SEWAGE COLLECTION SYSTEM INSPECTION FORM
City of Albany, CA

GENERAL INFORMATION

Inspection Date: April 9, 2009

Utility Name: City of Albany
Address: 1000 San Pablo Ave., Albany, CA 94706
Contact Person: Rich Cunningham, Public Works Manager
Phone: 510-524-9543 Cell: Fax: 510-455-1509
Email: rcunningham@albanyca.org

Inspectors Names	Agency/Contractor
Michelle Moustakas	EPA Region 9
Bill Hahn	SAIC
Dianne Stewart	SAIC

Utility personnel who accompanied inspectors

Name	Title
Rich Cunningham	Public Works Manager
Dan Stevenson	Maintenance Supervisor
Randy Leptien	City Engineer (contract)
Ana Bernardes	Civil Engineer/ Project Manager

SYSTEM OVERVIEW

Population: 17,000 Service Area (Sq. Miles): 1.5
Service Area Description: urban, SF Bay up into Oakland-Berkeley hills

	Residential	Commercial	Industrial	Total
Number of service connections	5,096	260	10	5,366

Combined Sewers (% of system): 0

Name and NPDES permit number for WWTP(s) owned or operated by the collection system utility: NA

Name and NPDES permit number for WWTP(s) that receive flow from the collection system utility: East Bay Municipal Utility District (EBMUD). Order No. 01-072, NPDES Permit No. CA0037702

Names of upstream collection systems sending flow to the collection system utility:
University of Californa, University Village student housing in Albany

Names of downstream collection systems receiving flow from the collection system utility:
EBMUD
A few blocks of Albany discharge to Berkeley

Do any interagency agreements exit with upstream collection systems? Yes
Joint use agreement with Berkeley for 42-inch trunk sewer
U.C. Village

Does the utility maintain the legal authority to limit flow from upstream satellite collection systems? No

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
35	0	17	755	0	1

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

Size Distribution of Collection System: (Information from GIS that still needs confirmation)

Diameter in inches	Gravity Sewer (miles)	Force Mains (miles)
6 inches or less	20.7	0
8 inches	7.7	0
9 - 18 inches	5.6	0
19 - 36 inches	0.6	0
> 36 inches	0.4	0

Age Distribution of Collection System

Age	Sewer Mains, miles	# of Pump Stations
0 - 25 years	12	0
26 - 50 years	1	0
51 - 75 years	11	0
> 76 years	11	0

SYSTEM FLOW CHARACTERISTICS

Collection System (flow measurement locations: Pierce at Cerrito Creek, Buchanan at Eastshore, Eastshore (Target), and Castro & Adams (Berkeley sewers))		
Average Daily Dry Weather Flow (MGD)	Peak Daily Wet Weather Flow (MGD)	Peak Instantaneous Wet Weather Flow (MGD)
1.18	6.5	17.3

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

Upstream Satellite Name	Avg. Dry Weather Flow		Peak Flow (MGD)	Flow based on meter or estimate?
	(MGD)	% of total flow		
U.C. Village	0.13	11%	0.68	Both

Constructed Relief Points		
Relief Point	Location	Number of Discharges/Year
	None known	

Comment

The peak instantaneous flow given in the table is an average from 1999 to 2003. No newer measurements exist. City staff stated that this figure was previously 29 MGD prior to their rehabilitation projects. They say they have achieved the goal of 7 MGD reduction that was stated in the October 1993 Compliance Plan.

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 City of Albany, NPDES Permit No. CA0038471

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 (or agencies) promulgates the spill reporting requirements? RWQCB and SWRCB

Outline the spill reporting requirements (summarize spill reporting requirement for each applicable statute, regulation and permit): See copy of NPDES Permit

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 becoming aware of the SSO.	Electronic www.r2esmr.net/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

Sanitary Sewer Overflows From and Caused by Utility									
Note: Spill Rate = number of SSOs/100 miles of sewer pipe/year									
Year	Mains (Miles of Mains 35)			Laterals (Miles of Laterals 17)			Totals (Total Miles 52)		
	#SSO's	Spill Rate	Gross Spill Volume	#SSO's	Spill Rate	Gross Spill Volume	Total SSO's	Total Spill Rate	Total Gross Spill Volume
2009	5	57	1,300	5	118	1,321	10	77	2,621
2008	11	31	525	31	182	422	42	81	947
2007	17	48	415	82	482	1,235	99	190	1,650
2006	29	83	15,490	61	359	899	90	173	16,389
Total	62		17,730	179		3,877	241		21,607

Spill Cause - Mains

Time Period	Blockage								Gravity Pipe Break		Force Main Break		Pump Station		Capacity	
	Grease		Roots		Debris		Multiple /Other									
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2009			3	60	2	40										
2008			3	27	8	73										
2007	3	18	2	12	12	70										
2006	2	7	2	7	23	79	1	3.5							1	3.5
Total	5		10		45		1								1	

Spill Cause – Service Laterals

Time Period	Blockage							
	Grease		Roots		Debris		Multiple/Other	
	#	%	#	%	#	%	#	%
2009			1	20	4	80		
2008			6	19	23	74	2	6
2007	2	2	10	12	65	79	5	7
2006	1	2	16	26	42	69	2	3
Total	3		33		134		9	

BUILDING BACKUPS (list only backups caused by problems in sewer mains)		
Year	Number of backups	Cost of Settled Claims
None	0	0
TOTAL	0	0

Comments

City staff defined the "multiple" spill cause as causes other than grease, roots, or debris, including structural. "Debris" includes materials such as cloth, rags, sticks, unknown, clay pieces, baby wipes, diapers, and kitty litter.

The City provided hard copy printouts of its spills for the years 2006 through 2009. Where the numbers in the tables above did not agree with the printouts, SAIC revised the numbers in the above table to agree with the printouts. SAIC also recalculated percentages and volumes as necessary. The data available from the CIWQS website[1] was incomplete for 2007 and 2008, so SAIC did not review that information except to note that as of September 1, the City has reported 14 spills in 2009.

The City encourages residents to call the City first if there is a problem with sewage in their homes or at their cleanouts. Field crews from the Public Works Department respond to the calls. These staff could include parks and building maintenance as well as sanitary sewer staff. If needed, the responding crew would call in the vactor.

The City has found that most spills from cleanouts are due to problems in City-owned structures. Because the City requires backflow prevention for below grade residences, the City recognizes no responsibility for building backups.

City staff evaluate SSOs to determine if a permanent fix is needed to eliminate the problem. This is of particular concern where repeat SSOs have occurred.

STAFFING

Indicate Number of Staff
Management and Administrative: 1
Maintenance: 2
Electricians and Mechanical Technicians: 0
Operators: 0
Engineering: 1.5
Number of Certified Collection System Operators/Certification Program: 2
Number of Sewer Cleaning Crews: 1
Sewer Cleaning Crew Size: 2

[1] http://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.shtml#sso

Contractor Services	Contractor Name(s) (NA if contractors not used)	Cost ($/year)
Sewer Cleaning	NA	
Chemical Root Control	Yes	$13,500
Spot Repairs	Yes	$100,000
CCTV	NA	
Spill Response	NA	
Other:	NA	

Comments

The staff numbers indicated above include only staff actually responsible for the collection system, and all positions are filled. The engineering staff includes a CCTV operator.

The City did not provide the names of its contractors for root control and spot repairs.

EQUIPMENT

List Major Equipment Owned by the Utility:

Equipment	Number	Number in Service
Combination Trucks (hydroflush and vactor)	1	1
Hydroflusher	0	0
Mechanical Rodder	1	1
CCTV Truck	1	1
Utility Truck	0	0
Portable Pumps	5	4
Portable Generator	0	0

FINANCIAL

REVENUES	
Revenue Source	Annual Revenue ($/year)
User Fees	$1,948,519
Connection Fees	$38,415
Grants	
Bonds	
SRF Loans	
Interest Earnings	$262,460
TOTAL	$2,249,394

EXPENSES		
Expense	Annual Cost ($/year)	Cost / Mile of Pipe (Total Pipe Mileage: 52)[2]
Maintenance	$675,735	$12,994.90
Operations (electric, fuel, etc.)		
Salaries and Benefits	$447,960	$8,614.62
Capital Improvements	$364,939	$7,018.06
Debt payments	$623,403	$11,988.52
TOTAL	$2,112,037	$40,616.10

Average Monthly Household User Fee for Sewage Collection: $23.88
Wastewater Treatment: EBMUD Fees
Total Wastewater Fees: $23.88 + EBMUD Fees

Sewer Fee Rate Basis (i.e. water consumption, flat rate, etc.): No answer provided

Last Fee Increase (Date): July 1, 2008

Planned Fee Increases: Depends on the consumer price index

Capital Improvement Fund: $6 million for 5 years (2004 – 2009)

Comment

The expense figures are for the fiscal year that ended 6/30/08. Sewer charges are collected annually on the tax bill. The City stated that their Enterprise Fund is reaching its maximum allowable debt.

[2] Includes mains and lower laterals.

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	Y	
System for Receiving Public Calls	Y	
Dispatch Procedures – Normal Hours	Y	
Dispatch Procedures – After Hours	Y	
Coordination with First Responders (police, fire department)	Y	
Response Time Goal	Y	
SPILL CONTROL/MITIGATION		
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 (list methods in comment field)	Y	
Determination of Spill Start Time	Y	
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	
Spill Report Forms	Y	
Persons Responsible for Filing Reports	Y	

Are all spills reported regardless of volume? Yes
Are Contractors Required to Follow Spill Response Procedures? Yes
Average Spill Response Time (normal work hours): 0.5 hours
Average Spill Response Time (after hours/holidays): 1 hour
Does the Utility CCTV Pipes Following Spill? Yes
Are Cleaning Schedules Adjusted in Response to Spills? Yes

Comments

Spills are usually identified by calls from residents. Calls go to the Police Department after business hours. The City website includes the telephone numbers to call about sewer problems. The Maintenance Supervisor usually does the volume estimation if the spill occurs during regular business hours. The City uses the San Diego photographs and methods to calculate volume. The spill start time is usually assumed to be 15 to 30 minutes before the call comes in; staff also talk to the person who called in the spill to get a better idea of when it started. The City televises the pipes after every spill and can also call in a contractor if additional CCTV work is needed.

SEWER CLEANING AND MAINTENANCE

Does the Utility Have Detailed Sewer System Maps? Yes
Are Maps on GIS Database? In progress
Are Maps Available to Maintenance Crews? Yes
Does the Utility Have a Written Maintenance Management System? Yes
Does the Utility Have a Computerized Maintenance Management System? Yes

ANNUAL SEWER CLEANING – Include hydroflushing, mechanical and hand rodding		
Pipe Cleaning excluding repeats		Pipe Cleaning Including Repeats
(miles/year)	% of system/year	(miles/year)
12	33	14

System Cleaning Frequency (years to clean entire system): A three year cycle began in summer 2008.

Hot Spots subject to more frequent cleaning: 3 locations; 0.5 miles of pipe

Types of problems subject to hot spot cleaning? Grease and roots

HOT SPOT CLEANING SCHEDULE			
Cleaning Frequency	Number of Locations	Pipe length excluding repeats (miles)	Pipe length including repeats (miles)
1/month			
6/year			
4/year	3	0.5	2
2/year			
1/year			

Chemical Root Treatments
Length of pipe subject to chemical root treatments (miles/year): 1.3
Chemical treatment frequency: 2 times/year
Root treatment chemicals used: Diquat dibromide

Spot Repairs
Spot repairs completed annually: 41 per year; _____ (miles/year)
Spot repair budget ($/year): $100,000
Spot repair expenditures last year: $100,000; year: 2008

Odors
Annual number of complaints: 1
Odor hot spot locations: 700 block of Adams Street (City of Berkeley main)
Odor treatment facilities: None

Easement Pipe Cleaning
Total length of easement pipes (miles): 5.5
Annual easement pipe cleaning (miles/year): 1.85
Do maintenance workers have access to all easements? Yes

Comments

The sewer maintenance program was begun last summer. Prior to that, maintenance was reactive in response to blockages and SSOs. Root chemical treatment began in June 2008.

In an effort to control odors in the area of the 700 block of Adams St., the City installed a solid manhole cover, cleaned their parallel main, and asked the City of Berkeley to flush their main.

The GIS is not yet complete, in that there is not a linkage between the Autocad layers (roads, pipes, etc.) and the SSO data. They expect to be able to do this within two years.

FATS, OILS AND GREASE (FOG) CONTROL

Does the Utility have a FOG source control ordinance?
- EBMUD has a Wastewater Control Ordinance

Ordinance Citation: East Bay Municipal Utility District Wastewater Control Ordinance, Ordinance 311A-03
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

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

Indicate Elements Included In the Food Service Establishment FOG Source Control Program		
Element	**Y/N**	**Comment**
		installation and appropriate maintenance
Grease removal device (GRD) requirements:		
traps		
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:

EBMUD has helped the City deal with recurrent blockages from a veterinary clinic. These were not due to grease. EBMUD reclassified the clinic as an industrial user. This classification means that the facility will be regularly inspected and sampled.

The City has not identified any SSOs due to grease since 2007.

City staff do not know how many FSEs are present within the city.

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.

PIPE INSPECTION AND CONDITION ASSESSMENT

Gravity Main Inspection

Describe Pipe Inspection Methods: CCTV and visual

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: 35)
1985 to present	CCTV	4.3	4	11%
19__ to present	Other			
Present to 2014	CCTV	8 mi/year	8 mi/year	23%/year
Present to 20__	Other			

Describe Planned Pipe Inspection:
The planned pipe inspection will include video line segments and condition assessments with ratings. The City will establish and update a database to maintain this information. Repair and/or replacement projects will be recommended based on the assessments.

Summary of Condition Assessment Findings: NA

Force Mains

Describe Force Main Inspection Methods: NA

Describe Program for Inspecting Air Relief Valves: NA

Private Laterals

Does the Utility Inspect Private Laterals? No, but the City requires inspection when there is a change of ownership and for remodeling projects larger than 5% of the property value.

Number of Private Laterals Inspected 1985 to Present: 1,380

Summary of Inspection Findings: Replaced lower laterals only

Number of Private Laterals Planned for Inspection Present to 20__ : This depends on housing sales and construction.

Comments

The CCTV program began in November 2008. The pipe is cleaned prior to televising. The City will use PACP scoring for its condition assessments. To ensure consistency, the same individual will perform all the scoring. In 2003 the City had a contract company doing condition assessment using CCTV. They corrected the problems that were found at that time.

In the lateral inspection program, the homeowner has a plumber videotape the lateral (a videotape is not required if the owner elects to replace the lateral). The City reviews the videotape and determines if the lateral must be repaired or replaced. Once that is done the City will issue a certificate that is good for 20 years. City staff stated that about one-third of all upper laterals have been replaced since the program began 15 years ago.

Homeowners are notified of the opportunity to have their upper laterals replaced at the time of a main replacement project. Five homeowners have taken advantage of this offer. Lower laterals are replaced if needed during main replacement projects, and a cleanout is installed. The new cleanouts also include backflow prevention. Whenever a homeowner replaces the upper lateral, the City requires that a two-way cleanout and a backflow prevention device be installed. The certificate will not be issued without these items being present.

The City also experimented with a program to replace upper laterals in 1997. This program reimbursed homeowners up to $2,500 to replace their upper laterals. The City found that the program was too expensive and involved too much paperwork.

CAPACITY ASSURANCE

List Locations and Dates of Repeats Capacity Spills: None.

List Locations of Known Capacity Bottlenecks:

Dry Weather:

None

Wet Weather (5-year event):

None

Describe I/I Assessments Completed by the Utility (dates, area covered, findings, etc.):
Assessments were done in 1985, 1992, 1996, and 1998.

Flow Meters (number, locations):
Three flow meters were in use for a 5-year period (1999-2003): Pierce at Cerrito Creek, Buchanan at Eastshore, Eastshore (Target), and Castro & Adams (Berkeley sewers).

Describe Flow Model Used by the Utility: The City plans to do some modeling of the collection system when the GIS is complete. Currently there are no known capacity issues.

Inflow

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

Describe Program for Enforcing Ban on Illicit Connections: The City referred to the October 1993 Compliance Plan

Describe Program for Locating Illicit Connections (smoke testing, etc.): Televising upper sewer lateral (homeowner responsibility); will be doing smoke testing during wet weather to identify sources of high peak wet weather flows. Some smoke testing was also done in the late 1990s.

Locations Subject to Street Flooding: None

Has the Utility sealed manholes in locations subject to street flooding: NA

I/I Control

Describe I/I Control Projects (miles of pipe rehabilitated or replaced for I/I Control):

Recently Completed Projects: San Pablo Avenue Sewer (FY 04/05) – 1 mile; Curtis/Sonoma Sewer (FY 04) – 0.11 mile; Key Route/Pomona and Madison/Adams Easement Sewers (FY 06) – 0.6 miles; I80-Pierce Street to Cleveland Avenue Sewers (FY 06) – 1 mile; Buchanan Relief and Polk Street Sewer (FY 06) – 0.1 mile; East Albany Hill Easement Sewers (FY 08) – 1.1 miles; Nielson Sewer (FY 08/09) – 0.5 miles; Polk/Madison Avenue Sewer Project (FY 09) – 0.43 miles.

Planned Projects: Masonic Avenue; North of Brighton Easement Sewer

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

Recently Completed Projects: Buchanan Relief and Polk Street Sewer (FY 06) – 0.1 mile

Planned Projects: None

Comments

The only capacity spill reported by the City since 2006 occurred at 920 Buchanan Street on 2/28/06. They smoke tested here and found a cross connection. A leaking corrugated storm drain pipe was located above the sanitary sewer. The City replaced this pipe and also installed a bypass from the pipe that had the SSO to another sanitary sewer to ensure that no further overflows would occur.

City staff stated that it is common for them to find roof leaders and yard drains attached to laterals. They have prioritized projects and corrected some areas. They do not believe that the amount of inflow from these sources is sufficient to account for the high peak wet weather flows observed.

INFRASTRUCTURE RENEWAL AND CAPITAL IMPROVEMENTS

Pipe Rehabilitation and Replacement Methods Used: pipe bursting/replacement

Miles of Pipe Rehabilitated or Replaced: Last 20 Years and Planned Next 20 Years		
Date Range	Miles of Pipe	% of System (System miles: 52)
1985 to present	17.1[3]	33%
Present to 2013	2.0	6%

Describe Capacity Improvement Program: None needed

List Major Planned Improvements: None

Describe Master Plan: The City referred to the October 1993 Compliance Plan.

Comment

The City has completed the projects required by the October 1993 Compliance Plan. New projects will be developed based on the results of the condition assessment that are being planned.

[3] Includes mains and lower laterals.