CITY OF LOS ANGELES

Sewer System Management Plan (SSMP)
Biennial Self-Audit Report

Pursuant to the State General Waste Discharge Requirements (WDRs)
Order No. SSS WDRs 2006-0003

February 2017
City of Los Angeles Bureau of Sanitation

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1. Purpose and Background

This Audit Report was prepared by LA Sanitation in accordance with the requirements of Paragraph D.13 (x) of the California State General Waste Discharge Requirements (WDRs). The purpose of this audit is to review the City’s Sewer System Management Plans (SSMPs) for compliance with the WDRs and effectiveness in controlling and mitigating Sanitary Sewer Overflows (SSOs).

Paragraph D.13 (X) of WDRs states:

“SSMP Program Audits - As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee’s compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.”

Pursuant to WDRs Paragraph D.13, LA Sanitation prepared a SSMP for each of the City’s three Sanitary Sewer Systems which were approved by the Board of Public Works in February 2009. A self-audit report on the City’s SSMPs is, therefore, due no later than February of each odd year following the Board of Public Works’ adoption of the original SSMP in 2009.

In addition, Paragraph D.14 of WDRs states that:

“... The SSMP must be updated every five (5) years, and must include any significant program changes. Re-certification by the governing board of the Enrollee is required in accordance with D.14 when significant updates to the SSMP are made. ...”

Accordingly, the Board of Public Works adopted a Five-year Update of the SSMPs in February 2014. The next Five-year Update will be due in February 2019.

The following is a brief overview of the City’s three Sanitary Sewer Systems.

Hyperion Sanitary Sewer System: The Hyperion System is by far the largest of the City’s sanitary sewer systems, including 6,117 miles of gravity sewer and 24 miles of force main. Currently an average wastewater flow rate of nearly 300 million gallons per day (MGD) is generated in the System. About 70 MGD is treated at upstream Donald C. Tillman and Los-Angeles Glendale Water Reclamation Plants. All other flow in the System and the bio-solids from these
reclamation plants are treated at the Hyperion Treatment Plant located in Playa Del Rey.

**Terminal Island Water Reclamation Plant Sanitary Sewer System:** The plant currently processes an average wastewater flow rate of 15 million gallons per day that is collected and conveyed to the plant by 318 miles of gravity sewer and 13 miles of force main.

**The City of Los Angeles Regional Sanitary Sewer System:** The service area consists of 113 miles of gravity sewer and one (1) mile of force main. Wastewater generated in this service area is treated at the County Sanitation Districts’ Joint Water Pollution Control Plant in Carson.
2. Self-Audit Method and Scope

An audit questionnaire was prepared and key personnel in the City’s Clean Water Program were interviewed. All Parts and Sub-parts of the SSMPs were evaluated with respect to compliance with WDRs and their effectiveness in helping meet the SSMP Goals as set forth in SSMP Part I.

The SSMP elements which have been determined to be WDR-compliant and effective will continue to be implemented. Recommendations are made for the SSMP elements which have been determined to be in need of an update or enhancement.

In addition, in light of the requirement to prepare the next Five-year Update of the SSMPs by February 2019 pursuant to WDRs Paragraph D.14, this Audit Report will include a recommendation for a more extensive review and update of the SSMPs to be completed in February 2019, as described in Section 4, Audit Recommendations.

3. Self-audit Findings

The WDRs require that the biennial self-audits focus on (1) the SSMPs continued compliance with WDRs, and (2) effectiveness in controlling and mitigating sewer overflows. The following will provide an overall evaluation report followed by a more detailed report on the SSMPs individual Parts and Sub-parts.

a. Broad Evaluation

(1) Compliance with WDRs
The City’s SSMPs continue to be in full compliance with the provisions of the WDRs. The SSMPs contain all WDRs-required parts and subparts, are being implemented, and are communicated to staff and the public via the internet and LA Sanitation’s intranet and other means.

(2) Effectiveness in Controlling Sanitary Sewer Overflows
During this audit cycle, except for one major sewer collapse which resulted in high-volume Category1 SSOs that reached surface waters, all SSMP goals have been met.

In Fiscal Years 2014/15 and 2015/16, the number of SSOs were a total of 110 and 102, respectively, for all three of the City’s Systems combined, or less than two (2) SSOs per year per 100 miles of sewer pipes, far below the State and National average.

The volume of SSOs during the past two years, however, has been uncharacteristically high due to a major collapse of the North Outfall Sewer (NOS) in July 2016 which resulted in a number of Category 1 SSOs
that reached surface waters. The City has taken measures to mitigate impact and is planning and implementing preventive measures to avoid similar future occurrence, in full communication with the Los Angeles Regional Water Quality Control Board.

The following are some of the highlights of accomplishments in the past two Fiscal Years.

➢ Inspected 764 miles of sewer using CCTV.

➢ Completed 64 miles of rehabilitation and replacement projects.

➢ Cleaned more than 14,000 miles as a part of preventive maintenance program.

➢ Chemically treated 731 miles for root control.

➢ Annually inspected all of the nearly 10,000 food service establishments (FSEs) for compliance with the FOG Control Program Ordinance.
Figures shown are totals for all three Sanitary Sewer Systems combined.

85% Reduction in SSOs since 2000-01
FOG-Related SSO Reduction

Figures shown are totals for all three Systems combined.

95% Reduction in FOG-Related SSOs since 2000-01
Root-Caused SSO Reduction

![Graph showing reduction in root-caused SSOs from 2002-03 to 2015-16]

Figures shown are totals for all three Systems combined.

b. More Detailed Findings on Individual SSMP Parts and Sub-parts

The following are the findings of this Self-audit Report with respect to WDRs compliance and effectiveness in controlling and mitigating SSOs in greater details. For each SSMP part and subpart, two key questions have been addressed: (1) Does it continue to comply with the requirements of the WDRs and any amendments thereto, and (2) Does it continue to be effective and efficiently support the SSMP objectives to control and mitigate sewer overflows. Recommendations are provided for improvement if these questions could not be answered affirmatively.

A questionnaire was used to verify the prevalence and accuracy of each SSMP part and sub-part. Recommended action is noted where an element of the SSMP is found to be no longer current or accurate.
Part i, Goal

Are the goals included in Part I still appropriate and accurate?

Yes.

Part ii, Organization

Are the City’s Clean Water Program’s organization and staff contact information included in Part II up-to-date and effective?

The names and contact information of the City offices having a lead or support role in the policy making, management, operation, and maintenance of the sanitary sewer systems are largely current and accurate. There are a few exceptions. For example, some offices’ names have been changed to more accurately reflect their current responsibilities and functions which will be included with the updated SSMPs when the recommended revisions are incorporated.

Recommendations: None for this biennial cycle. Consider conducting a review of the City’s Clean Water Program’s organization with the aim to maximize the advantages that are or should be realized due to overlaps and redundancies as a part of the next Five-year Update which is due by February 2019.

Part III, Legal Authority

(a) Are the City ordinances for illicit discharge prevention and Inflow/Infiltration (I/I) control still current and accurate?

Yes.

(b) Are the existing permit requirements sufficient for proper sewer connections?

Yes.

(c) Legal authority for access to the portion of sewer laterals the City is responsible for?

Not applicable. Property owners own and are responsible for the entire lateral reach.

(d) Is the FOG Control Ordinance current and effective?

Yes.
(e) Are the City’s enforcement mechanisms still adequately addressing violations of sewer ordinances?
Yes.

**Recommendations:** None.

**Part IV, Operation and Maintenance Program**

(a) Does the current mapping system and applications provide for adequate display of Sanitary Sewer Systems components and applicable features of the stormwater system?
Yes. Sewer S-maps and Y-maps are updated as appropriate. Navigate LA is an increasingly powerful web-based mapping application.

(b) Does the City’s preventive maintenance program continue to be effective as stated?
Yes.

(c) Does the City’s sewer rehabilitation and replacement program continue to be effective in identifying and prioritizing deficiencies and implementing the needed improvements in a timely manner to prevent failures?
Yes. An anomaly during the period covered by this audit was a North Outfall Sewer (NOS) collapse in July 2016 which resulted in Category 1 SSOs at a number of locations. Mitigation measures have been implemented and plans for a vigorous inspection program and capital improvement projects are under way so as to prevent similar occurrences in the future.

(d) Does the City continue to provide ongoing and special training to the City’s and private contractors’ staff effectively?
Yes. The City continues to invest generously on staff training; no issues attributable to a lack of sufficient training. All training and certification requirements for proper operation & maintenance, timely and effective emergency response, and safe practices are met and documented. For contractors’ staff, training requirements are spelled out in the contracts.

(e) Does the City continue to maintain a reliable inventory of parts to ensure timely and emergency replacement?
Yes.

The City’s design, construction, and performance standards continue to be among the highest in the industry.

Recommendations: None.

Part VI, Overflow Emergency Response Plan

The overflow emergency response plan continues to be WDR-compliant and very effective in documenting, communicating, containing, and mitigating all overflows. Public notification plan and procedures to limit access to and contact with the areas affected by SSOs are very effective. A notable example is the City’s response to the July 2016 North Outfall Sewer (NOS) overflows.

Recommendations: None.

Part VII, Fats, Oils, and Grease (FOG) Control Program

The City’s FOG Control Program is WDR-compliant and produces exceptional results. FOG-related SSOs are down in the low teens per year, exceptionally low for the City’s vast sewer network with more than 6,700 miles of sewer pipes.

Recommendations: None.

Part VIII, System Evaluation and Capacity Assurance Plan

The capacity planning methods documented in the existing SSMPs continue to be practiced. As a result of basin planning, major interceptors and outfall system planning, and the resulting capital improvement projects planning and implementation, the sewer system is able to collect and convey all peak flows. During the two-year period covered by this Audit Report the City did not experience any wet weather overflows.

Some planning features and tools, however, have been enhanced and ought to be documented in the updated SSMPs to keep current, for example, flow monitoring and hydrodynamic modeling.

Recommendation: Rewrite Part VIII to include a current description of the City’s flow monitoring and reporting program. Also document how any exceptions are identified and improvement measures are planned and implemented.
Part IX, Monitoring, Measurements, and Program Modifications

While the City’s ongoing measures and activities have produced exceptional results particularly in controlling the number of SSOs and providing emergency response when SSOs do occur, during the period covered by this biennial self-audit the total volume of SSOs and the portion reaching the surface waters have been unusually high. This is almost entirely attributable to the July 2016 North Outfall Sewer (NOS) overflows.

Recommendations: To ensure sufficient and continued commitment of resources to the highest of priorities, conduct a review of all SSMP measures and activities as a part of the next Five-year Update of the SSMPs which is due by February 2019. This review ought to focus on key results areas with the aim to validate the existing programs and/or make refinement recommendations for effective and efficient development and implementation of the various program elements. Please also see recommendations in Part X, SSMP Program Audits, for further details.

Part X, SSMP Program Audits

Since the original SSMPs were approved by the Board of Public Works (“Governing Body”) in February 2009, all Biennial Self-audits and a Five-year Update of the SSMPs have been prepared internally by the City staff.

In keeping with the City’s commitment to transparency and objectivity, the audit team believes that it is time for a fresh and independent review of the City’s SSMPs by experts from outside the City service. The upcoming required Five-year Update of the SSMPs which is due by February 2019 per Paragraph D.14 of the WDRs provides an excellent opportunity for this independent and comprehensive review.

The City’s approval process for acquiring the services of outside experts who do not currently do business in the Clean Water Program and are not on the existing list of pre-qualified on-call consultant contract is relatively lengthy. As such, preparations for the recommended Five-year review by outside experts need to be made far enough in advance so that the next Five-year Update will be completed and adopted by the Board of Public Works by February 2019.

Recommendations: Develop and implement a schedule for hiring a consultant from outside the City service and conducting the next Five-year Update of the SSMPs by February 2019.
Part XI, Communication Program

The City’s communication with the public, regulators, satellite agencies, City staff and policy makers, and other stakeholders on the development, implementation, and performance of its SSMPs continue to be adequate and effective; no issues as a result of a communication gap.

Recommendations: None.

4. Audit Recommendations

In summary, the recommendations of this Audit Report are twofold:

(1) Incorporate the above-referenced updates and improvements to individual SSMP Parts and Sub-parts and recertify the updated SSMPs with the State Water Board in February 2017; and

(2) Begin preparations for acquiring the services of an outside consultant and/or expert personnel from peer agencies to prepare a Five-year Update of the SSMPs in time for the Board of Public Works’ adoption by February 2019.