SEWAGE COLLECTION SYSTEM INSPECTION FORM
(EPA Reg 9, February 9, 2010)

GENERAL INFORMATION

Inspection Date___3/25/2010____

Utility Name: **City of South Pasadena**		
Address: **1414 Mission St.** **South Pasadena, CA 91030**		
Contact Person: **Matthew Sweeney, P.E.**		
Phone: **626/403-7242**	Cell:	Fax: **626/403-7241**
Email: **msweeney@ci.south-pasadena.ca.us**		

Inspectors Names	Agency
JoAnn Cola	**U.S. EPA Region 9**
Jose M. Morales	**CRWQCB Region 4**
Hugh Marley	**CRWQCB Region 4**
Noah Golden-Krasner	**California DOJ**
Gary Tavetian	**California DOJ**

Utility personnel who accompanied inspectors

Name	Title
Shin Furukawa	**Deputy Director, City of South Pasadena DPW**
Richard L. Adams, II	**City Attorney, City of South Pasadena**
Eddie Munoz	**Supervisor, Streets and Sewers**
Marcellino Aguilar	**Public Works Superintendent**

SYSTEM OVERVIEW

Population:_____25,832_____ Service Area (Sqr. Miles):_____2.5_____
Service Area Description: _Residential Community Northeast of downtown Los Angeles_____

	Residential	Commercial	Industrial	Total
Number of service connections	5,901	376	(included under "commercial")	6,277

Combined Sewers (% of system):___0___

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

Name and NPDES permit number for WWTP(s) that receive flow from the collection system utility: _____City of Los Angeles, Hyperion NPDES No. CA0109991
Los Angeles County Sanitation District 16 NPDES No. CA0053716

Names of upstream collection systems sending flow to the collection system utility:
_____N/A_____
Names of downstream collection systems receiving flow from the collection system utility:
_Los Angeles County Sanitation District 16_____
_(multiple connection points)_____
_City of Los Angeles_____

Do any interagency agreements exit with upstream collection systems? (Y/N)__N/A__

Does the utility maintain the legal authority to limit flow from upstream satellite collection systems? (Y/N) __N/A__

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
54	0	0	1,137	0	0

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

Size Distribution of Collection System

Diameter in inches	Gravity Sewer (miles)	Force Mains (miles)
6 inches or less	0	0
8 inches	51	0
9 - 18 inches	3	0
19 - 36 inches	0	0
> 36 inches	0	0

Age Distribution of Collection System

Age	Sewer Mains, miles	# of Pump Stations
Newer than 1985	1	0
1960 - 1984	11	0
1935 - 1959	6	0
Older than 1935	36	0

SYSTEM FLOW CHARACTERISTICS

Collection System		
Average Daily Dry Weather Flow (MGD)	Peak Daily Wet Weather Flow (MGD)	Peak Instantaneous Wet Weather Flow (MGD)
2.2 (calculated, not measured)	Not measured.	Not measured.

Location of flow monitor(s) from which above information obtained: N/A

Period over which flow was monitored: N/A

Agency conducting the flow monitoring: N/A

If no flow monitors, describe method for estimating flows: City states that sewer master plan estimated total flow based on land use, average flow per land use, and population distribution. Prorated for population increase. Wet weather flow estimated for capacity study by increasing dry weather flow by 1.5x.

Wastewater Treatment Plant		
Average Daily Dry Weather Flow (MGD)	Peak Daily Wet Weather Flow (MGD)	Peak Instantaneous Wet Weather Flow (MGD)
N/A		

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

Constructed Relief Points		
Relief Point	Location	Number of Discharges/Year
N/A		

REGULATORY BACKGROUND

Does the system operate under the provisions of an NPDES permit (either their own or under provisions of another agencies permit)? (Y/N)__Y__

Permit holder Los Angeles County Permit # CA0053716
City of Los Angeles Permit # CA0109991

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? (Y/N)__Y__
Are there any spill reporting requirements? (Y/N)__Y__
Which agency (or agencies) promulgates the spill reporting requirements?_____SWRQCB_____

Outline the spill reporting requirements (summarize spill reporting requirement for each applicable statute, regulation and permit): __Per Statewide General WDR for Wastewater Collection Agencies Order No. 2006-0003-DWQ, requires reporting to CWIQS database of all SSOs.

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 __54__)			Laterals (Miles of Laterals ____)			Totals (Total Miles____)		
	#SSOs	(1)Spill Rate (see below)	Gross Spill Volume	#SSOs	(2)Spill Rate (see below)	Gross Spill Volume	Total SSOs	(3)Total Spill Rate (see below)	Total Gross Spill Volume
2010	1	1.85	7,500	2		0	3		7,500
2009	10	18.52	67,750	1		750	11		68,500
2008	3	7.41	10,450	1		100	5		10,550
2007	4	7.41	9,600	0	0	0	4		9,600
Total	18		95,300	4		850	23	35.19	96,150

(1)Spill Rate = [(#SSOs in main pipe) X 100]/Miles of Main Pipe in System
(2)Spill Rate = [(#SSOs in laterals) X 100]/Miles of Lateral in System
(3)Total Spill Rate = [(#SSOs in Main + #SSOs in Laterals)X100]/[Miles of Main + Miles of Laterals]

Spill Cause

Year (as listed in Table above)	Blockage								Gravity Pipe Break		Force Main Break		Pump Station		Capacity	
	Grease		Roots		Debris		Multiple									
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2010			2		1											
2009	5		4		1		1									
2008	1				1		2									
2007	2		1		1											
Total	8		7		4		3		0		0		0		0	

Please attach a copy of facility spill records for each of the past five years. The information for each spill should include, at a minimum, the following: Date of spill, time spill reported, location of spill (address and city), whether the spill occurred in a private lateral, whether it reached a surface water, total volume of the spill, volume of spill recovered, volume of spill that reached a surface water, the appearance point of the spill, final spill destination, spill cause and explanation, whether a health warning was posted.

(The two charts above use numbers provided by city staff.)

BUILDING BACKUPS (list only backups caused by problems in sewer mains)		
Year	Number of ~~backups~~ claims	Cost of Settled Claims
2010	2	None settled
2009	5	$4,535
2008	3	$564
2007	5	$20,830
2006	6	$38,439
TOTAL	18	$64,368

City noted that the number of claims may not equal the number of incidents. For example, there could have been multiple claims on a single incident; there can also be backups without claims.

STAFFING

Indicate *Number of Staff – As pertaining specifically to collection system responsibilities

***Provided as numerical or FTEs or positions**

Management and Administrative: Budgeted___5__ Filled___5_____

Maintenance: Budgeted___6___ Filled____5_____

Electricians and Mechanical Technicians: Budgeted __0___ Filled ___0_____

Operators: Budgeted __0___ Filled __0_____

Engineering: Budgeted __3___ Filled __3_____

Number of Certified Collection System Operators/Certification Program: ___0_____

Number of Sewer Cleaning Crews: __1____

Sewer Cleaning Crew Size: __6___ (Supervisor and 5 laborers; same as maintenance. City said it is able to fill vacancy, but has been using other city staff as needed.)

Contractor Services	**Contractor Name(s)** (NA if contractors not used)	**Cost ($/year)**
Sewer Cleaning	**Performance Pipeline**	**$60,000**
Chemical Root Control	**Duke's Root Control**	**$20,000**
Spot Repairs	**Various**	**$230,000**
CCTV	**Performance Pipeline**	**$70,000**
Spill Response	**Various**	**FY10-11 Budget $50,000**
Other:		

EQUIPMENT

List Major Equipment Owned by the Utility:

Equipment	**Number**	**Number in Service**
Combination Trucks (hydroflush and vactor)	0	0
Hydroflusher	2	1 (one being repaired)
Mechanical Rodder	0	0
CCTV Truck	1 (plus additional unit on jet-rodding trailer)	1
Utility Truck	3	3
Portable Pumps	1 (4" gas powered)	1
Portable Generator	1 (on trailer)	1

FINANCIAL

Does the collection system operate from an enterprise fund? **Yes**

REVENUES	
Revenue Source	**Annual Revenue ($/year)**
User Fees	
Connection Fees	
Grants	
Bonds	
SRF Loans	
TOTAL	$667,000

EXPENSES		
Expense	**Annual Cost ($/year)**	**Cost / Mile of Pipe** (Total Pipe Mileage: 54)
Maintenance	$70,000	$1,296,30
Operations (electric, fuel, etc.)	$226,700	$4,190.74
Salaries and Benefits	$305,642	$5,660.04
Capital Improvements	$230,000	$4,259.26
Debt payments	0	0
TOTAL	$831,942 (FY09-10)	$15,406.33

Average Monthly Household User Fee for Sewage Collection: ___$1.00 (on water bill)___
Wastewater Treatment: (LACSD on property tax bill)
Total Wastewater Fees: $113/year on 2008 property tax bill.

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

Last Fee Increase (Date): City staff unsure of date, but said it was "A long time ago"

Planned Fee Increases: City has been working on a fee study for all city funds and is due to council in April/May.

Capital Improvement Fund: _____ $ for _____ years **Pay-as-you-go, general fund covers shortfalls in sewer budget. Unplanned emergency repairs are subsidized by the general fund, rather than increase the sewer rate.**

SPILL RESPONSE, NOTIFICATION AND REPORTING

Does the Utility Have a Written Spill Response Plan? Yes, State WDR mandated SSMP
Is the Plan Carried by Maintenance/Spill Response Crews? Yes, and can use contractor support

Indicate Elements Included In the Spill Response Plan		
Element	**Y/N**	**Comment**
Identification of Responsible Staff	Yes	Organization chart in SSMP and wallet cards provided to staff
DISPATCH		
System for Becoming Aware of Spills	Yes	Calls from public or city staff
System for Receiving Public Calls	Yes	
Dispatch Procedures – Normal Hours	Yes	City hall to public works to crew
Dispatch Procedures – After Hours	Yes	PD dispatch categorizes call as "sewer", autodials up to 3 numbers until response. Crew rotates responsibility for response, carries emergency cell phone. No written work order generated.
Coordination with First Responders (police, fire department)	Yes	
Response Time Goal	Yes	45 minutes during "off" hours
SPILL CONTROL/MITIGATION		
Spill Response Activity Sequence	Yes	City crew can do spill minimization and traffic control.
Spill Site Security	Yes	PD/Fire can assist with traffic control
Procedures for Stopping Spills	Yes	Block and contain spill
Spill Containment	Yes	Sand bags/catch basin plugs on sewer trailer
Protection of Storm Drains	Yes	Pump out catch basin & return to main
Cleanup/Mitigation	Yes	Disinfect with bleach
DOCUMENTATION		
Spill Volume Estimation Method (list method in comment field)		Visual estimation based on San Diego flow estimation chart. No other method used – City said that "most" spills are from manholes.
Determination of Spill Start Time	Yes	Based on time first call is received
Spill Sampling	Yes	Consultant
Receiving Water Sampling	Yes	City of Long Beach (outlet)
Photographing Spill Site	Yes	Truck has digital camera, don't always keep photos with spill report
Field Notes Form	Yes	On utility truck. Notes & photos attached to typed report.
Spill Report Form	Yes	Per State WDR
NOTIFICATION		
Notification of Affected Public (schools, recreational users, etc.)	Yes	At direction of health department. Health Dept. may coordinate with Long Beach.
Posting Warning Signs	Yes	Standard practice is to delineate spill area
Sanitation Information re: building backups	Yes	Health Dept. notified for all spills

REPORTING		
Reporting Procedures	Yes	
Spill Report Forms	Yes	
Persons Responsible for Filing Reports	Yes	Incident Commander or designee

Are all spills reported regardless of volume? _Yes____
Are Contractors Required to Follow Spill Response Procedures? __Yes___
Average Spill Response Time (normal work hours): ___.75____ hours
Average Spill Response Time (after hours/holidays): ___1____ hours
Does the Utility CCTV Pipes Following Spill? __Yes (next morning if after hours)____
Are Cleaning Schedules Adjusted in Response to Spills? __Yes_____

SEWER CLEANING AND MAINTENANCE

Does the Utility Have Detailed Sewer System Maps? __Yes, paper maps only, not digital____
Are Maps on GIS Database? __No, due to insufficient budget___
Are Maps Available to Maintenance Crews? ___Yes___

Maintenance Management System is (check whichever is applicable):
Written __X__ Computerized _____ Both _____ Other (describe) _____

ANNUAL SEWER CLEANING – Include hydroflushing, mechanical and hand rodding		
Pipe Cleaning excluding repeats		Pipe Cleaning Including Repeats
(miles/year)	% of system/year	(miles/year)
13	25	

What does the crew report for total length of pipe cleaned in a single visit if they clean the same pipe segment more than once during that visit?

System Cleaning Frequency (years to clean entire system): ___4_____
Types of problems subject to hot spot cleaning? _Known heavy root or grease areas
_____

HOT SPOT CLEANING SCHEDULE			
Cleaning Frequency	Number of Locations	Pipe length excluding repeats (miles)	Pipe length including repeats (miles)
1/month			
6/year	4	0.1	0.6 total
4/year			
2/year			
1/year			

CHEMICAL ROOT TREATMENTS
Length of pipe subject to chemical root treatments (miles/year): ___4____
Chemical treatment frequency: __Annual____
Root treatment chemicals used: _"Razorooter" (diquat based)_____
SPOT REPAIRS
Spot repairs completed annually: __1-2__ (#/year); __<0.5__ (miles/year)
Spot repair budget ($/year): $230,000
Spot repair expenditures last year: $200,000; year: FY08-09 (all work done under contract)

ODORS
Annual number of complaints: __<3___
Odor hot spot locations: Fair Oaks at 110 Fwy. Undetermined cause of odor.
Odor treatment facilities: _None_____

EASEMENT PIPE CLEANING
Total length of easement pipes (miles): __4_____
Annual easement pipe cleaning (miles/year): _1_____
Do maintenance workers have access to all easements? __Yes_____

FATS, OILS AND GREASE (FOG) CONTROL

Does the Utility have a FOG source control ordinance? _Yes__
Ordinance Citation: __South Pasadena Municipal Code Chapter 30 & City Ordinance 2186
Agency responsible for implementing the FOG control program: __City of South Pasadena

Number of Food Service Establishments (FSEs) in service area: __65_____
Number of FSEs subject to FOG ordinance: _55 (10 do not generate FOG, e.g., yogurt shops)

Indicate Elements Included In the Food Service Establishment FOG Source Control Program		
Element	**Y/N**	**Comment**
FSE Permits	Yes	Planning to begin program July 1, 2010
FSE inspections	Yes	Annual
FSE enforcement	Yes	Fee study to determine fee structure
Oil & grease discharge concentration limit	No	
Grease removal device (GRD) requirements:		
traps	Yes	If grease-generating (many FSEs to be "grandfathered" into program & may opt to pay fee in lieu of installing GRD. Fee study completion to determine.)
interceptors		
Automatic cleaning traps		
FSEs subject to GRD installation:		
all FSEs (new and existing)	Yes	If grease-generating
new FSEs	Yes	If grease-generating
remodeled FSEs	Yes	Reviewed case-by-case
for cause at existing FSEs	Yes	
GRD maintenance requirements:		
Cleaning frequency	Yes	Minimum 1x/year
25% rule (grease and solids accumulation)	Yes	
Kitchen BMP Requirements (list required BMPs below)		
		City's FOG inspection form has BMP checklist
Allowance for chemical additives?	Yes	Per FOG inspection form
Allowance for biological additives?	Yes	
FOG Disposal Requirements	Yes	
FOG Disposal Manifest System	Yes	

Number of FOG Program staff: No City staff. Contract (w/John Hunter & Assoc.) only.

Inspectors ___1__
Permit writers __1___
Other _____

FSE Inspection frequency: ___Annual____
Annual number of FSE inspections: ___All____
Does Utility use CCTV to identify FOG sources? No, all FSEs are automatically in program

Does sewer maintenance staff coordinate with FOG source control program staff? _Yes_
Cleaning targeted to FOG hot spots? At a minimum, maintenance crews are contacted annually regarding FOG hot spots.
Maintenance crew referrals to FOG program? __No____
Pipe repairs at FOG hot spots? __As needed____

Describe program for public outreach and education related to residential FOG sources: City-wide mailers, press releases in local newspaper, quarterly community newsletters

_____

PIPE INSPECTION AND CONDITION ASSESSMENT

Gravity Main Inspection

Describe Pipe Inspection Methods:

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: 54)
2000 to present	CCTV	54	54	100
2000 to present	Other	0		
Present to 2020	CCTV	54	54	100
Present to 2020	Other	0		

Describe Planned Pipe Inspection: City states that until 2000, CCTV of the system was done in-house annually. Vacancies caused program to be out-sourced. Now, City says it has a 4-year program to clean, inspect, and CCTV entire city system. A more thorough inspection is done now, as the consultant's CCTV report comes on DVD with written report and photos. City CCTV van output is VHS tape, and trailer unit is digital output to DVD. City utilizes CCTV inspection after spills or repairs, lateral backup investigations.

Summary of Condition Assessment Findings: City states that the majority of system is problem-free. Only localized spots of joint displacement and/or cracked pipe. City indicates it has no capacity issues.

Force Mains

Describe Force Main Inspection Methods: N/A

Describe Program for Inspecting Air Relief Valves: N/A

Private Laterals

Does the Utility Inspect Private Laterals? ___No____

Number of Private Laterals Inspected 2000 to Present: ___0____

Summary of Inspection Findings: N/A

Number of Private Laterals Planned for Inspection Present to 2020 : 0

CAPACITY ASSURANCE

List Locations and Dates of Repeats Capacity Spills: N/A

List Locations of Known Capacity Bottlenecks:

Dry Weather: None. City states that based on its 2009 capacity analysis report, the entire system has adequate capacity.

Wet Weather: None. City states that wet weather capacity is not a problem. City is "built-out" and expects very little future population increase. Capacity analysis concluded that all pipes had sufficient capacity to handle wet weather flow, assumed to be 1.5x dry weather flow. City staff said that the capacity study, done by DMR Team, Inc. in July 2009, did not use any actual flow measurement data. The analysis broke the city into tributary areas, then used land use and population data to calculate the estimated dry weather flow. Wet weather flow was then assumed to be 1.5x dry weather flow.

Describe I&I Assessments Completed by the Utility (dates, area covered, findings, etc.): I/I estimated as 1.5x dry weather flow in capacity analysis report.

Flow Meters (number, locations): City has none. City of LA and LACSD have discharge agreements requiring annual measurement of flow at specified discharge locations.

Describe Flow Model Used by the Utility: Estimated based on tributary areas and land uses.

Inflow

Does the Utility Prohibit Storm Water Connections to the Sanitary Sewer (roof drains, sump pumps, etc.)? _Yes, per South Pasadena Municipal Code, Chapter 30

Describe Program for Enforcing Ban on Illicit Connections: If noticed, any illicit connections can be reported to the building inspector for code enforcement. City does not search for any illicit connections

Describe Program for Locating Illicit Connections (smoke testing, etc.): None, CCTV only

Locations Subject to Street Flooding: None

Has the Utility Sealed Manholes in Locations Subject to Street Flooding: N/A, as the City notes no areas of repeated flooding.

I&I Control

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

Recently Completed Projects: FY09-10:

Garfield Spot Repair
Oak Hill
Hanscom/Peterson

Total length = <1.0 mile

Planned Projects: FY10 –11:
Hermosa St.
Marengo Ave.
Monterey Rd.
Pasadena Ave.
Cypress/Elm Park
Total length = < 1.0 mile

Rehabilitation/replacement projects normally done in conjunction with planned street repairs. CCTV if problems, and do spot repairs. Replacement pipe is either VCP or PVC.

Describe Capacity Control Measures (relief sewers, storage, WWTP expansion, etc.)
Recently Completed Projects: N/A

Planned Projects: N/A

INFRASTRUCTURE RENEWAL AND CAPITAL IMPROVEMENTS

Pipe Rehabilitation and Replacement Methods Used: City has done some lining projects.

Miles of Pipe Rehabilitated or Replaced: Last 10 Years and Planned Next 10 Years		
Date Range	Miles of Pipe	% of System (System miles: 54)
2000 to present	0.5	1
Present to 2020	3	5

Describe Capacity Improvement Program: City states no program is needed because capacity is not a problem.

List Major Planned Improvements: Listed on page 15 & 16.

Describe Master Plan: "The City is built-out and has not seen significant population increases since the 1970s. Sewer system has adequate capacity. No new sewer infrastructure is needed. All future improvements are rehabilitation of existing infrastructure."

PUMP STATIONS

(Please complete one sheet for EACH pump station)

Name and Location of Pump Station: _There are no pump stations in South Pasadena__

Pump Information

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

Pump Station Information:

A. Average flow: _____
B. Holding Time: _____
C. Does station have sufficient pumping capacity with the largest pump out of service during:
   Peak Dry Weather Flow: Yes_____No_____
   Peak Wet Weather Flow: Yes_____No_____
D. Dry weather capacity limitations? Y/N (if yes, describe) _____
E. Wet weather capacity limitations? Y/N (if yes, describe) _____
F. Number of failures resulting in overflows/bypass or backup, in the last five years _____
G. Total quantity of overflow/bypass: Gallons or MG _____
H. Is dry well protected from wet well overflow? Yes____ No_____
I. How often is pump station inspected? _____
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____	Yes____No____	Yes____No____	Yes____No____	

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

K**. Station Alarms**:

Low Wet Well	High Wet Well	Power Loss	Unauthorized Entry	Other (Describe)
Yes___No___	Yes___No____	Yes____No____	Yes___No____	

a) Is there 24 hour coverage for alarms? Yes_____No_____
b) Alarm signal sent to: _____

L. What equipment is available for emergency response? _____
_____

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

Attachment 1

Inspection Photographs

All photographs taken by JoAnn Cola on March 25, 2010

Figure 1: City of South Pasadena spill response trailer

Figure 2: City of South Pasadena spill response trailer

Figure 3: Spill response trailer with sandbags used for spill containment

Figure 4: Spill response trailer with plugs, hoses, and sandbags

Figure 5: Utility truck with generator/jet rodder/CCTV trailer

Figure 6: Combination generator/jet rodder/CCTV trailer at city maintenance yard

Figure 7: CCTV cable reel on trailer

Figure 8: Jet rodder on trailer

Figure 9: CCTV head on the generator/jet rodder/CCTV trailer

Figure 10: Site of a spill that occurred on December 31, 2009. The first manhole to spill, MH152H, was located at Fair Oaks at State Sts., South Pasadena. "Two or three" more manholes upstream (east) along State St. were reported to have also overflowed. City staff did not recall the spill volume, but had to wait for the California Highway Patrol to arrive and block traffic on I-110 before beginning spill mitigation efforts. This spill was reportedly caused by root infiltration from a palm tree at MH143A, which was cut down by the city in March 2009. Two SSOs have occurred since March 2009.

Figure 11: MH143B, the first manhole upstream from the Fair Oaks at State St. spill site, at the end of Mound Ave. This manhole is above the westbound onramp to the I-110 freeway. City staff indicated that this manhole was the first manhole downstream from the root blockage and surcharged but did not overflow.

Figure 12: Location of manhole and storm drain inlet at the end of Mound Ave. where it abuts I-110 freeway. City stated that the manhole on opposite side of the fence (see Fig. 11), surcharged but did not overflow.

Figure 13: Site of October 10, 2009 spill at 1020 Arroyo Verde Road. City staff explained that this spill was due to a cracked pipe and excessive roots infiltrating main from an unused lateral connection. City staff said that the manhole is shallow, relative to upstream and downstream manholes. Three spills occurred within two weeks at this location, although smaller in volume than the Fair Oaks spill. The lateral connection was later eliminated and a pressure manhole cover installed.

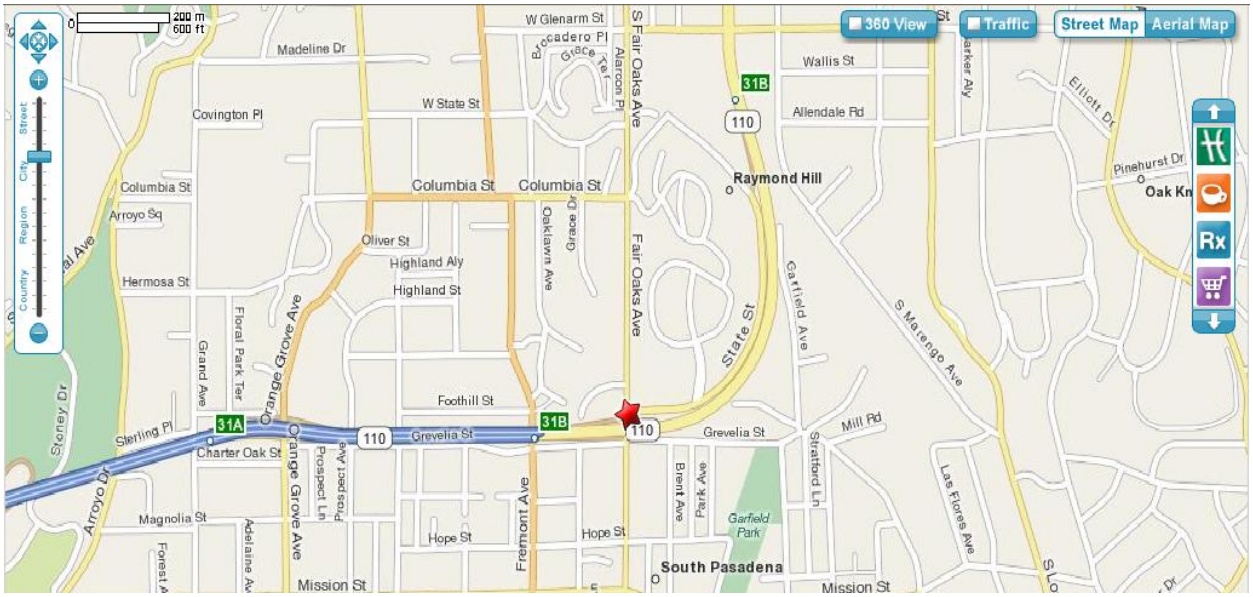

Figure 14: Fair Oaks Ave. at State St., South Pasadena. Site of repeated sewer overflows.

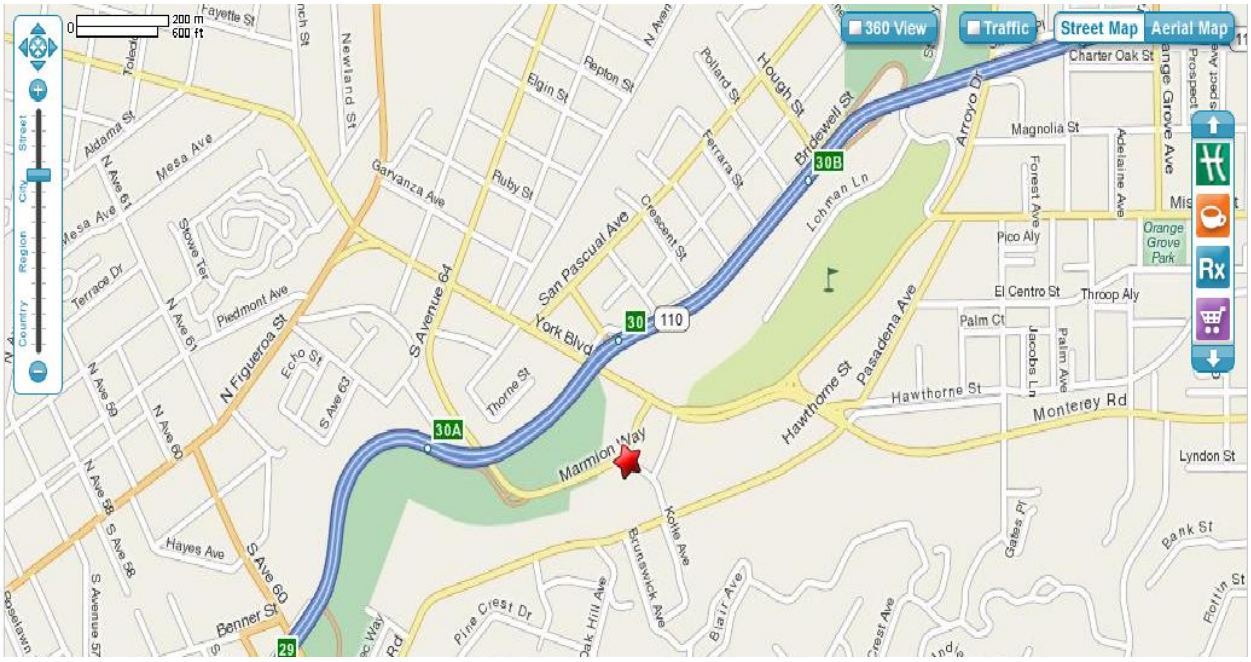

Figure 15: Arroyo Verde, South Pasadena. Site of repeated sewer overflows.

Attachment 2

Inspection Summary

1. **Introduction.** On March 25, 2010, EPA Region 9, accompanied by Regional Board 4 and the State Attorney General's Office inspected the City of South Pasadena's wastewater collection system. South Pasadena is a satellite collection system tributary to both the Los Angeles County Sanitary District 16 and to the City of Los Angeles collection systems. Information provided by South Pasadena representatives is summarized in the Inspection Form, above. This summary provides highlights of EPA's inspection findings.

2. **Occurrence of SSOs.** Discharges to waters of the United States without a permit are prohibited by Section 301(a) of the Clean Water Act. Part C.1 Prohibitions of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, DWQ No. 2006-0003, states that any spill that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

   From January 1, 2007 through March 25, 2010, 18 SSOs occurred due to blockages of City pipes, according to the questionnaire filled out by the City prior to the inspection. The City owns and is responsible for the operation and maintenance of 54 miles of pipe. This results in a spill rate of 10.3 spills/year/100 miles pipe averaged over the 3 year period.

   The City told inspectors that one-fourth of its system is cleaned and inspected each year under contract, and that there are four hot spots flushed monthly. The City reported that none of the SSOs have been due to pipe failure, but are primarily due to either grease or root intrusion. *Recommendation:* The City should increase its efforts to reduce SSOs, and increase focus on its FOG and root control programs.

3. **Reporting of SSOs.** According to the Sewer System Management Plan (SSMP) submitted by the City to the State Water Resources Control Board, the City was to begin reporting all SSOs to the CWIQS database on January 2, 2007. In response to EPA's request for additional documentation following the inspection, the City staff provided a listing of 24 SSOs that occurred between January 2007 and March 2010 (Table 1), along with the handwritten field spill reports for each listed SSO. Table 2 provides a listing of 14 spills that occurred between January 2007 and March 2010 that the City reported to California's CIWQS database pursuant to the Statewide General WDR for Sanitary Sewer Systems. The City also reported two spills to the "private lateral" section of the CIWQS database: the first occurred on March 18, 2008, and the second on November 11, 2009. (Reporting of private lateral spills to CIWQS is not mandatory.)

Based on the spill data provided to EPA by the City (Table 1 and field reports), it appears that the City may have failed to report several spills to CIWQS that should have been reported in accordance with the Statewide WDR Monitoring and Reporting Requirements. Table 3 is a list of spills that, based on the spill information provided by the City, appear to meet the criteria for required reporting to CIWQS but were not included in the CIWQS data for the City of Pasadena's sewage collection system.

Two SSOs, both occurring on January 17, 2010, one at 748 Bonita and the second at 1801 Meridian are noted in the Table 1 data provided by the City as "lateral" SSOs and were not reported in CWIQS. The field report describes the SSO at 1801 Meridian was due to "roots in the main". The field report for the SSO at748 Bonita on January 17, 2010 says that the SSO was to private property from a 6" pipe and that the SSO appeared from a manhole. The City did not report the January 25, 2009 SSO at Oxley and Fairview Streets in CWIQS, despite the City's field report noting the spill as coming from a manhole, and not from a private lateral. Information in the City's field reports indicate that these SSOs were not private lateral spills, but were caused by blockages in the City's sewer mains and, therefore, should have been reported to CIWQS. It is not clear from the documentation provided why these SSOs were not reported.

A review of the Table 1 SSO listing and South Pasadena's handwritten field reports show that an SSO occurred at 1414 Mission St. on January 29, 2007 and one at 354 Camino del Sol on May 21, 2007. The City did not report either of these SSOs to CIWQS. It is not clear from the field reports why these were not reported SSOs.

The City's handwritten field report for an SSO at 1700 Wayne on November 11, 2009 indicates that the spill point was located inside a building. The City's photos of the spill, attached to the City's field report, appear to show the spill running in the gutter. Google maps shows that 1700 Wayne is a residence. In its field report, the City indicates the "diameter of sewer main at point of blockage" is 8", the cause of the spill as roots, and it is marked as a private lateral spill. On March 31, 2010, the City reported this spill to CIWQS as a "private lower lateral" spill. The City reported in CIWQS that it had cleaned up the spill and restored flow, yet 120 gallons of sewage reached a storm drain over a two-hour period. The information provided suggests that this spill was caused by a problem in the City's sewer main. Information in the City's reports do not describe clearly enough the circumstances to explain the reason why the City reported this spill to CIWQS as a private lateral spill rather than a City spill.

Recommendation: The City should be reporting all SSOs, including backups that may occur on private property but are due to blockages in a city-owned pipe, as required by the State's Monitoring and Reporting Program No. 2006-0003-DWQ. The City should provide EPA with an explanation of the reasons spills included in Table 3 were not reported to CIWQS. The City should report missing spill data to CIWQS as appropriate.

Table 1: List of 24 SSOs provided by the City of South Pasadena following the March 25, 2010 inspection.

SSO REPORT [2007-2010]

Date	Address	Duration (hr)	Volume (gal)	Vol. Captured (gal)	Cause
1/29/2007	E. Huntington & Fair Oaks Ave	1:00	600	0	Grease
5/21/2007	354 Camino Del Sol	5:00	5400	5000	Intruding Lateral
6/19/2007	1800 Fremont Ave	2:00	240	0	Grease
10/12/2007	State St. and Fair Oaks Ave.	4:25	3360	1125	Roots
3/18/2008	State St. and Fair Oaks Ave (Lateral)	1:30	100	50	Grease
8/4/2008	1948 Fletcher Ave.	6:30	600	0	Roots, Grease
8/24/2008	1035 Arroyo Verde	0:00	2250	0	Trash
12/22/2008	1129 Garfield Ave.	2:45	7500	0	Debris, Roots
1/18/2009	Arroyo Verde Dr. at Marmion Way	1:00	1500	0	Shallow MH
1/25/2009	609 Prospect Ave. (Lateral)	0:25	750	0	Roots
1/25/2009	Oxley St. at Fairview Ave.	0:49	490	0	Roots
3/14/2009	Fair Oaks and State St.	3:00	18000	0	Roots
3/18/2009	1709 Meridian Ave	1:00	1500	0	Roots
4/17/2009	324 Camino Del Sol	2:00	200	0	Intruding Lateral
5/5/2009	Arroyo Verde at Sycamore	1:25	6000	0	Shallow MH
10/4/2009	Arroyo Verde at Sycamore	1:30	13500	5250	Shallow MH
10/10/2009	Arroyo Verde at Sycamore	1:10	14000	4000	Grease
11/11/2009	1700 Wayne (Lateral)	0:36	120	15	Roots
12/4/2009	809 Bonita Dr.	1:30	300	300	Roots
12/18/2009	422 Magnolia St.	1:48	2750	1750	Grease
12/31/2009	Fair Oaks and Mound Ave.	1:40	10000	0	Grease
1/17/2010	1801 Meridian Ave (Lateral)	7:05	0	N/A	Roots
1/17/2010	748 Bonita Dr. (Lateral)	3:40	0	N/A	Roots
1/18/2010	342 Camino Del Sol	0:50	7500	6250	Intruding Lateral

Table 2: SSOs Reported to CIWQS between January 1, 2007 and March 25, 2010 from City of South Pasadena Collection System.

Date	Location	Volume (gal.)	Volume Recovered	Volume to Surface Water	Cause
6/19/07	1800 Fremont	240	0	240	Grease
10/12/07	State & Fair Oaks Sts.	3,360	1,125	2,235	Roots
8/4/08	1948 Fletcher	600	0	0	Roots & Grease
8/24/08	1035 Arroyo Verde	2,250	0	0	Trash
3/14/09	State & Fair Oaks	18.000	0	18,000	Roots
3/18/09	1709 Meridian	1,500	0	1,500	Roots
4/17/09	324 Camino Del Sol	200	0	0	Intruding Lateral
5/5/09	1020 Arroyo Verde	6,000	0	6,000	Shallow Manhole
10/4/09	1020 Arroyo Verde	13,500	5,250	8,250	Shallow Manhole
10/10/09	1020 Arroyo Verde	14,000	4,000	10,000	Grease
12/4/09	809 Bonita	300	300	0	Roots
12/18/09	422 Magnolia	2,750	1,750	0	Grease
12/31/09	State & Fair Oaks	10,000	0	0	Grease
1/18/10	342 Camino Del Sol	7,500	6,250	0	Intruding Lateral

Table 3: Spills included in Table 1 and not included in Table 2.

Date	Spill Location	Comment
1/29/2007	E. Huntington at Fair Oaks	Included in Table 1 but not Table 2
5/21/2007	354 Camino Del Sol	Included in Table 1 but not Table 2
12/22/2008	1129 Garfield Ave.	Included in Table 1 but not Table 2
1/18/2009	Arroyo Verde at Marmion Way	Included in Table 1 but not Table 2. Cause listed as "shallow MH".
1/25/2009	Oxley at Fairview	Included in Table 1 but not Table 2. Field report indicates spill from a manhole.
11/11/2009	1700 Wayne	Included in Table 1. Reported to CWIQS as private lateral spill. Documentation unclear; suggests reportable SSO.
1/17/2010	1801 Meridian	Included in Table 1 but not Table 2. Field report states caused by "roots in the main".
1/17/2010	748 Bonita	Included in Table 1 but not Table 2. Field report states "lateral" but also that spill emanated from a manhole.

4. **Repeat SSO Locations.** A review of the SSO data reveals three locations where there have been repeated spills over the past three years: Fair Oaks and State Streets, Arroyo Verde St., and Camino Del Sol. These three locations account for 13 of the 24 spills documented by the City's list of field reports. Table 4 lists these repeat spills.

   The inspectors visited the intersection of Fair Oaks and State Streets, one site of repeated sewage spills, the on March 25, 2010. Inspectors were informed by city sewer crew staff that there had been "three or four" spills, all caused by root intrusion, and that no problems had occurred since the city crews cut down a palm tree located at a manhole immediately west of the end of Mound Ave. in March 2009. However, according to data provided by the City, there have been two other SSOs at Fair Oaks and State Streets since the palm tree was removed in March 2009. In addition, for some SSOs at this location, the City's documents would suggest that both grease and debris accumulation may have also contributed to spills at this location.

   The City's sewer map indicates the tree was located at MH143A, one manhole downstream from the intersection of the sewer lines (at MH143B, at the end of Mound Ave.) from State, Fair Oaks, and Mound Streets.

   Field reports submitted by the city document a 3,360 gallon root intrusion SSO on October 12, 2007. The next SSO, on March 18, 2008 was documented briefly in a City memo as a spill of 100 gallons with 50 gallons recovered, from a private lateral at the Orchard Supply Plaza shopping center, with the spill report listing the cause as debris. The next SSO, on March 14, 2009, reported the cause of the 18,000 gallon SSO to root intrusion. However, the City provided to the inspectors a copy of an "Investigation Worksheet" dated March 16, 2009 describing a grease spill that occurred on March 14, 2009, and investigating FOG discharges from Phoenix Food Boutique located in the Orchard Supply Plaza. For this SSO, the City's documentation suggests conflicting causes. The fourth SSO occurred on December 31, 2009, with the incident report citing the cause as both roots and grease, while CWIQS lists the cause as FOG only. The December 31 SSO emanated from MH145E, at the corner of Mound and Fair Oaks, upstream from MH143A and a block north of State St. A city e-mail dated January 6, 2010 from the sewer crew responding to the City's public works department stated that the December 31 spill was unrelated to earlier spills in the same location. The most recent SSO at Fair Oaks and State Streets on April 27, 2010 was reportedly caused by FOG buildup between manholes 145B and 145C, just north of Orchard Supply Plaza. City sewer crews caused a downstream blockage while cleaning a grease buildup and the SSO occurred from manhole 152H, located in the middle of the Fair Oaks and State intersection.

The City should follow-up with CCTV of the sewer pipes along Fair Oaks, State Street, and Mound, and especially near MH143A to ascertain that there is no residual damage to the pipes from the earlier root intrusion. The City's SSMP says that State St. between the City of Pasadena and Fair Oaks has been targeted for monthly flushing. The City should consider expanding the targeted area. The City stated on Page 11 of the inspection form that the frequency of hot-spot flushing is 6 times per year. The City may also benefit in this area from immediate implementation of its FOG program.

A second repeat spill location is at Arroyo Verde at the intersection of Sycamore. The first spill at this location was reportedly caused by "trash". A complete investigation following the SSO at this location may have revealed the structural problems, such as the shallow manhole, cracked pipe, and the root infiltration from an unused lateral. Four additional SSOs may have been prevented. After the fourth spill, the City lined the pipe, installed a pressure manhole cover, and eliminated the unused lateral. Arroyo Verde between Monterey and Marmion is also on the City's list for hot-spot flushing.

The third location of repeat spills is Camino Del Sol, where three spills have occurred, all attributed to intruding laterals. A CCTV inspection of this street may possibly reveal additional similar problems. Proactive repairs could prevent further SSOs at this location.

The City's documentation does not clearly and completely describe either the SSOevents, or the follow-up investigations, activities, or recommendations. Conflicting and incomplete documentation regarding the causes of the spills would seem to make it difficult for the City to take appropriate corrective action. If spill documentation is to be useful to the city, it must be complete and accurate so that causes can be determined and remedial activities be undertaken in a timely manner.

Recommendation: City staff should receive supplemental training so that field documentation is helpful to the City for accurate and consistent spill reporting, generating maintenance orders, and analyzing causes of SSOs. In addition, the City must focus efforts on making timely and complete maintenance measures, including pipe repair, to prevent repeat SSOs.

Table 4: Repeat SSOs

Location	Date of SSO	Unrecovered Spill Volume (gallons)	Cause (field report)
Fair Oaks	10/12/2007	2,235	Roots
	3/18/2008	50	Grease
	3/14/2009	18,000	Roots
	12/31/2009	10,000	Grease
	4/27/2010	100	Grease
Arroyo Verde	8/24/2008	2,250	Trash
	1/18/2009	1,500	Shallow Manhole
	5/5/2009	6,000	Shallow Manhole
	10/4/2009	8,250	Shallow Manhole
	10/10/2009	10,000	Grease
Camino Del Sol	5/21/2007	400	Intruding Lateral
	4/17/2009	200	Intruding Lateral
	1/18/2010	1,250	Intruding Lateral

5. **SSO Containment and Mitigation.** Part D.3 of the State Water Resources Control Board Order No. 2006-0003-DWQ states that in the event of a spill, the enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO. Of the SSOs reported between January 1, 2007 and March 25, 2010, the total SSO volume was reported as 80,200 gallons. 18,675 gallons, or 23% of that volume, was reported to have been recovered while 45,985 gallons, or 57%, of that volume was reported to have reached surface water. South Pasadena owns a spill response trailer that is used when the City crew responds to an SSO. The trailer contains sand bags, hoses, pump, and several sizes of plugs. A second trailer contains a generator, jet rodder, and CCTV unit. The City does not own a vactor or combination flusher/vactor truck. When a spill occurs, the maintenance crew is able to use sandbags and plugs to prevent flow from entering a storm drain, however,

according to field spill reports, on at least one occasion the plugs did not fit and 10,000 gallons of sewage entered the storm drain. Spill response activities requiring additional equipment are performed by private contractors to the city, and response is delayed. *Recommendation:* The City should improve its efforts to contain and mitigate SSOs.

6. **Capital Improvement Program and Aging Infrastructure.** Thirty-six of the 54 miles of South Pasadena's sewer collection system pipes were reported by the City to have been installed prior to 1935. Two-thirds of the system is now over 75 years old. Although the lifespan of clay sewer pipe does vary, the average life of a clay sewer pipe is often considered to be approximately 70 years. There is currently no program in place to systematically repair, rehabilitate, or replace this aging pipe before it fails. The City representative stated that 0.5 miles of pipe has been rehabilitated or replaced over the past 10 years. At this rate, it will take over 100 years to rehabilitate the City's sewage collection system. The City currently makes repairs upon failure, and rehabilitates sewer pipes in conjunction with street repairs. *Recommendation:* The City should consider instituting a Capital Improvement Program that includes sufficient funding to refurbish its sewer collection system pipes over time so as to avoid large scale failure and to level out the costs of rehabilitation and replacement.

7. **Sewer Rates.** The City reported that it collected $667,000 sewer fees from its ratepayers during FY09/10 while expenses were $831,942, leaving a shortfall of $164,942. The City made up this shortfall from its general fund. Ideally, fees and expenses for an enterprise sewer fund should be well-balanced. Residents currently pay $1 per month for sewer collection system operation and maintenance, which is billed jointly with water service. The cost of wastewater treatment is paid to Los Angeles County Sanitary District #16 as a separate charge on property tax bills. The sample tax bill provided by the City showed an annual charge of $113, slightly less than $10 per month. The total current sewer fee is significantly below that of other Southern California cities, which average approximately $35 per month. Inspectors were told that the City has not raised rates "in a long time", and prefers to subsidize from the general fund rather than raise rates. The City is expecting to submit a fee study, which includes sewer rates and fees, to the City Council in April or May 2010. *Recommendation:* In order to consistently meet sewer system expenses, the City should consider increasing its sewer rates.

8. **Fats, Oils, and Grease (FOG) Program.** The City reported that almost half (8 of 18) of all sanitary sewer overflows (SSOs) that have occurred since 2007 have been primarily due to fats, oils, and grease (FOG) deposition in its pipes. The City is subject to the State Water Resources Control Board's (SWRCB) Statewide General WDR for Wastewater Collection Agencies Order No. 2006-0003-DWQ requiring a program designed to eliminate FOG from sewage collection system pipes where it is a problem. City Ordinance 2186, South Pasadena's FOG ordinance, was passed and adopted by the City Council on May 6, 2009; requiring permits, grease removal devices (GRDs), annual

inspections of food service establishments (FSEs), and education on food service best management practices (BMPs). Although FSEs have not yet been issued FOG permits, inspectors were told that annual inspections have been performed under contract with John Hunter & Associates. City staff said that education on BMPs was not being required during inspections. EPA and Regional Board inspectors were told by the City that in cases where installation of a grease removal device (GRD) may be difficult, the facility would pay a fee to cover the City's cost of increased maintenance in lieu of installing the GRD. According to the City's FOG Ordinance, "grandfathering" of restaurants is allowable when the Public Works Director has determined that GRD installation is impossible, but there must also be consideration of the implementation of alternative pretreatment technology, implementation of good management practices, payment of Grease Disposal Mitigation fees to the City, and installation of a GRD upon significant remodel of the FSE. Inspectors were told that the FOG program is not currently being implemented because the fee study is incomplete and not yet adopted by the City Council. According to the City, the program is expected to begin implementation on July 15, 2010 after sewer fees are set by the City Council. *Recommendation:* To eliminate spills due to FOG, the City should begin implementing its Ordinance 2186 as soon as possible.

9. **Maintenance Management System.** The inspection team was told that there are no digitized sewer system maps, no computerized maintenance management system, and no automated system for generating work orders. There does not appear to be a system in place to track maintenance, facilitate adjusting the frequency of maintenance, or generate work orders following SSOs. *Recommendation:* Adopting a maintenance management system would more efficiently allow the City to integrate, track, record maintenance, spills, inspection history, and condition assessment of its pipes.

10. **Flow Measurements and Capacity.** Part D.10 of the State Water Resources Control Board Order WQO No. 2006-0003 states that an enrollee must provide adequate capacity to convey base flows and peak flows, including flows related to wet weather events.

    The City of South Pasadena staff told inspectors that it had no capacity problems but also that it has no flow metering capability at any point within its system. As part of its SSMP, South Pasadena had a Sewer System Capacity Analysis prepared in July 2009. To calculate "peak dry weather sewage flow volume", each contributory area was assigned a "peak dry flow rate" based on its land use designation, and "peak dry weather flow volume" calculated by multiplying the acreage of a contributory area by an assigned flow rate. The "peak wet weather sewage flow volume" was calculated by multiplying the dry weather value by 1.5. This was then tabulated for each of the key collectors within the South Pasadena system. From this tabulation, the report concluded that all pipes were sized sufficiently to handle the calculated flow volume. A capacity study typically measures actual flow during both wet and dry seasons. A study using actual

flow data can identify areas of excess inflow and infiltration, and locate bottlenecks and potential areas of surcharging in the collection system. *Recommendation:* The City should take actual flow measurements during dry and wet weather in order to verify the dry and wet weather flow estimates used in its sewer system capacity analysis. The analysis should be updated and, if necessary, conclusions adjusted to reflect verified flow estimates.

11. **Flow Estimates and Discharge Agreements.** Inspectors were told that there is no metering of flow within South Pasadena's system; however, the City provided the inspectors with copies of its discharge agreements with both the City of Los Angeles and Los Angeles County Sanitation District #16. Each agreement requires flow monitoring at specified discharge points. A LACSD representative informed EPA that determining the total flow to LACSD from South Pasadena alone is rather complicated because: 1) there are multiple discharge points from South Pasadena to several large pipes in the LACSD system, and 2) LACSD also collects from several municipalities upstream from South Pasadena. It is not clear whether any flow measurements taken by LACSD had been considered by the City or its consultant in producing the Capacity Analysis Report. *Recommendation:* The City should evaluate whether any of the flow measurements taken at any of the discharge points could be used to corroborate calculated capacity study flow estimates.

12. **Staffing.** The City representative explained that it has five staff assigned to its "streets and sewers" crew. The crew supervisor described the crew's "normal" work as "concrete, asphalt, painting, graffiti removal, trash pickups, and seasonal tasks" in addition to bi-monthly hot spot flushing and SSO response. Although the city maintenance staff performs the routine flushing at hot spots and CCTV inspection following SSOs, sewer cleaning work seemed to be a minor part of the sewer maintenance crew's normal work. Routine sewer cleaning and CCTV inspection is done under contract to a private company; the city itself invests very little into its own staff toward sewer maintenance.

13. **Odor Complaints.** The City noted that it received less than three odor complaints per year, and has one odor hot spot located at Fair Oaks where it crosses over the I-110 freeway. The inspection team visited that location because it is the site of several repeat spills. Inspectors noted a strong sewer odor at this location. The City is unaware of the specific cause of the odors and has no odor treatment at this location. *Recommendation:* The City should consider investigating the cause of the odor and determine whether steps can be taken to resolve the odor problems.

INSPECTION FORM TRANSMITTAL

Date Inspection Form Finalized: May 26, 2010

Date Final Inspection Report Sent to Facility: May 26, 2010

Person(s) to Whom Inspection Form Sent:

Name	Title	Address
Matthew Sweeney, P.E.	Director of Public Works, City of South Pasadena	
Shin Furukawa, P.E.	Deputy Director of Public Works, City of South Pasadena	
Hugh Marley	Chief, Enforcement Section, California Regional Water Quality Control Board, Region 4 (Los Angeles)	

Signed by:

EPA Inspector	May 26, 2010
	Date