection that is needed. Crews record their work on portable computers then dock these to the main computer to update the CMMS.

The indicated easement cleaning includes repeat miles. Many are cleaned more frequently than twice per year. Mr. Humphrey provided additional information on repeat cleaning in an email dated 8/5/09:

- About 18 miles are cleaned 2 times per month
- About 11 miles are cleaned 2 times per year
- About 10 miles are cleaned before foaming is applied
- About 20 miles are identified in the "Hotspot" cleaning table above (1/month and 4/year)
- About 30 miles consists of repeat cleaning of 1 time per year lines. These are cleaned again or are "repeats" when, based upon results of first cleaning, they run the line again with a rodder instead of a hydro, or run it again based upon video inspection after first cleaning.

FATS, OILS AND GREASE (FOG) CONTROL - Filled in by EBMUD FOG Program for all agencies.

Does the Utility have a FOG source control ordinance? Yes

- Ordinance Citation: East Bay Municipal Utility District Wastewater Control Ordinance, Ordinance 311A-03; Stege Sanitary District Ordinance Code Section 3

Agency responsible for implementing the FOG control program:

- Collection System Agencies and EBMUD for respective program components

Number of Food Service Establishments (FSEs) in service area:

- Approximately 3,000 in the entire area

Number of FSEs subject to FOG ordinance:

- Same as number of FSEs

Indicate Elements Included In the Food Service Establishment FOG Source Control Program		
Element	**Y/N**	**Comment**
FSE Permits	Y	
FSE inspections	Y	
FSE enforcement	Y	
Oil & grease discharge concentration limit		EBMUD's Ordinance has an O&G limit; however, the FOG program focuses on GRD installation and appropriate maintenance
Grease removal device (GRD) requirements:		
traps		

Indicate Elements Included In the Food Service Establishment FOG Source Control Program		
interceptors	Y	
Automatic cleaning traps		
FSEs subject to GRD installation:		
all FSEs (new and existing)		
new FSEs	Y	
remodeled FSEs	Y	Remodels > $75,000
for cause at existing FSEs	Y	
GRD maintenance requirements:		
Cleaning frequency	Y	Every 3 months or more as needed
25% rule (grease and solids accumulation)	Y	EBMUD requires increased pumping frequency if >25% grease/solids
Kitchen BMP Requirements (list required BMPs below)		
		BMPs are recommended, not required (BMP information attached)
Allowance for chemical additives?		See BMPs ("Do not use emulsifiers or solvents…")
Allowance for biological additives?		Not recommended
FOG Disposal Requirements		See permit for maintenance and disposal requirements
FOG Disposal Manifest System		See permit for documentation/manifest requirements

Number of FOG Program staff:
Inspectors 10
Permit writers 1
Other 4

FSE Inspection frequency: Every 5 years for routine inspections, as needed for Hotspot Response
Annual number of FSE inspections: _____
Does Utility use CCTV to identify FOG sources? Yes

Does sewer maintenance staff coordinate with FOG source control program staff? Yes
Collection system agencies report hotspots to EBMUD staff
Cleaning targeted to FOG hot spots? _____
Maintenance crew referrals to FOG program? _____
Pipe repairs at FOG hot spots? _____

Describe program for public outreach and education related to residential FOG sources:

- EBMUD conducts outreach to businesses (FSEs), universities and residents, both throughout the year and during the holidays. EBMUD has expanded its multi-lingual targeted outreach in residential areas that have SSOs and blockages.
  - EBMUD includes outreach with permit issuances and inspections via BMPs, posters, and brochures, most in multiple languages (English, Chinese, Spanish, Korean, and Vietnamese).

- EBMUD has coordinated with UC Berkeley for targeted outreach to the university's residential areas
- EBMUD has general residential outreach including *Customer Pipeline* articles, articles in other newsletters, and information on the EBMUD website. EBMUD also targets residential outreach to hotspot areas in coordination with the collection system communities, via distribution of doorhangers with information in English, Chinese, and Spanish.
- EBMUD has a container at the entrance to its wastewater treatment plant for residents to bring used grease. This bin collected approximately 2,400 gallons in 2008.
- EBMUD has a hotline phone number and email address for customers to contact us for additional information regarding FOG.

- EBMUD also partners with the nongovernmental organization Baykeeper to expand its FOG control message to residential customers. Information on FOG control is on Baykeeper's website. EBMUD and Baykeeper collaborate to expand the FOG-control message by working with "big box" retailers that sell turkey fryers and with grocers during the holiday season. We provide information to go on the turkey fryers and pull-off tags for use at grocery stores to communicate not to put FOG down the drain and with contact information for EBMUD for additional information.

Comments:

SSD identified that there are 120 FSEs in their service area.

The 10 inspectors identified as FOG program staff are also responsible for pollution prevention and industrial user inspections in addition to FOG. One of these staff is a senior inspector whose primary job responsibility is FOG.

It does not appear that there is a consistent feedback mechanism between the satellite and EBMUD on such issues as enforcement actions against non-complying FSEs and feedback on follow-up to FSEs referred to EBMUD.

PIPE INSPECTION AND CONDITION ASSESSMENT

Gravity Main Inspection

Describe Pipe Inspection Methods: CCTV

Miles of Pipe Inspected in the Last 10 Years and Planned Inspection Next 10 Years				
Date Range	Inspection Method	Miles of Pipe without repeats	Useable Condition Assessment	
			Miles of Pipe (without repeats)	% of System (System miles:147)
1999 to present	CCTV	128	128	87
19__ to present	Other	NA		
Present to 2019	CCTV	147	147	100
Present to 20__	Other	NA		

Describe Planned Pipe Inspection:

- Video about 20% of system each year
- Video lines treated by foaming for root control
- Video all lines after SSOs/blockages found

Summary of Condition Assessment Findings: Stege did not have this available.

Force Mains

Describe Force Main Inspection Methods: None

Describe Program for Inspecting Air Relief Valves: NA

Private Laterals

Does the Utility Inspect Private Laterals? Mandatory upon property sale or installation or repair of laterals.

Number of Private Laterals Inspected 1999 to Present: 1,102 have been videoed since the program began in July 2005

Summary of Inspection Findings: 90% fail

Number of Private Laterals Planned for Inspection Present to 2019: 300/year, 3000 total

Comments:

In-house CCTV costs about $1.60 per foot, not including the data analysis. SSD believes their in-house capability is better than if they were to contract it out because they achieve better consistency in the analysis. The crews receive training; operators identify the defects and forward the still photos of these to Mr. Delizo, who will evaluate and design an appropriate fix.

This number of private laterals inspected 1999 to Present is the number that has been tested prior to sale of the house. SSD did not do this videoing; it is all done by private contractors hired by the homeowner. The number of tested laterals only includes videos that were submitted to SSD. The 'planned' 300 per year consists of an estimate of house sales, minus an estimate of houses that are turning over more than once.

CAPACITY ASSURANCE

List Locations and Dates of Repeats Capacity Spills:

- 12/31/2005 & 01/04/2008 648 Wellesley Avenue; 190 Stanford Avenue (Oberlin)
- 12/22/2005 & 01/04/2008 4 Pomona Avenue

List Locations of Known Capacity Bottlenecks:

Dry Weather: None

Wet Weather: See Above:

- Wellesley & Stanford Avenues – believe to be corrected in 2008, increased downstream capacity and added manholes
- 4 Pomona Avenue – replaced downstream line, SSO in 2008 caused by combination of flow and blockage – not really capacity problem

Describe I/I Assessments Completed by the Utility (dates, area covered, findings, etc.):
Smoke testing – September/October 2008. Prior to the 2008 smoke testing, SSD did an earlier round of smoke testing a few years before. Some flow metering was done in the 1990s, and in the winter of 05-06 they metered every subbasin. EBMUD has done all the flow metering in the last two winters.

Flow Meters (number, locations):
Two (2) flow meters – temporarily at Subbasin N and C. Will move to A and G after EBMUD completes study. Purchasing additional meters next 5 years for other subbasins

Describe Flow Model Used by the Utility:
Hydra Hydraulic Model. Calibrated with actual flow measurements

Inflow
Does the Utility Prohibit Storm Water Connections to the Sanitary Sewer (roof drains, sump pumps, etc.)? Yes, Ordinance Code, Section 3

Describe Program for Enforcing Ban on Illicit Connections: SSD wrote letters to homeowners; gave them a flyer; gave them a printout with a picture that shows smoke coming out of their house or their lateral. The homeowner has to come to them for a permit to disconnect the illicit connection. This is so that SSD will know who has responded and who hasn't. SSD then inspects the work. Some people just ignore it. Only about 10% have responded. Some are just cleanout caps need to be restored. A lot are failed laterals, but since the house is not changing ownership, the owner doesn't want to spend $4000 to replace it.

Describe Program for Locating Illicit Connections (smoke testing, etc.):
One of the "Planned Projects" in the section below is to begin smoke testing in the fall of this year. It appears that this project will be an ongoing program for locating illicit connections.

Locations Subject to Street Flooding:
San Pablo Avenue, Schmidt Lane southward a few blocks

Has the Utility Sealed Manholes in Locations Subject to Street Flooding:
Yes – Tehama and San Pablo Avenues

I/I Control
Describe I/I Control Projects (miles of pipe rehabilitated or replaced for I/I Control)
Recently Completed Projects:
Standard Pipebursting Project (annual replacement project) - $900,000 to $1 million - this will result in about 11,000 feet of work. Bid is based on a 'standard' pipe segment (length, depth, no. of lateral connections, etc). They can also get the contractor on an emergency basis for no extra premium. SSD can re-prioritize pipes without having a new contract.

Planned Projects:

- CIP Program
- Lateral Testing/Replacement programs
- Also plan to do smoke testing in the fall of 2009. 70,000 to 80,000 feet per year is planned. They will prioritize based on flow data, and start with the areas with the worst I/I.

Describe Capacity Control Measures (relief sewers, storage, WWTP expansion, etc.)

Recently Completed Projects:

None

Planned Projects:

None

Comments:

SSD did not provide information on the amount of area covered by the smoke testing, or the results.

SSD staff stated that the hydraulic model indicates that all pipes currently meet the design capacity. Any locations that did not were identified and fixed by 2001. They believe that lack of capacity is generally not a problem, and that the relief pipes installed have dealt with capacity issues. Crews check known problem areas during storms.

They have done three projects at the Stanford & Wellesley problem area. At the "4 Pomona" SSO location, the model indicates that the site can handle the flow, but it probably doesn't account for the energy dissipation problem caused by its location at the end of a steep hill.

INFRASTRUCTURE RENEWAL AND CAPITAL IMPROVEMENTS

Pipe Rehabilitation and Replacement Methods Used: Pipebursting; sometimes relining if it is appropriate for the project.

Miles of Pipe Rehabilitated or Replaced: Last 20 Years and Planned Next 20 Years		
Date Range	Miles of Pipe	% of System (System miles:)
1989 to present	22.3	15.2
Present to 2029	30 – 60	20 – 40

Describe Capacity Improvement Program:

N/A, flow reduction is the focus for foreseeable future

List Major Planned Improvements:

- Pump Stations
- Master Plan (currently in progress)

Describe Master Plan:

- Sewer System Management Plan
- Stege Sanitary District Rehabilitation Plan

Comments

The Master Plan that is currently in progress is for the pump stations only. They use the SSMP (dated August 2008) and the rehabilitation plan (2005 update) for the collection system pipes. SSD may upgrade its pump stations based on recommendations from a contractor that is currently reviewing them.

SSD staff stated that they are not sure what date they completed the 1993 AO requirements, but it was at some point after the June 30, 2000 due date, probably around 2002. It is notable that several locations at which capacity-related SSOs occurred in 2004, 2005, and/or 2008 are listed in Table 6 of the October 1993 Compliance Plan. These locations were to be corrected by relief projects. They include:

- Coventry & Ocean View – Overflow occurred at 398 Ocean View in 2005
- 4 Pomona – Overflows occurred in 2004, 2005, and 2008
- #203 Behrens – Overflow occurred at 223 Behrens in 2004
- End of A Street – Overflow occurred at 7209 A Street in 2004

PUMP STATIONS

Name and Location of Pump Station: Burlingame PS

Pump Information

Pump #/Name	Dry or Submersible	Capacity	Constant or Variable	In Service?
Flygt #1	Submersible	380 gpm	Constant	Yes
Flygt #2	Submersible	380 gpm	Constant	Yes

Pump Station Information:

A. Average flow: 30-40,000 gallons per day (132 homes plus a bottling plant)
B. Holding Time: _4-6 hours (1 hour between pump cycles, 10,000 gal wet well)
C. Does station have sufficient pumping capacity with the largest pump out of service during:
Peak Dry Weather Flow: Yes__X____No_____
Peak Wet Weather Flow: Yes__X_____No_____
D. Dry weather capacity limitations? Y/N (if yes, describe) __N_____
E. Wet weather capacity limitations? Y/N (if yes, describe) ___N_____
F. Number of failures resulting in overflows/bypass or backup, in the last five years __0
G. Total quantity of overflow/bypass: Gallons or MG _0
H. Is dry well protected from wet well overflow? Yes – controls mounted above surface
I. How often is pump station inspected? __Weekly_____
J. **Back up power sources and type**:

On-site generators	Portable Generators	Back-Up Line from same grid?	Back-up Line from different grid?	Other (describe)
Yes_X _No____	Yes_X__No____	Yes____No_X__	Yes____No_X__	

If generators on-site, describe testing and maintenance procedures: 150 KW Generator is shared with the storm water pump station next to this wastewater pump station. City of Richmond maintains the generator. Generator is tested weekly.

K**. Station Alarms**:

Low Wet Well	High Wet Well	Power Loss	Unauthorized Entry	Other (Describe)
Yes_X__No___	Yes_X__No____	Yes_X___No____	Yes___No_X___	

a) Is there 24 hour coverage for alarms? Yes
b) Alarm signal sent to: _SSD Main Office phone number; Dispatch Service after hours._

L. What equipment is available for emergency response? Portable submersible pumps, hoses, portable generator
M. Are there SCADA controls? Yes _____ No ____X_____
If yes, ability to operate station remotely? Yes _____ No___X_____

Name and Location of Pump Station: Cannon PS

Pump Information

Pump #/Name	Dry or Submersible	Capacity	Constant or Variable	In Service?
Cornell	Dry	Unknown	Constant	Yes

Pump Station Information:

A. Average flow: 40,000 gpd (26 homes)
B. Holding Time: 6 hours (1,000 gallon wet well)
C. Does station have sufficient pumping capacity with the largest pump out of service during:
Peak Dry Weather Flow: Yes___X____No_____
Peak Wet Weather Flow: Yes___X_____No_____
D. Dry weather capacity limitations? Y/N (if yes, describe) __N_____
E. Wet weather capacity limitations? Y/N (if yes, describe) ___N_____
F. Number of failures resulting in overflows/bypass or backup, in the last five years __0
G. Total quantity of overflow/bypass: Gallons or MG __0
H. Is dry well protected from wet well overflow? Yes_X___ No_____
I. How often is pump station inspected? ___Weekly_____
J. **Back up power sources and type**:

On-site generators	Portable Generators	Back-Up Line from same grid?	Back-up Line from different grid?	Other (describe)
Yes____No_X___	Yes__X_No____	Yes____No_X___	Yes____No_X___	

If generators on-site, describe testing and maintenance procedures: NA

K**. Station Alarms**:

Low Wet Well	High Wet Well	Power Loss	Unauthorized Entry	Other (Describe)
Yes_X__No___	Yes_X__No____	Yes_X___No____	Yes___No_X___	

a) Is there 24 hour coverage for alarms? Yes
b) Alarm signal sent to: SSD Main Office phone number; Dispatch Service after hours.

L. What equipment is available for emergency response? Portable submersible pumps, hoses

M. Are there SCADA controls? Yes _____ No _____X_____
If yes, ability to operate station remotely? Yes _____ No___X_____

Photo 1 Burlingame pump station wet well

Photo 2 Generator for Burlingame pump station

Photo 3 Controller and emergency switch at Burlingame pump station

Photo 4 Outside view of Burlingame pump station

Photo 5 Cannon pump station

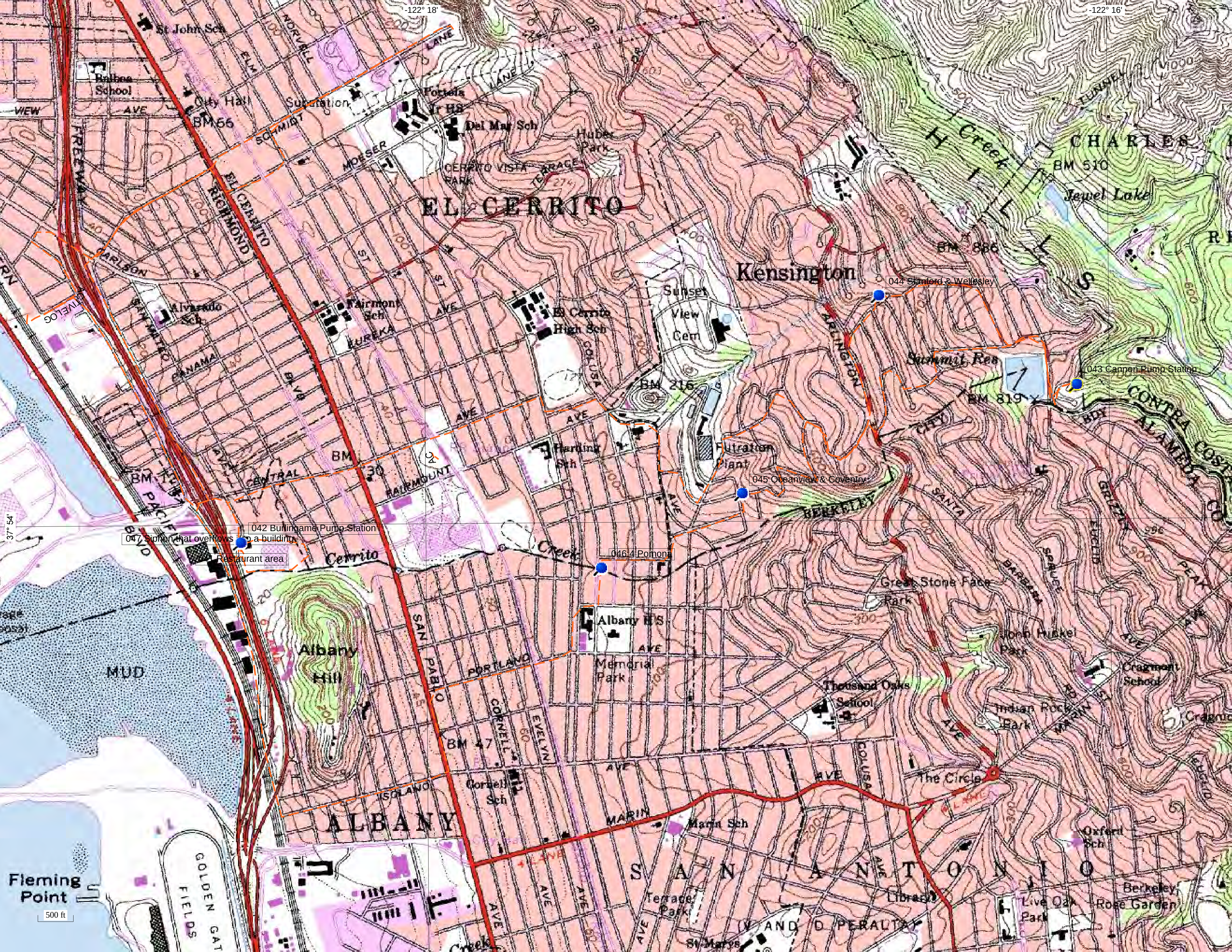
Photo 6 Cannon pump station wet well

Photo 7 "Stanford & Wellesley" - Addition of underflow pipe to prevent overflows from this manhole

Photo 8 "Stanford & Wellesley" - this is the manhole that now overflows

Photo 9 "Ocean View & Coventry" - reduced 90 degree bend in pipe to prevent overflows

Photo 10 "4 Pomona" - capacity spill site



-122° 18'
-122° 16'
37° 54'
042 Burlingame Pump Station
047 Siphon that overflows
to a building.
Restaurant area
046.4 Pomona
045 Oceanview & Coventry
044 Stanford & Wellesley
043 Cannon Pump Station
500 ft
EL CERRITO
Kensington
ALBANY
Albany Hill
MUD
Fleming Point
Cerrito Creek
Summit Res
Jewel Lake
St John Sch
Balboa School
City Hall
Substation
Portola Jr HS
Del Mar Sch
Huber Park
Cerrito Vista Park
Fairmont Sch
Alvarado Sch
El Cerrito High Sch
Sunset View Cem
Harding Sch
Filtration Plant
Albany H S
Memorial Park
Great Stone Face Park
John Hinkel Park
Thousand Oaks School
Cragmont School
Indian Rock Park
The Circle
Cornell Sch
Marin Sch
Oxford Sch
Library
Live Oak Park
Berkeley Rose Garden
Terrace Park
St Marys
BM 216
BM 819
BM 866
BM 510
BM 47
BM 56