

**SEWER SYSTEM MANAGEMENT PLAN AUDIT
FOR THE CITY OF
PALOS VERDES ESTATES**

CITY OF PALOS VERDES ESTATES

INCORPORATED 1939

CALIFORNIA

2021

SEWER SYSTEM MANAGEMENT PLAN AUDIT FOR 2013 to 2020

- May 2, 2006 – State Water Resources Control Board adopted Statewide General Waste Discharge Requirements (WDRs).
- January 1, 2007 – Electronic reporting of Sanitary Sewer Overflows (SSO).
- July 28, 2009 – Sewer System Management Plan (SSMP) adopted by the City Council.
- July 2011 – First SSMP audit due (to coincide with the County of Los Angeles) and every two years thereafter per subsection D.13.x of the WDRs, and Section 10.1 of the City's SSMP.
- SSMP Audit Dates: 2011, 2014, and 2021

Elements of the SSMP

1. **Goals** – description of the City's SSMP goals.
2. **Organization** – description of the City's organizational structure.
3. **Legal Authority** – description of the City's legal rights, including codes and ordinances, to enforce the requirements of the WDRs.
4. **Operation and Maintenance Program** – outlines the City's maintenance schedule and methodology to ensure proper management and maintenance of sewer facilities.
5. **Design and Performance Provisions** – description of methods by which the City ensures that new and rehabilitated sewer facilities are properly designed and installed.
6. **Overflow Emergency Response Plan** – describes how the City responds to, reports, and documents SSO events within the City.
7. **Fats, Oils, and Grease (FOG) Control Program** – describes how the City prevents or minimizes the discharge of fats, oils, and grease into the sewer lines in an effort to minimize SSOs.
8. **System Evaluation and Capacity Assurance** – how the City ensures that adequate capacity is available for new and existing developments.
9. **Monitoring, Measurement, and Program Modifications** – details the City's program to continually monitor and assess the performance of each SSMP element in achieving the goals and objectives of the SSMP and updating them as necessary.
10. **SSMP Program Audit and Certification** – describes the City's plan to periodically assess the effectiveness of the SSMP in reducing SSOs.
11. **Communication Program** – summarizes the City's plan to ensure that stakeholders are aware of the City's SSMP.

PERFORMANCE MEASURES

Overflow Prevention/Collection System Maintenance

Performance Indicator		2013	2014	2015	2016	2017	2018	2019	2020
Input									
1	Total miles of scheduled closed-circuit television (CCTV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.86
2	Total miles of scheduled periodic cleaning	22.50	40.54	37.11	38.55	40.42	36.79	39.58	40.23
3	Total miles of scheduled cleaning (periodic and contract CCTV)	22.50	40.54	37.11	38.55	40.42	36.79	39.58	109.09
4	Total number of pump station inspections scheduled	208	208	208	208	208	208	208	208
5	Total number of manhole inspections scheduled	3,760	3,760	3,760	3,760	3,768	3,768	3,768	3,768
Workload/Output									
6	Total number of SSOs responded to in a 12-month period *	11	9	4	5	7	5	5	6
7	Total volume of SSOs	26,025	26,640	7,950	15,100	6,585	14,330	50,560	3,025
8	Total SSO response time	16.07	8.68	6.80	6.53	9.17	6.25	6.03	6.35
9	Total miles of sewer lines maintained	77.33	77.21	77.21	77.21	78.26	78.26	78.26	78.26
10	Total miles of scheduled periodic cleaning completed	26.70	21.30	25.00	25.00	26.80	31.00	28.10	22.80
11	Total number of pump stations maintained	2	2	2	2	2	2	2	2
12	Total number of pump station inspections completed	174	200	259	185	160	146	118	145
13	Total number of manhole inspections completed	3,760	3,760	3,760	3,760	3,768	3,768	3,768	3,768
14	Total SSOs > 1,000 gallons responded to	3	2	3	1	2	2	2	1
15	Total FOG-related SSOs responded to	0	0	0	0	1	0	0	1
16	Total root-related SSOs responded to	9	8	1	1	1	1	0	0
17	Total SSOs due to other causes (debris, vandalism, etc.)	2	1	3	4	5	4	5	5
18	Total number of capacity-related SSOs	0	0	0	0	0	0	0	0
19	Total number of SSOs due to pump station malfunction	0	0	0	0	0	0	0	0
20	Number of SSOs responded to within 2 hours or less	8	8	3	4	6	4	5	5
21	Total miles of scheduled CCTV completed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.86
22	Total miles of scheduled cleaning completed	26.70	21.30	25.00	25.00	26.80	31.00	28.10	91.66
23	Total miles of CCTV completed (including contract CCTV)	1.30	1.10	0.93	0.64	0.58	0.67	1.40	69.81
24	Total miles of sewer lines cleaned (all including contract CCTV)**	35.60	44.32	42.93	31.14	36.36	33.86	34.59	100.59
25	Total number of service requests responded to	46	56	39	50	47	39	55	47
Efficiency									
26	Number of SSOs per 100 miles of sewer lines	14.22	11.66	5.18	6.48	8.94	6.39	6.39	7.67
27	Volume of SSOs recovered	12,525	4,500	500	0	3,250	6,785	300	160
28	Number of SSOs that reached surface water	4	3	1	2	1	1	2	2
29	Average response time per SSO	1.46	0.96	1.70	1.31	1.31	1.25	1.21	1.06
30	Average number of SSOs per pump station	0	0	0	0	0	0	0	0
Effectiveness/Outcome									
31	Percentage of SSOs > 1,000 gallons	27.27%	22.22%	75.00%	20.00%	28.57%	40.00%	40.00%	16.67%
32	Percentage of SSOs captured	48.13%	16.89%	6.29%	0.00%	49.35%	47.35%	0.59%	5.29%
33	Percentage of SSOs due to FOG	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	16.67%
34	Percentage of SSOs due to roots	18.18%	11.11%	75.00%	80.00%	71.43%	20.00%	100.00%	83.33%
35	Percentage of SSOs due to other causes	18.18%	11.11%	75.00%	80.00%	71.43%	80.00%	100.00%	83.33%
36	Percentage of SSOs that reached surface water	36.36%	33.33%	25.00%	40.00%	14.29%	20.00%	40.00%	33.33%
37	Percentage of SSOs with response time 2 hours or less	72.73%	88.89%	75.00%	80.00%	85.71%	80.00%	100.00%	83.33%
38	Percentage of manhole inspections completed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
39	Percentage of scheduled CCTV completed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100.00%
40	Percentage of pump station condition assessments completed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41	Percentage of pump station inspections completed	83.65%	96.15%	124.52%	88.94%	76.92%	70.19%	56.73%	69.71%
42	Percentage of scheduled cleaning completed ***	118.67%	52.54%	67.37%	64.85%	66.30%	84.26%	71.00%	84.02%
43	SSOs from house laterals not related to mainline sewer problems	3	1	0	0	1	2	0	0

* Not including SSOs from house laterals

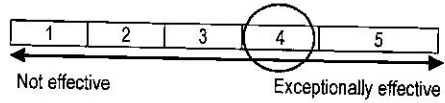
**Due to the Maintenance Management System (MMS) upgrade in 2019-20, some data loss/inaccuracies were found in the system. LA County Sewer Maintenance Division is working with its IT Division to fix this problem.

***All scheduled periodics were completed. The higher and/or less than 100 percent completion rate recorded could be attributed to the different sewer segment length determination methods used by field staff and office engineers (GIS), plus the fact that occasional adjustments in the frequencies of the periodics are not reflected in these numbers.

SEWER SYSTEM MANAGEMENT PLAN AUDIT

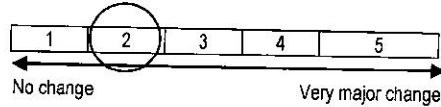
A. Goals and Objectives

To what extent, on a scale of 1 to 5, has the SSMP been effective in reducing SSOs in the City?



B. Organization

How would you describe the changes in the City's organizational structure on a scale of 1 to 5? Please specify.



C. Legal Authority

Give the year of adoption of the latest version of the following County Codes/Ordinances:

- (1) County Industrial Waste Ordinance
Date: 2020
- (2) City Municipal Code/County Plumbing Code
Date: 2019
- (3) City Municipal Code/County Building Code
Date: 2019

D. Operation and Maintenance Program

(1) What was the actual expenditure on each of these elements of the City's/Consolidated Sewer Maintenance District's (CSMD) operation and maintenance (O&M) programs for the last four fiscal years?

- (i) New Equipment Purchase
- (ii) Capital Improvement – Accumulative Capital Outlay (ACO)
- (iii) Travel and Training

	*2013-14	*2014-15	*2015-16	*2016-17
(i)	\$1,902,216	\$ 902,399.64	\$ 1,880,241.38	\$ 1,115,061.57
(ii)	\$1,577,253	\$ 728,491.95	\$ 2,133,766.08	\$ 851,321.55
(iii)	\$57,345	\$ 16,831.41	\$ 74,313.75	\$ 97,754.43
	*2017-18	*2018-19	*2019-20	
(i)	\$ 1,719,869.71	\$ 731,609.43	\$ 305.86	
(ii)	\$ 1,006,569.71	\$ 1,083,887.97	\$ 1,214,529.09	
(iii)	\$ 51,783.80	\$ 105,627.08	\$ 28,073.28	

(2) Expenditure/Revenue Data

- (i) Total Budget Amount
- (ii) Actual Expenditures on CCTV
- (iii) Total O&M Expenditure
- (iv) Sewer Service Charge Rates – CSMD

*CSMD data

	*2013-14	*2014-15	*2015-16	*2016-17
(i)	\$44,611,000	\$ 47,945,000.00	\$ 9,387,000.00	\$ 52,234,000.00
(ii)	\$4,523,501	\$ 4,166,519.00	\$ 195,219.39	\$ 1,105,128.15
(iii)	\$27,591,969	\$ 26,835,670.03	\$ 7,892,656.92	\$ 27,874,789.94
(iv)	\$ 47.50	\$ 50.50	\$ 50.50	\$ 50.50
	*2017-18	*2018-19	*2019-20	
(i)	\$ 57,677,000.00	\$ 61,009,000.00	\$ 68,227,000.00	
(ii)	\$ 1,024,064.94	\$ 2,621,199.08	\$ 2,875,323.72	
(iii)	\$ 31,748,200.85	\$ 32,388,078.50	\$ 31,761,482.15	
(iv)	\$ 50.50	\$ 50.50	\$ 50.50	

E. Design and Performance Provision

(1) What dollar amount of the City's/CSMD's expenditure went into:

- (i) Sewer Plan Check
- (ii) Construction Management and Inspection
- (iii) Project Design

*CSMD data

	*2013-14	*2014-15	*2015-16	*2016-17
(i)	\$74,639	\$50,169.84	\$74,134.84	\$110,348.40
(ii)	\$195,635	\$309,103.65	\$300,524.31	\$ 94,012.88
(iii)	\$111,002	\$142,699.76	\$142,756.96	\$177,320.18
	*2017-18	*2018-19	*2019-20	
(i)	\$ 244,845.13	\$210,679.80	\$246,177.89	
(ii)	\$ 151,125.48	\$0	\$29,906.96	
(iii)	\$177,320.18	\$10,960.83	\$42,060.13	

- (2) Has there been any major change in the City's design standard?
If so, specify and indicate fiscal year in which it occurred?

Yes		No	✓
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F. Overflow Emergency Response Plan

- (1) Total number of SSOs (private lateral SSOs not included).
(2) Percentage responded to within 2 hours.

2013	2014	2015	2016	2017	2018	2019	2020
11	9	4	5	7	5	5	6
73%	89%	75%	80%	86%	80%	100%	83%

G. FOG Control Program

- (1) Was an annual report with information on FOG published and/or mailed out to the City's property owners?
(2) What was the percentage of SSOs due to:
(i) FOG
(ii) Roots
(iii) Other Causes
(3) What was the total volume (gal) of SSOs that reached surface water?

Yes	✓	No	
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2013	2014	2015	2016	2017	2018	2019	2020
0	0	0	0	14	0	0	17
80%	88%	25%	20%	14%	80%	0%	0%
20%	11%	75%	80%	72%	20%	100%	83%
%							
12,625	21,400	2,500	40	900	9,980	2,00	2,150

H. System Evaluation and Capacity Assurance

- (1) What is the total length (ft) of sewer lines rehabilitated by lining or reconstructed?
(2) What percentage of televised sewer lines was rated as being in severely deteriorated structural condition?
(3) What percentage of SSOs was due to a sewer capacity issue?

2013	2014	2015	2016	2017	2018	2019	2020
0	1,667	0	0	0	0	0	0
0	0	0	0	0	0	0	2.2%
0	0	0	0	0	0	0	0

I. Monitoring, Measurement, and Program Modifications

- (1) When was the last audit conducted certified?
(2) Were any deficiencies identified?
(3) If answer to No. 2 is yes, were all the deficiencies corrected?
*If no, please elaborate in Section L

2014			
Yes	✓	No	
Yes	✓	*No	

J. SSMP Program Audit and Certification

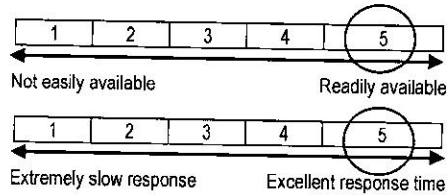
- (1) What was the overall effectiveness rating of the last audit?
(2) What is the overall effectiveness rating of this audit?

1	2	3	4	5
Poor	Fair	Good	Very Good	Excellent
1	2	3	4	5
Poor	Fair	Good	Very Good	Excellent

K. Communication Program

- (1) List all communication methods utilized in disseminating information on FOG to stakeholders with implementation dates. (Done by the County)
- (2) To what extent is the County's emergency telephone number readily available to the City and the City's residents on a scale of 1 to 5?
- (3) How responsive is the County (local sewer service provider) in responding to the City's and/or residents' sewer issues on a scale of 1 to 5?

✓	Method	Date Last Implemented
✓	Annual Report	2018
✓	Door Hangers	Ongoing
✓	Internet	Ongoing
✓	EPD/CSD Posters	Ongoing



L. List of identified deficiencies and planned corrective actions, if any.

The Consolidated Sewer Maintenance District (CSMD) has completed 68.86 miles of the interior inspection of the City's 78.26 miles of gravity sewer system by closed-circuit television (CCTV) camera to evaluate the physical condition of the pipes. The remainder inspection of the City's sewer system (9.4 miles) will be completed by the end of 2021. This is part of the ongoing efforts by the CSMD to identify and correct any structural or maintenance deficiencies in the sewer system. The sewer system will be reviewed and evaluated for maintenance and structural deficiencies after the entire inspection of the City's sewer system is completed. Upon completion of the assessment of the condition, the CSMD will identify and schedule structural rehabilitation of the City's sewer system as part of the ongoing CSMD's Accumulative Capital Outlay Program.

In 2015, a point repair on Rocky Point Pump Station's force main was completed. In addition, two-point repairs were completed this year to address broken or fractured sewer pipes.

The CSMD operates and maintains two sewage pump stations for the City of Palos Verdes Estates: Paseo Del Mar and Rocky Point. Major pump station improvements completed during this audit period included installation of new sewage force mains for both pump stations and complete rehabilitation/upgrade of the Rocky Point Sewage Pump Station (PS). The Rocky Point Sewage PS project included: installation of all new dry-pit submersible pumps/motors, piping, valves, air compressor, ventilation, valve vault, emergency overflow storage, motor control center with integrated control panel, instrumentation, lighting fixtures, disconnect switches, panelboards, dry type transformers, conduits/boxes, and related appurtenances. Work also included the epoxy/polyurethane lining application to the interior concrete surface of the existing wet well; repair and modification of existing concrete structures; and replacement of hatches. Other pump station operation and maintenance replacements completed for the Rocky Point PS during this audit period included: level transducers, variable frequency drive for pump No. 2, pump motor No. 1, backflow device, air compressor, and voltage surge protector. Other pump station operation and maintenance replacements completed for the Paseo Del Mar PS during this audit period included: motor saver, air compressor, level transducers, soft start unit for pump motor

No. 2, and valve vault sump pump. Note that the Paseo Del Mar Sewage PS was completely rehabilitated/upgraded in 2012, just prior to this audit period.

CSMD has a 10-year cycle to complete the CCTV of all the sewer system under its jurisdiction. The City's 2nd CCTV cycle will be completed by the end of 2021.

There were no sewer capacity issues identified in the City's system during this audit period.

M. COMMENTS

The City's/SMDs SSMP has been very effective in keeping the number and total volume of SSOs in the City significantly below the Statewide median.

There were also very few citizen complaints during the same period.

The SSMP along with associated programs, based on all categories of performance indicators shown on page 2, seem to have significantly enhanced the City's sewer collection system management and operations.

N. CERTIFICATION

We, the undersigned, do hereby certify that information contained in this audit report is to the best of our knowledge true.

Name (s)	Position	Signature	Date
Los Angeles County Department of Public Works			
Alex Villarama, Senior Civil Engineer		<i>Alexander I. Villarama</i>	
City of Palos Verdes Estates		<i>MT</i>	4/4/2022