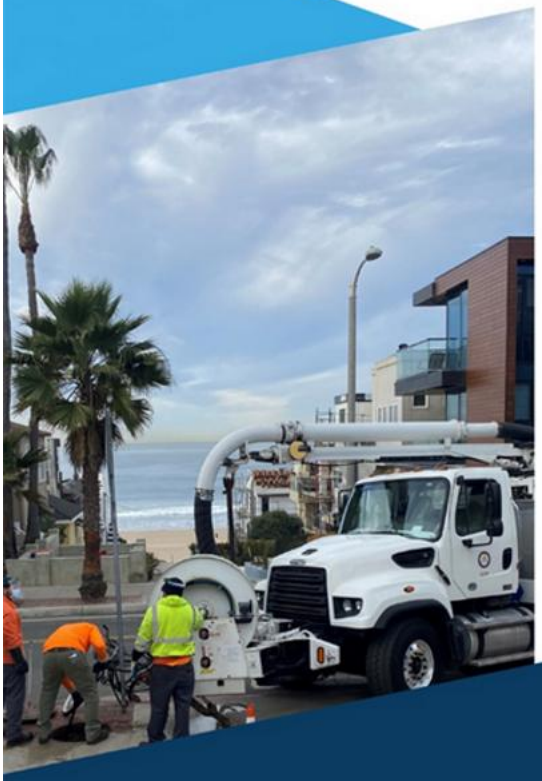
CITY OF

Manhattan Beach

UTILITIES DIVISION

Sewer System Management Plan Update

July 15, 2025







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Definitions, Acronyms, and Abbreviations

Best Management Practices (BMP) – Refers to the procedures employed in commercial kitchens to minimize the quantity of grease that is discharged to the sanitary sewer system.

Blockage or Stoppage – A build-up of debris in the sewer line or lateral, which stops the flow of wastewater and allows the water to back up behind the stoppage, sometimes causing a spill.

California Integrated Water Quality System (CIWQS) – Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certifies completion of the SSMP, and provides information on the sanitary sewer system.

California Office of Emergency Services (OES) – Responsible for the coordination of overall state agency response to disasters. Assuring the state's readiness to respond to, recover from all hazards and assisting local government in their emergency preparedness, response, recovery, and mitigation.
https://www.caloes.ca.gov/cal-oes-divisions

Capital Improvement Program (CIP) – Refers to the document that identifies planned capital improvements to the district's wastewater collection system.

Closed-Circuit Television (CCTV) – The process and equipment that is used to internally inspect the condition of gravity sewers.

California Water and Environmental Association (CWEA) - CWEA the State Water board committed to re-designing the CIWQS3 Online database to allow "event" based SSO reporting versus the original "location "based reporting.
http://www.cwea.org/

Enrollee – A public entity that owns or operates a sanitary sewer system and has submitted a complete and approved application for coverage under the SSS WDR.

Fats, Oils, and Grease (FOG) – Refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system.

Food Service Establishment (FSE) – Refers to commercial or industrial facilities where food is handled/prepared/served that discharge to the wastewater collection system.

Geographical Information System (GIS) – A computerized database linked with mapping, which includes various layers of information used for asset management purposes . Examples of information found on a GIS can include a sewer map and sewer features such as pipe location, diameter, material, condition, and last date cleaned or repaired. The GIS also typically contains base information such as streets and parcels.

General Waste Discharge Requirements (GWDR) – Similar to a NPDES permit but with significant differences. A WDR is an authorization to discharge waste with certain conditions, which can be issued on an individual basis or to a group of dischargers. WDR's do not sunset, unlike NPDES permits, and are most issued by the Regional Water Boards. The Statewide General WDR for Sanitary Sewer Systems was adopted by the SWCRB and will be implemented by the Regional Water Boards and SWRCB.

Infiltration/Inflow (I/I) – Infiltration is generally considered to be extraneous water that enters the sewer system over longer periods of time, such as groundwater seepage through cracks in the sewer. Inflow is generally considered to be extraneous water that enters the system as a direct result of a rain event, such as through defects in the sewer. While it is impossible to control all I/I, it is certainly desirable to reduce I/I when cost-effective.

Legally Responsible Official (LRO) – The authority to ensure the enrolled sanitary sewer system(s) complies with this Order, and is authorized to serve as a duly authorized representative.

Los Angeles County Department of Health (LACDH)

Los Angeles County Sanitation District (LACSD)

Lateral (House Connection Sewer) - The portion of sewer that connects a structure (residence or business) with the main sewer line in the street, alley or easement.

Lower Lateral – That portion of a lateral usually from the property line or easement line to the sewer main. Enrollees may or may not be responsible for maintenance of this portion of the lateral. If not, the lower lateral is owned and maintained by the property its serves.

Manhole – Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

Monitoring and Reporting Program (MRP) – Refers to the State Water Resources Control Board Monitoring and Reporting Program 2022-0103-DWQ including all future revisions

National Association of Sewer Service Company (NASSCO) – Sets industry standards for the assessment, maintenance, and rehabilitation of underground infrastructure, and to assure the continued acceptance and growth of trenchless technologies. Provides viable solutions through education, technical resources, and advocacy

National Pollution Discharge Elimination System (NPDES) – An NPDES permit is typically a license for a facility to discharge a specified amount of a pollutant into a receiving water under certain conditions. Permits may also authorize facilities to process, incinerate, landfill, or beneficially use sewage sludge.

NGO – Non-governmental organization.

Online SSO Reporting System – Refers to the California Integrated Water Quality System (CIWQS).

Operations and Maintenance (O&M) – WDR requirements for Sanitary Sewer Management Plan to maintain maximum flow to the wastewater treatment plant and to maximize either in-line storage capacity or detention upstream of the system inlets. There are several key components of an O&M program that a municipality/authority must provide to ensure proper O&M and to meet the minimum control requirement

Overflow Emergency Response Plan (OERP) – The purpose of the OERP is to supports an orderly and effective response to sanitary sewer overflows (SSOs). It provides guideline for City personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within the City's service area.

Percent Reached Surface Water – Volume of sewage discharged from a sanitary sewer system or private lateral or collection system estimated to have reached surface water divided by the total volume of sewage discharged.

Percent Recovered – Volume of sewage discharged that was disposed of properly, divided by the total volume of sewage discharged.

Private Lateral – Privately owned sewer service lateral.

Private Lateral Sewage Discharge (PLSD) – Sewage discharges caused by blockages or other problems within privately owned laterals, collection systems or other private sewer assets that are tributary to the reporting Enrollee's sanitary sewer system. Reports of these events may be submitted by Enrollees on a voluntary basis but are not the Enrollee's responsibility unless caused by issues in the main line or because of other Enrollee activity. Normally, this type of sewage discharge is the responsibility of the private lateral, private asset, or collection system owner.

Pipeline Assessment and Certification Program (PACP)

Regional Water Quality Control Board (RWQCB)

Sanitary Sewer Overflow (SSO) – Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSO may also be referred to as a "spill" in this document and the 2022 Order. SSOs include:

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States.
(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

Sanitary Sewer System – Any system of pipes, pump stations, sewer lines, or other

conveyances, upstream of a WWTP head works and which is comprised of more than one mile of pipes and sewer lines, used to collect, and convey wastewater to a publicly owned treatment facility.

Sanitary Sewer System Waste Discharge Requirements (SSS WDRs) – An Order to develop a regulatory mechanism to provide a consistent statewide approach for reducing sanitary sewer overflows

Sanitary Sewer Spill Categories –

Spill Category 1 – All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system that resulted in a discharge to a drainage channel and/or surface water.

Spill Category 2 – All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system of a volume equal to or greater than 1,000 gallons that did not reach surface water.

Spill Category 3 – All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system of a volume equal to or greater than 50 gallons and less than 1,000 gallons that did not reach surface water.

Spill Category 4 - All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system of a volume less than 50 gallons that did not reach surface water.

Spill Database – Online reporting system developed, hosted, and maintained by the SWRCB for compliance with the Monitoring and Reporting Program contained in SSS WDR.

System Evaluation and Capacity Analysis Plan (SECAP) Sewer System – See Wastewater Collection System

Sewer System Management Plan (SSMP) is a document that describes the activities an agency uses to manage their wastewater collection system effectively.

State Water Resources Control Board (SWRCB) – State Water Resources Control Board and staff responsible for protecting the State's water resources.

Supervisory Control and Data Acquisition (SCADA) – Refers to an electronic system that is used to monitor lift station performance and to initiate alarms when monitored parameters exceed pre-set limits.

Upper Lateral – Portion of a lateral usually from the building foundation to the property line or easement line where it connects to the Lower Lateral. Enrollees may not own and maintain this portion of a Lateral since responsibility usually lies with the owner of the property that the lateral serves.

Waste Discharge Requirements (WDR/ GWDR) – Refers to the State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated May 2, 2006, and Order No. WQ2013-0058-EXEC including all future revisions.

Wastewater Collection System – All pipelines, pump stations, and other facilities upstream of the headworks of the wastewater treatment plant, which convey wastewater from its sources to the wastewater treatment plant.

Waters of the United States (Please refer to the link below to access Federal register published on January 18, 2023 for the updated and detailed definition of this item)
https://www.federalregister.gov/documents/2023/01/18/2022-28595/revised-definition-of-waters-of-the-united-states

WDID – Waste Discharge Identification number assigned as a unique identifier by the SWRCB to each Enrollee for regulatory recordkeeping and data management purposes.

Introduction

Willdan Engineering has been retained by the City of Manhattan Beach Utilities Division to update the City's Sewer System Management Plan (SSMP) to be presented to the State Water Resources Control Board (SWRCB). The report is organized in accordance with the SWRCB requirements, provides discussions of the requirements and makes recommendations to implement measures to meet the requirements.

Background

On May 2, 2006, the State Water Resources Control Board (SWRCB) adopted a Statewide General Waste Discharge Requirements and Monitoring and Reporting Program (GWDR) by issuing Order No. 2006-003. See Appendix A for reference. The regulations in the Order were developed out of growing concern about the water quality impacts of Sanitary Sewer Overflows (spills), particularly those that cause beach closures, adverse effects to other bodies of water, or pose serious health and safety nuisance problems.

On July 30, 2013, Attachment A to the Order was promulgated and became effective on September 9, 2013, and is known as Attachment A, SWRCB Order No. WQO 2013-0058-EXEC, amending the Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (together these documents constitute the "SSS WDR"). The amendment added a spill Category 3 and revised the Category 1 and 2 updating the reporting requirement.

The contents of this document reflect the requirements of Order No. 2022-0103-DWQ (2022 Order), which was adopted by the SWRCB on December 6, 2022 and became effective on June 5, 2023. Prior to the 2022 Order's effective date, the City's LRO successfully certified the City's continued regulatory coverage under the WDR in the California Integrated Water Quality System (CIWQS) Sanitary Sewer System Database.

This permit, among other things, requires local public sewer collection system agencies, referred to as "Enrollees," to develop a Sewer System Management Plan ("SSMP"). SSMPs must be self-audited at least every three (3) years and updated every six (6) years from the original adoption date by the Enrollee's governing board. The original SSMP must have been approved by the governing board of the Enrollee at a public meeting and adopted.

The six-year SSMP update must also be approved and certified as do all significant updates to the SSMP. The SSMP, all references in the document, and the adoption documents by the governing board must be available on the agency website or submitted to the SWRCB upon adoption or recertification. Enrollees do not send their SSMP to the State or Regional Water Boards for review or approval, but must make it publicly available, and upload an electronic copy to the spill database or provide a link to the Enrollees' website where the SSMP is posted.

The two major components of the GWDR are:

1. Owners and operators of publicly owned collection Sewer Systems, a mile long or greater, apply for coverage under the GWDR; and
2. Owners and operators develop and implement a system specific Sewer System Management Plan (SSMP).

The SSMP must be self-audited at least every three years and updated every six years. The last SSMP update for the City of Manhattan Beach was in March 28, 2022 and the City performed its last internal audit on February 4, 2025

See Appendix E for Self-Audit report.

Areas of Concern:

- Cleaning and CCTV mileage recordkeeping have faced challenges and do not have full data for the year of 2024.
- CCTV mileage recordkeeping and cleaning have encountered challenges and do not have complete data for the year 2024.

Appendix 14 includes the Notice of Inspection, pre-inspection questionnaire, inspection report, and sign-in sheet. Appendix 15 includes the Notice of Violation and inspection findings. Appendix 16 includes the City's response to the violations and areas of concern, planned amendments, FY 2021-2026 CIP Budget, Completed Priority Projects,, manhole with root issues resolved, hydro cleaning daily report, and wastewater station daily worksheet.

i. Organization of SSMP

Section D.13 of the SSS WDR, requires all Enrollees to development an SSMP and make it available to the public and to the SWRCB and RWQCB. The SSS WDR further specifies eleven (11) mandatory Elements that must be addressed in the SSMP. The SSS WDR also requires that the SSMP be audited at least every three (3) years from the original governing board approval date and updated or revised and re-certified by the governing board at least every six years from adoption and must include any significant changes to the SSMP, as specified in Section D.14 of the SSS WDR. This guide is written to assist Enrollees in developing and updating SSMPs.

The eleven (11) required SSMP Elements that must be included in an SSMP are as follows:

1. Goals
2. Organization
3. Legal Authority
4. Operation and Maintenance Program
5. Design and Performance Provisions
6. Spill Emergency Response Plan (SERP)
7. Sewer Pipe Blockage Control Program
8. System Evaluation and Capacity Assurance and Capital Improvements
9. Monitoring, Measurement, and Program Modifications
10. Internal Audits
11. Communication Program

If an Enrollee (the City) modifies amends or changes any of the Elements as a result of an audit, changes in its operating philosophies, or new technology additions, those changes must be specified and included in an SSMP Change Log now required to be included in an appendix D to the SSMP (MRP Section E.3.).

Chapter 1 Goals

This SSMP element identifies goals and schedules the City has set for the management, operation and maintenance of the sewer system and discusses the role of the SSMP in supporting these goals. These goals provide focus for City staff to continue high-quality work and to implement improvements in the management of the City's wastewater collection system, reduce and prevent spills, and contain and mitigate spills. This section fulfills the requirement of SWRCB SSMP Element 1 - Goals

1.1 Regulatory Requirements

According to State Water Resources Control Board Order No. 2022-0103-DWQ (2022 Order), the goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent spills, as well as mitigate any spills that do occur.

The intent of the WDR is to provide consistent statewide requirements for managing and regulating sanitary sewer systems throughout California. The State Water Board recognized a need to provide this consistent regulatory measure because many of the Regional Water Boards were beginning to implement similar measures inconsistently throughout the State, which was creating confusion in the discharger community. The State Water Board believes that providing a consistent regulatory measure that identifies regulatory expectations and comprehensive spill data will ultimately yield better collection system management and performance.

There are three major components to the WDR, including:

- Prohibitions;
- Sanitary Sewer Management Plan (SSMP) Elements; and -
  Spill Reporting

While there are many other relevant components and findings within the WDR, the major components identified above represent most of the State Water Board's regulatory expectations for the implementation of the WDR. The regulatory audit is intended to provide an analysis of the current programs and practices within the City of Manhattan Beach that address the above issues. This document will provide recommendations to ensure the development of appropriate SSMP programs and an appropriate time schedule necessary to comply with the WDR.

1.2 Sewer System Management Plan Update Schedule

SSMP Update Due Dates							
8/2/2025		8/2/2031		8/2/2037		8/2/2043	
Audit Due Dates							
End of Audit Period	**Audit Due Date**	**End of Audit Period**	**Audit Due Date**	**End of Audit Period**	**Audit Due Date**	**End of Audit Period**	**Audit Due Date**
8/2/2024	2/2/2025	8/2/2027	2/2/2028	8/2/2030	2/2/2031	8/2/2033	2/2/2034
Annual Report (due April 1st annually)							
Training Programs (Ongoing)							

*Per Section 5.5 and Attachment E1, Section 3.11 of General Order, Plan updates are due within six years after the required due date of the Enrollee's last Plan Update.
**Per Section 5.4 and Attachment E1, Section 3.10 of the General Order, the Audit Report is due within six months after the end of the required audit period.

1.3 City Service Area and Sewer System Asset Overview

The City of Manhattan Beach is located 19 miles southwest of Los Angeles on the southerly end of Santa Monica Bay, in Los Angeles County. The City of Manhattan Beach has a city area of 3.88 square miles with a population of 33,369 based on the 2023 Census. The City's owned and operated sewer collection system is made up of a network of gravity sewers, pump stations, and force mains. The gravity system consists of approximately 81.6 miles of pipe, and 2,086 manholes and clean outs. The system also includes eight pump stations and 5,114 feet of associated force mains.

The City's Public Works Department manages and collects data for the City's sanitary sewer collection system. Although the City maintains its sewer main lines, the lateral lines that connect individual homes and businesses to the main line are considered the responsibility of the property owner under the local ordinance: Title 5 – Sanitation and Health (MBMC 5.36.240). The majority of the local sewers lines tie into one of the Los Angeles County Sanitation District (LACSD) trunk sewers crossing the City. The sewage is then conveyed by gravity flow to the LACSD's Joint Water Pollution Control Plant in the City of Carson. The number of residential, commercial, and industrial service connections in the City is currently 13,251. The City has two low-flow diversion structures that divert stormwater to the sanitary sewer.

The City currently has no unique service boundary conditions.

References to the City's sanitary sewer system map can be found in Section 4.2 of this document.

1.4 SSMP Goals

The City of Manhattan Beach Public Works Department prides itself in providing high quality services to the City's many residents and businesses. Providing safe, responsive, and reliable sewer service is a key component to fulfilling the City's goal. The Public Works Department is cautious and mindful of the importance of their role in the City's day-to-day functions. Accordingly, the Public Works Department provides safe, reliable, efficient, and

cost-effective services to ensure continuity of operations throughout the City. In support of this goal, the City has developed the following goals for the proper management, operation, and maintenance of its sewer system.

1. Minimize sanitary sewer overflows.
2. Prevent public health hazards.
3. Minimize inconveniences by responsibly handling interruptions in service.
4. Protect the large investment in the collection system by maintain adequate capacities and extending useful life.
5. Prevent unnecessary damage to public and private property.
6. Use funds available for sewer operations in the most efficient manner
7. Convey wastewater to treatment facilities with a minimum of infiltration, inflow and exfiltration.
8. Provide adequate capacity to convey peak flows
9. Perform all operations in a safe manner to avoid personal injury and property damage

This SSMP supplements and supports the City's existing Operation and Maintenance Program and goals by providing high-level, consolidated guidelines and procedures for all aspects of the City's sewer system management. The SSMP will contribute to the proper management of the collection system and assist the City in minimizing the frequency and impacts of spills by providing guidance for appropriate maintenance, capacity management, and emergency response.

1.5 Monitoring and Reporting Plan Requirements

All changes to this Element of the SSMP must be recorded along with the date and person responsible for the changes on the SSMP Change Log (MRP at section E.3.) attached as an appendix D to the SSMP. Enrollees should also consider the addition of separate appendices for copies of all adoption and recertification documents and all audit reports completed by the Enrollee

1.6 References

2022 SSS WDR -
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2022/wqo_2022-0103-dwq.pdf

Chapter 2 Organization

The intent of the Organization element is to identify persons, by name, responsible for implementing the SSMP, responding to spill events, and meeting the spill reporting requirements, including drafting, and certifying spill reports and providing other information required by the CIWQS Online Database. This section fulfills the requirement of SWRCB SSMP Element 2 - Organization.

2.1 Regulatory Requirements

According to State Water Resources Control Board Order No. 2022-0103-DWQ Attachment D of Section 2, the SSMP must identify the:

a. Name of the Legally Responsible Official
b. Names and telephone numbers, email addresses for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program.
c. Identify lines of authority in an organization chart or similar document with a narrative explanation; and
d. Chain of communication for reporting spills, from receipt of a complaint or other information, including the person responsible for reporting spills to the State and Regional Water Quality Control Board (RWQCB) and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, and/or State Office of Emergency Services (OES)).

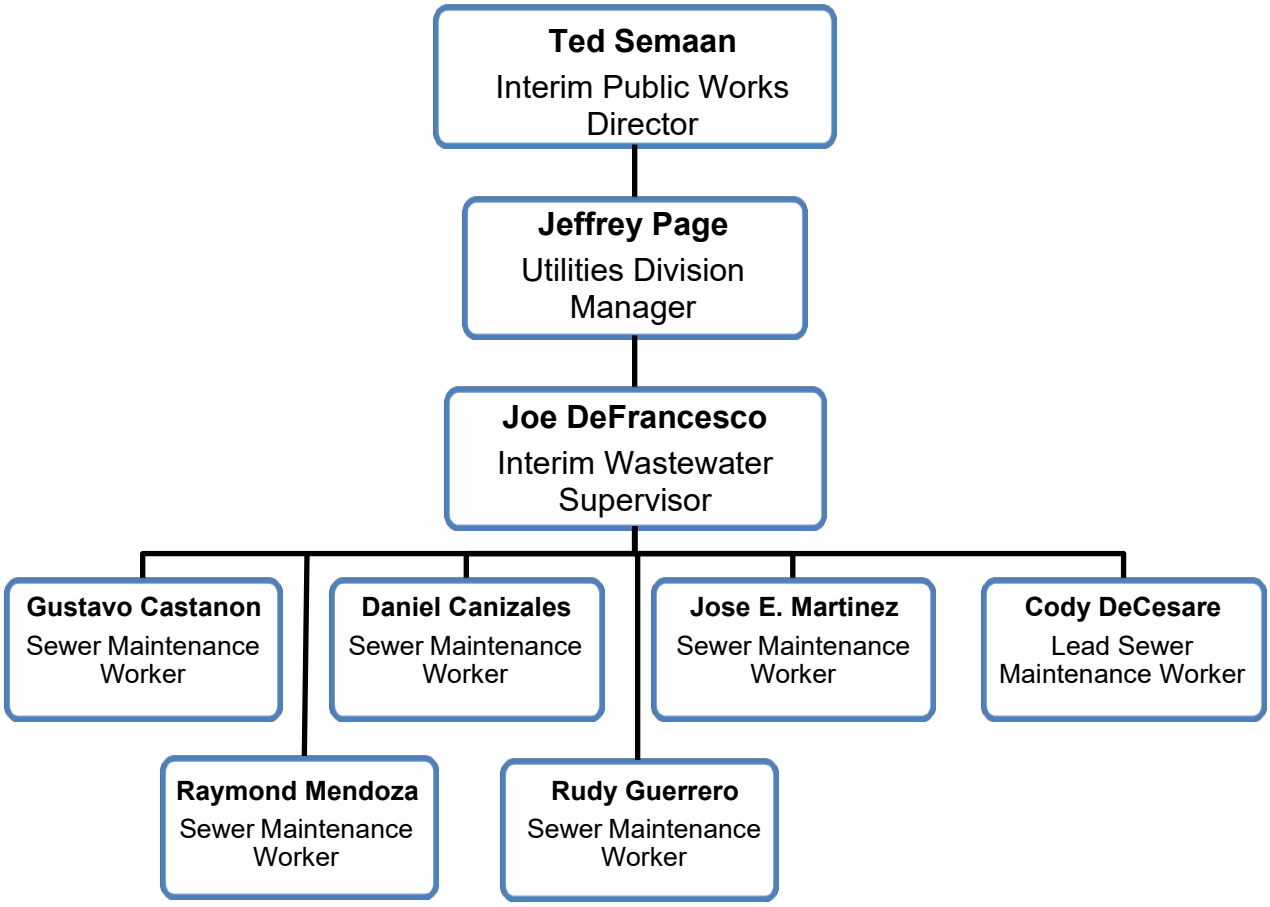
2.2 Legally Responsible Official

The Utilities Division Manager, Jeffrey Page, is the authorized representative for the execution of the compliance actions required under the WDRs. This includes, but not limited to, signing and certifying all reports and correspondence as required under this order.

2.3 Management and Organizational Structure

The organization chart for management, operation, and maintenance of the City's wastewater collection system is shown in Figure 1 – Organization Chart of Sewer Staff. The phone numbers and email addresses for designated staff are included in Table 1 – Sewer Staff Contact Information.

Figure 1 – Organization Chart of Sewer Staff



Description of General Responsibilities

Public Works Director: Approves Public Notifications of a spill and Sewage Stoppage Report, communicates with media, as applicable.

Utilities Manager: Reviews Sewage Stoppage Report and provides to Public Works Director for approval, receives and conveys messages of after-hour spills, certifies online spill reporting, communicates with media, as applicable.

Wastewater Supervisor: Monitors SCADA system, receives and conveys messages of spills to appropriate personnel, provides instructions for reporting to spills, completes online spill reporting, provides Sewage Stoppage Report to Utilities Manager.

Sewer Maintenance Worker: Responds to spills, obtains onsite information regarding the spill, assists in containment, clean-up, and maintenance of the collection system. One on-call person is assigned to be on standby seven days a week, with a 30-minute response time after business hours.

Table 1 – Enrollee Contacts Responsible for SSMP

Name	Title	Phone Number	Email Address
Ted Semaan	Interim Public Works Director	(310) 802-5302	tsemaan@manhattanbeach.gov
Jeffrey Page	Utilities Manager	(310) 802-5320	jpage@manhattanbeach.gov
Joe DeFrancesco	Interim Utilities Supervisor – Sewer/Stormwater	(310) 802-5310	jdefrancesco@manhattanbeach.gov
Gustavo Castanon	Sewer Maintenance Worker	(310) 600-0475	gcastanon@manhattanbeach.gov
Daniel Canizales	Sewer Maintenance Worker	(310) 600-0475	dcanizales@manhattanbeach.gov
Jose E. Martinez	Sewer Maintenance Worker	(310) 600-0475	jmartinez@manhattanbeach.gov
Cody DeCesare	Lead Sewer Maintenance Worker	(310) 600-0475	cdecesare@manhattanbeach.gov
Raymond Mendoza	Sewer Maintenance Worker	(310) 600-0475	rmendoza@manhattanbeach.gov
Rudy Guerrero	Sewer Maintenance Worker	(310) 600-0475	rguerrero@manhattanbeach.gov

SSMP Element	Responsible Party (Position)	Responsible Party (Name)	Phone Number	Email Address
Introduction				
1 – Goals	Interim Public Works Director	Ted Semaan	(310) 802-5302	tsemaan@manhattanbeach.gov
2 – Organization	Interim Public Works Director	Ted Semaan	(310) 802-5302	tsemaan@manhattanbeach.gov
3 – Legal Authority	Utilities Manager	Jeffrey Page	(424)445-6577	jpage@manhattanbeach.gov
4 – O&M Program	Interim Utilities Supervisor – Sewer/Stormwater	Joe DeFrancesco	(424)445-6566	jdefrancesco@manhattanbeach.gov
5 – Design & Performance Provisions	Sr. Civil Engineer	Marzena Laskowska	(310) 802-5325	mlaskowska@manhattanbeach.gov
6 – Overflow Emergency Response Program	Interim Utilities Supervisor – Sewer/Stormwater	Joe DeFrancesco	(424)445-6566	jdefrancesco@manhattanbeach.gov
7 – FOG Control Program	Water Compliance Supervisor	Sandy Nimat	(310) 802-5338	snimat@manhattanbeach.gov
8 – SECAP	Sr. Civil Engineer	Marzena Laskowska	(310) 802-5325	mlaskowska@manhattanbeach.gov
9 – Monitoring, Measurement, and Program Modifications	Interim Utilities Supervisor – Sewer/Stormwater	Joe DeFrancesco	(424)445-6566	jdefrancesco@manhattanbeach.gov
10 – SSMP Program Audits	Water Compliance Supervisor	Sandy Nimat	(310) 802-5338	snimat@manhattanbeach.gov
11 – Communication	Utilities Manager	Jeffrey Page	(424)445-6577	jpage@manhattanbeach.gov

Change Log	Utilities Manager	Jeffrey Page	(424)445-6577	jpage@manhattanbeach.gov

2.4 Spill Reporting Chain of Communication

The chain of communication for responding to and reporting spills to the appropriate regulatory agencies is depicted in Figure 2 – Spill Reporting Flow Chart. Table 2 lists the contact phone numbers for the parties included in the chain of communication. Chapter 6 Spill Emergency Response Plan details the procedures and responsibilities during an spill event, and the procedure is briefly summarized below:

The City encourages citizens to report spills to the Public Works Department during business hours. All calls are forwarded to the Utilities or Street Division at the Public Works Department if residents call the Fire Department or City Hall. For after-hours, the City utilizes a Regional Communication Center (RCC). There are four maintenance workers, one of whom is on standby seven days a week. The dispatchers are trained to page the on-call maintenance phone for water, sewer, or street-related incidents. Once at the scene, staff will:

- Investigate the site
- Determine the cause of the problem
- Request reinforcement, if necessary
- Contain and mitigate
- Correct the spill and clean-up
- Notify the proper regulatory agencies, as appropriate
- Document response actions by completing the internal Spill Report Form
- Report the Spill in the CIWQS Spill Online Reporting Database

2.5 Monitoring and Reporting Plan Requirements

The MRP states that:

- Any LRO shall be registered with the SWRCB; link to CIWQS User Registration (LROs and Data Submitters) at https://ciwqs.waterboards.ca.gov/ciwqs/newUser.jsp.
- Any enrollee employee or contractor may enter draft data into the CIWQS Online Database on behalf of the enrollee if authorized by the LRO and registered with the State Water Board. However, only LROs may certify reports in CIWQS.

The Enrollee shall maintain continuous coverage by an LRO. Any change of a registered LRO, including deactivation or a change to the LRO's contact information, shall be submitted by the Enrollee to the SWRCB within 30 days of the change by email at ciwqs@waterboards.ca.gov and copying the appropriate Regional Water Quality Control Board at rb4-ssswdr@waterboards.ca.gov

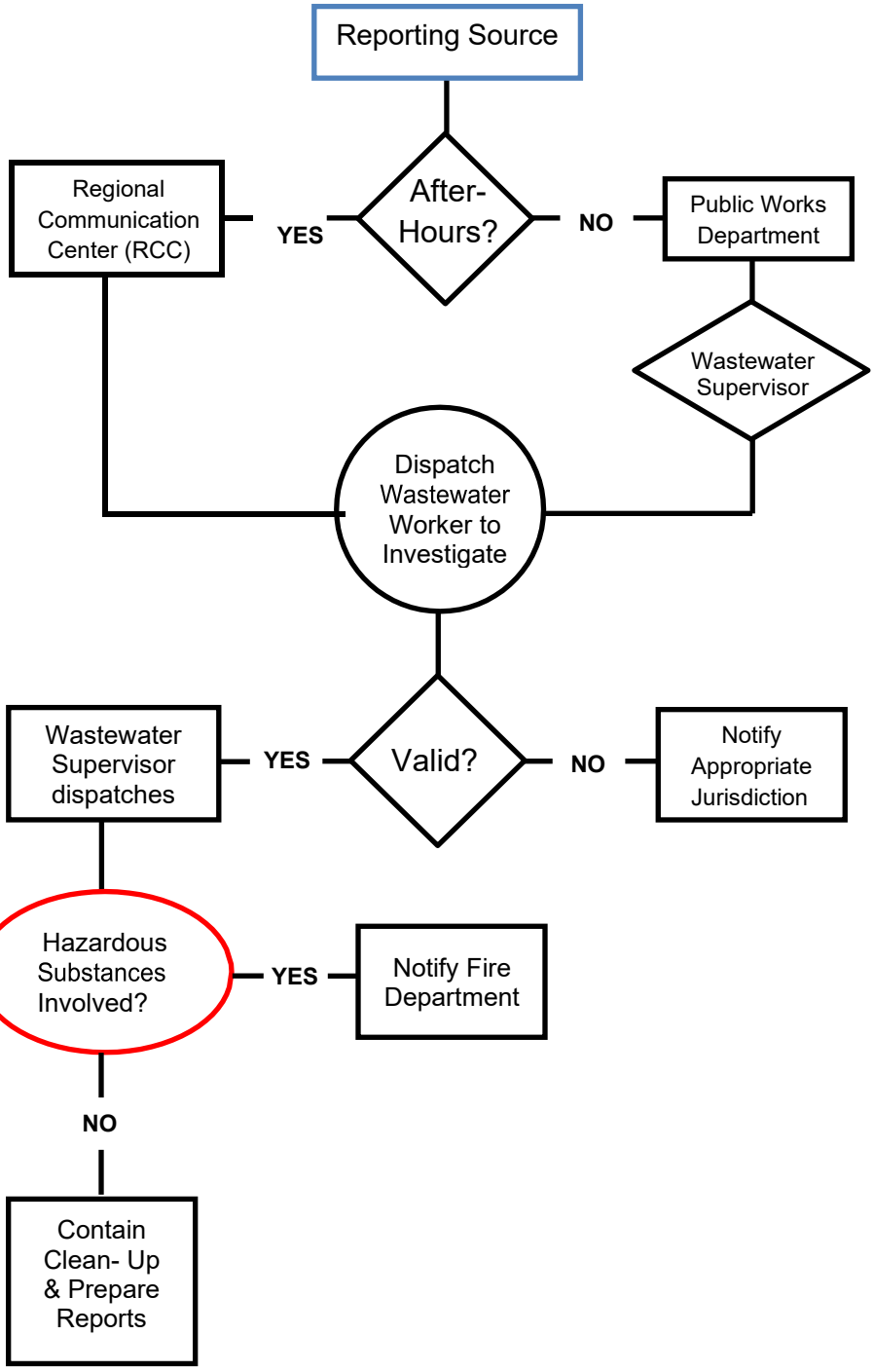
2.6 References

2022 SSS WDR (complete with appendices) - https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2022/wqo_2022-0103-dwq.pdf

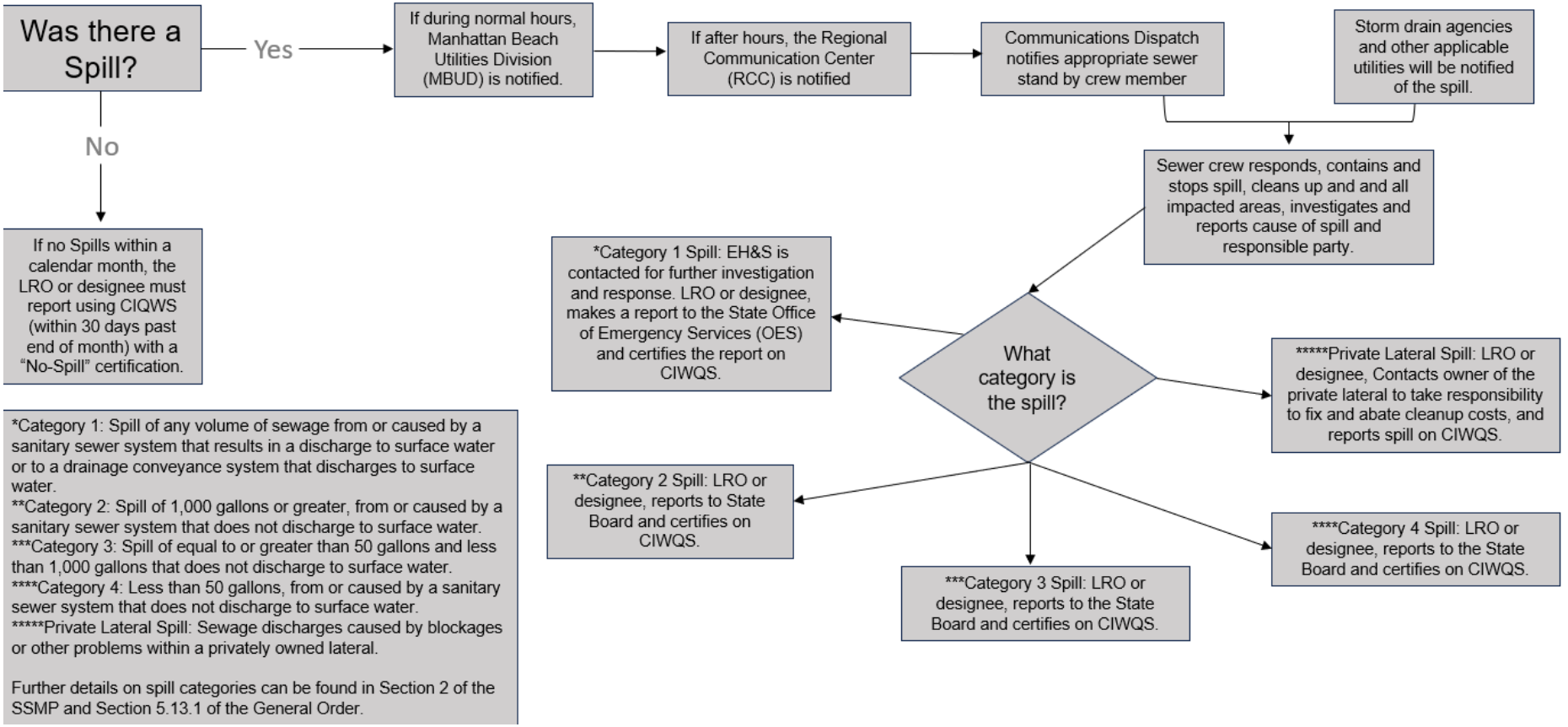
Table 2 – Contact Numbers for Spill Chain of Communication

Contact	Phone Number
Utilities Division	(310) 802-5304
Public Works Department – After Hours	(310) 545-4566
Public Works Department – Daytime	(310) 802-5313
Office of Emergency Services (OES)	(800) 852-7550
Emergency Service Coordinator (Sherryl Jones)	(310)729-8322
L. A. County Department of Health	(213) 974-1234
City Hall	(310) 802-5000
Fire Department	(310) 802-5200
Police Department	(310) 545-4566

Figure 2 – Spill Reporting Flow Chart



External Reporting Flow Chart



Chapter 3 Legal Authority

This chapter of the SSMP discusses the legal authority, including the Manhattan Beach Municipal Code, to comply with the SSMP requirements through sewer ordinances and service agreements with other agencies. This section fulfills the requirement of SWRCB SSMP Element 3 - Legal Authority.

3.1 Regulatory Requirements

According to State Water Resources Control Board Order WQ 2022-0103 Section 3, the enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

a. Prevent illicit discharges into its sanitary sewer system (examples may include infiltration and inflow (I/I), stormwater, chemical dumping, unauthorized debris and cut roots, etc.).
b. Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure.
c. Require that sewers and connections be properly designed and constructed.
d. Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency.
e. Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and
f. Enforce any violation of its sewer ordinances.
Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

3.2 Illicit Discharge Prevention

The City of Manhattan Beach amended the Code of Ordinance, Title 5 – Sanitation and Health, to include Chapter 5.36 – Sewers, Sewage Disposal – City Sewage System. The purpose of this chapter is to prevent discharges from entering the sewer pipelines and drainage that would obstruct or damage the system, interfere with treatment, or threaten harm to human health or the environment. Sections from Chapter 5.36 that specifically limit the illicit discharges are included in Appendix 1 – Code of Ordinance, Title 5 – Sanitation and Health Chapter 5.36 – Sewer, Sewage Disposal – City Sewage System and identified in Table 3 Legal Authority Checklist.

3.3 Collaboration with Storm Sewer Agencies for Emergency Spill Responses

The City of Manhattan Beach collaborates with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure.

3.4 Design, Construction, and Installation Requirements

The Public Works Department, Engineering Division, develops and enforces standards that require all sewers constructed in the City comply with standard plans, specifications, policies, and practices. This applies to private developer designed and constructed projects. These standards are continuously updated to incorporate new materials and construction methods to ensure that the completed installations meet the high-performance standards of the City. Construction plans and technical specifications are prepared for all new or rehabilitation projects that document the standard of performance for the construction and the standards for acceptance. Service connections must be designed and constructed to meet the City of Manhattan Beach Plumbing Code. The City does not accept the installed components until they pass all required performance tests, paid fees, and a field acceptance from the Public Works Building Inspector. Every connection made with any public sewer of the City shall be made in accordance with the Sewer Connection Special Plans and Specifications approved by the Council designated and numbered as MBSS-200A-0(ST-5) on file in the office of the City Clerk and hereby referred to and by this reference incorporated herein and made a part hereof, and only with materials as are therein specified. Sections from Chapter 5.36 of the Manhattan Beach municipal code that support these requirements are included in Appendix 1 - Code of Ordinance, Title 5 – Sanitation and Health Chapter 5.36 – Sewer, Sewage Disposal – City Sewage System and identified in Table 3 Legal Authority Checklist.

3.5 Lateral Maintenance Access

The City does not maintain private lateral sewer lines. Property owners are responsible for proper installation, operation and maintenance of both upper and lower laterals, including laterals on the City-owned easement. Property owners are required to obtain permits from the Department of Community Development for work on private properties and the Department of Public Works for work in the public right-of-way. The section from Chapter 5.36 of the Manhattan Beach municipal code that supports these requirements is included in Appendix 1 - Code of Ordinance, Title 5 – Sanitation and Health Chapter 5.36 – Sewer, Sewage Disposal – City Sewage System and identified in Table 3 Legal Authority Checklist.

3.6 Fats, Oils and Grease Discharge Limitations

The City of Manhattan Beach amended the Code of Ordinance, Title 5 – Sanitation and Health, to include Chapter 5.38 – FATS, OILS AND GREASE MANAGEMENT AND DISCHARGE CONTROL. The purpose of this chapter is to facilitate the maximum beneficial public use of the City's sanitary sewer collection system while preventing blockages of sewer lines resulting from discharges of FOG to the system, and to specify appropriate FOG discharge requirements for FSEs discharging into the City's sewer system. Sections that specifically limit the discharge of FOG that may cause blockages are include in Appendix 2 - Code of Ordinance , Title 5 – Sanitation and Health Chapter 5.38 – Fats, Oils and Grease Management and Discharge Control and identified in Table 3 Legal Authority Checklist.

3.7 Monitoring and Reporting Plan Requirements

The City follows the 2022 Order of the MRP per the Attachment E2 – Summary of Notification, Monitoring and Reporting Requirements. .

3.8 Enforcement Provisions

The City's Ordinance provides the authority to carry out all inspection, surveillance, and monitoring procedures necessary to determine, independent of information supplied by FSE's, compliance or noncompliance by industrial users with applicable pretreatment standards and requirements. The Ordinance gives the Director of Public Works the power, jurisdiction, and supervision over places of discharge of wastewater into the sewer system, necessary to adequately enforce and administer all applicable State and Federal laws. Sections in Chapter 5.38 of the Manhattan Beach municipal code that support these requirements are include in Appendix 2 - Code of Ordinance , Title 5 – Sanitation and Health Chapter 5.38 – Fats, Oils and Grease Management and Discharge Control and identified in Table 3 Legal Authority Checklist.

3.9 Easement Accessibility Agreements

Per Chapter 5.38.120 of the City's Ordinance, persons or occupants of premises where wastewater is created or discharged shall allow the Director, or City representatives, reasonable access to all parts of the FSE and all wastewater generating and disposal facilities for the purposes of inspection and sampling during all times the discharger's facility is open, operating, or any other reasonable time. No person shall interfere with, delay, resist or refuse entrance to City representatives attempting to inspect any FSE or facility involved directly or indirectly with a discharge of wastewater to the City's sewer system

Table 3 – Legal Authority Checklist

Requirement	Title 5, Code of Ordinance
ILLICIT DISCHARGES	
Prevent illicit discharges into the wastewater collection system	Chapter 5.36 Sections: 250, 260, 270, 280, 290, 300, 330
PROPER DESIGN AND CONSTRUCTION	
Require that sewers and connections are properly designed and constructed	Chapter 5.36 Section: 170, 310
LATERAL ACCESS	
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained	Chapter 5.36 Section: 240 (shall be maintained by property owner)
FOG SOURCE CONTROL	
Limit the discharge of FOG and other debris that may cause blockages including permits and requirements	Chapter 5.38 Sections: 015, 020, 025,030, 035, 045, 050, 055, 060, 065, 070,
Requirements to install grease removal devices (such as interceptors)	Chapter 5.38 Section: 105
ENFORCEMENT	
Enforce any violation of sewer ordinance	Chapter 5.38 Sections: 110, 115, 120,125, 130, 135, 140, 145, 150, 155, 160, 65, 170, 175, 180
EASEMENT ACCESSIBILITY	
Ensures access for maintenance	Chapter 5.36 Section: 120

3.10 References

City of Manhattan Beach Municipal Code Title 5, Sanitation and Health

5.36 – Sewers, Sewage Disposal – City Sewage System

https://www.municode.com/library/ca/manhattan_beach/codes/code_of_ordinances?nodeId=TIT5SAHE_CH5.36SESEDIITSESY

5.38 - Fats, Oils and Grease Management And Discharge Control

https://www.municode.com/library/ca/manhattan_beach/codes/code_of_ordinances?nodeId=TIT5SAHE_CH5.38FAOIGRMADICO

SSS WDR - https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2022/wqo_2022-0103-dwq.pdf

Chapter 4 Operation and Maintenance Program

This chapter of the SSMP discusses the operation and maintenance program to comply with the SSMP requirements through preventive and cleaning routines, staff training, and appropriate equipment. This section fulfills the requirement of SWRCB SSMP Element 4 - Operation and Maintenance Program.

4.1 Regulatory Requirements

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ. The enrollee must include those elements that are appropriate and applicable to the Operation and Maintenance Program:

a. Maintain an up-to-date map of the sanitary sewer system and procedures for maintenance. The map(s) must show all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;
b. Describe routine preventive operation and maintenance activities by staff and contractors; including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas, including areas with tree root problems. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
c. Develop rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and CCTV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short and long term plans plus a schedule for developing the funds needed for the capital improvement plan;
d. Provide training on a regular basis for staff in sanitary sewer system operations, maintenance, and require contractors to be appropriately trained; and
e. Provide equipment and replacement part inventories, including identification of critical replacement parts.

4.2 Collection System Mapping

The City's GIS mapping database, maintained by the GIS Manager, shows all features of the sanitary sewer system, including lift stations and pumping facilities, gravity line segments, manholes, force mains, and valves. Other information layers are used for recording and tracking CCTV-identified defects, such as broken pipes, holes in pipes, offset joints, roots, and grease. The maps are routinely updated to include sewer division capital projects and new or rehabilitated sewer system components. The Public Works Engineering and Utilities Divisions are responsible for providing as-built information to the GIS section for updating the maps. This system is a powerful tool when used to quickly

access critical information during an emergency response. These records serve as reference for all future Capital Improvement planning.

City's Website

Map Gallery (pdfs)
https://www.manhattanbeach.gov/departments/information-technology/gis-and-maps/map-gallery:

Sewer System:
https://www.manhattanbeach.gov/departments/public-works/utilities-division/sewer-system

Interactive Mapping:
https://permitmaps.citymb.info/Html5Viewer/index.html?viewer=mbca&_ga=2.115490053.2059370828.1647203212-1275532579.1647203212

4.3 Routine and Preventive Maintenance Program

The City operates and maintains a sewer system that serves a population of approximately 35,000 people within the City area of 3.88 square miles. The City's system consists of approximately 81.6 miles of sewer lines, 2,086 manholes and clean-outs, 8 lift stations, and 5,114 feet of associated force mains. The City has a proactive and preventive maintenance program for its sewer system. The maintenance yard is strategically located in an area such that travel time is minimized when addressing routine and emergency situations. Given the City's proximity to the sea, a sewer- system-overflow can reach the ocean in a relatively short period of time. Accordingly, the City's sewer system preventative maintenance program is aggressive so as to obviate raw sewage reaching the ocean. The Wastewater Staff respond to all sewer emergency calls received 24/7, regardless of nature and ownership – public and private. During business hours, all reported and observed problem sewers are inspected and addressed within 15 minutes. During after-hours, all reported and observed sewer problems are inspected and addressed within sixty minutes. Problem sewers are identified, prioritized and scheduled for maintenance based on a comprehensive review of the maintenance history and system characteristics of all the sewers in the City including overflows, blockages, age, material and condition.

The City has acquired the work order management system inframaps and the city is in the process of training personnel. The City does not have written standard operations and maintenance procedures for its pump/lift stations; however, the City does use a standardized check list for the weekly pump/lift station inspections (included at the end of Appendix 16 – Notice of Violation Response). For routine cleaning, the collection system is organized into 25 districts based on their tributary and the goal is to clean out each district twice a year. Maintenance includes high velocity sewer cleaning, vacuuming, and manual rodding. Closed circuit television inspections are performed at the site of all sewer overflows within twenty-four hours to identify any necessary repairs or special maintenance needs. These may trigger further reviews to determine cause and/or immediate or accelerated corrective actions. Corrective action schedules are set based

on the severity of the problem. Preventative maintenance activities that the City currently conducts include the following:

- Fats, Oils, and Grease (FOG) Cleaning
  Overflows caused by blockages from FOG are monitored for location and needed cleaning frequency. The City performs increased rotation of cleaning in sewers with known FOG concentrations. The City's FOG Ordinance provides the legal authority to regulate and thus minimize FSE FOG contribution to the sewer system; and FOG Source Control Program Manual provides the FSE's with information on FOG control Best Management Practices.
  The FOG Source Control Program 2010 Manual is draft copy.

  City's Website for Municipal Code Title 5: Sanitation and Health

  https://library.municode.com/ca/manhattan_beach/codes/code_of_ordinances?nodeId=TIT5SAHE

- Root Control Strategy
  Roots are the main issue the City faces, since the sandy soil conditions allow roots to grow quickly in search of a water source. The City performs routine mechanical root removal as an extensive cleaning schedule especially in areas of known root intrusion. This schedule has prevented major root issues such as veil-type and root balls originating from private laterals.

- Odor Control Strategy
  The City's aggressive sewer line cleaning program has served to effectively control odor. The entire 81.6 miles of sewer lines are cleaned twice a year. "Extra attention" line, those with known root and grease issues, are cleaned twice a month. The City's six wet wells are inspected and skimmed twice a week, and completely vacuumed out once a year.

- Pump Stations Maintenance
  The Public Works Utilities office serves as the main center for SCADA monitoring and control of pump stations. Utilities Electrician and Sewer Maintenance Worker inspect the eight lift stations once per week. Southern California Edison is contracted to perform overall plant energy efficiency testing, infrared panel inspections, meg ohm testing, vibration analysis and electric panel cleaning. The City's seven of eight sewage lift stations have built-in backup emergency and redundancy power systems with automatic transfer switches. The power systems are start tested weekly by staff, and undergo motor and generator servicing bi- annually by Power Plus, Inc. The back-up generator is tested by running it once per month under no-load conditions, in compliance with local Air Quality Management District regulations.

4.4 Rehabilitation and Replacement Plan

The City plans to launch a five-year program to inspect its approximately 2,086 manholes and cleanouts, conduct CCTV inspections of its 81.6 miles of sewer lines and perform a

structural rehabilitation analysis of the findings. The city has acquired its own CCTV equipment to commence this initiative. The CCTV recordings are prioritized per the database summary developed through the analysis. Each reach will be assigned a condition grade per the PACP standards and prioritization will be based on the type and number of defects identified in each recording. Pipes that are believed to be at higher risk of collapse and blockages, and therefore have a greater potential for causing a sanitary sewer overflow will be given the highest priority. Operation and maintenance (O&M) defects such as grease, roots, and deposits are considered separately.

For each of the identified structural deficiencies, a Rehabilitation and Replacement Plan is developed along with an engineer's cost estimate. The estimates include the construction cost, as well as the design, inspection, administration costs and contingencies. The Rehabilitation and Replacement Plan implementation entails a variety of short-, medium-, and long-term activities that ensure the sustainability of the sanitary sewer system infrastructure.

Short, Medium and Long-Term CIP Schedule

CCTV inspections and physical inspections provide up-to-date data that is used by the City to evaluate the hydraulic and structural condition of its sanitary sewer system. From this assessment, deficiencies are identified, evaluated, improvement projects identified and scheduled. To assess the condition of CCTV inspected sewers, the City uses a five-category rating system based on the types and severity of defects. The Categories range from Category A (Excellent) to Category E (Emergency Condition). The condition ratings trigger a follow-up action that includes either rehabilitation within a certain time frame or a follow-up inspection. Rehabilitation projects are developed and scheduled for implementation on a prioritized basis with other identified needs. Category A and B Sewers are in excellent to good condition and are scheduled for continued inspections and monitoring. Category C condition sewers fall into the long-term CIP schedule. They are in fair condition and are scheduled for follow-up inspections every five years until repairs have been completed. Category D condition sewers fall into the medium-term CIP schedule. They are in a condition that requires close monitoring and may require rehabilitation within five years. Preventive measures are intensified, as appropriate, to avoid emergency situations and follow-up inspections are conducted annually. Category E condition sewers fall into the short-term CIP schedule and they need emergency repair. These are sewers where a pipe failure has already occurred or there is a full flow obstruction/blockage and immediate repairs are initiated.

4.5 Staff and Contractor Training

- Sewer Maintenance Workers are initially trained in the proper operation and maintenance of all major sewer collections equipment and facilities by the Utilities Supervisor – Sewer/Stormwater.
- Critical equipment training is facilitated by outside contractors in areas of fork lift operation, backhoe and bob-cat operation, crane operation
- Every staff member receives periodic formal safety training in confined space entry, trench shoring, traffic control, heat illness, and hazardous materials management.
- On-the-Job cross training is actively pursued to ensure staff has a proficient working

knowledge of all aspects of sewer system maintenance.

- Task proficiency is a requirement for all job positions, and training records are maintained to monitor completed classes.
- Disaster training exercises are conducted twice a year, city-wide. The exercise is a live disaster simulation, which includes outside contractors. The collection system trains for by setting up a bypass scenario for a pump station.
- The spill volume is involved in the training for field operators to know how to approach the situation.
- Staff is trained in the Best Management Practices of the Fats, Oils, and Grease (FOG) Control Ordinance, and has been instructed to report violations when encountered in the course of a working day.
- Staff are provided with 24/7 emergency contact numbers for contractors who perform sewer system repair, in addition to contact numbers for three neighboring cities – Hawthorne, El Segundo and Redondo Beach – who can lend aid in the form of equipment and personnel.
- The City has contracted staff trained to use the electronic CIWQS reporting for City staff to submit the data.

More information about the preventive maintenance and staff training is provided in Appendix 8 – Wastewater Master Plan – Section 8, Condition Assessment.

4.6 Equipment and Replacement Part Inventory

The City maintains an inventory of equipment, replacement parts, and supplies and follows a structured process to ensure an up-to-date accounting and complete inventory of equipment and replacement parts for their specific duties. Parts that are needed for preventive maintenance are identified ahead of time for each specific maintenance task. Parts are secured prior to the start of preventive maintenance. Redundancy is provided for key pump station equipment and all pump stations have backup power to minimize the risk of a complete shut-down. As a backup, managers have credit authority to purchase needed materials and supplies from local vendors of non-stock items when they are critically needed. The City maintains equipment and performs testing as needed to guarantee a ready state for immediate deployment in an emergency. A complete list of the inventory is provided in Appendix 3 – Equipment and Replacement Parts Inventory and Existing Pump Inventory is provided in Appendix H.

4.7 Monitoring and Reporting Plan Requirements

a. The 2022 MRP update included new information to be implemented for the Spill Technical Report for the spill causes and circumstances *“Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions”, “Description of the pipe material, and estimated age of the pipe material, at the failure location”, “Description of the impact of the spill”.*
b. The 2022 MRP update to the enrollee’s response to spill included details to the final corrective actions such as *“Local regulatory enforcement action taken against an illicit*

discharge in response to this spill, as applicable", "Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences", and "Necessary modifications to the Emergency Spill Response Plan to incorporate lessons learned in responding to and mitigating the spill". Any changes to the Preventive Maintenance Schedule could be included as a part of a corrective action plan.

c. The 2022 MRP updates to the new Technical Report requirement for spills ≥ 50,000 gallons does require a *"List of pollutant and parameters monitored, sampled and analyzed as required in section 2.3 (Receiving Water Monitoring) of this Attachment", "Laboratory results, including laboratory reports",* and *"Other regulatory agencies receiving sample results (if applicable)".* The 2022 MRP included a new section of information *for "Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water".*
d. The 2022 MRP includes a new Category 4 Spill in the Technical Report to *"report and certify the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, within 30 calendar days after the end of the month in which the spills occurred".* The category 4 is to be implemented in the corrective action plan.

4.8 References

City of Manhattan Beach Capital Improvement Plan
https://citymb.maps.arcgis.com/apps/MapSeries/index.html?appid=9f848041862b41418965ab94420ee79b

City of Manhattan Beach Wastewater Master Plan (Section 5 & 9)
https://www.manhattanbeach.gov/departments/public-works/utilities-division/master-plans

See Appendix 4-9 for Wastewater Master Plan (AKM Consulting engineers, October 21. 2010)

Chapter 5 Design and Performance Provisions

This chapter discusses the design standards and specifications to comply with the SSMP requirements for new and/or rehabilitated sewers and other appurtenances. This section fulfills the requirement of SWRCB SSMP Element 5 – Design and Performance Provisions.

5.1 Regulatory Requirements

According to State Water Resources Control Board Order No. No. 2022-0103-DWQ, the enrollee must include the following Design and Performance Provisions:

a. Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and
b. Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

5.2 Design and Construction Standards and Specifications

As noted in Chapter 3, Legal Authority, the Public Works Department, Engineering Division, develops and enforces standards that require all new sanitary sewers and appurtenances constructed to comply with standard plans, specifications, policies, and practices. This applies to private developer designed and constructed projects. Construction plans and technical specifications are prepared for all new or rehabilitation projects that document the standard of performance for the construction and the standards for acceptance. Service connections must be designed and constructed to meet the City of Manhattan Beach Plumbing Code. Standards are continuously updated to incorporate new materials and construction methods to ensure that the completed design, construction, and installations meet the high-performance standards of the City. These standards include methodology for estimating wastewater design flows and minimum design standards for the collection system pipes, pump stations, and force mains. Technical information related to Section 5.2 is included in Appendix 4 - Wastewater Master Plan – Section 4, Criteria.

5.3 Procedures and Standards for Installation, Rehab, and Repair Projects

The Public Works Department, Engineering Division, provides inspection on all rehabilitation and new sewer system construction contracts. Written inspection procedures are followed to ensure that sewer system facilities are built to conform to the plans and specifications. Inspections are conducted both on the jobsite and at material fabricators during manufacture and testing. The City does not accept the installed components until they pass all required performance tests and a field acceptance from the Public Works Inspector. New or rehabilitated system components are placed into service upon certification by the Public Works Inspector that they have been installed in accordance with plans and specifications.

5.4 Monitoring and Reporting Plan Requirement

The MRP, issued with the SSS WDR, has no requirements to report anything specifically related to the Design and Reporting Standards required in the SSS WDR.

Chapter 6 Spill Emergency Response Program (SERP)

This chapter of the SSMP discusses the emergency response procedures for sewer overflows to comply with the SSMP requirements. This section fulfills the requirement of SWRCB SSMP Element 6 – Spill Emergency Response Program.

6.1 Regulatory Requirements

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ, the enrollee shall develop and implement a spill emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

a. Proper notification procedures so that the primary responders and regulatory agencies are informed of all spills in a timely manner;
b. Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
c. Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
d. Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
e. Address emergency system operations, traffic control and other necessary response activities;
f. Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
g. Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
h. Remove sewage from the drainage conveyance system;
i. Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
j. Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
k. Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;
l. Conduct post-spill assessments of spill response activities;
m. Document and report spill events as required in this General Order; and
n. Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

6.2 Notification Procedures for Spills

The City of Manhattan Beach Utilities Division maintains an up-to-date Sanitary Sewer Overflow Response Plan as mandated by the State Water Resources Control Board, which the City follows to provide formal notice to the Office of Emergency Services (OES). The City encourages citizens to report overflows to the Utilities Division via the Public Works Department (business hours) and the Regional Communication Center (after-hours). Sewer staff is available 24 hours per day, seven days per week to receive and

respond to calls, regardless of whether they originate on public or private property. There is a complaint phone log maintained of all calls. Once verified, all sewer spills regardless of volume or potential impact are reported to all parties in the chain of communication within the City and to the appropriate regulatory agencies, as shown in Figures 1 and 2 in Chapter 2.

Under the Order's reporting requirements four categories of Spills are defined:

- **Category 1.** A spill of **any volume** of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:
  - ✓ A surface water, including a surface water body that contains no flow or volume of water; or
  - ✓ A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.

  Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility. A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of the General Order.
- **Category 2.** All spills 1,000 gallons or greater of sewage resulting from or caused by, or failure or blockage in the sanitary sewer system that:
  - ✓ A spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
  - ✓ A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.
- **Category 3**. All spills equal to or greater than 50 gallons and less than 1,000 gallons from or caused by a sanitary sewer system:
  - ✓ A spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
  - ✓ A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 3 spill.
- **Category 4.** All spills that are less than 50 gallons and less than 1,000 gallons from or caused by a sanitary sewer system:
  - ✓ A spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
  - ✓ A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.
- **Private Lateral Sewage Discharges (PLSD)**. Sewage discharges that are caused by blockages or other problems within a privately owned lateral. PLSD that the enrollee becomes aware of may be voluntarily reported to the CIWQS Online Spill Database.

Initial reporting of Category 1 and Category 2 Spills must submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database as soon as possible, but no later than three business days after the spill is known. A final certified spill report must be completed through the Online CIWQS Sanitary Sewer System Database within 15 calendar days of the conclusion of the spill response and remediation, and the user will receive a final spill

event identification number. Category 3 Spills must be reported to the Online CIWQS Sanitary Sewer System Database within 30 days after the end of the calendar month in which the spill occurred. After the Legally Responsible Official certifies the spills, the online CIWQS Sanitary Sewer System Database will issue a spill event identification number for each spill. Category 4 and/or Lateral Spills (1) no spills occur during a calendar month or (2) only Category 4, and/or Enrollee-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the Enrollee shall certify, within 30 calendar days after the end of each calendar month, either a "No-Spill" certification statement, or a "Category 4 Spills" and/or "Non-Category 1 Lateral Spills" certification statement, in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Lateral Spills that will be reported annually. Private Lateral Sewage Discharges may be reported on the Online CIWQS Sanitary Sewer System Database, but, if reported, should be identified as occurring and caused by a private lateral.

In addition to reporting on the CIWQS Sanitary Sewer System Database, Category 1 Spills, especially those that enter surface waters, must notify to the Office of Emergency Services (OES) within two hours and obtain a notification control number in accordance with California Water Code Section 13271, et seq. Order No. WQ. 2013-0058-EXEC

The City of Manhattan Beach Spill Report Form is included in Appendix 12 – Spill Report Form. The sanitary sewer overflow locations map (from SWRCB Online Incident Map) and reports from 2017 to 2021 are included in Appendix 13 – Spill Map & Reports. Spills from 2007-2009 are summarized in Appendix 8 – Wastewater Master Plan – Section 9, Operation and Maintenance.

6.3 Spill Emergency Response Plan

The City's Overflow (spill) Response Plan presents a strategy for the mobilization of labor, materials, tools, and equipment to correct or repair any condition which may cause or contribute to a spill. The procedure requires full, immediate, and appropriate attention and response to a sanitary sewer spill with the ultimate goal of minimizing impacts to public health and safety and the environment. Telephone calls to report spills or other maintenance problems are answered 24 hours per day, 7 days per week. Wastewater personnel are immediately notified upon receipt of a reported potential sewer spill and are instructed to respond immediately, regardless of whether the cause of the problem originates on public or private property. Additionally, storm drain agencies and other applicable utilities will be notified of the spill. As residents or businesses in the immediate vicinity of the spill are to be informed of the cause of the problem and the remedial action taken. Written procedures are provided for assessing the spill, notifying supervisors, documenting the spill, estimating the volume of the spill, sampling, and laboratory analysis, posting warning signs, and following up. The City shall conduct a post-spill assessment to determine the spill response activities progress during the spill and cleanup.

All construction contractors working on the City's sewer system are required to have Department of Public Works approved sewage flow bypass system and Emergency Response Plan in place prior to start of construction. Contractors are instructed to take

immediate action to stop any overflow and to contact City personnel immediately.

The City will annually review and assess the effectiveness of the Response Plan and update as needed.

6.4 Notification to Regulatory Agencies

The City's Sanitary Sewer Overflow Response Plan outlines notification steps and includes a comprehensive contact and notification list. Notification depends on the severity and potential impact of the overflow. All sewer overflows that enter the waters of the state, such as the ocean, must be reported immediately – within 15 minutes of the knowledge of an overflow event, and/or when the Utilities Division's personnel determine that an overflow could potentially reach the waters of the State based on their knowledge of the sewer and storm drain infrastructure. Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify CalOES and obtain a notification control number by calling at (800) 852-7550

The notification lists are updated to keep officials' names and positions current. Construction contractors are required to take immediate measures to mitigate, and report overflows as soon as they are discovered. The Department of Public Works inspectors report construction-related overflows to the Utilities Division and document the time, location, cause, estimated quantity, and any impact of the overflow, and take mitigation measures as needed.

6.5 Procedure to ensure that staff and contractors are aware of and are appropriately trained to follow Emergency Response Plan

All Utilities Division personnel have participated in a workshop on the City's Standard Operating Procedures (SOP) for the Sanitary Sewer System. The SOP is an active element of the City's Emergency Operations Center training program. All wastewater operation and maintenance staff are trained on emergency response procedures once a year, city-wide. New employees receive this training as part of their orientation and this training is reinforced during tailgate training sessions. Public Works Inspectors are also trained in emergency response procedures. The City emphasizes its goal to have no construction-related overflows during pre-bid and pre-construction meetings. Presently, the City is in process of training personnel.

Construction contractors are required to submit and obtain approval of all flow bypasses and emergency response plans prior to the start of construction.

6.6 Procedures to address Emergency Operations such as traffic and crowd control and other necessary response activities

Public health and safety are of paramount importance when a sewer system spill occurs. Accordingly, City personnel are trained to utilize the *Work Area Control Handbook* in traffic and crowd control. The control systems and signage serve to provide safe and effective

work areas, and to warn, control, protect and facilitate vehicular and pedestrian traffic. The City has implemented sewer system spill response and reporting procedures that include timely reporting to regulatory agencies, tables for estimating spill volume, and follow-up CCTV inspection to accurately determine cause and prevention methods. Adequate staff is placed on standby status to supplement existing staff as needed or respond to an emergency after hours.

The City maintains a list of pre-qualified on-call contractors who provide specific equipment, materials, and crews to the City in emergency operations. The City's Police Department, Fire Department, and Public Works Department can be utilized to assist in emergency situations.

6.7 Program to Eliminate or Minimize the Discharge of Spills into Waters of the United States

The City seeks to protect public health & safety and the environment through the implementation of all Federal and State laws, standards, and orders applicable to untreated wastewater. Through a comprehensive and systematic program of cleaning, condition assessment, repair, and upgrade of its sewer system, the City has minimized all reasonable risks associated with the accidental discharge of sewage into the ocean. When a spill occurs, the highest priorities are to contain the spill and minimize, if not prevent, the spill discharge into the storm drain system, and to minimize or eliminate exposure to the public and impact on public health. The City's Sanitary Sewer Spill Response Plan provides guidance to the crews in order to accomplish this objective. A comprehensive investigation is performed for each spill event to diagnose cause and take remedial measures to prevent and mitigate similar future events. Reducing response time would significantly limit the amount of spills that reach the Waters of the United States.

Chapter 7 Sewer Pipe Blockage Control Program

The City's Manhattan Beach Municipal Code Title 5, Sanitation and Health, Chapter 5.38-Fats, Oils And Grease Management And Discharge Control facilitates the maximum beneficial public use of the City's sanitary sewer collection system while preventing blockages of sewer lines resulting from discharges of FOG into the sewer system, and specifying appropriate FOG discharge requirements for Food Service Establishments (FSEs) to comply with the SSMP requirements. This section fulfills the requirement of SWRCB SSMP Element 7 – FOG Control Program.

7.1 Regulatory Requirements

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ the enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:

a. An implementation plan and schedule for a public education outreach program that promotes proper disposal of pipe-blocking substances ;
b. A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area.
c. The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;
d. Requirements to install grease removal devices (such as traps or interceptors) design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.
e. Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance.
f. An identification of sanitary sewer system sections subject to FOG blockages and establish a cleaning maintenance schedule for each section; and
g. Implementation of source control measures, for all sources of FOG reaching the sanitary sewer system, for each section identified in (f) above.

7.2 Implementation Plan and Schedule for Public Outreach

The City of Manhattan Beach public education and outreach program is an ongoing effort that includes topics such as proper FOG management disposal procedures, as well as a general overview of the FOG Ordinance. Four outreach FOG workshops were provided to FSEs. Educational brochures and posters describing the FOG (Sewer Pipe Blockage) Control Program and Kitchen Best Management Practices are distributed to FSEs in English and Spanish. The City also maintains an up-to-date website, which serves as an additional source of information to the food service industry and the community at large.

The FOG Ordinance, FOG Source Control Manual, and general information about eliminating FOG discharges into the sewer system are among the information items provided on the website.

7.3 Plan and Schedule for Disposal of FOG Generated within the System Service Area

The City does not own or operate any FOG disposal facilities, and the City does not allow FOG waste haulers to discharge waste FOG into the sewer system either. However, the Los Angeles County Sanitation District accepts FOG from its member agency service areas, of which the City of Manhattan Beach is a part, at its Joint Water Pollution Control Plant in the City of Carson.

7.4 Legal Authority to Prohibit Discharges to the System and Identify Measures to Prevent Spills and Blockages Caused by FOG.

The City of Manhattan Beach implements FOG discharge prohibitions, which are set forth in the Manhattan Beach Municipal Code – Title 5, Sanitation and Health, Chapter 5.38 – Fats, Oils and Grease Management And Discharge Control. The prohibition section of the Manhattan Beach municipal code that supports this requirement is included in Appendix 2 – Code of Ordinance, Title 5 – Sanitation and Health, Chapter 5.38 – Sewers, Sewage Disposal – City Sewage System and identified in Table 3 of Legal Authority Checklist.

7.5 Requirements to Install Grease Removal Devices, Design Standards, Maintenance BMP's, Record Keeping and Reporting

The City of Manhattan Beach implements requirements for grease removal devices in Chapter 5.38 – Fats, Oils and Grease Management And Discharge Control. The grease removal devices must be cleaned, maintained and operational in order to minimize FOG discharges into the sewer system. The sections of the Manhattan Beach municipal code that support this requirement are included in Appendix 2 – Code of Ordinance, Title 5 – Sanitation and Health, Chapter 5.38 – Sewers, Sewage Disposal – City Sewage System and identified in Table 3 Legal Authority Checklist.

7.6 Authority for Inspection of Grease Producing Facilities, to Enforcement, and Evidence of Adequate Staffing to Inspect and Enforce the FOG Ordinance

The City of Manhattan Beach implements inspection requirements for grease producing facilities in Chapter 5.38 – Fats, Oils and Grease Management and Discharge Control. These regulations ensure the sewer facilities are protected and are able to operate with the highest degree of efficiency, as well as protect the public health and environment. The Director has authority to inspect and sample wastewater discharges of any FSE to ensure compliance. The City may utilize one or a combination of enforcement. The sections of the Manhattan Beach municipal code that support this requirement are included in Appendix 2 – Code of Ordinance, Title 5 – Sanitation and Health, Chapter 5.38 – Sewers, Sewage Disposal – City Sewage System and identified in Table 3 Legal Authority Checklist.

See Appendix F for FOG Facilities

7.7 Identification and Scheduling for Maintenance of Sewer Sections Prone to FOG Blockages

Spills caused by blockages from FOG are monitored for location and required cleaning frequency. All blockages are plotted on a GIS overlay map. Locations with a high number of sewers prone to FOG accumulation or blockages are given high priority and cleaned more frequently in an effort to prevent FOG–related spills. All reaches, including "non-problem" sewers, are included in a routine preventive maintenance cleaning schedule. Scheduled and completed tasks are catalogued and tracked by work orders. The maintenance program includes preventive, proactive, predictive, and corrective maintenance, maintenance engineering, and quality control.

7.8 Development and Implementation of Source Control Measures for Sewer Sections Prone to FOG Blockages

The City's FOG Ordinance requires FSEs to have an industrial wastewater permit, comply with source control measures for all sources of grease, implement Best Management Practices, install grease interceptors as applicable, and are subject to annual inspections to verify continuous compliance.

The FOG Ordinance provides the City with the legal authority to inspect FSE premises and monitor the implementation of Best Management Practices. As part of routine inspection activities, the City's contracted inspector determines permit requirements and verifies observance of FOG Ordinance provisions. Additionally, information and training materials such as multi-language Best Management Practices posters, an ordinance summary, and lists of licensed grease waste haulers are provided to help FSEs comply with the FOG Ordinance.

Installation of grease interceptors is required at all FSEs that have the potential to generate FOG, unless a Conditional Waiver is granted. In the event an industrial discharger fails to comply with the requirements of the FOG Control Ordinance, Director of Public Works takes immediate enforcement action by applying one or more sections of the Ordinance included in Appendix 2 – Code of Ordinance, Title 5 – Sanitation and Health, Chapter 5.38 – Sewers, Sewage Disposal – City Sewage System and identified in Table 3 Legal Authority Checklist.

7.9 Monitoring and Reporting Plan Requirements

The September 2013 MRP did not change any of the requirements of the previously adopted SSS WDR for this element.

7.10 References

City of Manhattan Beach Municipal Code, Title 5, Sanitation and Health – Chapter 38
https://www.municode.com/library/ca/manhattan_beach/codes/code_of_ordinances?nodeId=TIT5SAHE_CH5.38FAOIGRMADICO

Chapter 8 System Evaluation and Capacity Assurance and Capital Improvements

This chapter of the SSMP discusses the capital improvement plan along with evaluations, design criteria, and analysis of the sewer system elements to comply with the SSMP requirements. This section fulfills the requirement of SWRCB SSMP Element 8 – System Evaluation and Capacity Assurance and Capital Improvements.

8.1 Regulatory Requirements

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ the enrollee shall prepare and implement the plan to include procedures and activities for: routine evaluation and assessment of system conditions; capacity assessment and design criteria; prioritization of corrective actions; and a capital improvement plan.

a) System Evaluation and Condition Assessment: The Plan must include procedures and activities for:
   - Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;
   - Identify and justify the amount (percentage) of its system for its condition to be assessed each year;
   - Prioritize the condition assessment of system areas that:
     - Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
     - Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
     - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
   - Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;
   - Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;
   - Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and
   - Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

b) Capacity Assessment and Design Criteria: The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:
   - Dry-weather peak flow conditions that cause or contributes to spill events;
   - The appropriate design storm(s) or wet weather events that causes or contributes to spill events;
   - The capacity of key system components; and
   - Identify the major sources that contribute to the peak flows associated with sewer

spills.

- The capacity assessment must consider:
- Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;
- Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions;
- Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;
- Increases of erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events;
- Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and
- Necessary redundancy in pumping and storage capacities.

c) Prioritization of Corrective Action: The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

d) ,Capital Improvement Plan: The capital improvement plan must include the following items:
   - Project schedules including completion dates for all portions of the capital improvement program;
   - Internal and external project funding sources for each project; and
   - Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.

8.2 System Evaluation and Condition Assessment

The City's goal is to perform CCTV on 20% of the system each year, thereby completing the entire City assessment within five (5) years. To perform a detailed evaluation of the capacity of the sewer collection system, it is convenient to create a mathematical model that is capable of simulating the operating characteristics of the system. The simulations for this study were performed on a Microsoft Windows based computer utilizing software designed for the analysis of sewer systems. The software selected for this study is InfoSewer. It is an ArcGIS-based computer program with the ability to perform steady state analyses of the flows in the sewer system. InfoSewer offers direct ArcGIS integration, allowing GIS analysis and hydraulic modeling to exist in a single environment. The program also manages and maintains the database that stores the sewer analysis input and output results. Manning's Equation is used for depth of flow calculations in the gravity sewer pipes. Technical information related to Section 7.2 is included in Appendix 6 – Wastewater Master Plan – Section 7, Hydraulic Model & Collection System Capacity Analysis. The City is assessing these issues to identify system assets that are vulnerable to both direct and indirect impacts of climate change. This includes, but is not limited to: rising sea levels; flooding and erosion caused by increased storm volume, frequency, and intensity; wildfires; and more frequent power disruptions.

The condition assessment was completed from 2008 to 2012 to assess the adequacy of

the existing sewer system. The details for the sanitary sewer system are found in Appendix 8 – Wastewater Master Plan – Section 9, Operation and Maintenance.

8.3 Capacity Assessment and Design Criteria

Establishing performance standards is an important part of evaluating a wastewater collection system, as it forms the basis for system analysis and system improvement recommendations. These standards include methodology for estimating wastewater design flows and minimum design standards for the collection system pipes pump stations, and force mains.

Average wastewater flows can be reasonably estimated from land use and their corresponding unit flow factors. The results are then compared to measured flows. Peaking factors are needed for estimating peak dry weather and perk wet weather flows. Peak wet weather flows include an allowance for inflow and infiltration. As, the storm(s) or wet weather events that cause or contribute to spill events.

The Capacity Assessments will consider the following to ensure the current design and future comply to prevent spills. Evaluate the existing data from system assessments, inspections, and audits, as well as spill history. The capacity of flood-prone systems to manage increased infiltration and inflow during both normal and extreme storm events attributed to climate change. Additionally, it addresses the erosive forces affecting underground and above-ground components near canyons and streams during high-intensity storms. The assessment to also covers the capacity of major system elements to handle peak dry weather flows and updated design storm conditions. Lastly, the necessity of maintaining redundancy in pumping and storage capacities to ensure system resilience.

Collection system design standards include minimum pipe size, minimum flow velocity and depth of flow to pipe diameter ration. Pump station criteria include the capacity and number of pumps, wet wells and force main sizes, redundancy, emergency power, remote monitoring capabilities, as well as safety and regulatory agency requirements. Finally, facility useful lives are needed for adequately scheduling replacement of the aging infrastructure.

A comprehensive set of criteria for planning and design of new sewers, pump stations, force mains, and appurtenances, and for the rehabilitation of existing sewers are used to address:

- Flow Monitoring
- Unit Flow Factors
- Peaking Factors – Dry Weather and Wet Weather
- Inflow and Infiltration
- Sewer Design Criteria
- Pump Station Design Criteria – wet wells, pumps, dry well, force mains, SCADA
- Service Life of Pipe and Lift Station Equipment
- Sewer System Operation and Maintenance

Technical information related to Section 8.2 is included in Appendices 5, 6, & 7.

8.4 Prioritization of Corrective Action

The results and findings of the system evaluation and capacity assessments will be used to implement corrective actions to improve the efficiency of the sanitary sewer system and prevent future spills. This information will also inform the CIP schedule and applicable projects. The City will prioritize the corrective actions based upon the severity of the consequence of the potential spill.

8.5 Capital Improvement Plan

The primary goal of the Capital Improvement Program (CIP) is to provide the City of Manhattan Beach with a long-range planning tool for implementing its sewer infrastructure improvements in an orderly manner and a basis for financing of these improvements. To accomplish this goal, the program is phased based upon the implementation cost of the facilities, the quantity of work the City can reasonably administer each year, and the funds available for these projects.

Capital Improvement Projects Priorities

The capital improvement projects were selected primarily with consideration of the health and safety of the public and protection of the environment by minimizing the possibility of overflows. The projects that will eliminate the capacity deficiencies in the gravity collection system are prioritized based upon the hydraulic analyses conducted. As the City completes CCTV inspection of the system, severe and major defects identified should be incorporated into the CIP and addressed. When the CCTV inspection is completed and a full condition assessment has been conducted, the capital improvement project priorities should be reevaluated.

Collection System Capacity Improvement Projects

The collection system capacity improvement projects include the areas identified with a capacity deficiency in the hydraulic model when pump capacities were implemented. It is recommended that the identified locations be flow monitored to verify the d/D ratios prior to implementing any replacement projects. Operations staff has not indicated that these areas are a problem. Therefore, until the deficiencies are verified in the field, these projects are considered low in priority. Details of the project locations are presented in Appendix 6 - Wastewater Master Plan – Section 7, Hydraulic Model & Collection System Capacity Analysis.

Collection System Condition Improvement Projects

The condition improvement projects are prioritized solely on the condition of the pipe as determined from reviews of the CCTV recordings. The condition deficiencies with critical structural damage and severe obstructions were given the highest priority. Sewer pipes with conditions categorized as “Severe” or “Major” and manholes categorized as in poor condition are included in the recommended improvements. Details of the projects are presented Appendix 7 – Wastewater Master Plan – Section 8, Condition Assessment.

The planning level recommendations are based upon the ranking and pipe defects from the CCTV inspection reports, and reviews of recordings. It may be possible to reline, repair or perform root treatment on some of the existing gravity pipes, in lieu of replacing them. Actual improvements should be designed based upon further detailed reviews of each recording, taking into consideration other factors such as location, age, capacity of the pipe, existing utilities, and concurrent infrastructure construction projects. The useful life gained from replacing the deficient facilities will be longer than repairs and relining projects. Root treatment is usually a temporary solution. Unless the source is removed, it is likely that the roots will get thicker as time passes and the root intrusion will continue until the pipe is replaced.

Pump Station Improvements

The recommended pump station capital improvement projects have been based upon condition assessment of each facility, capacity analysis, and conformance with the adopted criteria. The implementation priorities should be based upon the likelihood of a failure that may result in a spill, the volume of spill, and its impact on the public and the environment. The condition assessment and analysis results are described in Appendix 5 Wastewater Master Plan – Section 6, Existing Pump Stations.

Capital Improvement Program

The Capital Improvement Program is developed based upon the results of the hydraulic analyses and the established priorities. The recommended improvement project locations and cost estimates are included in Appendix 9 – Wastewater Master Plan – Section 10, Capital Improvement Program. Replacement costs are generally more conservative and will therefore allow the City more flexibility for each project. Preliminary design studies should be conducted utilizing detailed utility information to identify and evaluate project alternatives such as parallel pipes and/or diversions prior to final design. When sewers are replaced, they should be relocated into the walkways or right-of-ways as much as possible if they are currently in a location that cannot be easily accessed.

The City of Manhattan Beach is largely occupied and there are many existing utilities to consider. Therefore, the costs of replacing sewer facilities will be generally higher than in an area that is undeveloped. The recommended projects have been based upon the best information currently available. It should be updated as new information becomes available from sources such as CCTV inspections and from maintenance crew observations. The project priorities may be revised to correspond to changed conditions, such as impending facility failures, or to take advantage of concurrent construction such as street paving projects or adjacent infrastructure work. Some of the projects recommended are small and it may not be feasible to implement them as a single project. Therefore, several projects should be combined and bid as a package. Some of the projects may be broken down into smaller components to fit the City's budgetary and other obligations. Related information is included in Appendix 9 - Wastewater Master Plan – Section 10, Capital Improvement Program & 11 – FY 2026 – 2030 Capital Improvement Plan.

8.6 Completion Schedule

The City's rolling Five-Year Capital Improvement Program is reviewed and updated

annually and lists all capital improvement projects scheduled for implementation during the following 5 years. Inclusion in the CIP is determined by a risk-based prioritization system.

Due to the CIP deficiency violation from the SWRCB 2015 inspections, the priority strategy for specific projects was developed and executed through the rolling 5-year CIP. The strategy is based on the Wastewater Master Plan recommendations and involved construction of a combination of projects, all of which included Grade 5 Spot Repairs, Grade 5 Line Replacements and a sequenced replacement of six Sewer Lift Stations. All of the priority projects identified in the Appendix 9 - Wastewater Master Plan – Section 10, Capital Improvement from 2010 – 2025.

The most recent adoption of the 2026-2030 Capital Implement Plan includes carryover and new projects. These include:

- Annual Rehabilitation of Gravity Sewer Mains
- Voorhees Lift Station Upgrade, Emergency Storage, and Force Main Replacement
- Pacific Lift Station Conversion to Gravity Line
- Poinsettia Sewage Lift Station Replacement and Force Main Replacement
- Bell Lift Station Upgrade, Emergency Storage, and Force Main Replacement
- Meadows Lift Station Upgrade, Emergency Storage, and Force Main Replacement
- Wastewater Masterplan Update
- Palm Lift Station Upgrade, Emergency Storage, and Force Main Replacement

The City of Manhattan Beach Capital Improvement Plan (CIP) for wastewater projects is included in Appendix 11 – FY 2026 – 2030 Capital Improvement Plan.

8.7 References

City of Manhattan Beach Wastewater Master Plan (Sections 6, 7, 8, & 10) https://www.manhattanbeach.gov/departments/public-works/utilities-division/master-plans

City of Manhattan Beach 2026-2030 Capital Improvement Plan (Appendix 11)

https://city-manhattan-beach-ca-budget-book.cleargov.com/16787/introduction/transmittal-letter

Chapter 9 Monitoring, Measurement and Program Modifications

This chapter of the SSMP discusses the monitoring, measurement, and program modifications to comply with the SSMP requirements. This section fulfills the requirement of SWRCB SSMP Element 9 – Monitoring, Measurement, and Program Modifications.

9.1 Regulatory Requirements

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ, the enrollee shall:

a. Maintain relevant information, including audit findings, to establish and prioritize appropriate Plan activities;
b. Monitor the implementation and measure the effectiveness of each Plan Element;
c. Assess the success of the preventative operation and maintenance activities;
d. Update program procedures and activities, as appropriate, based on results of monitoring or performance evaluations; and
e. Identify and illustrate spill trends, including: spill frequency, locations, and estimated volume.

9.2 Information Maintenance

The City has multiple ongoing programs that support the collection and management of data and information essential to successful implementation of its Sewer System Management Plan (SSMP). Major SSMP activities are established and prioritized as follows:

Information Management Systems

The City's information management system is an integral and essential element of the operation and maintenance program. All attributes of each sewer segment are included in a comprehensive inventory database. Information regarding all maintenance activities, sewer condition, spills, and odor complaints is entered into the database. This information is routinely evaluated to document maintenance needs, identify problem locations, and assist in analysis of spill events and odor complaints. This data is available to quickly identify and visualize problem areas, communicate actual condition and maintenance needs to operation and maintenance staff, prioritizes cleaning and root removal activities, and provide for corrective measures. CCTV records housed in the GIS database are a primary tool used to prioritize and schedule sewer assessments and maintenance activities in their preventive maintenance program.

Sewer Condition Assessment

To assess the condition of CCTV inspected sewers, the City uses the National Association of Sewer Service Company (NASSCO) Pipeline Assessment and Certification Program (PACP) coding procedures, which utilized a five-category rating system based on the types and severity of defects. They range from 1 (excellent) to 5 (Immediate Attention) condition. The condition ratings trigger follow-up actions that could include increased monitoring and maintenance to keep a problem sewer fully operational while a capital

improvement project is being developed and implemented to provide long-term solution. Rehabilitation or replacement projects are developed and scheduled for implementation on a prioritized basis with other identified needs. Category 1 and 2 sewers are in excellent to good condition and are scheduled for continued inspections and monitoring on 10-year cycles. Category 3 condition sewers are considered to be in fair condition and are scheduled for follow-up inspections once every five years. Category 4 condition sewers are considered in poor condition are closely monitored and are included in the Wastewater Capital Improvement Program (WCIP) for replacement or rehabilitation within five years. Increased preventive measures are taken for Category D condition sewers, as appropriate, to avoid emergency situations and follow-up inspections are conducted annually. Category 5 condition sewers are considered to be in need of immediate action. These are sewers where a pipe failure has already occurred or there is a full flow obstruction. Condition E sewers are immediately repaired and restored to condition A or B sewers.

Operation and Maintenance Program

The City has an extensive proactive and preventive maintenance program for its collection system. Maintenance is performed by five Wastewater Division staff. Preventive maintenance is focused on critical and problematic areas. The critical sewers are identified, prioritized and scheduled for maintenance based on a comprehensive review of maintenance history and system characteristics of all sewers in the City including overflows, blockages, excessive maintenance, age, pipe material, and condition assessment records.

In an effort to prevent spills, flow monitoring and CCTV records are reviewed to identify potential weaknesses in the system. Sewers that are in poor condition are identified through this process. These assessment activities may trigger further reviews to determine cause and/or may trigger immediate or accelerated corrective actions. Maintenance priorities are set based on the relative severity of the problem. The City has implemented the proactive maintenance program where all sewer lines are jetted once per year and “hot spots” are jetted once per quarter. The City’s lift stations are inspected, and wet wells are cleaned weekly. Hot Spots Cleaning included in Appendix I and Appendix 8 – Wastewater Master Plan – Section 9, Operation and Maintenance.

Spill Emergency Response

The Utilities Manager and staff meet quarterly to review emergency response actions and collaborate on methods and procedures that will improve performance. Aggressive performance standards for timely response to sewer overflows are established and communicated to the spill response team. Response protocol is reviewed periodically and updated as needed based on a review of established and actual response times.

9.3 SSMP Implementation and Effectiveness Monitoring

The City’s SSMP is a well-integrated plan with each element designed to complement and support the other elements. Each year as a part of the City’s rolling Five-Year Capital Improvement Program, the SSMP goals are set, the deliverables required to meet goals are defined and prioritized, lead and support staff and resources are assigned, and progress is measured and reported to ensure the City is meeting or exceeding goals and

achieving full compliance with the SSMP requirements. Overall, SSMP performance is evaluated and reported to management quarterly, and annually following the end of each fiscal year. Any plan updates necessary to enhance the SSMP performance are identified and become a part of the following year's rolling Five-Year Capital Improvement Program.

9.4 Assessment of Preventative Operation and Maintenance Program

The City uses a variety of metrics to measure the effectiveness of different SSMP components. Productivity standards for the Operation and Maintenance Program, for example, use footage/mileage goals for Cleaning and CCTV activities. Data is recorded for each crew daily. Productivity can be assessed for time periods ranging from an hour to a year, and for individuals or for the division. Data recorded in the field is compiled into an Access database and extracted into weekly, monthly, and yearly reports. Spill data is an important measure of sewer system performance. The frequency, location, and volume of spills is often used to determine how resources will be allocated. For example, Smart Cover® manhole lids have been strategically placed in areas of the City more prone to spills. Data will also be used to recalibrate the frequency of cleaning activity for problem areas, or sewer "hot spots." Sewer system management is regularly evaluated for effectiveness and when needed, protocols are updated to produce more favorable outcomes. The City utilizes community outreach via the City website. Additionally, residents are notified prior to a project starting.

9.5 Program Modifications/Updates

This section lists some examples of ongoing monitoring and review processes that are part of the City's system performance evaluation and continual improvement.

Annual Review of Preventive Maintenance
On an annual basis a comprehensive review of the maintenance program is conducted. The critical sewers are identified, prioritized and scheduled for maintenance based on a comprehensive review of maintenance history and system characteristics of all sewers in the City including overflows, blockages, excessive maintenance, age, pipe material and condition assessment records.

In an effort to prevent overflows, CCTV records are reviewed to identify potential weaknesses in the system. Sewer locations that are in poor condition are identified through this process. These assessment activities may trigger further reviews to determine cause and/or may trigger immediate or accelerated corrective actions. Maintenance priorities are set based on the relative severity of the problem.

Sewer Pipe Blockage Control Program
The City utilizes a robust program that includes annual Fats, Oils and Grease restaurant inspections, and ongoing user education and involvement. As a result, amendments and improvements are made to the program with active support of the FSEs. The program goal is to eliminate all preventable sewer spills caused by grease.

Root Control Program

Roots are the main issue the City faces, since the sandy soil conditions allow roots to grow quickly in search of a water source. The City performs routine mechanical root removal as an extensive cleaning schedule especially in areas of known root intrusion. This schedule has prevented major root issues such as veil-type and root balls originating from private laterals. A recent CUES camera has been purchased by the City to investigate locations of hotspot causes and help maintenance staff determine the specific locations that need root control.

Construction

To avoid construction related sewer overflows to comply with the City's "zero [construction] spill" policy requires that a spill prevention and response plan be developed and implemented for all sewer construction projects. The City's zero spill policy is documented in the "Standard Specifications for Public Works Construction (Green Book)".

9.6 Identification and Illustration of Spill Trends

Spill trends are identified and tracked through a state-of-the art GIS tracking system. When complaints are called in, they are uploaded to a master database and plotted on a City-wide map. The City's information management system is an integral part of the operation and maintenance program. All attributes of each sewer pipe gravity and pressure segment are included in a comprehensive inventory database. Information regarding each new overflow and odor complaint is entered into a maintenance management database. This information is evaluated to document locations, causes, and frequency of overflows and odors. This data is overlain on a GIS base map of the sewer system to quickly identify and visualize problem areas; communicate conditions and needs to City policy makers and management; and prioritize maintenance activities, urgent and emergency repairs, and mid- and long-term solutions.

9.7 Monitoring and Reporting Plan Requirements

The September 2013 MRP added an additional requirement related to the program modifications issue. The 2013 MRP states: "Records documenting all changes made to the SSMP since its last certification indicating when a subsection(s) of the SSMP was changed and/or updated and who authorized the change or update. These records shall be attached to the SSMP."

These changes may relate to the results of the system's performance evaluation. Other changes may be enacted by an Enrollee after an SSMP audit is performed. The changes are to be documented, whenever they are made, as described in the MRP. An Enrollee may easily keep these actions and changes documented through the use of a simple "Change Log" that may provide a brief description and date of any SSMP changes, as an appendix to the SSMP. A SSMP Sample Change Log is attached in Appendix D for convenience.

Chapter 10 SSMP Program Audits

This section fulfills the requirement of SWRCB SSMP Element 10 – SSMP Program Internal Audits.

10.1 Regulatory Requirements

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ, the enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of spills. At a minimum, these audits must occur every three 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, including identification of any deficiencies in the SSMP and steps to correct them.

10.2 SSMP Program Audits

Audit and benchmarking programs are among primary City strategies in accomplishing its mission to protect public health and the environment and meeting goals. As a part of the City's continuing performance measurement, the City's SSMP undergoes ongoing reviews at all levels of the organization having authorities and responsibilities in the SSMP implementation shown in Chapter 2 Organization of this SSMP. These reviews culminate in internal (self) audits of the SSMP that result in every three-year internal audit reports. As a part of these audits, all parts and sub-parts of the SSMP are reviewed critically with regards to their ability to effectively and efficiently meet the State General Waste Discharge Requirements (GWDR) and comply with City policies.

Each year as a part of City's Wastewater Division Five-Year Capital Improvement Plan:

- SSMP goals are set
- Deliverables that are required to meet goals defined and prioritized
- Lead and support staff and resources necessary to complete deliverables assigned
- Progress measured and reported on an ongoing basis to ensure full and timely completion of deliverables.

Any gaps between targeted results and actual progress are identified or anticipated and mitigation measures developed and implemented to close or avoid any performance gaps. The overall SSMP performance is evaluated and reported to management annually following the end of each fiscal year. Any plan updates necessary to enhance the SSMP performance are identified and included as a part of the following year's City's Five-Year Capital Improvement Plan.

See Appendix E for self-audit report dated February 4, 2025.

10.3 Monitoring and Recording

The 2022 Order of the Attachment E2 – Summary of Notification, Monitoring and Reporting Requirements includes the current monitoring and reporting program regulations.
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10.4 Self-Monitoring and Plan Modification

Performance measures and benchmarks are established through ongoing performance review. Experienced personnel audit the SSMP at least once every three years by evaluating the effectiveness of each SSMP element and making recommendations for improvements and updates as appropriate. The SSMP is updated by incorporating adopted recommendations. Audit reports and related materials are maintained in a comprehensive hard copy and electronic document tracking and management system. The following are examples of ongoing self-monitoring and plan modification:

- *Spill Emergency Response*
  The Utilities Manager and Wastewater Division Staff meet quarterly to review emergency response actions and collaborate on methods and procedures that will improve performance. Performance standards are developed, published, and communicated to relevant staff. Actual response times are compared to standards; changes are made and documented and staff retrained as appropriate.

- *Hydraulic Models*
  The City of Manhattan Beach Wastewater Master Plan included hydraulic modeling and collection system capacity analysis to model and assesses the hydraulic performance of its network of pipes, flow splits, and pumping plants, and to predict future flow based on growth projections.

- *Structural Condition Assessment*
  Fifty percent of the City's sewer lines, and manholes have been inspected by closed circuit television; the remaining fifty percent will be inspected over the next five years. Based on these inspections, the condition of each sewer line and manhole have been assessed and rated in a five-category condition ranking. The ranking system is used to prioritize and schedule future inspections and rehabilitation or replacement planning studies. Changes are made to work priorities and project delivery schedules based on the findings of field investigations and criticality of system needs.

- *Maintenance Management Approaches*
  Priority is given to sewers within sewer sheds that return the most benefit for the maintenance effort. Data are accumulated on maintenance hot spots and displayed on GIS maps to display locations requiring additional attention. This information forms the basis for prioritizing cleaning, inspection, and rehabilitation. All maintenance holes are physically inspected annually, all sewers cleaned annually, and operationally challenged sewers are cleaned more often as needed. This ongoing monitoring and adjustment

process will work to optimize staff efficiency and system performance. Effectiveness of root control is also monitored and changes to cleaning schedules made as needed.

- *Sewer Design Criteria and Standard Plans and Specifications*
  The City's Public Works Department, Engineering Division, oversees design, construction, start-up and optimization of public works sewer system projects. Design standards, specifications and standard details are continuously monitored for currency and effectiveness. Staff input based on field experience is provided and reviewed systematically. Appropriate changes are incorporated into the City's standards and work in progress as needed.

- *Construction Activities*
  In another effort to avoid spills, the City developed and implemented a requirement that a spill prevention and response plan has to be developed and implemented for all wastewater construction projects.

Chapter 11 Communication Program

This section fulfills the requirement of SWRCB SSMP Element 11 – Communication Program.

11.1 Regulatory Requirements

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ, the enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public information about spills and discharges that lead to the closure of public areas or contaminate sources of drinking water, and allow the opportunity for the public to provide input to the Enrollee as the program is developed and implemented. The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system for System operation, maintenance, and capital improvement-related activities.

11.2 Public Communication

The City performs community outreach which includes mailing of pamphlets to Food Service Establishments; website SSMP information; handing out materials at community fairs; advisories and press releases; and toll-free help lines. Outreach events are held for the general public and Food Service Establishments to familiarize them with the Fats, Oils, and Grease (FOG) Control Program, now known as the Sewer Pipe Blockage Control Program. Electronic versions of the FOG Ordinance and FOG Source Control Manual are also made available on the City's website.

The following are examples of the community outreach activities within the City's SSMP:

- Sewer Pipe Blockage Control Program

The FOG Ordinance and FOG Source Control Manual outreach is geared towards FSEs and businesses. During each FOG inspection laminated posters are presented and inspectors provide a direct, verbal explanation to the establishment's personnel regarding best management practices for FOG. This consistent, on-site engagement is an effective method of reinforcing FOG pollution prevention measures within the food service community

- Private Lateral Sewer Maintenance and Root Control Outreach

This outreach is focused in the areas of City designated as "root hot spots" where spills may occur due to blockages caused by roots. Properties in the "root hot spot" areas are sent pamphlets which contain information regarding causes of root growth in private laterals, prevention methods and proper operation and maintenance for private laterals.

- Capital Improvement Projects (CIPs)

Capital Improvement Projects (CIPs) are listed in the Wastewater Master Plan and are advertised in the community through updates to the City website. Outreach is also conducted by meeting with local businesses and community. These activities ensure that

the communities are informed about projects in their neighborhoods.

11.3 Monitoring and Reporting Plan Requirements

The 2022 Order of the Attachment E2 – Summary of Notification, Monitoring and Reporting Requirements includes the current monitoring and reporting program regulations.

Appendices

Appendix A – State Water Resources Control Board Order No. 2022-0103-DWQ Statewide General WDR For Sanitary Sewer Systems

STATE WATER RESOURCES CONTROL BOARD
1001 I Street, Sacramento, California 95814
ORDER WQ 2022-0103-DWQ

STATEWIDE WASTE DISCHARGE REQUIREMENTS

GENERAL ORDER FOR SANITARY SEWER SYSTEMS

This Order was adopted by the State Water Resources Control Board on December 6, 2022.
This Order shall become effective **180 days after the Adoption Date of this General Order,** on June 5, 2023. The Enrollee shall comply with the requirements of this Order upon the Effective Date of this General Order.

This General Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, protect the Enrollee from liability under federal, state, or local laws, nor create a vested right for the Enrollee to continue the discharge of waste.

CERTIFICATION

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the State Water Board on December 6, 2022.

AYE:	Chair E. Joaquin Esquivel Vice Chair Dorene D'Adamo Board Member Sean Maguire Board Member Laurel Firestone Board Member Nichole Morgan
NAY:	None
ABSENT:	None
ABSTAIN:	None

Courtney Tyler for
Jeanine Townsend
Clerk to the Board

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1. INTRODUCTION

This General Order regulates sanitary sewer systems designed to convey sewage. For the purpose of this Order, a sanitary sewer system includes, but is not limited to, pipes, valves, pump stations, manholes, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a wastewater treatment plant headworks. A sanitary sewer system includes:

- Laterals owned and/or operated by the Enrollee;
- Satellite sewer systems; and/or
- Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks and diversion structures.

Sewage is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of stormwater or groundwater, conveyed in a sanitary sewer system. Sewage contains high levels of suspended solids, non-digested organic waste, pathogenic bacteria, viruses, toxic pollutants, nutrients, oxygen-demanding organic compounds, oils, grease, pharmaceuticals, and other harmful pollutants.

For the purpose of this General Order, a spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Sewage and its associated wastewater spilled from a sanitary sewer system may threaten public health, beneficial uses of waters of the State, and the environment.

This General Order serves as statewide waste discharge requirements and supersedes the previous State Water Resources Control Board (State Water Board) Order 2006-0003-DWQ and amendments thereafter. All sections and attachments of this General Order are enforceable by the State Water Board and Regional Water Quality Control Boards (Regional Water Boards). Through this General Order, the State Water Board requires an Enrollee to:

- Comply with federal and state prohibitions of discharge of sewage to waters of the State, including federal waters of the United States;
- Comply with specifications, and notification, monitoring, reporting and recordkeeping requirements in this General Order that implement the federal Clean Water Act, the California Water Code (Water Code), water quality control plans (including Regional Water Board Basin Plans) and policies;
- Proactively operate and maintain resilient sanitary sewer systems to prevent spills;
- Eliminate discharges of sewage to waters of the State through effective implementation of a Sewer System Management Plan;
- Monitor, track, and analyze spills for ongoing system-specific performance improvements; and
- Report noncompliance with this General Order per reporting requirements.

An Enrollee is a public, private, or other non-governmental entity that has obtained approval for regulatory coverage under this General Order, including:

- A state agency, municipality, special district, or other public entity that owns and/or operates one or more sanitary sewer systems:
  - greater than one (1) mile in length (each individual sanitary sewer system);
  - one (1) mile or less in length where the State Water Board or a Regional Water Board requires regulatory coverage under this Order; or
- A federal agency, private company, or other non-governmental entity that owns and/or operates a sanitary sewer system of any size where the State Water Board or a Regional Water Board requires regulatory coverage under this Order in response to a history of spills, proximity to surface water, or other factors supporting regulatory coverage.

For the purpose of this Order, a sanitary sewer system includes only systems owned and/or operated by the Enrollee.

2. REGULATORY COVERAGE AND APPLICATION REQUIREMENTS

2.1. Requirements for Continuation of Existing Regulatory Coverage

To continue regulatory coverage from previous Order 2006-0003-DWQ under this General Order, **within the 60-days-prior-to the Effective Date of this General Order**, the Legally Responsible Official of an existing Enrollee shall electronically certify the Continuation of Existing Regulatory Coverage form in the online California Integrated Water Quality System (CIWQS) Sanitary Sewer System Database. The Legally Responsible Official will receive an automated CIWQS-issued Notice of Applicability email, confirming continuation of regulatory coverage under this General Order. All regulatory coverage under previous Order 2006-0003-DWQ will cease on the Effective Date of this Order.

An Enrollee continuing existing regulatory coverage is not required to submit a new application package or pay an application fee for enrollment under this General Order. The annual fee due date for continued regulatory coverage from previous Order 2006-0003-DWQ to this General Order remains unchanged.

A previous Enrollee of Order 2006-0003-DWQ that fails to certify the Continuation of Existing Regulatory Coverage form in the online CIWQS database by the Effective Date of this Order is considered a New Applicant, and will not have regulatory coverage for its sanitary sewer system(s) until:

- A new application package for system(s) enrollment is submitted per section 2.2 (Requirements for New Regulatory Coverage) below; and
- The new application package is approved per section 2.2.2 (Approval of Application Package (For New Applicants Only)).

2.2. Requirements for New Regulatory Coverage

No later than 60 days prior to commencing and/or assuming operation and maintenance responsibilities of a sanitary sewer system, a duly authorized representative that

maintains legal authority over the public or private sanitary sewer system is required to enroll under this General Order by submitting a complete application package as specified below and as provided in Attachment B (Application for Enrollment Form) of this General Order.

Unless required by a Regional Water Board, a public agency that owns a combined sewer system subject to the Combined Sewer Overflow Control Policy (33 U.S. Code § 1342(q)), is not required to enroll, under this Order, the portions of its sanitary sewer system(s) that collects combined sanitary wastewater and stormwater.

2.2.1. Application Package Requirements

The Application for Enrollment package for new applicants must include the following items:

- **Application for Enrollment Form**. The form in Attachment B of this General Order must be completed, signed, and certified by a Legally Responsible Official, in accordance with section 5.1 (Designation of a Legally Responsible Official) of this General Order. If an electronic Application for Enrollment form is available at the time of application, a new applicant shall submit its application form electronically; and
- **Application Fee**. A fee payable to the "State Water Resources Control Board" in accordance with the Fee Schedule in the California Code of Regulations, Title 23, section 2200, or subsequent fee regulations updates.

  The application fee for this General Order is based on the sanitary sewer system's threat to water quality and complexity designations of category 2C or 3C, which is assigned based on the population served by the system. The current Fee Schedule for sanitary sewer systems is listed under subdivision (a)(2) at the following website: Fee Schedule (https://www.waterboards.ca.gov/resources/fees/water_quality/).

2.2.2. Approval of Application Package (For New Applicants Only)

The Deputy Director of the State Water Board, Division of Water Quality (Deputy Director) will consider approval of each complete Application for Enrollment package. The Deputy Director will issue a Notice of Applicability letter which serves as approved regulatory coverage for the new Enrollee.

If the submitted application package is not complete in accordance with section 2.2.1 (Application Package Requirements) of this General Order, the Deputy Director will send a response letter to the applicant outlining the application deficiencies. The applicant will have 60 days from the date of the response letter to correct the application deficiencies and submit the identified items necessary to complete the application package to the State Water Board.

2.2.3. Electronic Reporting Account for New Enrollee

Within 30 days after the date of the Approval of Complete Application Package for System Enrollment, a duly authorized representative for the Enrollee shall obtain a CIWQS Sanitary Sewer System Database user account by clicking the "User Registration" button and following the directions on the CIWQS Login Page

(https://ciwqs.waterboards.ca.gov). If additional assistance is needed to establish an online CIWQS user account, contact State Water Board staff by email at CIWQS@waterboards.ca.gov. The online user account will provide the Enrollee secure access to the online CIWQS database for electronic reporting.

2.3. Regulatory Coverage Transfer

Regulatory coverage under this General Order is not transferable to any person or party except after an existing Enrollee submits a written request for a regulatory coverage transfer to the Deputy Director, at least 60 days in advance of any proposed system ownership transfer. The written request must include a written agreement between the existing Enrollee and the new Enrollee containing:

- Acknowledgement that the transfer of ownership is solely of an existing system with an existing waste discharge identification (WDID) number;
- The specific ownership transfer date in which the responsibility and regulatory coverage transfer between the existing Enrollee and the new Enrollee becomes effective; and
- Acknowledgement that the existing Enrollee is liable for violations occurring up to the ownership transfer date and that the new Enrollee is liable for violations occurring on and after the ownership transfer date.

The Deputy Director will consider approval of the written request. If approved, the Deputy Director will issue a Notice of Applicability letter which serves as an approved transfer of regulatory coverage to the new Enrollee.

3. FINDINGS

3.1. Legal Authorities

3.1.1. Federal and State Regulatory Authority

The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the waters of the United States (33 U.S.C. 1251). The Water Code authorizes the State Water Board to implement the Clean Water Act in the State and to protect the quality of all waters of the State (Water Code sections 13000 and 13160).

3.1.2. Discharge of Sewage

A discharge of untreated or partially treated sewage is a discharge of waste as defined in Water Code section 13050(d) that could affect the quality of waters of the State and is subject to regulation by waste discharge requirements issued pursuant to Water Code section 13263 and Chapter 9, Division 3, Title 23 of the California Code of Regulations. A discharge of sewage may pollute and alter the quality of the waters of the State to a degree that unreasonably affects the beneficial uses of the receiving water body or facilities that serve those beneficial uses (Water Code section 13050(l)(1)).

3.1.3 Water Boards Authority to Require Technical Reports, Monitoring, and Reporting

Water Code sections 13267 and 13383 authorize the Regional Water Boards and the State Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. Water Code section 13267(b), authorizes the Regional Water Boards to "require any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region… or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of water within its region shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires…In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports." Water Code section 13267(f) authorizes the State Water Board to require this information if it consults with the Regional Water Boards and determines that it will not duplicate the efforts of the Regional Water Boards. The State Water Board has consulted with the Regional Water Boards and made this determination.

The technical and monitoring reports required by this General Order and Attachment E (Notification, Monitoring, Reporting and Recordkeeping Requirements) are necessary to evaluate and ensure compliance with this General Order. The effort to develop required technical reports will vary depending on the system size and complexity and the needs of the specific technical report. The burden and cost of these reports are reasonable and consistent with the interest of the state in protecting water quality, which is the primary purpose of requiring the reports.

Water Code section 13383(a) authorizes the Water Boards to "establish monitoring, inspection, entry, reporting, and recordkeeping requirements… for any person who discharges, or proposes to discharge, to navigable waters, any person who introduces pollutants into a publicly owned treatment works, any person who owns or operates, or proposes to own or operate, a publicly owned treatment works or other treatment works treating domestic sewage, or any person who uses or disposes, or proposes to use or dispose, of sewage sludge." Section 13383(b) continues, "the state board or the regional boards may require any person subject to this section to establish and maintain monitoring equipment or methods, including, where appropriate, biological monitoring methods, sample effluent as prescribed, and provide other information as may be reasonably required."

Reporting of spills from privately owned sewer laterals and systems pursuant to section 5.15 (Voluntary Reporting of Spills from Privately-Owned Sewer Laterals and/or Private Sanitary Sewer Systems) of this General Order is authorized by Water Code section 13225(c) and encouraged by the State Water Board, wherein a local agency may investigate and report on any technical factors involved in water quality control provided the burden including costs of such reports bears a reasonable relationship to the need for the report and the benefits to be obtained therefrom. The burden of reporting private spills under section 5.15 (Voluntary Reporting of Spills from Privately-Owned Sewer Laterals and/or Private Sanitary Sewer Systems) is minimal and is outweighed by the benefit of providing Regional Water Boards an opportunity to respond to these spills

when an Enrollee, which in many cases has a contractual relationship with the owner of the private system, has knowledge of the spills.

3.1.4. Water Board Authority to Prescribe General Waste Discharge Requirements

Water Code section 13263(i) provides that the State Water Board may prescribe general waste discharge requirements for a category of discharges if the State Water Board finds or determines that:

- The discharges are produced by the same or similar operations;
- The discharges involve the same or similar types of waste;
- The discharges require the same or similar treatment standards; and
- The discharges are more appropriately regulated under general waste discharge requirements than individual waste discharge requirements.

Since 2006, the State Water Board has been regulating over 1,100 publicly owned sanitary sewer systems (See section 3.1.5 (Previous Statewide General Waste Discharge Requirements) of this General Order). California also has a large unknown number of unregulated privately owned sanitary sewer systems. All waste conveyed in publicly owned and privately owned sanitary sewer systems (as defined in this General Order) is comprised of untreated or partially treated domestic waste and/or industrial waste. Generally, sanitary sewer systems are designed and operated to convey waste by gravity or under pressure; system-specific design elements and system-specific operations do not change the common nature of the waste, the common threat to public health, or the common impacts on water quality. Spills of waste from a sanitary sewer system prior to reaching the ultimate downstream treatment facility are unauthorized and enforceable by the State Water Board and/or a Regional Water Board. Therefore, spills from sanitary sewer systems are more appropriately regulated under general waste discharge requirements.

As specified in Water Code sections 13263(a) and 13241, the implementation of requirements set forth in this Order is for the reasonable protection of past, present, and probable future beneficial uses of water and the prevention of nuisance. The requirements implement the water quality control plans (Basin Plans) for each Regional Water Board and take into account the environmental characteristics of sewer service areas and hydrographic units within the state. Additionally, the State Water Board has considered water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality, costs associated with compliance with these requirements, the need for developing housing within California, and the need to protect sources of drinking water and other water supplies.

3.1.5. Previous Statewide General Waste Discharge Requirements

On May 2, 2006, the State Water Board adopted Order 2006-0003-DWQ serving as Waste Discharge Requirements pursuant to Article 4, Chapter 4, Division 7 of the Water Code (commencing with section 13260) for inadvertent discharges to waters of the State. Order 2006-0003-DWQ prohibited discharges of untreated or partially treated sewage. Order 2006-0003-DWQ also required system-specific management, operation, and maintenance of publicly owned sewer systems greater than one mile in length.

To decrease the impacts on human health and the environment caused by sewage spills, the previous Order required enrollees to develop a rehabilitation and replacement plan that identifies system deficiencies and prioritizes short-term and long-term rehabilitation actions. The previous Order also required enrollees to:

1. Maintain information that can be used to establish and prioritize appropriate Sewer System Management Plan activities; and
2. Implement a proactive approach to reduce spills.

The previous Order required Sewer System Management Plan elements for "the proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management."

On July 30, 2013, the State Water Board amended General Order 2006-0003-DWQ with Order WQ 2013-0058-EXEC, Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

Many enrollees of Order 2006-0003-DWQ have already implemented proactive measures to reduce sewage spills. Other enrollees, however, still need technical assistance and funding to improve sanitary sewer system operation and maintenance for the reduction of sewage spills.

3.1.6. Existing Memorandum of Agreement with California Water Environment Association

The California Water Environment Association is a nonprofit organization dedicated to providing water industry certifications, training, and networking opportunities. The Association's Technical Certification Program provides accredited sanitary sewer system operator certification for collection system operators and maintenance workers.

On February 10, 2016, the State Water Board entered into a collaborative agreement with the Association titled *Memorandum of Agreement Between the California State Water Resources Control Board and the California Water Environment Association - Training Regarding Requirements Set Forth in Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*. The Memorandum sets forth collaborative training necessary for regulated sanitary sewer system personnel to operate and maintain a well operating system and ensure full compliance with statewide sewer system regulations.

On March 15, 2018, the State Water Board and the California Water Environment Association amended the existing Memorandum of Agreement to include collaborative outreach and expand training needs associated with further updates to Water Board regulations for sanitary sewer systems. The State Water Board encourages further Agreement updates as necessary to support improved sewer system operations and the professionalism of collection system operators.

3.2. General

3.2.1. Waters of the State

Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state as defined in Water Code section 13050(e), and are inclusive of waters of the United States.

3.2.2. Sanitary Sewer System Spill Threats to Public Health and Beneficial Uses

Sewage contains high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. Sewage spills may cause a public nuisance, particularly when sewage is discharged to areas with high public exposure such as streets and surface waters used for drinking, irrigation, fishing, recreation, or other public consumption or contact uses.

More specifically, sanitary sewer spills may:

- Adversely affect aquatic life and/or threaten water quality when reaching receiving waters;
- Inadvertently release trash, including plastics;
- Impair the recreational use and aesthetic enjoyment of surface waters by polluting surface water or groundwater;
- Threaten public health through direct public exposure to bacteria, viruses, intestinal parasites, and other microorganisms that can cause serious illness such as gastroenteritis, hepatitis, cryptosporidiosis, and giardiasis;
- Negatively impact ecological receptors and biota within surface waters; and
- Cause nuisance including odors, closure of beaches and recreational areas, and property damage.

Sanitary sewer system spills may pollute receiving waters and threaten beneficial uses of surface water and groundwater. Potentially threatened beneficial uses include, but are not limited to the following (with associated acronym representations as included in statewide water quality control plans and Regional Water Boards' Basin Plans):

- Municipal and Domestic Supply (MUN)
- Water Contact Recreation (REC-1) and Non-Contact Water Recreation (REC-2)
- Cold Freshwater Habitat (COLD)
- Warm Freshwater Habitat (WARM)
- Native American Culture (CUL)
- Wildlife Habitat (WILD)
- Rare, Threatened, or Endangered Species (RARE)
- Spawning, Reproduction, and/or Early Development (SPWN)
- Wetland Habitat (WET)
- Agricultural Supply (AGR)
- Estuarine Habitat (EST)

- Commercial and Sport Fishing (COMM)
- Subsistence Fishing (SUB)
- Tribal Tradition and Culture (CUL)
- Tribal Subsistence Fishing (T-SUB)
- Aquaculture (AQUA)
- Marine Habitat (MAR)
- Preservation of Biological Habitats of Special Significance (BIOL)
- Migration of Aquatic Organisms (MIGR)
- Shellfish Harvesting (SHELL)
- Industrial Process Supply (PROC)
- Industrial Service Supply (IND)
- Hydropower Generation (POW)
- Navigation (NAV)
- Flood Peak Attenuation/Flood Water Storage (FLD)
- Water Quality Enhancement (WQE)
- Fresh Water Replenishment (FRSH)
- Groundwater Recharge (GWR)
- Inland Saline Water Habitat (SAL)

3.2.3. Proactive Sanitary Sewer System Management to Eliminate Spill Causes

Finding 3 of the previous Order, 2006-0003-DWQ, states: “Sanitary sewer systems experience periodic failures resulting in discharges that may affect waters of the state. There are many factors (including factors related to geology, design, construction methods and materials, age of the system, population growth, and system operation and maintenance), which affect the likelihood of an SSO [sanitary sewer overflow]. A proactive approach that requires Enrollees to ensure a system-wide operation, maintenance, and management plan is in place will reduce the number and frequency of SSOs within the state. This approach will in turn decrease the risk to human health and the environment caused by SSOs.”

Many spills are preventable through proactive attention on sanitary sewer system management using the best practices and technologies available to address major causes of spills, including but not limited to:

- Blockages from sources including but not limited to:
  - Fats, oils and grease;
  - Tree roots;
  - Rags, wipes and other paper, cloth and plastic products; and
  - Sediment and debris.
- Sewer system damage and exceedance of sewer system hydraulic capacity from identified system-specific environmental, and climate-change impacts, including but not limited to:

- Sea level rise impacts including flooding, coastal erosion, seawater intrusion, tidal inundation and submerged lands;
- Increased surface water flows due to higher intensity rain events;
- Flooding;
- Wildfires and wildfire induced impacts;
- Earthquake induced damage;
- Landslides; and
- Subsidence.

- Infrastructure deficiencies and failures, including but not limited to:
  - Pump station mechanical failures;
  - System age;
  - Construction material failures;
  - Manhole cover failures;
  - Structural failures; and
  - Lack of proper operation and maintenance.
- Insufficient system capacity (temporary or sustained), due to factors including but not limited to:
  - Excessive and/or increased storm or groundwater inflow/infiltration;
  - Insufficient capacity due to population increase and/or new connections from industrial, commercial and other system users; and
  - Stormwater capture projects utilizing a sanitary sewer system to convey stormwater to treatment facilities for reuse.
- Community impacts, including but not limited to:
  - Power outages;
  - Vandalism; and
  - Contractor-caused or other third party-caused damages.

3.2.4. Underground Sanitary Sewer System Leakage

Portions of some sanitary sewer systems may leak, causing underground exfiltration (exiting) of sewage from the system. Exfiltrated sewage that remains in the underground infrastructure trench and/or the soil matrix, and that does not discharge into waters of the State (surface water or groundwater) may not threaten beneficial uses.

Underground exfiltrated sewage may threaten beneficial uses if discharged to waters of the State. Exfiltrated sewage that discharges to groundwater may impact beneficial uses of groundwater and pollute groundwater supply. Additionally, if in close proximity, exfiltrated sewage may enter into a compromised underground drainage conveyance system that discharges into a water of the United States, or into groundwater that is hydrologically connected to (feeds into) a water of the United States, thus potentially causing: (1) a Clean Water Act violation, (2) threat and impact to beneficial uses, and/or (3) surface water pollution.

3.2.5. Proactive Sanitary Sewer System Management to Reduce Inflow and Infiltration

Excessive inflow (stormwater entering) and infiltration (groundwater seepage entering) to sanitary sewer systems is preventable through proactive sewer system management using the best practices and technologies available. The efficiency of the downstream wastewater treatment processes is dependent on the performance of the sanitary sewer system. When the structural integrity of a sanitary sewer system deteriorates, high volumes of inflow and infiltration can enter the sewer system. High levels of inflow and infiltration increase the hydraulic load on the downstream treatment plant, which can reduce treatment efficiency, lead to bypassing a portion of the treatment process, cause illegal discharge of partially treated effluent, or in extreme situations make biological treatment facilities inoperable (e.g., wash out the biological organisms that treat the waste).

3.3. Water Quality Control Plans, Policies and Resolutions

The nine Regional Water Boards have adopted region-specific water quality control plans (commonly referred to as Basin Plans) that designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives. The State Water Board has adopted statewide water quality control plans, policies and resolutions establishing statewide water quality objectives, implementation programs and initiatives.

3.3.1. State Water Board Antidegradation Policy

On October 28, 1968, the State Water Board adopted Resolution 68-16, titled Statement of Policy with Respect to Maintaining High Quality of Waters in California, which incorporates the federal antidegradation policy. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings.

The continued prohibition of sewage discharges from sanitary sewer systems into waters of the State aligns with Resolution 68-16. A sewage discharge from sanitary sewers to waters of the State is prohibited by this Order. Therefore, this Order does not allow degradation of waters of the State. In addition, this Order: (1) further expands the existing prohibition of sewage discharges to include waters of the State, in addition to waters of the United States as provided in previous Order 2006-0003-DWQ, and (2) enhances the ability for Water Board enforcement of violations of the established prohibitions.

3.3.2. State Water Board Sources of Drinking Water Policy

On May 19,1988, the State Water Board adopted Resolution 88-63 (amended on February 1, 2006), titled Sources of Drinking Water, establishing state policy that all waters of the State, with certain exceptions, are suitable or potentially suitable for municipal or domestic supply.

3.3.3. State Water Board Cost of Compliance Resolution

On September 24, 2013, the State Water Board adopted Resolution 2013-0029, titled Directing Actions in Response to Efforts by Stakeholders on Reducing Costs of

Compliance While Maintaining Water Quality Protection. Through this resolution, the State Water Board committed to continued stakeholder engagement in identifying and implementing measures to reduce costs of compliance with regulatory orders while maintaining water quality protection and improving regulatory program outcomes.

3.3.4. State Water Board Human Right to Water Resolution

On February 16, 2016, the State Water Board adopted Resolution 2016-0010, titled Adopting the Human Right to Water as a Core Value and Directing its Implementation in Water Board Programs and Activities, addressing the human right to water as a core value and directing Water Board programs to implement requirements to support safe drinking water for all Californians.

On November 16, 2021, the State Water Board adopted Resolution 2021-0050 titled Condemning Racism, Xenophobia, Bigotry, and Racial Injustice, and Strengthening Commitment to Racial Equity, Diversity, Inclusion, Access, and Anti-racism. Among other actions, through Resolution 2021-0050, the State Water Board, in summary as corresponding to this General Order, reaffirms its commitment to its Human Right to Water resolution, upholding that every human being in California deserves safe, clean, affordable, and accessible water for human consumption, cooking, and sanitation purposes. Resolution 2021-0050 provides the State Water Board commitment to:

- Protect public health and beneficial uses of waterbodies in all communities, including communities disproportionately burdened by wastes discharge of waste to land and surface water;
- Restore impaired surface waterbodies and degraded aquifers; and
- Promote multi-benefit water quality projects.

Through Resolution 2021-0050, the State Water Board also commits to expanding implementation of its Climate Change Resolution to address the disproportionate effects of extreme hydrologic conditions and sea-level rise on Black, Indigenous, and people of color communities, prioritizing:

- The right to safe, clean, affordable, and accessible drinking water and sanitation;
- Sustainable management and protection of local groundwater resources;
- Healthy watersheds; and
- Access to surface waterbodies that support subsistence fishing.

On June 7, 2022, the State Water Board adopted a Resolution, titled Authorizing the Executive Director or Designee to Enter into One or More Multi-Year Contracts Up to a Combined Sum of $4,000,000 for a Statewide Wastewater Needs Assessment, supporting the equitable access to sanitation for all Californians and implementation of Resolutions 2016-0010 and 2021-0050.

This General Order supports the State Water Board priority in collecting a comprehensive set of data for California's wastewater systems, including sanitary sewer systems. Data reported per the requirements of this Order will be used with data from other Water Boards' programs, to further develop criteria and create a statewide risk

framework to prioritize critical funding and infrastructure investments for California's most vulnerable populations, including disadvantaged or severely disadvantaged communities with inadequate or failing sanitation systems and threatened access to healthy drinking water supplies.

3.3.5. State Water Board Open Data Resolution

On July 10, 2018, the State Water Board adopted Resolution 2018-0032, titled Adopting Principles of Open Data as a Core Value and Directing Programs and Activities to Implement Strategic Actions to Improve Data Accessibility and Associated Innovation, directing regulatory programs to assure all monitoring and reporting requirements support the State Water Boards' Open Data Initiative.

3.3.6. State Water Board Response to Climate Change

On March 7, 2017, the State Water Board adopted Resolution 2017-0012, titled Comprehensive Response to Climate Change, requiring a proactive response to climate change in all California Water Board actions, with the intent to embed climate change consideration into all programs and activities.

3.4. California Environmental Quality Act

The adoption of this Order is an action to reissue general waste discharge requirements that is exempt from the California Environmental Quality Act (Public Resources Code section 21000 et seq.) because it is an action taken by a regulatory agency to assure the protection of the environment and the regulatory process involves procedures for protection of the environment (Cal. Code Regs., Title 14, section 15308). In addition, the action to adopt this Order is exempt from CEQA pursuant to Cal. Code Regs., Title 14, section 15301, to the extent that it applies to existing sanitary sewer collection systems that constitute "existing facilities" as that term is used in sections 15301 and 15302, to the extent that it results in the repair or replacement of existing systems involving negligible or no expansion of capacity.

3.5. State Water Board Funding Assistance for Compliance with Water Board Water Quality Orders

The State Water Board, Division of Financial Assistance administers the implementation of the State Water Board financial assistance programs, per Board-adopted funding policies. Among other funding areas, the Division administers loan and grant funding for the planning and construction of wastewater and water recycling facilities per funding program-specific policies and guidelines. Applicants may apply for Clean Water State Revolving Fund low-interest loan, Small Community Wastewater grant funding assistance, and other funding available at the time of application, for some of the costs associated with complying with this General Order.

Funding applicants may obtain further information regarding current funding opportunities, and Division of Financial Assistance staff contact information at the following website: Financial Assistance Funding - Grants and Loans | California State Water Resources Control Board.
(https://www.waterboards.ca.gov/water_issues/programs/grants_loans/)

Section 13477.6 of the Water Code authorizes the Small Community Grant Fund. The Small Community Grant Fund allows the State Water Board to provide grant funding assistance to small, disadvantaged communities and small severely disadvantaged communities that may not otherwise be able to afford a loan or similar financing for projects to comply with requirements of this General Order. The State Water Board also considers loan forgiveness on a disadvantaged community-specific basis.

For disadvantaged communities' wastewater needs, the State Water Board places priority on the funding of projects that address:

- Public health;
- Violations of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permits;
- Providing sewer system service to existing septic tank owners; and
- High priority public health and water quality concerns identified by a Regional Water Board.

3.6. Notification to Interested Parties

On January 31, 2022, the State Water Board notified interested parties and persons of its intent to reissue Sanitary Sewer Systems General Order 2006-0003-DWQ by issuing a draft General Order for a 60-day public comment period. State Water Board staff conducted extensive stakeholder outreach and encouraged public participation in the adoption process for this General Order. On March 15, 2022, the State Water Board held a public meeting to hear and consider oral public comments. The State Water Board considered all public comments prior to adopting this General Order.

THEREFORE, IT IS HEREBY ORDERED, that pursuant to Water Code sections 13263, 13267, and 13383 this General Order supersedes Order 2006-0003-DWQ, Order WQ 2013-0058-EXEC, and any amendments made to these Orders thereafter, except for enforcement purposes and to meet the provisions contained in Division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, the Enrollee shall comply with the requirements in this Order.

4. PROHIBITIONS

4.1 Discharge of Sewage from a Sanitary Sewer System

Any discharge from a sanitary sewer system that has the potential to discharge to surface waters of the State is prohibited unless it is promptly cleaned up and reported as required in this General Order.

4.2. Discharge of Sewage to Waters of the State

Any discharge from a sanitary sewer system, discharged directly or indirectly through a drainage conveyance system or other route, to waters of the State is prohibited.

4.3. Discharge of Sewage Creating a Nuisance

Any discharge from a sanitary sewer system that creates a nuisance or condition of pollution as defined in Water Code section 13050(m) is prohibited.

5. SPECIFICATIONS

5.1. Designation of a Legally Responsible Official

The Enrollee shall designate a Legally Responsible Official that has authority to ensure the enrolled sanitary sewer system(s) complies with this Order, and is authorized to serve as a duly authorized representative. The Legally Responsible Official must have responsibility over management of the Enrollee's entire sanitary sewer system, and must be authorized to make managerial decisions that govern the operation of the sanitary sewer system, including having the explicit or implicit duty of making major capital improvement recommendations to ensure long-term environmental compliance. The Legally Responsible Official must have or have direct authority over individuals that:

- Possess a recognized degree or certificate related to operations and maintenance of sanitary sewer systems, and/or
- Have professional training and experience related to the management of sanitary sewer systems, demonstrated through extensive knowledge, training and experience.

For example, a sewer system superintendent or manager, an operations manager, a public utilities manager or director, or a district engineer may be designated as a Legally Responsible Official.

The Legally Responsible Official shall complete the electronic CIWQS "User Registration" form (https://ciwqs.waterboards.ca.gov/ciwqs/newUser.jsp). A Legally Responsible Official that represents multiple enrolled systems shall complete the electronic CIWQS "User Registration" form for each system.

The Enrollee shall submit any change to its Legally Responsible Official, and/or change in contact information, to the State Water Board within 30 calendar days of the change by emailing ciwqs@waterboards.ca.gov and copying the appropriate Regional Water Board as provided in Attachment F (Regional Water Quality Control Board Contact Information) of this General Order.

5.2. Sewer System Management Plan Development and Implementation

To facilitate adequate local funding and management of its sanitary sewer system(s), the Enrollee shall develop and implement an updated Sewer System Management Plan. The scale and complexity of the Sewer System Management Plan, and specific elements of the Plan, must match the size, scale and complexity of the Enrollee's sanitary sewer system(s). The Sewer System Management Plan must address, at minimum, the required Plan elements in Attachment D (Sewer System Management Plan – Required Elements) of this General Order. To be effective, the Sewer System Management Plan must include procedures for the management, operation, and maintenance of the sanitary sewer system(s). The procedures must: (1) incorporate the

prioritization of system repairs and maintenance to proactively prevent spills, and (2) address the implementation of current standard industry practices through available equipment, technologies, and strategies.

For an existing Enrollee under Order 2006-0003-DWQ that has certified its Continuation of Existing Regulatory Coverage, per section 2.1 (Requirements for Continuation of Existing Regulatory Coverage) of this General Order:

Within six (6) months of the Adoption Date of this General Order:

- The Legally Responsible Official shall upload the Enrollee's existing Sewer System Management Plan to the online CIWQS Sanitary Sewer System Database.

For a new Enrollee:

Within twelve (12) months of the Application for Enrollment approval date:

- The governing entity of the new Enrollee shall approve its Sewer System Management Plan; and
- The Legally Responsible Official shall certify and upload its Sewer System Management Plan to the online CIWQS Sanitary Sewer System Database.

5.3. Certification of Sewer System Management Plan and Plan Updates

The Legally Responsible Official shall certify and upload its Sewer System Management Plan and all subsequent updates to the online CIWQS Sanitary Sewer System Database.

5.4. Sewer System Management Plan Audits

The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. **Within six months after the end of the required 3-year audit period**, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order.

Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff.

The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At minimum, the audit must:

- Evaluate the implementation and effectiveness of the Enrollee's Sewer System Management Plan in preventing spills;
- Evaluate the Enrollee's compliance with this General Order;
- Identify Sewer System Management Plan deficiencies in addressing ongoing spills and discharges to waters of the State; and

- Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.

The Enrollee shall submit a complete audit report that includes:

- Audit findings and recommended corrective actions;
- A statement that sewer system operators' input on the audit findings has been considered; and
- A proposed schedule for the Enrollee to address the identified deficiencies.

A new Enrollee of this General Order (that did not have a sanitary sewer system enrolled in the previous State Water Board Order 2006-0003-DWQ) shall conduct its first internal Sewer System Management Plan audit for the time period between the date of submittal of its certified Sewer System Management Plan and the third subsequent December 31st date. The audit report must be submitted into the online CIWQS Sanitary Sewer System Database **by July 1 of the following calendar year**.

See the following tables for clarification:

Initial Audit Period and Audit Due Date for New Enrollees

	Audit Period	Audit Due Date
New Enrollee	Certified Sewer System Management Plan Submittal Date through the third subsequent December 31st date	July 1st date after audit period
Example	*Certified Sewer System Management Plan Submittal Date of August 2, 2025* *Audit Period of August 2, 2025 through December 31, 2027*	*July 1, 2028*

Initial Audit Period for Transition from 2-Year Audit Required in Previous Order 2006-0003-DWQ to 3-Year Audit Required in this General Order

	Audit Period	Audit Due Date
An Enrollee previously regulated by Order 2006-003-DWQ	A 3-year period starting from the end of last required 2-year Audit Period	Within six months after end of 3-year Audit Period
Example	*Last required Audit Period start date of August 2, 2021;* *Audit Period of August 2, 2021 through August 1, 2024*	*February 1, 2025*

Three-Year Ongoing Audit Period

	Audit Period	Audit Due Date
Each Enrollee	A 3-year period starting from the end of last required Audit Period	Within six months after end of 3-year Audit Period

5.5. Six-Year Sewer System Management Plan Update

At a minimum, the Enrollee shall update its Sewer System Management Plan every six (6) years after the date of its last Plan Update due date. (For an Enrollee previously regulated by Order 2006-0003-DWQ, the six-year period shall commence on the due date identified in section 3.11 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this Order. The Updated Sewer System Management Plan must include:

- Elements required in Attachment D (Sewer System Management Plan – Required Elements) of this Order;
- Summary of revisions included in the Plan update based on internal audit findings; and
- Other sewer system management-related changes.

The Enrollee's governing entity shall approve the updated Plan. The Legally Responsible Official shall upload and certify the approved updated Plan in the online CIWQS Sanitary Sewer System Database in accordance with section 3.11 (Sewer System Management Plan Reporting Requirements) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order. During the time period in between Plan updates, the Enrollee shall continuously document changes to its Sewer System Management Plan in a change log attached to the Plan.

5.6. System Resilience

The Enrollee shall include and implement system-specific procedures in its Sewer System Management Plan to proactively prioritize: (1) operation and maintenance, (2) condition assessments, and (3) repair and rehabilitation, to address ongoing system resilience, as specified in Attachment D (Sewer System Management Plan – Required Elements) of this General Order.

5.7. Allocation of Resources

The Enrollee shall:

- Establish and maintain a means to manage all necessary revenues and expenditures related to the sanitary sewer system; and
- Allocate the necessary resources to its sewer system management program for:
  - Compliance with this General Order,
  - Full implementation of its updated Sewer System Management Plan,
  - System operation, maintenance, and repair, and
  - Spill responses.

5.8. Designation of Data Submitters

The Legally Responsible Official may designate one or more individuals as a Data Submitter for reporting of spill data. The Legally Responsible Official shall authorize the designation of Data Submitter(s) through the online CIWQS database (https://ciwqs.waterboards.ca.gov) prior to the individuals establishing a CIWQS user account (https://ciwqs.waterboards.ca.gov/ciwqs/newUser.jsp) and entering spill data into the online CIWQS Sanitary Sewer System Database.

The Legally Responsible Official shall submit any change to its Data Submitter(s), and/or change in Data Submitter contact information, to the State Water Board within 30 calendar days of the change, by emailing ciwqs@waterboards.ca.gov and copying the appropriate Regional Water Board as provided in Attachment F (Regional Water Quality Control Board Contact Information) of this General Order.

5.9. Reporting Certification

The Legally Responsible Official shall electronically certify, on the Enrollee's behalf, all applications, reports, the Sewer System Management Plan(s) and corresponding updates, and other information submitted electronically into the online CIWQS Sanitary Sewer System Database, as follows:

"I certify under penalty of perjury under the laws of the State of California that the electronically submitted information was prepared under my direction or supervision. Based on my inquiry of the person(s) directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete, and complies with the Statewide Sanitary Sewer Systems General Order. I am aware that there are significant penalties for submitting false information."

Hardcopy submittals to the State Water Board must be accompanied by the above certification statement.

5.10. System Capacity

The Enrollee shall maintain the system capacity necessary to convey: (1) base flows during dry weather conditions, and (2) wet weather peak flows consistent with designated local historic storms. Design storms must take into account system-specific stormwater contributions via inflow and infiltration, and location-specific depth of groundwater and storm frequencies. The Enrollee shall implement capital improvements to provide adequate hydraulic capacity to:

- Meet or exceed the design criteria as defined in the Enrollee's System Evaluation and Capacity Assurance element of its Sewer System Management Plan; and
- Prevent system capacity-related spills, and adverse impacts to the treatment efficiency of downstream wastewater treatment facilities.

5.11. System Performance Analysis

The Enrollee shall include a running 10-year system performance analysis in its Annual Report. The analysis must include two CIWQS-generated graphs presenting the following information:

Graph 1 – Total Spill Volume per Year:

X axis: A 10-year period which includes the current calendar year and the nine previous calendar years;

Y axis: The total spill volume, per Spill Category, for each calendar year.

Graph 2 – Total Number of Spills per Year:

X axis: A 10-year period which includes the current calendar year and the nine previous calendar years;

Y axis: The total number of spills, per Spill Category, for each calendar year.

The current calendar year is the calendar year covered in the Annual Report.

The Enrollee shall generate the graphs in CIWQS, using the existing data in the online CIWQS Sanitary Sewer System Database at the following graph generation link: (https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_operation_report).

5.12. Spill Emergency Response Plan and Remedial Actions

For Existing Enrollees (with regulatory coverage under Order 2006-0003-DWQ):

Within six (6) months of the Adoption Date of this General Order, the Enrollee shall update and implement its Spill Emergency Response Plan, per Attachment D, section 6 (Spill Emergency Response Plan) of this General Order.

For New Enrollees:

Within six (6) months of the Application for Enrollment approval date, the Enrollee shall develop and implement a Spill Emergency Response Plan, per Attachment D, section 6 (Spill Emergency Response Plan) of this General Order.

The Enrollee shall certify, in its Annual Report, that its Spill Emergency Response Plan is up to date.

The Spill Emergency Response Plan shall include measures to protect public health and the environment. The Enrollee shall respond to spills from its system(s) in a timely manner that minimizes water quality impacts and nuisance by:

- Immediately stopping the spill and preventing/minimizing a discharge to waters of the State;
- Intercepting sewage flows to prevent/minimize spill volume discharged into waters of the State;
- Thoroughly recovering, cleaning up and disposing of sewage and wash down water; and
- Cleaning publicly accessible areas while preventing toxic discharges to waters of the State.

5.13. Notification, Monitoring, Reporting and Recordkeeping Requirements

The Enrollee shall comply with notification, monitoring, reporting, and recordkeeping requirements in Attachment E1 of this General Order.

5.13.1. Spill Categories

Individual spill notification, monitoring and reporting must be in accordance with the following spill categories:

- **Category 1 Spill**

  A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:

  - A surface water, including a surface water body that contains no flow or volume of water; or
  - A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.

    Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.

A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

- **Category 2 Spill**

  A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

  A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.

- **Category 3 Spill**

  A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

  A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

- **Category 4 Spill**

  A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

  A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.

5.13.2. Annual Report

The Enrollee shall submit an Annual Report (previously termed as Collection System Questionnaire in Order 2006-0003-DWQ) as specified in section 3.9 (Annual Report) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

For new Enrollees: Within 30 days of obtaining a CIWQS account, a new Enrollee shall submit its initial Annual Report, as specified in section 3.9 (Annual Report) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

5.14. Electronic Sanitary Sewer System Service Area Boundary Map

For continuing enrollees, starting on July 1, 2025, and no later than December 31, 2025:

For new enrollees – no earlier than July 1, 2025, or within 12 months of the Application for Enrollment approval date, whichever date is later:

The Legally Responsible Official shall submit, to the State Water Board, geospatial data detailing the locations of the Enrollee's sanitary sewer system service area boundary, per the required content and specifications in section 3.8 (Electronic Sanitary Sewer System Service Area Boundary Map) of Attachment E1 of this General Order, for each system identified by a WDID number.

An Enrollee of a disadvantaged community that may need assistance developing an electronic map to comply with this requirement, may contact State Water Board staff for assistance at SanitarySewer@waterboards.ca.gov.

5.15. Voluntary Reporting of Spills from Privately-Owned Sewer Laterals and/or Private Sanitary Sewer Systems

Within 24 hours of becoming aware of a spill (as described below) from a private sewer lateral or private sanitary sewer system that is not owned/operated by the Enrollee, the Enrollee is encouraged to report the following observations to the online CIWQS Sanitary Sewer System Database at the following link: https://ciwqs.waterboards.ca.gov:

- A spill equal or greater than 1,000 gallons that discharges (or has a potential to discharge) to a water of the State, or a drainage conveyance system that discharges to waters of the State; **or**
- Any volume of sewage that discharges (or has a potential to discharge) to surface waters.

In the CIWQS module, the Enrollee is encouraged to identify:

- Time of observation;
- Description of general spill location (for example, street name and cross street names);
- Estimated volume of spill;
- If known, general description of spill destination (for example, flowing into drainage channel, flowing directly into a creek, etc.); and
- If known, name of private system owner/operator.

The CIWQS database will make the name and contact information of the entity voluntarily reporting a private spill, accessible to State and Regional Water Board staff only. The CIWQS database will only make information regarding the actual spill, accessible to the public.

5.16. Voluntary Notification of Spills from Privately-Owned Laterals and/or Systems to the California Office of Emergency Services

Upon observing or acquiring knowledge of any of the following from a private sewer lateral or private sanitary sewer system that is not owned/operated by the Enrollee, the Enrollee is encouraged to notify the California Office of Emergency Services (as provided by Health and Safety Code section 5410 et. seq. and Water Code section 13271), or inform the responsible party that State law requires such notification to the Office of Emergency Services by any person that causes or allows a sewage discharge to waters of the State:

- A spill equal to 1,000 gallons or more that discharges (or has a potential to discharge) to waters of the State, or a drainage conveyance system that discharges to waters of the State; or
- A spill of any volume to surface waters.

5.17. Unintended Failure to Report

If an Enrollee becomes aware that they unintentionally failed to submit relevant facts in any report required in this General Order, the Enrollee shall promptly notify Regional Water Board and State Water Board staff. Regional Water Board contact information is included in Attachment F of this Order. State Water Board staff shall be contacted by email at SanitarySewer@waterboards.ca.gov for assistance in formally amending the corresponding report(s) in the online CIWQS Sanitary Sewer System Database.

5.18. Duty to Report to Water Boards

In accordance with Water Code section 13267 and/or section 13383, upon request by the State Water Board Executive Director (or designee) or a Regional Water Board Executive Officer (or designee), the Enrollee shall provide the requested information which the State or Regional Water Board deems necessary to determine compliance with this General Order.

5.19. Operation and Maintenance

To prevent discharges to the environment, the Enrollee shall maintain in good working order, and operate as designed, any facility or treatment and control system designed to contain sewage and convey it to a treatment plant.

6. PROVISIONS

6.1. Enforcement Provisions

The following enforcement provisions are based on existing federal and state regulations, laws and policies, including the federal Clean Water Act, the state Water Code and the State Water Board Enforcement Policy.

6.1.1. Enforceability of Clean Water Act and Water Code Violations

Noncompliance with requirements of this General Order or discharging sewage without enrolling in this General Order constitutes a violation of the Water Code and a potential

violation of the Clean Water Act and is grounds for an enforcement action by the State Water Board or the applicable Regional Water Board. Failure to comply with the notification, monitoring, inspection, entry, reporting, and recordkeeping requirements may subject the Enrollee to administrative civil liabilities of up to $10,000 a day per violation pursuant to Water Code section 13385; up to $1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement. Discharging waste not in compliance with the requirements of this General Order or the Clean Water Act may subject the Enrollee to administrative civil liabilities up to $10,000 a day per violation and additional liability up to $10 per gallon of discharge not cleaned up after the first 1,000 gallons of discharge; up to $5,000 a day per violation pursuant to Water Code section 13350 or up to $20 per gallon of waste discharged; or referral to the Attorney General for judicial civil enforcement.

6.1.2. Monetary Penalties

The Water Code provides the State and Regional Water Boards the authority to pursue formal enforcement actions, including imposing administrative liability and civil monetary penalties, for non-compliance with the requirements of this General Order and violations of the Clean Water Act.

6.1.3. Falsifying or Failure to Report

The Water Code provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this General Order, or falsifying any information provided in the technical or monitoring reports is subject to administrative liability and civil monetary penalties. Any person who knowingly fails or refuses to furnish technical or monitoring program reports or falsifies any information provided in reports required by this General Order is subject to criminal penalties.

6.1.4. Severability of General Order

The provisions of this General Order are severable; if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected thereby.

6.1.5. Indirect Discharges

In the event that a spill enters into a drainage conveyance system, the Enrollee shall take all feasible steps to prevent discharge of sewage into waters of the State by blocking or redirecting the flow in the drainage conveyance system, removing the sewage from the drainage conveyance system, and cleaning the system in a manner that does not inadvertently impact beneficial uses of the receiving water body.

6.1.6. Water Boards' Considerations for Discretionary Enforcement

Consistent with the State Water Board Enforcement Policy, when considering Water Code section 13327 factors, the State Water Board or a Regional Water Board may consider the Enrollee's efforts to contain, control, clean up, and mitigate spills. In assessing the factors, the State Water Board or the applicable Regional Water Board will consider:

- The Enrollee's compliance with this General Order with a focus on compliance with reporting requirements;
- The Enrollee's provision of adequate funding to implement the requirements of this General Order;
- The Enrollee's compliance with providing a complete and updated Sewer System Management Plan;
- The Enrollee's compliance with implementing its Sewer System Management Plan;
- The overall effectiveness of the Enrollee's Sewer System Management Plan with respect to:
    - System management, operation, and maintenance,
    - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent spills (e.g. adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow, etc.),
    - Preventive maintenance (including cleaning, root grinding, and fats, oils, and grease control) and source control measures,
    - Implementation of backup equipment,
    - Inflow and infiltration prevention and control,
    - Appropriate sanitary sewer system capacity to prevent spills, and
    - The Enrollee's responsiveness to stop and mitigate the impact of the discharge;
- The Enrollee's compliance with identifying the cause of the spill;
- The Enrollee's use of available information and observations to accurately estimate the spill volume and identify the affected or potentially affected receiving waters;
- The Enrollee's thoroughness of cleaning up sewage in drainage conveyance systems after the spill(s);
- The Enrollee's use of water quality and biological monitoring and assessment to determine the short-term and long-term impacts to beneficial uses and the environment;
- The Enrollee's follow up actions to improve system performance;
- The Enrollee's implementation of feasible alternatives to prevent spills, such as:
    - Use of temporary storage or waste retention,
    - Reduction of system inflow and infiltration,
    - Collection and hauling of waste to a treatment facility,
    - Prevention of and/ or containment of spills due to a design storm event identified in the Enrollee's Sewer System Management Plan,

- Implementation of available equipment, technologies, strategies, and recommended industry practices for maintaining and managing sewer systems to prevent spills, and contain and eliminate discharges to waters of the State; and

- The spill duration and factors beyond the reasonable control of the Enrollee causing the event.

6.1.7. Enforcement Discretion Based on Reporting Compliance

Consistent with the State Water Board Enforcement Policy, the State Water Board or a Regional Water Board may consider the Enrollee's efforts to comply with spill reporting requirements when determining compliance with Water Code section 13267 and section 13383. When assessing Water Code section 13227 factors, the State Water Board or the applicable Regional Water Board will consider:

- The Enrollee's diligence to comply with all reporting requirements in this General Order;
- The use of best available information for the Enrollee's reporting of spill start date and start time in which the release of sewage from the sanitary sewer system initiated;
- The Enrollee's reporting of spill end date, and end time to be the date and time in which the release of sewage from the sanitary sewer system was stopped;
- The Enrollee's diligence to accurately estimate and report spill volumes;
- The Enrollee's subsequent verification and/or updates to initial Draft Spill Reports in accordance with this General Order; and
- The Enrollee's timely certification of required spill reports.

Consistent with Water Code section 13267 and section 13383, the State Water Board or a Regional Water Board may require an Enrollee to report the results of a condition assessment of a specified portion of the Enrollee's sanitary sewer system.

6.2. Other Regional Water Board Orders

It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with federal and state regulations. This Order will not be interpreted or applied:

- In a manner inconsistent with the federal Clean Water Act;
- To authorize a spill or discharge that is illegal under either the Clean Water Act, the Water Code, and/or an applicable Basin Plan prohibition or water quality standard;
- To prohibit a Regional Water Board from issuing an individual National Pollutant Discharge Elimination System (NPDES) permit or individual waste discharge requirements superseding an Enrollee's regulatory coverage under this General Order for a sanitary sewer system authorized under the Clean Water Act or Water Code;

- To supersede any more specific or more stringent waste discharge requirements or enforcement orders issued by a Regional Water Board; or
- To supersede any more specific or more stringent state or federal requirements in existing regulation, an administrative/judicial order, or Consent Decree.

6.3. Sewer System Management Plan Availability

The Enrollee's updated Sewer System Management Plan must be maintained for public inspection at the Enrollee's offices and facilities and must be available to the public through CIWQS and/or on the Enrollee's website, in accordance with section 3.8 (Sewer System Management Plan Reporting Requirements) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

6.4. Entry and Inspection

6.4.1. Entry and Availability of Information

The Enrollee shall allow State and Regional Water Board staff, upon presentation of credentials and other documents as may be required by law, to:

- Enter upon the Enrollee's premises where a regulated facility or activity is located or conducted, or where records are kept under the requirements of this General Order;
- Have access to and reproduce any records required to be maintained by this General Order;
- Inspect any facility and/or equipment (including monitoring and control equipment), practices, or operations required in this General Order; and
- Sample or monitor substances or parameters for assuring compliance with this General Order, or as otherwise authorized by the Water Code.

6.4.2. Pre-Inspection Questionnaire

The Enrollee shall provide pre-inspection information to State and Regional Water Board staff through the completion of a Pre-Inspection Questionnaire provided by Water Board staff.

ATTACHMENT A - DEFINITIONS

Annual Report

An Annual Report (previously termed as Collection System Questionnaire in Order 2006-0003-DWQ) is a mandatory report in which the Enrollee provides a calendar-year update of its efforts to prevent spills.

Basin Plan

A Basin Plan is a water quality control plan specific to a Regional Water Quality Control Board (Regional Water Board), that serves as regulations to: (1) define and designate beneficial uses of surface and groundwaters, (2) establish water quality objectives for protection of beneficial uses, and (3) provide implementation measures.

Beneficial Uses

The term “Beneficial Uses” is a Water Code term, defined as the uses of the waters of the State that may be protected against water quality degradation. Examples of beneficial uses include but are not limited to, municipal, domestic, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

California Integrated Water Quality System (CIWQS)

CIWQS is the statewide database that provides for mandatory electronic reporting as required in State and Regional Water Board-issued waste discharge requirements.

Data Submitter

A Data Submitter is an individual designated and authorized by the Enrollee’s Legally Responsible Official to enter spill data into the online CIWQS Sanitary Sewer System Database. A Data Submitter does not have the authority of a Legally Responsible Official to certify reporting entered into the online CIWQS Sanitary Sewer System Database.

Disadvantaged Community

A disadvantaged community is a community with a median household income of less than eighty percent (80%) of the statewide annual median household income.

For the purpose of this General Order, there is no differentiation between a small and large disadvantaged community.

Drainage Conveyance System

A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows.

Enrollee

An Enrollee is a public, private, or other non-governmental entity that has obtained approval for regulatory coverage under this General Order, including:

- A state agency, municipality, special district, or other public entity that owns and/or operates one or more sanitary sewer systems:
  - greater than one (1) mile in length (each individual sanitary sewer system);
  - one mile or less in length where the State Water Resources Control Board or a Regional Water Quality Control Board requires regulatory coverage under this Order, or
- A federal agency, private company, or other non-governmental entity that owns and/or operates a sanitary sewer system of any size where the State Water Resources Control Board or a Regional Water Quality Control Board requires regulatory coverage under this Order in response to a history of spills, proximity to surface water, or other factors supporting regulatory coverage.

Environmentally Sensitive Area

An environmentally sensitive area is a designated agricultural and/or wildlife area identified to need special natural landscape protection due to its wildlife or historical value.

Exfiltration

Exfiltration is the underground exiting of sewage from a sanitary sewer system through cracks, offset or separated joints, or failed infrastructure due to corrosion or other factors.

Flood Control Channel

A flood control channel is a channel used to convey stormwater and non-stormwater flows through and from areas for flood management purposes.

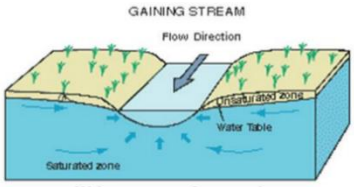
Governing Entity

A governing entity includes but is not limited to the following:

- A publicly elected governing board, council, or commission of a municipal agency;
- A Department or Division director of a federal or state agency that is not governed by a board;
- A governing board or commission of an organization or association; and
- A private system owner/manager that is not governed by a board.

Hydrologically Connected

Two waterbodies are hydrologically connected when one waterbody flows, or has the potential to flow, into the other waterbody. For the purpose of this General Order, groundwater is hydrologically connected to a surface water when the groundwater feeds into the surface water. (The surface waterbody in this example is termed a gaining stream as it gains flow from surrounding groundwater.)



Lateral (including Lower and Upper Lateral)

A lateral is an underground segment of smaller diameter pipe that transports sewage from a customer's building or property (residential, commercial, or industrial) to the Enrollee's main sewer line in a street or easement. Upper and lower lateral boundary definitions are subject to local jurisdictional codes and ordinances, or private system ownership.

A lower lateral is the portion of the lateral located between the sanitary sewer system main, and either the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations.

An upper lateral is the portion of the lateral from the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations, to the building or property.

Legally Responsible Official

A Legally Responsible Official is an official representative, designated by the Enrollee, with authority to sign and certify submitted information and documents required by this General Order.

Nuisance

For the purpose of this General Order, a nuisance, as defined in Water Code section 13050(m), is anything that meets all of the following requirements:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;
- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and
- Occurs during, or as a result of, the treatment or disposal of wastes.

Private Sewer Lateral

A private sewer lateral is the privately-owned lateral that transports sewage from private property(ies) into a sanitary sewer system.

Private Sanitary Sewer System

A private sanitary sewer system is a sanitary sewer system of any size that is owned and/or operated by a private individual, company, corporation, or organization. A private sanitary sewer system may or may not connect into a publicly owned sanitary sewer system.

Potential to Discharge, Potential Discharge

Potential to Discharge, or Potential Discharge, means any exiting of sewage from a sanitary sewer system which can reasonably be expected to discharge into a water of the State based on the size of the sewage spill, proximity to a drainage conveyance system, and the nature of the surrounding environment.

Receiving Water

A receiving water is a water of the State that receives a discharge of waste.

Resilience

Resilience is the ability to recover from or adjust to adversity or change, and grow from disruptions. Resilience can be built through planning, preparing for, mitigating, and adapting to changing conditions.

Sanitary Sewer System

A sanitary sewer system is a system that is designed to convey sewage, including but not limited to, pipes, manholes, pump stations, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a wastewater treatment plant headworks, including:

- Laterals owned and/or operated by the Enrollee;
- Satellite sewer systems; and/or
- Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks and diversion structures.

For purpose of this Order, sanitary sewer systems include only systems owned and/or operated by the Enrollee.

Satellite Sewer System

A satellite sewer system is a portion of a sanitary sewer system owned or operated by a different owner than the owner of the downstream wastewater treatment facility ultimately treating the sewage.

Sewer System Management Plan

A sewer system management plan is a living document an Enrollee develops and implements to effectively manage its sanitary sewer system(s) in accordance with this General Order.

Sewage

Sewage, and its associated wastewater, is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of stormwater or groundwater, conveyed in a sanitary sewer system.

Spill

A spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under this General Order if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

Training

Training is in-house or external education and guidance needed that provides the knowledge, skills, and abilities to comply with this General Order.

Wash Down Water

Wash down water is water used to clean a spill area.

Waste

Waste, as defined in Water Code section 13050(d), includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

Waste Discharge Identification Number (WDID)

A waste discharge identification number (WDID) identifies each individual sanitary sewer system enrolled under this General Order. A WDID number is assigned to each enrolled system upon an Enrollee's approved regulatory coverage.

Waters of the State

Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

Waters of the United States

Waters of the United States are surface waters or waterbodies that are subject to federal jurisdiction in accordance with the Clean Water Act.

Water Quality Objective

A water quality objective is the limit or maximum amount of pollutant, waste constituent or characteristic, or parameter level established in statewide water quality control plans and Regional Water Boards' Basin Plans, for the reasonable protection of beneficial uses of surface waters and groundwater and the prevention of nuisance.

ATTACHMENT B – APPLICATION FOR ENROLLMENT

1. Enrollment Status: (Mark only one item)

☐ New Enrollee

☐ New Enrollee with previous regulatory coverage under Order 2006-0003-DWQ
(that failed to certify continuation of coverage in CIWQS per Order 2022-XXXX-DWQ)
Existing WDID Number: _____

2. Applicant Information:

Legally Responsible Official Submitting Application

First and Last Name: _____

Title: _____

Phone: _____

Email: _____

System Owner/Operator Name: _____

Mailing Address:_____

City, State, Zip:_____

County:_____

Sanitary Sewer System Name: _____

Regional Water Quality Control Board(s): _____

Signature and Date: _____

3. Applicant Type (Check one):

☐ City ☐ County ☐ State ☐ Federal ☐ Special District

☐ Government Combination ☐ Private ☐ Other Non-governmental Entity

4. Wastewater Treatment Plant Receiving Sanitary Sewer System Waste:

Wastewater Treatment Plant Permittee:_____

WDID No.: _____

5. Billing Information

Billing Address: _____

City, State, Zip: _____

Billing Contact Person and Title: _____

Phone and Email Address: _____

6. Application Fee:

The application fee, as required by Water Code section 13260, is based on the daily population served by the sanitary sewer system. See updated Fee Schedule. (https://www.waterboards.ca.gov/resources/fees/water_quality/)

Check one of the following and enter fee amount:

☐ Population Served < 50,000 – Total Fee submitted: $ _____

☐ Population Served ≥ 50,000 – Total Fee submitted: $ _____

Make the fee payment payable to the State Water Resources Control Board and mail the complete application package to:

State Water Resources Control Board, Accounting Office
P. O. Box 1888
Sacramento, CA 95812-1888

Attention: Statewide Sanitary Sewer System Program

7. Application Submittal Certification

I certify under penalty of perjury under the laws of the State of California that to the best of my knowledge and belief, the information in the submitted application package is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Print Name: _____

Title: _____

Signature: _____Date: _____

ATTACHMENT C - NOTICE OF TERMINATION

1. Enrollee Information

Enrollee Name: _____

WDID No:_____

Legally Responsible Official Requesting Termination of Coverage: _____

First and Last Name: _____

Title: _____

Phone: _____

Email: _____

Mailing Address: _____

City, State, Zip: _____

County: _____

Sanitary Sewer System Name(s) or Unique Identifier(s): _____

Regional Water Quality Control Board(s): _____

Signature and Date:_____

2. Basis of Termination

Explanation of termination, including subsequent regulatory coverage and subsequent owner/operator of enrolled sanitary sewer system, as applicable:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

3. Regulatory Coverage Termination Certification

I certify under penalty of perjury under the laws of the State of California that to the best of my knowledge: 1) the sanitary sewer system I officially represent is not required to be regulated under the Statewide Waste Discharge Requirements for Sanitary Sewer Systems Order 2022-XXXX-DWQ, and 2) the information submitted in this Notice of Termination is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I understand that the submittal of this Notice of Termination does not release sanitary sewer system agencies from liability for any violations of the Clean Water Act.

Print Name: _____

Title: _____

Signature: _____Date: _____

For State Water Board Use Only

☐ Approved for Termination ☐ Denied and Returned to Enrollee

Deputy Director of Water Quality Signature: _____

Date: _____Notice of Termination Effective Date: _____

ATTACHMENT D – SEWER SYSTEM MANAGEMENT PLAN – REQUIRED ELEMENTS

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ATTACHMENT D – SEWER SYSTEM MANAGEMENT PLAN – REQUIRED ELEMENTS

A Sewer System Management Plan (Plan) is a living planning document that documents ongoing local sewer system management program activities, procedures, and decision-making – at the scale necessary to address the size and complexity of the subject sanitary sewer system(s). This Plan may incorporate other programs and other plans by reference, to address short-term and long-term system resilience through:

- Proactive planning and decision-making;
- Local government ordinances;
- Updated operations and maintenance activities and procedures;
- Implementation of capital improvements;
- Sufficient local budget to support staff resources, contractors, equipment, and training; and
- Updated training of staff and contractors.

The Enrollee's development, update, and implementation of a Sewer System Management Plan addressing the requirements of this Attachment is an enforceable component of this General Order. As specified in Provision 6.1 (Enforcement Provisions) of this General Order, consistent with the Water Code and the State Water Board Enforcement Policy, the State Water Board or a Regional Water Board may consider the Enrollee's efforts in implementing an effective Sewer System Management Plan to prevent, contain, control, and mitigate spills when considering Water Code section 13327 factors to determine necessary enforcement of this General Order.

This Attachment includes the following required elements that the Enrollee shall address in its Plan and subsequent updates. The Enrollee shall identify any requirement in this Attachment that is not applicable to the Enrollee's sewer system and shall explain in its Plan why the requirement is not applicable.

1. SEWER SYSTEM MANAGEMENT PLAN GOAL AND INTRODUCTION

The goal of the Sewer System Management Plan (Plan) is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur.

The Plan must include a narrative Introduction section that discusses the following items:

1.1. Regulatory Context

The Plan Introduction section must provide a general description of the local sewer system management program and discuss Plan implementation and updates.

1.2. Sewer System Management Plan Update Schedule

The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer spills.

1.3. Sewer System Asset Overview

The Plan Introduction section must provide a description of the Enrollee-owned assets and service area, including but not limited to:

- Location, including county(ies);
- Service area boundary;
- Population and community served;
- System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons;
- Structures diverting stormwater to the sewer system;
- Data management systems;
- Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals;
- Estimated number or percent of residential, commercial, and industrial service connections; and
- Unique service boundary conditions and challenge(s).

Additionally, the Plan Introduction section must provide reference to the Enrollee's up-to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of this Attachment.

2. ORGANIZATION

The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation that includes:

- The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;
- The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;
- Organizational lines of authority; and
- Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county

health officer, county environmental health agency, and State Office of Emergency Services.)

3. LEGAL AUTHORITY

The Plan must include copies or an electronic link to the Enrollee's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;
- Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure;
- Require that sewer system components and connections be properly designed and constructed;
- Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee;
- Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and
- Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

4. OPERATION AND MAINTENANCE PROGRAM

The Plan must include the items listed below that are appropriate and applicable to the Enrollee's system.

4.1. Updated Map of Sanitary Sewer System

An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.

4.2. Preventive Operation and Maintenance Activities

A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors.

The scheduling system must include:

- Inspection and maintenance activities;

- Higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems;
- Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.

The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.

4.3. Training

In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:

- The requirements of this General Order;
- The Enrollee's Spill Emergency Response Plan procedures and practice drills;
- Skilled estimation of spill volume for field operators; and
- Electronic CIWQS reporting procedures for staff submitting data.

4.4. Equipment Inventory

An inventory of sewer system equipment, including the identification of critical replacement and spare parts.

5. DESIGN AND PERFORMANCE PROVISIONS

The Plan must include the following items as appropriate and applicable to the Enrollee's system:

5.1. Updated Design Criteria and Construction Standards and Specifications

Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.

5.2. Procedures and Standards

Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

6. SPILL EMERGENCY RESPONSE PLAN

The Plan must include an up to date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
- Address emergency system operations, traffic control and other necessary response activities;
- Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
- Remove sewage from the drainage conveyance system;
- Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;
- Conduct post-spill assessments of spill response activities;
- Document and report spill events as required in this General Order; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

7. SEWER PIPE BLOCKAGE CONTROL PROGRAM

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed.

The procedures must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;
- A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area;
- The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;
- Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

8. SYSTEM EVALUATION, CAPACITY ASSURANCE AND CAPITAL IMPROVEMENTS

The Plan must include procedures and activities for:

- Routine evaluation and assessment of system conditions;
- Capacity assessment and design criteria;
- Prioritization of corrective actions; and
- A capital improvement plan.

8.1 System Evaluation and Condition Assessment

The Plan must include procedures to:

- Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;

- Identify and justify the amount (percentage) of its system for its condition to be assessed each year;
- Prioritize the condition assessment of system areas that:
    - Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
    - Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
    - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
- Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;
- Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;
- Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and
- Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

8.2. Capacity Assessment and Design Criteria

The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- Dry-weather peak flow conditions that cause or contributes to spill events;
- The appropriate design storm(s) or wet weather events that causes or contributes to spill events;
- The capacity of key system components; and
- Identify the major sources that contribute to the peak flows associated with sewer spills.

The capacity assessment must consider:

- Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;
- Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions;

- Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;
- Increases of erosive forces in canyons and streams near underground and above-ground system components due to larger and/or higher-intensity storm events;
- Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and
- Necessary redundancy in pumping and storage capacities.

8.3. Prioritization of Corrective Action

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

8.4. Capital Improvement Plan

The capital improvement plan must include the following items:

- Project schedules including completion dates for all portions of the capital improvement program;
- Internal and external project funding sources for each project; and
- Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.

9. MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS

The Plan must include an Adaptive Management section that addresses Plan-implementation effectiveness and the steps for necessary Plan improvement, including:

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities;
- Monitoring the implementation and measuring the effectiveness of each Plan Element;
- Assessing the success of the preventive operation and maintenance activities;
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and
- Identifying and illustrating spill trends, including spill frequency, locations and estimated volumes.

10. INTERNAL AUDITS

The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order.

11. COMMUNICATION PROGRAM

The Plan must include procedures for the Enrollee to communicate with:

- The public for:
  - Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and
  - The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.
- Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:
  - System operation, maintenance, and capital improvement-related activities.

ATTACHMENT E1 – NOTIFICATION, MONITORING, REPORTING AND RECORDKEEPING REQUIREMENTS

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ATTACHMENT E1– NOTIFICATION, MONITORING, REPORTING AND RECORDKEEPING REQUIREMENTS

The Notification Requirements (section 1), Spill-specific Monitoring Requirements (section 2), Reporting Requirements (section 3) and Recordkeeping Requirements (section 4) in this Attachment are pursuant to Water Code section 13267 and section 13383, and are an enforceable component of this General Order. For the purpose of this General Order, the term:

- Notification means the notifying of appropriate parties of a spill event or other activity.
- Spill-specific Monitoring means the gathering of information and data for a specific spill event to be reported or kept as records.
- Reporting means the reporting of information and data into the online California Integrated Water Quality System (CIWQS) Sanitary Sewer System Database.
- Recordkeeping means the maintaining of information and data in an official records storage system.

Failure to comply with the notification, monitoring, reporting and recordkeeping requirements in this General Order may subject the Enrollee to civil liabilities of up to $10,000 a day per violation pursuant to Water Code section 13385; up to $1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement.

Water Code section 13193 et seq. requires the Regional Water Quality Control Boards (Regional Water Boards) and the State Water Resources Control Board (State Water Board) to collect sanitary sewer spill information for each spill event and make this information available to the public. Sanitary sewer spill information for each spill event includes but is not limited to: Enrollee contact information for each spill event, spill cause, estimated spill volume and factors used for estimation, location, date, time, duration, amount discharged to waters of the State, response and corrective action(s) taken.

1. NOTIFICATION REQUIREMENTS

1.1. Notification of Spills of 1,000 Gallons or Greater to the California Office of Emergency Services

Per Water Code section 13271, for a spill that discharges in or on any waters of the State, or discharges or is deposited where it is, or probably will be, discharged in or on any waters of the State, the Enrollee shall notify the California Office of Emergency Services and obtain a California Office of Emergency Services Control Number as soon as possible **but no later than two (2) hours** after:

- The Enrollee has knowledge of the spill; and
- Notification can be provided without substantially impeding cleanup or other emergency measures.

The notification requirements in this section apply to individual spills of 1,000 gallons or greater, from an Enrollee-owned and/or operated laterals, to a water of the State.

1.2. Spill Notification Information

The Enrollee shall provide the following spill information to the California Office of Emergency Services before receiving a Control Number, as applicable:

- Name and phone number of the person notifying the California Office of Emergency Services;
- Estimated spill volume (gallons);
- Estimated spill rate from the system (gallons per minute);
- Estimated discharge rate (gallons per minute) directly into waters of the State or indirectly into a drainage conveyance system;
- Spill incident description:
  - Brief narrative of the spill event, and
  - Spill incident location (address, city, and zip code) and closest cross streets and/or landmarks;
- Name and phone number of contact person on-scene;
- Date and time the Enrollee was informed of the spill event;
- Name of sanitary sewer system causing the spill;
- Spill cause or suspected cause (if known);
- Amount of spill contained;
- Name of receiving water body receiving or potentially receiving discharge; and
- Description of water body impact and/ or potential impact to beneficial uses.

1.3. Notification of Spill Report Updates

Following the initial notification to the California Office of Emergency Services and until such time that the Enrollee certifies the spill report in the online CIWQS Sanitary Sewer System Database, the Enrollee shall provide updates to the California Office of Emergency Services regarding substantial changes to:

- Estimated spill volume (increase or decrease in gallons initially estimated);
- Estimated discharge volume discharged directly into waters of the State or indirectly into a drainage conveyance system (increase or decrease in gallons initially estimated); and
- Additional impact(s) to the receiving water(s) and beneficial uses.

2. SPILL-SPECIFIC MONITORING REQUIREMENTS

2.1 Spill Location and Spread

The Enrollee shall visually assess the spill location(s) and spread using photography, global positioning system (GPS), and other best available tools. The Enrollee shall document the critical spill locations, including:

- Photography and GPS coordinates for:
  - The system location where spill originated.

    For multiple appearance points of a single spill event, the points closest to the spill origin.
- Photography for:
  - Drainage conveyance system entry locations,
  - The location(s) of discharge into surface waters, as applicable,
  - Extent of spill spread, and
  - The location(s) of clean up.

2.2 Spill Volume Estimation

To assess the approximate spill magnitude and spread, the Enrollee shall estimate the total spill volume using updated volume estimation techniques, calculations, and documentation for electronic reporting. The Enrollee shall update its notification and reporting of estimated spill volume (which includes spill volume recovered) as further information is gathered during and after a spill event.

2.3. Receiving Water Monitoring

2.3.1. Receiving Water Visual Observations

Through visual observations and use of best available spill volume-estimating techniques and field calculation techniques, the Enrollee shall gather and document the following information for spills discharging to surface waters:

- Estimated spill travel time to the receiving water;
- For spills entering a drainage conveyance system, estimated spill travel time from the point of entry into the drainage conveyance system to the point of discharge into the receiving water;
- Estimated spill volume entering the receiving water; and
- Photography of:
  - Waterbody bank erosion,
  - Floating matter,
  - Water surface sheen (potentially from oil and grease),

- Discoloration of receiving water, and
- Impact to the receiving water.

2.3.2. Receiving Water – Water Quality Sampling and Analysis

For sewage spills in which an estimated 50,000 gallons or greater are discharged into a surface water, the Enrollee shall conduct the following water quality sampling no later than **18 hours** after the Enrollee's knowledge of a potential discharge to a surface water:

- Collect one water sample, each day of the duration of the spill, at:
  - The DCS-001 location as described in section 2.3.4 (Receiving Water Sampling Locations) of this Attachment, if sewage discharges to a surface water via a drainage conveyance system; and/or
  - Each of the three receiving water sampling locations in section 2.3.4 (Receiving Water Sampling Locations) of this Attachment;

    If the receiving water has no flow during the duration of the spill, the Enrollee must report "No Sampling Due To No Flow" for its receiving water sampling locations.

The Enrollee shall analyze the collected receiving water samples for the following constituents per section 2.3.3 (Water Quality Analysis Specifications) of this Attachment:

- Ammonia, and
- Appropriate bacterial indicator(s) per the applicable Basin Plan water quality objectives, including one or more of the following, unless directed otherwise by the Regional Water Board:
  - Total Coliform Bacteria
  - Fecal Coliform Bacteria
  - *E-coli*
  - Enterococcus

  Dependent on the receiving water(s), sampling of bacterial indicators shall be sufficient to determine post-spill (after the spill) compliance with the water quality objectives and bacterial standards of the California Ocean Plan or the California Inland Surface Water Enclosed Bays, and Estuaries Plan, including the frequency and/or number of post-spill receiving water samples as may be specified in the applicable plans.

The Enrollee shall collect and analyze additional samples as required by the applicable Regional Water Board Executive Officer or designee.

2.3.3. Water Quality Analysis Specifications

Spill monitoring must be representative of the monitored activity (40 Code of Federal Regulations section 122.41(j)(1)).

Sufficiently Sensitive Methods

Sample analysis must be conducted according to sufficiently sensitive test methods approved under 40 Code of Federal Regulations Part 136 for the sample analysis of pollutants. For the purposes of this General Order, a method is sufficiently sensitive when the minimum level of the analytical method approved under 40 Code of Federal Regulations Part 136 is at or below the receiving water pollutant criteria.

Environmental Laboratory Accreditation Program-Accredited Laboratories

The analysis of water quality samples required per this General Order must be performed by a laboratory that has accreditation pursuant to Article 3 (commencing with section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (Water Code section 13176(a).) The State Water Board accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

2.3.4. Receiving Water Sampling Locations

The Enrollee shall collect receiving water samples at the following locations.

Sampling of Flow in Drainage Conveyance System (DCS) Prior to Discharge

Sampling Location	Sampling Location Description
DCS-001	A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.

Receiving Surface Water Sampling (RSW)[1]

Sampling Location	Sampling Location Description
RSW-001 Point of Discharge	A point in the receiving water where sewage initially enters the receiving water.
RSW-001U: Upstream of Point of Discharge	A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.

Sampling Location	Sampling Location Description
RSW-001D: Downstream of Point of Discharge	A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

[1] The Enrollee must use its best professional judgment to determine the upstream and downstream distances based on receiving water flow, accessibility to upstream/downstream waterbody banks, and size of visible sewage plume.

2.4. Safety and Access Exceptions

If the Enrollee encounters access restrictions or unsafe conditions that prevents its compliance with spill response requirements or monitoring requirements in this General Order, the Enrollee shall provide documentation of access restrictions and/or safety hazards in the corresponding required report.

3. REPORTING REQUIREMENTS

All reporting required in this General Order must be submitted electronically to the online CIWQS Sanitary Sewer System Database (https://ciwqs.waterboards.ca.gov), unless specified otherwise in this General Order. Electronic reporting may solely be conducted by a Legally Responsible Official or Data Submitter(s) previously designated by the Legally Responsible Official, as required in section 5.8 (Designation of Data Submitters) of this General Order.

The Enrollee shall report any information that is protected by the Homeland Security Act, by email to SanitarySewer@waterboards.ca.gov, with a brief explanation of the protection provided by the Homeland Security Act for the subject report to be protected from unauthorized disclosure and/or public access, and for official Water Board regulatory purposes only.

3.1. Reporting Requirements for Individual Category 1 Spill Reporting

3.1.1. Draft Spill Report for Category 1 Spills

Within three (3) business days of the Enrollee's knowledge of a Category 1 spill, the Enrollee shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;

5. Estimated spill start date and time;
6. Date and time the Enrollee notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated;
    - If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
    - Description of the drainage conveyance system transporting the spill;
    - Photographs of the drainage conveyance system entry location(s);
    - Estimated spill volume fully recovered from the drainage conveyance system;
    - Estimated spill volume remaining within the drainage conveyance system;
11. Description and photographs of all discharge point(s) into the surface water;
12. Estimated spill volume that discharged to surface waters; and
13. Estimated total spill volume recovered.

3.1.2. Certified Spill Report for Category 1 Spills

Within 15 calendar days of the spill end date, the Enrollee shall submit a Certified Spill Report for Category 1 spills, to the online CIWQS Sanitary Sewer System Database. Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report per section 3.1.1 (Draft Spill Report for Category 1 Spills) above:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
    - The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    - The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;

4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, lateral, pump station, etc.);
6. Description of the pipe material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion;
14. Name and type of receiving water body(s);
15. Description of the water body(s), including but not limited to:
    - Observed impacts on aquatic life,
    - Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill,
    - Responsible entity for closing/restricting use of water body, and
    - Number of days closed/restricted as a result of the spill.
16. Whether or not the spill was located within 1,000 feet of a municipal surface water intake; and
17. If water quality samples were collected, identify sample locations and the parameters the water quality samples were analyzed for. If no samples were taken, Not Applicable shall be selected.

3.1.3. Spill Technical Report for Individual Category 1 Spill in which 50,000 Gallons or Greater Discharged into a Surface Water

For any spill in which 50,000 gallons or greater discharged into a surface water, **within 45 calendar days** of the spill end date, the Enrollee shall submit a Spill Technical Report to the online CIWQS Sanitary Sewer System Database. The Spill Technical Report, at minimum, must include the following information:

1. Spill causes and circumstances, including at minimum:
    - Complete and detailed explanation of how and when the spill was discovered;

- Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions;
- Diagram showing the spill failure point, appearance point(s), the spill flow path, and ultimate destinations;
- Detailed description of the methodology employed, and available data used to calculate the discharge volume and, if applicable, the recovered spill volume;
- Detailed description of the spill cause(s);
- Description of the pipe material, and estimated age of the pipe material, at the failure location;
- Description of the impact of the spill;
- Copy of original field crew records used to document the spill; and
- Historical maintenance records for the failure location.

2. Enrollee's response to the spill:
   - Chronological narrative description of all actions taken by the Enrollee to terminate the spill;
   - Explanation of how the Sewer System Management Plan Spill Emergency Response Plan was implemented to respond to and mitigate the spill; and
   - Final corrective action(s) completed and a schedule for planned corrective actions, including:
     - Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable,
     - Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences, and
     - Necessary modifications to the Emergency Spill Response Plan to incorporate lessons learned in responding to and mitigating the spill.
3. Water Quality Monitoring, including at minimum:
   - Description of all water quality sampling activities conducted;
   - List of pollutant and parameters monitored, sampled and analyzed; as required in section 2.3 (Receiving Water Monitoring) of this Attachment;
   - Laboratory results, including laboratory reports;
   - Detailed location map illustrating all water quality sampling points; and
   - Other regulatory agencies receiving sample results (if applicable).
4. Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water.

3.1.4. Amended Certified Spill Reports for Individual Category 1 Spills

The Enrollee shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report.

After **90 calendar days**, the Enrollee shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

3.2. Reporting Requirements for Individual Category 2 Spill Reporting

3.2.1. Draft Spill Report for Category 2 Spills

Within three (3) business days of the Enrollee's knowledge of a Category 2 spill, the Enrollee shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Date and time the Enrollee notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated;

   If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
    - Description of the drainage conveyance system transporting the spill;
    - Photographs of the drainage conveyance system entry location(s);
    - Estimated spill volume fully recovered from the drainage conveyance system;
    - Estimated spill volume remaining within the drainage conveyance system;

- Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable; and

11. Estimated total spill volume recovered.

3.2.2. Certified Spill Report for Category 2 Spills

Within 15 calendar days of the spill end date, the Enrollee shall submit a Certified Spill Report for the Category 2 spill, to the online CIWQS Sanitary Sewer System Database (https://ciwqs.waterboards.ca.gov). Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report per section 3.2.1 (Draft Spill Report for Category 2 Spills) above:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
   - The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
   - The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, pump station, etc.);
6. Description of the pipe/infrastructure material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; and

14. Whether or not the spill was located within 1,000 feet of a municipal surface water intake.

3.2.3. Amended Certified Spill Reports for Individual Category 2 Spills

The Enrollee shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report.

After **90 calendar days**, the Enrollee shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

3.3. Monthly Certified Spill Reporting for Category 3 Spills

The Enrollee shall report and certify all Category 3 spills to the online CIWQS Sanitary Sewer System Database within 30 calendar days after the end of the month in which the spills occurred. (For example, all Category 3 spills occurring in the month of February shall be reported and certified by March 30th). After the Legally Responsible Official certifies the spills, the online CIWQS Sanitary Sewer System Database will issue a spill event identification number for each spill.

The monthly reporting of all Category 3 spills must include the following items for each spill:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Description, photographs, and GPS coordinates where the spill originated:
    - If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
7. Estimated total spill volume exiting the system;
8. Description and photographs of the extent of the spill and spill boundaries;
9. Did the spill reach a drainage conveyance system? If Yes:
    - Description of the drainage conveyance system transporting the spill;
    - Photographs of the drainage conveyance system entry locations(s);
    - Estimated spill volume fully recovered from the drainage conveyance system; and

- Estimated spill volume discharged to a groundwater infiltration basis or facility, if applicable.

10. Estimated total spill volume recovered;
11. Description of the spill event destination(s), including GPS coordinates, if available, that represent the full spread and reaches of the spill;
12. Spill end date and time;
13. Description of how the spill volume estimations were calculated, including, at minimum:
    - The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    - The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;
14. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
15. System failure location (for example, main, pump station, etc.);
16. Description of the pipe/infrastructure material, and estimated age of the pipe/infrastructure material, at the failure location;
17. Description of the impact of the spill;
18. Whether or not the spill was associated with a storm event;
19. Description of spill response activities including description of immediate spill containment and cleanup efforts;
20. Description of spill corrective actions, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of the major milestones for those steps; including, at minimum:
    - Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable, and
    - Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including:
      - Adjusted schedule/method of preventive maintenance,
      - Planned rehabilitation or replacement of sanitary sewer asset,
      - Inspected, repaired asset(s), or replaced defective asset(s),
      - Capital improvements,
      - Documentation verifying immediately implemented system modifications and operating/maintenance modifications,
      - Description of spill response activities,

- Spill response completion date, and
- Ongoing investigation efforts, and expected completion date of investigation to determine the full cause of spill;

21. Detailed narrative of investigation and investigation findings of cause of spill.

3.4. Monthly Certified Spill Reporting for Category 4 Spills

The Enrollee shall report and certify the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, within 30 calendar days after the end of the month in which the spills occurred.

3.5. Amended Certified Spill Reports for Category 3 Spills

Within 90 calendar days of the certified Spill Report due date, the Enrollee may update or add additional information to a certified Spill Report by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report.

After 90 calendar days, the Legally Responsible Official shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a certified Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the 90-day timeframe for amending the certified Spill Report, as provided above.

3.6. Annual Certified Spill Reporting of Category 4 and/or Lateral Spills

For all Category 4 spills and spills from its owned and/or operated laterals that are caused by a failure or blockage in the lateral and that do not discharge to a surface water, the Enrollee shall:

- Maintain records per section 4.4. of this Attachment;

  The Enrollee shall provide records upon request by State Water Board or Regional Water Board staff.

- Annually upload and certify a report, in an appropriate digital format, of all recordkeeping of spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occurred.

A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

3.7. Monthly Certification of "No-Spills" or "Category 4 Spills" and/or "Non-Category 1 Lateral Spills"

If either (1) no spills occur during a calendar month or (2) only Category 4, and/or Enrollee-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the Enrollee shall certify, within 30 calendar days after

the end of each calendar month, either a “No-Spill” certification statement, or a “Category 4 Spills” and/or “Non-Category 1 Lateral Spills” certification statement, in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Lateral Spills that will be reported annually (per section 3.6 of this Attachment) for the designated month.

If a spill starts in one calendar month and ends in a subsequent calendar month, and the Enrollee has no further spills of any category, in the subsequent calendar month, the Enrollee shall certify “no-spills” for the subsequent calendar month.

If the Enrollee has no spills from its systems during a calendar month, but the Enrollee voluntarily reported a spill from a private lateral or a private system, the Enrollee shall certify “no-spills” for that calendar month.

If the Enrollees has spills from its owned and/or operated laterals during a calendar month, the Enrollee shall not certify “no spills” for that calendar month.

3.8. Electronic Sanitary Sewer System Service Area Boundary Map

The Legally Responsible Official shall submit, to the State Water Board, an up-to-date electronic spatial map of its sewer system service area boundaries. The map must be in accordance with section 5.14 (Electronic Sanitary Sewer System Service Area Boundary Map) of this General Order and the specification provided on the statewide Sanitary Sewer Systems program website. The map must include the location of wastewater treatment facility(ies) that treats the sewer system waste, if in the same sewer service boundary.

By the Effective Date of this General Order, specifications for the electronic sanitary sewer service area boundary map format will be provided on the statewide Sanitary Sewer Systems Order program website.

3.9. Annual Report (Previously termed as Collection System Questionnaire in General Order 2006-0003-DWQ)

A new Enrollee shall complete and submit its first certified Annual Report into the online CIWQS Sanitary Sewer System Database, **within 30 days of obtaining a CIWQS account**; Subsequent Annual Reports are due by April 1 of each year.

All enrollees shall update their previous year’s Annual Report, **by April 1 of each year after the Effective Date of this General Order,** for each calendar year (January 1 through December 31)**.**

The Annual Report must be entered directly into the online CIWQS Sanitary Sewer System Database. The Enrollee’s Legally Responsible Official shall certify the Annual Report as instructed in CIWQS;

The Annual Report must address, and update as applicable, the following items:

- Population served;

- Updated sewer system service area boundary map, if service area boundary has changed from original map submitted per section 5.14 (Electronic Sanitary Sewer System Service Area Boundary Map) of this General Order;
- Number of system operation and maintenance staff:
  - Entry level (less than two years of experience),
  - Journey level (greater than two years of experience),
  - Supervisory level, and
  - Managerial level;
- Number of operation and maintenance staff certified as a certified collection system operator by the California Water Environmental Association (CWEA), with:
  - Corresponding number of certified collection system operator grade levels (Grade I, II, III, IV, and V);
- System information:
  - Miles of system gravity and force mains,
  - Number of upper and lower service laterals connected to system,
  - Estimated number of upper and lower laterals owned and/or operated by the Enrollee,
  - Portion of laterals that is Enrollee's responsibility,
  - Average age the major components of system infrastructure,
  - Number and age of pump stations, and
  - Estimated total miles of the system pipeline not accessible for maintenance;
- Name and location of the treatment plant(s) receiving sanitary sewer system's waste;
- Name of satellite sewer system tributaries;
- Number of system's gravity sewer above or underground crossings of water bodies throughout system;
- Number of force main (pressurized pipe) above or underground crossings of water bodies throughout system;
- Number of siphons used to convey waste throughout the sewer system;
- Miles of sewer system cleaned;
- Miles of sewer system video inspected, or comparable (i.e., video closed-circuit television or alternative inspection methods);
- System Performance Evaluation as specified in section 5.11 (System Performance Analysis) of this General Order;
- Major spill causes (for example, root intrusion, grease deposition);

- System infrastructure failure points (for example, main, pump station, lateral, etc.);
- Ongoing spill investigations; and
- Actions taken to address system deficiencies.

3.10. Sewer System Management Plan Audit Reporting Requirements

The Enrollee shall submit its Sewer System Management Plan Audit and other pertinent audit information, in accordance with section 5.4 (Sewer System Management Plan Audits) of this General Order, to the online CIWQS Sanitary Sewer System Database **by six (6) months after the end of the 3-year audit period**.

If a Sewer System Management Plan Audit is not conducted as required: the Enrollee shall:

- Update the online CIWQS Sanitary Sewer System Database and select the justification for not conducting the Audit; and
- Notify its corresponding Regional Water Board (see Attachment F (Regional Water Quality Control Board Contact Information)) of the justification for the lapsed requirements.

The Enrollee's reporting of a justification for not conducting a timely Audit does not justify non-compliance with this General Order. The Enrollee shall:

- Submit the late Audit as required in this General Order; and
- Comply with subsequent Audit requirements and due dates corresponding with the original audit cycle.

3.11. Sewer System Management Plan Reporting Requirements

For an Existing Enrollee previously regulated by Order 2006-0003-DWQ: **Within every six (6) years after the required due date of its last Plan Update**, the Legally Responsible Official shall upload and certify a local governing entity-approved Sewer System Management Plan Update to the online CIWQS Sanitary Sewer System Database. If the electronic document format or size capacity prevents the electronic upload of the Plan, the Legally Responsible Official shall report an electronic link to its updated Sewer System Management Plan posted on its own website.

Order 2006-0003-DWQ required each enrollee to develop its initial Sewer System Management Plan per the following schedule, with required Plan updates at a frequency of 5-years thereafter:

Systems serving populations: Greater than 100,000: May 2, 2009

Between 100,000 and 10,000: August 2, 2009

Between 10,000 and 2,500: May 2, 2010

Less than 2,500: August 2, 2010

This Order carries forth the previously-required Plan Update schedule per Order 2006-0003-DWQ. Per the six-year Plan Update frequency required in this Order, the Enrollee shall upload and certify its first Plan Update, to the online CIWQS Sanitary Sewer System Database by the following due dates, with subsequent Plan Updates at the frequency of six years thereafter:

Systems serving populations: Greater than 100,000: May 2, 2025

Between 100,000 and 10,000: August 2, 2025

Between 10,000 and 2,500: May 2, 2026

Less than 2,500: August 2, 2026

For a New Enrollee: **Within twelve (12) months of its Application for Enrollment Approval date**, the Legally Responsible Official of a new Enrollee shall upload and certify a local governing entity-approved Sewer System Management Plan to the online CIWQS Sanitary Sewer System Database. If electronic document format or size capacity prevents the electronic upload of the Plan, the Legally Responsible Official shall report an electronic link to its Sewer System Management Plan posted on its own website. The due date for subsequent 6-year Plan updates, is six (6) years from the submittal due date of the new Enrollee's first Sewer System Management Plan.

4. RECORDKEEPING REQUIREMENTS

The Enrollee shall maintain records to document compliance with the provisions of this General Order, and previous General Order 2006-0003-DWQ as applicable, for each sanitary sewer system owned, including any required records generated by an Enrollee's contractor(s).

4.1. Recordkeeping Time Period

The Enrollee shall maintain records of documents required in this Attachment, including records collected for compliance with this General Order, and records collected in accordance with previous General Order 2006-0003-DWQ, for five (5) years.

4.2. Availability of Documents

The Enrollee shall make the records required in this General Order readily available, either electronic or hard copies, for review by Water Board staff during onsite inspections or through an information request.

4.3. Spill Reports

The Enrollee shall maintain records for each of the following spill-related events and activities:

- Spill event complaint, including but not limited to records documenting how the Enrollee responded to notifications of spills. Each complaint record must, at a minimum, include the following information:
    - Date, time, and method of notification,

- Date and time the complainant first noticed the spill, if available,
- Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available,
- Complainant's contact information, if available, and
- Final resolution of the complaint;

- Records documenting the steps and/or remedial action(s) undertaken by the Enrollee, using all available information, to comply with this General Order, and previous General Order 2006-0003-DWQ as applicable;
- Records documenting how estimate(s) of volume(s) and, if applicable, volume(s) of spill recovered were calculated;
- All California Office of Emergency Services notification records, as applicable; and
- Records, in accordance with the Monitoring Requirements in this Attachment.

4.4. Recordkeeping of Category 4 Spills and Non-Category 1 Lateral Spills

An Enrollee must maintain the following records for each individual Category 4 spill and for each individual non-Category 1 Enrollee-owned and/or operated lateral spill, and report in accordance to section 3.6 (Annual Certified Spill Reporting of Category 4 and/or Lateral Spills) of this Attachment.

Recordkeeping of Individual Category 4 Spill Information:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Description and GPS coordinates for the system location where the spill originated;
4. Did the spill reach a drainage conveyance system? If Yes:
   - Description of drainage conveyance system location,
   - Estimated spill volume fully recovered within the drainage conveyance system, and
   - Estimated spill volume remaining within the drainage conveyance system;
5. Estimated total spill volume exiting the sanitary sewer system;
6. Spill date and start time;
7. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
8. System failure location (for example, main, pump station, etc.);
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of how the volume estimation was calculated, including, at minimum:

- The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
- The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;

11. Description of implemented system modifications and operating/maintenance modifications.

Recordkeeping of Individual Lateral Spill Information:

1. Date and time the Enrollee was notified of, or self-discovered, the spill;
2. Location of individual spill;
3. Estimated individual spill volume;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.); and
5. Description of how the volume estimations were calculated.

Total Annual Spill Information:

1. Estimated total annual spill volume;
2. Description of spill corrective actions, including at minimum:
   - Local regulatory enforcement action taken against the sewer lateral owner in response to a spill, as applicable, and
   - System operation, maintenance and program modifications implemented to prevent repeated spill occurrences at the same spill location.

4.5. Sewer System Telemetry Records

The Enrollee shall maintain the following sewer system telemetry records if used to document compliance with this General Order, and previous General Order 2006-0003-DWQ as applicable, including spill volume estimates:

- Supervisory control and data acquisition (SCADA) system(s);
- Alarm system(s);
- Flow monitoring device(s) or other instrument(s) used to estimate sewage flow rates, and/or volumes;
- Computerized maintenance management system records; and
- Asset management-related records.

4.6. Sewer System Management Plan Implementation Records

The Enrollee shall maintain records documenting the Enrollee's implementation of its Sewer System Management Plan, including documents supporting its Sewer System Management Plan audits, corrections, modifications, and updates to the Sewer System Management Plan.

4.7. Audit Records

The Enrollee shall maintain, at minimum, the following records pertaining to its Sewer System Management Plan audits, and other internal audits:

- Completed audit documents and findings;
- Name and contact information of staff and/or consultants that conducted or involved in the audit; and
- Follow-up actions based on audit findings.

4.8. Equipment Records

The Enrollee shall maintain a log of all owned and leased sewer system cleaning, operational, maintenance, construction, and rehabilitation equipment.

4.9. Work Orders

The Enrollee shall maintain record of work orders for operations and maintenance projects.

ATTACHMENT E2 – SUMMARY OF NOTIFICATION, MONITORING AND REPORTING REQUIREMENTS

This Attachment provides a summary of notification, monitoring and reporting requirements, by spill category, and for Enrollee-owned and/or operated laterals as required in Attachment E1 of this General Order, for quick reference purposes only.

Table E2-1

Spill Category 1: Spills to Surface Waters

Spill Requirement	Due	Method
Notification	**Within two (2) hours** of the Enrollee's knowledge of a Category 1 spill of 1,000 gallons or greater, discharging or threatening to discharge to surface waters: Notify the California Office of Emergency Services and obtain a notification control number.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1)
Monitoring	• Conduct spill-specific monitoring; • Conduct water quality sampling of the receiving water within **18 hours** of initial knowledge of spill of 50,000 gallons or greater to surface waters.	(Section 2 of Attachment E1)
Reporting	• Submit Draft Spill Report **within three (3) business days** of the Enrollee's knowledge of the spill; • Submit Certified Spill Report **within 15 calendar days** of the spill end date; • Submit Technical Report **within 45 calendar days** after the spill end date for a Category 1 spill in which **50,000 gallons or greater** discharged to surface waters; and • Submit Amended Spill Report **within 90 calendar days** after the spill end date.	(Section 3.1 of Attachment E1)

Table E2-2
Spill Category 2: **Spills of 1,000 Gallons or Greater That Do Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	**Within two (2) hours** of the Enrollee's knowledge of a Category 2 spill of 1,000 gallons or greater, discharging or threatening to discharge to waters of the State: Notify California Office of Emergency Services and obtain a notification control number.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1)
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1)
Reporting	• Submit Draft Spill Report **within three (3) business days** of the Enrollee's knowledge of the spill; • Submit Certified Spill Report **within 15 calendar days** of the spill end date; and • Submit Amended Spill Report **within 90 calendar days** after the spill end date.	(Section 3.2 of Attachment E1)

Table E2-3
Spill Category 3: Spills of Equal or Greater than 50 Gallons and Less than 1,000 Gallons That Does Not Discharge to Surface Waters

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1)
Reporting	• Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer System Database within **30 calendars days** after the end of the month in which the spills occur; and • Submit Amended Spill Reports **within 90 calendar days** after the Certified Spill Report due date.	(Section 3.3 and 3.5 of Attachment E1)

Table E2-4
Spill Category 4: Spills Less Than 50 Gallons That Do Not Discharge to Surface Waters

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1)
Reporting	• If, during any calendar month, Category 4 spills occur, certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills into the online CIWQS Sanitary Sewer System Database, within 30 days after the end of the calendar month in which the spills occurred. • Upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur.	(Section 3.4, 3.6, 3.7 and 4.4 of Attachment E1)

Table E2-5
Enrollee Owned and/or Operated Lateral Spills That Do Not Discharge to Surface Waters

Spill Requirements	Due	Method
Notification	**Within two (2) hours** of the Enrollee's knowledge of a spill of 1,000 gallons or greater, from an enrollee-owned and/or operated lateral, discharging or threatening to discharge to waters of the State: Notify California Office of Emergency Services and obtain a notification control number. Not applicable to a spill of less than 1,000 gallons.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1)
Monitoring	Conduct visual monitoring.	(Section 2 of Attachment E1)
Reporting	• Upload and certify a report, in an acceptable digital format, of all lateral spills (that do not discharge to a surface water) to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur. • Report a lateral spill of any volume that discharges to a surface water as a Category 1 spill.	(Sections 3.6, 3.7 and 4.4 of Attachment E1)

ATTACHMENT F – REGIONAL WATER QUALITY CONTROL BOARD CONTACT INFORMATION

This Attachment provides a map, list of counties, and contact information to assist the Enrollee in identifying the corresponding Regional Water Quality Control Board office, for all Regional Water Board notification requirements in this General Order.



Region 1 -- North Coast Regional Water Quality Control Board:
Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Modoc, Siskiyou, Sonoma, and Trinity counties.

RB1SpillReporting@waterboards.ca.gov or (707) 576-2220

Region 2 -- San Francisco Bay Regional Water Quality Control Board:
Alameda, Contra Costa, San Francisco, Santa Clara (Northern most part of Morgan Hill), San Mateo, Marin, Sonoma, Napa, Solano counties.

RB2SpillReports@waterboards.ca.gov or (510) 622-2369

Region 3 -- Central Coast Regional Water Quality Control Board:
Santa Clara (most of Morgan Hill), San Mateo (Southern portion), Santa Cruz, San Benito, Monterey, Kern (small portions), San Luis Obispo, Santa Barbara, Ventura (Northern portion) counties.

CentralCoast@waterboards.ca.gov or (805) 549-3147

Region 4 -- Los Angeles Regional Water Quality Control Board:
Los Angeles, Ventura counties (small portions of Kern and Santa Barbara counties).

rb4-ssswdr@waterboards.ca.gov or (213) 576-6600

Region 5 -- Central Valley Regional Water Quality Control Board:

Rancho Cordova (Sacramento) Office: Colusa, Lake, Sutter, Yuba, Sierra, Nevada, Placer, Yolo, Napa, (North East), Solano (West), Sacramento, El Dorado, Amador, Calaveras, San Joaquin, Contra Costa (East), Stanislaus, Tuolumne counties.

RB5sSpillReporting@waterboards.ca.gov or (916) 464-3291

Fresno Office: Fresno, Kern, Kings, Madera, Mariposa, Merced, and Tulare counties, and small portions of San Benito and San Luis Obispo counties.

RB5fSpillReporting@waterboards.ca.gov or (559) 445-5116

Redding Office: Butte, Glen, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Tehama counties.

RB5rSpillReporting@waterboards.ca.gov or (530) 224-4845

Region 6 -- Lahontan Regional Water Quality Control Board:

Lake Tahoe Office: Alpine, Modoc (East), Lassen (East side and Eagle Lake), Sierra, Nevada, Placer, El Dorado counties.

RB6sSpillReporting@waterboards.ca.gov or (530) 542-5400

Victorville Office: Mono, Inyo, Kern (East), San Bernardino, Los Angeles (North East corner) counties.

RB6vSpillReporting@waterboards.ca.gov or (760) 241-6583

Region 7 -- Colorado River Basin Regional Water Quality Control Board:

Imperial county and portions of San Bernardino, Riverside, San Diego counties.

RB7SpillReporting@waterboards.ca.gov or (760) 346-7491

Region 8 -- Santa Ana Regional Water Quality Control Board:

Orange, Riverside, San Bernardino counties.

RB8SpillReporting@waterboards.ca.gov or (951) 782-4130

Region 9 -- San Diego Regional Water Quality Control Board:

San Diego county and portions of Orange and Riverside counties.

RB9Spill_Report@waterboards.ca.gov or (619) 516-1990

End of Order 2022-0103-DWQ

Appendix B – Vacant

Appendix C - Vacant

Appendix D – SSMP Sample Change Log

City of Manhattan Beach Sewer System Management Plan Change Log

Date	SSMP Element/Location	Description of Change/Revision Made	Change Authorized By:
6/27/2025	Title Page	Added City WDID, date updated.	Jeffrey Page
6/27/2025	Table of Contents	Updated section titles and page numbers to reflect updated document.	Jeffrey Page
6/27/2025	Abbreviations	Added newly identified abbreviations.	Jeffrey Page
6/27/2025	Figures, Tables and References	Updated appendix, figures and tables titles to reflect the 2025 update	Jeffrey Page
6/27/2025	All Sections	Replaced “SSO” terminology with “spill” as applicable throughout the document to reflect the terminology of the 2022 Order.	Jeffrey Page
6/27/2025	All Sections	Minimum requirements section throughout the document updated to be consistent with the 2022 Order.	Jeffrey Page
6/27/2025	Definitions	Added definitions for LRO, lateral, & Waters of the US. Updated definitions for MRP, SSO (Spill), Spill Category 3, & Wastewater Collection System.	Jeffrey Page
6/27/2025	Background	Removed reference to revisions based upon 2013 MRP Amendment. Added reference to 2022 Order and related requirements. Updated internal audit dates and areas of concern.	Jeffrey Page
6/27/2025	Chapter 1 - Goals	Updated section and subsections per the 2022 Order.	Jeffrey Page
6/27/2025	1.2 - Sewer System Management Plan Update Schedule	Schedule added to subsection.	Jeffrey Page
6/27/2025	1.3 – City Service Area and Sewer System Asset Overview	Updated to include unique service boundary challenges and the number of residential, commercial, and industrial service connections in the city of 13,251.	Jeffrey Page
6/27/2025	1.6 - References	References to Order updated	Jeffrey Page
6/27/2025	Chapter 2 - Organization	Updated section and subsections per the 2022 Order.	Jeffrey Page

6/27/2025	2.2 – Legally Responsible Official	LRO updated to Jeffrey Page.	Jeffrey Page
6/27/2025	2.3 - Management and Organizational Structure	Figure 1 staff and titles updated. Table 1 contact information updated	Jeffrey Page
6/27/2025	External Reporting Flow Chart	Updated per 2022 Order requirements.	Jeffrey Page
6/27/2025	Chapter 3 – Legal Authority	Updated section and subsections per the 2022 Order.	Jeffrey Page
6/27/2025	3.4 – Design, Construction, and Installation Requirements	Updated numbering system of the Sewer connection Special Plans and Specifications. Inserted reference to Code of Ordinance Title 5– Sanitation and Health Chapter 5.36 – Sewer, Sewage Disposal – City Sewage System.	Jeffrey Page
6/27/2025	3.5 – Lateral Maintenance Access	Inserted reference to Code of Ordinance Title 5– Sanitation and Health Chapter 5.36 – Sewer, Sewage Disposal – City Sewage System.	Jeffrey Page
6/27/2025	3.6 – Fats, Oils, and Grease Discharge Limitations	Inserted reference to Code of Ordinance , Title 5 – Sanitation and Health Chapter 5.38 – Fats, Oils and Grease Management and Discharge Control.	Jeffrey Page
6/27/2025	3.8 – Enforcement Provisions	Inserted Reference to Code of Ordinance , Title 5 – Sanitation and Health Chapter 5.38 – Fats, Oils and Grease Management and Discharge Control.	Jeffrey Page
6/27/2025	3.9 – Easement Accessibility Agreements	Added subsection and reference Chapter 5.38.120 of the Municipal Code.	Jeffrey Page
6/27/2025	Table 3 – Legal Authority Checklist	Updated per 2022 Order and code reference.	Jeffrey Page
6/27/2025	Chapter 4 – Operation and Maintenance Program	Updated section and subsections per the 2022 Order, including the MRP requirements.	Jeffrey Page
6/27/2025	Chapter 5 – Design and Performance Provisions	Updated section and subsections per the 2022 Order.	Jeffrey Page
6/27/2025	Chapter 6 – Spill Emergency Response Program	Updated section and subsections per the 2022 Order, including updated spill categories.	Jeffrey Page
6/27/2025	6.3 – Spill Emergency Response Plan	Included language regarding notification procedures and post-spill assessment.	Jeffrey Page
6/27/2025	7 – Sewer Pipe Blockage Control Program	Updated section and subsections per the 2022 Order. Legal authority references updated.	Jeffrey Page

6/27/2025	7.6 - Authority for Inspection of Grease Producing Facilities, to Enforcement, and Evidence of Adequate Staffing to Inspect and Enforce the FOG Ordinance	Language added regarding authority to inspect and sample wastewater discharges.	Jeffrey Page
6/27/2025	8 – System Evaluation and Capacity Assurance and Capital Improvements	Updated section and subsections per the 2022 Order.	Jeffrey Page
6/27/2025	8.2 - System Evaluation and Condition Assessment	CCTV assessment goals were added and language added to address assets vulnerable to climate change. Reference to the 2008 to 2012 condition assessment was added.	Jeffrey Page
6/27/2025	8.3 – Capacity Assessment and Design Criteria	Language was added regarding future consideration of design capacities and regarding infiltration and inflow during storm events and other climate related influences.	Jeffrey Page
6/27/2025	8.4 – Prioritization of Corrective Actions	Section added, referencing the used of assessments to inform corrective actions.	Jeffrey Page
6/27/2025	8.6 – Completion Schedule	Removed FY 10/11, 11/12, 12/13 CIP. Referenced 2026-2030 CIP and associated projects.	Jeffrey Page
6/27/2025	8.7 – References	Updated CIP Link	Jeffrey Page
6/27/2025	9- Monitoring, Measurement, and Program Modifications	Updated section and subsections per the 2022 Order.	Jeffrey Page
6/27/2025	9.2 - Information Maintenance	Updated frequency of sewer maintenance.	Jeffrey Page
6/27/2025	10 – SSMP Program Audits	Updated section and subsections per the 2022 Order.	Jeffrey Page
6/27/2025	10.4 Self-monitoring and Plan Modification	Manhole inspection frequency changed to annually.	Jeffrey Page
6/27/2025	11 – Communication Program	Updated section and subsections per the 2022 Order.	Jeffrey Page
6/27/2025	11.2 – Public Communication	Language added regarding FOG inspection outreach protocols.	Jeffrey Page
6/27/2025	Appendix A	Replaced with State Water Resources Control Board Order No. 2022-0103-2006-003-DWQ Statewide General WDR For Sanitary Sewer Systems	Jeffrey Page
6/27/2025	Appendix B	Removed State Water Resources Control Board Order No. 2013-0058-EXEC Amending Monitoring and	Jeffrey Page

		reporting Program for statewide General WDR for Sanitary Sewer Systems as it is outdated and updated in the 2022 Order. Replaced title of appendix with “Vacant” as a placeholder for a future appendix, should it be needed.	
6/27/2025	Appendix C	Removed Fact sheet Amending Monitoring and reporting Program for Statewide General WDR for Sanitary Sewer Systems as it is outdated .Replaced title of appendix with “Vacant” as a placeholder for a future appendix, should it be needed.	Jeffrey Page
6/27/2025	Appendix E	Updated with 2024 Self Audit Report	Jeffrey Page
6/27/2025	Appendix I	Updated Extra Attention Lines	Jeffrey Page
6/27/2025	Appendix 8	Hot Spot List and SSO records were updated	Jeffrey Page
6/27/2025	Appendix 9	Updated to included references to new CIP list.	Jeffrey Page
6/27/2025	Appendix 10	Updated to include Resolution No. 24.0066	Jeffrey Page
6/27/2025	Appendix 11	Updated with 2026-2030 CIP	Jeffrey Page
6/27/2025	Appendix 13	Spills Maps and Report updated with recent spill data.	Jeffrey Page

Appendix E – Self-Audit

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Sewer System Management Plan (SSMP)
Internal Audit

Introduction

The City of Manhattan Beach (The City) Sewer System is subject to permitting requirements under the Statewide General Waste Discharge Requirement for Sanitary Sewer Systems (WDR SSS). The State Water Resources Control Board (SWRCB) issued Order No. WQ 2022-0103-DWQ to mitigate the potential impact of sanitary sewer overflows (SSOs) on public health and the environment. The WRO SSS applies to all public collection system agencies in California that own and operate collection systems. The City is subject to permitting requirements under the WRO SSS, and is required to prepare a Sewer System Management Plan (SSMP) every five (5) years. Its principal elements include how the municipality operates and maintains the collection system and procedures for reporting all Sanitary Sewer Overflows (SSOs) to the California Integrated Water Quality System (CIWQS) online database, aiming to minimize SSOs.

Background

The City sanitary sewer system comprises 431,083 ft. of gravity sewer mains ranging in size from 6in to 21in and 5,114 ft. of 6in force mains diameter, eight pump stations, and 2,086 sewer maintenance holes. The table below summarizes The City Collection System.

Collections System Overview	
Gravity Sewer Mains	431,083 ft.
Force Mains	5,114 ft.
Sewer Pump Lift Stations	8

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SSMP Internal Audit Overview

Section 10 of the WRD SSS requires The City to conduct internal audits every three (3) years. The audit focuses on evaluating the plan's effectiveness, compliance with its program elements, identifying steps to correct any deficiencies, and implementing programs as stated in the SSMP. The City has performed its first audit in 2022. This report summarizes the results of The City's internal audit for 2022-2024. It is important to note that the current version of the SSMP is nearing the end of its 5-year lifespan. In 2022, a new SSMP was completed to cover 2022-2027. Therefore; some of the discussion may provide recommendations on how the new SSMP could be improved to reflect different aspects of The City program.

The **2024 internal** audit addresses the compliance status, effectiveness, deficiencies and recommendations for the following sections of the SSMP:

1. The City's SSMP Goals.
2. The City's Organization Structure.
3. The City's Legal Authority.
4. The City's Operation and Maintenance Activities.
5. The City's Design and Performance Provisions.
6. The City's Overflow Emergency Response Program (OERP).
7. Fats, Oils, and Grease (FOG) Control Program.
8. The City's System Evaluation & Capacity Analysis Plan (SECAP).
9. The City's Monitoring, Measurement, and Program Modifications.
10. The City's SSMP Program Audits.
11. The City's Communication Program.

Audit of Section 1. Goals

The City has defined the following nine goals in the SSMP:

1. *Minimize sanitary sewer overflows.*
2. *Prevent public health hazards.*
3. *Minimize inconveniences by responsibly handling interruptions in service.*
4. *Protect the large investment in the collection system by maintaining adequate capacities and extending useful life.*
5. *Prevent unnecessary damage to public and private property.*
6. *Use funds available for sewer operations in the most efficient manner.*
7. *Convey wastewater to treatment facilities with a minimum of infiltration, inflow and exfiltration.*
8. *Provide adequate capacity to convey peak flows.*
9. *Perform all operations in a safe manner to avoid personal injury and property damage.*

Compliance Status
The City is compliant with requirements 1) through 9) on this section.

Effectiveness
The stated goals are meant to concentrate efforts on minimizing occurrences of SSO events, as well as mitigation their impact on public health and the environment

Deficiencies and Recommendations
No deficiencies have been identified with this element of the SSMP.

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Audit of Section 2. Organization

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ item 2*, the SSMP must identify the:*

- The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;
- The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;
- Organizational lines of authority; and
- Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health agency, and State Office of Emergency Services.)

Compliance Status
The City is compliant with the requirements in this section.

Effectiveness
The organizational structure clearly identifies lines of authority as well as the key positions responsible for implementing specific measures in the SSMP. The chain of communication for reporting SSOs is also provided.

Deficiencies and Recommendations
The City has gone through a significant amount of staff turnover. Thus, the current organization is different from what it was when the 2017 SSMP was written, names and phone numbers need to be updated. The SSO Reporting Chain of Communication has not changed.

Audit of Section 3. Legal Authority

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ *Item 3,* The Plan must include copies or an electronic link to The City's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate The City possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;
- Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure;
- Require that sewer system components and connections be properly designed and constructed;
- Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by The City;
- Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and

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- Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

Compliance Status
The City is compliant with requirements a) through e) on this section.

Effectiveness
The City's legal authority is derived through the City Council. The rules and regulations that govern the Sewer Collection System can be found within several ordinances within the City of Manhattan Beach Municipal Code. Please reference Table 3 – Legal Authority Checklist in the 2022 SSMP

Deficiencies and Recommendations
The section of the SSMP has no significant deficiencies and is generally satisfactory.

Audit of Section 4. Operation and Maintenance

The SSMP Plan must include the items listed below that are appropriate and applicable to The City's system.

Collections System Mapping
Maintain an up-to-date map of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map. The map must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.

Compliance Status
The City is compliant with the requirements of this section.

Effectiveness
The City uses a Geographic Information System (GIS) to manage its database of extensive information about the sanitary sewer network. This includes attribute data for mains, laterals, manholes, and pump stations. Maps of non-sanitary sewer elements include water, storm drain, street, county trunk sewer, and other underground utility data. Maps are routinely updated with new information.

Deficiencies and Recommendations
No deficiencies found

Routine and Preventive Maintenance Program
Describe routine preventive operation and maintenance activities by staff and contractors; including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.

Compliance Status
The City is not fully compliant with this section.

Effectiveness
The problem sewers are identified, prioritized and scheduled for maintenance based on a comprehensive review of the maintenance history and system characteristics of the sewer system including overflows, blockages, age, material and condition. Maintenance includes

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high velocity sewer cleaning, vacuuming and manual rodding. The power systems are start tested weekly by staff, and undergo motor and generator servicing bi-annually by Power Plus, Inc. The back-up generator is tested by running it once per month under no-load conditions, in compliance with local Air Quality Management District regulations.

Deficiencies and Recommendations

The City has had challenges in meeting Cleaning and CCTV mileage goals as the Sewer Section has not had the manpower to achieve its productivity goals. The City started utilizing the CCTV in late 2024 and do not have a full year's data to include at the time of this report.

Cleaning*			
	2022	**2023**	**2024**
Goal (miles)	163.3	163.3	163.3
Actual (miles)	119.23	146.09	84.85
% of Goal	66%	57%	52%

*Does not include miles from repeat cleaning

Another program enhancement has been better targeting of trouble areas or sewer "hot spots." These are areas in the sewer system known to be difficult to maintain, such as high- grease areas, or segments containing siphons. Sewer staff has experimented with different frequency intervals to find the ideal schedule for repeat cleaning activities. Continued analysis of these frequencies is recommended for optimal distribution of labor and equipment resources.

Rehabilitation and Replacement Plan

Develop rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short and long term plans plus a schedule for developing the funds needed for the capital improvement plan.

Compliance Status

The City is compliant with this section.

Effectiveness

The Sewer Capital Improvement Plan (CIP) targets segments of sewer system infrastructure that are at highest risk of failure.

Deficiencies and Recommendations

The City last updated the Sewer Master Plan in 2010. An update to the Master Plan will occur in 2025.

Staff and Contractor Training

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ *Item 4.3, in-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:*

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- *The requirements of this General Order;*
- *The City's Spill Emergency Response Plan procedures and practice drills;*
- *Skilled estimation of spill volume for field operators; and*
- *Electronic CIWQS reporting procedures for staff submitting data.*

Compliance Status
The City is compliant with the requirements of this section.

Effectiveness
Sewer Maintenance Workers are trained to properly operate and maintain all major wastewater equipment and facilities. Every staff member receives periodic formal safety training in confined space entry, trench shoring, traffic control, heat illness, and hazardous material management.

Deficiencies and Recommendations
N/A

Equipment and Replacement Part Inventory
Provide equipment and replacement part inventories, including identification of critical replacement parts.

Compliance Status
The City is compliant with this element of the O&M section.

Effectiveness
Sufficient inventory of critical equipment and replacement parts is maintained at all times.

Deficiencies and Recommendations
N/A

Audit of Section 5. Design and Performance Provisions

According to State Water Resources Control Board Order No. WQ 2022-0103-DWQ *Item 5, The Plan must include the following items as appropriate and applicable to the City's system:*

5.1 Updated Design Criteria and Construction Standards and Specifications

Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria

5.2 Procedures and Standards
Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances

Compliance Status
The City is compliant with requirements of this section.

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Effectiveness
A civil engineer designs each project and each project has its own custom specification written for the construction of that specific project.

Deficiencies and Recommendations
N/A

Audit of Section 6. Spill Emergency Response Plan

- The Plan must include an up to date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to: Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
- Address emergency system operations, traffic control and other necessary response activities;
- Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
- Remove sewage from the drainage conveyance system;
- Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior to, during, and after a spill event;
- Conduct post-spill assessments of spill response activities;
- Document and report spill events as required in this General Order; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

Compliance Status
The City is compliant with the requirements listed in this section of the SSMP.

Effectiveness
The City of Manhattan Beach Utilities Division maintains an up-to-date Sanitary Sewer Overflow Response Plan as mandated by the State Water Resources Control Board, which the City follows to provide formal notice to the Los Angeles County Department of Health (LACDH) and the Office of Emergency Services (OES). The City encourages citizens to report overflows to the Utilities Division via the Public Works Department (business hours) and the Regional Communication Center (after-hours). Sewer staff is available 24 hours per day, seven days per week to receive and respond to calls, regardless of whether they originate on public or private property. There is a complaint phone log maintained of all calls. Once verified, all sewer overflows regardless of volume or potential impact are reported to all parties in the chain of communication within the City and to the appropriate regulatory agencies.

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Deficiencies and Recommendations
N/A

Audit of Section 7. Sewer Pipe Blockage Control Program

The Sewer System Management Plan must include procedures for the evaluation of The City's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. If The City determines that a program is not needed, The City shall provide justification in its Plan for why a program is not needed

The procedures must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;
- A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area;
- The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;
- Authority to inspect grease producing facilities, enforcement authorities, and whether The City has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

Compliance Status
The City is compliant with requirements of this section of the SSMP.

Effectiveness
The City utilizes a consultant to inspect and enforce FOG ordinances. Additionally, the City has the proper legal authority, permits and proper public outreach to comply with this section.

Deficiencies and Recommendations
N/A

Audit of Section 8: System Evaluation, Capacity Assurance, and Capital Improvements

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The Plan must include procedures and activities for:

- Routine evaluation and assessment of system conditions;
- Capacity assessment and design criteria;
- Prioritization of corrective actions; and
- A capital improvement plan.

System Evaluation and Condition Assessment

The Plan must include procedures to:

- Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;

- Identify and justify the amount (percentage) of its system for its condition to be assessed each year;
- Prioritize the condition assessment of system areas that:
  - Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
  - Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
  - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
- Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;

- Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State; • Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and • Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

Capacity Assessment and Design Criteria

The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- Dry-weather peak flow conditions that cause or contribute to spill events;

- The appropriate design storm(s) or wet weather events that cause or contribute to spill events; • The capacity of key system components; and

- Identify the major sources that contribute to the peak flows associated with sewer spills.

The capacity assessment must consider:

- Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;

- Capacity of flood-prone systems subject to increased infiltration and inflow under

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normal local and regional storm conditions;

- Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;
- Increases of erosive forces in canyons and streams near underground and above-ground system components due to larger and/or higher-intensity storm events;
- Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and
- Necessary redundancy in pumping and storage capacities.

Prioritization of Corrective Action

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

Capital Improvement Plan

The capital improvement plan must include the following items:

- Project schedules, including completion dates for all portions of the capital improvement program;
- Internal and external project funding sources for each project; and
- Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.

Compliance Status
The City is compliant with the requirements in this section.

Effectiveness
All information can be found in the 2022 Sewer Master Plan.

Deficiencies and Recommendations
N/A

Audit of Section 9. Monitoring, Measurement, and Program Modifications

The Plan must include an Adaptive Management section that addresses Plan implementation effectiveness and the steps for necessary Plan improvement, including:

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities;
- Monitoring the implementation and measuring the effectiveness of each Plan Element;

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- Assessing the success of the preventive operation and maintenance activities;
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and
- Identifying and illustrating spill trends, including spill frequency, locations and estimated volumes.

Compliance Status
The City is compliant with this SSMP element.

Effectiveness
The City uses a variety of metrics to measure the effectiveness of different SSMP components. Productivity standards for the Operation and Maintenance Program, for example, use footage/mileage goals for Cleaning and CCTV activities. Data is recorded for each crew daily. Productivity can be assessed for time periods ranging from an hour to a year and for individuals or for the division. Data recorded in the field is compiled into an Access database and extracted into weekly, monthly, and yearly reports. SSO data is an important measure of sewer system performance. The frequency, location, and volume of SSOs are often used to determine how resources will be allocated. For example, Smart Cover® manhole lids have been strategically placed in areas of The City more prone to overflows. Data will also be used to recalibrate the frequency of cleaning activity for problem areas or sewer "hot spots." Sewer system management is regularly evaluated for effectiveness, and when needed, protocols are updated to produce more favorable outcomes.

Deficiencies and Recommendations
N/A

Audit of Section 10. Internal Audits

The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for The City to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order.

Compliance Status
The City in not compliant in this section however, we are currently in the process of conducting our first program audit and will continue to do so as required every three (3) years.

Effectiveness
N/A

Deficiencies and Recommendations
N/A

Audit of Section 11. Communication Program

The Plan must include procedures for The City to communicate with:

- *The public for:*
    - *Spills and discharges resulting in closures of public areas or that enter a source of drinking water, and*

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- *The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.*

- *Owners/operators of systems that connect to The City's system, including satellite systems, for System operation, maintenance, and capital improvement-related activities*

Compliance Status
The City is compliant in this section.

Effectiveness
The City utilizes public outreach via the City website. Additionally, residents are notified prior to a project starting.

Deficiencies and Recommendations
N/A

Certification of Self-Audit

By signing below, we certify the information contained in this self-audit report is correct to the best of our knowledge.

Name	Position	Signature	Date
Jeffrey Page	Utilities Manager	Signed by: Jeff Page 18B6AB356B1E4BE...	2/4/2025
Joel Velez	Acting Wastewater Supervisor	Signed by: Joel Velez A02D69B8FE41462...	2/4/2025
Sandy Nimat	Water Compliance Supervisor	Sandy Nimat FD2238C2FCC243D...	2/4/2025

Appendix F – FOG Facilities

Site Name	St Name St Suffix | St Direction St # | Unit
(New) Boa Steakhouse and Sushi	Sepulveda Blvd | N 3110 |
(New) Caffe Luxxe	Manhattan Ave | 904 |
(New) Crafted Sweet	9th St | 860 |
(New) Culture Brewing	Manhattan Beach Blvd | 327 |
(New) Dan Modern Chinese	Sepulveda Blvd | N 3160 |
(New) Devil and Angel	Sepulveda Blvd | N 3208 |
(New) Dunkin MB	Sepulveda Blvd | N 1100 |
(New) Edible Arrangements	Aviation Blvd | 1061 |
(New) Fete Bistro by Slay	Manhattan Ave | 1017 |
(New) French Touch	Sepulveda Blvd | N 3200 | D11
(New) Gelsons Market	Sepulveda Blvd | N 707 |
(New) Global Cuisine by Gary Arabia	Rosecrans Ave | 1600 |
(New) Good Boy Bob, Inc.	Highland Ave | 1300 |
(New) Growing Wild	Highland Ave | 1201 |
(New) Handel's Ice Cream	Sepulveda Blvd | 3360 |
(New) HiFi Espresso	Manhattan Ave | 1025 |
(New) Ike's Love and Sandwiches	Sepulveda Blvd | N 1116 |
(New) Kreation Juicery	Highland Ave | 1300 | 110
(New) Kreation Juicery	Manhattan Beach Blvd | 451 | D118
(New) Live Oak Tavern	Manhattan Beach Blvd | 124 |
(New) Manhattan Country Club	Parkview Ave | 1330 |
(New) Mother's Market and Kitchen	Rosecrans Ave | 1700 | C
(New) Nando Trattoria	Manhattan Ave | 1131 |
(New) Nawa Thai	Highland Ave | 3713 |
(New) Nick and Sons Gourmet Market	Highland Ave | 3307 |
(New) Perfect Cookies	35th St | 428 |
(New) Presotea	Manhattan Ave | 1100 | 102
(New) Pressed Juicery	Manhattan Beach Blvd | 310 |
(New) Salt and Straw	Manhattan Beach Blvd | 209 |
(New) Savva's	Sepulveda Blvd | S 330 |
(New) Sidecar Doughnuts	Sepulveda Blvd | 3026 |
(New) Smashburger	Sepulveda Blvd | N 3026 |
(New) Sprinkles Cupcakes	Sepulveda Blvd | N 3360 | N120
(New) Sunlife Organics	Supulveda Blvd | 3200 |
(New) Sushi Manhattan	Sepulveda Blvd | N 2700 |
(New) Sweetgreen LA	Sepulveda Ave | N 3200 | E18
(New) The Hive	Highland Ave | 2201 |
(New) The Hook and Plow	Manhattan Ave | 1112 |
(New) Trader Joes	Manhattan Beach Blvd | 1821 |

(New) Two Guns Espresso	Highland Ave | 3516 |
(New) Two Guns Espresso	Manhattan Beach Blvd | 875 |
(New) Un Cafe Altamura	Highland Ave | 1140 |
(New) Wild Forks	Sepulveda Blvd | N 1130 |
(New) Wood Ranch	Rosecrans Ave | 1550 | A1
Ali'i	Sepulveda Blvd | N 924 |
Ameci Pizza & Pasta Man Bch	Artesia Blvd | 1751 |
Amigos Tacos	Artesia Blvd | 1221 |
Arthur J	Manhattan Ave | 903 |
Baja Sharkeez	Highland Ave | 3600 |
Bakery by the yard	Rosecrans Ave | 312 |
Barnes & Noble Café	Rosecrans Ave | 1800 |
Baskin Robbins	Sepulveda Blvd | N 925 |
Beach Chinese Food To Go	Rosecrans Ave | 314 |
Beach Pizza	Highland Ave | 3301 |
Becker's Bakery	Manhattan Ave | 1025 |
Belamar Hotel, The	Sepulveda Blvd | N 3501 |
Big Wok Bar-B-Q Inc.	Sepulveda Blvd | N 250 |
Bluestone Lane	Manhattan Beach Blvd | 321 |
Brewco	Manhattan Beach Blvd | 124 |
Bristol Farms	Rosecrans Ave | 1570 |
Brooklyn Brick Oven Pizza	Sepulveda Blvd | S 500 | 203
Cafe Rio	Rosecrans Ave | 1800 | G
Cafe Wild	Highland Ave | 3505 |
Caffe Altamura	Highland Ave | 1140 |
California Pizza Kitchen	Sepulveda Blvd | N 3280 |
Castle,The	Sepulveda Blvd | N 2401 |
Dash Dash	Manhattan Ave | 1127 |
Domino's Pizza #7842	Sepulveda Blvd | N 3001 | STE A
El Gringo Manhattan	Sepulveda Blvd | N 921 |
El Pollo Loco #5905	Sepulveda Blvd | N 800 |
El Sombrero #1	Manhattan Ave | 1005 |
El Sombrero #2	Artesia Blvd | 1157 | B
El Tarasco	Rosecrans Ave | 316 |
Ercoles Bar And Grill	Manhattan Ave | 1101 |
Esperanza Cocina de la Playa	Manhattan Beach Blvd | 309 |
FanSea Sushi	Rosecrans Ave | 302 |
Fatburger	Artesia Blvd | 1139 | C
Fishbar	Highland Ave | 3801 |
Fishing With Dynamite	Manhattan Ave | 1148 | 1
Fresh Brothers	Sepulveda Blvd | N 2008 |
Fusion Sushi	Morningside Dr | 1150 |
Gelato And Angels	Manhattan Beach Blvd | 308 |
Grunions Sports Bar & Grill	Sepulveda Blvd | N 1501 |

Hangar Inn	Aviation Blvd | N 1001 |
Health Nut	Manhattan Beach Blvd | 332 |
Hennesseys Tavern	Manhattan Beach Blvd | 313 |
Hummus Factory, The	Rosecrans Ave | 1570 | STE L
Il Fornaio	Rosecrans Ave | 1800 |
India's Tandoori	Sepulveda Blvd | N 916 |
Islands Fine Burgers & Drinks	Sepulveda Blvd | N 3200 | STE D1
Izaka -Ya By Katsu-Ya, The	Highland Ave | 1133 |
Jamba Juice #006	Rosecrans Ave | 1590 |
Joey Manhattan Beach	Sepulveda Blvd | N 3120 |
Johnny Rockets	Rosecrans Ave | 1550 | STE C
Just Food For Dogs	Sepulveda Blvd | N 1605 |
Kettle,The	Highland Ave | 1139 |
Le Pain Quotidien	Manhattan Beach Blvd | 451 |
Lido De Manhattan Bakery	Sepulveda Blvd | N 3001 | STE D
Lido Di Manhattan	Rosecrans Ave | 1550 | STE D
Little French Bakery	Highland Ave | 3319 |
Local Yolk Llc, The	Highland Ave | 3414 |
Love And Salt	Manhattan Beach Blvd | 317 |
Mangiamo	Manhattan Beach Blvd | 128 |
Manhattan Beach Creamery	Manhattan Ave | 1120 |
Manhattan Beach Post	Manhattan Ave | 1142 |
Manhattan Bread & Bagel	Sepulveda Blvd | N 1812 |
Manhattan Meats	Manhattan Ave | 1111 |
Manhattan Pizzeria	Manhattan Beach Blvd | 133 |
Mc Donald's #11194	Manhattan Beach Blvd | 1852 |
Mc Donald's Of Man Bch Inc.	Artesia Blvd | 1203 |
Mercado	Sepulveda Blvd | N 3212 | A
Noahs Bagels #2546	Manhattan Beach Blvd | 330 | 332
North End Cafe	Highland Ave | 3421 |
Nothing Bundt Cakes	Rosecrans Ave | 1570 | STE Q
O-Sho Sushi	Sepulveda Blvd | N 913 |
Ob's Grill & Bar	Highland Ave | 3610 |
Olive Garden #1723, The	Sepulveda Blvd | N 2610 | STE 1
Pachanga Mexican Grill	Rosecrans Ave | 1590 |
Pancho's Abbjohn, Inc.	Highland Ave | 3615 |
Panda Express Inc 356	Sepulveda Blvd | S 125 |
Paradise Bowls	Manhattan Ave | 919 | STE D
Peet's Coffee & Tea	Manhattan Beach Blvd | 328 |
Petros	Manhattan Beach Blvd | 451 | STE B110
Pisces	Highland Ave | 3216 |
Pitfire Artisan Pizza	Manhattan Beach Blvd | 401 |
Pure Bean	Artesia Blvd | 1133 |
Ralphs Grocery Company #166	Sepulveda Blvd | N 2700 |

Reborn Coffee	Sepulveda Blvd | N 3180 |
Rice	Manhattan Ave | 820 | #105
Rice Teriyaki Sushi Grill	Rosecrans Ave | 1570 | STE P
Rock'N Fish	Manhattan Beach Blvd | 120 |
Rockefeller Manhattan Beach, The	Highland Ave | 1209 |
Shellback Tavern	Manhattan Beach Blvd | 116 |
Silverlake Ramen	Sepulveda Blvd | N 3360 | 140
Simmzy's	Manhattan Beach Blvd | 229 |
Slay Italian Kitchen	Manhattan Ave | 1001 |
SLAY Steak & Fish House	Manhattan Ave | 1141 |
Sloopy's Beach Café	Highland Ave | 3416 |
Starbucks	Sepulveda Blvd | N 815 |
Starbucks #542	Manhattan Beach Blvd | 233 |
Strand House, The	Manhattan Beach Blvd | 117 |
Subway Sandwiches/Salads #2941	Artesia Blvd | 1145 |
Sugarfish	12th St | 304 |
Surf Food Stand	The Strand | 4115 |
Susiecakes Bakery	Sepulveda Blvd | N 3500 |
Taco Bell #28542	Sepulveda Blvd | N 301 |
Tacolicious	Manhattan Ave | 1129 |
Target(Starbucks)	Sepulveda Blvd | N 1200 |
Thai Dishes Restaurant	Sepulveda Blvd | N 1015 |
The 900 Club	Manhattan Ave | 900 |
The Coffee Bean & Tea Leaf	Sepulveda Blvd | N 2616 |
The Garden Thai Restaurant	Aviation Blvd | N 210 |
Tin Roof Bistro	Sepulveda Blvd | N 3500 | 100
Tomboy's	Manhattan Beach Blvd | 1816 |
Trader Joe’s	Rosecrans Ave | 1800 |
Uncle Bills Pancake House	Highland Ave | 1305 |
Union Pizza Company	Rosecrans Ave | 1570 | K
Urban Beach Cafe	Rosecrans Ave | 1600 | BLDG 5 A
Valentinos Pizza	Aviation Blvd | N 975 |
Vons #2275	Manhattan Beach Blvd | 410 |
Yanagi Kitchen Sushi Rolls & Bowls	Sepulveda Blvd | N 3001 | STE C
Yogurtland South Bay	Rosecrans Ave | 1570 | STE M

Appendix G – Standard Operating Procedures

CITY OF MANHATTAN BEACH
STANDARD OPERATING PROCEDURES FOR THE SANITARY SEWER SYSTEM.

The City of Manhattan Beach Wastewater Division uses the following procedures to maintain the sanitary sewer system mainline infrastructure.

MAINTENANCE:
The system is divided in to 24 districts. Each district is uniquely numbered with manhole numbers and district maps. The system will be cleaned following the schedule on the work sheet, and will always be cleaned from the upstream manhole to a collector trunk owned and maintained by the Los Angeles County Sanitation District, or to a City sewer lift station. Lift stations discharge sewage to gravity mains that eventually empty into a county trunk line. Each district is cleaned at least twice a year and is completed by going through the districts numerically from 1 to 24.

REPLACEMENT AND NON EMERGENCY REPAIRS:
Normal maintenance identifies areas that are deficient and in need of spot repairs or entire replacement of a sewer main. These areas will be documented and scheduled for repair or replacement in the CIP list.

REPAIRS:
Emergency repairs will be completed as required. If repairs require immediate attention, crews will be dispatched to make the necessary repairs. If the repairs are above and beyond what the City crew can handle, a contractor will be called to handle the emergency. Contractors that can be called are:

DOTY BROTHERS	Lic.# 273024	(310) 864-6566	Class A
KOHLER & SONS	Lic.# 380895	(310) 375-2725	Class A
HOFMANN & SON	Lic.# 235869	(310) 370-1210	C-42
TRIGGER THE DIGGER	Lic.# 661465	(310) 318-3112	Class A
SOUTH BAY PIPELINE	Lic.# 417151	(310) 376-4101	Class A
WATSON PLUMBING	Lic.# 714440	(818) 785-2121	C-42; C-36

PACIFIC COAST CONSTRUCTION (310) 355-0585

EXTRA ATTENTION LINES:
There are sewer mains in the City that need extra attention due to root intrusion and or grease buildup. The frequency of cleaning depends on the problem of that particular line. Extra attention lines may be cleaned anywhere from 4 to 12+ times a year. The list is kept on file with the Wastewater Supervisor and updated as needed.

REPLACEMENT PARTS INVENTORY:
An up to date list will be maintained of replacement parts for the sewer system collection system and lift stations. Parts used from the inventory will be replaced immediately. Replacement pumps will be identified with tags that show which lift station the pump is designated for. Replacement pumps will be exercised at least once every two months to prevent the bearings from freezing up.

Spare hydro hose will be kept in stock as well as leader hose. Hoses for emergency pumps will be checked for leaks once a year and replaced as needed.

LIFT STATION MAINTENANCE:
The City also operates ten lift stations. Six of these lift stations are in the collection system and located at the following locations:

Pacific Station:	2901 Pacific Ave.
Palm Station:	3529 Palm Ave.
Bell Station:	549 31st Street
Poinsettia Station:	1100 N. Poinsettia Ave.
Voorhees Station:	1360 Voorhees Ave.
Meadows Station:	1300 9th Street
City Hall:	1400 Highland Avenue
Public Safety Facility:	400 15th Street.
Pier Roundhouse:	00 Manhattan Beach Blvd.
Metlox:	1220 Morningside

Lift stations located in the collections system are serviced twice a week. Servicing includes operating the check valves for proper operation, cleaning debris baskets, checking backup floats, checking the generator and operating the pumps to check pump times, vibrations, any unusual noises, fuel level in generator, and leaks. The generators are exercised once a week. The electronic level indicators are checked for proper operation so the wet well only fills to a certain level before the pump is started, and that the pump shuts off at the low level that has been established. Lift stations at the facilities are checked for pump and float operation.

By pass valves that were installed for emergency pumping of the wet wells at the six lift stations will be exercised at least once a year.

STANDBY:
Sewer Workers are required to work standby, carry a pager and cell phone. They will handle all off hour emergencies and when needed, call other standby personnel if the emergency requires more than one person to handle.

SEWER SPILLS:
Anytime there is a sewer spill that enters the storm drain system, enters the beach, or ocean, the Wastewater Supervisor will be notified immediately. Emergency phone number can be found in you manual that contain the procedures to follow in a sewer spill event. All spills will be reported as required by the WDR (Waste Discharge Requirements).

LATERAL SPILLS:
All backups caused by roots coming from a residents lateral will be documented and a letter will be sent to the resident and owner of the property to make the necessary repairs. If repairs are not made and another backup occurs, time and materials will be billed to the resident/owner for the City's expense to respond to the call and for any cleanup required.

TRAINING:
Provide training on a regular basis for staff in sanitary sewer system operations and maintenance. Training will cover: SOP's, sanitary sewer overflows, sampling requirements when the spill enters the beaches and ocean and standby procedures. Required OSHA training will be held when required.

RECORD KEEPING:
Work sheets that are used to record cleaning information will be kept in work books at the Public Works Utilities office. Work books will be labeled and dated and kept on hand for reference. Lift station maintenance logs will be maintained and kept on file in workbooks that are labeled, dated, and kept on file at the Public Works Utilities office.

9-19-2007

CITY OF MANHATTAN BEACH
SANITARY SEWER OVERFLOW
SAMPLING PROCEDURES
OCTOBER 2007



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ATTACHMENTS

1. Telephone numbers of City's personnel to contact in case of spill
2. Sewage Spill Chain of Custody
3. Map and directions to Applied Microbiological Services.

Applied Microbiological Services
2625 Lime Avenue
Signal Hill, CA 90755
Ph. (888) 685-3330
Ph. (562) 595-7576
Fax (562) 595-6593

I. INTRODUCTION

The intent of this sampling procedure is to provide staff with guidance on what steps to take when a sewage spill occurs. The City's goals for spill response, which are fully detailed in the "Sanitary Sewer Overflow Response Plan", include response to the scene of the overflow within 30 minutes of notification of the overflow. For spill reporting protocols/requirements to regulatory prompt agency notification, to stop the overflow. For spill reporting protocols/requirements to regulatory agencies please refer to the Notification and Reporting Procedures for Sewage Spills, Recycled Water Spills, and NPDES Noncompliant Conditions The steps that are detailed in this sampling procedure involve notification of internal staff, determining sampling locations and schedule, coordinating the actual sampling events, and internal distribution of analytical results and reports generated regarding the incident.

II. IS NOTIFICATION NECESSARY?

The City is required to report to various regulatory agencies sewage spills greater than 1,000 gallons, and, in some cases, spill less than 1,000 gallons. The reporting requirements vary according to location of the spill, the amount of sewage spilled, whether or not the spill entered receiving water, and whether or not public health or the environment was endangered.

In accordance with the Notification and Reporting Procedures for Sewage Spills, Recycled Water Spills, and NPDES Noncompliant Conditions, notification to the appropriate regulatory agencies shall be made by authorized City's personnel (typically, the Wastewater Supervisor). If verbal notification is made to other agencies, their particular concern/input should be noted as these types of analysis that are requested, if sampling is determined to be necessary.

The person making the notification shall act as the contact/lead person for all work related to the spill. This contact/lead person shall also contact other the appropriate personnel and relay all pertinent information available at the time of notification, note input/concerns, and distribute them to appropriate personnel.

III. PERTINENT INFORMATION REGARDING THE SPILL

Before the Wastewater Supervisor notifies staff, certain pertinent information regarding the spill should be gathered. Prompt notification should be made even if not all the information below is available. Information to be gathered shall include the following:

1. Location of spill
2. Receiving water impacted
3. Best estimate of time spill started
4. Preliminary estimate of volume involved
5. Status of spill (whether or not the spill has been contained or isolated; if flow is continuing, the estimated time of repair and present flow rate; if stopped, when stopped)
6. Cause of spill (whether or not industrial wastes are involved; probable source of spill)
7. Actions taken
8. Agencies involved in repairs and cleanup.

The initial information gathered will be used for the spill response purposes only; all information will be verified before being used for formal notification of regulatory agencies except in the case of major spill requiring immediate agency notification.

IV. WHO SHOULD BE NOTIFIED?

The following guidelines should be used in determining which personnel should be notified of the spill:

1. If the overflowing wastewater appears to be of industrial waste origin, the Supervising Industrial Waste Inspector of the Industrial Waste Section shall be contacted. The Industrial Waste Section shall conduct inspections and perform sampling at industrial facilities suspected to be a contributing factor in causing a contributing factor in the spill.

2. The Wastewater Division currently maintains an internal spill record system that tracks information the collection system regardless of volume or destination. Information on each spill consists of date; time; volume; duration; location; pipe age, size and material; probable case; and actions taken to prevent recurrence. These spill records are available to City staff and are considered when making decisions such as cleaning schedules. As a result, the Utilities Manager shall be notified of all spills or bypasses of raw or partially treated sewage from the City's collection system.

3 The laboratories Section provides response support to City's sewage spills as needed. The two laboratory facilities capable of providing microbiological and chemical analysis for this purpose are **Applied Microbiological Services**. The Supervisor of the Laboratories Microbiology Group shall be notified of the spill as soon as it is considered likely that **any** testing may be desired or required.

The Ocean Monitoring Group is also available to provide response support to the City's sewage spills. The group is capable of sampling in receiving waters (such as open ocean, near shore zones,) suspected to have been impacted by a spill. The contact/lead person shall discuss selection of sampling locations with the Supervisor of the Laboratories Section Microbiology Group; if they decide that assistance from the Ocean Monitoring Group is necessary (for example, in cases when sampling locations are only accessible by boat), the contact/lead person shall contact the Supervising Environmental Scientist of the Ocean Monitoring Group. Otherwise, staff from the section responsible for the spill shall conduct the appropriate sampling.

Names and telephone numbers of people in the above-listed positions are shown in Attachment 1.

V. IS SAMPLING NECESSARY?

The objective of sampling is to determine: (1) the zone of impact; (2) whether or not the spill has adversely impacted the environment or public health; (3) in cases where the receiving water or groundwater has been adversely impacted by the spill, the magnitude of the impact and when conditions return to normal background levels. In addition, if the spill impacted a public beach or ocean water-contact sports area, sampling is required until samples show levels below State ocean water quality standards and the beach or water-contact sports area can be reopened.

Consequently, except for cases where the spill is **fully** contained and returned to the sanitary sewer, sampling shall be performed for the following types of spills:

1. Sewage spills, regardless of quantity, that have entered or will enter receiving water. (Receiving waters are actual bodies or water such as streams, creeks, estuaries or oceans and open storm water channels. Street gutters and buried storm sewers are not considered receiving waters.)

2. Sewage spills that occurred near receiving waters or groundwater and may have entered receiving waters. (Sampling is performed to confirm that spill did not reach or impact receiving waters).

VI. SAMPLING LOCATIONS

The decision on sampling locations shall be made on a case-by-case basis by the contact/lead person with recommendations from staff familiar with the monitoring requirements and conditions particular to the region impacted. The following people /groups may be contacted and consulted as appropriate:

1. Supervising of the Laboratories Section from Applied Microbiological Services or Chemtek Environmental Laboratories Inc.

2. Supervising Environmental Scientist of the Ocean Monitoring Group

A. General Guidelines

For spills that reach receiving waters, the Discharger shall obtain and analyze grab samples for total and fecal coliforms, and enterococcus, upstream and downstream of the point of entry spill.

If response to the spill includes sampling, the contact person or the Sewer System Manager shall decide on sampling locations and analytical tests to be requested.

If possible, sampling locations for spills should be selected to be at or near these routine sampling locations so that sampling results are directly comparable. If it is determined that ocean sampling is needed, the Ocean Monitoring Group shall assist in the selection of sampling sites and shall perform the sampling.

Selection of sampling locations should take into consideration information regarding terrain and background bacterial levels. With respect to terrain, choose locations near landmarks or use GPS positioning so that they can locate later if resampling is necessary. Make sure that sampling locations are accessible. If a sampling location cannot be accessed by foot or vehicle, assesses if it can be reached by boat or other method. With respect to background bacterial levels, avoid locations in areas where bacterial indicator results are already normally high (for example, pier areas or areas near birds, etc.) since spill impacts may not be easily distinguishable from background conditions.

B. Sampling of Overflow

If possible, a sample of the actual overflow must be collected to provide information regarding the source of the spill. If the location of the overflow is in a contained area (such as a construction zone or manhole area), collect separate samples from all flowing point sources as well as any standing or pooled water if possible. Descriptive information regarding the overflow should be recorded as well.

C. Upstream and Downstream Sampling Locations

When a spill enters receiving water, thereby necessitating sampling, at least one location before the spill entry point shall be sampled. This upstream location should be far enough upstream from the spill location so as to not be affected by the spill but close enough to the spill location so that all upstream point and non-point source inputs are accounted for in the analysis results. For receiving water whose direction of flow may be affected by flowing ocean

time of day and weather conditions. The sampling technician shall be provided with maps and specific sampling location information. The technician shall carry a radio or cellular phone for communication and be aware of local posted safety warnings.

b. Sampling Requirements (Equipment)

i. Containers

An adequate number of appropriate sample containers shall be determined and located prior to dispatching sampling staff to offsite locations. The use of sterile 500 mL polypropylene wide mouth bottles is adequate for bacteriological analyses and most chemical tests. These sterile bottles are identifiable by the black striped indicator tape securing the bottle caps and an inventory is maintained at the Public Works Utilities offices. The Wastewater Supervisor shall carry two bottles for emergency sampling. When primary contact is made with the contracted laboratory regarding the spill, arrangements for additional bottles shall be made at that time.

2. Sampling tools

Sampling tools such as poles, buckets, and ropes are available at the Public Works Facility as well as the laboratory. Their use shall be considered so as to ensure safe collection of sample as well as improving accessibility to difficult sampling locations.

3 Sample documentation

Waterproof labeling tape and ink markers can be obtained from the laboratory prior to sampling. Sample containers must be labeled with the following information at the time of sampling:

- Technician=s name
- Date and time of sampling
- Location with specific description

All information pertinent to field sampling activities should be recorded in a logbook. (As an alternative, the sampler can use the Sewage Spill Sample Information form in Attachment 4 to record sampling information.) At a minimum, entries in the logbook should contain the following information:

- Date and time of collection
- Purpose of sampling
- Weather conditions
- Location of sampling point (GIS coordinates, description)
- Flow estimate
- Qualitative observation of sample (e.g., color, smell)
- Presence of storm water runoff, waste or floating solids

4. Sample preservation and transport

Filled sample containers shall be stored upright in an insulated cooler with ice or blue ice after collection and during transport back to the laboratory. The samples must be received by the laboratory within six hours of collection.

Additional items to be considered include clean glass containers for oil and grease sampling, deioinized water for rinsing and a GPS unit for more accurate location of sampling sites.

B. Sampling Techniques

1. General guidelines

Samples collected for bacteriological analyses must be done in an aseptic manner in order to insure representative data. Aseptic in the field means an attempt to minimize outside contamination to the sample during and after collection. The sampling technician shall maintain the sterility of the sample bottle by removing the cap just before collection without touching the inside of the bottle and cap. If a sampling pole is used, the bottle shall be placed in the sampling pole and opened right before sampling. If a bucket is used to collect the initial sample, be sure it is clean prior to use. When possible, collect samples from an area where the water is mixing, close to the center and facing the flow. Try to avoid an excess of floating material. The bottle is tightly capped , properly labeled and stored in a cooler until delivered to the laboratory.

2. Sampling when flow is sheeting over an impervious area

Select a low spot in area of flow. If there is not enough volume to fill a sample container, small amounts should be collected using a clean container (glass or polypropylene) and transferred to the sample container. When collecting samples, take care to avoid contact with the bottom of the impervious area (i.e., surface underlying sheet flow); otherwise, water fouling may occur.

3. Sampling at the shoreline

Samples collected directly at the shoreline shall be collected from ankle to knee-deep water, approximately 4 to 24 inches below the water surface, using a sample pole. The technician shall observe ocean wave action and collect the sample with a sweeping motion toward incoming surf, approximately 4 inches below the water surface without the collection of sand, if possible. Special observations that may be recorded include estimations of bird or animal populations or unusual debris.

Samples collected in front of a storm drain or other freshwater outlet shall be collected from a flowing stream and be labeled as an Apoint zero@ sample. The volume or rate of flow should be estimated and recorded.

Samples collected from pooled or stagnant water resulting from low tidal conditions should be described as such.

Since bacteriological data is not reportable for 24 hours, it is necessary to sample at least two days following the spill event unless results from the first day's samples confirm complete containment and recovery of the spill, in which case resampling is not required. For example, if samples were collected the day of the spill event, at least one attempt at sampling the following morning should be made. If final results from the initial samples demonstrate no single exceedance of the Basin Plan standards (refer to Section XI) then processing of the second day's samples is unnecessary. If, however, the bacteria counts from any samples have exceeded **any** of the limits, then Los Angeles County Department of Health Services will keep the affected beaches closed and sampling should continue until all impacted beaches pass all four indicator criteria.

Although storm runoff may contribute bacterial load to the shoreline, possibly causing interference with the public health assessment, monitoring should continue unless specifically instructed otherwise by the Los Angeles County Department of Health Services.

All follow-up sampling should be scheduled for morning collection and early return to the laboratory. An exception to this would be an attempt to bracket impact by ebb/flow or high/low tide conditions. Any freshwater outlets located near sampling locations should be noted and sampled as well to determine impact. Although the bacteriological data takes 24 hours to confirm, preliminary estimates of results by the laboratory within 18 hours of processing can be useful in determining direction, spatial extent and public health impact of the spill.

Title 17 of the California Code of Regulations mandates Los Angeles County Department of Health Services to close any beach impacted by an untreated sewage release and allows for its reopening only when the water sample passes all four standards. (The standards in Title 17 are the same as those in the Basin Plan.) Therefore, sampling for total coliform, fecal coliform and enterococcus must continue until all indicators meet the standards noted in Section XI.

IX. LABORATORY ANALYSIS

All samples submitted for analysis must be tested for total coliform, fecal coliform and enterococcus bacteria. In addition, the test for *E.coli* shall be included for freshwater sample(s) collected from any receiving water designated as REC-1 in the Basin Plan

Samples should be delivered as soon as possible to the lab (directions and map in Attachment 5), within 6 hours of collection. If possible, some samples should be delivered ahead of others so that the lab does not get overwhelmed by a large number of samples at once. The Microbiology Group shall coordinate with Sample Receiving at the lab to ensure that the samples are properly entered into the lab data tracking system.

X. ANALYSIS RESULTS

Once samples are entered into the lab data tracking system (mainframe), the laboratory shall forward sample identification number(s) to the contact person. The contact person should use these sample ID numbers to validate descriptive information associated with the sample and enter into the data system. The laboratory shall e-mail preliminary bacteriological results (using the Sewage Spill Sample Result form in Attachment 4) to the Wastewater Supervisor as early as possible. This information is to be used to assist in the planning for further sampling needs. Final verified results may be obtained only through the laboratory supervisor or manager. The laboratory shall e-mail **final** reportable bacteriological results (using the Sewage Spill Sample Result form in Attachment 4) to the contact/lead person. Final laboratory results of chemical or physical constituents shall be available to the contact/lead person when the data have been approved by the laboratory manager. The laboratory shall verify and approve final results as soon as possible.

XI. WHEN SHOULD SAMPLING STOP?

In general, sampling should continue as long as bacterial levels are still elevated and should not be discontinued until levels have returned to background levels at downstream stations (if background data are available) or until levels at downstream locations are at or below levels at upstream location(s). As mentioned in Section VI, the City of Los Angeles and the Los Angeles County Department of Health Services routinely monitor numerous shoreline

locations; consequently, these agencies should be contacted to obtain data to supplement City data. For reference, Table 1 shows applicable water quality limitations for marine water and fresh water for the Los Angeles Region.

XII. DISTRIBUTION OF REPORTS

Copies of reports generated regarding spills shall be distributed to all parties involved in the spill response.

Table 1. Bacteria Water Quality Objectives

	Geometric Mean Limits	Single Sample Limits
In Marine Water Designated for Water Contact Recreation (REC-1)	Total coliform density shall not exceed 1,000/100 mL Fecal Coliform density shall not exceed 200/100 mL Enterococcus density shall not exceed 35/100 mL	Total coliform density shall not exceed 10,000/100 Ml Fecal Coliform density shall not exceed 400/100 mL Enterococcus density shall not exceed 104/100 mL Total coliform density shall not exceed 1,000/100 mL, if the ratio of fecal-to-total coliform exceeds 0.1.
In Fresh Waters Designated for Water Contact Recreation (REC-1)	E. coli density shall not exceed 126/100 mL Fecal coliform density shall not exceed 200/100 mL	E. coli density shall not exceed 235/100 mL Fecal coliform density shall not exceed 400/100 mL
Implementation Provisions for Water Contact Recreation Bacteria Objectives: The geometric mean values should be calculated based on a statistically sufficient number of samples (generally not less than 5 samples equally spaced over a 30-day period exceed). If any of the single sample limits are exceeded, the Regional Board may require repeat sampling on a daily basis until the sample falls below the single sample limit in order to determine the persistence of the exceedance. When repeat sampling is required because of an exceedance of any one single sample limit, values from all samples collected during that 30-day period shall be used to calculate the geometric mean.		

CHAIN OF CUSTODY RECORD

CITY OF MANHATTAN BEACH
Public Works Department
3621 Bell Avenue Manhattan Beach, CA 90266
Tel. (310) 802-5300 FAX: (310) 802-5301

CLIENT INFORMATION	ANALYSIS REQUIRED
CLIENT NAME:	Coliform & Fecal Coliform (MPN)
PROJECT CONTACT	Coliform Fecal (MPN, Serial Dilutions
ADDRESS:	Enterococcus
CITY, STATE, ZIP:	E. Coli (0157:H7)
PHONE:	
EMAIL: FAX:	
PROJECT INFORMATION	
PROJECT NAME:	
SITE ADDRESS:	
SAMPLED BY:	

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	TYPE*	REMARKS	NO. OF CONT

SIGNATURE	PRINT NAME	COMPANY NAME	DATE	TIME
Relinquished By:				
Received By:				
Relinquished By:				
Received For Laboratory By:				

☐ Normal ☐ Rush ☐ Same Day ☐ 72 hrs. ☐ 24 hrs. ☐ 48 hrs.

*Type: SO-Soil GW-Ground Water WW-Waste Water AQ- Aqueous A-Air OT-Other

Page ___ of ___

Appendix H – Existing Pump Inventory

Table 6-1
Pump Stations

	General Pump Station Information										Pump Specifications					Motor Specifications			Estimated Flows		
Pump Station	Location	Date of Cons.	Plan No.	Area Served (Acres)	Force Main Dia (in)	Force Main Length (ft)	Force Main Material	Type	Wet Well Dimensions	Generator Set	Number of Pumps	Pump Mfg	Pump Type	Pump Model	Estimated Flow Capacity (gpm)	RPM	Phase	HP	ADWF (gpm)	PDWF (gpm)	PWWF (gpm)
Bell Avenue	Bell Ave between 31st St and 31st Pl	1938	S-60 S-150 S-230	78	6	900	CIP	Wetwell/ Drywell	12' x 9.5' x ~7'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3102	263	1750	3	5	70	198	278
Palm Avenue	Palm Ave south of Rosecrans Ave	1953	S-149 S-230	39	6	775	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	174	1740	3	10	38	114	159
Pacific Avenue	Pacific Ave south of 31st St	1953	S-149	103	6	1,225	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	304	1740	3	10	98	269	376
Poinsettia Avenue	Poinsettia Ave south of Manhattan Beach Blvd	1949	S-227 S-145	25	4	163	CIP	Wetwell/ Drywell	18.6 ft² x 6'-10"	Diesel Fueled	2	Flygt	submersible, non-clog	CT3102	136	NA	3	NA	19	60	85
Meadows Avenue	Meadows Ave south of 9th St	1953	S-148 S-230	99	6	730	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	304	1740	3	10	77	216	303
Voorhees Avenue	Voorhees Ave at Rowell Ave	1953	S-148 S-230	103	6	1,321	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	227	1740	3	10	90	250	350
Civic Center	Highland Ave south of 15th St	1992	-	Civic Center Bulding	-	-	-	Submersible	-	-	2	-	-	-	-	-	-	-	-	-	-
Pier	End of Manhattan Beach Pier	1992	-	Pier Restaurant	4	-	CIP	Submersible	4' x 4' x 4'	-	2	-	submersible	-	-	-	-	3	-	-	-

Appendix I – Hot Spot Cleaning

Extra Attention Lines

Nov-24

page #	Location	Date	Crew	MH to MH,	Footage,	Pipe size	History
	Sepulveda & Duncan Ave.			10-16 to 10-15	255	feet	
	Duncan & Poinsettia			10-39 to 10-29	266	feet	
				10-126 to 10-125	300	feet	Notify before Hydro-jetting (714)249-0108
	412 6th st & Ingleside			10-129 to 10-126	30	feet	Notify before Hydro-jetting (714)249-0108
	7th & Highland			11-105 to 11-106	100	feet	
	9th & The Strand			11-134 to 11-128	110	feet	
				11-134 to 11-133	300	feet	
	617 Highland			11-106 to 11-106A	120	feet	CALL (310) 874-4762
	416 10th St. & Crest.			11-87 to 11-86,	208	feet 6"	**Don't go past 420ft from MH 11-88**
				11-88 to 11-87	266	feet 8"	
	15th place & Valley			14- 9 to 14- 8,	220	feet	
	13th & Morningside			14 -12 to 14-11	292	feet	
				14-13 to 14-12	40	feet	
				14-15 to 14-13	271	feet	

Extra Attention Lines

page #	Location	Date	Crew	MH to MH, Footage, Pipe size	History
	644 14th (Church lot)			15- 13 to 15- 12 172 feet	
	18th & Agnes			15-33 to 15-32 301 feet	
				15-34 to 15-33 300 feet	
				15 - 34 to 15 - 27 185 feet	
				15 - 27 to 15 - 24 202 feet	
				15 - 24 to 15 - 23 195 feet	
	24th & Blanche			15- 82 to 15- 81, 315 feet 6"	
				15- 82A to 15- 82, 258 feet 6"	
				17- 12 to 17- 11 352 feet 8"	
				17 - 13 to 17 - 12 149 feet	
	29th & Bell			17- 13 to 17- 18A, 281 feet, 10"	
				17- 13 to 17- 6, 343 feet 10"	
	575 31st.			17- 20 to 17- 19 351 feet	Hard spot at 170 feet.
	36th Pl. & Bell			17-26 to 17-25 338 feet	
				17-26 to 17-29 350 feet	
	27th & Flournoy			16-15 to 16-16 350 feet	

Extra Attention Lines

page #	Location	Date	Crew	MH to MH, Footage, Pipe size	History
				16-15 to 16-17 350 feet	
	31st pl. & Agnes			17- 52 to 17- 51 324 feet.	Hard spot @ 90 feet.
	33rd Pl. & Flournoy to Bell			17- 64 to 17- 63 260 feet 8"	
				17- 65 to 17- 64 325 feet 8"	
				17- 66 to 17- 65 166 feet 8"	
				17- 67 to 17- 66 210 feet 8"	
				17- 68 to 17- 67 316 feet 8"	
				17- 69 to 17- 50 349 feet 8"	
	33rd Pl. & Bell			17- 69 to 17- 68 227 feet 8"	
	31st Pl. & Blanche			17-72 to 17-71 355 feet 8"	
				17- 73 to 17-72 247 feet	
				17- 70 to 17- 69 105 feet	
				17-75 to 17- 70 150 feet 8"	
	31st Pl. & Bell			17- 74 to 17-73 275 feet 8"	
				17 - 75 to 17 - 74 350 feet	
	43rd & The Strand			23-9 Parking lot 300 feet	
	34th & Man Ave. to Highland			18- 34 to 18- 33, 256 feet 6"	

Extra Attention Lines

page #	Location	Date	Crew	MH to MH,	Footage,	Pipe size	History
	36th & Man Ave.			18- 39 to 18- 38	236 feet	6"	
	Rosecrans & Man Ave.			18- 40 to 18- 39	240 feet	6"	
				18- 46 to 18- 43	175 feet		
	Rosecrans Pl. & Highland			18- 46 to 18- 44	120 feet		
	35th & Grandview			18-10 to 18-9	310 feet		**Physically check at MH # 18-9**
	33rd & Alma			18- 4 to 18- 2	236 feet	6"	
	33rd & Alma			18- 4 to 18- 3	172 feet	6"	
	34th & Alma			18-8 to 18-4	228 feet	6"	
	31st & Alma			19-5 to 19-2	316 feet		
				19-5 to 19-4	155 feet		
				19- 10 to 19- 9,	355 feet	6"	
	32nd & Alma			19- 12 to 19- 10,	267 feet	6"	
	28th & Alma			20- 16 to 20- 13,	177 feet	6"	
	29th & Alma			20- 6 to 20- 3,	270 feet	6"	
	23th & Man ave to 24 th MA			20- 59 to 20- 57	174 feet	6"	
	24th & Highland to Alma			21- 10 to 21- 9	227 feet,	6"	
	23 & Highland to 24th High.			21- 18 to 21- 10,	240 feet	6"	

Extra Attention Lines

page #	Location	Date	Crew	MH to MH, Footage, Pipe size	History
	23rd & Highland to 23 Alma			21- 18 to 21- 8, 240 feet 6"	
	23rd & Strand			21- 23 to 21- 22, 302 feet 6"	
	23rd & Alma			21-7 to 21-6 110 feet 6"	Notify Supervisor or PD
				21-8 to 21-7 60 feet	
	20th & Highland			22-30 to 22-29 162 feet	
				22-31 to 22-30 352 feet	
	Terrazza Pl. & Ronda			4- 29 to 4-28, 140 feet 8"	
	1217 2nd St. & Terrazza			4- 30 to 4-29 350 feet 8"	
				4-31 to 4-30 300 feet	
	Keats & Meadows			5-43 to 5-42 136 feet 8"	Grease
				5-44 to 5-43 222 feet	
	Rosecrans & Pacific			7- 33 to 7- 32 237 feet 8"	
	Rosecrans & Palm ave.			7- 38 to 7- 37 265 feet 8"	
				8- 17 to 8- 19 160 feet 8"	
	Rosecrans & Poinsettia ave.			7-11 to 7-7 270 feet 8"	Hard spot at 160 feet.
	Pine Easement / Walnut			8- 18 to 8- 19 170 feet 8"	

Extra Attention Lines

page #	Location	Date	Crew	MH to MH,	Footage,	Pipe size	History
				8- 23 to 8- 19	220 feet	8"	
	Walnut & Valley			8-24 to 8-25	150 feet		
				8-25 to 8-26	349 feet		
	31st & laurel.			8- 68 to 8- 67	268 feet	8"	
				8- 71 to 8- 68	186 feet	8"	
				8- 71 to 8- 70	252 feet	8"	
	30th & Laurel			8- 72 to 8- 66	251 feet	8"	
				8- 72 to 8- 71	121 feet	8"	
	2920 Laurel			8-73 to 8- 72	61 feet	8"	
				8- 73 to 8- 74	129 feet	8"	
				8- 73 to 8-62	220 feet	8"	
				8- 74 to 8- 76	174 feet	8"	
	19th & Lyngrove			2-32 to 2-30	250 feet	8"	**GREASE BUILD UP** **Roots**
	Wendy way & 19th			2-41 to 2-40	340 feet		
				2-42 to 2-41	340 feet		
	1821 3rd st			1-92 to 1-93	190 feet	8"	**ROOTS**
	2nd & Vista			10-143 to 10-146	250 feet	6"	

Extra Attention Lines

page #	Location	Date	Crew	MH to MH,	Footage,	Pipe size	History
				10-144 to 10-146	150 feet	6"	
				10-145 to 10-146	300 feet	6"	
	2nd & Ingleside			10-146 to 10-147	300 feet	8"	
	Gates & Aviation			01-55 to 01-56	248 feet	8"	**Pipe offset at 244 feet**
	17th & Ocean			22-13 to 22-50	116 feet		**ROOTS**
	1237 6th St.			04-48 to 04-49	338 feet	8"	**Hard Spot at 68 feet**
	931 9th St.			09-10 to 09-08	150 feet		
				09-08 to 09-07	150 feet		
				09-08 to 09-06	150 feet		
				09-10 to 09-11	145 feet		
				09-15 to 09-13	178 feet		
				09-13 to 09-12	160 feet		
				09-13 to 09-11	150 feet		
	2516 Palm			06-276 to 06-275	192 feet		
	36th St. & Bell			17-32 to 17-29	175 feet		
	Rosecrans & Man. Ave			18-40 to 18-29	284 feet		

Extra Attention Lines

page #	Location	Date	Crew	MH to MH,	Footage,	Pipe size	History
	Fairway Dr. & Lafayette Ct.			24-34 to 24-35	156 feet		
	28th & Man. Ave			20-44 to 20-46	251 feet		
	28th & Highland			20-29 to 20-28	254 feet		
	461 33rd St			18-02 to 18-01			
	440 5th St			10-132 to 10-131			
	544 3rd St			10-142 to 10-140			
	461 30th			20-02 to 20-01	300ft		**Hard spot @ 140ft**
	30th St & Vista			20-03 to 20-02	300ft		**Hard spot @ 90ft**
	606 9th St				350ft		**Verify jetter makes it to upper MH**

Appendix 1 – Code of Ordinance, Title 5 – Sanitation and Health, Chapter 5.36 – Sewers, Sewage Disposal – City Sewage System

5.36.170 – Sewer Connection
It shall be unlawful for any person to make, or cause to be made, any sewer connection referred to or designated in this chapter pursuant to any such permit at any place other than that designated therein.

5.36.240 – Maintenance of House Connection Sewers
All house connection sewers, industrial connection sewers and appurtenances thereto shall be maintained by the owner of the property served in a safe and sanitary condition, and all devices or safeguards which are required by this chapter or any other law of the City for the operation thereof shall be maintained in good working order.

5.36.250 – Depositing of Industrial Waste and Solids in Sewers
It shall be unlawful for any person to place, throw or deposit, or cause or permit to be placed, thrown or deposited, in any public sewer or sewer connection any dead animal, offal, or garbage, or to place, throw or deposit or discharge, or cause or permit to be placed, thrown, deposited or discharged, in any such sewer any fish, fruit or vegetable waste or other solid matters or materials or obstructions of any kind whatever of such nature as shall clog, obstruct or fill such sewer, or which shall interfere with or prevent the effective use or operation thereof. It shall be unlawful for any person to cause or permit to be deposited or discharged into any such sewer any water, sewage or liquid waste of any kind containing chemicals, greases, oil, tar or other matters in solution which may by reason of precipitation clog, obstruct or fill the same, or which may in any way interfere with or prevent the effective use thereof, or which may necessitate or require frequent repair, cleaning out or flushing of such sewer to render the same operative.

5.36.260 – Dilution and Neutralization of Acids and Corrosive Liquids
In no case shall acids or corrosive liquids liable to destroy or damage a public or house connection sewer be discharged into such sewer without being fully diluted and neutralized by passing through a properly constructed dilution and neutralizing sink or tank. Such sink or tank shall be automatically provided with a sufficient intake of water or neutralizing medium or substance so as to make its contents non-injurious before being discharged.

5.36.270 – Storm Waters
It shall be unlawful for any person to connect any roof conductor, yard drain or other conduit used for carrying off rain or surface water with any sanitary sewer of the City or house connection sewer leading thereto.

5.36.280 – Cellar Shower Drainage
Any cellar drain or any shower in a basement or roofed shower in a yard shall be protected to prevent the admission of sand, detritus and storm or surface water into the sewer. When necessary, in the opinion of the Division Superintendent, a person shall trap such appurtenances by a sand interceptor constructed in accordance with the provisions of the Uniform Plumbing Code.

5.36.290 – Swimming Pools
It shall be unlawful for any person to connect any swimming pool or tank to any public sewer in the City or house connection leading thereto, except in those instances where the topography, gradients, capacities and/or other features of the public sewer permit such over quantitative discharge, or control outlined by the Engineering Department.

5.36.300 – Over quantitative Discharge
Application must be made to the Public Works Department for permission to discharge water from swimming pools or other large quantities of water. A permit fee will be charged as established by the Council under separate resolution.

5.36.310 – Alterations Must Conform
All renewals or alterations of any public or house connection sewer, or any repairs or additions thereto, must conform to the requirements of the Uniform Plumbing Code and/or the Special Plans and Specifications No. MBSS-200A-0(ST-5) referred to in Section 5.36.170.

5.36.320 - Damage to sewers, flush tanks and manholes.
It shall be unlawful for any person to remove or cause to be removed or to damage or cause to be damaged any portion of any public sewer, flush tank, flushing manhole or manhole, or to open or enter or cause to be opened or entered, any public sewer, flush tank, flushing manhole or manhole, or to use or cause to be used any water from any flushing apparatus for any use whatever without first obtaining a permit from the Building Inspector to do so.

5.36.330 - Draining Cesspools or Septic Tanks
A. No person shall connect or cause to be connected any cesspool or septic tank to any public sewer or house sewer connection leading thereto.
B. No effluent from cesspools or septic tanks may be discharged or pumped into any house sewer connection or public sewer or manhole.

5.36.340 - Abandoned septic tanks and cesspools.
Abandoned septic tanks and cesspools shall be dealt with in accordance with existing requirements of the Uniform Plumbing Code.

Appendix 2 – Code of Ordinance, Title 5 – Sanitation and Health, Chapter 5.38 – Fats, Oils and Grease Management And Discharge Control

5.38.015 – FOG Discharge Requirement
No FSE shall discharge or cause to be discharged into the sewer system FOG that exceeds a concentration level adopted by the City or that may accumulate and/or cause or contribute to blockages in the sewer system or at the sewer system lateral which connects the FSE to the sewer system.

5.38.020 – Prohibitions
The following prohibitions shall apply to all FSEs:
A. No person shall discharge, or cause to be discharged any wastewater from FSEs directly or indirectly into the sewer system without first obtaining an FOG wastewater discharge permit pursuant to this chapter.
B. Discharge of any waste, including FOG and solid materials removed from the grease control device to the sewer system, is prohibited.
C. Discharge of any waste or FOG to the sewer system which fails to comply with the FOG Discharge Manual is prohibited.
D. Discharge of any waste or FOG to the sewer system in a manner which either violates the sewer WDRs or causes or contributes to a condition which fails to comply with the sewer WDRs is prohibited.

5.38.025 – Food Grinders Prohibited
A. No food grinder shall be installed in a plumbing system of new construction of an FSE.
B. All food grinders shall be removed from an existing FSE upon:
1. Major operational change to the FSE; or
2. Any construction requiring the issuance of a building permit for either remodeling or construction of the FSE valued at fifty thousand dollars ($50,000.00) or more.
All food grinders shall be removed from all existing FSEs within 180 days of the effective date of the ordinance from which this chapter was derived, except when expressly allowed by the Director.

5.38.030 – Best Management Practices Required
A. All FSEs shall implement best management practices in its operation to minimize the discharge of FOG to the sewer system.
B. All FSEs must implement and demonstrate compliance with best management practices (BMP) requirements as specified in the City's FOG Discharge Manual. Detailed requirements for best management practices are specified in the FOG Discharge Manual and may include kitchen practices and employees training that are essential in minimizing FOG discharges.

5.38.035 – FOG Pretreatment Required
FSEs are required to install, operate and maintain an approved type and adequately sized grease interceptor necessary to maintain compliance with the objectives of this

chapter in accordance with the FOG Discharge Manual and the requirements of 40 CFR § 403.5.

5.38.045 – Multiple FSEs at Commercial Properties

For properties at which multiple FSEs are operated on a single parcel, each FSE operator shall be individually and separately responsible for installation and maintenance of the grease interceptor serving its FSEs and for compliance with this chapter. Furthermore, owners of commercial properties at which multiple FSEs are operated on a single parcel shall be responsible for ensuring compliance by each FSE on the parcel. Such operators and/or property owner can comply with this chapter by installing and maintaining a grease interceptor or grease interceptors serving multiple FSEs upon approval by the Director on such terms and conditions that the Director may establish in his sole discretion.

5.38.050 – Grease Disposal Mitigation Fee

A. FSEs that operate without a grease control interceptor may be required to pay an annual grease disposal mitigation fee to equitably cover the costs of increased maintenance and administration of the sewer system as a result of the FSEs' inability to adequately remove FOG from its wastewater discharge. This section shall not be interpreted to allow a new FSE or existing FSEs undergoing remodeling or change in operations, to operate without an approved grease interceptor unless the Director has determined that it is impossible to install or operate a grease control interceptor for the FSE under the provisions of this chapter.

B. The grease disposal mitigation fee shall be established by resolution of the City Council, and shall be based on the estimated annual increased cost of maintaining the sewer system for inspection and removal of FOG and other viscous or solidifying agents attributable to the FSE resulting from the lack of a grease interceptor or grease control device and such other costs that the City Council considers appropriate.

C. The grease disposal mitigation fee may not be waived or reduced when the FSE does not comply with the minimum requirements of this chapter and/or its discharge into the sewer system in the preceding twelve (12) months has caused or potentially caused or contributed alone or collectively, in sewer blockage or an SSO in the sewer downstream, or surrounding the FSE prior to the waiver request.

D. At a minimum, the grease disposal mitigation fee shall be equivalent to the City's cost to:

1. Conduct quarterly inspections of FSE premises for compliance with this chapter;
2. Clean the city sewer line that is impacted by the FSEs waste water discharges twice a year; and
3. Review the FSEs sewer lateral cleaning records.

5.38.055 – Sewer System Overflows, Public Nuisance, Abatement Orders and Cleanup Costs

Notwithstanding any waiver of grease interceptor requirements under this chapter, FSEs determined by the Director to have contributed to a sewer blockage, SSOs or any sewer system interferences resulting from the discharge of wastewater or waste

containing FOG, may be ordered by the Director to immediately install and maintain a grease interceptor, and may be subject to a plan determined by the Director to abate the nuisance and prevent any future health hazards created by sewer line failures and blockages, SSOs or any other sewer system interferences. SSOs may cause threat and injury to public health, safety, and welfare of life and property and are hereby declared public nuisances. Furthermore, sewer lateral failures and SSOs caused by FSEs alone or collectively are the responsibility of the private property owner and/or FSE, and individual(s) as a responsible officer or owner of the FSE. If the City must act immediately to contain and clean up an SSO caused by blockage of a private or public sewer lateral or serving an FSE, or at the request of the property owner or operator of the FSE, or because of the failure of the property owner or FSE to abate the condition causing immediate threat of injury to the health, safety, welfare, or property of the public, the City's costs for such abatement may be entirely borne by the property owner or operator of the FSE, and individual(s) as a responsible officer or owner of the FSE(s) and may constitute a debt to the City and become due and immediately payable upon the City's request for reimbursement of such costs.

5.38.060 – FOG Wastewater Discharge Permit Required

A. FSEs proposing to discharge or currently discharging wastewater-containing FOG into the City's sewer system shall obtain an FOG wastewater discharge permit from the City within either:

1. One hundred eighty (180) days from the effective date of this chapter; or
2. At the time any FSE applies for or renews its annual business license from the City. Compliance with this chapter must be demonstrated at the time any business license is issued, provided that the Director may extend the compliance date for no more than ninety (90) days after the date of the issuance of the license.

B. FOG wastewater discharge permits shall be expressly subject to all provisions of this chapter and all other regulations, charges for use, and fees established by the City. The conditions of FOG wastewater discharge permits shall be enforced by the City in accordance with this chapter and applicable State and Federal regulations.

C. The City shall not issue a certificate of occupancy for any new construction, or occupancy unless an FSE has fully complied with the provisions of this chapter.

5.38.065 – FOG Wastewater Discharge Permit Application

Any person required to obtain an FOG wastewater discharge permit shall complete and file with the City prior to commencing discharges, an application in a form prescribed by the Director and shall provide the City such plans, information, and documents as the Director determines is necessary and appropriate to properly evaluate the application. The applicable fees shall accompany this application. After evaluation of the data furnished, the Director may issue an FOG wastewater discharge permit, subject to terms and conditions set forth in this chapter and as otherwise determined by the Director to be appropriate to protect the City's sewer system.

5.38.070 – FOG Wastewater Discharge Permit Condition

The issuance of an FOG wastewater discharge permit may contain any of the following conditions or limits as determined by the Director:

A. Limits on discharge of FOG and other priority pollutants;

B. Requirements for proper operation and maintenance of grease interceptors and other grease control devices;

C. Grease interceptor maintenance frequency and schedule;

D. Requirements for implementation of best management practices and installation of adequate grease interceptor and/or grease control devices;

E. Requirements for maintaining and reporting status of best management practices;

F. Requirements for maintaining and submitting logs and records, including waste hauling records and waste manifests;

G. Requirements to self-monitor;

H. Requirements for the FSE to construct, operate, and maintain, at its own expense, FOG control device and sampling facilities;

I. Consent by the operator of the FSE for the City and other regulatory agencies to inspect the FSE to confirm compliance with this chapter, the NPDES permit and other applicable laws, rules and regulations;

J. Additional requirements as otherwise determined to be reasonably appropriate by the Director to protect the City's system or as specified by other regulatory agencies; or

K. Other terms and conditions, which may be reasonably applicable to ensure compliance with this chapter as determined by the Director.

5.38.105 – Grease Interceptor Requirements

A. No waste water discharges from FSEs shall be introduced into the sewer system until the required grease interceptors have been approved by the Director.

B. Grease interceptors shall be maintained in efficient operating condition in accordance with the FOG Discharge Manual.

C. Grease interceptors must be cleaned, maintained, and FOG must be removed from grease interceptors at regular intervals.

D. FOG removed from grease interceptors shall be waste hauled periodically as part of the operation and maintenance requirements for grease interceptors and disposed of at an approved location in a proper manner and at regular intervals.

5.38.110 – Monitoring and Reporting Conditions

A. Monitoring for Compliance with FOG Wastewater Discharge Conditions and Reporting Requirements.

1. The Director may require periodic reporting of the status of implementation of best management practices, in accordance with the FOG control program and the FOG Discharge Manual.

2. The Director may require visual and other monitoring at the sole expense of the permitted to observe the actual conditions of the FSEs sewer lateral and sewer lines downstream.

3. The Director may require reports for self-monitoring of wastewater constituents and FOG characteristics of the permitted needed for determining compliance with any conditions or requirements as specified in the FOG wastewater discharge permit or this chapter. Monitoring reports of the analyses of wastewater

constituents and FOG characteristics shall be in a manner and form approved by the Director and shall be submitted upon request of the Director.

4. Failure by the permitted to perform any required monitoring, or to submit monitoring reports required by the Director constitutes a violation of this chapter and shall be cause for the City to initiate all necessary tasks and analyses to determine the wastewater constituents and FOG characteristics for compliance with any conditions and requirements specified in the FOG wastewater discharge permit or in this chapter.

5. The permitted shall be responsible for any and all expenses of the City in undertaking such monitoring analyses and preparation of reports.

6. Other reports may be required such as compliance schedule progress reports, FOG control monitoring reports, and any other reports deemed reasonably appropriate by the Director to ensure compliance with this chapter.

B. Record Keeping Requirements. The permitted shall be required to keep all documents identified by the Director relating to its compliance with this chapter, including manifests, receipts and invoices of all cleaning, maintenance, grease removal of/from the grease control device, disposal carrier and disposal site location for no less than two (2) years. The permitted shall, upon request, make the manifests, receipts and invoices available to any City representative, or inspector. These records may include:

1. A logbook of grease interceptor, and/or other grease control device cleaning and maintenance practices;

2. A record of best management practices being implemented including employee training;

3. Copies of records and manifests of waste hauling interceptor contents;

4. Records of sampling data and sludge height monitoring for FOG and solids accumulation in the grease interceptors; or

5. Any other information deemed appropriate by the Director to ensure compliance with the ordinance from which this chapter was derived.

C. Falsifying Information or Tampering with Process. It shall be unlawful to make any false statement, representation, record, report, plan or other document that is filed with the City, or to tamper with or knowingly render inoperable any grease control device, monitoring device or method or access point required under this chapter.

5.38.115 – Inspection and Sampling Conditions

A. The Director may inspect or order the inspection and sample the wastewater discharges of any FSE to ascertain whether the intent of this chapter is being met and the permitted is complying with all requirements. The permitted shall allow the City access to the FSE premises, during normal business hours, for purposes of inspecting the FSE's grease control devices and/or interceptor, reviewing the manifests, receipts and invoices relating to the cleaning, maintenance and inspection of the grease control devices or interceptor.

B. The Director shall have the right to place or order the placement on the FSE's property or other locations as determined by the Director, such devices as are necessary to conduct sampling or metering operations. Where an FSE has security measures in force, the permitted shall make necessary arrangements so that

representatives of the City shall be permitted to enter without delay for the purpose of performing their specific responsibilities.
C. For the Director to determine the wastewater characteristics of the discharger for purposes of determining the annual use charge and for compliance with permit requirements, the permitted shall make available for inspection and copying by the City all notices, monitoring reports, waste manifests, and records including, but not limited to, those related to wastewater generation, and wastewater disposal without restriction but subject to the confidentiality provision set forth in this chapter. All such records shall be kept by the permitted a minimum of two (2) years.

5.38.120 – Right of Entry
Persons or occupants of premises where wastewater is created or discharged shall allow the Director, or City representatives, reasonable access to all parts of the FSE and all wastewater generating and disposal facilities for the purposes of inspection and sampling during all times the discharger's facility is open, operating, or any other reasonable time. No person shall interfere with, delay, resist or refuse entrance to City representatives attempting to inspect any FSE or facility involved directly or indirectly with a discharge of wastewater to the City's sewer system.

5.38.125 – Notification of Spill
A. In the event a permitted is unable to comply with any permit condition due to a breakdown of equipment, accidents, or human error or the permitted has reasonable opportunity to know that his/her/its discharge will exceed the discharge provisions of the FOG wastewater discharge permit or this chapter, the discharger shall immediately notify the City by telephone at the number specified in the permit. If the material discharged to the sewer has the potential to cause or results in sewer blockages or SSOs, the discharger shall immediately notify the City, the Los Angeles County Department of Public Health, the Regional Water Quality Control Board, and the California State Office of Emergency Services if the SSO is 1,000 gallons or more.
B. Confirmation of this notification shall be made in writing to the Director at the address specified in the permit no later than five (5) working days from the date of the incident. The written notification shall state the date of the incident, the reasons for the discharge or spill, what steps were taken to immediately correct the problem, and what steps are being taken to prevent the problem from recurring.
C. Such notification shall not relieve the permitted of any expense, loss, damage or other liability which may be incurred as a result of damage or loss to the City or any other damage or loss to person or property; nor shall such notification relieve the permitted of any fees or other liability which may be imposed by this chapter or other applicable law.

5.38.130 – Enforcement
A. The City Council finds that, in order for the City to comply with the laws, regulations, and rules imposed upon it by regulatory agencies and to ensure that the City's sewer facilities are protected and are able to operate with the highest degree of efficiency and to protect the public health and the environment, specific enforcement provisions must be adopted to govern the discharges to the City's sewer system by FSEs.

B. To ensure that all interested parties are afforded due process of law and that violations are resolved as soon as possible, a permitted, or applicant for a permit, may appeal any determination made by the Director, including but not limited to a denial of a discharge permit, a notice of violation, permit suspension or revocation, or a compliance schedule agreement (CSA), pursuant to the procedures set forth in Section 5.38.185.
C. The City, at its discretion, may utilize anyone, combination, or all enforcement remedies provided in this chapter in response to any FOG wastewater discharge permit or chapter violations.

5.38.135 – Violations
A. The owner and operator of an FSE or permitted shall be in violation of this chapter if such owner or operator or permitted:
1. Fails to install approved grease control device as required by this chapter;
2. Makes any false statement, representation, record, report, plan or other document that is filed with the City;
3. Tampers with or knowingly renders inoperable any grease control device required under this chapter;
4. Fails to clean, maintain or remove grease from a grease control device within the required time for such cleaning, maintenance or grease removal;
5. Fails to keep up-to-date and accurate records of all cleaning, maintenance, and grease removal and upon request to make those records available to any City code enforcement representative, or his or her designee, any representative of a local sanitation agency that has jurisdiction over the sanitary sewer system that services the food facility, or any authorized inspector that has jurisdiction under the water quality chapter;
6. Refuses a City code enforcement representative, or his or her designee, a representative of a local sanitary sewer agency that has jurisdiction over the sanitary sewer system that services the food facility, or any authorized inspector, reasonable access to the food facility for the purposes of inspecting, monitoring, or reviewing the grease control device manifests, receipts and invoices of all cleaning, maintenance, grease removal of/from the grease control device, and/or to inspect the grease control device;
7. Disposes of, or knowingly allows or directs FOG to be disposed of, in an unlawful manner;
8. Fails to remove all food grinders located in the food facility by the date specified by this chapter;
9. Introduces additives into a wastewater system for the purposes of emulsifying FOG without the written, specific authorization from the sanitary sewer agency that has jurisdiction of the sanitary sewer system that services the food facility;
10. Fails to pay the grease disposal mitigation fee as specified in this chapter when due;
11. Fails to comply with the FOG Discharge Manual; or
12. Otherwise fails to comply with the provisions of this chapter or any permit issued by the City under this chapter.

B. Violations under this section shall be subject to the procedures, penalties and remedies set out in this chapter and Chapter 1.04. All costs for the investigations,

enforcement actions, and ultimate corrections of violations under this section, incurred by the City shall be reimbursed by the owner/operator of the FSE.

5.38.140 – Compliance Schedule Agreement (CSA)

A. Upon determination by the Director that a permitted or other owner or operator of an FSE or owner of a property is in noncompliance with the terms and conditions specified in its permit or any provision of this chapter, or needs to construct and/or acquire and install a grease control device or grease interceptor, the Director may require the permitted, owner or operator to enter into a CSA.

B. The issuance of a CSA may contain terms and conditions as determine appropriate by the Director, including but not limited to requirements for installation of a grease control device, grease interceptor and facilities, submittal of drawings or reports, audit of waste hauling records, best management and waste minimization practices, payment of fees, or other provisions to ensure compliance with this chapter.

C. The Director shall not enter into a CSA until such time as all amounts owed to the City, including user fees, noncompliance sampling fees, or, or other amounts due are paid in full, or an agreement for deferred payment secured by collateral or a third party, is approved by the Director. If compliance is not achieved in accordance with the terms and conditions of a CSA during its term, the Director may issue an order suspending or revoking the discharge permit pursuant to this chapter.

5.38.145 – Permit Suspension

A. The Director may suspend any permit when it is determined that a permitted:

1. Fails to comply with the terms and conditions of a CSA order;
2. Knowingly provides a false statement, representation, record, report, or other document to the City;
3. Refuses to provide records, reports, plans, or other documents required by the City to determine permit terms or conditions, discharge compliance, or compliance with this chapter;
4. Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or sample collection method;
5. Refuses reasonable access to the Permittee's premises for the purpose of inspection and monitoring;
6. Does not make timely payment of all amounts owed to the City for user charges, permit fees, or any other fees imposed pursuant to this chapter;
7. Causes interference, sewer blockages, or SSOs with the City's collection, treatment, or disposal system; or
8. Violates grease interceptor maintenance requirements, any condition or limit of its discharge permit or any provision of this chapter.

B. When the Director has reason to believe that grounds exist for permit suspension, he/she shall give written notice thereof by certified mail to the permitted setting forth a statement of the facts and grounds deemed to exist.

C. Effect.

1. Upon an order of suspension by the Director, the permitted shall immediately cease and desist its discharge and shall have no right to discharge any wastewater containing FOG directly or indirectly to the City's system for the

duration of the suspension. All costs for physically terminating and reinstating service shall be paid by the permitted.

2. Any owner or responsible management employee of the permitted shall be bound by the order of suspension.

5.38.150 – Permit Revocation

A. Revocation. The Director may revoke any FOG wastewater discharge permit when it is determined that a permitted has failed to comply with this chapter.

B. Notice of Revocation. When the Director has reason to believe that grounds exist for the revocation of a permit, he/she shall give written notice by certified mail thereof to the permitted setting forth a statement of the facts and grounds.

C. Effect of Revocation.

1. Upon an order of revocation by the Director becoming final, the permitted shall permanently lose all rights to discharge any wastewater containing FOG directly or indirectly to the City's system. All costs for physical termination shall be paid by the permitted.
2. Any owner or responsible management employee of the permitted shall be bound by the order of revocation.
3. Any future application for a discharge permit at any location within the City by any person associated with an order of revocation will be considered by the City after fully reviewing the records of the revoked permit, which records may be the basis for denial of a new permit.
4. An order of permit revocation issued by the Director of Public Works shall be final in all respects on the sixteenth (16th) day after it is mailed to the permitted.

5.38.155 – Damages to Facilities or Interruption of Normal Operations

A. Any person who discharges any waste, including but not limited to those listed under 40 CFR § 403.5, which causes or contributes to any sewer blockage, SSOs, obstruction, interference, damage, or any other impairment to the City's sewer facilities or to the operation of those facilities shall be liable for all costs required to clean or repair the facilities together with expenses incurred by the City to resume normal operations. The total amount shall be payable within forty-five (45) days of invoicing by the City.

B. Any person who discharges a waste which causes or contributes to the City violating its discharge requirements established by any regulatory agency incurring additional expenses or suffering losses or damage to the facilities, shall be liable for any costs or expenses incurred by the City, including regulatory fines, penalties, and assessments made by other agencies or a court.

5.38.160 – Public Nuisance

Discharge of wastewater in any manner in violation of this chapter or of any order issued by the Director, as authorized by this chapter, is hereby declared a public nuisance, and shall be corrected or abated as directed by the Director. Any person creating a public nuisance is guilty of a misdemeanor.

5.38.165 – Termination of Service

A. The City, by order of the Director, may physically terminate sewer service and water service to any FSE, as follows:

1. On a term of any order of suspension or revocation of a permit; or
2. Upon the failure of a person not holding a valid discharge permit to immediately cease the discharge, whether direct or indirect, to the City's sewer facilities after the notice and process as provided herein.

B. All costs for physical termination shall be paid by the owner or operator of the FSE or permitted as well as all costs for reinstating service.

5.38.170 – Emergency Suspension Order

The City may, by order of the Director, suspend sewer service and/or water service when the Director determines that such suspension is necessary in order to stop an actual or impending discharge which presents or may present an imminent or substantial endangerment to the health and welfare of persons, or to the environment, or may cause SSOs, sewer blockages, interference to the City's sewer facilities, or may cause the City to violate any State or Federal law or regulation. Any discharger notified of and subject to an emergency suspension order shall immediately cease and desist the discharge of all wastewater containing FOG to the sewer system.

5.38.175 – Civil Penalties

A. In addition to criminal penalties and administrative penalties authorized by this Code, all users of the City's system and facilities are subject to enforcement actions administratively or judicially by the City, U.S. EPA, State of California Regional Water Quality Control Board, or the County of Orange Los Angeles, and other regulatory agencies. Said actions may be taken pursuant to the authority and provisions of several laws, including but not limited to:

1. Federal Water Pollution Control Act, commonly known as the Clean Water Act (33 U.S.C.A. Section 1251 et seq.);
2. California Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.);
3. California Hazardous Waste Control Law (California Health & Safety Code Section 25100 et seq.);
4. Resource Conservation and Recovery Act of 1976 (42 U.S.C.A Section 6901 et seq.); and
5. California Government Code, Sections 54739—54740.

B. In the event the City is subject to the payment of fines or penalties pursuant to the legal authority and actions of other regulatory or enforcement agencies based on a violation of law or regulation or its permits, and said violation can be established by the City, as caused by the discharge of any user of the City's system which is in violation of any provision of the City's chapter or the user's permit, the City shall be entitled to recover from the user all costs and expenses, including, but not limited to, the full amount of said fines or penalties to which it has been subjected.

C. Pursuant to the authority of California Government Code Sections 54739—54740, any person who violates any provision of this chapter; any permit condition, prohibition, or effluent limit; or any suspension or revocation order shall be liable civilly for a sum not to exceed twenty-five thousand dollars ($25,000.00) per violation for each day in which

such violation occurs. Pursuant to the authority of the Clean Water Act, 33 U.S.C. Section 1251 et seq., any person who violates any provision of this chapter, or any permit condition, prohibition, or effluent limit shall be liable civilly for a sum not to exceed twenty-five thousand dollars ($25,000.00) per violation for each day in which such violation occurs. The City Attorney of the City, upon request of the Director, shall petition the Superior Court to impose, assess, and recover such penalties, or such other penalties as the City may impose, assess, and recover pursuant to Federal and/or State legislative authorization.

D. Administrative Civil Penalties. Pursuant to the authority of California Government Code Sections 54740.5 and 54740.6, the City may issue an administrative complaint to any person who violates:

1. Any provision of this chapter;
2. Any permit condition, prohibition, or effluent limit; or
3. Any suspension or revocation order.

5.38.165 – Criminal Penalties

Any person who violates any provision of this chapter is guilty of a misdemeanor, which upon conviction is punishable by a fine not to exceed one thousand dollars ($1,000.00), or imprisonment for not more than six (6) months, or both. Each violation and each day in which a violation occurs may constitute a new and separate violation of this chapter and shall be subject to the penalties contained herein.

Appendix 3 – Equipment and Replacement Parts Inventory

The City maintains equipment and performs weekly testing to guarantee a ready state for immediate deployment in an emergency.

Sewer Line Cleaning Equipment

- 1 Combination Vacuum/Hydro jet truck with capacity for clearing 800 feet of sewer or storm drain pipe (¾ inch high pressure hose)
- 1 Hydro Jet truck with 600 foot cleaning capacity, one inch hose
- Replacement leader hoses and an array of cleaning nozzles for sewer and storm drain cleaning
- 1 replacement spool of 400 feet of ¾ inch high pressure hose for the combination truck

Light/Heavy Equipment

- 1 Case 580L backhoe, 1 four yard front end loader, 1 medium duty dump and flat bed truck, one 15 TON boom crane, 1 medium duty single axle-6 wheel dump truck
- 2 six inch diesel pumps – these pumps can be used for bypassing sewer lift stations or moving large amounts of storm water from retention basins
- 2 twenty three foot suction hoses
- 800 feet of four inch flat poly discharge hose

Sewer Lift Stations

- 1 replacement pump for two sewer lift stations – Poinsettia and Bell
- 1 replacement pump for one sewer lift station – Pacific
- 3 replacement pumps for three sewer lift stations – Voorhees, Palm, and Meadows

(These pumps are to be set in place on a temporary basis until repairs or replacements on permanent pumps can be done.)

- 1 replacement pump for Pier lift station
- 2 six inch check valves
- 1 four inch check valve
- 1 eight inch check valve
- 2 eight inch gate valves
- 3 sets of floats
- 3 transformers
- Replacement fuses for each station – located at each station
- 2 Siemens transducers for the hydroranger level controls

Sewer Pipe

- 28 feet total of four inch clay pipe with repair couplings and 3 twenty-two and ½ degree, 5 forty-five degree and 1 ninety degree 4 inch pipe fittings and 1 eight inch by four inch Y
- 50 feet of six inch clay pipe with repair couplings and 7 twenty-two and ½ degree, 3 ninety degree (elbow style) 6 inch pipe fittings and 4 six inch by six inch Y's and 3 six inch saddles
- 35 feet of eight inch clay pipe with repair couplings and 1 twenty-two and ½ degree, 5 forty-five degree, and 3 ninety degree 8 inch pipe fittings and 2 eight inch by eight inch Y's and 1 eight inch T
- 5 feet of twelve inch clay pipe with repair couplings
- 7 feet of fifteen inch clay pipe with repair couplings
- 6 feet of eighteen inch clay pipe with repair couplings

Appendix 4 – Wastewater Master Plan – Section 4, Criteria

SECTION 4

CRITERIA

4-1 GENERAL

Establishing performance standards is an important part of evaluating wastewater collection systems, as it forms the basis for system analysis and system improvement recommendations. These standards include methodology for estimating wastewater design flows and minimum design standards for the collection system pipes, pump stations, and force mains.

Average wastewater flows can be reasonably estimated from land use and their corresponding unit flow factors. The results are then compared to measured flows. Peaking factors are needed for estimating peak dry weather and peak wet weather flows. Peak wet weather flows include an allowance for inflow and infiltration (I/I).

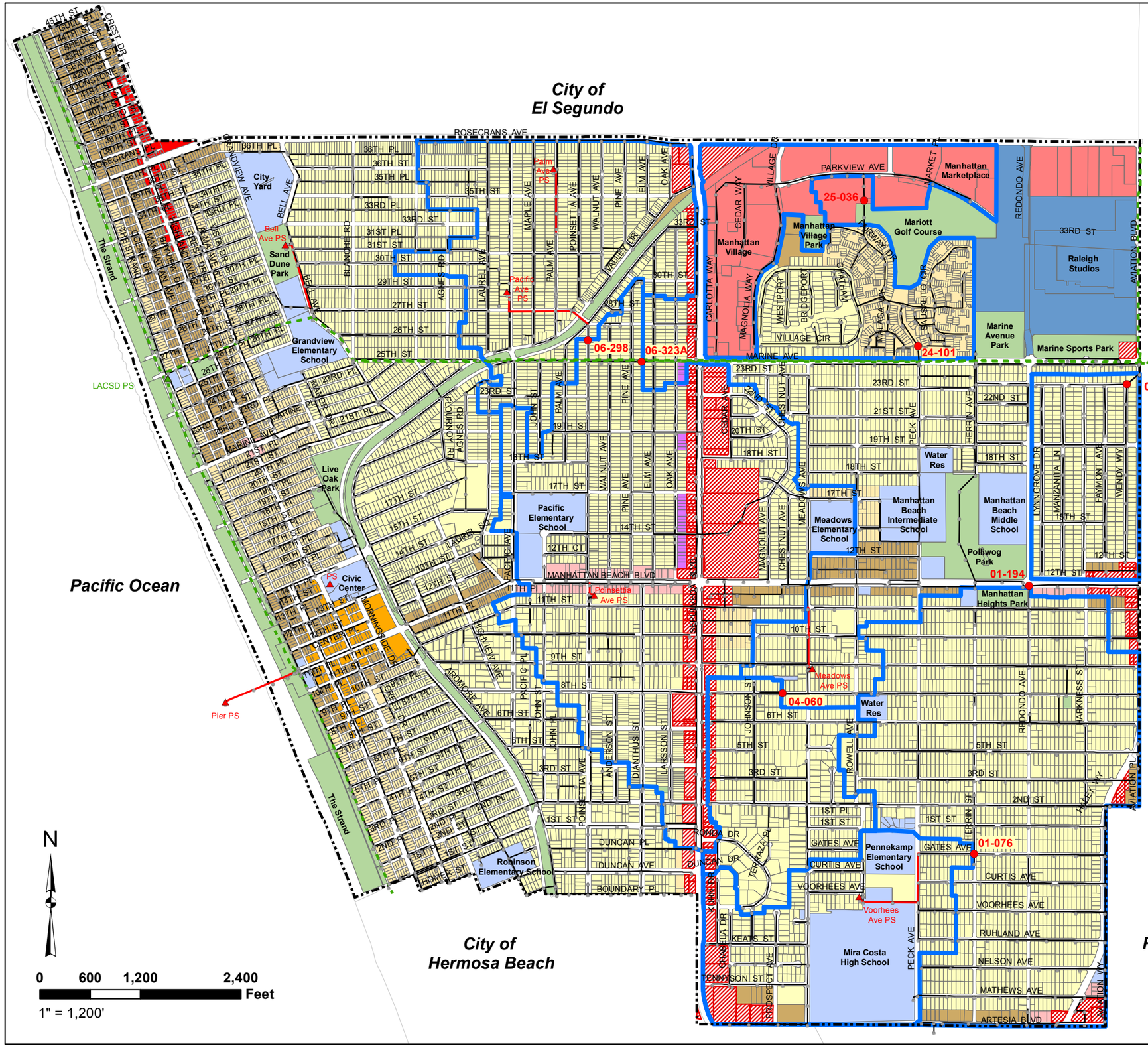
Collection system design standards include minimum pipe size, minimum flow velocity, and depth of flow to pipe diameter ratio (d/D). Pump station criteria include the capacity and number of pumps, wet well and force main sizes, redundancy, emergency power, remote monitoring capabilities, as well as safety and regulatory agency requirements. Finally, facility useful lives are needed for adequately scheduling replacement of the aging infrastructure.

4-2 FLOW MONITORING

Data collection and review is essential in developing unit flow factors, calibrating the system model, and estimating the ultimate average day and peak flows.

A temporary flow monitoring study was conducted by ADS Environmental Services from December 21, 2008 to March 14, 2009 at eight locations. The selected flow monitoring locations and a summary of the results are shown on Figure 4-1 and in Table 4-1. The measured flows are graphically depicted on Figure 4-2. Detailed flow monitoring data can be found in Appendix 1.

The flow monitoring sites were strategically selected to aid in the development of unit flow factors and calibration of the model. Sites were selected in an attempt to get a good sampling of data across the study area. At the same time, the areas tributary to each site must generate depths of flow large enough to develop accurate wastewater flows.



CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

Flow Monitoring Locations

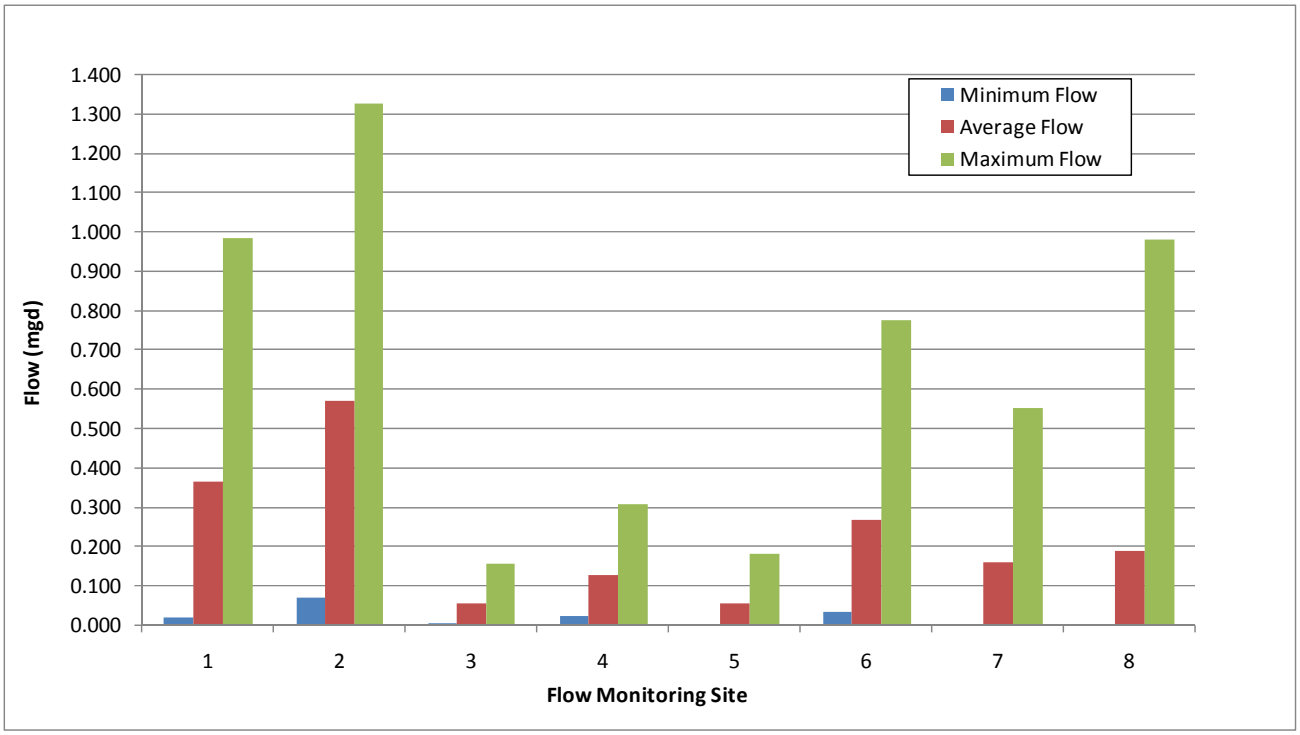
PROJECT NO: 1640901.10
DATE: September 2009

Figure 4-1

Table 4-1
Flow Monitoring Results

Site ID	Pipe ID	Manhole ID	Location	Pipe Size (in)	Reason	Gross Area (Ac)	Depth (in)			Velocity (ft/s)			Flow (mgd)		
							Min	Ave	Max	Min	Ave	Max	Min	Ave	Max
1	01194-01195	01-194	Redondo Ave and Manhattan Beach Blvd	18	Unit Flow Factor	422	1.8	3.9	5.9	0.3	1.9	3.4	0.017	0.367	0.987
2	06311-06323A	06-323A	Marine Ave between Pine Ave and Elm Ave	18	Calibration	516	1.9	4.7	7.2	0.9	2.2	3.3	0.071	0.572	1.329
3	04059-04060	04-060	8th St between Johnson St and Meadows Ave	12	Unit Flow Factor	92	1.1	2.2	3.5	0.2	0.8	1.3	0.006	0.057	0.159
4	25035-25036	25-036	On the easement west of Parkview Ave, between Park Way and Village Dr	12	Unit Flow Factor	86	1.3	2.4	3.9	0.8	1.7	3.1	0.024	0.128	0.308
5	02051-02052	02-051	On the easement between intersection of Wendy Way & 23rd St and Aviation Blvd	8	Unit Flow Factor	70	0.2	2.3	4.1	0.3	0.9	1.8	0.001	0.057	0.182
6	24100-24101	24-101	Marine Ave and Gateway Dr	15	Unit Flow Factor	81	1.6	3.4	5.7	0.5	1.9	3.1	0.033	0.270	0.777
7	01073-01076	01-076	Gates Ave and Herrin St	8	D/S of Voorhees PS Forcemain & Unit Flow Factor	118	0.4	2.8	5.9	0.1	1.9	4.6	0.001	0.163	0.553
8	06297-06298	06-298	Poinsettia Ave and Marine Ave; downstrem of Pacific Pump Station	8	D/S of Pacific PS Forcemain & Unit Flow Factor	172	0.2	1.3	3.2	1.1	5.9	11.6	0.002	0.190	0.982

Figure 4-2
Measured Flow Data



4-3 UNIT FLOW FACTORS

Unit flow factors utilized in this study were developed based upon the existing land uses obtained from the City's GIS, and results of the flow monitoring studies discussed in Sub-section 4-2. Water use records, aerial photographs and field reviews supplemented this information.

The average daily flow recorded at each flow monitoring site was utilized in determining calibrated existing unit flow factors for each land use, which are shown in Table 4-2. The flow factors were developed in units of gallons per day per acre.

Table 4-2
Unit Flow Factors

Land Use Description		Unit Flow Factor (gpd/ac)
Downtown Commercial	DC	1,500
General Commercial	GC	1,500
High Density Residential - District 1 & 2	HDR	3,000
High Density Residential - District 3 & 4	HDR3	4,200
Industrial	IND	2,000
Local Commercial	LC	1,500
Low Density Residential - District 1	LDR1	1,100
Low Density Residential - District 2	LDR2	1,400
Low Density Residential - District 3	LDR3	3,800
Medium Density Residential - District 1	MDR1	1,400
Medium Density Residential - District 2	MDR2	1,600
Medium Density Residential - District 3	MDR3	4,000
Mixed-Use Commercial	MUC	1,500
Manhattan Village	MV	1,600
North End Commercial	NEC	1,500
Parks/Open Space	OS	200
Public Facilities	PF	1,200

4-4 PEAKING FACTORS

Peak Dry Weather

The wastewater unit flow factors discussed in Sub-section 4-3 are used to generate average dry weather flows (ADWF) entering the collection system. However, the adequacy of a sewage collection system is based upon its ability to convey the peak flows. At any point in the system, peak dry weather flow (PDWF) is estimated by converting the total average flow upstream of the point in question to peak dry weather flow by an empirical peak-to-average relationship.

The peaking formula commonly used in sewerage studies is of the following form:

$$PDWF = a \times ADWF^{b}$$

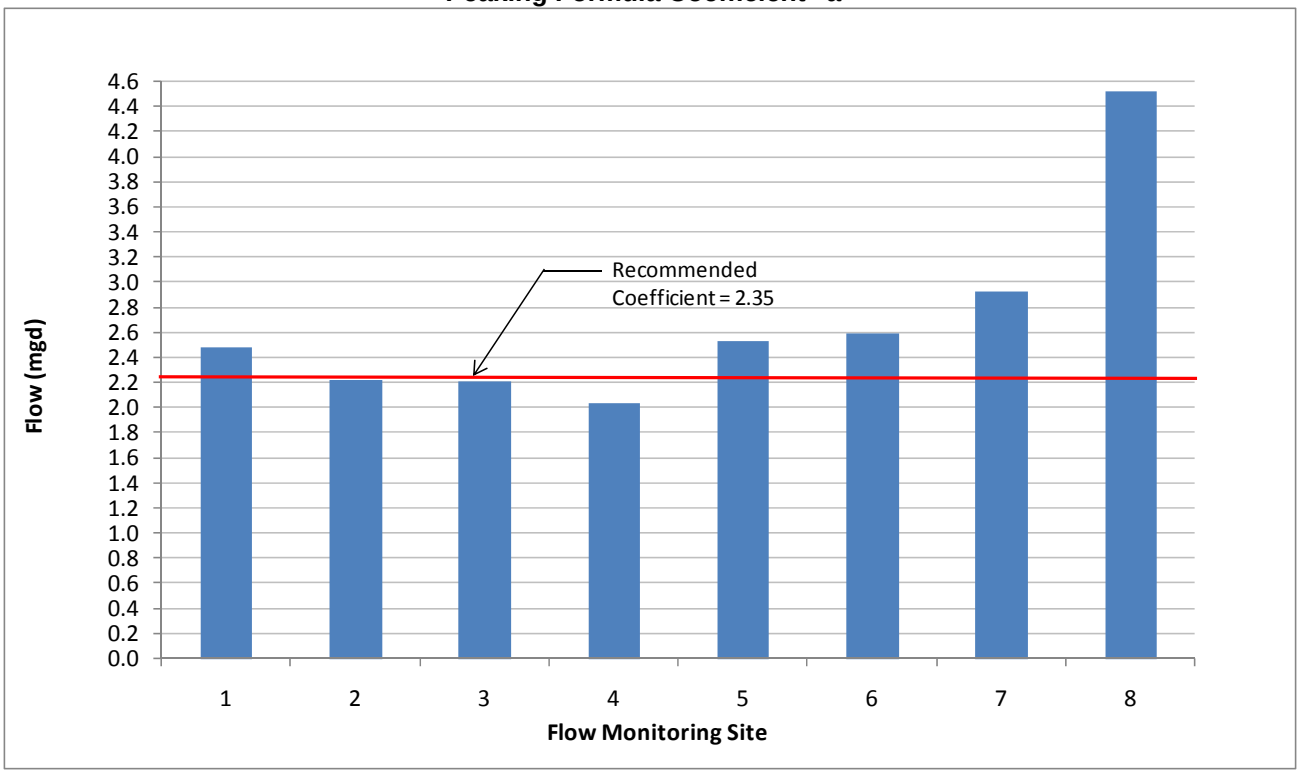
where PDWF = Peak Dry Weather Flow
ADWF = Average Dry Weather Flow
a, b = Peaking Formula Coefficients

The temporary flow monitoring data was reviewed to develop peaking relationships at each site. As expected, these relationships varied from site to site depending upon the makeup and size of the tributary land use. Coefficient "b" is typically found to be in the range of 0.91 to 0.92 based on empirical studies. Using a coefficient "b" of 0.92, the resulting coefficient "a" can be calculated from the measured flow data. The calculated coefficient "a" for each flow monitoring site is shown graphically on Figure 4-3.

The following peaking relationship was selected for this study:

$$PDWF\ (mgd) = 2.35 \times ADWF\ (mgd)^{0.92}$$

Figure 4-3
Peaking Formula Coefficient "a"



It should be noted that Site 7 and Site 8 were located downstream of a sewer pump station force main discharge location. The peaking coefficients are believed to be unusually high and were therefore not incorporated into the development of the recommended coefficient.

Peak Wet Weather

The peak wet weather flow (PWWF) has two components: peak dry weather flow (PDWF) and rainfall dependent inflow/infiltration (I/I) as expressed by the following equation:

$$PWWF = PDWF + I/I$$

Inflow and infiltration is discussed further in Sub-section 4-5.

Although the flow monitoring effort for this study covered the normal wet weather period, significant precipitation did not occur to develop what would be considered peak wet weather flows. Until wet weather flow data can be collected, it is recommended that the peak wet weather flow be estimated as the following:

Peak Wet Weather Flow (PWWF) = 1.35 x Peak Dry Weather Flow (PDWF)

Although the PWWF/PDWF factor of 1.35 may not cover all situations, it is not reasonable or feasible to design the sewer system to carry the flows that would result from the use of a larger ratio. Instead, it is recommended that the City concentrate on projects such as replacing manhole covers, installing plugs in manhole covers, and replacing or relining cracked pipes to reduce inflow and infiltration.

4-5 INFLOW AND INFILTRATION

Inflow is the surface water that typically gains entry to the sewer system through perforated or unsealed manhole covers during rainfall events. Infiltration is defined as water entering the collection system from the ground through defective pipes, pipe joint connections, or manhole walls. The sewer system design capacity must include allowances for these extraneous flow components, which inevitably become a part of the total flow. The amount of inflow and infiltration (I/I) that enters the system typically depends upon the availability, adequacy, and location of the storm water drainage facilities; age and condition of structures; materials and methods of construction; the location of the groundwater table; and the characteristics of the soil. In the absence of flow monitoring data, many regulating agencies utilize commonly accepted practices for estimating I/I. For example, I/I is often estimated based on the diameter and length of pipeline (100 to 400 gpd/ in. dia/ mile) or as a percentage of the peak flow or pipeline capacity.

AKM's experience from other master planning studies and review of limited flow monitoring information available during severe rainfall events indicate that the peak wet weather flow can vary from 110 percent of peak dry weather flows in steeper areas with adequate drainage facilities, to over 200 percent of peak dry weather flows in flat areas that lack significant drainage facilities.

For this study, extraneous flow due to inflow and infiltration is included in the peak wet weather flow formula described in Subsection 4-4. If better data becomes available subsequently for specific areas, the analysis should be updated based upon that information.

4-6 SEWER DESIGN CRITERIA

Design criteria are established to ensure that the wastewater collection system can operate effectively under all flow conditions. Each pipe segment must be capable of carrying peak wet weather flows in the hydraulically stable zone of the pipe. Low flows must be conveyed at a velocity that will prevent solids from settling and blocking the system.

The design capacity of a gravity pipeline is the calculated capacity of the pipeline based on the Manning formula:

$$\mathbf{Q = 1.486\ A\ R^{2/3}\ S^{1/2} / n}$$

where, **Q** = flow in cubic feet per second
R = hydraulic radius in feet = A / P
A = cross-sectional area of flow in the pipe in square feet
P = wetted perimeter in feet
S = slope of pipe in feet of rise per foot of length
n = Manning's friction factor

Sewer system capacity is established using a Manning's friction factor of 0.013 for vitrified clay pipe.

The design and analysis of sewer pipes is typically based upon the depth to diameter ratio (d/D). In this study, **existing** pipes are considered capacity deficient if the d/D is above 0.64 at peak dry weather flows. This d/D ratio was arrived at by taking 75 percent of a pipe's maximum stable flow capacity, which is at a d/D of 0.82. The area above a d/D of 0.82 is considered hydraulically unstable. This provides capacity for 25 percent of peak dry weather flow for inflow and infiltration. Calculated capacity deficiencies should be verified through flow monitoring prior to replacing facilities.

The extra pipeline capacity allows for the possibility that actual wastewater flows may be slightly higher than anticipated, especially during the hours when instantaneous or intermittent peaks may occur. These peaks are generally observed between the hours of 6:00 a.m. and 9:00 a.m. and 7:00 p.m. and 9:00 p.m. during weekdays and somewhat later in the morning hours during weekends in the predominantly residential areas. They may also be observed during rainfall events due to inflow and infiltration. Additionally, the area above the water surface helps to keep the sewage aerated, reducing the possibility of septic conditions and odors.

For **new construction**, the design and analysis of gravity sewer pipes should be based on the following depth to diameter ratios:

- Pipes **12-inches and smaller** in diameter shall be designed to flow at a maximum **d/D of 0.50** under peak dry weather flows
- Pipes **15-inches and greater** in diameter shall be designed to flow at a maximum **d/D of 0.64** under peak dry weather flows
- For either group, the depth of flow to diameter ratio shall not exceed 0.82 with peak wet weather flows

At a minimum, all pipes should be 8 inches or larger in diameter and the velocity of flow in the pipe should be greater than 2 feet per second at average dry weather flow (ADWF). This velocity will prevent deposition of solids in the sewer and help to resuspend any materials that may have already settled in the pipe. The minimum corresponding slopes for various pipe sizes are shown in Table 4-3.

Table 4-3
Minimum Sewer Sizes

Sewer Size	2 ft/s Velocity Slope
8"	0.0057
10"	0.0042
12"	0.0033
15"	0.0019
18"	0.0014
21"	0.0011
24"	0.0008
27"	0.0008
30"	0.0007
33"	0.0006
36" & larger	0.0005

It is important to note that the slopes listed above assume the depth of flow in the pipe is 50 or 64 percent full. If there is insufficient flow to create this condition, greater slopes than those shown may be required.

The peak flow velocity should be less than 10 feet per second in vitrified clay pipe and 5 feet per second in poly vinyl chloride (PVC) pipe.

4-7 PUMP STATION DESIGN CRITERIA

It is desirable to develop a sewer collection system with as few pump stations as possible due to the associated cost and maintenance required. Pump stations must be designed to be reliable, and sized with

sufficient capacity. They must contain redundant equipment, an emergency power supply, bypass pumping capability, sufficient wet well storage, and be able to notify the appropriate personnel in the event of failure.

The primary components of a typical pump station are the wet well, motors, valves, dry well, pumps, ventilation, electrical, controls and the force main. The following general criteria are recommended.

The wet well stores the incoming wastewater until a pump is activated to discharge it to a gravity facility for further conveyance. It should be designed with sufficient capacity to prevent short cycles whereby the pumps frequently start and stop, yet small enough that it will regularly evacuate sewage from the wet well to prevent the wastewater from becoming septic. Generally, the desired number of pump cycles should be limited to no more that 6 per hour for motors up to 10 horsepower. Motors up to 75 horsepower should start no more than 4 times per hour. Larger motors should cycle less frequently. Pump stations should also have sufficient volume to store sewage in the event of mechanical or electrical failures, until the City can respond to the failure and prevent overflows. The necessary emergency storage is dependent upon how rapidly the City can respond to a failure and mitigate it. A minimum emergency storage of 30 minutes at peak wet weather flow should be provided.

The pumps should be sized to efficiently handle the peak wet weather flows. A minimum of two pumps sized at the peak wet weather flow to the station should be provided so that sufficient standby capacity is available when one pump is removed for repairs or experiences a mechanical failure. The pumps should be able to pass a minimum solid size of 3 inches without clogging. The shafts, seals and impellers should be constructed of wear resistant material to provide long life. Tungsten Carbide seals, Ni-Hard impellers, and 316 stainless steel pump shafts are recommended. For services where aggressive agents may be found in the sewage, such as at golf courses, complete stainless steel construction is recommended. This includes the pump bowl, shaft, impeller, and motor housing.

The dry well houses the valves, pumps, motors and electrical equipment and controls. It must be well ventilated and provide unobstructed access to all equipment. A minimum 3-foot clearance from all obstructions should be provided. Greater clearances may be required for equipment with special maintenance needs. Provisions for equipment removal including hatches, large door openings, and hoists should also be provided.

The force mains should be selected to operate within a 3 feet per second to 5 feet per second velocity range, but should not be smaller than 4-inches in diameter.

While submersible pump stations may be utilized for the small flows, the larger pump stations should be the wet well/dry well type. They should be designed with easy access to all equipment. The National Electric Code classifies the wet wells of wastewater pumping stations as Class I, Group D, Division 1 facilities if ventilated at less than 12 air changes per hour, and Division 2 if continuously ventilated at 12 or more air changes per hour. Dry wells, which are physically separated from wet wells, if ventilated at less than 12 air changes per hour, are classified as Class I, Group D, Division 2 locations. Wet wells, and under certain circumstances dry wells, are considered confined spaces and should be entered in accordance with the corresponding requirements of Occupational Safety and Health Administration (OSHA).

All pump stations should incorporate redundant control systems for operation of the pumps. A float system should be used as a backup for a primary control system that utilizes an ultrasonic device or a bubbler system for level measurement and pump operation.

Telemetry equipment which includes a telephone dialer as a minimum, must be provided at all sewer pump stations. When an alarm or failed condition occurs, the dialer calls pre-programmed telephone numbers in sequence until the call is acknowledged, indicating response will be provided by City staff. If the alarm or failed condition is not corrected within a set time, the dialer will call the pre-programmed numbers again. The dialer can also be used to remotely check the status of the station if desired. A summary of sewer system design criteria is listed in Table 4-4.

Table 4-4
Sewer System Criteria

Collection System	
Minimum Pipe Size	8-inch
Minimum Velocity	2.0 ft/sec at average flow 3.0 ft/sec at peak dry weather flow
Pipe Depth to Diameter Ratio for *Existing Pipes*	0.64 for all pipe sizes at peak dry weather flow 0.82 for all pipe sizes at peak wet weather flow
Pipe Depth to Diameter Ratio for *New Construction*	0.50 for pipes 12-inches and smaller at peak dry weather flow 0.64 for pipes 15-inches and larger at peak dry weather flow 0.82 for all pipe sizes at peak wet weather flow
Pump Stations	
Pumps	▪ Minimum 2 each sized at peak wet weather flow ▪ Minimum solids handling capacity 3"
Wet Wells	▪ Sized to limit pump cycling to less than 4 to 6 times/hr ▪ Provide sufficient storage at peak wet weather flow to allow response to a failure ▪ Equipment to be maintained must be accessible without entering structure
Ventilation	▪ 12 -air changes/hour minimum in dry well and as required by NFPA 820 ▪ 30-air changes/hour minimum in wet well if not operated continuously ▪ 12-air changes/hour minimum in wet well if operated continuously
Controls	Redundant system. Float operated back-up controls.
Emergency Power	Stationary source with automatic transfer switch
Telemetry	Dialer system at all pump stations to alert personnel in the event of a station failure.
Force Mains	▪ Minimum velocity 3.0 ft/sec, maximum velocity 5 ft/sec. ▪ Minimum size 4" ▪ Air/Vacs installed in vaults ▪ Plumb Air/Vac piping back to wet well to avoid discharges of raw sewage to vaults

4-8 SERVICE LIFE OF PIPE AND LIFT STATION EQUIPMENT

In addition to the design criteria discussed in previous sections, the useful lives for which one can expect relatively trouble-free service is also of great importance when assessing an existing or future sewer system. Once the service life of a facility is exceeded, it becomes subject to failure and is often expensive to maintain. The determination of useful life can be difficult and depends on many different considerations including the following:

- Type of materials used and recorded performance of similar installations
- Velocities and flow rates expected in the system
- Chemical and biological conditions of the wastewater
- Construction methods and installation

The values listed in Table 4-5 are generally accepted as prudent planning criteria and are used as benchmarks for replacement recommendations in this study.

Table 4-5
Planning Criteria for Facility Useful Life

Facility	Description	Useful Life (Years)
Gravity Sewers:	Cast Iron Pipe (CIP)	20
	Plastic Pipe	65
	Vitrified Clay Pipe (VCP)	75
Force Mains:	Asbestos-Cement Pipe (ACP)	40
	Ductile Iron Pipe (DIP)	40
	Plastic Pipe	30
Pump Stations:	Structure	60
	Piping	30
	Valving	20
	Mechanical	15
	Electrical	15

4-9 CRITERIA FOR SPECIFIC PLANS AND DEVELOPMENT SUBAREAS

Each party wishing to pursue development of a tract or area within the City's study area shall develop a Sub-Area Master Plan (SAMP). The developer's plans for providing adequate sewer service to all users within the proposed development, how the local sewer system will connect to the backbone and regional system, and the impact of the proposed development to the downstream facilities (starting at the local system and extending to the regional system) shall be fully described in the SAMP. The local sub-area sewers shall meet the sewer design criteria provided in this document and the City Standard Drawings for Sewer Construction. At a minimum, sewage flow calculations shall be based upon the unit flow factors described in Section 4-3, or

higher factors if specific conditions require it. A typical Sub-Area Sewer Master Plan Report shall include, but not be limited to the following:

- Map showing project boundaries and drainage areas
- Detailed land use description and map
- Average dry weather, peak dry weather, and peak wet weather flow calculations
- Exhibit showing all proposed sewer facilities and connections to the downstream regional system
- Phasing of development and wastewater flows
- Hydraulic calculations for phased and fully developed ultimate conditions, from the development to the regional system, meeting all sewer design criteria

Appendix 5 – Wastewater Master Plan – Section 6, Existing Pump Stations

SECTION 6

EXISTING PUMP STATIONS

6-1 GENERAL DESCRIPTION

The City of Manhattan Beach owns and operates eight (8) pump stations to lift wastewater from the lower lying areas to the local or the regional gravity systems. Table 6-1 provides general information on each pump station and Figure 6-1 shows the locations of the pump stations and their associated tributary areas and force mains. Description and planning level evaluation of each pump station are included in this section.

6-2 BELL AVENUE PUMP STATION

Location and Tributary Area

Bell Avenue Pump Station is a wet well-dry well type facility located on the east side of Bell Avenue between 31st Street and 31st Place. Access to the pump station, shown on Photograph 6-1, is through an access hatch above the dry well. The pump station was originally constructed in 1938. It was improved to its current condition in 1997.

Bell Avenue Pump Station serves a 78 acre tributary area consisting mostly of low density residential land use, with a small number of high density residential and public recreation areas. The tributary area, shown on Figure 6-2, is generally located between 27th Street and Rosecrans Avenue, east of Grandview Avenue and west of Agnes Road. The tributary land use categories are shown in Table 6-2.



Photograph 6-1 Bell Avenue Pump Station Access

Table 6-1
Pump Stations

General Pump Station Information											Pump Specifications					Motor Specifications			Estimated Flows		
Pump Station	Location	Date of Cons.	Plan No.	Area Served (Acres)	Force Main Dia (in)	Force Main Length (ft)	Force Main Material	Type	Wet Well Dimensions	Generator Set	Number of Pumps	Pump Mfg	Pump Type	Pump Model	Estimated Flow Capacity (gpm)	RPM	Phase	HP	ADWF (gpm)	PDWF (gpm)	PWWF (gpm)
Bell Avenue	Bell Ave between 31st St and 31st Pl	1938	S-60 S-150 S-230	78	6	900	CIP	Wetwell/ Drywell	12' x 9.5' x ~7'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3102	263	1750	3	5	70	198	278
Palm Avenue	Palm Ave south of Rosecrans Ave	1953	S-149 S-230	39	6	775	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	174	1740	3	10	38	114	159
Pacific Avenue	Pacific Ave south of 31st St	1953	S-149	103	6	1,225	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	304	1740	3	10	98	269	376
Poinsettia Avenue	Poinsettia Ave south of Manhattan Beach Blvd	1949	S-227 S-145	25	4	163	CIP	Wetwell/ Drywell	18.6 ft^2 x 6'-10"	Diesel Fueled	2	Flygt	submersible, non-clog	CT3102	136	NA	3	NA	19	60	85
Meadows Avenue	Meadows Ave south of 9th St	1953	S-148 S-230	99	6	730	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	304	1740	3	10	77	216	303
Voorhees Avenue	Voorhees Ave at Rowell Ave	1953	S-148 S-230	103	6	1,321	CIP	Wetwell/ Drywell	10' x 4' x ~11.5'	Diesel Fueled	2	Flygt	submersible, non-clog	CT3127	227	1740	3	10	90	250	350
Civic Center	Highland Ave south of 15th St	1992	-	Civic Center Bulding	-	-	-	Submersible	-	-	2	-	-	-	-	-	-	-	-	-	-
Pier	End of Manhattan Beach Pier	1992	-	Pier Restaurant	4	-	CIP	Submersible	4' x 4' x 4'	-	2	-	submersible	-	-	-	-	3	-	-	-

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsettia Ave PS

Pier PS

Meadows Ave PS

Voorhees Ave PS

N

0 600 1,200 2,400 Feet

1" = 1,200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Bell Pump Station Tributary Area
- Meadows Pump Station Tributary Area
- Pacific Pump Station Tributary Area
- Palm Pump Station Tributary Area
- Poinsettia Pump Station Tributary Area
- Voorhees Pump Station Tributary Area

AKM

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2009

Pump Station Tributary Areas

Figure 6-1

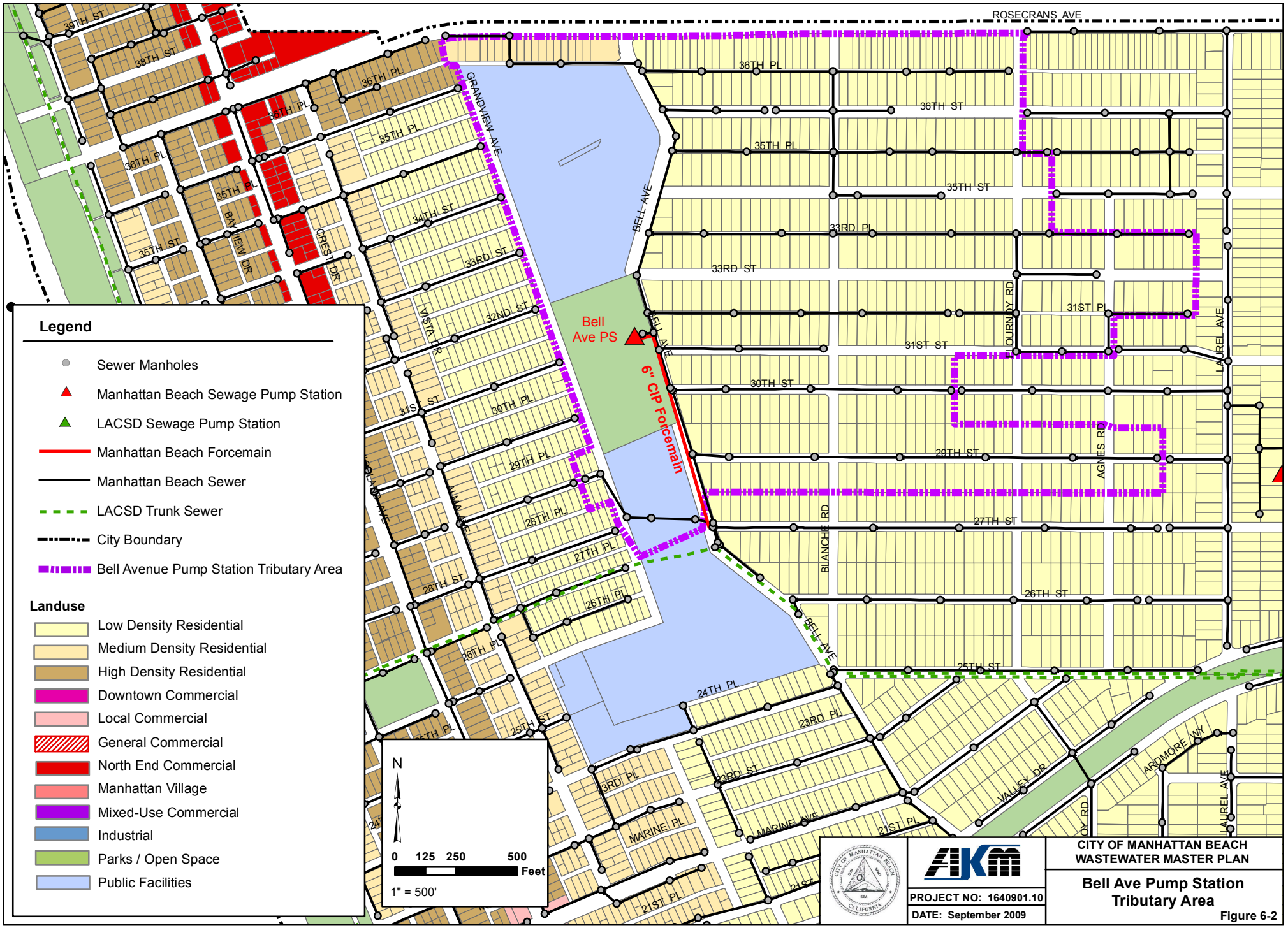

Legend
Sewer Manholes
Manhattan Beach Sewage Pump Station
LACSD Sewage Pump Station
Manhattan Beach Forcemain
Manhattan Beach Sewer
LACSD Trunk Sewer
City Boundary
Bell Avenue Pump Station Tributary Area
Landuse
Low Density Residential
Medium Density Residential
High Density Residential
Downtown Commercial
Local Commercial
General Commercial
North End Commercial
Manhattan Village
Mixed-Use Commercial
Industrial
Parks / Open Space
Public Facilities
Bell Ave PS
6" CIP Forcemain
ROSECRANS AVE
BELL AVE
GRANDVIEW AVE
LAUREL AVE
BLANCHE RD
AGNES RD
LOURNOY RD
VALLEY DR
ARDMORE WY
MARINE AVE
MARINE PL
39TH ST
38TH ST
36TH PL
36TH ST
35TH PL
35TH ST
34TH ST
33RD PL
33RD ST
32ND ST
31ST PL
31ST ST
30TH ST
30TH PL
29TH PL
29TH ST
28TH ST
27TH PL
27TH ST
26TH PL
26TH ST
25TH ST
24TH PL
23RD PL
21ST PL
BAYVIEW DR
CREST DR
VISTA DR
ALMA AVE
N
0 125 250 500 Feet
1" = 500'
CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN
Bell Ave Pump Station
Tributary Area
PROJECT NO: 1640901.10
DATE: September 2009
Figure 6-2

Table 6-2
Bell Avenue Pump Station Tributary Land Uses

Land Use Description	Number of Parcels	Total Area (ac)
Low Density Residential	487	56.7
Medium Density Residential	16	1.3
High Density Residential	3	0.3
Parks / Open Space	1	5.2
Public Facilities	3	14.7
Total	**510**	**78.2**

Influent Sewer

The wastewater generated within the tributary area is conveyed to the pump station wet well by two gravity sewers. A 10-inch sewer on Bell Avenue brings flows from the south and an 8-inch sewer on Bell Avenue conveys flows from the north. They then confluence into one 10-inch sewer that enters the wet well from the east with an invert elevation of 53.80 feet.

Wet Well

The existing wet well (Photograph 6-2) is a 12'-0" long and 9'-6" feet wide rectangular unlined reinforced concrete structure, located directly south of the dry well. Access to the wet well is through a 17" x 24" square hatch at ground level.

The bottom elevation of the wet well is 51.44 feet amsl. A fillet starting at elevation 52.53 feet amsl along the southerly wall slopes to elevation 51.44 feet amsl towards the northerly wall over 9 feet. 6-inch pump suction pipes exit the wet well with an invert elevation of 51.91 feet amsl and extend about 20 inches north where they enter the dry well.



Photograph 6-2 Bell Avenue Pump Station Wet Well

Significant exposed aggregate indicates concrete corrosion due to hydrogen sulfide generated by the wastewater. A basket is located below the influent pipe at the wet well to intercept rags and other debris/non-dispersible material. City maintenance crews visit the pump station twice a week (Monday & Friday) to clean out the debris from the basket.

The wet well has 512 gallons of operational storage between the pump start and stop levels, which indicates maximum cycling of 7 to 8 times per hour. Since the pump start level is the same as the influent sewer invert elevation, Bell Avenue Pump Station has no emergency storage.

Dry Well

The dry well is a 9'-0" long and 9'-6" wide rectangular reinforced concrete structure located north of the wet well. Its top slab is at elevation 65.80 feet amsl. The bottom elevation of the dry well is at 51.03 feet amsl. The pumps are located 2'-6" and 5'-4" from the easterly wall. The floor slopes towards the southwest corner of the dry well where a sump pump is located. The sump pump conveys any leakage and wash water back to the wet well through a 1-¼" discharge pipe. Access to the dry well is through a 5'-0" x 2'-6" rectangular hatch at ground level and stairs.

Suction Piping

The suction pipes extend through the wet well wall, and connect to 6-inch isolation pinch valves in the dry well. Then they connect to a spool and a 6" x 4" reducer before terminating at the suction elbow of the pumps.

Discharge Piping

The discharge piping for each pump starts at the discharge nozzle with a 6" x 4" flanged 90 degree reducing bend and a 6-inch swing check valve in the vertical run, followed by a 6-inch isolation pinch valve, a spool extending up with a flexible coupling, and a 6-inch 90 degree elbow that connects to the 6-inch discharge header. The discharge header (Photograph 6-3) exits the dry well through the easterly wall toward Bell Avenue.



Photograph 6-3 Bell Avenue Pump Station Discharge Header

Forcemain

The forcemain is a 6-inch cast iron pipe. It conveys the sewage from an average wet well elevation of 52.68 feet amsl to a discharge elevation of 68.00 feet amsl. The forcemain turns south on Bell Avenue and discharges to a City sewer manhole at the intersection of Bell Avenue and 27th Street. The downstream sewer is an 8-inch VCP extending further south on Bell Avenue. The total length of the forcemain is about 900 feet. It was constructed in 1938.

Based on the existing pump capacity of 263 gpm, the forcemain velocity is 3.0 fps, which is within the recommended velocity range of 3 to 5 fps.



Photograph 6-4 Bell Avenue Pump Station Pumps

Pumps

Bell Avenue Pump Station has two (2) FLYGT wastewater pumps (Model CT3102) with non-clog impellers. One of the pumps is shown on Photograph 6-4. The pumps are driven by 5 HP motors.

The existing pump capacity based on SCADA information from April 6, 2009 is approximately 263 gpm. The pumps start 4 to 6 times per hour during morning peak hours (5:00 am – 9:00 am).

Electrical and Controls

The Bell Avenue Pump Station is powered by a 100 amp, 460 volt, 3 phase, 3 wire service. The pump station operation is controlled by the wet well water level, which is determined by an ultrasonic level sensor. The pumps alternate and start when the level rises to about 2.4 feet above the wet well floor and stop when the level drops to about 1.8 feet above the wet well floor.



Photograph 6-5 Bell Avenue Pump Station Control Panel

Tributary Flows

The average dry weather flow calculated by land use and unit flow factors is 70 gpm. The associated peak dry weather flow and peak wet weather flow are 198 gpm and 278 gpm, respectively. The peak dry weather flow based on the April 6, 2009 SCADA information is approximately 160 gpm.

Recommendations

The existing pump capacity is approximately 265 gpm, based upon SCADA data and wet well dimensions. Therefore, the firm pumping capacity is somewhat lower than the estimated peak wet weather flow of 278 gpm. Because the pump station has no emergency storage, the existing pumps should be replaced with 300 gpm capacity pumps.

Emergency storage of 8,400 gallons, as well as operating volume of 1,150 gallons should be provided. This may require the construction of a new station with a lower bottom elevation, and incorporation of the existing structure into emergency storage, which would provide approximately 3,400 gallons.

The forcemain should be replaced with a new 6-inch pipe when the pump station is improved.

6-3 PALM AVENUE PUMP STATION

Location and Tributary Area

Palm Avenue Pump Station is a wet well-dry well facility located at 3529 Palm Avenue south of Rosecrans Avenue. Access to the pump station, shown on Photograph 6-6, is through a hatch above the dry well, on the westerly sidewalk of Palm Avenue. The pump station was originally constructed in 1953. It was improved to its current condition in 1997.



Photograph 6-6 Palm Avenue Pump Station Access

Palm Avenue Pump Station serves a 39 acre tributary area consisting of low density residential and general commercial land uses. The tributary

area is illustrated on Figure 6-3. The tributary land use categories are shown in Table 6-3.

Table 6-3
Palm Avenue Pump Station Tributary Land Uses

Land Use Description	Number of Parcels	Total Area (ac)
Low Density Residential	335	38.2
General Commercial	2	1.2
Total	**337**	**39.4**

Influent Sewer

The wastewater generated within the tributary area is conveyed to the pump station wet well by two 8-inch gravity sewers, one from the south, and another from the north. They confluence at a manhole just east of the pump station, and enter the wet well as 10-inch sewer with an invert elevation of 81.90 feet amsl.

Wet Well

The existing wet well (Photograph 6-7) is a 10'-0" long and 4'-0" wide rectangular unlined reinforced concrete structure, located directly east of the dry well. Access to the wet well is through a 30-inch diameter manhole on Palm Avenue at street level.



Photograph 6-7 Palm Avenue Pump Station Wet Well

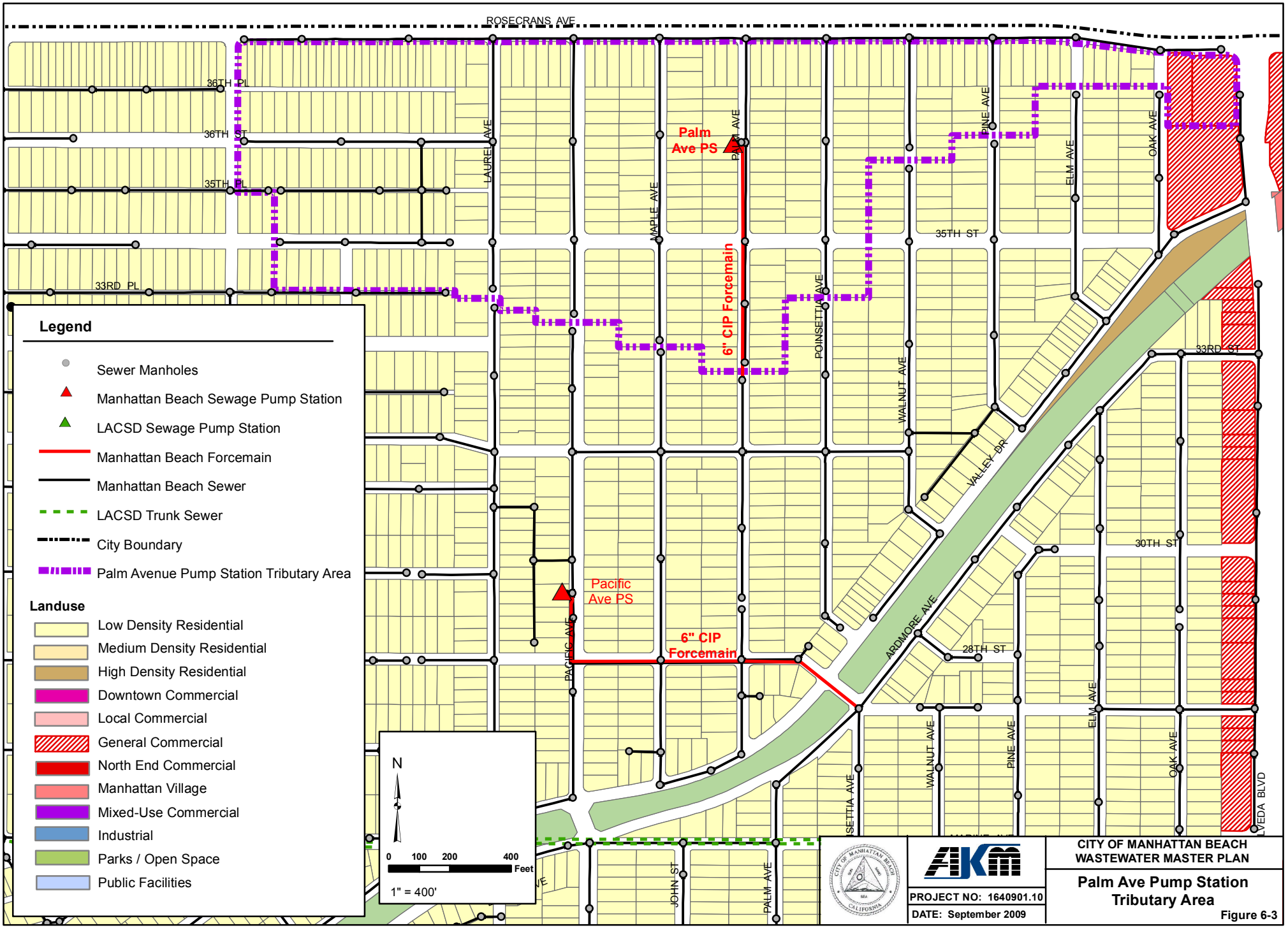
The bottom elevation of the wet well is 78.10 feet amsl at the westerly wall. Two 6-inch suction pipes extend through the wet well wall into the dry well with invert elevations of 78.10 feet amsl.

Significant exposed aggregate indicates concrete corrosion due to hydrogen sulfide generated by the wastewater. There is a basket at the terminus of the influent pipe to intercept rags and other debris/non-dispersible material. City maintenance crew visits the pump station twice a week (Monday & Friday) to clean out the rags from the basket.

The wet well has 226 gallons of operational storage between the pump start level (2.66 ft above wet well floor) and stop level (1.91 ft above wet well floor). Emergency storage available is 344 gallons. Currently wet well has only 2.1 minutes of emergency storage during peak wet weather flow of 159 gpm.

Dry Well

The dry well is a 10'-6" long and 10'-0" wide rectangular reinforced concrete structure located to the west of the wet well. Its top slab is at elevation 90.62 feet amsl. The bottom elevation of the dry well is at 76.97 feet amsl. The pumps are located 3'-0" and 7'-0" from the southerly wall. The floor slopes towards the middle of the easterly wall of the dry well where the sump pump is located. The sump pump conveys any leakage and wash water back to the wet well through a 1- ¼" discharge pipe. Access to the dry well is through a 30" x 60" rectangular hatch, located at ground level on the westerly sidewalk of Palm Avenue. A ladder leads down to each of the two levels of the dry well.


ROSECRANS AVE
36TH PL
36TH ST
35TH PL
33RD PL
LAUREL AVE
MAPLE AVE
PALM AVE
PINE AVE
ELM AVE
OAK AVE
35TH ST
POINSETTIA AVE
WALNUT AVE
33RD ST
VALLEY DR
30TH ST
ARDMORE AVE
28TH ST
PACIFIC AVE
JOHN ST
Palm Ave PS
6" CIP Forcemain
Pacific Ave PS
6" CIP Forcemain
Legend
Sewer Manholes
Manhattan Beach Sewage Pump Station
LACSD Sewage Pump Station
Manhattan Beach Forcemain
Manhattan Beach Sewer
LACSD Trunk Sewer
City Boundary
Palm Avenue Pump Station Tributary Area
Landuse
Low Density Residential
Medium Density Residential
High Density Residential
Downtown Commercial
Local Commercial
General Commercial
North End Commercial
Manhattan Village
Mixed-Use Commercial
Industrial
Parks / Open Space
Public Facilities
N
0 100 200 400
Feet
1" = 400'
CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN
Palm Ave Pump Station
Tributary Area
PROJECT NO: 1640901.10
DATE: September 2009
Figure 6-3

Suction Piping

The suction pipes start at the wet well bottom, extend through the wet well wall and connect to 6-inch isolation pinch valves. Then they connect to a spool before terminating at the suction elbow of the pump.

Discharge Piping

The discharge piping for each pump starts at the discharge nozzle with a 6-inch flanged 90 degree bend and a 6-inch swing check valve in the vertical run, followed by a 6-inch isolation pinch valve, a spool extending up, a flexible coupling, and a 6-inch 90 degree elbow that connects to the 6-inch discharge header. The discharge header (Photograph 6-8) exits the dry well through the southerly wall.



Photograph 6-8 Palm Avenue Pump Station Discharge Header

Forcemain

The forcemain is a 6-inch cast iron pipe. It conveys the sewage from an average wet well elevation of 79.02 feet amsl to a discharge elevation of 118.42 feet amsl. The forcemain exits the dry well through the southerly wall of the pump station, follows Palm Avenue south and discharges to a City sewer manhole on Palm Avenue, north of 31st Street. The total length of the forcemain is 775 feet. It was constructed in 1953.

Based on the existing pump capacity of 174 gpm, the forcemain velocity is 2.0 fps, which is less than the recommended velocity range of 3 to 5 fps.



Photograph 6-9 Palm Avenue Pump Station Control Panel

Pumps

Palm Avenue Pump Station has two (2) FLYGT wastewater pumps (Model CT3127) with non-clog impellers. They are driven by 10 HP motors. The existing pump capacities are 167 gpm and 181 gpm, based on SCADA information from April 6, 2009. The existing firm capacity of 167 gpm is greater than the estimated peak wet weather flow of 159 gpm. The pumps start 5 to 8 times per hour during morning peak hours (5:00 am – 9:00 am).

Electrical and Controls

The Palm Avenue Pump Station is powered by a 100 amp, 460 volt, 3 phase, 3 wire service. The pump station operation is controlled by the wet well

water level, which is determined by an ultrasonic level sensor. The pumps alternate and start when the level rises to about 2.6 to 2.8 feet above the wet well floor and stop when the level drops to about 1.8 to 2.1 feet above the wet well floor.

A 25 kVA diesel generator (Photograph 6-10) is located at the bottom level of the dry well adjacent the pumps.



Photograph 6-10 Palm Avenue Pump Station Generator

Tributary Flows

The average dry weather flow calculated by land use and unit flow factors is 38 gpm. The associated peak dry weather and peak wet weather flows are 114 gpm and 159 gpm, respectively. The peak dry weather flow based on the April 6, 2009 SCADA information is approximately 83 gpm.

Recommendations

The existing firm capacity of 167 gpm is greater than the estimated peak wet weather flow of 159 gpm. Therefore, Palm Avenue Pump Station has adequate pumping capacity.

Emergency storage of 4,800 gallons, as well as operating volume of 700 gallons should be provided. This may require the construction of a new station with a lower bottom elevation, and incorporation of the existing structure into emergency storage, which would provide approximately 3,200 gallons.

The forcemain should be replaced with a new 4-inch pipe when the pump station is improved.

6-4 PACIFIC AVENUE PUMP STATION

Location and Tributary Area

Pacific Avenue Pump Station is a wet well-dry well type facility located on Pacific Avenue south of 31st Street. Access to the pump station, shown on Photograph 6-11, is through a access hatch above the dry well on the westerly sidewalk of Pacific Avenue. It was constructed in 1953, and retrofitted in 1997.



Photograph 6-11 Pacific Avenue Pump Station Access

Pacific Avenue Pump Station serves a 103 acre tributary area consisting of low density residential, medium density residential and general commercial land uses. The tributary area is shown on Figure 6-4. The tributary land use categories are shown in Table 6-4.

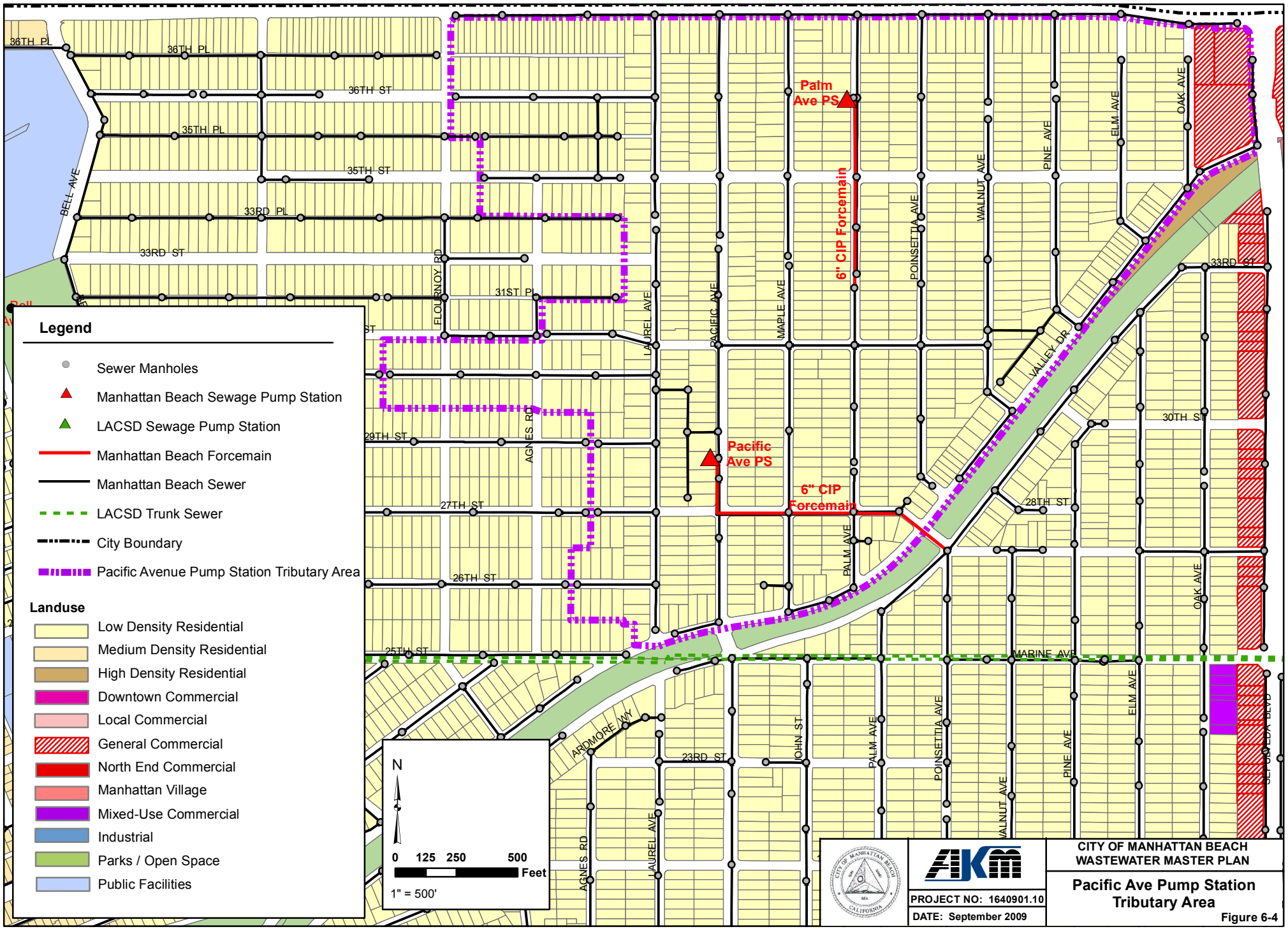

Palm Ave PS
6" CIP Forcemain
Pacific Ave PS
6" CIP Forcemain
Legend
Sewer Manholes
Manhattan Beach Sewage Pump Station
LACSD Sewage Pump Station
Manhattan Beach Forcemain
Manhattan Beach Sewer
LACSD Trunk Sewer
City Boundary
Pacific Avenue Pump Station Tributary Area
Landuse
Low Density Residential
Medium Density Residential
High Density Residential
Downtown Commercial
Local Commercial
General Commercial
North End Commercial
Manhattan Village
Mixed-Use Commercial
Industrial
Parks / Open Space
Public Facilities
N
0 125 250 500 Feet
1" = 500'
36TH PL
36TH ST
35TH PL
35TH ST
33RD PL
33RD ST
31ST PL
29TH ST
27TH ST
26TH ST
25TH ST
23RD ST
30TH ST
28TH ST
BELL AVE
FLOURNOY RD
LAUREL AVE
PACIFIC AVE
MAPLE AVE
POINSETTIA AVE
WALNUT AVE
PINE AVE
ELM AVE
OAK AVE
VALLEY DR
AGNES RD
PALM AVE
JOHN ST
ARDMORE WY
MARINE AVE
SEPULVEDA BLVD
CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN
Pacific Ave Pump Station
Tributary Area
Figure 6-4
PROJECT NO: 1640901.10
DATE: September 2009

Table 6-4
Pacific Avenue Pump Station Tributary Land Uses

Land Use Description	Number of Parcels	Total Area (ac)
Low Density Residential	880	99.4
Medium Density Residential	1	1.0
General Commercial	3	2.8
Total	**884**	**103.2**

Influent Sewer

The wastewater generated within the tributary area is conveyed to the pump station wet well by two 8-inch gravity sewers on Pacific Avenue, one from the south and another from the north. The two sewers confluence at a manhole east of the wet well, and a 10-inch sewer enters the wet well with an invert elevation of 79.66 feet amsl.

Wet Well

The existing wet well (Photograph 6-12) is a 10'-0" long and 4'-0" wide rectangular unlined reinforced concrete structure, located directly east of the dry well. Access to the wet well is through a 30-inch diameter manhole on Pacific Avenue at street level.



Photograph 6-12 Pacific Avenue Pump Station Wet Well

The bottom elevation of the wet well is 73.85 feet amsl at the westerly wall. Two pump suction pipes, 6-inch in diameter, exit the wet well with an invert elevation of 73.85 feet amsl and extend into the dry well.

The wet well has 305 gallons of operational storage between the pump start and stop levels. Pumps cycled 8 to times per hour during the peak flow period of 6:00 am and 8:00 am on April 6, 2009.

Dry Well

The dry well is a 10'-6" long and 10'-0" wide rectangular reinforced concrete structure located to the west of the wet well. Its top slab is at elevation 86.37 feet amsl. The bottom elevation of the dry well is at 72.72 feet amsl. The pumps are located 3'-0" and 7'-0" from the southerly wall. The floor slopes towards the middle of the eastern wall of the dry well where the sump pump is located. The sump pump conveys any leakage and wash water back to the wet well through a 1-¼" discharge pipe. Access to the dry well is through a 30" x 60" rectangular hatch, located at ground level on the westerly sidewalk of Pacific Avenue. A ladder leads down to each of the two levels of the dry.

Suction Piping

The suction pipes start at the wet well, extend through the wet well wall and connect to 6-inch isolation pinch valves in the dry well. Then they connect to a spool before terminating at the suction elbow of the pumps.

Discharge Piping

The discharge piping for each pump starts at the discharge nozzle with a 6-inch flanged 90 degree bend and a 6-inch swing check valve in the vertical run, followed by a 6-inch isolation pinch valve, a spool extending up, a flexible coupling, and a 6-inch 90 degree elbow that connects to the 6-inch discharge header. The discharge header (Photograph 6-13) exits the dry well through the southerly wall.



Photograph 6-13 Pacific Avenue Pump Station Discharge Header

Forcemain

The forcemain is a 6-inch diameter cast iron pipe. It conveys the sewage from an average wet well elevation of 76.78 feet amsl to discharge elevation of 109.23 feet amsl. The forcemain follows Pacific Avenue south for 200 feet, then turns east on 27th Street, and discharges to a City manhole at the intersection of 27th Street and Ardmore Avenue. The total length of the forcemain is 1225 feet. It was constructed in 1953.

Based on the existing average pump capacity of 304 gpm, the forcemain velocity is 3.4 fps, which is within the recommended velocity range of 3 to 5 fps.



Photograph 6-14 Pacific Avenue Pump Station Pumps

Pumps

Pacific Avenue Pump Station has two (2) FLYGT wastewater pumps (Model CT3127) with "non-clog" impellers. One of the pumps is shown on Photograph 6-14. The pumps are driven by 10 HP motors. The existing pump capacities are 291 gpm and 317 gpm, based on SCADA information from April 6, 2009.

Electrical and Controls

The Pacific Avenue Pump Station is powered by a 100 amp, 460 volt, 3 phase, 3 wire service. The pump station operation is controlled by the wet well water level, which is determined by an ultrasonic level sensor. Per SCADA information, the pumps alternate and start when the level rises to about 3.3 feet above the wet well floor and stop when the level drops to about 2.1 feet above the wet well floor.

A diesel fuel generator is located at the bottom level of the dry well.

Tributary Flows

The average dry weather flow calculated by land use and unit flow factors is 98 gpm. The associated peak dry weather and peak wet weather flows are 269 gpm and 376 gpm, respectively. The peak dry weather flow based on the April 6, 2009 SCADA information is approximately 251 gpm.

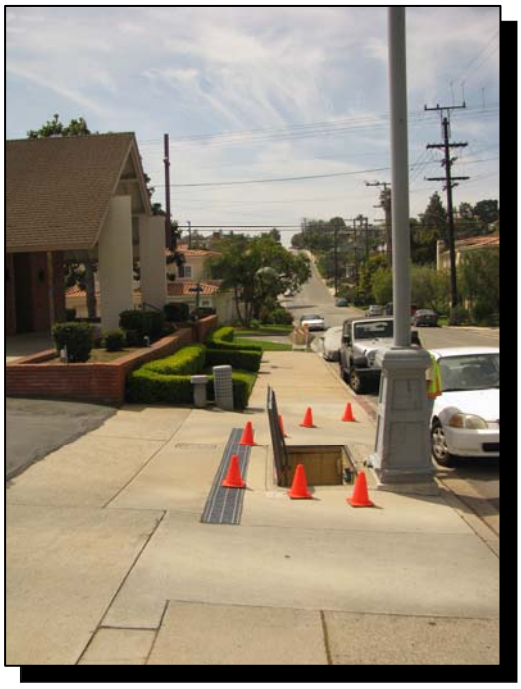
Recommendations

The existing pump capacities are approximately 291 gpm and 317 gpm, based upon SCADA data and wet well dimensions. The firm pumping capacity of 291 gpm is lower than the estimated peak wet weather flow of 376 gpm. The existing pumps should be replaced with 400 gpm capacity pumps.

Emergency storage of 12,000 gallons, as well as operating volume of 1,500 gallons should be provided. This may require the construction of a new station with a lower bottom elevation, and incorporation of the existing structure into emergency storage, which would provide approximately 7,180 gallons.

The forcemain should be replaced with a new 6-inch pipe when the pump station is improved.

6-5 POINSETTIA AVENUE PUMP STATION



Photograph 6-15 Poinsettia Avenue Pump Station Access

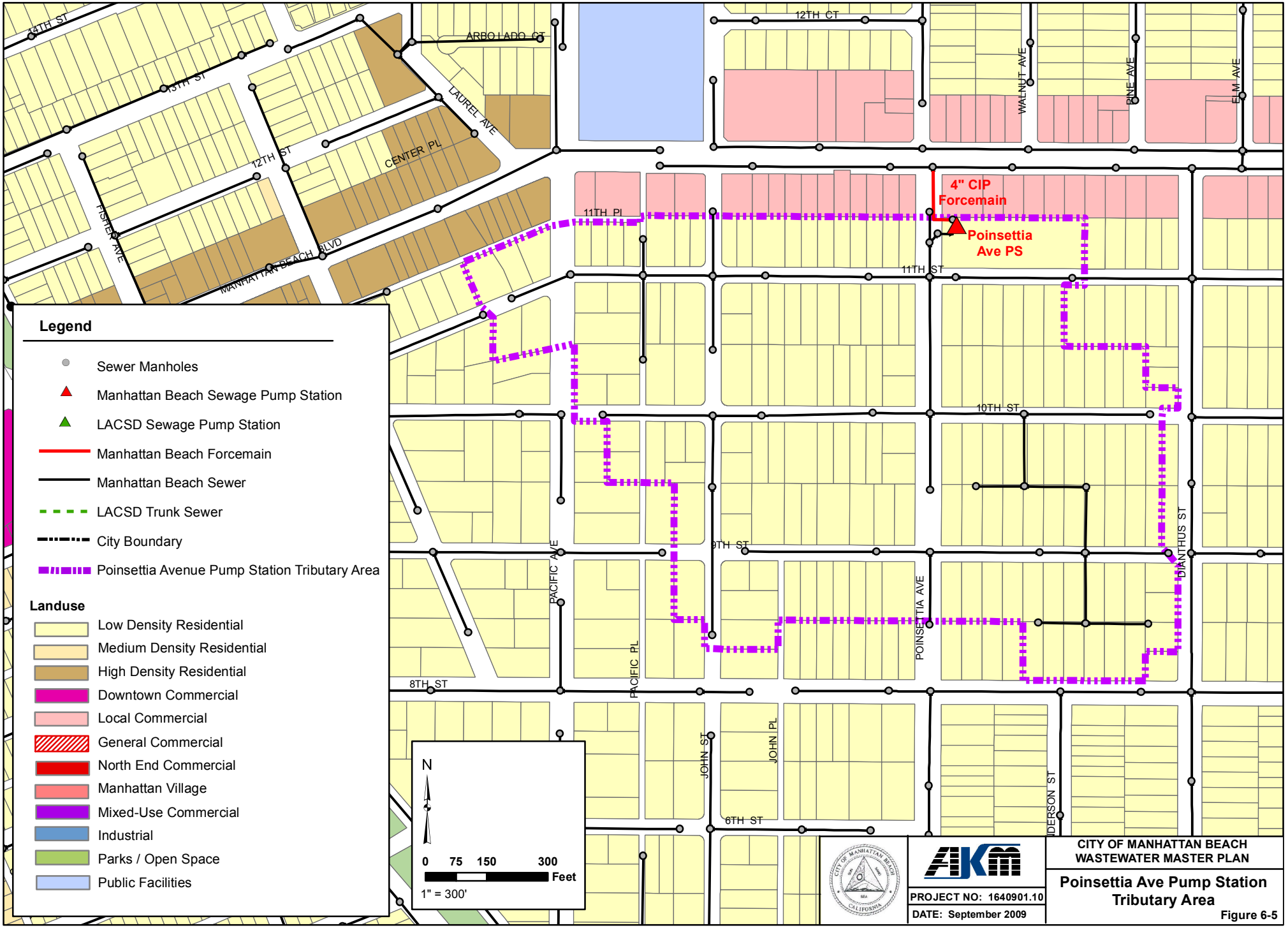
Location and Tributary Area

Poinsettia Avenue Pump Station is a wet well-dry well type facility located on Poinsettia Avenue south of Manhattan Beach Boulevard. Access to the pump station, shown on Photograph 6-15, is through a hatch above the dry well, on the easterly sidewalk of Poinsettia Avenue. The pump station was originally constructed in 1949 and retrofitted in 1995.

Poinsettia Avenue Pump Station serves a 25 acre tributary area consisting of only low density residential land uses. The tributary area of the pump station is shown on Figure 6-5. The details of the tributary area land uses are shown in Table 6-5.

Table 6-5
Poinsettia Avenue Pump Station Tributary Land Uses

Land Use Description	Number of Parcels	Total Area (ac)
Low Density Residential	152	25.3
Total	**152**	**25.3**


14TH ST
13TH ST
12TH ST
ARBOLADO CT
LAUREL AVE
CENTER PL
TISTER AVE
MANHATTAN BEACH BLVD
12TH CT
WALNUT AVE
PINE AVE
ELM AVE
4" CIP Forcemain
Poinsettia Ave PS
11TH PL
11TH ST
10TH ST
9TH ST
8TH ST
6TH ST
PACIFIC AVE
PACIFIC PL
POINSETTIA AVE
MANHATTUS ST
JOHN ST
JOHN PL
IDERSON ST
Legend
Sewer Manholes
Manhattan Beach Sewage Pump Station
LACSD Sewage Pump Station
Manhattan Beach Forcemain
Manhattan Beach Sewer
LACSD Trunk Sewer
City Boundary
Poinsettia Avenue Pump Station Tributary Area
Landuse
Low Density Residential
Medium Density Residential
High Density Residential
Downtown Commercial
Local Commercial
General Commercial
North End Commercial
Manhattan Village
Mixed-Use Commercial
Industrial
Parks / Open Space
Public Facilities
N
0 75 150 300
Feet
1" = 300'
CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN
Poinsettia Ave Pump Station
Tributary Area
PROJECT NO: 1640901.10
DATE: September 2009
Figure 6-5

Influent Sewer

A great majority of the wastewater generated within the tributary area is conveyed to the pump station by an 8-inch sewer on Poinsettia Avenue from the south. A 70 foot section of 8-inch sewer serves the parcels between the pump station and Manhattan Beach Boulevard. The two gravity sewers confluence at a manhole southwesterly of the pump station. The influent 8-inch diameter sewer extends northeasterly, and enters the wet well from the west with an invert elevation of 93 feet amsl.

Wet Well

The pump station is an 11 foot diameter reinforced concrete structure. The existing wet well (Photograph 6-16) is a portion of the pump station structure with cross sectional area of 18.6 square feet. Access to the wet well is through a 24-inch diameter cover located on the floor of the dry well mezzanine level.

The bottom elevation of the wet well is 86.92 feet amsl. Two 4-inch diameter suction start with 90 degree bends and short flanged spools through the north wall of the wet well.



Photograph 6-16 Poinsettia Avenue Pump Station Wet Well

The wet well has 154 gallons of operational storage between the pump start and stop levels, which indicates pump cycling of up to 13 per hour. The pumps cycled about 6 times per hour between 6 am and 9 am on April 6, 2009. The wet well has 394 gallons of emergency storage, which provides 4.7 minutes of storage during the estimated peak wet weather flow of 85 gpm.

Dry Well

The dry well has a mezzanine level, which houses most of the electrical equipment and the standby generator, and a bottom level which contains the pumps. The bottom elevation of the dry well is at 86.92 feet amsl.

Suction Piping

The suction pipes start at the wet well, extend through the wet well wall to 4-inch isolation pinch valves and a spool before terminating at the suction elbow of the pumps.

Discharge Piping

The discharge piping for each pump starts at the discharge nozzle with a 4-inch flanged 90 degree elbow followed by a 4-inch check valve, a 4-inch isolation pinch valve, a spool and a 4-inch flanged 45 degree elbow. The piping for one pump then connects directly into a 4-inch tee that connects to the discharge header. The piping for the second pump requires another 4-inch spool before it connects into the tee.

Forcemain

The forcemain is a 4-inch diameter cast iron pipe. It conveys the sewage from an average wet well elevation of 89.92 feet amsl to a discharge elevation of 111.83 feet amsl. The forcemain exits the dry well through the westerly wall of the pump station, follows Poinsettia Avenue north, and discharges to a City sewer manhole at the intersection of Poinsettia Avenue and Manhattan Beach Boulevard. The total length of the forcemain is about 163 feet. It was constructed in 1949.

Based on the existing pump capacity of 136 gpm, the forcemain velocity is 3.5 fps, which is within the recommended velocity range of 3 to 5 fps.

Pumps

Poinsettia Avenue Pump Station has two (2) FLYGT wastewater pumps (Model CT3102) with "non-clog" impellers. One of the pumps is shown in Photograph 6-17. The pumps are driven by 5 HP motors. The existing pump capacity, based on SCADA information from April 6, 2009, is approximately 136 gpm. The pumps start and stop 5 to 6 times per hour during morning peak hours (6:00 am – 9:00 am).



Photograph 6-17 Poinsettia Avenue Pump Station Pumps

Electrical and Controls

The Poinsettia Avenue Pump Station is powered by a 100 amp, 460 volt, 3 phase, 3 wire service. The pump station operation is controlled by the wet well water level, which is determined by an ultrasonic level sensor. Per SCADA information, the pumps alternate and start when the level rises to about 3.1 to 3.3 feet above the wet well floor and stop when the level drops to about 1.9 to 2.2 feet above the wet well floor.

A diesel generator is located on the mezzanine level of the pump station.



Photograph 6-18 Poinsettia Avenue Pump Station Control Panel

Tributary Flows

The average dry weather flow calculated by land use and unit flow factors is 19 gpm. The associated peak dry weather and peak wet weather flows are 60 gpm and 85 gpm, respectively. The peak dry weather flow based on the April 6, 2009 SCADA information is approximately 48 gpm.

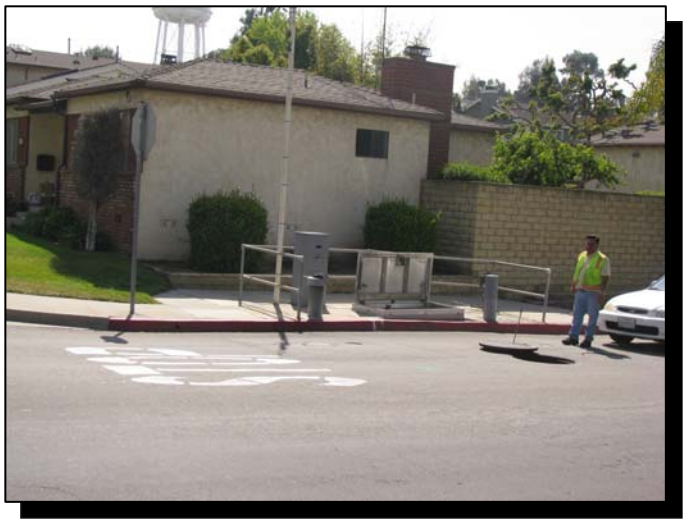
Recommendations

Poinsettia Avenue Pump Station has a very small operational wet well, which may result in the pumps cycling about 14 times per hour, which is excessive. The emergency storage capacity of 394 gallons is much less than that required by the criterion (2,600 gallons). Its location in the driveway of the adjacent school precludes construction of improvements needed to completely eliminate surface water leakage into the dry well. The electrical equipment is old, and does not meet current standards. It has exceeded its useful life. It should be replaced with a new pump station. A new forcemain should be constructed at the same time.

6-6 MEADOWS AVENUE PUMP STATION

Location and Tributary Area

Meadows Avenue Pump Station is a wet well – dry well type facility located on Meadows Avenue south of 9th Street. Access to the pump station, shown on Photograph 6-19, is through a hatch above the dry well, on the easterly sidewalk of Meadows Avenue. The pump station was originally constructed in 1953 and upgraded in 1997.



Photograph 6-19 Meadows Avenue Pump Station Access

Meadows Avenue Pump Station serves a 99 acre tributary area consisting of low density residential, medium density residential, general commercial and public facilities land uses. The tributary area is shown on Figure 6-6. The tributary land use categories are shown in Table 6-6.

Table 6-6
Meadows Avenue Pump Station Tributary Land Uses

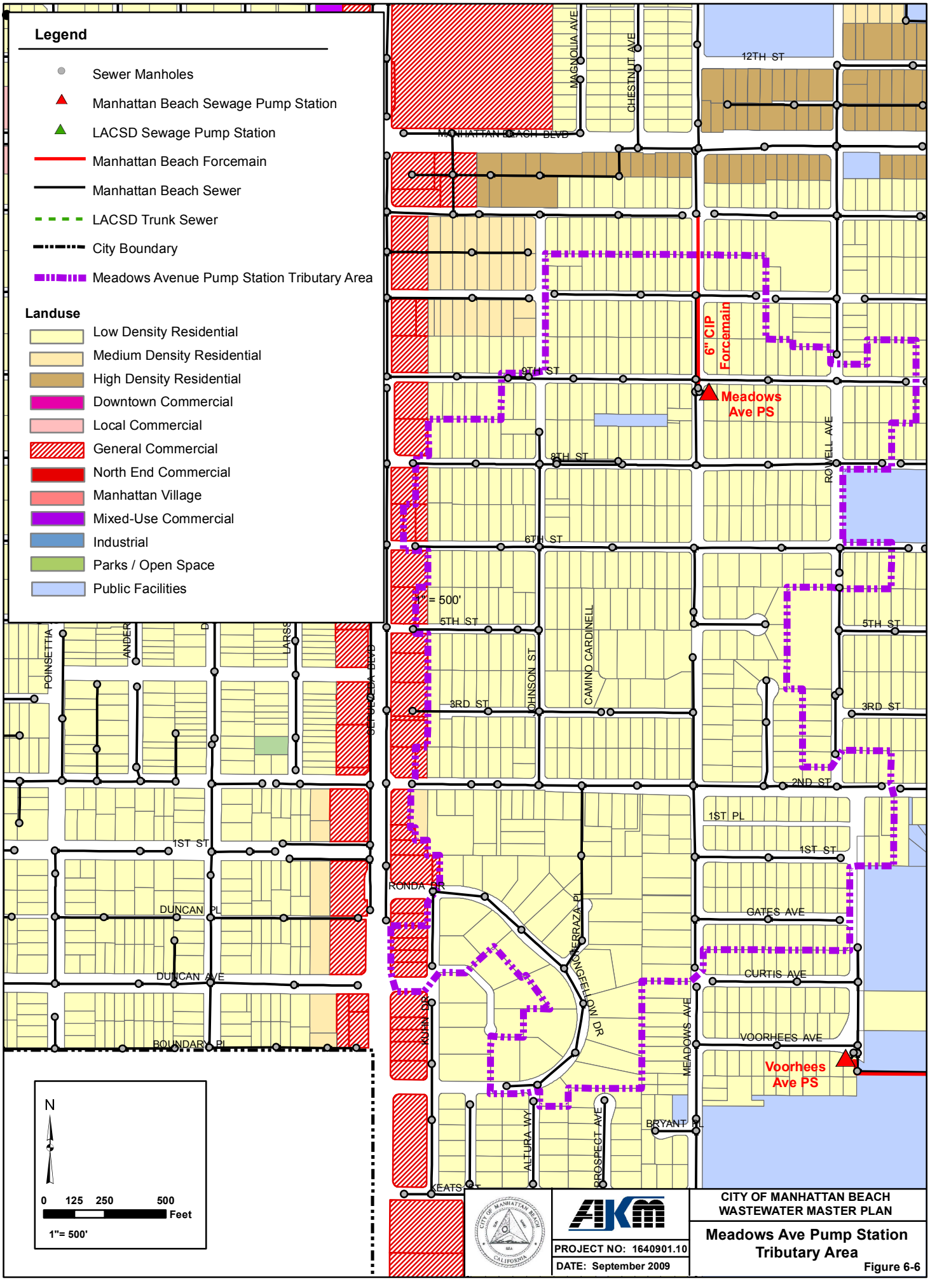
Land Use Description	Number of Parcels	Total Area (ac)
Low Density Residential	492	93.2
Medium Density Residential	1	0.3
General Commercial	20	5.3
Public Facilities	1	0.3
Total	**514**	**99.1**

Influent Sewer

The wastewater generated within the tributary area is conveyed to the pump station wet well by gravity sewers. A 12-inch sewer on Meadows Avenue conveys flows from the south and an 8-inch sewer brings flows from the north. They then combine into one 12-inch sewer that enters the wet well from the west at an elevation of 103.90 ft.

Wet Well

The existing wet well (Photograph 6-20) is a 10'-0" long and 4'-0" wide rectangular unlined reinforced concrete structure, located directly west of the dry well. Access to the wet well is through a 30-inch diameter manhole on Meadows Avenue.



CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

Meadows Ave Pump Station Tributary Area

PROJECT NO: 1640901.10
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Figure 6-6

The bottom elevation of the wet well is 98.98 feet amsl at the westerly wall. Two 6-inch pipes exit the wet well with an invert of 98.98 feet amsl and extend east into the dry well.

The wet well has 300 gallons of operational storage between the pump start and stop levels, which indicates that pumps may cycle up to 19 times per hour. The wet well has 536 gallons of emergency storage, which provides 1.8 minutes of wet weather storage.



Photograph 6-20 Meadows Avenue Pump Station Wet Well

Dry Well

The dry well is a 10'-6" long and 10'-0" wide rectangular reinforced concrete structure located to the east of the wet well. Its top slab is at elevation 111.50 feet amsl. The bottom elevation of the dry well is at 97.85 feet amsl. The pumps are located 3'-0" and 7'-0" from the northerly wall. The floor slopes towards the middle of the westerly wall of the dry well where the sump pump is located. The sump pump conveys any leakage and wash water back to the wet well through a 1-¼" discharge pipe. Access to the dry well is through a 30" x 60" rectangular hatch, located at ground level on the easterly sidewalk of Meadows Avenue. A ladder leads down to each of the two levels of the pump station.

Suction Piping

The suction pipes start at the wet well, extend through the wet well wall and connect to 6-inch isolation pinch valves. Then they connect to 6" x 4" flanged reducers before terminating at the suction elbow of the pumps.



Photograph 6-21 Meadows Avenue Pump Station Discharge Header

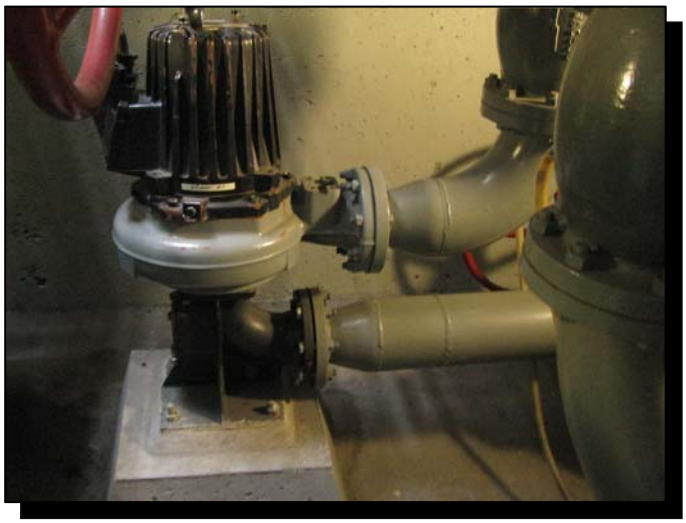
Discharge Piping

The discharge piping for each pump starts at the discharge nozzle with a 6" x 4" flanged 90 degree reducing bend and a 6-inch swing check valve in the vertical run, followed by a 6-inch isolation pinch valve, a spool extending up with a flexible coupling, and a 6-inch flanged 90 degree elbow that connects to the discharge header. The discharge header (Photograph 6-21) exits the dry well through the northerly wall.

Forcemain

The forcemain is a 6-inch cast iron pipe. It conveys the sewage from an average wet well elevation of 101.48 feet amsl to a discharge elevation of 149.17 feet amsl. The forcemain

exits the dry well through the northerly wall, follows Meadows Avenue north and discharges to a City sewer manhole at the intersection of Meadows Avenue and 11th Street. The total length of the forcemain is about 730 feet. It was constructed in 1953.



Photograph 6-22 Meadows Avenue Pump Station Pumps

Pumps

Meadows Avenue Pump Station has two (2) FLYGT wastewater pumps (Model CT3127) with "non-clog" impellers. One of the pumps is shown on Photograph 6-22. The pumps are driven by 10 HP motors. The existing pump capacity, based on SCADA information from April 6, 2009, is approximately 230 gpm. The pumps start 5 to 8 times per hour during morning peak hours (5:00 am – 9:00 am).



Photograph 6-23 Meadows Avenue Pump Station Control Panel

Electrical and Controls

The Meadows Avenue Pump Station is powered by a 100 amp, 460 volt, 3 phase, 3 wire service. The pump station operation is controlled by the wet well water level, which is determined by an ultrasonic level sensor. Per SCADA information, the pumps alternate cycles and start when the level rises to about 3.2 to 3.3 feet above the wet well floor and stop when the level drops to about 2.2 to 2.3 feet above the wet well floor.

A diesel standby generator is located on the bottom level of the pump station adjacent the wastewater pumps.

Tributary Flows

The average dry weather flow calculated by land use and unit flow factors is 77 gpm. The associated peak dry weather and peak wet weather flows are 216 gpm and 303 gpm, respectively. The peak dry weather flow based on the April 6, 2009 SCADA information is approximately 145 gpm.

Recommendations

The existing pump capacities are approximately 291 gpm and 317 gpm, based upon SCADA data and wet well dimensions. The firm pumping capacity of 291 gpm is lower than the estimated peak wet weather flow of 376 gpm. The existing pumps should be replaced with 400 gpm capacity pumps.

Emergency storage of 12,000 gallons, as well as operating volume of 1,500 gallons should be provided. This may require the construction of a new station with a lower bottom elevation, and incorporation of the existing structure into emergency storage, which would provide approximately 7,180 gallons.

The forcemain should be replaced with a new 6-inch pipe when the pump station is improved.

6-7 VOORHEES AVENUE PUMP STATION

Location and Tributary Area

Voorhees Avenue Pump Station is a wet well-dry well type facility located adjacent to the intersection of Voorhees Avenue and Rowell Avenue. Access to the pump station is through a hatch above the drywell. The pump station was originally constructed in 1953 and retrofitted in 1997.

Voorhees Avenue Pump Station serves a 103 acre tributary area consisting of low density residential, high density residential, general commercial and public facilities land uses. The tributary area of the pump station is shown on Figure 6-7. The tributary land use categories are shown in Table 6-7.

Table 6-7
Voorhees Avenue Pump Station Tributary Area

Land Use Description	Number of Parcels	Total Area (ac)
Low Density Residential	227	39.5
High Density Residential	6	3.8
General Commercial	14	11.2
Public Facilities	6	48.7
Total	**253**	**103.2**

Influent Sewer

The wastewater generated within the tributary area is conveyed to the pump station wet well by gravity sewers. An 8-inch sewer brings flows from the north and another 8-inch sewer brings flows from the south. They then combine into one 10-inch sewer that enters the wet well from east at an elevation of 113 feet amsl.



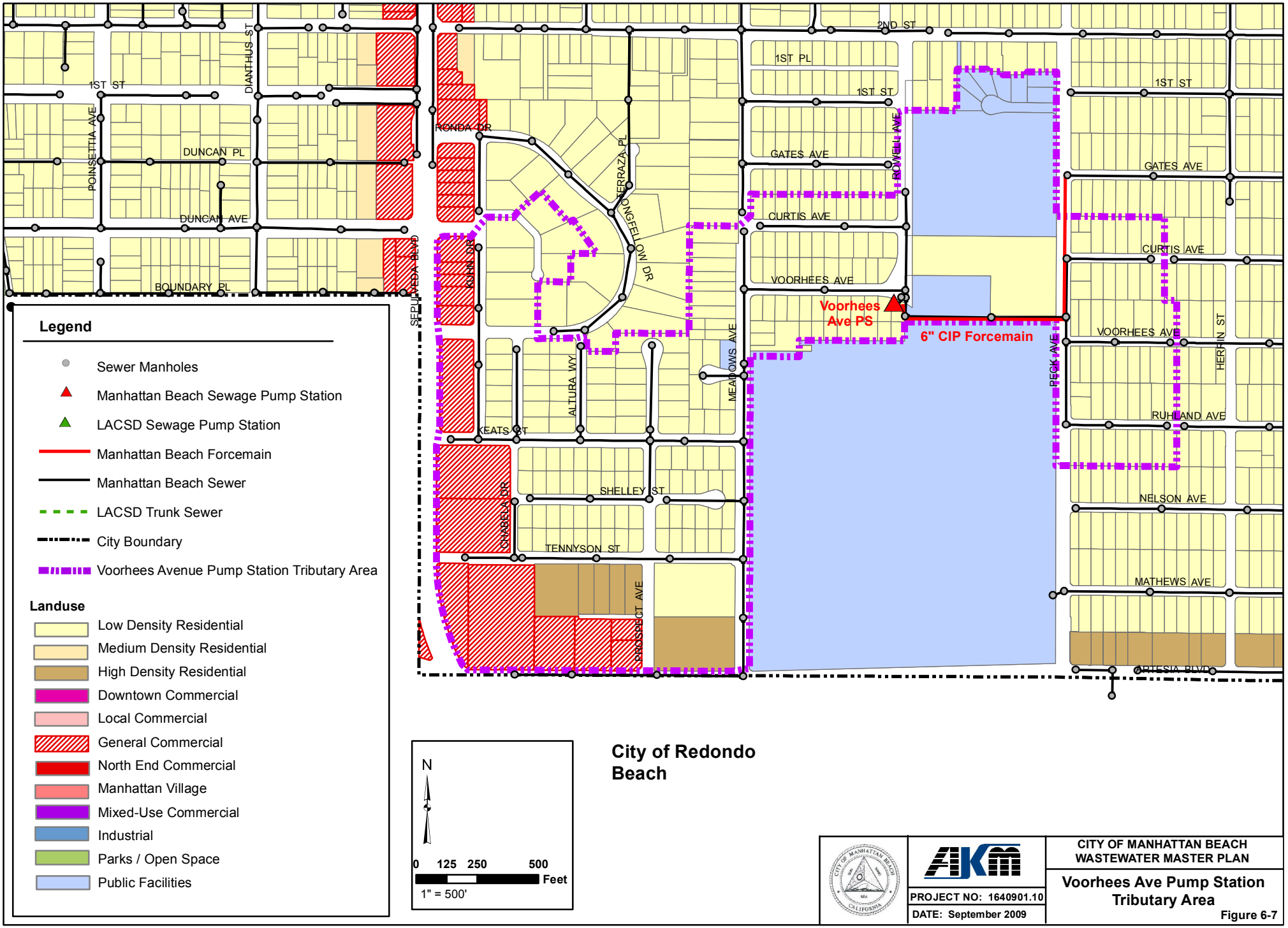
Photograph 6-24 Voorhees Avenue Pump Station Wet Well

Wet Well

The existing wet well (Photograph 6-24) is a 10'-0" long and 4'-0" wide rectangular unlined reinforced concrete structure, located north of the dry well. Access to the wet well is through a 30-inch diameter manhole cover.

The bottom elevation of the wet well is 109.68 feet amsl. Two 6-inch suction pipes exit the wet well with an invert of 109.68 feet amsl and extend into the dry well.

The wet well has 300 gallons of operational storage between the pump start and stop levels, which indicates that the pumps may cycle up to 12 times per hour.



City of Redondo Beach

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

Voorhees Ave Pump Station Tributary Area

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Figure 6-7

Dry Well

The dry well is a 10'-6" long and 10'-0" wide rectangular reinforced concrete structure located to the east of the wet well. Its top slab is at elevation 122.20 feet amsl. The bottom elevation of the dry well is at 108.55 feet amsl. The pumps are located 3'-0" and 7'-0" from the easterly wall. The floor slopes towards the middle of the northerly wall of the dry well where the sump pump is located. The sump pump conveys any leakage and wash water back to the wet well through a 1-¼" discharge pipe. Access to the dry well is through a 30" x 60" rectangular hatch, located at ground level. A ladder leads down to each of the two levels of the pump station.

Suction Piping

The suction pipes start at the wet well 2, extend through the wet well wall and connect to 6-inch isolation pinch valves. Then they connect to 6" x 4" flanged reducers before terminating at the suction elbow of the pumps.



Photograph 6-25 Voorhees Avenue Pump Station Discharge Header

Discharge Piping

The discharge piping for each pump starts at the discharge nozzle with a 6" x 4" flanged 90 degree reducing bend and a 6-inch swing check valve in the vertical run, followed by a 6-inch isolation pinch valve, a spool extending up with a flexible coupling, and a 6-inch flanged 90 degree elbow that connects to the discharge header. The discharge header (Photograph 6-25) exits the dry well through the easterly wall.

Forcemain

The forcemain is a 6-inch cast iron pipe. It conveys the sewage from an average wet well elevation of 110.39 feet to discharge elevation of 153 feet amsl. The forcemain exits the dry well and follows the easement to the south and east towards Peck Avenue. It then turns north on Peck Avenue and discharges at a City manhole located at the intersection of Gates Avenue and Peck Avenue.

Based on the existing pump capacity of 227 gpm, the forcemain velocity is 2.1 fps, which is less than the recommended velocity range of 3 to 5 fps.



Photograph 6-26 Voorhees Avenue Pump Station Pumps

Pumps

Voorhees Avenue Pump Station has two (2) FLYGT wastewater pumps (Model CT3127) with "non-clog" impellers. One of the pumps is shown on Photograph 6-26. The pumps are driven by 10 HP motors. The existing pump capacity,

based on SCADA information from April 6, 2009, is approximately 227 gpm. The pumps start 6 to 8 times per hour during morning peak hours (5:00 am – 9:00 am).

Electrical and Controls

The Voorhees Avenue Pump Station is powered by a 100 amp, 460 volt, 3 phase, 3 wire service. The pump station operation is controlled by the wet well water level, which is determined by an ultrasonic level sensor. Per SCADA information, the pumps alternate and start when the level rises to about 2.6 to 2.7 feet above the wet well floor and stop when the level drops to about 1.6 to 1.7 feet above the wet well floor.

A diesel standby generator is located on the bottom level of the pump station adjacent the wastewater pumps.

Tributary Flows

The average dry weather flow calculated by land use and unit flow factors is 90 gpm. The associated peak dry weather and peak wet weather flows are 250 gpm and 350 gpm, respectively. The peak dry weather flow based on the April 6, 2009 SCADA information is approximately 182 gpm.

Recommendations

The existing pump capacities are approximately 227 gpm. The firm pumping capacity is lower than the estimated peak wet weather flow of 350 gpm. The existing pumps should be replaced with 350 gpm capacity pumps.

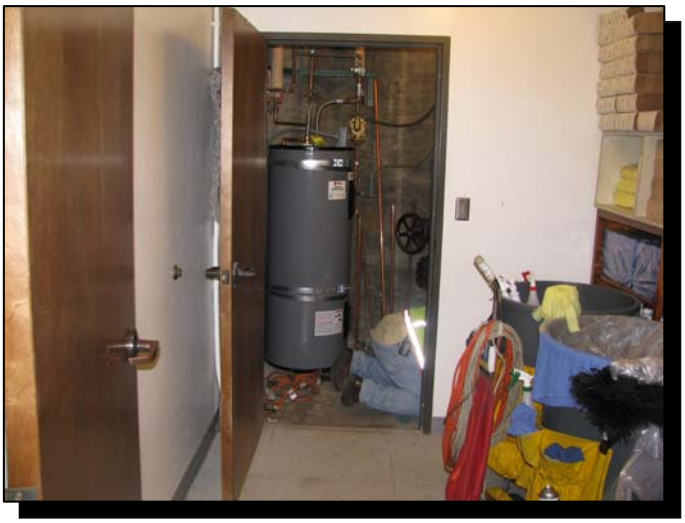
Emergency storage of 10,500 gallons, as well as operating volume of 1,330 gallons should be provided. This may require the construction of a new station with a lower bottom elevation, and incorporation of the existing structure into emergency storage, which would provide approximately 6,000 gallons.

The forcemain should be replaced with a new 6-inch pipe when the pump station is improved.

6-8 CIVIC CENTER PUMP STATION

The Civic Center Pump Station is a submersible station which serves the Civic Center. It is located in a utility room at the bottom level of the Civic Center Building, as shown on Photograph 6-27. The wet well, pumps, and discharge piping are shown on Photographs 6-28 and 6-29.

Record information for the facility could not be located. However, the pump station appears to have ample capacity for its tributary flows.



Photograph 6-27 Civic Center Pump Station Access



Photograph 6-28 Civic Center Pump Station Wet Well



Photograph 6-29 Civic Center Pump Station Pumps

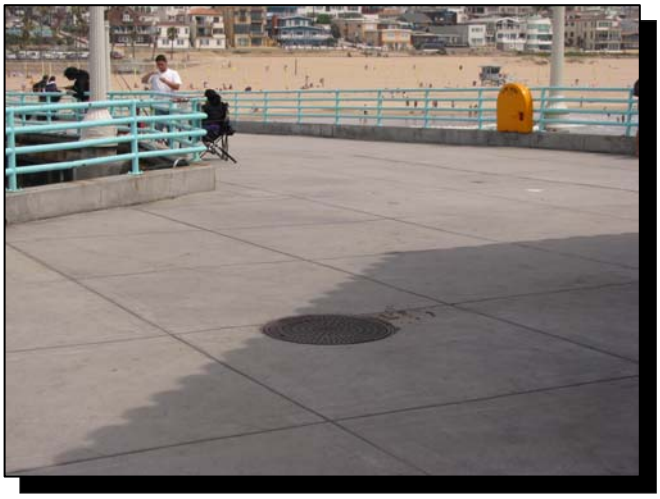
Recommendations

The Civic Center Pump Station is in good condition, and no improvements are necessary at this time.

6-9 PIER PUMP STATION

Location and Tributary Area

The Pier Pump Station is a submersible pump station located at the end of the Manhattan Beach Pier. Access to the pump station, shown on Photograph 6-30, is through manhole cover on the pier. The pump station is approximately 15 years old. The Pier Pump Station serves the restaurant located at the end of the pier.



Photograph 6-30 Pier Pump Station Access



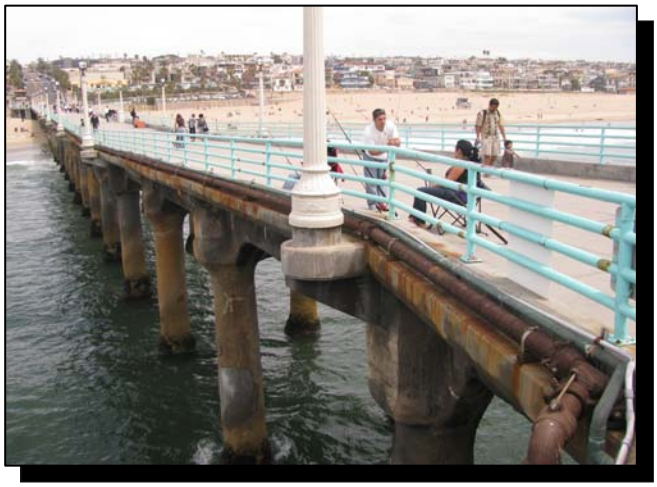
Photograph 6-31 Pier Pump Station Wet Well

Wet Well

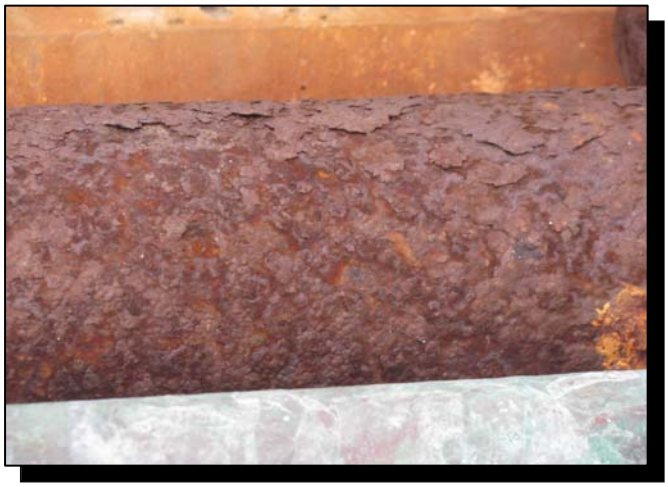
The existing wet well (Photograph 6-31) is a 4'-0" x 4'-0" reinforced concrete vault.

Forcemain

The forcemain/discharge pipe is a 4-inch cast iron pipe along the north side of the Pier. Due to its location, it has experienced significant corrosion, as shown on Photographs 6-32 and 6-33.



Photograph 6-32 Pier Pump Station Force Main



Photograph 6-33 Pier Pump Station Force Main Close-up

Pumps

There are two (2) submersible pumps that are driven by 3 HP motors. While record information is not available, the pumps appear to have ample capacity for the tributary flows.

Recommendations

Due to its significantly deteriorated condition, the force main/discharge pipe should be replaced with a non-corrosive pipe properly protected from the environment.

Appendix 6 – Wastewater Master Plan – Section 7, Hydraulic Model & Collection System Capacity Analysis

SECTION 7

HYDRAULIC MODEL AND COLLECTION SYSTEM CAPACITY ANALYSIS

7-1 GENERAL

To perform a detailed evaluation of the capacity of the sewer collection system, it is convenient to create a mathematical model that is capable of simulating the operating characteristics of the system. The simulations for this study were performed on a Microsoft Windows based computer utilizing software designed for the analysis of sewer systems. The software selected for this study is InfoSewer. It is an ArcGIS-based computer program with the ability to perform steady state analyses of the flows in the sewer system. InfoSewer offers direct ArcGIS integration allowing GIS analysis and hydraulic modeling to exist in a single environment. The program also manages and maintains the database that stores the sewer analysis input and output results. Manning's Equation is used for depth of flow calculations in the gravity sewer pipes.

7-2 GEOMETRIC MODEL

As a part of this Master Plan project, the City's Wastewater GIS was developed. As-built plans were georeferenced and the wastewater facilities were then digitized. Data was collected from the as-built plans and input into the GIS. The developed Wastewater GIS served as the basis of the system geometric model. Data utilized included upstream and downstream manhole invert elevations, pipe sizes and pipe lengths. Design pipe slopes were calculated from the invert elevations and reach lengths.

Inverts for approximately 4.8 percent of the system (99 reaches out of 2,078) were not found through a search of the City's available construction plans. Invert elevations for these reaches were obtained through field surveying. Detailed survey information is provided in Appendix 2.

The hydraulic model includes the entire sewer system that is owned and operated by the City, from the uppermost reaches of the system to its confluence with a Los Angeles County Sanitation District (LACSD) trunk sewer or until the flow exits the City into an adjacent agency facility. Excluded from the model are laterals, private sewers, and any areas within the City that are provided sewer service by other agencies. The pipe information utilized in the model, including size, material, length, and upstream/downstream manhole elevations is listed in Appendix 3.

7-3 LAND USE

The parcel layer, which provides the City's 2003 General Plan land use information, was used as the land use base map. The land uses within the City boundaries are shown on Figure 3-4. Since the City's service area is mostly developed, the hydraulic analyses were conducted assuming fully developed and occupied tributary areas.

7-4 SPLIT MANHOLES AND FLOW PATTERNS

The existing system consists of 16 split manholes (more than one pipe exiting the manhole). Most of the split manholes occur at high points in the system, where the manhole is typically dry. In general, the flows at the split manholes were divided by calculations based on invert elevations, downstream pipes sizes, and downstream slopes at the split manhole.

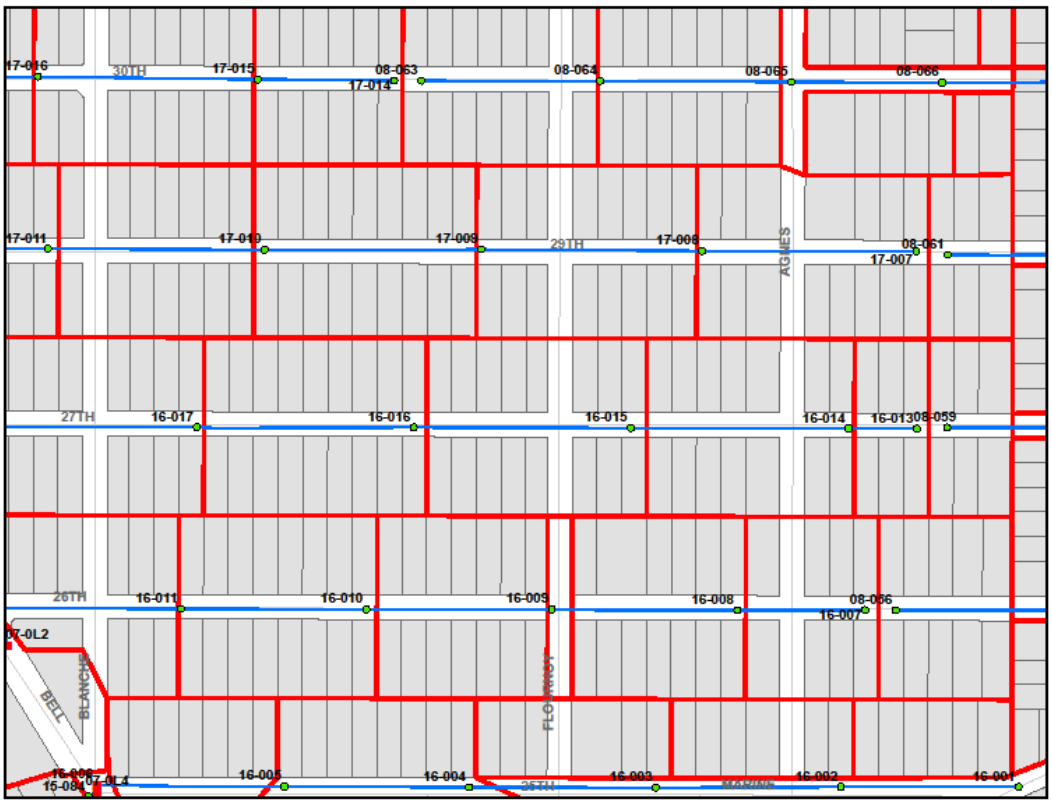
Table 7-1
Flow Split Locations

No.	Manhole ID	Location	Flow Directions from Split Manhole	Comments
1	06-009	Cedar Ave & 16th St	East-West	High Point
2	06-011	Sepulveda Blvd & 17th St	North-South	High Point
3	06-040	Meadows Ave & 12th St	North-South	High Point
4	06-168	Dianthus St & 11th St	East-West	High Point
5	06-193	Pacific Ave & 23rd St	North-South	High Point
6	06-203	Poinsettia Ave & 18th St	North-South	High Point
7	06-225	Pine Ave & 19th St	North-South	High Point
8	06-230	Elm Ave & Marine Ave	North-South	High Point
9	06-245	Palm Ave & 23rd St	North-South	High Point
10	06-277	Sepulveda Blvd & 30th St	North-South	High Point
11	06-287	Elm Ave & 30th St	North-South	High Point
12	10-148	Ingleside Dr & 1st St	South- Southeast	-
13	11-001	19 th St & Ardmore Ave	East-West	High Point
14	16-021	Bell Ave & 27th St	North-Northwest	-
15	17-027	36th Pl & Blanche Rd	East-West	High Point
16	20-059	Manhattan Ave & 24th St	North-West	-

7-5 TRIBUTARY AREAS

Polygons were created around individual sewer manholes to define the tributary area to each manhole. Most manholes have a tributary area assigned to it unless there are multiple manholes in the same area. Approximately 1,530 polygons were created for the existing and ultimate system analysis. A sample area, displaying the tributary area polygons is shown on Figure 7-1.

Figure 7-1
Tributary Area Polygons



7-6 MODEL LOADS

For each tributary area, the existing land uses (discussed in Subsection 3-5) and the developed unit flow factors (see Table 4-2) were utilized to apply the average loads to the hydraulic model.

Peak dry weather flows are calculated in the model by a user defined relationship. The peaking formula used in the City's sewer model is as follows:

$$PDWF\ (cfs) = 2.35 \times ADWF(cfs)^{0.92}$$

7-7 PUMPED FLOWS

There are two separate analysis methods that can be used on the City's sewer collection system to evaluate the effect of pumped flows downstream of the existing 8 pump stations. A description of each of the analysis methods is as follows:

Method 1: The average tributary flow to each pump station was transferred to the manholes located at the discharge end of the respective forcemains. The total average flow was peaked and the downstream sewer depth to diameter ratios were evaluated based on the calculated peak dry weather flows or

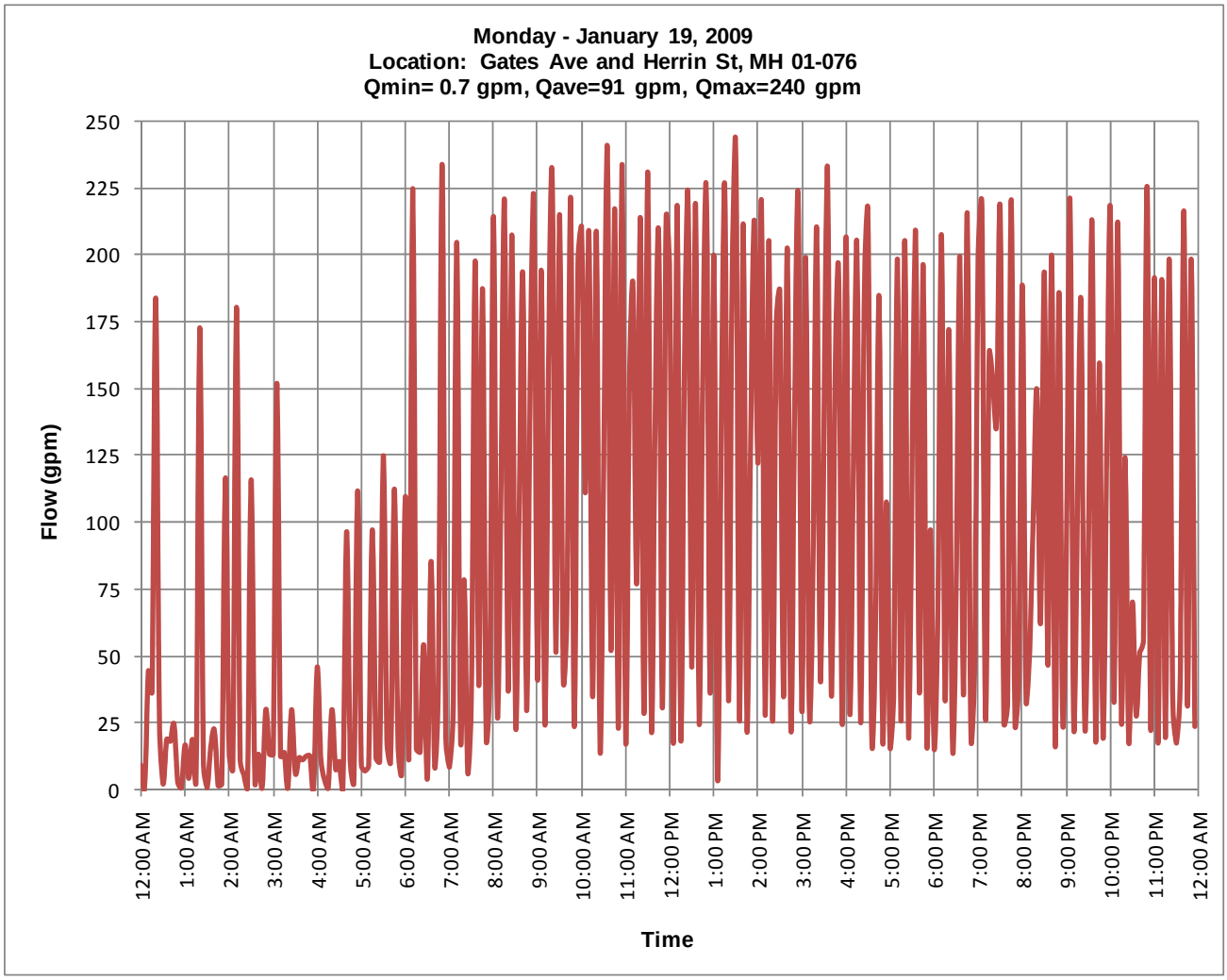
$$Qpdw = (2.35 \times Qadw^{0.92})\ (in\ mgd)$$

Method 2: The pump capacity of each pump station was transferred to the manholes located at the discharge end of the respective forcemains. The pump capacities were not peaked, but added to the peak dry weather flow at each manhole located downstream of the pump station. The downstream sewer depth to diameter ratios were evaluated based on the calculated peak dry weather flows plus the pump capacities (Qpump) or

$$Qpdw = (2.35 \times Qadwf^{0.92}) + Qpump \text{ (in mgd)}$$

Flow monitoring results have shown that pump discharge becomes more and more attenuated the further downstream in the system the monitor is placed. Often times, only the first few reaches located immediately downstream of the discharge point will experience a rush of flow that reflects the pump capacity as displayed on Figure 7-2. In this study, the pump capacity was only considered in the first few reaches downstream of the pump discharge locations. For the pipes located a far distance from the pump discharge point, the calculated peak dry weather flow based on land use and unit flow factors was utilized for analysis (Method 1).

Figure 7-2
Flow Monitoring of 8" Sewer with Influence from Voorhees Pump Station



7-8 HYDRAULIC ANALYSIS RESULTS

At the completion of a modeling run, output data is created for viewing on the screen or for printing. Output data for pipes include flow rate, velocity, full pipe capacity, ratio of flow depth to diameter, and required size of replacement or relief pipes to satisfy the established criterion. Appendix 4 of this Wastewater Master Plan contains the results of hydraulic analyses of the sewer collection system.

The depth to diameter ratio exceeded the established criteria of 0.64 at the following locations:

1. Bell Avenue at 25th Street (Pipe ID 15084-070L4)
   10" diameter sewer with peak d/D>1.00
   No pump station influence

   As-built plans show a slope of 0.00 and a length of 10 feet. The downstream manhole 070L4 is a LACSD manhole. It is recommended that the slope of this sewer be verified.

2. Pacific Avenue north of 27th Street (Pipe ID 08077-08082)
   8" diameter sewer with peak d/D=0.66 with no pump station influence
   8" diameter sewer with peak d/D>1.00 with pump station influence from Palm Avenue PS (see Table 7-2 and description below)

A few reaches downstream of the Poinsettia Avenue Pump Station, Palm Avenue Pump Station, and Bell Avenue Pump Station discharge locations resulted in d/D ratios greater than 0.64 when the pump capacities were implemented (Method 2). These locations are listed in Table 7-2 and shown on Figure 7-3. It is recommended that flow monitoring be conducted in these areas to verify the d/D ratios prior to implementing any replacement projects.

Table 7-2
Pipes with Model Calculated Capacity Deficiencies Downstream of Pump Discharge Points

Pipe ID	U/S MH ID	D/S MH ID	Dia (in)	Length (ft)	Slope	ADWF (mgd)	Pumped Flow (mgd)	PDWF (mgd)	PDWF Vel (ft/s)	PDWF d/D	PDWF Depth (ft)	Full Flow (mgd)	Comments
06173-06174	06-173	06-174	8	192	0.0040	0.0019	0.7363	0.7437	3.30	1.00	0.67	0.4959	D/S of Poinsettia PS
06174-06175	06-174	06-175	8	254	0.0040	0.0028	0.7363	0.7469	3.31	1.00	0.67	0.4962	D/S of Poinsettia PS
06175-06176	06-175	06-176	8	190	0.0136	0.0033	0.7363	0.7485	4.51	0.69	0.46	0.9125	D/S of Poinsettia PS
08037-08052	08-037	08-052	8	262	0.0040	0.0446	0.4085	0.5430	2.41	1.00	0.67	0.4957	D/S of Palm PS
08052-08055	08-052	08-055	8	281	0.0040	0.0583	0.4085	0.5805	2.57	1.00	0.67	0.4944	D/S of Palm PS
08055-08077	08-055	08-077	8	350	0.0040	0.0637	0.4085	0.5951	2.64	1.00	0.67	0.4953	D/S of Palm PS
08077-08082	08-077	08-082	8	110	0.0040	0.0858	0.4085	0.6538	2.90	1.00	0.67	0.4951	D/S of Palm PS
16019-16022	16-019	16-022	8	68	0.0099	0.0131	0.5728	0.6164	3.84	0.67	0.45	0.7809	D/S of Bell PS
16022-070L3	16-022	07-0L3	10	18	0.0028	0.0135	0.5728	0.6176	2.38	0.69	0.58	0.7504	D/S of Bell PS
		Total		**1,725**									

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

N

0 600 1,200 2,400 Feet

1" = 1,200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Model Calculated Capacity Deficiency Locations

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

Model Calculated Capacity Deficiency Locations

Figure 7-3

AKM

PROJECT NO: 1640901.10

DATE: September 2009

Appendix 7 – Wastewater Master Plan – Section 8, Condition Assessment

SECTION 8

COLLECTION SYSTEM CONDITION ASSESSMENT

8-1 INTRODUCTION

The City of Manhattan Beach (City) established a program to begin CCTV inspections of its approximately 86 mile long sewer collection system. The scope of the Master Plan included inspections of 227,714 feet (43.1 miles) of pipe or 52.9 percent of the total system.

Condition assessment of the inspected gravity sewer pipes and manholes is presented in this section. The procedure followed to complete the assessment of the gravity sewers is as follows:

a. Conduct CCTV Inspections.

b. Review information provided by the CCTV contractor.

c. Prepare a database summarizing the findings of the CCTV reports and recordings.

d. Prioritize the CCTV recordings per the database summary to select a list of reaches with numerous or significant defects of representative types. Consider operation and maintenance issues separately and identify additional hotspots for the City's review.

e. Select representative reaches of the system to review the CCTV recordings in detail to ensure compliance with CCTV standards and procedures and further prioritize the sewers for replacement and/or repair. Verify the completeness of the inspection reports and update the inspection database.

f. Develop a rating system to identify and prioritize the condition deficiencies, therefore identifying the critical sewer mains in need of rehabilitation and/or repair. Focus on the sewer pipes that are at risk of collapse or prone to more frequent blockages.

g. Develop an engineer's cost estimate for the rehabilitation/replacement of the sewer mains, including construction cost, design, inspection, administration, and contingencies.

8-2 CLOSED CIRCUIT TELEVISION (CCTV) INSPECTIONS OF GRAVITY PIPES

Empire Pipe Cleaning and Equipment, Inc. (Empire) performed video inspection work on approximately 222,714 feet of pipe between October 2008 and August 2009. Seventy-six (137) DVD's with inspection reports for 1,200 reaches of sewer were produced by Empire. Each inspection report lists the service connections and deficiencies by location in the inspected pipe. Photographs of the identified deficiencies are included in the inspection reports.

The locations of City sewers with completed CCTV inspections are shown on Figure 8-1. The CCTV inspected sewer pipes range in size from 6-inches to 15-inches in diameter. The majority of the pipes inspected is 8-inches in diameter and made of vitrified clay pipe (VCP).

National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) coding procedures formed the basis of the inspection work and reports prepared by Empire.

8-2.1 INSPECTION REPORT DATABASE SUMMARY

Initially, a database summary was developed utilizing the CCTV inspection written reports. This database summary contained a tabulation of the deficiencies identified in the written reports, including the following information:

- DVD Number
- Inspection (Run) Number
- Reversal DVD Number
- Reversal Inspection (Run) Number
- Location (Street Name)
- CCTV Inspection Date
- Pipe Identification Number
- Upstream Manhole and Downstream Manhole Identification Numbers
- Direction of Camera
- Pipe Size and Material
- Atlas Length and CCTV Inspected Length of Pipe
- Deficiency Tabulation from Written Reports using PACP codes

8-2.2 REVIEW OF REPRESENTATIVE CCTV RECORDINGS

The inspection report database summary was used in selecting the recordings to be reviewed in detail. The pipe reaches selected for detailed review were those that showed the most severe structural problems and multiple deficiencies, as well as severe operation and maintenance issues.

First, the reaches that had listed deficiencies such as deformed pipe, hole in pipe, broken pipe, large offset joint, large obstacles, and ball roots were selected for review. These deficiencies can be a cause of sanitary sewer collapse, overflow or exfiltration into the surrounding soil and may need immediate attention. Next, reaches that had numerous or multiple deficiencies such as fractures, cracks, roots, deposits, obstructions, sags, camera underwater, and survey abandoned were selected. Finally, several reaches without listed deficiencies were selected in order to develop insight into the overall condition of the CCTV inspected system.

Recordings for 264 reaches and 53,789 feet of pipe (23.9% of total inspected) were selected and reviewed in detail. The assessment information of pipes reviewed in detail was incorporated into the original Inspection Report Database Summary. Seventy-two (72) reverse inspections were conducted and are included in the database summary. The reverse set-ups were conducted to complete runs when the camera was blocked for any reason. The length recorded for some of the reaches where reverse inspections were necessary may be shorter than actual due to blockages in the pipe, as sometimes the camera was not able to reach the same point in the pipe from two directions.

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Palm Ave PS

Bell Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Pier PS

Meadows Ave PS

Voorhees Ave PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- CCTV Inspection Location

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

CCTV Locations

Figure 8-1

8-2.3 CONDITION GRADING

The PACP condition grading system was used to assign a condition rating for structural defects and operation and maintenance defects for each reach of pipe. The rating provides the ability to quantitatively measure the difference in pipe condition between one inspection and subsequent inspections, and to prioritize among different pipe segments. A grade of 1 to 5 is assigned to each defect based on potential for further deterioration or pipe failure. Pipe failure is defined as when it can no longer convey the design capacity. The grades are as follows:

5 – Immediate Attention	Defects requiring immediate attention
4 – Poor	Severe defects that will become Grade 5 defects within the foreseeable future
3 – Fair	Moderate defects that will continue to deteriorate
2 – Good	Defects that have not begun to deteriorate
1 – Excellent	Minor defects

A truly continuous defect is defined as a defect that extends more than 3 feet. A repeated continuous defect is defined as a defect that occurs in a length of pipe in at least 75 percent of the joints (i.e. 3 out of 4 joints).

The equivalent number (quantity) of “truly” and “repeating” continuous defects is calculated by dividing the length of the continuous defect by 5, normalizing the defects for comparison to other reaches. Each unit in the number of defects represents an occurrence of defect or a joint length of defective pipe. This is a PACP standard.

The grade values for the most common defects are shown in Table 8-1. For defects with variable grade values dependent on the degree of deficiency of the defect, an estimated average value was used.

Figure 8-2 shows the number of reaches where an identified deficiency was found at least once within the reach. It provides a general sense of the magnitude of the problems that were found in the City’s collection system. The problems identified most often were fine roots (835 reaches, 22% of total), cracks (563 reaches, 15% of total) and joint offset medium (437 reaches, 12% of total).

The structural defect score and O& M defect score is calculated by multiplying the number of occurrences of each defect by its assigned grade and summing them.

The structural defect index and the O&M defect index is calculated by dividing the defect score by the number of defects. It is an indicator of the distribution of defect severity.

Figure 8-3 is a plot of the number of reaches versus the highest deficiency grades found in each reach. For example, there were 218 reaches found with at least one structural deficiency grade of 5 and 4 reaches found with at least one operation and maintenance deficiency grade of 5.

Figures 8-4 through 8-6 illustrate the locations of the reaches with significant structural defects such as broken pipe, holes in pipe, and large joint offsets.

Table 8-1
Defect Codes and Condition Grades

PACP Code	Structural Defect Coding	Grade
CL	Crack - longitudinal	2
CC	Crack - circumferential	1
CM	Crack - multiple	3
CS	Crack - spiral	2
FL	Fracture - longitudinal	3
FC	Fracture - circumferential	2
FM	Fracture - multiple	4
FS	Fracture - spiral	3
BSV	Broken - soil visible	5
BVV	Broken - void visible	5
HSV	Hole - soil visible	5
HVV	Hole - void visible	5
JOL	Joint Offset - large	5[b]
JOM	Joint Offset - medium	3[a]
JSL	Joint Separated - large	2
JSM	Joint Separated - medium	1
RPZ	Point Repair - other	1
MWLS	Miscellaneous - water level, sag.	2

[a] *PACP grade is 1. Grade was increased for this report, because defect is considered to be major.*

[b] *PACP grade is 2. Grade was increased for this report, because defect is considered to be severe.*

PACP Code	Operational & Maintenance and Construction Features	Grade
DAE	Deposits Attached - encrustation	2
DAGS	Deposits Attached - grease	2
DAR	Deposits Attached - ragging	2
DAZ	Deposits Attached - other	2
DSF	Deposits Settled - fine	2
DSC	Deposits Settled - hard/compacted	2
DSZ	Deposits Settled - other	2
DNF	Deposits Ingress - fine material (silt & sand)	2
RFB	Roots Fine - barrel	2
RFL	Roots Fine - lateral	1
RFC	Roots Fine - connection	1
RFJ	Roots Fine - joint	1
RMB	Roots Medium - barrel	4
RML	Roots Medium - lateral	3
RMC	Roots Medium - connection	3
RMJ	Roots Medium - joint	3
RBB	Roots Ball - barrel	5
RBL	Roots Ball - lateral	4
RBC	Roots Ball - connection	4
RBJ	Roots Ball - joint	4
RTB	Roots Tap - barrel	3
RTC	Roots Tap - connection	2
RTJ	Roots Tap - joint	2
IW	Infiltration - Weeper	2
ID	Infiltration - Dripper	3
IR	Infiltration - Runner	4
IG	Infiltration - Gusher	5
OBI	Obstacles - protruding through wall	4
OBJ	Obstacles - wedged in joint	4
OBC	Obstacles - through connection	4
OBP	Obstacles -external pipe cable	4
OBS	Obstacles - build into structure	4
OBN	Obstacles - construction debris	4
OBR	Obstacles - rocks	4
OBZ	Obstacles - other	4
VC	Vermin - cockroach	1
TFD	Tap (Lateral) - factory made defective	2
TB	Tap (Lateral) - break in	3
TBI	Tap (Lateral) - intruding	3
TBA	Tap (Lateral) - active	3
TBB	Tap (Lateral) - abandoned	0
TBC	Tap (Lateral) - capped	2
ISSRH	Intruding Seal Material - ring hanging	4
LL	Line - left	2
LD	Line - Down	2
MCU	Miscellaneous - camera underwater	4
MSC	Miscellaneous - shape/size change	0
MMC	Miscellaneous - material change	0
MSA	Miscellaneous - survey abandoned	0

Figure 8-2
Sewer Reaches with Identified Deficiencies

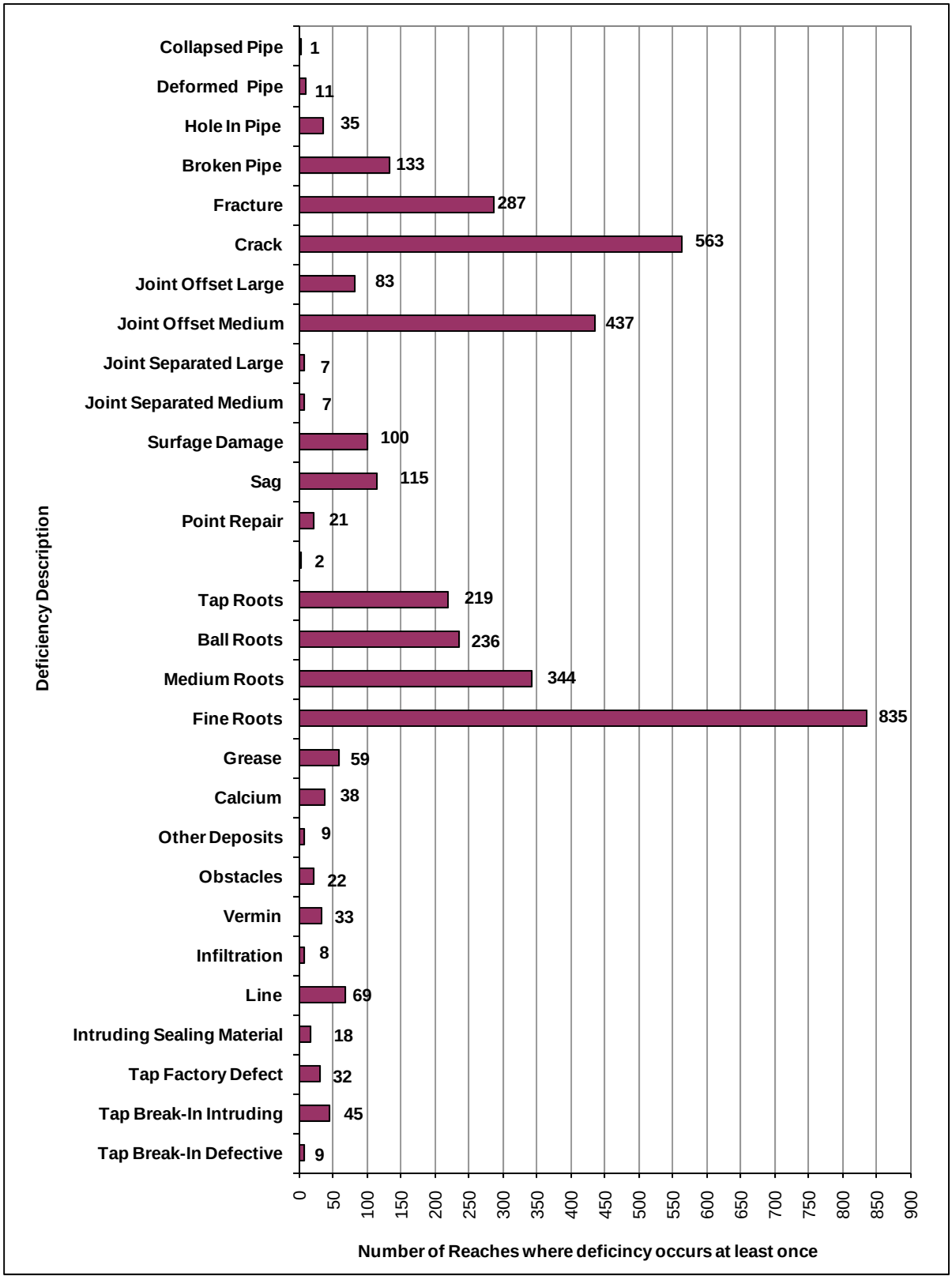
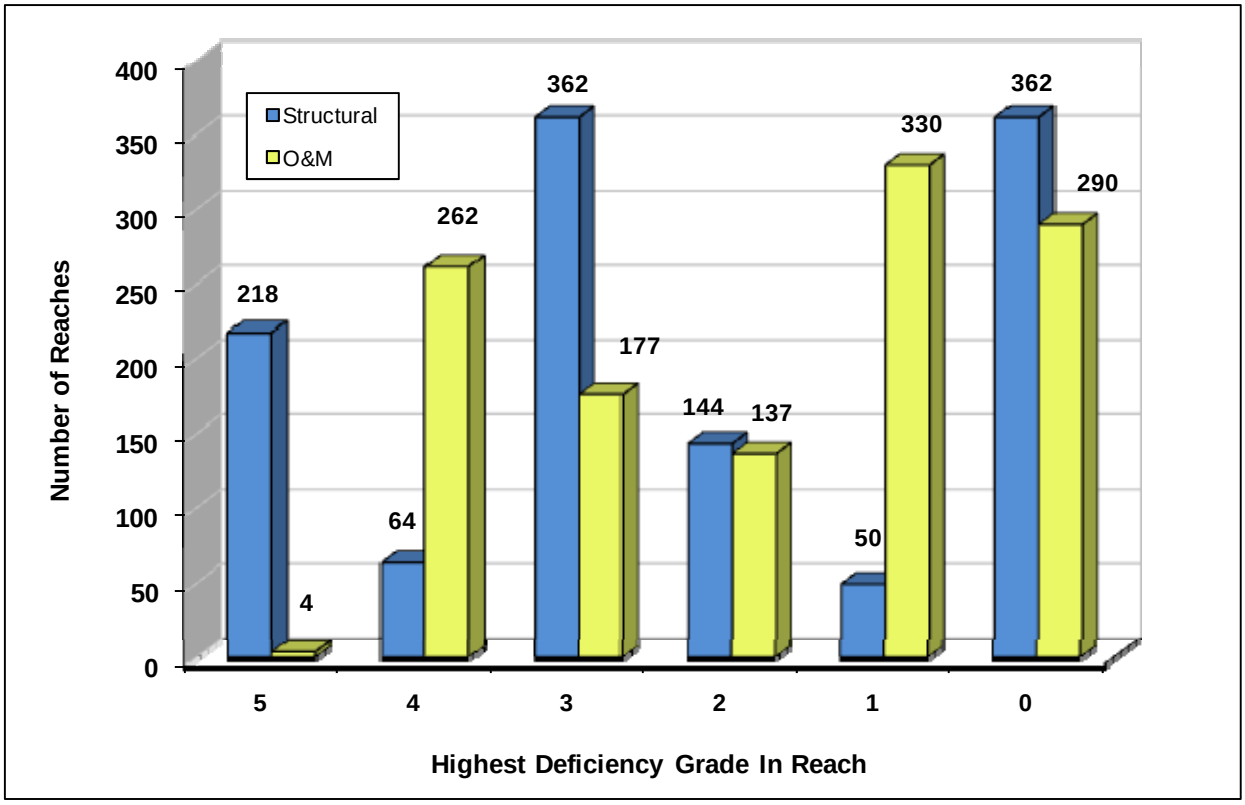


Figure 8-3
Deficiency Grades



City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Location Identified with Large Offset Joints

N

0 600 1,200 2,400 Feet

1" = 1200'

CITY OF MANHATTAN BEACH WASTEWATER MASTER PLAN

Large Offset Joints

Figure 8-6

PROJECT NO: 1640901.10

DATE: September 2010

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Palm Ave PS

Bell Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Pier PS

Meadows Ave PS

Voorhees Ave PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Location Identified with Hole in Pipe

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

Holes in Pipe

Figure 8-5

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Palm Ave PS

Bell Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Location Identified with Broken Pipe

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

Broken Pipe

PROJECT NO: 1640901.10

DATE: September 2010

Figure 8-4

8-2.4 REHABILITATION AND REPLACEMENT PRIORITIES

The purpose of CCTV inspections is to determine the condition of the City's existing gravity sewers, and formulate a rehabilitation plan for the defective sewers. The defect scores and indexes provide a good indication as to which pipes are in poor condition, but cannot be relied upon solely to prioritize improvement projects. The priorities are selected primarily with consideration of the health and safety of the public and protection of the environment by minimizing the possibility of sanitary sewer overflows and leakage. The pipe capacity, location of particular defects, and the tributary areas/wastewater flow rates are other considerations used in formulating the final capital improvement project priorities.

The initial priorities for improvements to the sewers are based on the severity of the pipe defects. The six (6) categories utilized in this report are as follows:

a. Severe Condition – This category primarily includes structural defects of deformed pipe, hole in pipe, broken pipe, and large joint offsets.

b. Major Condition – This category primarily includes structural defects of multiple fractures, medium joint offsets and major sags. Pipes with a large number of cracks are also included.

c. Moderate Condition – Pipes in this category have fractures, cracks, small and medium joint offsets, and sags.

d. Minor Condition – Pipes in this category have slight sags, cracks, and small joint offsets.

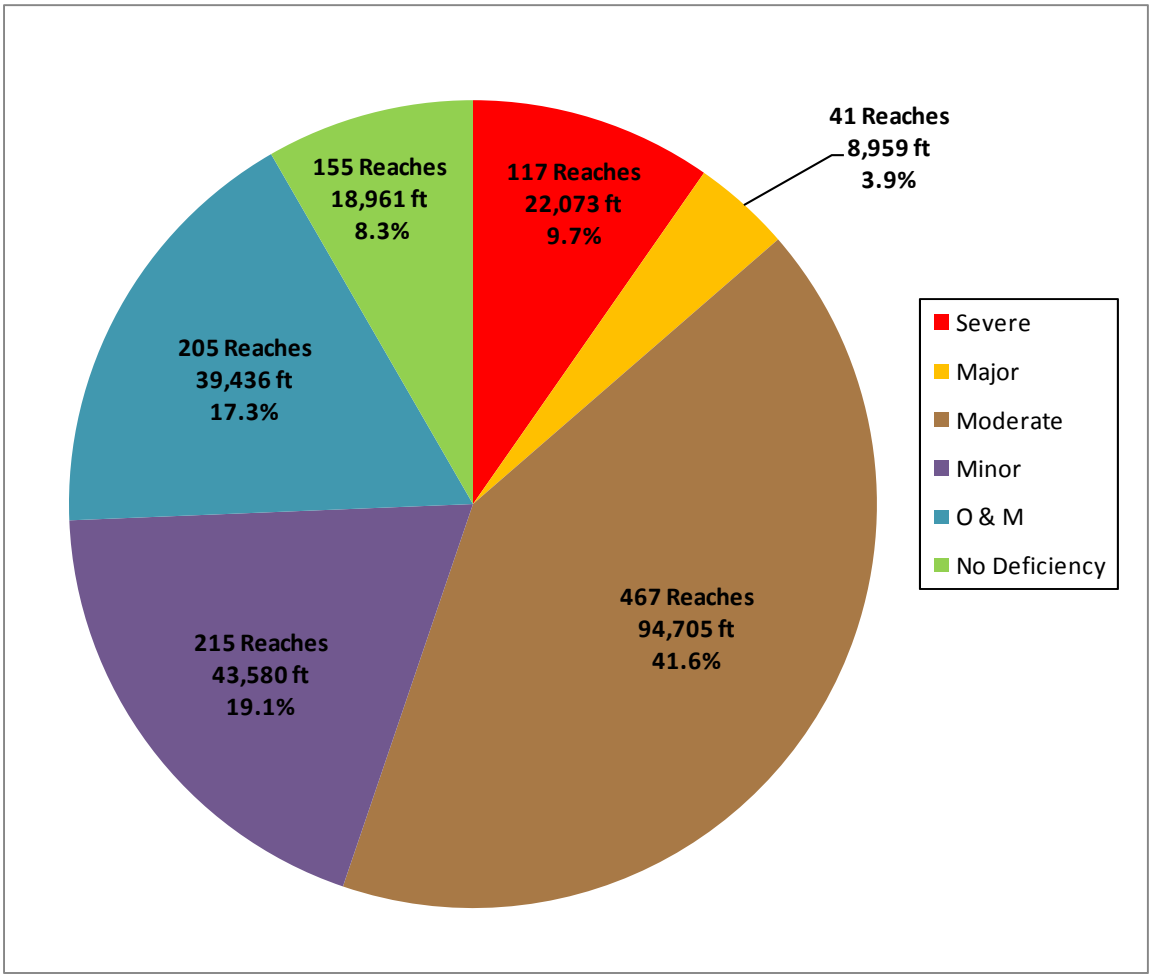
e. O&M – This condition is for operational and maintenance problems and construction feature defects. There are no structural defects.

f. No Defects – This condition is for the pipe with no structural, operation and maintenance or construction feature defects.

Figure 8-7 shows the distribution of the condition priorities assigned to the pipes with completed inspections. Figure 8-8 shows the CCTV locations, color coded by rehabilitation/replacement priority.

The gravity pipe condition inspection summary, sorted by priority is shown in Appendix 5, Gravity Pipe Condition Inspection Summary. Planning level recommendations are included and are based upon the pipe defects reported in the CCTV Inspection Reports and review of select recordings. Actual improvements must be designed based upon further detailed review of each recording, taking into consideration other factors such as location, age and flow capacity of the pipe, existing utilities, and concurrent infrastructure construction projects. The initial priorities are given to the reaches with severe and major structural defects.

Figure 8-7
CCTV Inspection Priorities



The City of Manhattan Beach will address the "Severe" and "Major" collection system deficiencies. Table 8-2 lists the project priorities assigned to the 87 reaches of collection system identified as in "Severe" or "Major" condition, as well as planning level implementation costs based upon August 2010 dollars. The collection system construction estimates are based upon replacement at $45 per diameter inch per foot of pipe. Implementation cost is determined by adding 35 percent of construction cost to cover engineering, inspection, and administration. The total estimated cost of upgrading the sewers with severe or major condition priorities is $15,330,000. This is based on the assessment of 43.1 miles of pipe or 52.9 percent of the total gravity sewer system. Assuming that similar deficiencies will be identified when the remainder of the system is CCTV inspected, the total cost for rehabilitation and replacement of the remaining gravity sewer pipes is estimated at approximately $13,600,000.

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Palm Ave PS

Bell Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- CCTV Inspection Location

Gravity Sewer Condition Priorities

- Severe Condition
- Major Condition
- Moderate Condition
- Minor Condition
- O&M Condition
- No Defects

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

Gravity Sewer Condition Priorities

Figure 8-8

Table 8-2
Severe and Major Condition Priorities

| General Information | | | | | | | | | | | | | | Structural Defect Coding | | | | | | | | | | | | | |

Table 8-2
Severe and Major Condition Priorities

| General Information | | | | | | | | | | | | | | | | Structural Defect Coding | | | | | | | | | | | | | | | |

Table 8-2
Severe and Major Condition Priorities

| General Information | | | | | | | | | | | | | | | | Structural Defect Coding | | | | | | | | | | | | | | | |

Table 8-2
Severe and Major Condition Priorities

| General Information | | | | | | | | | | | | | | | | Structural Defect Coding | | | | | | | | | | | | | | | |

Table 8-2
Severe and Major Condition Priorities

| General Information | | | | | | | | | | | | | | | Structural Defect Coding | | | | | | | | | | | | | | |

8-2.5 FOLLOW-UP CCTV INSPECTION AND CONDITION ASSESSMENT PROGRAM

a. Portions of the system rated to be in **Severe Structural Deficiency** condition will be inspected **annually** and evaluated to determine if immediate corrective action is needed.

b. Portions of the system rated to be in **Major Structural Deficiency** condition will be CCTV inspected and evaluated once every **three (3) years**

c. Portions of the system rated to be in **Moderate Structural Deficiency** condition will be CCTV inspected and evaluated once every **five (5) years**

d. Portions of the system rated to be in **Minor Structural Deficiency** condition will be CCTV inspected and evaluated once every **ten (10) years**

e. Portions of the system with **no structural deficiencies** will be CCTV inspected and evaluated once every **ten (10) years**

f. Portions of the system with **Operational and Maintenance** deficiencies, except the **Hot Spots**, will be CCTV inspected and evaluated once every **four (4) years.**

g. **Hot Spots**, except siphons, will be CCTV inspected and evaluated **before and after each maintenance activity and cleaning for one year** to establish the appropriateness of the method, and then **annually**.

As structural deficiency mitigation projects are implemented, their condition will be reclassified, and they will be included in the appropriate category for follow up CCTV inspection and condition assessment work.

8-3 MANHOLE INSPECTIONS AND ASSESSMENTS

The condition of the manholes associated with the 52.9 miles of gravity pipes inspected was also assessed. A total of 1,075 manholes were inspected and assessed. Photos were taken of each element of the manholes and inspection reports were prepared.

The manhole inspections included general evaluations of the following elements:

- Manhole Cover
- Frame
- Cone
- Barrel
- Rungs
- Bench
- Channel

Each element was rated as good, fair, poor, or failing. Signs of debris, grease, vermin, and odors were also noted in the inspection reports. The results of the inspections are summarized in Table 8-3.

Table 8-3
Manhole Elements Condition Summary

Condition	Manhole Cover	Frame	Cone	Barrel / Wall	Rungs	Bench	Channel	Debris	Grease	Vermin	Odor
Good	1070	1068	1030	1048	612	1022	960				
Fair		7	37	22	155	38	95				
Poor			7	4	150	15	20				
Failing			1	1	67						
Broken	2										
Cracked	3										
Not Applicable					91						
Yes								15		55	3
No								1060	1075	1020	1072

8-3.1 Rehabilitation Priorities

Point values were assigned to each condition rating in order to prioritize the manholes for rehabilitation. The assigned point values are as follows:

Condition Rating	Point Value
Good	0
Fair	1
Poor	5*
Failing	10*
Broken	10
Crack	8
Yes	1
No	0

**For Rungs, Failing is given a point value of 3 and Poor is given a point value of 2*

Rungs are not considered as urgent a problem since the City no longer uses them to access manholes. If City staff must enter a sewer manhole, tripods are utilized. The detailed manhole condition inspection summary, sorted by priority can be found in Appendix 6, Manhole Condition Inspection Summary. Manhole locations colored by total point value are shown on Figure 8-9.

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Pier PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary

Manhole Inspection Priority Score

- 0 - 5
- 6 - 9
- 10 - 19
- 20 - 23

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

Manhole Inspections

Figure 8-9

8-3.2 Manhole Improvements

A total of thirty-two (32) manholes were identified to have poor conditions in the manhole cover, cone, barrel, bench, and/or channel. Preliminary recommendations are shown in Table 8-4.

The manhole rehabilitation cost estimates are based on the following:

Replacement	$30,000
Line Manhole	$10,000
Repair Mortar	$ 6,000
Replace Frame and Cover	$ 3,500

The total estimated cost of upgrading the manholes with poor conditions is $316,000. This is based on the assessment 1,075 manholes or 53 percent of all the manholes. The total number of manholes in the sewer system is estimated at 2,031. Assuming that similar deficiencies will be identified when the remainder of the system is CCTV inspected, the total remaining cost for rehabilitation and replacement of the manholes in poor condition is estimated at approximately $280,000.

Table 8-4
Manhole Rehabilitation and Replacement Recommendations and Cost Estimates

Inspection Phase	Session ID	Street	Manhole	Inspection Date	Surface Condition	Manhole Cover	Frame	Cone	Barrel / Wall	Rungs	Bench	Channel	Debris	Grease	Vermin	Odor	Priority Score	Condition Ranking	Comment	Recommendation	Project Cost ($)
1	25	HIghland Ave	19-015	1/12/09	Pavement - Concrete Collar	Good	Good	Failing	Failing	Good	Good	Good	No	No	No	No	24	1	Fractures in cone and barrel. Fracture seen in street pavement surrounding manhole cover.	Replace	30,000
1	28	1st St	01-080	11/21/08	Pavement - Concrete Collar	Good	Good	Poor	Poor	Failing	Poor	Poor	No	No	0	No	22	2	Missing mortar. Corrosion at bench and channel.	Line manhole	10,000
1	74	Duncan Ave	10-039	12/19/08	Pavement - Concrete Collar	Good	Good	Good	Good	Failing	Poor	Poor	No	No	No	No	18	3	Corrosion at bench and channel.	Line manhole	10,000
1	90	Gates Ave	01-072	11/20/08	Pavement - Concrete Collar	Good	Good	Poor	Fair	Poor	Poor	Poor	No	Yes	0	Yes	15	4	Corrosion at bench and channel.	Line manhole	10,000
1	51	Curtis Ave	05-052	12/2/08	Pavement - Concrete Collar	Broken	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	14	5	Broken manhole cover. Corrosion at bench and channel.	Replace manhole cover and line	13,500
1	36	2nd St	01-086	11/24/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	Yes	No	0	No	11	6	Corrosion at bench and channel.	Line manhole	10,000
1	109	18th St	06-244	12/5/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	10	7	Corrosion at bench and channel.	Line manhole	10,000
1	23	8th St	04-054	12/1/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	10	8	Corrosion at bench and channel.	Line manhole	10,000
1	50	Meadows Ave	05-023	12/2/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	10	9	Corrosion at bench and channel. Not a smooth transition.	Line manhole	10,000
1	130	14th St	06-191	12/8/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	10	10	Corrosion at bench and channel.	Line manhole	10,000
1	291	Cedar Way	25-012	1/22/09	Pavement - Concrete Collar	Good	Good	Poor	Poor	Poor	Good	Good	No	No	No	No	10	11	Corrosion and cracking in cone and wall	Line manhole	10,000
1	293	Village Dr	25-025	1/22/09	Pavement - Concrete Collar	Good	Good	Poor	Poor	Poor	Good	Good	No	No	No	No	10	12	Corrosion in cone and barrel.	Line manhole	10,000
1	53	Rowell Ave	05-055	12/2/08	Pavement - Concrete Collar	Broken	Good	Good	Good	Fair	Good	Good	No	No	No	No	9	13	Broken manhole cover.	Replace manhole cover	3,500
1	47	Tennyson St	05-020	12/2/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Fair	Poor	No	No	No	No	9	14	Corrosion at channel.	Line manhole	10,000
1	60	Voorhees Ave	05-005	12/2/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Fair	Poor	No	No	No	No	9	15	Corrosion at channel.	Line manhole	10,000
1	181	Flournoy Rd	17-057	1/8/09	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Poor	Poor	No	No	No	No	9	16	Corrosion at bench and channel.	Line manhole	10,000
1	46	11th St	09-028	12/18/08	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	Yes	No	9	17	Corrosion at bench and channel.	Line manhole	10,000
2	235	The Strand	12-030A	7/20/09	Pavement - Concrete Collar	Good	Good	Good	Poor	Poor	Good	Fair	No	No	No	No	9	18	Missing mortar.	Repair mortar	6,000
1	80	14th St	06-050	12/4/08	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	No	No	8	19	Corrosion at bench and channel.	Line manhole	10,000
1	131	14th St	06-077	12/8/08	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	No	No	8	20	Corrosion at bench and channel.	Line manhole	10,000
1	178	31st St	17-053	1/8/09	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	No	No	8	21	Corrosion at channel.	Line manhole	10,000
1	99	Manhattan Ave	11-116A	12/22/08	Pavement - Concrete Collar	Good	Good	Poor	Good	Poor	Good	Good	No	No	No	No	8	22	Cracks in cone.	Line manhole	10,000
3	25	35th Pl	17-049	8/11/09	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Fair	Poor	No	No	0	No	8	23	Corrosion at bench and channel.	Line manhole	10,000
1	284	The Strand	14-064	1/21/09	Pavement - Concrete Collar	Cracked	Good	Good	Good	N/A	Good	Good	No	No	No	No	7	24	Cracked manhole cover.	Replace manhole cover	3,500
1	119	19th St	06-030	12/5/08	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Fair	Poor	No	No	No	No	7	25	Corrosion at channel.	Line manhole	10,000
1	205	Blanche Rd	17-040	1/9/09	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Good	Poor	No	No	No	No	7	26	Corrosion at channel.	Line manhole	10,000
1	26	1st St	01-061	11/21/08	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Good	Poor	No	No	0	No	7	27	Corrosion at channel.	Line manhole	10,000
1	143	Marine Ave	15-053	1/7/09	Pavement - Concrete Collar	Good	Good	Poor	Good	Fair	Good	Good	No	No	No	No	7	28	Missing mortar and possibly bricks.	Repair mortar	6,000
1	87	Highview Ave	11-040	12/22/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Good	Good	Yes	No	No	No	7	29	Cracks in cone.	Line manhole	10,000
2	191	1st St	12-026	7/16/09	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Fair	No	No	No	No	7	30	Corrosion at bench and channel.	Line manhole	10,000
2	278	3rd St	10-139	7/22/09	Pavement - Concrete Collar	Cracked	Good	Good	Good	Good	Good	Good	No	No	No	No	7	31	Cracked manhole cover.	Replace manhole cover	3,500
1	100	Manhattan Ave	11-117	12/22/08	Pavement - Concrete Collar	Good	Good	Poor	Good	Good	Good	Good	No	No	No	No	6	32	Cracks in cone.	Line manhole	10,000
																				Total	**316,000**

Appendix 8 – Wastewater Master Plan – Section 9, Operation and Maintenance

SECTION 9

OPERATION AND MAINTENANCE

9-1 CCTV INSPECTION DATA

The operation and maintenance conditions of the gravity collection system pipes were considered separately. Figures 9-1 thru 9-5 illustrate the locations of ball roots, grease, deposits, infiltration, and obstacles. These conditions, along with siphons, are the cause of many of the frequent maintenance areas (hot spots).

Table 9-1 provides listings of all the inspected reaches with a summary of the operation and maintenance issues, as well as recommendations for corrective measures. It is also noted whether or not these reaches are existing hot spots, or have had spills in the area within the past few years. The recommendations provided should be used in updating the operation and maintenance of the system, the Hot Spot maintenance program, the cleaning program, as well as the Preventative Maintenance Program.

Any loss in cross sectional pipe area is a potential cause of backups and sewer overflows. Therefore those maintenance issues that cause a reduction in cross sectional area are given higher priority over others. Accordingly, the highest priority is given to those reaches identified with ball roots. Ball roots are defined as roots that have formed a mass and in doing so are greatly to severely restricting the flow. The cross sectional area lost is greater than 50 percent.

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
01025-01026	Nelson Ave	01-025	01-026	14									✓				
01025-01026	Nelson Ave	01-025	01-026	14									✓				
01026-01027	Nelson Ave	01-026	01-027	6													
01026-01027	Nelson Ave	01-026	01-027	6													
01027-01028	Nelson Ave	01-027	01-028	28									✓				
01027-01028	Nelson Ave	01-027	01-028	28									✓				
01028-01029	Nelson Ave	01-028	01-029	3													
01028-01029	Nelson Ave	01-028	01-029	3													
01029-01030	Nelson Ave	01-029	01-030	1													
01029-01030	Nelson Ave	01-029	01-030	1													
01030-01031	Nelson Ave	01-030	01-031	2													
01030-01031	Nelson Ave	01-030	01-031	2													
01031-01032	Nelson Ave	01-031	01-032	16		1	4	15				2/28/08 Grease & Roots	✓	✓			
01031-01032	Nelson Ave	01-031	01-032	16		1	4	15					✓	✓			
01058-01059	1st St	01-058	01-059	24		3							✓	✓			
01058-01059	1st St	01-058	01-059	24		3							✓	✓			
01059-01060	1st St	01-059	01-060														
01059-01060	1st St	01-059	01-060														
01060-01061	1st St	01-060	01-061	4													
01060-01061	1st St	01-060	01-061	4													
01061-01062	1st St	01-061	01-062	16		2							✓	✓			
01061-01062	1st St	01-061	01-062	16		2							✓	✓			
01068-01069	2nd St	01-068	01-069	17		1							✓	✓			
01068-01069	2nd St	01-068	01-069	17		1							✓	✓			
01069-01070	2nd St	01-069	01-070	51		5							✓	✓			
01069-01070	2nd St	01-069	01-070	51		5							✓	✓			
01070-01071	2nd St	01-070	01-070	18		2							✓	✓			
01070-01071	2nd St	01-070	01-071	18		2							✓	✓			
01071-01082	2nd St	01-071	01-082	7													
01071-01082	2nd St	01-071	01-082	7													
01072-01073	Gates Ave	01-072	01-073	2													
01072-01073	Gates Ave	01-072	01-073	2													
01073-01076	Gates Ave	01-073	01-076	2													
01073-01076	Gates Ave	01-073	01-076	2													
01074-01076	Gates Ave	01-074	01-076	2													
01074-01076	Gates Ave	01-074	01-076	2													
01075-01076	Herrin St	01-075	01-076	3													
01075-01076	Herrin St	01-075	01-076	3													
01076-01080	Herrin St	01-076	01-080	1			92								✓		
01076-01080	Herrin St	01-076	01-080	1			92								✓		
01077-01078	1st St	01-077	01-078	31									✓				
01077-01078	1st St	01-077	01-078	31									✓				
01078-01080	1st St	01-078	01-080	6													
01078-01080	1st St	01-078	01-080	6													
01079-01080	1st St	01-079	01-080														
01079-01080	1st St	01-079	01-080	0													
01080-01082	Herrin St	01-080	01-082														
01080-01082	Herrin St	01-080	01-082	0													
01081-01082	Herrin St	01-081	01-082	1													
01081-01082	Herrin St	01-081	01-082	1													
01082-01083	2nd St	01-082	01-083	2			100								✓		
01082-01083	2nd St	01-082	01-083	2			100								✓		
01083-01085	2nd St	01-083	01-085				115	30							✓		
01083-01085	2nd St	01-083	01-085	0			115	30							✓		
01084-01085	Redondo Ave	01-084	01-085														
01084-01085	Redondo Ave	01-084	01-085														
01085-01086	2nd St	01-085	01-086	1													
01085-01086	2nd St	01-085	01-086	1													
01086-01087	2nd St	01-086	01-087	4													
01086-01087	2nd St	01-086	01-087	4													
01161-01162	9th St	01-161	01-162	14		1							✓	✓			
01161-01162	9th St	01-161	01-162	14		1							✓	✓			
01162-01163	9th St	01-162	01-163	23									✓				
01162-01163	9th St	01-162	01-163	23									✓				
01163-01164	9th St	01-163	01-164	3													
01163-01164	9th St	01-163	01-164	3													
01164-01165	9th St	01-164	01-165	1													
01164-01165	9th St	01-164	01-165	1													
01165-01166	9th St	01-165	01-166	2		1								✓			
01165-01166	9th St	01-165	01-166	2		1								✓			
01186-01187	10th St	01-186	01-187	4													
01186-01187	10th St	01-186	01-187	4													
01187-01089	Aviation Blvd	01-187	01-189														
01187-01189	Aviation Blvd	01-187	01-189														
01088-01189	11th St	01-188	01-189	3													
01188-01189	11th St	01-188	01-189	3													
01189-01190	Aviation Blvd	01-189	01-190	1													
01189-01190	Aviation Blvd	01-189	01-190	1													
01221-01222	18th St	01-221	01-222	6				4	4								
01221-01222	18th St	01-221	01-222	6				4	4								
01222-01223	18th St	01-222	01-223	1			25	52	51						✓		✓
01222-01223	18th St	01-222	01-223	1			25	52	51						✓		✓
01223-01226	Herrin Ave	01-223	01-226					24	1								
01223-01226	Herrin Ave	01-223	01-226					24	1								
01224-01225	19th St	01-224	01-225	6		1								✓			
01224-01225	19th St	01-224	01-225	6		1								✓			
01225-01226	19th St	01-225	01-226	1													

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
01225-01226	19th St	01-225	01-226	1													
01230-01231	23rd St	01-230	01-231														
01230-01231	23rd St	01-230	01-231														
010231-01234	Herrin Ave	01-231	01-234	24			1						✓				
01231-01234	Herrin Ave	01-231	01-234	24			1						✓				
02001-02002	Faymont Ave	02-001	02-002	48									✓				
02001-02002	Faymont Ave	02-001	02-002	48									✓				
02002-02005	Faymont Ave	02-002	02-003	36									✓				
02002-02005	Faymont Ave	02-002	02-005	36									✓				
02003-02004	Faymont Ave	02-003	02-004	45									✓				
02003-02004	Faymont Ave	02-003	02-004	45									✓				
02004-02005	Faymont Ave	02-004	02-005	32									✓				
02004-02005	Faymont Ave	02-004	02-005	32									✓				
02005-02012	15th St	02-005	02-012	4													
02005-02012	15th St	02-005	02-012	4													
02006-02007	Harkness St	02-006	02-007	15		1							✓	✓			
02006-02007	Harkness St	02-006	02-007	15		1							✓	✓			
02007-02012	Harkness St	02-007	02-012	30									✓				
02007-02012	Harkness St	02-007	02-012	30									✓				
02008-02009	Easement	02-008	02-009	2													
02008-02009	Easement	02-008	02-009	2													
02009-02010	Easement	02-009	02-010	11	1								✓				
02009-02010	Easement	02-009	02-010	11	1								✓				
02010-02011	Harkness St	02-010	02-011	9													
02010-02011	Harkness St	02-010	02-011	9													
02011-02012	Harkness St	02-011	02-012	13									✓				
02011-02012	Harkness St	02-011	02-012	13									✓				
02012-02018	15th St	02-012	02-018	1													
02012-02018	15th St	02-012	02-018	1													
02013-02014	Manzanita Ln	02-013	02-014	37									✓				
02013-02014	Manzanita Ln	02-013	02-014	37									✓				
02014-02015	Manzanita Ln	02-014	02-015	24				1					✓				
02014-02015	Manzanita Ln	02-014	02-015	24				1					✓				
02015-02018	Manzanita Ln	02-015	02-018	19									✓				
02015-02018	Manzanita Ln	02-015	02-018	19									✓				
02016-02017	Manzanita Ln	02-016	02-017	19									✓				
02016-02017	Manzanita Ln	02-016	02-017	19									✓				
02017-02018	Manzanita Ln	02-017	02-018	2													
02017-02018	Manzanita Ln	02-017	02-018	2													
02018-02021	15th St	02-018	02-021														
02018-02021	15th St	02-018	02-021														
02019-02020	Lynngrove Dr	02-019	02-020	33									✓				
02019-02020	Lynngrove Dr	02-019	02-020	33									✓				
02020-02021	Lynngrove Dr	02-020	02-021	45									✓				
02020-02021	Lynngrove Dr	02-020	02-021	45									✓				
02021-02022	Lynngrove Dr	02-021	02-022	50									✓				
02021-02022	Lynngrove Dr	02-021	02-022	50									✓				
02022-02023	Lynngrove Dr	02-022	02-023	14									✓				
02022-02023	Lynngrove Dr	02-022	02-023	14									✓				
02023-02030	Lynngrove Dr	02-023	02-030														
02023-02030	Lynngrove Dr	02-023	02-030														
02024-02025	Manzanita Ln	02-024	02-025	58									✓				
02024-02025	Manzanita Ln	02-024	02-025	58									✓				
02025-02027	23rd St	02-025	02-027	4													
02025-02027	23rd St	02-025	02-027	4													
02026-02027	23rd St	02-026	02-027	5													
02026-02027	23rd St	02-026	02-027	5													
02027-02028	Lynngrove Dr	02-027	02-028	4													
02027-02028	Lynngrove Dr	02-027	02-028	4													
02028-02029	Lynngrove Dr	02-028	02-029	37									✓				
02028-02029	Lynngrove Dr	02-028	02-029	37									✓				
02029-02030	Lynngrove Dr	02-029	02-030	36									✓				
02029-02030	Lynngrove Dr	02-029	02-030	36									✓				
02051-02052	Easement	02-051	02-052	18									✓				
02051-02052	Easement	02-051	02-052	18			1						✓				
03026-03027	17th St	03-026	03-027	45									✓				
03026-03027	17th St	03-026	03-027	45									✓				
03027-03029	Begg School	03-027	03-029	47									✓				
03027-03029	Begg School	03-027	03-029	47									✓				
03028-03029	15th St	03-028	03-029	2													
03028-03029	15th St	03-028	03-029	2													
03029-03030	Begg School	03-029	03-030	2													
03029-03030	Begg School	03-029	03-030	2													
03030-03031	Begg School	03-030	03-031	15									✓				
03030-03031	Begg School	03-030	03-031	15									✓				
03031-03032	Begg School	03-031	03-032	12		2							✓	✓			
03031-03032	Begg School	03-031	03-032	12		2							✓	✓			
03050-03051	23rd St	03-050	03-051	24									✓				
03050-03051	23rd St	03-050	03-051	24									✓				
03051-03053	23rd St	03-051	03-053	44									✓				
03051-03053	23rd St	03-051	03-053	44									✓				
03052-03053	Magnolia Ave	03-052	03-053	23									✓				
03052-03053	Magnolia Ave	03-052	03-053	23									✓				
03053-03056	23rd St	03-053	03-056	24									✓				
03053-03056	23rd St	03-053	03-056	24									✓				
03054-03055	Chestnut Ave	03-054	03-055	9													
03054-03055	Chestnut Ave	03-054	03-055	9													
03055-03056	Chestnut Ave	03-055	03-056	21									✓				
03055-03056	Chestnut Ave	03-055	03-056	21									✓				

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
03056-03057	23rd St	03-056	03-057	37									✓				
03056-03057	23rd St	03-056	03-057	37									✓				
03057-03058	Meadows Ave	03-057	03-058	41			1						✓				
03057-03058	Meadows Ave	03-057	03-058	41			1						✓				
03058-03060	Meadows Ave	03-058	03-060	14									✓				
03058-03060	Meadows Ave	03-058	03-060	14									✓				
03059-03060	21st St	03-059	03-060	12									✓				
03059-03060	21st St	03-059	03-060	12									✓				
03060-03061	Meadows Ave	03-060	03-061														
03060-03061	Meadows Ave	03-060	03-061														
03061-03062	21st St	03-061	03-062	16									✓				
03061-03062	21st St	03-061	03-062	16									✓				
03062-03063	21st St	03-062	03-063	22		2							✓	✓			
03062-03063	21st St	03-062	03-063	22		2							✓	✓			
03063-03064	21st St	03-063	03-064	13		2							✓	✓			
03063-03064	21st St	03-063	03-064	13		2							✓	✓			
03064-03065	21st St	03-064	03-065	28									✓				
03064-03065	21st St	03-064	03-065	28									✓				
03066-03067	23rd St	03-066	03-067	27									✓				
03066-03067	23rd St	03-066	03-067	27									✓				
03067-03068	23rd St	03-067	03-068	25									✓				
03067-03068	23rd St	03-067	03-068	25									✓				
03068-03069	23rd St	03-068	03-069	46									✓				
03068-03069	23rd St	03-068	03-069	46									✓				
03069-03072	23rd St	03-069	03-072	9													
03069-03072	23rd St	03-069	03-072	9													
04001-04002	Gates Ave	04-001	04-002	38									✓				
04001-04002	Gates Ave	04-001	04-002	38									✓				
04002-04004	Gates Ave	04-002	04-004	16									✓				
04002-04004	Gates Ave	04-002	04-004	16									✓				
04003-04004	Meadows Ave	04-003	04-004	1													
04003-04004	Meadows Ave	04-003	04-004	1													
04004-04007	Meadows Ave	04-004	04-007	24									✓				
04004-04007	Meadows Ave	04-004	04-007	24									✓				
04005-04006	1st St	04-005	04-006	23									✓				
04005-04006	1st St	04-005	04-006	23									✓				
04006-04007	1st St	04-006	04-007	15									✓				
04006-04007	1st St	04-006	04-007	15									✓				
04007-04018	Meadows Ave	04-007	04-018	32									✓				
04007-04018	Meadows Ave	04-007	04-018	32									✓				
04008-04011	3rd St	04-008	04-011	48		4							✓	✓			
04008-04011	3rd St	04-008	04-011	48		4							✓	✓			
04010-04011	Meadows Ave	04-010	04-011	52									✓				
04010-04011	Meadows Ave	04-010	04-011	52									✓				
04011-04018	Meadows Ave	04-011	04-018	21									✓				
04011-04018	Meadows Ave	04-011	04-018	21			3						✓				
04020-04021	Kuhn Dr	04-020	04-021	57									✓				
04020-04021	Kuhn Dr	04-020	04-021	57									✓				
04021-04022	Ronda Dr	04-021	04-022	34							✓		✓				
04021-04022	Ronda Dr	04-021	04-022	34							✓		✓				
04022-04023	Ronda Dr	04-022	04-023	37									✓				
04022-04023	Ronda Dr	04-022	04-023	37									✓				
04023-04028	Ronda Dr	04-023	04-024	44									✓				
04023-04028	Ronda Dr	04-023	04-028	44									✓				
04024-04025	Longfellow Dr	04-024	04-025	11									✓				
04024-04025	Longfellow Dr	04-024	04-025	11									✓				
04025-04026	Longfellow Dr	04-025	04-026	25									✓				
04025-04026	Longfellow Dr	04-025	04-026	25									✓				
04026-04027	Longfellow Dr	04-026	04-027	36									✓				
04026-04027	Longfellow Dr	04-026	04-027	36									✓				
04027-04028	Longfellow Dr	04-027	04-028	33									✓				
04027-04028	Longfellow Dr	04-027	04-028	33									✓				
04053-04054	8th St	04-053	04-054	23									✓				
04053-04054	8th St	04-053	04-054	23									✓				
04054-04056	8th St	04-054	04-056	1													
04054-04056	8th St	04-054	04-056	1													
04055-04056	Johnson St	04-055	04-056	14									✓				
04055-04056	Johnson St	04-055	04-056	14									✓				
04056-04059	8th St	04-056	04-059														
04056-04059	8th St	04-056	04-059														
04057-04058	8th St	04-057	04-058	1													
04057-04058	8th St	04-057	04-058	1													
04058-04059	8th St	04-058	04-059														
04058-04059	8th St	04-058	04-059														
04059-04060	8th St	04-059	04-060														
04059-04060	8th St	04-059	04-060														
04060-04064	8th St	04-060	04-064	1													
04060-04064	8th St	04-060	04-064	1													
04061-04062	8th St	04-061	04-062														
04061-04062	8th St	04-061	04-062														
04062-04063	8th St	04-062	04-063	10									✓				
04062-04063	8th St	04-062	04-063	10									✓				
04063-04064	8th St	04-063	04-064	1													
04063-04064	8th St	04-063	04-064	1													
04069-04070	9th St	04-069	04-070	14									✓				
04069-04070	9th St	04-069	04-070	14									✓				
04070-04071	9th St	04-070	04-071	1													
04070-04071	9th St	04-070	04-071	1													
04071-04075	9th St	04-071	04-075	4		1								✓			

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	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots In Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
04071-04075	9th St	04-071	04-075	4		1								✓			
05001-05002	Ruhland Ave	05-001	05-002	14									✓				
05001-05002	Ruhland Ave	05-001	05-002	14									✓				
05002-05003	Ruhland Ave	05-002	05-003	1													
05002-05003	Ruhland Ave	05-002	05-003	1													
05003-05006	Peck Ave	05-003	05-006	65									✓				
05003-05006	Peck Ave	05-003	05-006	65			1						✓				
05004-05005	Voorhees Ave	05-004	05-005	29									✓				
05004-05005	Voorhees Ave	05-004	05-005	29									✓				
05005-05006	Voorhees Ave	05-005	05-005	1													
05005-05006	Voorhees Ave	05-005	05-006	1													
05006-05009	Peck Ave	05-006	05-009	12									✓				
05006-05009	Peck Ave	05-006	05-009	12									✓				
05007-05008	Curtis Ave	05-007	05-008	33		1							✓	✓			
05007-05008	Curtis Ave	05-007	05-008	33		1							✓	✓			
05008-05009	Peck Ave	05-008	05-009	7													
05008-05009	Peck Ave	05-008	05-009	7													
05009-05010	Shores Parking Lot	05-009	05-010	57									✓				
05009-05010	Shores Parking Lot	05-009	05-010	57									✓				
05010-05011	Shores School	05-010	05-011	1													
05010-05011	Shores School	05-010	05-011	1													
05017-05019	Chabela Dr	05-017	05-019	1													
05017-05019	Chabela Dr	05-017	05-019	1													
05018-05019	Tennyson St	05-018	05-019	0													
05018-05019	Tennyson St	05-018	05-019														
05019-05020	Tennyson St	05-019	05-020														
05019-05020	Tennyson St	05-019	05-020														
05020-05021	Tennyson St	05-020	05-021				47								✓		
05020-05021	Tennyson St	05-020	05-021				47								✓		
05021-05022	Tennyson St	05-021	05-022	1													
05021-05022	Tennyson St	05-021	05-022	1													
05022-05023	Tennyson St	05-022	05-023														
05022-05023	Tennyson St	05-022	05-023														
05052-05053	Curtis Ave	05-052	05-053	16									✓				
05052-05053	Curtis Ave	05-052	05-053	16									✓				
05053-05055	Curtis Ave	05-053	05-055	7													
05053-05055	Curtis Ave	05-053	05-055	7													
05054-05055	Rowell Ave	05-054	05-055														
05054-05055	Rowell Ave	05-054	05-055														
05055-05056	Rowell Ave	05-055	05-056	4													
05055-05056	Rowell Ave	05-055	05-056	4													
06001-06002	22nd St	06-001	06-002	35									✓				
06001-06002	22nd St	06-001	06-002	35									✓				
06002-06003	22nd St	06-002	06-003	30									✓				
06002-06003	22nd St	06-002	06-003	30									✓				
06003-06005	Cedar Ave	06-003	06-005	1													
06003-06005	Cedar Ave	06-003	06-005	1													
06004-06005	21st St	06-004	06-005	29									✓				
06004-06005	21st St	06-004	06-005	29									✓				
06005-06008	Cedar Ave	06-005	06-008	15									✓				
06005-06008	Cedar Ave	06-005	06-008	15									✓				
06006-06007	20th St	06-006	06-007	26									✓				
06006-06007	20th St	06-006	06-007	26									✓				
06007-06008	20th St	06-007	06-008	54									✓				
06007-06008	20th St	06-007	06-008	54									✓				
06008-06010	Cedar Ave	06-008	06-010	34									✓				
06008-06010	Cedar Ave	06-008	06-010	34									✓				
06009-06010	18th St	06-009	06-010	17									✓				
06009-06010	18th St	06-009	06-010	17									✓				
06009-06034	18th St	06-009	06-034	6													
06009-06034	18th St	06-009	06-034	6													
06024-06025	Oak Ave	06-024	06-025	29									✓				
06024-06025	Oak Ave	06-024	06-025	29									✓				
06025-06026	Oak Ave	06-025	06-026	9													
06025-06026	Oak Ave	06-025	06-026	9													
06026-06030	Oak Ave	06-026	06-030	14									✓				
06026-06030	Oak Ave	06-026	06-030	14									✓				
06027-06028	Oak Ave	06-027	06-028	37									✓				
06027-06028	Oak Ave	06-027	06-028	37									✓				
06028-06029	Oak Ave	06-028	06-029														
06028-06029	Oak Ave	06-028	06-029														
06029-06030	Oak Ave	06-029	06-030	38									✓				
06029-06030	Oak Ave	06-029	06-030	38									✓				
06030-06233	19th St	06-030	06-233														
06030-06233	19th St	06-030	06-233														
06031-06032	Magnolia Ave	06-031	06-032	46									✓				
06031-06032	Magnolia Ave	06-031	06-032	46									✓				
06032-06033	Magnolia Ave	06-032	06-033	22									✓				
06032-06033	Magnolia Ave	06-032	06-033	22									✓				
06033-06035	Magnolia Ave	06-033	06-035	30									✓				
06033-06035	Magnolia Ave	06-033	06-035	30									✓				
06034-06035	18th St	06-034	06-035	50									✓				
06034-06035	18th St	06-034	06-035	50									✓				
06035-06036	Magnolia Ave	06-035	06-036	3													
06035-06036	Magnolia Ave	06-035	06-036	3													
06036-06037	Magnolia Ave	06-036	06-037														
06036-06037	Magnolia Ave	06-036	06-037														
06037-06050	Magnolia Ave	06-037	06-050	1													
06037-06050	Magnolia Ave	06-037	06-050	1													

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Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
06139-06140	Larsson St	06-039	06-040	52		1							✓	✓			
06048-06049	17th St	06-048	06-049	10									✓				
06048-06049	17th St	06-048	06-049	10									✓				
06049-06050	17th St	06-049	06-050														
06049-06050	17th St	06-049	06-050														
06067-06068	Sepulveda Blvd	06-067	06-068														
06067-06068	Sepulveda Blvd	06-067	06-068														
06068-06069	Sepulveda Blvd	06-068	06-069														
06068-06069	Sepulveda Blvd	06-068	06-069														
06069-06072	Sepulveda Blvd	06-069	06-072														
06069-06072	Sepulveda Blvd	06-069	06-072														
06070-06071	Sepulveda Blvd	06-070	06-071	7													
06070-06071	Sepulveda Blvd	06-070	06-071	7													
06071-06072	Sepulveda Blvd	06-071	06-072	1													
06071-06072	Sepulveda Blvd	06-071	06-072	1													
06072-06077	14th St	06-072	06-077														
06072-06077	14th St	06-072	06-077														
06073-06074	Oak Ave	06-073	06-074	25									✓				
06073-06074	Oak Ave	06-073	06-074	25									✓				
06074-06077	Oak Ave	06-074	06-077														
06074-06077	Oak Ave	06-074	06-077														
06075-06076	Oak Ave	06-075	06-076														
06075-06076	Oak Ave	06-075	06-076														
06076-06077	Oak Ave	06-076	06-077	10									✓				
06076-06077	Oak Ave	06-076	06-077	10									✓				
06077-06191	14th St	06-077	06-191	24									✓				
06077-06191	14th St	06-077	06-191	24									✓				
06136-06137	Larsson St	06-136	06-137	7													
06136-06137	Larsson St	06-136	06-137	7													
06137-06138	Larsson St	06-137	06-138	32									✓				
06137-06138	Larsson St	06-137	06-138	32									✓				
06138-06139	Larsson St	06-138	06-139	14									✓				
06138-06139	Larsson St	06-138	06-139	14									✓				
06139-06140	Larsson St	06-139	06-140	52		1							✓	✓			
06140-06141	Larsson St	06-140	06-141	41									✓				
06140-06141	Larsson St	06-140	06-141	41									✓				
06141-06142	Larsson St	06-141	06-142	34									✓				
06141-06142	Larsson St	06-141	06-142	34									✓				
06206-06207	12th Ct	06-206	06-207														
06206-06207	12th Ct	06-206	06-207														
06207-06208	12th Ct	06-207	06-208	41									✓				
06207-06208	12th Ct	06-207	06-208	41									✓				
06208-06210	12th Ct	06-208	06-210	1													
06208-06210	12th Ct	06-208	06-210	1													
06209-06210	Poinsettia Ave	06-209	06-210	40									✓				
06209-06210	Poinsettia Ave	06-209	06-210	40									✓				
06210-06213	Poinsettia Ave	06-210	06-213	36									✓				
06210-06213	Poinsettia Ave	06-210	06-213	36									✓				
06211-06212	14th St	06-211	06-212	28									✓				
06211-06212	14th St	06-211	06-212	28									✓				
06212-06213	14th St	06-212	06-213	7													
06212-06213	14th St	06-212	06-213	7													
06213-06220	14th St	06-213	06-220	33		1	6						✓	✓			
06213-06220	14th St	06-213	06-220	33		1	6						✓	✓			
06218-06219	Walnut Ave	06-218	06-219	1													
06218-06219	Walnut Ave	06-218	06-219	1													
06219-06220	Walnut Ave	06-219	06-220	15									✓				
06219-06220	Walnut Ave	06-219	06-220	15									✓				
06220-06223	14th St	06-220	06-223	50		1							✓	✓			
06220-06223	14th St	06-220	06-223	50		1							✓	✓			
06221-06222	Pine Ave	06-221	06-222	14									✓				
06221-06222	Pine Ave	06-221	06-222	14									✓				
06222-06223	Pine Ave	06-222	06-223	33			1						✓				
06222-06223	Pine Ave	06-222	06-223	33			1						✓				
06222-06223	Pine Ave	06-222	06-223	33			1						✓				
06230-06231	Elm Ave	06-230	06-231	1													
06230-06231	Elm Ave	06-230	06-231	1													
06231-06232	Elm Ave	06-231	06-232	4													
06231-06232	Elm Ave	06-231	06-232	4													
06232-06233	Elm Ave	06-232	06-233	5													
06232-06233	Elm Ave	06-232	06-233	5													
06241-06242	18th St	06-241	06-242	8													
06241-06242	18th St	06-241	06-242	8													
06242-06243	18th St	06-242	06-243	16									✓				
06242-06243	18th St	06-242	06-243	16									✓				
06243-06244	18th St	06-243	06-244	38									✓				
06243-06244	18th St	06-243	06-244	38									✓				
06244-06250	Palm Ave	06-244	06-250	65									✓				
06244-06250	Palm Ave	06-244	06-250	65									✓				
06245-06246	Palm Ave	06-245	06-246	1													
06245-06246	Palm Ave	06-245	06-246	1													
06246-06247	Palm Ave	06-246	06-247	1													
06246-06247	Palm Ave	06-246	06-247	1													
06247-06250	Palm Ave	06-247	06-250	4													
06247-06250	Palm Ave	06-247	06-250	4													
06248-06249	Easement	06-248	06-249	39	1								✓				
06248-06249	Easement	06-248	06-249	39	1								✓				
06249-06250	19th St	06-249	06-250	11									✓				
06249-06250	19th St	06-249	06-250	11									✓				

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
06282-06283	Oak Ave	06-282	06-283	54		1							✓	✓			
06282-06283	Oak Ave	06-282	06-283	54		1							✓	✓			
06283-06284	Oak Ave	06-283	06-284	61		1							✓	✓			
06283-06284	Oak Ave	06-283	06-284	61		1							✓	✓			
06284-06285	Oak Ave	06-284	06-285	61									✓				
06284-06285	Oak Ave	06-284	06-285	61									✓				
06285-06286	33rd St	06-285	06-286	1													
06285-06286	33rd St	06-285	06-286	1													
06286-06290	Ardmore Ave	06-286	06-290	8													
06286-06290	Ardmore Ave	06-286	06-290	8													
07001-07002	Rosecrans Ave	07-001	07-002	2													
07001-07002	Rosecrans Ave	07-001	07-002	2													
07002-07003	Rosecrans Ave	07-002	07-003					1									
07002-07003	Rosecrans Ave	07-002	07-003					1									
07003-07005	Rosecrans Ave	07-003	07-005	42									✓				
07003-07005	Rosecrans Ave	07-003	07-005	42									✓				
07004-07005	Pine Ave	07-004	07-005	12									✓				
07004-07005	Pine Ave	07-004	07-005	12									✓				
07005-07007	Rosecrans Ave	07-005	07-007	56									✓				
07005-07007	Rosecrans Ave	07-005	07-007	56									✓				
07006-07007	Walnut Ave	07-006	07-007	19		1							✓	✓			
07006-07007	Walnut Ave	07-006	07-007	19		1							✓	✓			
07007-07011	Rosecrans Ave	07-007	07-011	40									✓				
07007-07011	Rosecrans Ave	07-007	07-011	40									✓				
07008-07009	Poinsettia Ave	07-008	07-009	23									✓				
07008-07009	Poinsettia Ave	07-008	07-009	23									✓				
07009-07010	Poinsettia Ave	07-009	07-010	14									✓				
07009-07010	Poinsettia Ave	07-009	07-010	14									✓				
07010-07011	Poinsettia Ave	07-010	07-011	3													
07010-07011	Poinsettia Ave	07-010	07-011	3													
07011-07038	Rosecrans Ave	07-011	07-038	7													
07011-07038	Rosecrans Ave	07-011	07-038	7													
07012-07013	35th St	07-012	07-013	23									✓				
07012-07013	35th St	07-012	07-013	23									✓				
07013-07015	35th St	07-013	07-015	4													
07013-07015	35th St	07-013	07-015	4													
07014-07015	35th St	07-014	07-015	15									✓				
07014-07015	35th St	07-014	07-015	15									✓				
07015-07019	Easement	07-015	07-019	35									✓				
07015-07019	Easement	07-015	07-019	35									✓				
07016-07017	35th Pl	07-016	07-017	40									✓				
07016-07017	35th Pl	07-016	07-017	56									✓				
07017-07019	35th Pl	07-017	07-019	28									✓				
07017-07019	35th Pl	07-017	07-019	16		1							✓	✓			
07018-07019	35th Pl	07-018	07-019	20									✓				
07018-07019	35th Pl	07-018	07-019	25		1							✓	✓			
07019-07022	Easement	07-019	07-022	19									✓				
07019-07022	Easement	07-019	07-022	19									✓				
07020-07021	36th St	07-020	07-021	12									✓				
07020-07021	36th St	07-020	07-021	12									✓				
07021-07022	36th St	07-021	07-022	6													
07021-07022	36th St	07-021	07-022	6													
07022-07025	36th St	07-022	07-025	2													
07022-07025	36th St	07-022	07-025	2													
07023-07024	Laurel Ave	07-023	07-024	5													
07023-07024	Laurel Ave	07-023	07-024	5													
07024-07025	Laurel Ave	07-024	07-025	58		2							✓	✓			
07024-07025	Laurel Ave	07-024	07-025	58		2							✓	✓			
07025-07029	Laurel Ave	07-025	07-029	17		1							✓	✓			
07025-07029	Laurel Ave	07-025	07-029	17		1							✓	✓			
07026-07027	Rosecrans Ave	07-026	07-027	31		2							✓	✓			
07026-07027	Rosecrans Ave	07-026	07-027	31		2							✓	✓			
07027-07028	Rosecrans Ave	07-027	07-028	24								12/8/06 Debris & Roots	✓				
07027-07028	Rosecrans Ave	07-027	07-028	24									✓				
07028-07029	Rosecrans Ave	07-028	07-029	59									✓				
07028-07029	Rosecrans Ave	07-028	07-029	59									✓				
07029-07033	Rosecrans Ave	07-029	07-033	21		1							✓	✓			
07029-07033	Rosecrans Ave	07-029	07-033	21		1							✓	✓			
07033-07037	Rosecrans Ave	07-033	07-037	23									✓				
07033-07037	Rosecrans Ave	07-033	07-037	23							✓		✓				
07037-07038	Rosecrans Ave	07-037	07-038	19							✓		✓				
07037-07038	Rosecrans Ave	07-037	07-038	19							✓		✓				
07038-07042	Palm Ave	07-038	07-042	10									✓				
07038-07042	Palm Ave	07-038	07-042	10									✓				
07039-07040	Palm Ave	07-039	07-040	31									✓				
07039-07040	Palm Ave	07-039	07-040	31									✓				
07040-07041	Palm Ave	07-040	07-041	50									✓				
07040-07041	Palm Ave	07-040	07-041	50									✓				
07041-07042	Palm Ave	07-041	07-042	22									✓				
07041-07042	Palm Ave	07-041	07-042	22									✓				
08001-08001A	Sepulveda Blvd	08-001	08-001A	2			8										
08001-08002	Sepulveda Blvd	08-001	08-002	2			8										
08001A-08002	Sepulveda Blvd	08-001A	08-002														
08001A-08002	Sepulveda Blvd	08-001A	08-002														
08002-08003	Sepulveda Blvd	08-002	08-003	13		1							✓	✓			
08002-08003	Sepulveda Blvd	08-002	08-003	13		1							✓	✓			
08003-08004	Valley Dr	08-003	08-004														

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
08003-08004	Valley Dr	08-003	08-004														
08004-08007	Valley Dr	08-004	08-007														
08004-08007	Valley Dr	08-004	08-007														
08005-08006	Oak Ave	08-005	08-006	24									✓				
08005-08006	Oak Ave	08-005	08-006	24									✓				
08006-08007	Oak Ave	08-006	08-007	11		2							✓	✓			
08006-08007	Oak Ave	08-006	08-007	11		2							✓	✓			
08007-08011	Valley Dr	08-007	08-011														
08007-08011	Valley Dr	08-007	08-011														
08008-08009	Elm Ave	08-008	08-009	9						15						✓	
08008-08009	Elm Ave	08-008	08-009	3													
08008-08009	Elm Ave	08-008	08-009	12						15			✓			✓	
08009-08010	Elm Ave	08-009	08-010	5													
08009-08010	Elm Ave	08-009	08-010	5													
08010-08011	Elm Ave	08-010	08-011														
08010-08011	Elm Ave	08-010	08-011														
08024-08025	Valley Dr	08-024	08-025	50							✓		✓				
08024-08025	Valley Dr	08-024	08-025	50							✓		✓				
08025-08026	Walnut Ave	08-025	08-026	13		1							✓	✓			
08025-08026	Walnut Ave	08-025	08-026	13		1							✓	✓			
08026-08027	Walnut Ave	08-026	08-027	27									✓				
08026-08027	Walnut Ave	08-026	08-027	27									✓				
08027-08023	31st St	08-027	08-033	4		1								✓			
08027-08033	31st St	08-027	08-033	4		1								✓			
08028-08029	Poinsettia Ave	08-028	08-029	1													
08028-08029	Poinsettia Ave	08-028	08-029	1						5						✓	
08029-08030	Poinsettia Ave	08-029	08-030	10		1							✓	✓			
08029-08030	Poinsettia Ave	08-029	08-030	10		1							✓	✓			
08030-08033	Poinsettia Ave	08-030	08-033	6													
08030-08033	Poinsettia Ave	08-030	08-033	6													
08031-08032	Poinsettia Ave	08-031	08-032	30									✓				
08031-08032	Poinsettia Ave	08-031	08-032	30									✓				
08032-08033	Poinsettia Ave	08-032	08-033	40		1							✓	✓			
08032-08033	Poinsettia Ave	08-032	08-033	40		1							✓	✓			
08048-08049	Maple Ave	08-048	08-049	16									✓				
08048-08049	Maple Ave	08-048	08-049	16									✓				
08049-08050	Maple Ave	08-049	08-050	24									✓				
08049-08050	Maple Ave	08-049	08-050	24									✓				
08050-08052	Maple Ave	08-050	08-052	8	1								✓				
08050-08052	Maple Ave	08-050	08-052	8	1												
08056-08058	26th St	08-056	08-058	34		1							✓	✓			
08056-08058	26th St	08-056	08-058	34		1							✓	✓			
08057-08058	Laurel Ave	08-057	08-058	2		1								✓			
08057-08058	Laurel Ave	08-057	08-058	2		1								✓			
08058-08060	Laurel Ave	08-058	08-060	28									✓				
08058-08060	Laurel Ave	08-058	08-060	28									✓				
08059-08060	27th St	08-059	08-060	1													
08059-08060	27th St	08-059	08-060	1													
08060-08062	Laurel Ave	08-060	08-062	7													
08060-08062	Laurel Ave	08-060	08-062	7													
08061-08062	29th St	08-061	08-062	5		1								✓			
08061-08062	29th St	08-061	08-062	5		1								✓			
08062-08073	Laurel Ave	08-062	08-073	9													
08063-08064	30th St	08-063	08-064	25									✓				
08063-08064	30th St	08-063	08-064	25									✓				
08064-08065	30th St	08-064	08-065	12									✓				
08064-08065	30th St	08-064	08-065	12									✓				
08065-08066	30th St	08-065	08-066	41		1							✓	✓			
08065-08066	30th St	08-065	08-066	41		1							✓	✓			
08066-08072	30th St	08-066	08-072	18									✓				
08066-08072	30th St	08-066	08-072	18									✓				
08067-08068	31st St	08-067	08-068	59		3							✓	✓			
08068-08071	31st St	08-068	08-071	38		1							✓	✓			
08069-08070	Laurel Ave	08-069	08-070	32		2							✓	✓			
08070-08071	Laurel Ave	08-070	08-071	26							✓		✓				
08071-08072	Laurel Ave	08-071	08-072	4							✓						
08072-08073	Laurel Ave	08-072	08-073	11									✓				
09001-09002	9th St	09-001	09-002	12									✓				
09001-09002	9th St	09-001	09-002	12									✓				
09002-09004	9th St	09-002	09-004														
09002-09004	9th St	09-002	09-004														
09003-09004	Poinsettia Ave	09-003	09-004	3													
09003-09004	Poinsettia Ave	09-003	09-004	3													
09004-09005	9th St	09-004	09-005	1													
09004-09005	9th St	09-004	09-005	1													
09005-09010	9th St	09-005	09-010														
09005-09010	9th St	09-005	09-010														
09008-09010	No Street Name	09-008	09-010	17									✓				
09008-09010	No Street Name	09-008	09-010	17									✓				
09009-09010	9th St	09-009	09-010	18									✓				
09009-09010	9th St	09-009	09-010	18									✓				
09010-09011	No Street Name	09-010	09-011	25			4						✓				
09010-09011	No Street Name	09-010	09-011	25			4						✓				
09011-09013	No Street Name	09-011	09-013	38	2	1	5						✓	✓			
09011-09013	No Street Name	09-011	09-013	38	2	1	5						✓	✓			
09012-09013	No Street Name	09-012	09-013	13		1							✓	✓			
09012-09013	No Street Name	09-012	09-013	13		1							✓	✓			
09013-09015	No Street Name	09-013	09-015	18									✓				
09013-09015	No Street Name	09-013	09-015	18									✓				

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots In Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
09016-09017	John St	09-016	09-017	2						10						✓	
09016-09017	John St	09-016	09-017	2						10						✓	
09017-09019	John St	09-017	09-019	4													
09017-09019	John St	09-017	09-019	4													
09018-09019	10th St	09-018	09-019	45						10			✓			✓	
09018-09019	10th St	09-018	09-019	45						10			✓			✓	
09019-09020	10th St	09-019	09-020														
09019-09020	10th St	09-019	09-020														
09020-09021	10th St	09-020	09-021	25									✓				
09020-09021	10th St	09-020	09-021	25									✓				
09021-09023	10th St	09-021	09-023														
09021-09023	10th St	09-021	09-023														
09022-09023	Poinsettia Ave	09-022	09-023	16									✓				
09022-09023	Poinsettia Ave	09-022	09-023	16									✓				
09023-09036	Poinsettia Ave	09-023	09-036														
09023-09036	Poinsettia Ave	09-023	09-036														
09024-09025	11th St	09-024	09-025														
09024-09025	11th St	09-024	09-025														
09025-09028	11th St	09-025	09-028	20									✓				
09025-09028	11th St	09-025	09-028	20									✓				
09026-09028	Pacific Pl	09-026	09-028	1													
09026-09028	Pacific Pl	09-026	09-028	1													
09027-09028	Pacific Pl	09-027	09-028	36									✓				
09027-09028	Pacific Pl	09-027	09-028	36									✓				
09028-09031	11th St	09-028	09-031	10									✓				
09028-09031	11th St	09-028	09-031	10									✓				
09029-09031	John St	09-029	09-031														
09029-09031	John St	09-029	09-031														
09030-09031	John St	09-030	09-031	12									✓				
09030-09031	John St	09-030	09-031	12									✓				
09031-09032	11th St	09-031	09-032														
09031-09032	11th St	09-031	09-032														
09032-09033	11th St	09-032	09-033	23									✓				
09032-09033	11th St	09-032	09-033	23									✓				
09033-09036	11th St	09-033	09-036														
09033-09036	11th St	09-033	09-036														
10011-10012	Boundary Pl	10-011	10-012	18									✓				
10011-10012	Boundary Pl	10-011	10-012	18									✓				
10012-10013	Boundary Pl	10-012	10-013	17									✓				
10012-10013	Boundary Pl	10-012	10-013	17									✓				
10013-10014	Boundary Pl	10-013	10-014	7			2										
10013-10014	Boundary Pl	10-013	10-014	7			2										
10014-10017	Dianthus St	10-014	10-017														
10014-10017	Dianthus St	10-014	10-017														
10015-10016	Duncan Ave	10-015	10-016	34									✓				
10015-10016	Duncan Ave	10-015	10-016	34									✓				
10016-10017	Duncan Ave	10-016	10-017	2													
10016-10017	Duncan Ave	10-016	10-017	2													
10017-10019	Duncan Ave	10-017	10-019														
10017-10019	Duncan Ave	10-017	10-019														
10018-10019	No Street Name	10-018	10-019	28									✓				
10018-10019	No Street Name	10-018	10-019	28									✓				
10019-10020	Duncan Ave	10-019	10-020	8													
10019-10020	Duncan Ave	10-019	10-020	8													
10020-10029	Duncan Ave	10-020	10-029	15		1							✓	✓			
10020-10029	Duncan Ave	10-020	10-029	15		1							✓	✓			
10029-10039	Duncan Ave	10-029	10-039	6													
10029-10039	Duncan Ave	10-029	10-039	6													
10030-10031	Boundary Pl	10-030	10-031	5	1								✓				
10030-10031	Boundary Pl	10-030	10-031	5	1												
10031-10033	Boundary Pl	10-031	10-033	4													
10031-10033	Boundary Pl	10-031	10-033	4													
10032-10033	Poinsettia Ave	10-032	10-033	1													
10032-10033	Poinsettia Ave	10-032	10-033	1													
10033-10034	Boundary Pl	10-033	10-034	16									✓				
10033-10034	Boundary Pl	10-033	10-034	16									✓				
10034-10035	Boundary Pl	10-034	10-035	94									✓				
10034-10035	Boundary Pl	10-034	10-035	94									✓				
10035-10041	Ardmore Ave	10-035	10-041	2													
10035-10041	Ardmore Ave	10-035	10-041	2													
10036-10038	Duncan Pl	10-036	10-038	10		1							✓	✓			
10036-10038	Duncan Pl	10-036	10-038	10		1							✓	✓			
10037-10038	Ardmore Ave	10-037	10-038	1													
10037-10038	Ardmore Ave	10-037	10-038	1													
10038-10040	Ardmore Ave	10-038	10-040	6													
10038-10040	Ardmore Ave	10-038	10-040	6													
10039-10040	Duncan Ave	10-039	10-040	11									✓				
10039-10040	Duncan Ave	10-039	10-040	11									✓				
10040-10041	Ardmore Ave	10-040	10-041	1													
10040-10041	Ardmore Ave	10-040	10-041	1													
10041-10042	Longfellow Dr	10-041	10-042	5													
10041-10042	Longfellow Dr	10-041	10-042	5													
10042-10043	Longfellow Dr	10-042	10-043	1													
10043-10046	Ingleside Dr	10-043	10-046														
10044-10045	Francisco St	10-044	10-045	5													
10045-10046	Francisco St	10-045	10-046	17		2							✓	✓			
10046-10049	Easement	10-046	10-049														
10047-10048	Homer St	10-047	10-048	8													
10048-10049	Homer St	10-048	10-049	11									✓				

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID																
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
10049-10053	Easement	10-049	10-053	1													
10050-10052	Vista Dr	10-050	10-052														
10051-10052	Easement	10-051	10-052	1													
10052-10053	Easement	10-052	10-053	2													
10053-14100	Easement	10-053	14-100														
10054-10055	1st St	10-054	10-055	28									✓				
10055-10056	1st St	10-055	10-056	31									✓				
10056-14100	1st St	10-056	14-100	2													
10057-10148	1st St	10-057	10-148	15		2							✓	✓			
10058-140L5	1st St	10-058	14-0L5														
10072-10073	6th St	10-072	10-073														
10072-10073	6th St	10-072	10-073														
10073-10075	6th St	10-073	10-075	2													
10073-10075	6th St	10-073	10-075	2													
10074-10075	John St	10-074	10-075	3													
10074-10075	John St	10-074	10-075	3													
10075-10078	John St	10-075	10-078	2													
10075-10078	John St	10-075	10-078	2													
10076-10077	5th St	10-076	10-077	3													
10076-10077	5th St	10-076	10-077	3													
10077-10078	5th St	10-077	10-078														
10077-10078	5th St	10-077	10-078														
10112-85075	2nd St	10-112	85-075														
10113-10114	2nd St	10-113	10-114														
10114-10147	2nd St	10-114	10-147	2													
10115-10116	Valley Dr	10-115	10-116	32				8					✓				
10116-10117	Valley Dr	10-116	10-117	36									✓				
10117-10118	Valley Dr	10-117	10-118	37									✓				
10118-10119	Valley Dr	10-118	10-119	33									✓				
10119-10120	5th St	10-119	10-120	23	1								✓				
10120-10132	5th St	10-120	10-132	27		1							✓	✓			
10121-10122	7th St	10-121	10-122	50		7							✓	✓			
10121-10122	7th St	10-121	10-122	50		7							✓	✓			
10122-10124	7th St	10-122	10-124	44									✓				
10122-10124	7th St	10-122	10-124	44									✓				
10123-10124	7th St	10-123	10-124														
10123-10124	7th St	10-123	10-124														
10124-10129	Ingleside Dr	10-124	10-129	35		1							✓	✓			
10124-10129	Ingleside Dr	10-124	10-129	35		1							✓	✓			
10125-10126	6th St	10-125	10-126	15	1								✓				
10125-10126	6th St	10-125	10-126	15	1								✓				
10126-10129	6th St	10-126	10-129	33		4							✓	✓			
10126-10129	6th St	10-126	10-129														
10126-10129	6th St	10-126	10-129	33		4							✓	✓			
10127-10128	6th St	10-127	10-128	16				1					✓				
10127-10128	6th St	10-127	10-128	16				1					✓				
10128-10129	6th St	10-128	10-129	28									✓				
10128-10129	6th St	10-128	10-129	28									✓				
10129-10132	Ingleside Dr	10-129	10-132	40		1							✓	✓			
10129-10132	Ingleside Dr	10-129	10-132	40		1							✓	✓			
10130-10131	5th St	10-130	10-131	34		3							✓	✓			
10131-10132	5th St	10-131	10-132	1													
10131-10132	5th St	10-131	10-132	22		3							✓	✓			
10132-10137	Ingleside Dr	10-132	10-137														
10133-10134	4th St	10-133	10-134	1													
10134-10137A	4th St	10-134	10-137A	1													
10135-10136	4th St	10-135	10-136	2													
10136-10137	4th St	10-136	10-137	34		2		8					✓	✓			
10137-10142	Ingleside Dr	10-137	10-142	3													
10137A-10137	4th St	10-137A	10-137														
10138-10139	3rd St	10-138	10-139	61		2							✓	✓			
10139-10142	3rd St	10-139	10-142	23									✓				
10140-10141	3rd St	10-140	10-141	16									✓				
10141-10142	3rd St	10-141	10-142	15									✓				
10142-10147	Ingleside Dr	10-142	10-147	2													
10143-10146	Vista Dr	10-143	10-146	10									✓				
10143-10146	Vista Dr	10-143	10-146	10									✓				
10144-10146	Vista Dr	10-144	10-146	1													
10144-10146	Vista Dr	10-144	10-146	1													
10145-10146	2nd St	10-145	10-146	15		2							✓	✓			
10145-10146	2nd St	10-145	10-146	15		2							✓	✓			
10147-10146	2nd St	10-146	10-147	18									✓				
10146-10147	2nd St	10-146	10-147	18									✓				
10147-14100	Ingleside Dr	10-147	14-100														
10148-14100	1st St	10-148	14-100														
11001-11002	19th St	11-001	11-002	31		4							✓	✓			
15037-11001	19th St	11-001	15-037	1													
15037-11001	19th St	11-001	15-037	1													
11002-11003	19th St	11-002	11-003	4		1								✓			
11003-11004	Ardmore Ave	11-003	11-004	5													
11004-11005	Ardmore Ave	11-004	11-005	3													
11005-11011	Ardmore Ave	11-005	11-011	2													
11006-11007	18th St	11-006	11-007														
11007-11008	18th St	11-007	11-008	1													
11008-11009	18th St	11-008	11-009	1													
11009-11010	18th St	11-009	11-010	4													
11010-11011	18th St	11-010	11-011														
11011-85009	Ardmore Ave	11-011	85-009	3													
11012-11018	Ardmore Ave	11-012	11-018														

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Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
11013-11014	17th St	11-013	11-014	1													
11014-11015	17th St	11-014	11-015	3													
11015-11016	17th St	11-015	11-016	11		1							✓	✓			
11016-11017	17th St	11-016	11-017	9													
11017-11018	17th St	11-017	11-018														
11018-11021	Ardmore Ave	11-018	11-021	26		2		5					✓	✓			
11019-11020	15th St	11-019	11-020	11		2							✓	✓			
11020-11021	15th St	11-020	11-021	27						10	✓		✓			✓	
11021-11025	Ardmore Ave	11-021	11-025	6		1								✓			
11022-11023	14th St	11-022	11-023	13									✓				
11023-11024	14th St	11-023	11-024	21		1							✓	✓			
11024-11025	14th St	11-024	11-025	14		1	6						✓	✓			
11025-11030	Ardmore Ave	11-025	11-030	21			22						✓		✓		
11026-11027	13th St	11-026	11-027	3													
11027-11028	13th St	11-027	11-028	16									✓				
11028-11029	13th St	11-028	11-029	25									✓				
11029-11030	13th St	11-029	11-030	0													
11030-11032	Ardmore Ave	11-030	11-032	1													
11031-11032	13th St	11-031	11-032	1													
11032-11034	Ardmore Ave	11-032	11-034	8		1								✓			
11033-11034	12th St	11-033	11-034	12			3						✓				
11034-11034A	12th St	11-034	11-034A														
11034A-11047A	Ardmore Ave	11-034A	11-047A														
11035-11037	Pacific Ave	11-035	11-037	30									✓				
11036-11037	Manhattan Beach Blvd	11-036	11-037														
11037-11038	Manhattan Beach Blvd	11-037	11-038	3													
11038-11041	Manhattan Beach Blvd	11-038	11-041	7				64		20						✓	
11038-11041	Manhattan Beach Blvd	11-038	11-041	7													
11039-11040	Highview Ave	11-039	11-040	24									✓				
11039-11040	Highview Ave	11-039	11-040	24									✓				
11040-11041	Highview Ave	11-040	11-041	13		1							✓	✓			
11040-11041	Highview Ave	11-040	11-041	13		1							✓	✓			
11041-11042	Manhattan Beach Blvd	11-041	11-042	22									✓				
11041-11042	Manhattan Beach Blvd	11-041	11-042	22									✓				
11042-11046	Manhattan Beach Blvd	11-042	11-046	19									✓				
11042-11046	Manhattan Beach Blvd	11-042	11-046	19									✓				
11043-11045	12th St	11-043	11-045	11		1					✓		✓	✓			
11044-11045	Fisher Ave	11-044	11-045	8		1								✓			
11045-11046	Fisher Ave	11-045	11-046	4													
11046-11047	Manhattan Beach Blvd	11-046	11-047	23		1						4/20/06 Debris	✓	✓			
11046-11047	Manhattan Beach Blvd	11-046	11-047	23		1							✓	✓			
11047-11051	Ardmore Ave	11-047	11-051														
11048-11049	11th Pl	11-048	11-049	5													
11049-11050	11th Pl	11-049	11-050	8		1								✓			
11050-11051	11th Pl	11-050	11-051	28	2	2							✓	✓			
11051-11069	Ardmore Ave	11-051	11-069														
11064-11065	11th St	11-064	11-065	14		1							✓	✓			
11065-11067	11th St	11-065	11-067	5													
11066-11067	Railroad Pl	11-066	11-067	13		3							✓	✓			
11067-11068	11th St	11-067	11-068	1													
11068-11069	11th St	11-068	11-069	1													
11069-11071	10th Pl	11-069	11-071							15						✓	
11070-11071	10th Pl	11-070	11-071														
11071-11073	10th Pl	11-071	11-073														
11072-11071	Easement	11-072	11-071														
11073-11075	Morningside Dr	11-073	11-075														
11075-11078	11th St	11-075	11-078	2													
11076-11079	Highland Ave	11-076	11-079														
11077-11079	Highland Ave	11-077	11-079	1													
11078-11079	11th St	11-078	11-079														
11079-85071	11th St	11-079	85-071	1													
11080-11080A	11th St	11-080	11-080A														
11082-11083	10th St	11-082	11-083	9				2									
11083-11084	10th St	11-083	11-084	15									✓				
11084-11085	10th St	11-084	11-085														
11085-11081	Manhattan Ave	11-085	11-081														
11085-11095	Manhattan Ave	11-085	11-095														
11086-11087	10th St	11-086	11-087	28		1							✓	✓			
11086-11087	10th St	11-086	11-087	28		1							✓	✓			
11087-11088	10th St	11-087	11-088	39									✓				
11087-11088	10th St	11-087	11-088	39									✓				
11088-11092	Crest Dr	11-088	11-092	23									✓				
11088-11092	Crest Dr	11-088	11-092	23									✓				
11089-11090	9th St	11-089	11-090														
11089-11090	9th St	11-089	11-090														
11090-11092	9th St	11-090	11-092														
11090-11092	9th St	11-090	11-092														
11091-11091A	Crest Dr	11-091	11-091A	3		1	1	1						✓			
11091-11091A	Crest Dr	11-091	11-091A	3		1	1	1						✓			
11091A-11092	Crest Dr	11-091A	11-092														
11091A-11092	Crest Dr	11-091A	11-092														
11092-11092A	9th St	11-092	11-092A														
11092-11092A	9th St	11-092	11-092A														
11092A-11093	9th St	11-092A	11-093														
11092A-11093	9th St	11-092A	11-093														
11093-11094	9th St	11-093	11-094	14						15			✓			✓	
11093-11094	9th St	11-093	11-094	14						15			✓			✓	
11094-11095	9th St	11-094	11-095														

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Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
11095-11102	Manhattan Ave	11-095	11-102														
11096-11097	8th St	11-096	11-097	13		1							✓	✓			
11097-11098	8th St	11-097	11-098	50		2	1						✓	✓			
11098-11099	8th St	11-098	11-099	3													
11099-11100	8th St	11-099	11-100	13		2		1					✓	✓			
11100-11101	8th St	11-100	11-101	12									✓				
11101-11102	8th St	11-101	11-102	1													
11102-11110	Manhattan Ave	11-102	11-110	4	1												
11103-11105	Highland Ave	11-103	11-105	44	2								✓				
11104-11105	Highland Ave	11-104	11-105	19		1							✓	✓			
11105-11106	7th St	11-105	11-106	35	3	1	2						✓	✓			
11106-11106A	7th St	11-106	11-106A	1	1												
11106A-11107	7th St	11-106A	11-107	0													
11107-11108	7th St	11-107	11-108														
11108-11109	7th St	11-108	11-109														
11110-11123	Manhattan Ave	11-110	11-123	2													
11111-11112	7th St	11-111	11-112														
11111-11112	7th St	11-111	11-112														
11112-11113A	7th St	11-112	11-113A														
11112-11113A	7th St	11-112	11-113A														
11113-11136	7th St	11-113	11-136	2			2										
11113-11136	7th St	11-113	11-136	2			2										
11113A-11113	7th St	11-113A	11-113														
11113A-11113	7th St	11-113A	11-113														
11114-11114A	4th St	11-114	11-114A														
11114-85062	4th St	11-114	85-062														
11114A-11117	4th St	11-114A	11-117														
11116-11117	Manhattan Ave	11-116	11-117	12		1							✓	✓			
11116-11117A	Manhattan Ave	11-116	11-117A	12		1							✓	✓			
11117-11119	Manhattan Ave	11-117	11-119	17									✓				
11117-11119	Manhattan Ave	11-117	11-119	17									✓				
11117A-11117	Manhattan Ave	11-117A	11-117														
11117A-11117	Manhattan Ave	11-117A	11-117														
11118-11119	5th St	11-118	11-119	13				4					✓				
11118-11119	5th St	11-118	11-119	13				4					✓				
11119-11121	Manhattan Ave	11-119	11-121	15		2	3						✓	✓			
11119-11121	Manhattan Ave	11-119	11-121	15		2	3						✓	✓			
11120-11120A	6th St	11-120	11-120A	9													
11120A-11122	6th St	11-120A	11-122	24		1							✓	✓			
11121-11123	6th St	11-121	11-123														
11122-11121	Manhattan Ave	11-122	11-121														
11123-11124	6th St	11-123	11-124														
11124-11125	6th St	11-124	11-125	6													
11125-11139	6th St	11-125	11-139														
11126-11127	8th St	11-126	11-127	8													
11126-11127	8th St	11-126	11-127	8													
11127-11135	8th St	11-127	11-135	1			3										
11127-11135	8th St	11-127	11-135	1			3										
11128-11129	9th St	11-128	11-129	28									✓				
11128-11129	9th St	11-128	11-129	28									✓				
11129-11134	9th St	11-129	11-134	11									✓				
11129-11134	9th St	11-129	11-134	11									✓				
11130-11131	10th St	11-130	11-131	4													
11130-11131	10th St	11-130	11-131	4													
11131-11133	10th St	11-131	11-133														
11131-11133	10th St	11-131	11-133														
11132-11133	The Strand	11-132	11-133	1			4	1									
11132-11133	The Strand	11-132	11-133	1			4	1									
11133-11133A	The Strand	11-133	11-133A														
11133-11133A	The Strand	11-133	11-133A														
11133A-11134B	The Strand	11-133A	11-134B							10&15						✓	
11133A-11134B	The Strand	11-133A	11-134B							10&15						✓	
11134-11134A	The Strand	11-134	11-134A														
11134-11134A	The Strand	11-134	11-134A														
11134-11135	The Strand	11-134	11-135														
11134-11135	The Strand	11-134	11-135														
11134A-11135B	The Strand	11-134A	11-135B														
11134A-11135B	The Strand	11-134A	11-135B														
11134B-11134A	The Strand	11-134B	11-134														
11134B-11134A	The Strand	11-134B	11-134A														
11135-11136	The Strand	11-135	11-136	15			3						✓				
11135-11136	The Strand	11-135	11-136	15			3						✓				
11135B-11135A	The Strand	11-135B	11-135A														
11135B-11135A	The Strand	11-135B	11-135A														
11136-11139	The Strand	11-136	11-139														
11137-11139	The Strand	11-137	11-138	1													
11138-11139	The Strand	11-138	11-139														
11139-11139A	The Strand	11-139	11-139A														
1135A-11035	Pacific Ave	11-35A	11-035	10	1	1							✓	✓			
12001-12002	Highland Ave	12-001	12-002	7													
12001-12002	Highland Ave	12-001	12-002	7													
12002-12003	Highland Ave	12-002	12-003	44		1							✓	✓			
12002-12003	Highland Ave	12-002	12-003	44		1							✓	✓			
12003-12004	Highland Ave	12-003	12-004	48			42						✓		✓		
12003-12004	Highland Ave	12-003	12-004	48			42						✓		✓		
12004-12009	Highland Ave	12-004	12-009	38		1							✓	✓			
12004-12009	Highland Ave	12-004	12-009	38		1							✓	✓			
12005-12009	1st St	12-005	12-009	19		1							✓	✓			
12005-12009	1st St	12-005	12-009	19		1							✓	✓			

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Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
12006-12007	Homer St	12-006	12-007														
12006-12007	Homer St	12-006	12-007														
12007-12008	Highland Ave	12-007	12-008	43	1	2	10						✓	✓	✓		
12007-12008	Highland Ave	12-007	12-008	43	1	2	10						✓	✓	✓		
12009-12010	1st St	12-009	12-010	1													
12009-12010	1st St	12-009	12-010	1													
12010-12023	1st St	12-010	12-023	19		1	2						✓	✓			
12010-12023	1st St	12-010	12-023	19		1	2						✓	✓			
12011-12012	3rd St	12-011	12-012	10									✓				
12011-12012	3rd St	12-011	12-012	10									✓				
12012-12013	3rd St	12-012	12-013	4			3										
12012-12013	3rd St	12-012	12-013	4			3										
12013-12018	Manhattan Ave	12-013	12-018	25		2							✓	✓			
12013-12018	Manhattan Ave	12-013	12-018	25		2							✓	✓			
12014-12015	2nd St	12-014	12-015	2													
12014-12015	2nd St	12-014	12-015	2													
12015-12016	2nd St	12-015	12-016	1													
12015-12016	2nd St	12-015	12-016	1													
12016-12017	2nd St	12-016	12-017														
12016-12017	2nd St	12-016	12-017														
12017-12018	2nd St	12-017	12-018	1													
12017-12018	2nd St	12-017	12-018	1													
12018-12023	Manhattan Ave	12-018	12-023	8			3										
12018-12023	Manhattan Ave	12-018	12-023	8			3										
12019-12020	Homer St	12-019	12-020	1													
12019-12020	Homer St	12-019	12-020	1													
12020-12022	Manhattan Ave	12-020	12-022	2		1	7							✓			
12020-12022	Manhattan Ave	12-020	12-022	2		1	7							✓			
12021-12022	1st St	12-021	12-022	5	1			1					✓				
12021-12022	1st St	12-021	12-022	5	1			1									
12022-12024	Manhattan Ave	12-022	12-024														
12022-12024	Manhattan Ave	12-022	12-024														
12023-12024	Manhattan Ave	12-023	12-024														
12023-12024	Manhattan Ave	12-023	12-024														
12025-12026	1st St	12-025	12-026	13									✓				
12025A-12025	1st St	12-025A	12-025	8	1												
12026-12027	1st St	12-026	12-027														
12027-12027A	1st St	12-027	12-027A														
12027A-140L5	1st St	12-027A	14-0L5														
12028-12029	2nd St	12-028	12-029	8	2	1								✓			
12030-140L4	2nd St	12-030	14-0L4														
12031-12032	3rd St	12-031	12-032	2													
12031-12032	3rd St	12-031	12-032	2													
12032-12039	3rd St	12-032	12-039														
12032-12039	3rd St	12-032	12-039														
12033-12034	4th St	12-033	12-034	2													
12033-12034	4th St	12-033	12-034	2													
12034-12038	4th St	12-034	12-038														
12034-12038	4th St	12-034	12-038														
12035-12036	5th St	12-035	12-036	19		2							✓	✓			
12036-12037	5th St	12-036	12-037	4		1								✓			
12037-12038	The Strand	12-037	12-038					2									
12038-12039	The Strand	12-038	12-039	2													
12038-12039	The Strand	12-038	12-039	2													
14000A-14000B	Easement	14-000A	14-000B														
14000B-14000C	Easement	14-000B	14-000C	1													
14000C-14001	Easement	14-000C	14-001	10									✓				
14001-14002	19th St	14-001	14-002														
14002-14007	Valley Dr	14-002	14-007														
14002-14007	Valley Dr	14-002	14-007	0													
14003-14004	16th Pl	14-003	14-004	8													
14003-14004	16th Pl	14-003	14-004	8													
14004-14005	16th Pl	14-004	14-005	1													
14004-14005	16th Pl	14-004	14-005	1													
14005-14006	No Street Name	14-005	14-006	24									✓				
14005-14006	No Street Name	14-005	14-006	24									✓				
14006-14007	No Street Name	14-006	14-007	4													
14006-14007	No Street Name	14-006	14-007	4													
14007-14009	Valley Dr	14-007	14-009														
14007-14009	Valley Dr	14-007	14-009	0													
14008-14009	15TH PL	14-008	14-009	3		1								✓			
14009-14010	Valley Dr	14-009	14-010							10						✓	
14009-14010	Valley Dr	14-009	14-010	0						10						✓	
14010-14011	Valley Dr	14-010	14-011														
14010-14011	Valley Dr	14-010	14-011	0													
14011-14012	13th St	14-011	14-012														
14012-14013	13th St	14-012	14-013	3			1										
14013-14016	13th St	14-013	14-016	49	1	1							✓	✓			
14016-14017	13th St	14-016	14-017	15							✓		✓				
14017-14018	13th St	14-017	14-018				1				✓						
14018-14020	13th St	14-018	14-020														
14019-14020	Manhattan Ave	14-019	14-020	17									✓				
14020-14022	13th St	14-020	14-022														
14021-14022	Manhattan Ave	14-021	14-022														
14022-14023	13th St	14-022	14-023														
14023-14024	13th St	14-023	14-024														
14024-14027	13th St	14-024	14-027														
14025-14026	13th Pl	14-025	14-026	3		1								✓			
14026-14027	Ocean Dr	14-026	14-027	1													

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
14027-14066	13th St	14-027	14-066														
14028-14029	15th St	14-028	14-029					1									
14029-14031	15th St	14-029	14-031	2													
14031-14032	15th St	14-031	14-032	2													
14032-14033	15th St	14-032	14-033	2													
14033-14034	15th St	14-033	14-034														
14034-14062	15th St	14-034	14-062	6													
14035-14037	Manhattan Ave	14-035	14-037	14									✓				
14035-14037	Manhattan Ave	14-035	14-037	14									✓				
14036-14037	14th St	14-036	14-037	5								6/12/06 Roots					
14036-14037	14th St	14-036	14-037	5													
14037-14038	14th St	14-037	14-038								✓						
14037-14038	14th St	14-037	14-038								✓						
14038-14041	14th St	14-038	14-041	2							✓						
14038-14041	14th St	14-038	14-041	2							✓						
14039-14040	14th Pl	14-039	14-040	2													
14039-14040	14th Pl	14-039	14-040	2													
14040-14041	Westport	14-040	14-041														
14040-14041	Ocean Dr	14-040	14-041														
14041-14064	14th St	14-041	14-064	9													
14041-14064	14th St	14-041	14-064	9													
14042-14043	12th St	14-042	14-043	8													
14042-14043	12th St	14-042	14-043	8													
14043-14044	12th St	14-043	14-044	17									✓				
14043-14044	12th St	14-043	14-044	17									✓				
14044-14045	12th St	14-044	14-045	6													
14044-14045	12th St	14-044	14-045	6													
14045-14068	12th St	14-045	14-068	2													
14045-14068	12th St	14-045	14-068	2													
14046-14048	12th St	14-046	14-048														
14047-14048	Highland Ave	14-047	14-048														
14048-14050	Highland Ave	14-048	14-050					2									
14049-14050	Manhattan Beach Blvd	14-049	14-050														
14050-14053	Manhattan Beach Blvd	14-050	14-053				2										
14051-14053	Manhattan Ave	14-051	14-053														
14052-14053	Manhattan Ave	14-052	14-053					19									
14053-14054	Manhattan Beach Blvd	14-053	14-054														
14054-14072	Manhattan Beach Blvd	14-054	14-072														
14055-14056	11th St	14-055	14-056														
14056-14058	Ocean Dr	14-056	14-058	1													
14057-14058	11th Pl	14-057	14-058														
14058-14060	Ocean Dr	14-058	14-060					22									
14059-14060	Manhattan Beach Blvd	14-059	14-060	2			1			30						✓	
14060-14071	Manhattan Beach Blvd	14-060	14-071	3			1										
14062-14063	The Strand	14-062	14-063														
14063-14064	The Strand	14-063	14-064														
14064-14065	The Strand	14-064	14-065														
14064-14065	The Strand	14-064	14-065														
14065-14066	The Strand	14-065	14-066	3													
14065-14066	The Strand	14-065	14-066	3													
14066-14067	The Strand	14-066	14-067														
14066-14067	The Strand	14-066	14-067														
14067-14068	The Strand	14-067	14-068	21									✓				
14067-14068	The Strand	14-067	14-068	21									✓				
14068-14069	The Strand	14-068	14-069	32									✓				
14069-14072	The Strand	14-069	14-072	2													
14070-14071	The Strand	14-070	14-071							30						✓	
14071-130L2	The Strand	14-071	13-0L2	1													
14072-130L1	Manhattan Beach Blvd	14-072	13-0L1														
14100-10058	1st St	14-100	10-058				2										
15023-15024	No Street Name	15-023	15-024	2													
15023-15024	No Street Name	15-023	15-024	2													
15024-15027	No Street Name	15-024	15-027														
15024-15027	No Street Name	15-024	15-027														
15025-15026	17th St	15-025	15-026	31		1							✓	✓			
15025-15026	17th St	15-025	15-026	31		1							✓	✓			
15026-15027	17th St	15-026	15-027	16	2								✓				
15026-15027	17th St	15-026	15-027	16	2								✓				
15027-15034	No Street Name	15-027	15-034								✓						
15027-15034	No Street Name	15-027	15-034								✓						
15034-15036	18th St	15-034	15-036	2							✓						
15034-15036	18th St	15-034	15-036	2							✓						
15035-15036	18th St	15-035	15-036	17		1							✓	✓			
15035-15036	18th St	15-035	15-036	17		1							✓	✓			
15036-15039	Flournoy Rd	15-036	15-039	3				5									
15036-15039	Flournoy Rd	15-036	15-039	3				5									
15038-15037	19th St	15-037	15-038	24									✓				
15037-15038	19th St	15-037	15-038	24									✓				
15039-15038	19th St	15-038	15-039	6		1								✓			
15039-15038	19th St	15-038	15-039	6		1								✓			
15039-15041	Flournoy Rd	15-039	15-041														
15039-15041	Flournoy Rd	15-039	15-041														
15040-15041	19th St	15-040	15-041	21									✓				
15040-15041	19th St	15-040	15-041	21									✓				
15041-15046	Flournoy Rd	15-041	15-046	4						10						✓	
15041-15046	Flournoy Rd	15-041	15-046	4						10						✓	
15042-15043	Ardmore Ave	15-042	15-043	1		1								✓			
15043-15044	Ardmore Ave	15-043	15-044	3													

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
15044-15046	Ardmore Ave	15-044	15-046	1													
15045-15046	Ardmore Ave	15-045	15-046	38		2							✓	✓			
15046-15051	Flournoy Rd	15-046	15-051	5													
15046-15051	Flournoy Rd	15-046	15-051	5													
15047-15048	Valley Dr	15-047	15-048	28									✓				
15047-15048	Valley Dr	15-047	15-048	28									✓				
15048-15051	Valley Dr	15-048	15-051	18									✓				
15048-15051	Valley Dr	15-048	15-051	18									✓				
15049-15050	Valley Dr	15-049	15-050	42									✓				
15049-15050	Valley Dr	15-049	15-050	42									✓				
15050-15051	Valley Dr	15-050	15-051	51									✓				
15050-15051	Valley Dr	15-050	15-051	51									✓				
15051-15053	Flournoy Rd	15-051	15-053	40		2	1						✓	✓			
15051-15053	Flournoy Rd	15-051	15-053	40		2	1						✓	✓			
15052-15053	Marine Ave	15-052	15-053	10									✓				
15053-15054	Marine Ave	15-053	15-054	4													
15053-15054	Marine Ave	15-053	15-054	4													
15054-15055	Marine Ave	15-054	15-055	3													
15054-15055	Marine Ave	15-054	15-055	3													
15055-15070	Marine Ave	15-055	15-070														
15055-15070	Marine Ave	15-055	15-070														
15056-15058	Manor Dr	15-056	15-058	11									✓				
15056-15058	Manor Dr	15-056	15-058	11									✓				
15057-15058	21st St	15-057	15-058	21									✓				
15057-15058	21st St	15-057	15-058	21									✓				
15058-1059	21st St	15-058	15-059	14		2							✓	✓			
15058-15059	21st St	15-058	15-059	14		2							✓	✓			
15059-15060	21st St	15-059	15-060	11									✓				
15059-15060	21st St	15-059	15-060	11									✓				
15060-15060A	21st St	15-060	15-060A	24			8						✓				
15060-15060A	21st St	15-060	15-060A	24			8						✓				
15060A-15061	Valley Dr	15-060A	15-061														
15060A-15061	Valley Dr	15-060A	15-061														
15061-15065	Blanche Rd	15-061	15-065														
15061-15065	Blanche Rd	15-061	15-065														
15062-15063	21st Pl	15-062	15-063	2													
15062-15063	21st Pl	15-062	15-063	2													
15063-15064	21st Pl	15-063	15-064	18		3							✓	✓			
15063-15064	21st Pl	15-063	15-064	18		3							✓	✓			
15064-15065	21st Pl	15-064	15-065	11									✓				
15064-15065	21st Pl	15-064	15-065	11									✓				
15065-15066	Blanche Rd	15-065	15-066	5													
15065-15066	Blanche Rd	15-065	15-066	5													
15066-15070	Blanche Rd	15-066	15-070														
15066-15070	Blanche Rd	15-066	15-070														
15067-15068	Marine Ave	15-067	15-068	8		3								✓			
15068-15069	Marine Ave	15-068	15-069	11		2							✓	✓			
15069-15070	Marine Ave	15-069	15-070	13		3							✓	✓			
15070-15078	Blanche Rd	15-070	15-078	18		1							✓	✓			
15071-15072	23rd St	15-071	15-072	56		5							✓	✓			
15072-15073	23rd St	15-072	15-073	21		3							✓	✓			
15073-15078	23rd St	15-073	15-078	1													
15074-15076	Manor Dr	15-074	15-076	9		1								✓			
15075-15076	Manor Dr	15-075	15-076	26		1							✓	✓			
15076-15077	23rd St	15-076	15-077	45		3							✓	✓			
15077-15078	23rd St	15-077	15-078	29		3							✓	✓			
15078-15083	Blanche Rd	15-078	15-083	6													
15079-15081	Manor Dr	15-079	15-081	3													
15080-15081	24th St	15-080	15-081	6		2								✓			
15081-15082	24th St	15-081	15-082	22		9					✓		✓	✓			
15082-15082A	24th St	15-082	15-082A	13		3					✓		✓	✓			
15082A-15082B	24th St	15-082A	15-082B								✓						
15082B-15082C	24th St	15-082B	15-082C								✓						
15082C-15083	24th St	15-082C	15-083								✓						
15083-15084	Blanche Rd	15-083	15-084	1													
16001-16002	Marine Ave	16-001	16-002	38		1							✓	✓			
16001-16002	Marine Ave	16-001	16-002	38		1							✓	✓			
16002-16003	Marine Ave	16-002	16-003	29		1							✓	✓			
16002-16003	Marine Ave	16-002	16-003	29		1							✓	✓			
16003-16004	25th St	16-003	16-004	17									✓				
16003-16004	25th St	16-003	16-004	17									✓				
16004-16005	25th St	16-004	16-005	58						10			✓			✓	
16004-16005	25th St	16-004	16-005	58						10			✓			✓	
16005-16006	25th St	16-005	16-006	30						55			✓			✓	
16005-16006	25th St	16-005	16-006	30						55			✓			✓	
16013-16014	27th St	16-013	16-014	17	1		1						✓				
16013-16014	27th St	16-013	16-014	17	1		1						✓				
16014-16015	27th St	16-014	16-015	62						10			✓			✓	
16014-16015	27th St	16-014	16-015	62									✓				
16015-16016	27th St	16-015	16-016	48									✓				
16015-16016	27th St	16-015	16-016	48									✓				
16016-16017	27th St	16-016	16-017	22									✓				
16016-16017	27th St	16-016	16-017	22									✓				
16017-16018	27th St	16-017	16-018	53									✓				
16017-16018	27th St	16-017	16-018	53									✓				
16018-16019	27th St	16-018	16-019	44									✓				
16018-16019	27th St	16-018	16-019	44									✓				
17006-17013	Bell Ave	17-006	17-013	32	1						✓		✓				
17007-17008	29th St	17-007	17-008	59	1	6							✓	✓			

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
17008-17009	29th St	17-008	17-009	50	1	2							✓	✓			
17009-17010	29th St	17-009	17-010	74		2							✓	✓			
17010-17011	29th St	17-010	17-011	76	3	3							✓	✓			
17011-17012	29th St	17-011	17-012	18		2							✓	✓			
17012-17013	29th St	17-012	17-013	15			1				✓		✓				
17013-17018	Bell Ave	17-013	17-018	35									✓				
17014-17015	30th St	17-014	17-015	1													
17014-17015	30th St	17-014	17-015	1													
17015-17016	30th St	17-015	17-016	2													
17015-17016	30th St	17-015	17-016	2													
17016-17017	30th St	17-016	17-017	7													
17016-17017	30th St	17-016	17-017	7													
17017-17018	30th St	17-017	17-018	2													
17017-17018	30th St	17-017	17-018	2													
17018-17018A	Bell Ave	17-018	17-018A														
17018A-17021	Easement	17-018A	17-021	1													
17019-17020	31st St	17-019	17-020	52									✓				
17019-17020	31st St	17-019	17-020	52									✓				
17020-17021	31st St	17-020	17-021	31						15			✓			✓	
17020-17021	31st St	17-020	17-021	31									✓				
17021-17076	Bell Ave	17-021	17-076	14									✓				
17022-17023	Rosecrans Ave	17-022	17-023	46	1								✓				
17023-17024	Easement	17-023	17-024	3													
17024-17025	36th Pl	17-024	17-025	47									✓				
17025-17026	36th Pl	17-025	17-026	46									✓				
17026-17029	Bell Ave	17-026	17-029	1													
17027-17028	36th Pl	17-027	17-028	3													
17027-17037	36th Pl	17-027	17-037	36									✓				
17028-17029	36th Pl	17-028	17-029	10		2							✓	✓			
17029-17032	Bell Ave	17-029	17-032	16									✓				
17030-17031	36th St	17-030	17-031	28		2							✓	✓			
17031-17032	36th St	17-031	17-032	13									✓				
17032-80133	Bell Ave	17-032	17-033	3													
80133-17050	Bell Ave	17-033	17-050	13									✓				
17034-17035	36th Pl	17-034	17-035	26		5							✓	✓			
17034-17035	36th Pl	17-034	17-035	26		5							✓	✓			
17035-17036	36th Pl	17-035	17-036	8		1								✓			
17035-17036	36th Pl	17-035	17-036	8		1								✓			
17036-17037	36th Pl	17-036	17-037	34		9							✓	✓			
17036-17037	36th Pl	17-036	17-037	34		9							✓	✓			
17037-17040	Blanche Rd	17-037	17-040	17									✓				
17037-17040	Blanche Rd	17-037	17-040	17									✓				
17038-17040	36th St	17-038	17-040	15									✓				
17038-17040	36th St	17-038	17-040	15									✓				
17039-17040	36th St	17-039	17-040	10		1							✓	✓			
17039-17040	36th St	17-039	17-040	10		1							✓	✓			
17040-17048	Blanche Rd	17-040	17-048	12							✓		✓				
17040-17048	Blanche Rd	17-040	17-048	12							✓		✓				
17041-17042	35th St	17-041	17-041A														
17041-17042	35th St	17-041	17-042	13	1	1							✓	✓			
17041A-17041	35th St	17-041A	17-041														
17041A-17042	35th St	17-041A	17-042	13	1	1							✓	✓			
17042-17043	35th St	17-042	17-043	6													
17042-17043	35th St	17-042	17-043	6													
17043-17048	Blanche Rd	17-043	17-048	7	1								✓				
17043-17048	Blanche Rd	17-043	17-048	7	1												
17044-17045	35th Pl	17-044	17-045	8	3								✓				
17044-17045	35th Pl	17-044	17-045	8	3						✓						
17045-17046	35th Pl	17-045	17-046	23							✓		✓				
17045-17046	35th Pl	17-045	17-046	23							✓		✓				
17046-17047	35th Pl	17-046	17-047	13	1	1					✓		✓	✓			
17046-17047	35th Pl	17-046	17-047	13	1	1					✓		✓	✓			
17047-17048	35th Pl	17-047	17-048	9	1						✓		✓				
17047-17048	35th Pl	17-047	17-048	9	1												
17048-17049	35th Pl	17-048	17-049	3													
17049-17050	35th Pl	17-049	17-050	5		2		10						✓			
17050-17069	Bell Ave	17-050	17-069	67									✓				
17050-17069	Bell Ave	17-050	17-069	67									✓				
17051-17052	31st Pl	17-051	17-052	59		1							✓	✓			
17051-17052	31st Pl	17-051	17-052	59		1							✓	✓			
17052-17053	Agnes Rd	17-052	17-053	31									✓				
17052-17053	Agnes Rd	17-052	17-053	31									✓				
17053-17054	31st St	17-053	17-054	1													
17053-17054	31st St	17-053	17-054	1													
17054-17055	31st St	17-054	17-055	6													
17054-17055	31st St	17-054	17-055	6													
17055-17057	Flournoy Rd	17-055	17-057	3													
17055-17057	Flournoy Rd	17-055	17-057	3													
17056-17057	31st Pl	17-056	17-057	28									✓				
17056-17057	31st Pl	17-056	17-057	28									✓				
17057-17059	Flournoy Rd	17-057	17-059	2													
17057-17059	Flournoy Rd	17-057	17-059	2													
17058-17059	33rd St	17-058	17-059	15									✓				
17058-17059	33rd St	17-058	17-059	15									✓				
17059-17063	Flournoy Rd	17-059	17-063	4													
17059-17063	Flournoy Rd	17-059	17-063	4													
17060-17061	33rd Pl	17-060	17-061	39									✓				
17060-17061	33rd Pl	17-060	17-061	39									✓				
17061-17062	33rd Pl	17-061	17-062	18									✓				

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID																
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
17061-17062	33rd Pl	17-061	17-062	18									✓				
17062-17063	33rd Pl	17-062	17-063	20									✓				
17062-17063	33rd Pl	17-062	17-063	20									✓				
17063-17064	33rd Pl	17-063	17-064	21		1					✓		✓	✓			
17063-17064	33rd Pl	17-063	17-064	21		1					✓		✓	✓			
17064-17065	33rd Pl	17-064	17-065	42									✓				
17064-17065	33rd Pl	17-064	17-065	42									✓				
17065-17066	33rd Pl	17-065	17-066	8		1								✓			
17065-17066	33rd Pl	17-065	17-066	8		1								✓			
17066-17067	33rd Pl	17-066	17-067	21									✓				
17066-17067	33rd Pl	17-066	17-067	21									✓				
17067-17068	33rd Pl	17-067	17-068	64	1								✓				
17067-17068	33rd Pl	17-067	17-068	64	1								✓				
17068-17069	33rd Pl	17-068	17-069	21									✓				
17068-17069	33rd Pl	17-068	17-069	21									✓				
17069-17070	Bell Ave	17-069	17-070	19									✓				
17069-17070	Bell Ave	17-069	17-070	19									✓				
17070-17075	Bell Ave	17-070	17-075	33			8						✓				
17071-17072	31st Pl	17-071	17-072	82	1	6					✓		✓	✓			
17072-17073	31st Pl	17-072	17-073	50		1					✓		✓	✓			
17073-17074	31st Pl	17-073	17-074	13		2							✓	✓			
17074-17075	31st Pl	17-074	17-075	39	1	1							✓	✓			
17075-17076	Bell Ave	17-075	17-076	21	1								✓				
18001-18002	33rd St	18-001	18-002	35		2	3						✓	✓			
18001-18002	33rd St	18-001	18-002	35		2	3						✓	✓			
18002-18004	33rd St	18-002	18-004	12		1					✓		✓	✓			
18002-18004	33rd St	18-002	18-004	12		1					✓		✓	✓			
18003-18004	Alma Ave	18-003	18-004	8		4								✓			
18003-18004	Alma Ave	18-003	18-004	8		4								✓			
18004-18008	Alma Ave	18-004	18-008	14		2					✓		✓	✓			
18004-18008	Alma Ave	18-004	18-008	14		2					✓		✓	✓			
18005-18006	34th St	18-005	18-006	18		2							✓	✓			
18005-18006	34th St	18-005	18-006	18		2							✓	✓			
18006-18007	34th St	18-006	18-007	20		2							✓	✓			
18006-18007	34th St	18-006	18-007	20		2							✓	✓			
18007-18008	34th St	18-007	18-008	13		1							✓	✓			
18007-18008	34th St	18-007	18-008	13		1							✓	✓			
18008-18012	Alma Ave	18-008	18-012	1													
18008-18012	Alma Ave	18-008	18-012	1													
18009-18010	35th St	18-009	18-010	73	1								✓				
18009-18010	35th St	18-009	18-010	73	1								✓				
18010-18012	35th St	18-010	18-012	18									✓				
18010-18012	35th St	18-010	18-012	18									✓				
18011-18012	Alma Ave	18-011	18-012	13		2							✓	✓			
18011-18012	Alma Ave	18-011	18-012	13		2							✓	✓			
18012-18013	35th St	18-012	18-013	10		3							✓	✓			
18013-18015	35th St	18-013	18-015	6													
18014-18015	Highland Ave	18-014	18-015	4													
18015-18016	35th St	18-015	18-016														
18016-18020	Highland Ave	18-016	18-020														
18017-18018	36th St	18-017	18-018	4													
18018-18018A	36th St	18-018	18-018A														
18018A-18019	36th St	18-018A	18-019	1													
18019-18019A	36th St	18-019	18-019A														
18019A-18019B	36th St	18-019A	18-019B														
18019B-18020	36th St	18-019B	18-020														
18020-18029	Highland Ave	18-020	18-029														
18021-18022	36th Pl	18-021	18-022	8	1								✓				
18021-18022	36th Pl	18-021	18-022	8	1												
18022-18025	Vista Dr	18-022	18-025														
18022-18025	Vista Dr	18-022	18-025														
18023-18024	Rosecrans Ave	18-023	18-024	1													
18023-18024	Rosecrans Ave	18-023	18-024	1													
18024-18025	Rosecrans Ave	18-024	18-025	9													
18024-18025	Rosecrans Ave	18-024	18-025	9													
18025-18027	Rosecrans Ave	18-025	18-027	2													
18026-18027	Alma Ave	18-026	18-027														
18027-18028	Rosecrans Ave	18-027	18-028	1							✓						
18028-18029	Rosecrans Ave	18-028	18-029								✓						
18029-18029A	Rosecrans Ave	18-029	18-029A								✓						
18029A-18040	Rosecrans Ave	18-029A	18-040	5													
18030-18030A	33rd St	18-030	18-030A														
18030-18030A	33rd St	18-030	18-030A														
18030A-18031	33rd St	18-030A	18-031	5													
18030A-18031	33rd St	18-030A	18-031	5													
18031-18032	Manhattan Ave	18-031	18-032														
18031-18032	Manhattan Ave	18-031	18-032														
18032-18034	Manhattan Ave	18-032	18-034	5		1								✓			
18032-18034	Manhattan Ave	18-032	18-034	5		1								✓			
18033-18034	34th St	18-033	18-034	3		1					✓			✓			
18033-18034	34th St	18-033	18-034	3		1					✓			✓			
18034-18037	Manhattan Ave	18-034	18-037	5													
18034-18037	Manhattan Ave	18-034	18-037	5													
18035-18036	35th St	18-035	18-036	1													
18035-18036	35th St	18-035	18-036	1													
18036-18037	35th St	18-036	18-037	6													
18036-18037	35th St	18-036	18-037	6													
18037-18039	Manhattan Ave	18-037	18-039	38		1							✓	✓			
18037-18039	Manhattan Ave	18-037	18-039	38		1							✓	✓			

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
18038-18039	36th St	18-038	18-039	1							✓						
18038-18039	36th St	18-038	18-039	1							✓						
18039-18040	Manhattan Ave	18-039	18-040	29		1	14				✓		✓	✓			
18039-18040	Manhattan Ave	18-039	18-040	29		1	14				✓		✓	✓	✓		
18040-18041	Rosecrans Ave	18-040	18-041														
18041-18049	Ocean Dr	18-041	18-049														
18043-18046	Rosecrans Pl	18-043	18-046														
18044-18046	Highland Ave	18-044	18-046	10									✓				
18045-18046	Highland Ave	18-045	18-046														
18046-18047	Rosecrans Pl	18-046	18-047	6													
18047-18048	Rosecrans Pl	18-047	18-048														
18048-18049	Rosecrans Pl	18-048	18-049	1													
18049-18053	Ocean Dr	18-049	18-053														
18050-18051	38th Pl	18-050	18-051														
18050-18051	38th Pl	18-050	18-051														
18051-18052	38th Pl	18-051	18-052	1													
18051-18052	38th Pl	18-051	18-052	1													
18052-18053	Westport	18-052	18-053														
18052-18053	Ocean Dr	18-052	18-053														
18053-18055	38th St	18-053	18-055														
18054-18055	The Strand	18-054	18-055	36		3							✓	✓			
18055-18056	The Strand	18-055	18-056	1													
18056-100L1	The Strand	18-056	10-0L1	1													
19001-19002	31th St	19-001	19-002	55		6							✓	✓			
19001-19002	31st St	19-001	19-002	55		6							✓	✓			
19002-19005	31th St	19-002	19-005	55	8	3							✓	✓			
19002-19005	31st St	19-002	19-005	55	8	3							✓	✓			
19003-19005	Alma Ave	19-003	19-005														
19003-19005	Alma Ave	19-003	19-005														
19004-19005	Alma Ave	19-004	19-005														
19004-19005	Alma Ave	19-004	19-005								✓						
19005-19007	31st St	19-005	19-007	11									✓				
19005-19007	31st St	19-005	19-007	11									✓				
19006-19007	Highland Ave	19-006	19-007	29									✓				
19006-19007	Highland Ave	19-006	19-007	29									✓				
19007-19008	31st St	19-007	19-008														
19007-19008	31st St	19-007	19-008														
19008-19019	Highland Ave	19-008	19-019	2													
19008-19019	Highland Ave	19-008	19-019	2													
19009-19010	32nd St	19-009	19-010	23		3					✓		✓	✓			
19010-19012	32nd St	19-010	19-012	10							✓		✓				
19011-19012	Alma Ave	19-011	19-012	1						5						✓	
19012-19013	32nd St	19-012	19-013	3													
19013-19018	32nd St	19-013	19-018	1													
19014-19015	34th St	19-014	19-015														
19014-19015	34th St	19-014	19-015														
19015-19017	Highland Ave	19-015	19-017	8		1								✓			
19015-19017	Highland Ave	19-015	19-017	8		1								✓			
19016-19017	33rd St	19-016	19-017														
19016-19017	33rd St	19-016	19-017														
19017-19018	Highland Ave	19-017	19-018	36	1		1				✓		✓				
19017-19018	Highland Ave	19-017	19-018	36	1		1				✓		✓				
19018-19019	32nd St	19-018	19-019														
19018-19019	32nd St	19-018	19-019														
19019-19020	32nd St	19-019	19-020														
19019-19020	32nd St	19-019	19-020														
19020-19021	32nd St	19-020	19-021	4													
19020-19021	32nd St	19-020	19-021	4													
19021-19024	32nd St	19-021	19-024	3													
19021-19024	32nd St	19-021	19-024	3													
19022-19023	Manhattan Ave	19-022	19-023	1													
19022-19023	Manhattan Ave	19-022	19-023	1													
19023-19024	Manhattan Ave	19-023	19-024														
19023-19024	Manhattan Ave	19-023	19-024														
19024-19027	Manhattan Ave	19-024	19-027	12				17					✓				
19024-19027	Manhattan Ave	19-024	19-027	12				17					✓				
19025-19027	Manhattan Ave	19-025	19-027	16									✓				
19025-19027	Manhattan Ave	19-025	19-027	16									✓				
19026-19027	31st St	19-026	19-027	1													
19027-19028	31st St	19-027	19-028														
19028-19028A	31st St	19-028	19-028A	2													
19028A-19054	31st St	19-028A	19-054														
19030-19031	32nd St	19-030	19-031	21		1							✓	✓			
19030-19031	32nd St	19-030	19-031	21		1							✓	✓			
19031-19053	32nd St	19-031	19-053	1				1									
19031-19053	32nd St	19-031	19-053	1				1									
19032-19033	33rd St	19-032	19-033														
19033-19052	33rd St	19-033	19-052														
19034-19035	34th St	19-034	19-035														
19035-19051	34th St	19-035	19-051	14									✓				
19036-19037	27th St	19-036	19-037	3													
19037-19037A	27th St	19-037	19-037A	9													
19037-19044	28th St	19-037	19-044														
19037A-19044	27th St	19-037A	19-044	1													
19038-19039	28th St	19-038	19-039														
19039-19045	28th St	19-039	19-045	12									✓				
19040-19041	29th St	19-040	19-041	6													
19040-19041	29th St	19-040	19-041	6													
19041-19057	29th St	19-041	19-057	6													

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Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
19041-19057	29th St	19-041	19-057	6													
19042-19043	30th St	19-042	19-043	16		1							✓	✓			
19042-19043	30th St	19-042	19-043	16		1							✓	✓			
19043-19056	30th St	19-043	19-056	1													
19043-19056	30th St	19-043	19-056	1													
19044-19045	The Strand	19-044	19-045	16									✓				
19046-19048	36th St	19-046	19-048					7									
19047-19048	The Strand	19-047	19-048	18		1							✓	✓			
19048-19050	The Strand	19-048	19-050	16		1							✓	✓			
19049-19049A	35th St	19-049	19-049A														
19049A-19049B	35th St	19-049A	19-049B														
19049B-19050	35th St	19-049B	19-050														
19050-19051	The Strand	19-050	19-051	13		1							✓	✓			
19051-19052	The Strand	19-051	19-052	23									✓				
19052-19053	The Strand	19-052	19-053	5													
19053-19055	The Strand	19-053	19-055	19									✓				
19053-19055	The Strand	19-053	19-055	19									✓				
19054-19055	31st St	19-054	19-055														
19055-19056	The Strand	19-055	19-056														
19055-19056	The Strand	19-055	19-056														
19056-19057	The Strand	19-056	19-057														
19056-19057	The Strand	19-056	19-057														
19057-19058	The Strand	19-057	19-058														
19057-19058	The Strand	19-057	19-058														
19058-090L1	Easement	19-058	09-0L1														
20001-20002	30th St	20-001	20-002	21		4					✓		✓	✓			
20002-20003	30th St	20-002	20-003	39		2							✓	✓			
20003-20006	Alma Ave	20-003	20-006	18		2							✓	✓			
20004-20005	29th St	20-004	20-005	39									✓				
20004-20005	29th St	20-004	20-005	39									✓				
20005-20006	29th St	20-005	20-006	50									✓				
20005-20006	29th St	20-005	20-006	50									✓				
20006-20016	Alma Ave	20-006	20-016	23	1	1					✓		✓	✓			
20006-20016	Alma Ave	20-006	20-016	23	1	1					✓		✓	✓			
20007-20008	26th Pl	20-007	20-008	1													
20007-20008	26th Pl	20-007	20-008	1													
20008-20009	26th Pl	20-008	20-009	26									✓				
20008-20009	26th Pl	20-008	20-009	26									✓				
20009-20012	Vista Dr	20-009	20-012	7			3										
20009-20012	Vista Dr	20-009	20-012	7			3										
20010-20011	27th St	20-010	20-011	25		4							✓	✓			
20011-20012	27th St	20-011	20-012	18		2							✓	✓			
20012-20013	27th St	20-012	20-013	3			5										
20012-20013	27th St	20-012	20-013	3			5										
20013-20016	Alma Ave	20-013	20-016	5							✓						
20013-20016	Alma Ave	20-013	20-016	5							✓						
20014-20014A	28th St	20-014	20-014A	2													
20014A-20015	28th St	20-014A	20-015	2													
20015-20016	28th St	20-015	20-016	1													
20016-20017	28th St	20-016	20-017	0													
20017-20017A	28th St	20-017	20-017A	0													
20017A-2029	28th St	20-017A	20-029	6		1								✓			
20018-20021	Alma Ave	20-018	20-021	73		2		1					✓	✓			
20018-20021	Alma Ave	20-018	20-021	73		2		1					✓	✓			
20019-20021	Alma Ave	20-019	20-021	10			10						✓		✓		
20019-20021	Alma Ave	20-019	20-021	10			10						✓		✓		
20020-20021	25th St	20-020	20-021	1													
20020-20021	25th St	20-020	20-021	1													
20021-20022	25th St	20-021	20-022	9													
20021-20022	25th St	20-021	20-022	9													
20022-20036	25th St	20-022	20-036	14									✓				
20022-20036	25th St	20-022	20-036	14									✓				
20023-20024	30th St	20-023	20-024	15	2								✓				
20023-20024	30th St	20-023	20-024	15	2								✓				
20024-20025	30th St	20-024	20-025	14									✓				
20024-20025	30th St	20-024	20-025	14									✓				
20025-20028	Highland Ave	20-025	20-028	16							✓		✓				
20025-20028	Highland Ave	20-025	20-028	16							✓		✓				
20026-20027	29th St	20-026	20-027	5													
20026-20027	29th St	20-026	20-027	5													
20027-20028	29th St	20-027	20-028	33			2						✓				
20027-20028	29th St	20-027	20-028	33			2						✓				
20028-20029B	Highland Ave	20-028	20-029B	9			2				✓						
20029-20029A	28th St	20-029	20-029A	3													
20029B-20029	Highland Ave	20-029B	20-029	1							✓						
20030-20031	27th St	20-030	20-031	2							✓						
20031-20031A	27th St	20-031	20-031A														
20032-20033	26th St	20-032	20-033														
20033-20034	26th St	20-033	20-034	3													
20035-20036	Highland Ave	20-035	20-036														
20035-20036	Highland Ave	20-035	20-036	0													
20038-20039	25th St	20-038	20-039	32									✓				
20039-20058	25th St	20-039	20-058														
20040-20051	Manhattan Ave	20-040	20-051														
20041-20042	30th St	20-041	20-042	13		2							✓	✓			
20041-20042	30th St	20-041	20-042	13		2							✓	✓			
20042-20044	Manhattan Ave	20-042	20-044	28		1							✓	✓			
20042-20044	Manhattan Ave	20-042	20-044	28		1							✓	✓			
20043-20044	29th St	20-043	20-044														

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
20043-20044	29th St	20-043	20-044														
20044-20046	Manhattan Ave	20-044	20-046	4							✓						
20044-20046	Manhattan Ave	20-044	20-046	4							✓						
20045-20046	28th St	20-045	20-046								✓						
20046-20049	Manhattan Ave	20-046	20-049	9	1	1								✓			
20047-20048	27th St	20-047	20-048														
20048-20049	27th St	20-048	20-049														
20049-20051	Manhattan Ave	20-049	20-051														
20050-20051	26th St	20-050	20-051														
20051-20052	26th St	20-051	20-052	3													
20052-20064	26th St	20-052	20-064														
20053-20054	25th St	20-053	20-054	19				2					✓				
20053-20054	25th St	20-053	20-054	19				2					✓				
20054-20063	25th St	20-054	20-063	16									✓				
20054-20063	25th St	20-054	20-063	16									✓				
20055-20056	24th St	20-055	20-056														
20056-20059	24th St	20-056	20-059	6													
20057-20059	Manhattan Ave	20-057	20-059	12		1					✓		✓	✓			
20058-20040	Manhattan Ave	20-058	20-040														
20059-20058	Manhattan Ave	20-059	20-058	8		2								✓			
20059-20061	24th St	20-059	20-061	17									✓				
20059-20061	24th St	20-059	20-061	17									✓				
20060-20061	The Strand	20-060	20-061	17									✓				
20060-20061	The Strand	20-060	20-061	17									✓				
20061-20062	The Strand	20-061	20-062														
20061-20062	The Strand	20-061	20-062	0													
20062-20063	The Strand	20-062	20-063	15									✓				
20062-20063	The Strand	20-062	20-063	15									✓				
20063-20064	The Strand	20-063	20-064	10									✓				
20063-20064	The Strand	20-063	20-064	10									✓				
20064-20065	The Strand	20-064	20-065														
20065-080P1	The Strand	20-065	08-0P1														
21001-21002	24th St	21-001	21-002	31									✓				
21001-21002	24th St	21-001	21-002	31									✓				
21002-21005	Vista Dr	21-002	21-005	23		5							✓	✓			
21002-21005	Vista Dr	21-002	21-005	23		5							✓	✓			
21003-21004	23rd St	21-003	21-004	31		2	13						✓	✓	✓		
21003-21004	23rd St	21-003	21-004	31		2	13						✓	✓	✓		
21004-21005	23rd St	21-004	21-005	18		1	3	1					✓	✓			
21004-21005	23rd St	21-004	21-005	18		1	3	1					✓	✓			
21005-21007	23rd St	21-005	21-007														
21005-21007	23rd St	21-005	21-007														
21006-21007	Alma Ave	21-006	21-007	23									✓				
21006-21007	Alma Ave	21-006	21-007	23									✓				
21007-21008	23rd St	21-007	21-008														
21007-21008	23rd St	21-007	21-008	0													
21008-21018	23rd St	21-008	21-018	17		1							✓	✓			
21008-21018	23rd St	21-008	21-018	17		1							✓	✓			
21009-21010	24th St	21-009	21-010								✓						
21010-21018	Highland Ave	21-010	21-018	20	t	2					✓		✓	✓			
21011-21012	Marine Ave	21-011	21-012	22		2					✓		✓	✓			
21011-21012	Marine Ave	21-011	21-012	22		2					✓		✓	✓			
21012-21016	Marine Ave	21-012	21-016	50		2							✓	✓			
21012-21016	Marine Ave	21-012	21-016	50		2							✓	✓			
21013-21014	Marine Ave	21-013	21-014					1									
21013-21014	Marine Ave	21-013	21-014					1									
21014-21015	Marine Ave	21-014	21-015	20									✓				
21014-21015	Marine Ave	21-014	21-015	20									✓				
21015-21016	Marine Ave	21-015	21-016	12									✓				
21015-21016	Marine Ave	21-015	21-016	12									✓				
21016-21017	Marine Ave	21-016	21-017	19									✓				
21016-21017	Marine Ave	21-016	21-017	19									✓				
21017-21018	Highland Ave	21-017	21-018	8													
21017-21018	Highland Ave	21-017	21-018	8													
21018-21019	23rd St	21-018	21-019														
21018-21019	23rd St	21-018	21-019	0													
21019-21022	23rd St	21-019	21-022	9													
21019-21022	23rd St	21-019	21-022	9													
21020-21021	Marine Ave	21-020	21-021	5													
21021-21022	Manhattan Ave	21-021	21-022	1													
21022-21023	23rd St	21-022	21-023	34		5							✓	✓			
21022-21023	23rd St	21-022	21-023	34		5							✓	✓			
21023-21026	The Strand	21-023	21-026														
21023-21026	The Strand	21-023	21-026														
21024-21025	Marine Ave	21-024	21-025														
21025-21026	The Strand	21-025	21-026														
21026-21026A	No Street Name	21-026	21-026A				2	2			✓	12/21/06 Debris					
21026-21026A	No Street Name	21-026	21-026A				2	2			✓						
22001-22002	16th St	22-001	22-002														
22001-22002	16th St	22-001	22-002														
22002-22003	16th St	22-002	22-003														
22002-22003	16th St	22-002	22-003														
22003-22004	16th St	22-003	22-004	1							✓						
22003-22004	16th St	22-003	22-004	1							✓						
22004-22005	16th St	22-004	22-005														
22004-22005	16th St	22-004	22-005								✓						
22005-22007	16th St	22-005	22-007	1													
22005-22007	16th St	22-005	22-007	1													

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
22006-22007	Westport	22-006	22-007														
22006-22007	Ocean Dr	22-006	22-007														
22007-22048	16th St	22-007	22-048														
22007-22048	16th St	22-007	22-048														
22008-22009	17th St	22-008	22-009	14		3					✓		✓	✓			
22008-22009	17th St	22-008	22-009	14		3					✓		✓	✓			
22009-22010	17th St	22-009	22-010	6								12/23/07 Debris					
22009-22010	17th St	22-009	22-010	6													
22010-22011	17th St	22-010	22-011	5		1								✓			
22011-22012	17th St	22-011	22-012	1													
22012-22013	17th St	22-012	22-013	11		1					✓		✓	✓			
22013-22050	17th St	22-013	22-050	9													
22014-22015	18th St	22-014	22-015	6													
22014-22015	18th St	22-014	22-015	6													
22015-22016	18th St	22-015	22-016	20		1							✓	✓			
22015-22016	18th St	22-015	22-016	20		1							✓	✓			
22016-22016A	18th St	22-016	22-016A														
22016A-22018	18th St	22-016A	22-018	3													
22018-22020	18th St	22-018	22-020														
22019-22020	18th St	22-019	22-020														
22020-22021	18th St	22-020	22-021														
22021-22022	18th St	22-021	22-022														
22022-22053	18th St	22-022	22-053	18	1								✓				
22023-22024	19th St	22-023	22-024	1						15						✓	
22023-22024	19th St	22-023	22-024	1						15						✓	
22024-22025	19th St	22-024	22-025	14									✓				
22024-22025	19th St	22-024	22-025	14									✓				
22025-22026	19th St	22-025	22-026	44		1							✓	✓			
22026-22027	19th St	22-026	22-027	4													
22027-22028	19th St	22-027	22-028	15		1							✓	✓			
22028-22055	19th St	22-028	22-055														
22029-22030	20th St	22-029	22-030														
22029-22030	20th St	22-029	22-030														
22030-22031	20th St	22-030	22-031	44		6		1				12/7/06 Debris & Roots	✓	✓			
22030-22031	20th St	22-030	22-031	44		6		1					✓	✓			
22031-22032	20th St	22-031	22-032	1													
22031-22032	20th St	22-031	22-032	1													
22032-22033	20th St	22-032	22-033	2													
22032-22033	20th St	22-032	22-033	2													
22033-22034	20th St	22-033	22-034	5													
22033-22034	20th St	22-033	22-034	5													
22034-22035	20th St	22-034	22-035	15									✓				
22034-22035	20th St	22-034	22-035	15									✓				
22035-22057	20th St	22-035	22-057	8													
22035-22057	20th St	22-035	22-057	8													
22036-22037	21st St	22-036	22-037	7													
22037-22037A	21st St	22-037	22-037A														
22037A-22037B	21st St	22-037A	22-037B														
22037B-22038	21st St	22-037B	22-038														
22038-22039	21st St	22-038	22-039														
22039-22045	21st St	22-039	22-045														
22040-22041	21st Pl	22-040	22-041	8		1	1							✓			
22040-22041	21st Pl	22-040	22-041	8		1	1							✓			
22041-22042	21st Pl	22-041	22-042	4													
22041-22042	21st Pl	22-041	22-042	4													
22042-22043	21st Pl	22-042	22-043	8			2										
22042-22043	21st Pl	22-042	22-043	8			2										
22043-22044	21st Pl	22-043	22-044				4										
22043-22044	21st Pl	22-043	22-044				4										
22044-22045	Westport	22-044	22-045	2													
22044-22045	Ocean Dr	22-044	22-045	2													
22045-22060	21st St	22-045	22-060									1/10/06 Construction Debris					
22045-22060	21st St	22-045	22-060														
22046-14062	The Strand	22-046	14-062	3													
22048-22049	The Strand	22-048	22-049														
22048-22049	The Strand	22-048	22-049														
22049-22050	The Strand	22-049	22-050	14									✓				
22049-22050	The Strand	22-049	22-050	14									✓				
22050-22051	The Strand	22-050	22-051	1													
22050-22051	The Strand	22-050	22-051	1													
22051-22052	The Strand	22-051	22-052	15									✓				
22051-22052	The Strand	22-051	22-052	15									✓				
22052-22053	The Strand	22-052	22-053	2													
22052-22053	The Strand	22-052	22-053	2													
22053-22054	The Strand	22-053	22-054														
22054-22055	The Strand	22-054	22-055	1													
22055-22056	The Strand	22-055	22-056														
22056-22057	The Strand	22-056	22-057	3		1								✓			
22057-22058	The Strand	22-057	22-058														
22058-22059	The Strand	22-058	22-059	2													
22059-22060	The Strand	22-059	22-060														
22060-22061	No Street Name	22-060	22-061														
22060-22061	No Street Name	22-060	22-061														

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
22061-22061A	No Street Name	22-061	22-061A	1								3/15/06 Unknown					
22061-22061A	No Street Name	22-061	22-061A	1													
22061A-22063	No Street Name	22-061A	22-063														
22061A-22063	No Street Name	22-061A	22-063														
22063-120L1	No Street Name	22-063	12-0L1														
22063-22063A	No Street Name	22-063	22-063A														
23001-23002	38th Pl	23-001	23-002	10									✓				
23001-23002	38th Pl	23-001	23-002	10									✓				
23002-23003	38th Pl	23-002	23-003	3													
23002-23003	38th Pl	23-002	23-003	3													
23003-23005	Easement	23-003	23-005	1													
23003-23005	Easement	23-003	23-005	1													
23004-23005	39th St	23-004	23-005	25		1							✓	✓			
23004-23005	39th St	23-004	23-005	6													
23004-23005	39th St	23-004	23-005	25		1							✓	✓			
23005-23006	39th St	23-005	23-006	15									✓				
23005-23006	39th St	23-005	23-006	15									✓				
23006-23007	39th St	23-006	23-007														
23006-23007	39th St	23-006	23-007														
23007-23010	The Strand	23-007	23-010	1													
23008-23009	El Porto St	23-008	23-009	9		1								✓			
23009-23010	El Porto St	23-009	23-010	20									✓				
23010-23013	The Strand	23-010	23-013														
23011-23012	40th St	23-011	23-012	18		1							✓	✓			
23012-23013	40th St	23-012	23-013	9													
23013-23016	The Strand	23-013	23-016	5													
23014-23015	Kelp St	23-014	23-015	4		2								✓			
23015-23016	Kelp St	23-015	23-016	3													
23016-23019	The Strand	23-016	23-019	1													
23017-23018	41st St	23-017	23-018	15		3							✓	✓			
23017-23018	41st St	23-017	23-018	15		3							✓	✓			
23018-23019	41st St	23-018	23-019	3		1		1						✓			
23018-23019	41st St	23-018	23-019	3		1		1						✓			
23019-23022	The Strand	23-019	23-022														
23019-23022	The Strand	23-019	23-022														
23020-23021	Moonstone St	23-020	23-021	8	2	1								✓			
23021-23022	Moonstone St	23-021	23-022	16	1	2							✓	✓			
23022-23025	The Strand	23-022	23-025														
23022-23025	The Strand	23-022	23-025														
23023-23024	42nd St	23-023	23-024	15		1							✓	✓			
23024-23025	42nd St	23-024	23-025	26		1							✓	✓			
23025-23049	The Strand	23-025	23-049														
23025-23049	The Strand	23-025	23-049														
23026-23027	Homer St	23-026	23-027	4		1								✓			
23027-23028	Homer St	23-027	23-028	5													
23028-23029	Homer St	23-028	23-029	1													
23029-23033	The Strand	23-029	23-033	4													
23030-23031	Gull St	23-030	23-031	2													
23030-23031	Gull St	23-030	23-031	2													
23031-23032	Gull St	23-031	23-032	5													
23031-23032	Gull St	23-031	23-032	5													
23032-23033	Gull St	23-032	23-033	15									✓				
23032-23033	Gull St	23-032	23-033	15									✓				
23033-23037	The Strand	23-033	23-037	3						20						✓	
23034-23035	44th St	23-034	23-035														
23035-23036	44th St	23-035	23-036	9													
23036-23037	44th St	23-036	23-037	33		4							✓	✓			
23037-23041	The Strand	23-037	23-041														
23038-23039	Shell St	23-038	23-039	6													
23039-23040	Shell St	23-039	23-040	6													
23040-23045	Ocean Dr	23-040	23-045														
23041-23046	The Strand	23-041	23-046	2													
23042-23043	43rd St	23-042	23-043														
23042-23043	43rd St	23-042	23-043														
23043-23044	43rd St	23-043	23-044	2													
23043-23044	43rd St	23-043	23-044	2													
23044-23045	43rd St	23-044	23-045														
23044-23045	43rd St	23-044	23-045														
23045-23046	43rd St	23-045	23-046	1													
23045-23046	43rd St	23-045	23-046	1													
23046-23049	The Strand	23-046	23-049	16									✓				
23046-23049	The Strand	23-046	23-049	16									✓				
23047-23048	Seaview	23-047	23-048	8		1								✓			
23048-23049	Seaview	23-048	23-049	17		3							✓	✓			
23049-23050	No Street Name	23-049	23-050								✓	3/9/07 Debris & Grease					
23049-85056	No Street Name	23-049	85-056														
23050-23050A	No Street Name	23-050	23-050A								✓						
23050-23050A	No Street Name	23-050	23-050A														
24010-24011	Village Cir	24-010	24-011														
24010-24011	Village Cir	24-010	24-011														
24011-24012	Village Cir	24-011	24-012														
24011-24012	Village Cir	24-011	24-012														
24012-24013	Village Cir	24-012	24-013	1													
24012-24013	Village Cir	24-012	24-013	1													
24013-24017	Village Cir	24-013	24-017														
24013-24017	Village Cir	24-013	24-017														

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID																
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots in Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibly Reline
24014-24015	Westport	24-014	24-015	1													
24014-24015	Westport	24-014	24-015	1													
24015-24016	Westport	24-015	24-016														
24015-24016	Westport	24-015	24-016														
24016-24017	Westport	24-016	24-017	1													
24016-24017	Westport	24-016	24-017	1													
24017-24021	Village Cir	24-017	24-021														
24017-24021	Village Cir	24-017	24-021														
24018-24019	Bridgeport	24-018	24-019														
24018-24019	Bridgeport	24-018	24-019														
24019-24020	Bridgeport	24-019	24-020	1													
24019-24020	Bridgeport	24-019	24-020	1													
24020-24021	Bridgeport	24-020	24-021														
24020-24021	Bridgeport	24-020	24-021														
24021-24025	Village Cir	24-021	24-025														
24021-24025	Village Cir	24-021	24-025														
24022-24023	Chatham	24-022	24-023														
24022-24023	Chatham	24-022	24-023														
24023-24024	Chatham	24-023	24-024														
24023-24024	Chatham	24-023	24-024														
24024-24025	Chatham	24-024	24-025														
24024-24025	Chatham	24-024	24-025														
24025-24026	Village Cir	24-025	24-026														
24025-24026	Village Cir	24-025	24-026														
24026-24027	Village Cir	24-026	24-027														
24026-24027	Village Cir	24-026	24-027														
24027-24028	Village Cir	24-027	24-028														
24027-24028	Village Cir	24-027	24-028														
24028-24029	Village Cir	24-028	24-029														
24028-24029	Village Cir	24-028	24-029														
24080-24081	Sausalito Cir	24-080	24-081														
24080-24081	Sausalito Cir	24-080	24-081														
24081-24082	Sausalito Cir	24-081	24-082									6/5/06 Debris & Roots					
24081-24082	Sausalito Cir	24-081	24-082														
24082-24083	Sausalito Cir	24-082	24-083	1													
24082-24083	Sausalito Cir	24-082	24-083	1													
24083-24084	No Street Name	24-083	24-084	2													
24083-24084	No Street Name	24-083	24-084	2													
24084-24085	No Street Name	24-084	24-085					1	1								
24084-24085	No Street Name	24-084	24-085					1	1								
24085-24096	No Street Name	24-085	24-096					1	1								
24085-24096	No Street Name	24-085	24-096					1	1								
24086-24087	Sausalito Cir	24-086	24-087	11	2			3					✓				
24086-24087	Sausalito Cir	24-086	24-087	11	2			3					✓				
24087-24088	Sausalito Cir	24-087	24-088														
24087-24088	Sausalito Cir	24-087	24-088														
24088-24089	Sausalito Cir	24-088	24-089														
24088-24089	Sausalito Cir	24-088	24-089														
24089-24090	Sausalito Cir	24-089	24-090														
24089-24090	Sausalito Cir	24-089	24-090														
24090-24091	Sausalito Cir	24-090	24-091														
24090-24091	Sausalito Cir	24-090	24-091														
24091-24092	Sausalito Cir	24-091	24-092														
24091-24092	Sausalito Cir	24-091	24-092														
24092-24093	Sausalito Cir	24-092	24-093					1	1								
24092-24093	Sausalito Cir	24-092	24-093					1	1								
24093-24094	Sausalito Cir	24-093	24-094														
24093-24094	Sausalito Cir	24-093	24-094					8									
24094-24095	Sausalito Cir	24-094	24-095					1									
24094-24095	Sausalito Cir	24-094	24-095					1									
24095-24096	Sausalito Cir	24-095	24-096	2						10						✓	
24095-24096	Sausalito Cir	24-095	24-096	2						10						✓	
25001-25002	Carlotta Way	25-001	25-002														
25001-25002	Carlotta Way	25-001	25-002														
25002-25003	Carlotta Way	25-002	25-003														
25002-25003	Carlotta Way	25-002	25-003														
25003-25004	Carlotta Way	25-003	25-004														
25003-25004	Carlotta Way	25-003	25-004														
25004-25005	Carlotta Way	25-004	25-005														
25004-25005	Carlotta Way	25-004	25-005														
25005-25006	Carlotta Way	25-005	25-006														
25005-25006	Carlotta Way	25-005	25-006														
25006-25007	Carlotta Way	25-006	25-007														
25006-25007	Carlotta Way	25-006	25-007														
25007-25008	Carlotta Way	25-007	25-008														
25007-25008	Carlotta Way	25-007	25-008														
25008-25009	Carlotta Way	25-008	25-009														
25008-25009	Carlotta Way	25-008	25-009														
25009-25013	Carlotta Way	25-009	25-013														
25009-25013	Carlotta Way	25-009	25-013														
25010-25011	Cedar Way	25-010	25-011					19	2								
25010-25011	Cedar Way	25-010	25-011					19	2								
25011-25012	Cedar Way	25-011	25-012							10						✓	
25011-25012	Cedar Way	25-011	25-012							10						✓	
25012-25013	Cedar Way	25-012	25-013														
25012-25013	Cedar Way	25-012	25-013														
25013-25014	Carlotta Way	25-013	25-014														

Table 9-1
Operation and Maintenance Issues

	Location	Manhole ID															
Pipe ID	Street Name	U/S MH	D/S MH	Total Roots	Ball Roots In Barrel	Ball Roots in Lateral	Grease No. of Joints	Deposits No. of Joints	Infiltration No. of Joints	Obstacles Highest % of Pipe Blocked	Hot Spot	Past Spill Date and Cause	Root Treat and Cut	Inform Residents of Ball Roots in Lateral	Add to Hot Spot List	Clear Obstacle	Possibiy Reline
25013-25014	Carlotta Way	25-013	25-014														
25014-25025	Carlotta Way	25-014	25-025														
25014-25025	Carlotta Way	25-014	25-025														
25015-25016	Magnolia Way	25-015	25-016					26	1								
25016-25017	Magnolia Way	25-016	25-017														
25017-25018	Magnolia Way	25-017	25-018														
25018-25019	Magnolia Way	25-018	25-019	1				29									
25019-25020	Magnolia Way	25-019	25-020					23									
25020-25021	Magnolia Way	25-020	25-021														
25021-25022	Magnolia Way	25-021	25-022														
25022-25023	Magnolia Way	25-022	25-023														
25023-25024	Magnolia Way	25-023	25-024														
25024-25025	Magnolia Way	25-024	25-025					12									
25025-25026	Parkview Ave	25-025	25-026														
25026-25027	Parkview Ave	25-026	25-027														
25027-25028	Parkview Ave	25-027	25-028					17									
25029-25034	Parkview Ave	25-029	25-034														
85009-11012	Ardmore Ave	85-009	11-012	2													
85062-11117A	4th St	85-062	11-117A														
85071-11080	11th St	85-071	11-080	5		1								✓			
85074-14056	Ocean Dr	85-074	14-056														
85075-10113	2nd St	85-075	10-113	1													

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Palm Ave PS

Bell Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Location Identified with Obstacles

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

Obstacles

Figure 9-5

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Location Identified with Infiltration

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

Infiltration

Figure 9-4

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Pier PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary

Locations Identified with Deposits

- 1-20 Joint Lengths
- 21-40 Joint Lengths
- 41-64 Joint Lengths

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

Deposits

Figure 9-3

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary

Locations Identified with Grease

- 1-20 Joint Lengths
- 21-40 Joint Lengths
- 41-60 Joint Lengths
- 91-115 Joint Lengths

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2010

Grease

Figure 9-2

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Pier PS

Meadows Ave PS

Voorhees Ave PS

N

0 600 1,200 2,400 Feet

1" = 1200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Location Identified with Ball Roots in Mainline
- Location Identified with Ball Roots in Laterals

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

Ball Roots

PROJECT NO: 1640901.10

DATE: September 2010

Figure 9-1

9-2 'Hot Spots'

Hot Spots are areas of the system with reoccurring problems that require maintenance and cleaning on a quarterly basis minimum. Currently, there are 76 reaches with a total length of 10,796 feet that are considered to be Hot Spots in the City's system. Operations staff reports that the causes of the hot spots are grease and roots. The 'Hot Spot' locations as reported by City staff are listed in Table 9-2 and shown on Figure 9-6.

Table 9-2
Hot Spot Locations

No.	U/S MH ID	D/S MH ID	Size (in)	Length (ft)	Location Description
1	02-040	02-041	8	340	1601 Wendy Wy to 1709 Wendy Wy
2	02-041	02-042	8	340	1709 Wendy Wyto 19th St & Wendy Wy
3	04-021	04-022	8	216	Ronda & Kuhn to 1137 Ronda
4	04-028	04-029	8	140	Terraza & Ronda to 208 Terraza
5	04-029	04-030	8	350	208 Terraza to Eeasement
6	04-030	04-031	8	300	Eeasement to 1217 2nd St
7	07-032	07-033	8	327	3529 Pacific to Pacific & Rosecrans
8	07-036	07-037	8	297	3601 Maple to Maple & Rosecrans
9	07-033	07-037	8	300	Rosecrans & Pacific to Rosecrans & Maple
10	07-037	07-038	8	265	Rosecrans & Maple to Rosecrans & Palm
11	08-024	08-025	8	349	3201 Valley to Walnut & Valley
12	08-070	08-071	8	252	3200 Laurel to 31st St & Laurel
13	08-071	08-072	8	121	31st St & Laurel to 30th St & Laurel
14	08-073	08-074	8	129	2916 Laurel to Easement
15	08-076	08-077	8	130	Easement to 2907 Pacific
16	08-081	08-082	8	75	2801 Pacific to Pacific Station
17	08-077	08-082	8	115	2907 Pacific to Pacific Station
18	10-063	10-065	8	320	620 8th St to 8th St & Ardmore
19	11-020	11-021	8	255	528 15th St to 15th St & Ardmore
20	11-043	11-045	6	384	652 12th St to 12th St & Fisher
21	14-015	14-016	8	102	13th St & Highland to 228 13th St
22	14-016	14-017	8	15	228 13th St to 224 13th St
23	14-017	14-018	6	97	224 13th St to 13th St & Bayview
24	14-037	14-038	6	80	14th St & Manhattan Ave to 132 14th St
25	14-038	14-041	6	155	132 14th St to 14th St & Ocean Dr
26	15-027	15-034	8	185	Private School Easement to 18th St & Agnes
27	15-034	15-036	8	249	18th St & Agnes to 18th St & Flournoy
28	15-081	15-082	6	315	24th St & Manor to 526 24th St
29	15-082	15-083	6	258	526 24th St to 24th St & Blanche
30	17-012	17-013	8	149	571 29th St to 29th St & Bell
31	17-006	17-013	10	343	27th St & Bell to 29TH St & Bell
32	17-040	17-048	8	160	35th St & Blanche to 35th Pl & Blanche
33	17-044	17-045	8	125	35th Pl to 35th Pl & Flournoy
34	17-045	17-046	8	349	35th Pl & Flournoy to 640 35th Pl
35	17-046	17-047	8	177	640 35th Pl to 621 35th Pl
36	17-063	17-064	8	260	33rd Pl & Flournoy to 648 33rd Pl
37	17-071	17-072	8	355	649 31st Pl to 608 31st Pl

Table 9-2 (Continued)
Hot Spot Locations

No.	U/S MH ID	D/S MH ID	Size (in)	Length (ft)	Location Description
38	17-072	17-073	8	247	608 31st Pl to 592 31st Pl
39	18-002	18-004	6	236	429 33rd St to 33rd St & Alma
40	18-004	18-008	6	228	33rd St & Alma to 34th St & Alma
41	18-020	18-028	10	229	36th St & Highland to Rosecrans & Highland
42	18-027	18-028	6	292	Rosecrans & Alma to Rosecrans & Highland
43	18-028	18-029	8	19	Rosecrans & Highland to Rosecrans & Highland
44	18-033	18-034	6	256	226 34th St to 34th St & Manhattan Ave
45	18-038	18-039	8	236	200 36th St to 36th St & Manhattan Ave
46	18-039	18-040	6	240	36th St & Manhattan Ave to Rosecrans & Manhattan Ave
47	18-029	18-029A	10	35	Rosecrans & Highland to Rosecrans & Highland
48	19-004	19-005	6	155	Alma to 30th St to 31st St
49	19-009	19-010	6	355	32nd St & Grandview to 429 32nd St
50	19-010	19-012	6	267	429 32nd St to 32nd St & Alma
51	19-017	19-018	8	228	33rd St & Highland to 32nd St & Highland
52	20-001	20-002	8	293	473 30th St to 437 30th St
53	20-006	20-016	6	240	29th St & Alma to 28th St & Alma
54	20-013	20-016	6	177	27th St & Alma to 28th St & Alma
55	20-025	20-028	6	241	30th St & Highland to 29th St & Highland
56	20-028	20-029	8	254	29th St & Highland to 28th St & Highland
57	20-030	20-031	6	227	327 27th St to 27th St & Highland
58	20-045	20-046	6	260	232 28th St to 28th St & Manhattan Ave
59	20-044	20-046	6	251	29th St & Manhattan Ave to 28th St & Manhattan Ave
60	20-057	20-059	6	174	2300 Manhattan Ave to 24th St & Manhattan Ave
61	21-009	21-010	6	227	24th St & Alma to 24th St & Highland
62	21-010	21-018	6	240	24th St & Highland to 23rd St & Highland
63	21-011	21-012	6	110	Marine & Grandview to 433 Marine
64	21-026	08-0L4	8	150	2216 The Strand to LACSD
65	22-003	22-004	6	220	232 16th St to 132 16th St
66	22-004	22-005	6	44	132 16th St to 128 16th St
67	22-008	22-009	6	241	324 17th St to 17th St & Highland
68	22-012	22-013	6	155	128 17th ST to 17th St & Ocean
69	25-030	25-031	8	480	Parkview dead end to 12" Main
70	25-031	25-032	8	200	
71	25-032	25-033	8	375	
72	25-033	25-034	8	200	
73	25-034	25-035	12	591	Parkview & 12" main south to Fairway Dr
74	25-035	25-036	12	175	
75	25-036	25-037	12	140	
76	25-037	24-036	12	190	
			Total	**10,796**	

City of El Segundo

City of Hawthorne

City of Redondo Beach

City of Hermosa Beach

Pacific Ocean

Bell Ave PS

Palm Ave PS

Pacific Ave PS

LACSD PS

Civic Center PS

Poinsetta Ave PS

Meadows Ave PS

Voorhees Ave PS

Pier PS

N

0 600 1,200 2,400 Feet

1" = 1,200'

Legend

- Sewer Manholes
- Manhattan Beach Sewage Pump Station
- LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- LACSD Trunk Sewer
- City Boundary
- Manhattan Beach Hot Spot Location

CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN

PROJECT NO: 1640901.10

DATE: September 2009

Hot Spot Locations

Figure 9-6

9-3 SANITARY SEWER OVERFLOW (SSO) HISTORY

There were a total of 19 sanitary sewer overflows responded to by City crews between January 2007 and June 2009. The details of these spills are shown in Table 9-3. The total number of reported spills that occurred on City property over the past three years is as follows:

7 spills in 2007 (8.6 spills per 100 miles)

3 spills in 2008 (3.7 spills per 100)

1 spill in 2009 (1.2 spills per 100) – *up to September 2009*

A sewer collection system with less than three (3) spills from the publicly owned system (excludes private property spills that do not result from a blockage in the public system) per 100 miles per year is considered an adequate system. For the City's sewer system (81.6 miles), this is an average of about 2.4 (3 x 0.816) spills per year.

Table 9-3
Sanitary Sewer Overflow Summary
Calendar Year 2007 thru 2009

No.	Date	Location	Spill Cause	Location of Spill Cause	Estimated Spill Volume (gal)	SSO Type
1	01/31/07	219 33rd St.	Debris	Private lateral	25	Category 3
2	02/09/07	3009 Alma Ave.	Roots	Private lateral	20	Category 3
3	02/10/07	1550 Rosecrans Ave.	Grease	Private lateral	Unknown	Category 3
4	03/09/07	4210 The Strand	Debris & Grease	City sewer	1200	Category 1
5	03/13/07	1466 Manhattan Beach Blvd.	Debris	Private lateral	10	Category 3
6	04/05/07	700 block of 15th St.	Debris & Grease	City sewer	240	Category 2
7	05/02/07	4416 Highland Ave.	Debris	Private lateral	10	Category 3
8	05/06/07	306 17th St.	Debris	Private lateral	2	Category 3
9	05/26/07	555 35th St.	Roots	Private lateral	100	Category 2
10	06/25/07	201 Poinsettia Ave.	Debris	City sewer	150	Category 2
11	07/03/07	1600 Curtis Ave.	Grease & Roots	City sewer	50	Category 2
12	08/10/07	307 7th St.	Debris	Private lateral	15	Category 3
13	11/05/07	433 3rd St.	Debris & Roots	City sewer	150	Category 1
14	11/07/07	433 3rd St.	Debris & Roots	City sewer	125	Category 2
15	12/23/07	232 17th St.	Debris	City sewer	40	Category 2
1	01/31/08	28th St. & Manhattan Ave.	Debris & Roots	City sewer	60	Category 2
2	02/28/08	1769 Nelson Ave.	Grease & Roots	City sewer	200	Category 3
3	11/07/08	500 W. Ardmore Ave.	Unknown	City sewer	625	Category 1
1	06/09/09	433 3rd St.	Roots	City sewer	125	Category 2

Note: Spills related to City facilities and not private laterals are highlighted in yellow.

9-4 MAINTENANCE PROGRAM

A comprehensive maintenance program is an important tool in assuring reliable system operation. This not only includes regular inspections and preventative maintenance, but also good record keeping. Accurate records are the backbone of any maintenance operation. They can be used for many purposes including: scheduling regular maintenance activities; allocating manpower; budgeting; pinpointing persistent problems; tracking equipment performance and maintenance history; and the identification of equipment which may be showing signs of failure.

Preventative Maintenance

Preventative maintenance is a crucial element of the maintenance program. The preventative maintenance program (PMP) consists of cleaning, inspection, condition assessment, and rehabilitation tasks.

Sewer inspection includes CCTV inspection and condition assessment of the collection system, visual inspection of manholes and their flow channels, ground surface inspection of rights of way and easements, and odor and corrosion monitoring. Condition assessment includes, review of the inspection data, and formulation of maintenance, rehabilitation, and replacement projects. Following the completion of the initial CCTV inspection program, the City should develop a continuing inspection plan based upon the knowledge gained from the initial program. Hot Spots will be CCTV inspected and evaluated before and after each maintenance activity and cleaning for one year to establish the appropriateness of the method, and then annually. Each spill site must be CCTV inspected to pinpoint the cause of the spill, and implementation of corrective measures for preventing repeat spills.

Preventative maintenance activities that the City does currently conduct include the following:

- Clean entire gravity system twice per year
- Clean hot spots twice per month
- Inspect and skim wet wells twice per week
- Vacuum out wet wells once per year
- Inspect pump stations once per week by Utilities Electrician and Sewer Maintenance Worker
- Diagnose pump station motor control centers annually for operational efficiency and safety by the Southern California Edison Company
- Catalogue and track tasks by work orders in a maintenance management system
- Perform routine mechanical root removal in areas of known root intrusion
- Start test the emergency power systems at the pump stations weekly
- Service generators bi-annually by Power Plus, Inc.

Maintenance activities that are currently planned include the following:

- The City is in the process of hiring a consultant to complete the CCTV inspection of the gravity sewers and manholes.

Maintenance Staff and Training

The City currently has about 81.6 miles of pipe. In order to comply with the WDR requirements and the City's regular preventative maintenance program, the City must quantify the number of employees and equipment necessary to perform these tasks.

The City's current staffing for the wastewater collections system maintenance includes 5 employees, one supervisor and four field staff members. Training of these staff members is as follows:

- Initial training in proper operation and maintenance of all major wastewater equipment and facilities by the Wastewater Supervisor
- Critical equipment training is facilitated by outside contractors in areas of fork lift operation, backhoe and bob-cat operation, and crane operation
- Periodic training in confined space entry, trench shoring, traffic control, heat illness, and hazardous materials management
- Task proficiency is required for all positions and training records are maintained to monitor completed classes
- Disaster training exercises are conducted twice per year
- Staff is also trained in Best Management Practices of the Fats, Oils, and Grease (FOG) Control Ordinance and is instructed to report violations

Appendix 9 – Wastewater Master Plan – Section 10, Capital Improvement

SECTION 10

CAPITAL IMPROVEMENT PROGRAM

10-1 GENERAL DESCRIPTION

The primary goal of the Capital Improvement Program (CIP) is to provide the City of Manhattan Beach with a long-range planning tool for implementing its sewer infrastructure improvements in an orderly manner and a basis for financing of these improvements. To accomplish this goal, the program is phased based upon the implementation cost of the facilities, the quantity of work the City can reasonably administer each year, and the funds available for these projects.

10-2 CAPITAL IMPROVEMENT PROJECT PRIORITIES

The capital improvement projects were selected primarily with consideration of the health and safety of the public and protection of the environment by minimizing the possibility of overflows. The projects that will eliminate the capacity deficiencies in the gravity collection system are prioritized based upon the hydraulic analyses conducted during this study. As the City completes CCTV inspection of the system, severe and major defects identified should be incorporated into the CIP and addressed. When the CCTV inspection is completed and a full condition assessment has been conducted, the capital improvement project priorities should be reevaluated.

Collection System Capacity Improvement Projects

The collection system capacity improvement projects include the areas identified with a capacity deficiency in the hydraulic model when pump capacities were implemented. It is recommended that the identified locations be flow monitored to verify the d/D ratios prior to implementing any replacement projects. Operations staff has not indicated that these areas are a problem. Therefore, until the deficiencies are verified in the field, these projects are considered low in priority. Details of the project locations are presented in Table 7-2.

Collection System Condition Improvement Projects

The condition improvement projects are prioritized solely on the condition of the pipe as determined from reviews of the CCTV recordings. The condition deficiencies with critical structural damage and severe obstructions were given the highest priority. Sewer pipes with conditions categorized as “Severe” or “Major” and manholes categorized as in poor condition are included in the recommended improvements. Details of the projects are presented in Table 8-2 and Table 8-4.

The planning level recommendations are based upon the ranking and pipe defects from the CCTV inspection reports, and reviews of recordings. It may be possible to reline, repair or perform root treatment on some of the existing gravity pipes, in lieu of replacing them. Actual improvements should be designed based upon further detailed reviews of each recording, taking into consideration other factors such as location, age, capacity of the pipe, existing utilities, and concurrent infrastructure construction projects.

The useful life gained from replacing the deficient facilities will be longer than repairs and relining projects. Root treatment is usually a temporary solution. Unless the source is removed, it is likely that the roots will get thicker as time passes and the root intrusion will continue until the pipe is replaced.

Pump Station Improvements

The recommended pump station capital improvement projects have been based upon condition assessment of each facility, capacity analysis, and conformance with the adopted criteria. The implementation priorities should be based upon the likelihood of a failure that may result in a spill, the volume of spill, and its impact on the public and the environment. The condition assessment and analysis results are described in detail Section 6 for each pump station.

10-3 CAPITAL IMPROVEMENT PROGRAM

The Capital Improvement Program is developed based upon the results of the hydraulic analyses and the established priorities. The recommended improvement project locations are illustrated on Figure 10-1.

Gravity collection system projects are listed in Table 10-1 and Table 10-2 by priority, along with cost estimates. The cost estimates presented in Table 10-1 and Table 10-2 reflect replacement of the existing facilities. Replacement costs are generally more conservative and will therefore allow the City more flexibility for each project. The pipeline construction costs are based upon $45 / diameter inch / ft. Preliminary design studies should be conducted utilizing detailed utility information to identify and evaluate project alternatives such as parallel pipes and/or diversions prior to final design. When sewers are replaced, they should be relocated into the walk ways or right-of-ways as much as possible if they are currently in a location that cannot be easily accessed.

The City of Manhattan Beach is largely occupied and there are many existing utilities to consider. Therefore, the costs of replacing sewer facilities will be generally higher than in an area that is undeveloped. The total costs shown in Table 10-1 and Table 10-2 include engineering, administration and contingency costs, estimated at 35% of the construction cost.

The manhole rehabilitation and replacement projects are listed in Table 10-3. The pump station and forcemain improvement projects are listed in Table 10-4.

The recommended projects have been based upon the best information currently available. It should be updated as new information becomes available from sources such as CCTV inspections and from maintenance crew observations. The project priorities may be revised to correspond to changed conditions, such as impending facility failures, or to take advantage of concurrent construction such as street paving projects or adjacent infrastructure work.

Some of the projects recommended are small and it may not be feasible to implement them as a single project. Therefore, several projects should be combined and bid as a package. Some of the projects may be broken down into smaller components to fit the City's budgetary and other obligations.

The total Wastewater Capital Improvement Program is shown in Table 10-5. The total CIP costs are estimated at $42,042,640.

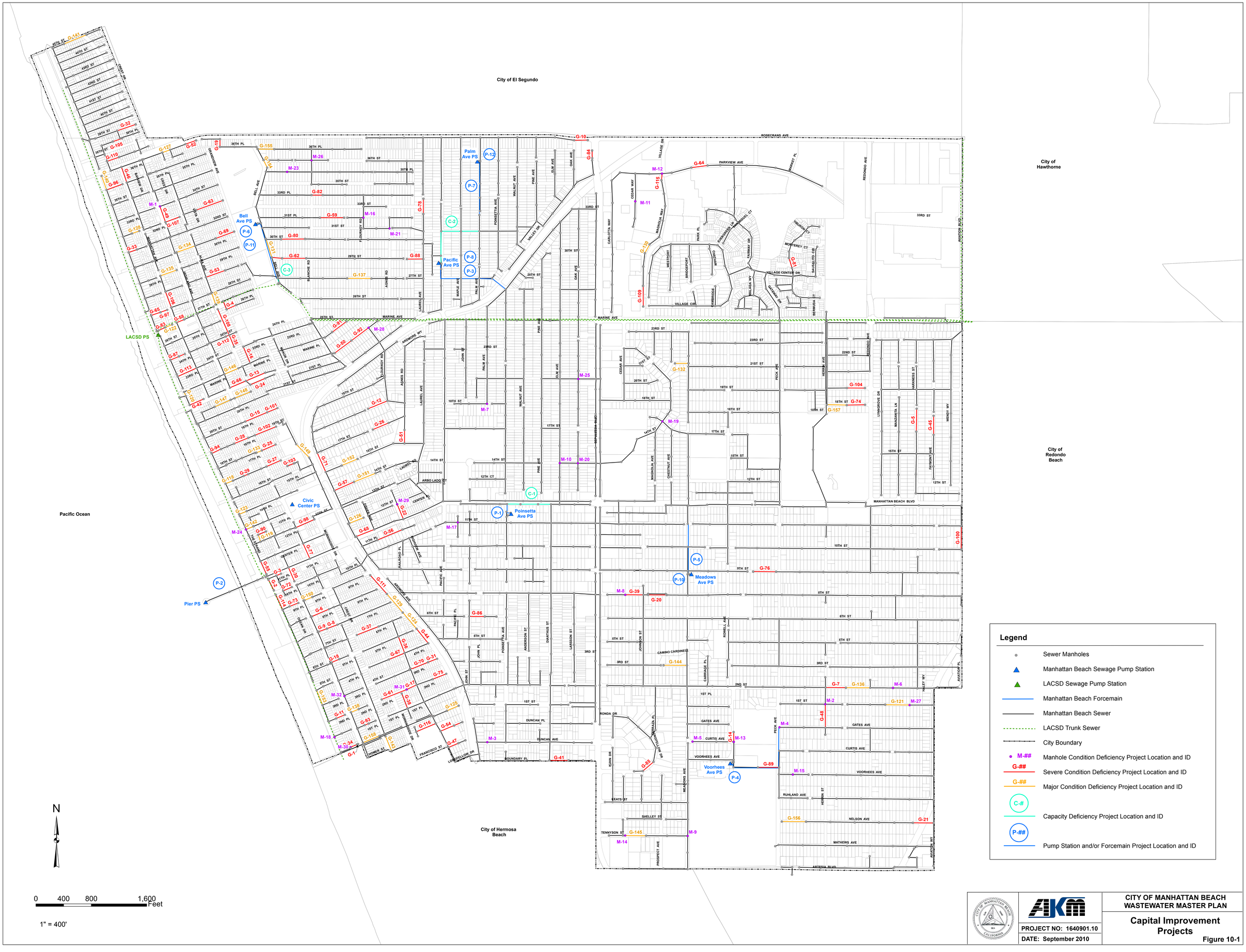

City of El Segundo
City of Hawthorne
City of Redondo Beach
City of Hermosa Beach
Pacific Ocean
ROSECRANS AVE
MARINE AVE
REDONDO AVE
ARTESIA BLVD
MANHATTAN BEACH BLVD
Bell Ave PS
Palm Ave PS
Pacific Ave PS
LACSD PS
Civic Center PS
Pier PS
Poinsetta Ave PS
Meadows Ave PS
Voorhees Ave PS
P-1
P-2
P-3
P-4
P-5
P-6
P-7
P-8
P-10
P-11
P-12
C-1
C-2
C-3
N
0 400 800 1,600 Feet
1" = 400'
Legend
Sewer Manholes
Manhattan Beach Sewage Pump Station
LACSD Sewage Pump Station
Manhattan Beach Forcemain
Manhattan Beach Sewer
LACSD Trunk Sewer
City Boundary
M-## Manhole Condition Deficiency Project Location and ID
G-## Severe Condition Deficiency Project Location and ID
G-## Major Condition Deficiency Project Location and ID
C-# Capacity Deficiency Project Location and ID
P-## Pump Station and/or Forcemain Project Location and ID
CITY OF MANHATTAN BEACH
WASTEWATER MASTER PLAN
Capital Improvement Projects
Figure 10-1
PROJECT NO: 1640901.10
DATE: September 2010

TABLE 10-1

Collection System Capacity Improvement Projects

STATUS	NOTES	Project No.	Pipe ID	U/S MH ID	D/S MH ID	Existing Dia(in)	Length (ft)	Slope	ADWF (mgd)	Pumped Flow (mgd)	PDWF (mgd)	Comments	Replacement Size (in)	Unit Cost ($)	Construction Cost ($)	Eng. & Admin Cost ($)	Project Cost ($)
NS		C-1	06171-06174	06-173	06-174	8	192	0.004	0.0019	0.7363	0.7437	D/S of Poinsettia PS	15	675	429,300	150,255	579,555
			06174-06175	06-174	06-175	8	254	0.004	0.0028	0.7363	0.7469						
			06175-06176	06-175	06-176	8	190	0.0136	0.0033	0.7363	0.7485						
NS		C-2	08037-08052	08-037	08-052	8	262	0.004	0.0446	0.4085	0.543	D/S of Palm PS	12	540	541,658	189,580	731,238
			08052-08055	05-052	08-055	8	281	0.004	0.0583	0.4085	0.5805						
			08055-08082	08-055	08-077	8	350	0.004	0.0637	0.4085	0.5951						
			08077-08082	08-077	08-082	8	110	0.004	0.0858	0.4085	0.6538						
NS		C-3	16019-16022	16-019	16-022	8	68	0.0099	0.0131	0.5728	0.6164	D/S of Bell PS	12	540	46,591	16,307	62,898
			16022-070L3	16-022	07-0L3	10	18	0.0028	0.0135	0.5728	0.6176						
						Total	1,725									Total	1,373,691

TABLE 10-2

GRAVITY SEWER REHAB AND REPLACEMENT PROJECTS

| STATUS | NOTES | Project No. | CIVIL No. | Inspection No. | Reverse CVID No. | Material Types No. | CIVID Matched? | Location | CCTV Date | Pipe ID | Manhole Start | Manhole End | Structural Grade | Pipe Size(in) | Pipe Mat'l | Pipe Adas Length (ft) | CCTV Length (ft) | Crack | Fracture | Broken | Hole | Joint | Joint | Joint

TABLE 10-2
GRAVITY SEWER REHAB AND REPLACEMENT PROJECTS

| STATUS | NOTES | Project No. | GVD No. | Inspect GVD No. | Reversal GVD No. | Reversal Inspect No. | GVD Matched (Y) | Location | CCTV Date PACP Grader | Pipe ID | Manhole Start | Manhole End | Direction of Comm | Pipe Size | Pipe Mat | Atlas Length (ft) | CCTV Length (ft) | Crack L | Crack C | Crack M | Fracture L | Fracture C | Fracture M | Broken D | Broken S | Broken V/U | Hole D | Hole S | Hole V/U | Joint L | Joint C | Joint M | Joint A | Joint V | Joint S | Lateral Unsealed | Obstacle Pipe | Surface Damage | Point Repair | Grade Adjust | Slope | Total Structural Defects | Total Structural Defects Score | Structural Defect Index | Deposits AGS | Deposits AE | Deposits Other | Rough I (I) C | Rough I (I) B | Rough I (I) L | Rough II (II) T | Rough II (II) C | Rough II (II) B | Rough II (II) L | Medium I | Medium C | Medium B | Medium L | Bad I | Bad C | Bad B | Bad L | Infiltration I | Infiltration C | Infiltration B | Infiltration L | Obstacles Dik | Obstacles Other | Vermin C | Vermin B | Total Operational Index | Total O&M Defects Index | Top (Lateral) FD | Top (Lateral) BI | Top (Lateral) BO | Line D | Line L | Line U | Line R | Line RD | Line UD | Intruding Seal Material GT | Intruding Seal Material Z | Root Intrusiveness SA | Root Intrusiveness CU | Root Intrusiveness MC | Prior Ry | Condition Ranking | Ry Reverse Set Up Completed | Comments | Minimum Recommendations | Project Replacement Cost (C3) |
|---|---|---

TABLE 10-2

GRAVITY SEWER REHAB AND REPLACEMENT PROJECTS

| STATUS | NOTES | Project No. | GIS No. | Inspection No. | Reinstall GIS No. | Reinstall Manh. No. | GIS Modified (Y/) | Location: Street Name | Location: CCTV Date / PACP Grade | Location: Pipe ID | Manhole: Start | Manhole: End | Direction of Camera | Pipe: Size(in) | Pipe: Mat | Pipe: Atlas Length (ft) | Pipe: CCTV Length (ft) | Crack: C | Crack: L | Crack: M | Crack: S | Crack: C | Crack: M | Crack: L | Broken: B | Broken: M | Broken: L | Hole: H | Joint: D | Joint: L | Joint: M | Joint: S | Joint: O | Joint: W | Lat Connect | Collapsed Pipe | Surface Damage | Point Repair | Lining Failure | Sag | Total Structural Defects | Total Structural Defects Score | Structural Defect Index | Deposits: A | Deposits: AD | Deposits: AE | Deposits: Other | Roots (-R-): B | Roots (-R-): C | Roots (-R-): B | Roots (-R-): T

TABLE 10-3

MANHOLE REHAB AND REPLACEMENT PROJECTS

STATUS	NOTES	Project No.	Inspection Phas	Session ID	Street	Manhole	Inspection Date	Surface Condition	Manhole Cover	Frame	Cone	Barrel / Wall	Rungs	Bench	Channel	Debris	Grease	Vermin	Odor	Priority Score	Condition Ranking	Comment	Recommendation	Project Cost ($)
NS		M-1	1	25	Highland Ave	19-015	1/12/2009	Pavement - Concrete Collar	Good	Good	Failing	Failing	Good	Good	Good	No	No	No	No	24	1	Fractures in Cone and barrel. Fracture seen in street pavement surrounding manhole cover.	Replace	30,000
COMPLETE	S-257	M-2	1	28	1st St	01-080	11/21/2008	Pavement - Concrete Collar	Good	Good	Poor	Poor	Failing	Poor	Poor	No	No	0	No	22	2	Missing Mortar. Corrosion at bench and channel	Line Manhole	10,000
COMPLETE	S-257	M-3	1	74	Duncan Ave	10-039	12/19/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Failing	Poor	Poor	No	No	No	No	18	3	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-4	1	90	Gates Ave	01-072	11/20/2008	Pavement - Concrete Collar	Good	Good	Poor	Fair	Poor	Poor	Poor	No	Yes	No	Yes	15	4	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-5	1	51	Curtis Ave	05-052	12/2/2008	Pavement - Concrete Collar	Broken	Good	Good	Good	Poor	Poor	Poor	No	No	0	No	14	5	Broken manhole cover. Corrosion at bench and channel.	Replace manhole and line	13,500
COMPLETE	S-257	M-6	1	36	2nd St	01-086	11/34/08	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	Yes	No	No	No	11	6	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-7	1	109	18th St	06-244	12/5/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	0	No	10	7	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-8	1	23	8th St	04-054	12/1/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	10	8	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-9	1	50	Meadows Ave	05-023	12/2/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	10	9	Corrosion at bench and channel. Not a smooth transition.	Line Manhole	10,000
COMPLETE	S-257	M-10	1	130	14th St	06-191	12/8/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Poor	No	No	No	No	10	10	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-11	1	291	Cedar Way	25-012	1/22/2009	Pavement - Concrete Collar	Good	Good	Poor	Poor	Poor	Good	Good	No	No	No	No	10	11	Corrosion and cracking in cone and wall	Line Manhole	10,000
COMPLETE	S-257	M-12	1	293	Village Dr	25-025	1/22/2009	Pavement - Concrete Collar	Good	Good	Poor	Poor	Poor	Good	Good	No	No	No	No	10	12	Corrosion in cone and barrel.	Line Manhole	10,000
COMPLETE	S-257	M-13	1	53	Rowell Ave	05-055	12/2/2008	Pavement - Concrete Collar	Broken	Good	Good	Good	Fair	Good	Good	No	No	No	No	9	13	Broken manhole cover. Corrosion at bench and channel.	Replace manhole cove	3,500
COMPLETE	S-257	M-14	1	47	Tennyson St	05-020	12/2/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Fair	Poor	No	No	No	No	9	14	Corrosion at channel	Line Manhole	10,000
NS		M-15	1	60	Voorhees Ave	05-005	12/2/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Fair	Poor	No	No	No	No	9	15	Corrosion at channel	Line Manhole	10,000
COMPLETE	S-257	M-16	1	181	Flournoy Rd	17-057	1/8/2009	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Poor	Poor	No	No	No	No	9	16	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-17	1	46	11th St	09-028	12/18/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	Yes	No	9	17	Corrosion at bench and channel.	Line Manhole	10,000
NS		M-18	2	235	The Strand	12-030A	7/20/2009	Pavement - Concrete Collar	Good	Good	Good	Poor	Poor	Good	Fair	No	No	No	No	9	18	Missing mortar.	Repair mortar	6,000
COMPLETE	S-257	M-19	1	80	14th St	06-050	12/4/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	No	No	8	19	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-20	1	131	14th St	06-077	12/8/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	No	No	8	20	Corrosion at bench and channel.	Line Manhole	10,000
COMPLETE	S-257	M-21	1	178	31st St	17-053	1/8/2009	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Poor	Poor	No	No	No	No	8	21	Corrosion at channel	Line Manhole	10,000
COMPLETE	S-257	M-22	1	99	Manhattan Ave	11-116A	12/22/2008	Pavement - Concrete Collar	Good	Good	Poor	Good	Poor	Good	Good	No	No	No	No	8	22	Cracks in cone.	Line Manhole	10,000
NS		M-23	3	25	35th Pl	17-049	8/11/2009	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Fair	Poor	No	No	0	No	8	23	Corrosion at bench and channel.	Line Manhole	10,000
NS		M-24	1	284	The Strand	14-064	1/21/2009	Pavement - Concrete Collar	Cracked	Good	Good	Good	N/A	Good	Good	No	No	No	No	7	24	Cracked manhole cover.	Replace Manhole Cov	3,500
COMPLETE	S-257	M-25	1	119	19th St	06-030	12/5/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Fair	Poor	No	No	No	No	7	25	Corrosion at channel	Line Manhole	10,000
COMPLETE	S-257	M-26	1	205	36th St	17-040	1/9/2009	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Good	Poor	No	No	No	No	7	26	Corrosion at channel	Line Manhole	10,000
DELETE	INCORREC	M-26	1	205	Blanche Rd	17-040	1/9/2009	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Good	Poor	No	No	No	No	7	26	Corrosion at channel	Line Manhole	0
COMPLETE	S-257	M-27	1	26	1st St	01-061	11/21/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Fair	Good	Poor	No	No	0	No	7	27	Corrosion at channel	Line Manhole	10,000
COMPLETE	S-257	M-28	1	143	Marine Ave	15-053	1/7/2009	Pavement - Concrete Collar	Good	Good	Poor	Good	Fair	Good	Good	No	No	No	No	7	28	Missing mortar and possbly bricks.	Repair mortar	6,000
NS		M-29	1	87	Highview Ave	11-040	12/22/2008	Pavement - Concrete Collar	Good	Good	Good	Good	Poor	Poor	Good	Yes	No	No	No	7	29	Cracks in cone.	Line Manhole	10,000
NS		M-30	2	191	1st St	12-026	7/16/2009	Pavement - Concrete Collar	Good	Good	Good	Good	Good	Good	Fair	No	No	No	No	7	30	Corrosion at bench and channel.	Line Manhole	10,000
NS		M-31	2	278	3rd St	10-139	7/22/2009	Pavement - Concrete Collar	Cracked	Good	Good	Good	Good	Good	Good	No	No	No	No	7	31	Cracked manhole cover.	Replace Manhole Cov	3,500
NS		M-32	1	100	Manhattan Ave	11-117	12/22/2008	Pavement - Concrete Collar	Good	Good	Poor	Good	Good	Good	Good	No	No	No	No	8	32	Cracks in cone.	Line Manhole	10,000
																							Total	316,000

TABLE 10-4

LIFT STATION AND FORCE MAIN IMPROVEMENT PROJECTS

						Recommended Facilities							
STATUS	NOTES	Project No.	Project Description	Date of Construction for Existing Facility	Justification	Firm Capacity (gpm)	Volume (gal)	Pipe Size (in)	Pipe Length (ft)	Unit Cost ($)	Construction Cost ($)	Eng. & Admin. Cost ($)	Total Project Cost ($)
			Replace Poinsettia PS	1949	Condition / Criteria	150					2,000,000	700,000	2,700,000
DESIGN		P-1	Replace Poinsettia PS Forcemain	1949	Age / Condition			4	163	300	49,000	18,000	67,000
COMPLETE		P-2	Replace Pier FS Forcemain	1935	Age / Condition			4	900	400	360,000	126,000	486,000
	CON SUMMER 2025 TO FALL 2026.		Upgrade Pacific PS	1953	Criteria	400					400,000	140,000	540,000
AWARD	PS to GRAVITY LINE.	P-3	Replace Pacific PS Forcemain	1953	Age / Condition			6	1225	240	294,000	102,900	396,900
	MAY 2025 TO		Upgrade Voorhees PS	1953	Criteria	350					400,000	140,000	540,000
CONSTRUCTION	SEPTEMBER 2026	P-4	Replace Voorhees PS Forcemain	1953	Age / Condition			6	930	240	223,200	78,120	301,320
			Replace Meadows PS	1953		310					400,000	140,000	540,000
PLANNING		P-5	Replace Meadows PS Forcemain	1953	Criteria			6	730	240	175,200	61,320	236,520
			Upgrade Bell Pump Station	1938	Criteria	300					400,000	140,000	540,000
PLANNING		P-6	Replace Bell PS Foreman	1938	Age / Condition			6	900	240	216,000	75,600	291,600
PLANNING		P-7	Replace Palm PS Forcemain		Age / Condition			4	775	240	186,000	65,100	251,100
DELETE	PS to GRAVITY LINE.	P-8	Construct Emergency Storage for Pacific PS	-	Criteria		12000			70	840,000	294,000	1,134,000
CONSTRUCTION	MAY 2025 TO SEPTEMBER 2026	P-9	Construct Emergency Storage for Voorhees PS	-	Criteria		10500			70	735,000	257,250	992,250
PLANNING		P-10	Construct Emergency Storage for Meadows PS	-	Criteria		9300			70	651,000	227,850	878,850
PLANNING		P-11	Construct Emergency Storage for Bell PS	-	Criteria		8400			70	588,000	205,800	793,800
PLANNING		P-12	Construct Emergency Storage for Palm PS	-	Criteria		4800			70	336,000	117,600	453,600
										Total	**8,253,400**	**2,889,540**	**11,142,940**

Table 10-5
Wastewater Capital Improvement Program

CIP No.	Project Description	Date of Construction for Existing Facility	Justification	Recommended Facilities				Unit Cost ($)	Construction Cost ($)	Eng. & Admin. Cost ($)	Total Project Cost ($)
				Firm Capacity (gpm)	Volume (gal)	Pipe Size (in)	Pipe Length (ft)				
1	Replace Poinsettia PS	1949	Condition / Criteria	150					2,000,000	700,000	2,700,000
	Replace Poinsettia PS Forcemain	1949	Age / Condition			4	163	300	49,000	18,000	67,000
2	Replace Pier PS Forcemain	1935	Age / Condition			4	900	400	360,000	126,000	486,000
3	Upgrade Pacific PS	1953	Criteria	400					400,000	140,000	540,000
	Replace Pacific PS Forcemain	1953	Age / Condition			6	1,225	240	294,000	102,900	396,900
4	Upgrade Voorhees PS	1953	Criteria	350					400,000	140,000	540,000
	Replace Voorhees PS Forcemain	1953	Age / Condition			6	930	240	223,200	78,120	301,320
5	Upgrade Meadows PS	1953	Criteria	310					400,000	140,000	540,000
	Replace Meadows PS Forcemain	1953	Age / Condition			6	730	240	175,200	61,320	236,520
6	Upgrade Bell Pump Station	1938	Criteria	300					400,000	140,000	540,000
	Replace Bell PS Forcemain	1938	Age / Condition			6	900	240	216,000	75,600	291,600
7	Replace Palm PS Forcemain		Age / Condition			4	775	240	186,000	65,100	251,100
8	Construct Emergency Storage for Pacific PS	-	Criteria		12,000			70	840,000	294,000	1,134,000
9	Construct Emergency Storage for Voorhees PS	-	Criteria		10,500			70	735,000	257,250	992,250
10	Construct Emergency Storage for Meadows PS	-	Criteria		9,300			70	651,000	227,850	878,850
11	Construct Emergency Storage for Bell PS	-	Criteria		8,400			70	588,000	205,800	793,800
12	Construct Emergency Storage for Palm PS	-	Criteria		4,800			70	336,000	117,600	453,600
*13	Gravity Sewer Rehabilitation and Replacement	Varies	Condition								28,930,000
*14	Manhole Rehabilitation and Replacement	Varies	Condition								596,000
**15	Collection System Capacity Deficiencies	Varies	Criteria			12 & 15	1,725				1,373,700
								Total	**8,253,400**	**2,889,540**	**42,042,640**

*Notes: * Total project cost includes a projection for the remainder of the system to be CCTV inspected*
*** Flow monitoring and verification of d/D ratios is recommended prior to project implementation*

Appendix 10 – Resolution No. 24-0066

RESOLUTION NO. 24-0066

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH, CALIFORNIA, APPROVING THE CAPITAL IMPROVEMENT PLAN FOR FISCAL YEARS 2024-2025 THROUGH 2028-2029

THE MANHATTAN BEACH CITY COUNCIL DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The City Council hereby makes the following findings:

A. The Manhattan Beach City Council desires to develop a proactive capital improvement plan to meet the community's needs for future services, programs, and facilities. The City Council wishes to improve the City's ability to continue providing essential services in emergency situations.
B. On May 14, 2024, the proposed Capital Improvement Program was presented to the City Council at a City Council meeting for discussion. At the conclusion of these discussions, the City Council accepted the proposed Capital Improvement Program, which was reflected in the Capital Improvement Program presented at the June 4, 2024, Public Hearing.
C. The City Council hereby finds that it can be seen with certainty that there is no possibility that the adoption of this Capital Improvement Program may have a significant effect on the environment. The Capital Improvement Program is a prioritizing and funding allocation program and cannot and does not have the potential to cause a significant effect on the environment. No physical activity will occur until all required environmental review is conducted at the time the physical improvements prioritized in the Capital Improvement Program are undertaken at a future unspecified date. Accordingly, the adoption of this Capital Improvement Program is therefore exempt from the environmental review requirements of the California Environmental Quality Act pursuant to Section 15061(b)(3) of Title 14 of the California Code of Regulations.

SECTION 2. That certain document entitled the "City of Manhattan Beach, California, FY 2024-2025 through FY 2028-2029 Capital Improvement Program" a copy of which is on file in the office of the City Clerk, which may hereafter be amended by the Council, is hereby approved and adopted.

SECTION 3. The City Clerk is directed to maintain three copies of the Capital Improvement Program on file at all times for inspection by the public.

SECTION 4. By approval and appropriation of funds for the FY 2024-2025 Capital Improvement Program projects as part of the City's Operational Budget, and approval of the FY 2025-2026 through FY 2028-2029 outlying years' Capital Improvement Program projects, it is the intent of the City Council to revise the plan each year by continuing to identify capital improvement projects within its five year plan and by re-prioritizing existing capital improvements as needed to serve the community.

SECTION 5. This resolution shall take effect immediately upon adoption.

SECTION 6. The City Clerk shall certify to the adoption of this resolution.

ADOPTED on June 4, 2024.

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
JOE FRANKLIN
Mayor

ATTEST:

_____
LIZA TAMURA
City Clerk

Appendix 11 – 2026-2030 Capital Improvement Plan

Schedule of Capital Improvement Projects by Fund

Funding Source	Prior Year Appropriation	FY2025	FY2026	FY2027	FY2028	FY2029	Total
Air Quality Fund	$225,000	$0	$0	$0	$0	$0	$225,000
CIP Fund	$10,137,310	$4,200,000	$4,633,000	$1,868,000	$1,568,000	$2,068,000	$24,474,310
Gas Tax Fund	$3,606,591	$2,015,000	$1,015,000	$2,095,000	$1,015,000	$2,215,000	$11,961,591
Measure M Fund	$13,753,993	$6,158,000	$800,000	$800,000	$800,000	$775,000	$23,086,993
Measure R Fund	$930,887	$2,410,000	$1,000,000	$500,000	$500,000	$500,000	$5,840,887
Prop C Fund	$2,601,570	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$800,000	$7,401,570
Parking Fund	$1,401,448	$1,325,000	$2,150,000	$900,000	$300,000	$400,000	$6,476,448
State Pier and Lot Fund	$156,120	$350,000	$0	$0	$0	$0	$506,120
Grants Fund	$1,410,000	$5,320,000	$100,000	$100,000	$100,000	$100,000	$7,130,000
Measure W Fund	$27,559,832	$100,000	$310,000	$920,000	$0	$0	$28,889,832
Storm Drain Fund	$3,265,172	$760,000	$810,000	$860,000	$710,000	$710,000	$7,115,172
Street Lighting and Landscape Fund	$0	$75,000	$75,000	$75,000	$75,000	$75,000	$375,000
Sewer Fund	$12,054,355	$5,380,000	$1,290,000	$2,670,000	$2,330,000	$2,500,000	$26,224,355
Water Fund	$4,151,523	$3,850,000	$4,160,000	$4,700,000	$4,300,000	$6,100,000	$27,261,523
Total Funding Sources	$81,253,801	$32,943,000	$17,343,000	$16,488,000	$12,698,000	$16,243,000	$176,968,801

Prior year appropriation column includes estimated carryover funding at the end of Fiscal Year 2024 that will be expended as multi-year projects progress. Reported carryover funds reflect the amount of fund balance previously committed to projects in prior year adopted budgets. In the Five Year Forecast, Opening Fund Balances include assumptions for Committed Capital Project expenditures and, where applicable, anticipated grant revenue.

Schedule of Capital Improvement Projects by Fund

	A	C	D	F	H	I	J	K	L	M
1	**Funding Source**	**Category**	**Request Title**	**Prior Year Appropriation**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**	**Total**
2	**AB 2766 Air Quality Fund**	**CIP**	Electric Vehicle Chargers at Marine Ave. Park	$225,000	$0	$0	$0	$0	$0	$225,000
3	**Total AB 2766 Air Quality Fund**			**$225,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$225,000**
4										
5	**CIP Fund**	**CIP**	**Annual Park Improvements/Replacement Program - Playground Equipment**	$0	**$250,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	$450,000
6			**Annual Park Improvements/Replacement Program - Sport Courts**	$0	**$100,000**	**$68,000**	**$68,000**	**$68,000**	**$68,000**	$372,000
7			Annual Park Improvements/Replacement Program - All Other	$32,500	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	$782,500
8			Sand Dune Park Improvements	$158,000	$0	**$1,000,000**	$0	$0	$0	$1,158,000
9			**Sports Court at Marine Avenue Park - Pay N Play (Partial Measure A)**	$0	**$50,000**	$0	$0	$0	$0	$50,000
10			**Replace Fencing at Marine Avenue Park Soccer Field**	$0	$0	**$150,000**	$0	$0	$0	$150,000
11			**Begg Facility Parking Lot Resurfacing**	$0	$0	$0	$0	$0	**$100,000**	$100,000
12			**Replace Light Controllers at Manhattan Village Field**	**$380,230**	$0	$0	$0	$0	$0	$380,230
13			City Facility Renovations	$470,722	**$650,000**	**$300,000**	$0	$0	$0	$1,420,722
14			City Council Chambers Renovations - Feasibility	$167,780	$0	$0	$0	$0	$0	$167,780
15			Police Facility Flooring Replacement	$200,000	$0	$0	$0	$0	$0	$200,000
16			Deferred Parks Maintenance	$690,000	$0	$0	$0	$0	$0	$690,000
17			Gateway and Monument Sign Replacement	$0	$0	$0	$0	$100,000	**$300,000**	$400,000
18			Wayfinding Program - Phase 2	$0	$0	$0	$0	$100,000	**$400,000**	$500,000
19			Aquatic Center - Feasibility/Design	$0	**$800,000**	**$800,000**	$0	$0	$0	$1,600,000
20			Sepulveda/Oak Neighborhood Traffic Calming (MV Mall)	$50,000	$0	$0	$0	$0	$0	$50,000
21			Annual Non-Motorized Transport. Program (Bike lanes, crosswalks)	$0	$50,000	**$40,000**	$50,000	$50,000	**$50,000**	$240,000
22			City Owned Refuse Enclosures Improvements	**$250,000**	$0	**$250,000**	$0	$0	$0	$500,000
23			School District Project	$6,430	**$500,000**	$0	$0	$0	$0	$506,430
24			Solar Power Installation at City Facilities	$0	$0	$50,000	$50,000	$150,000	**$150,000**	$400,000
25			Annual Facilities Capital Maintenance Program	$271,808	**$200,000**	$200,000	$200,000	$200,000	**$200,000**	$1,271,808
26			**City Hall Elevators Modernization**	$0	**$300,000**	$0	$0	$0	$0	$300,000
27			**Irrigation for Tree Wells in North Manhattan Beach**	$300,000	$0	$0	$0	$0	$0	$300,000
28			**Upgrade Main Electrical Feed to Public Works Yard**	$0	**$50,000**	**$400,000**	$0	$0	$0	$450,000
29			Mariposa Fitness Station Parcourse Equipment Replacement	$0	$0	$0	$0	**$200,000**	$0	$200,000
30			Manhattan Heights Park Restroom Rehab and Artificial Turf Installation	$100,000	$0	**$175,000**	**$200,000**	$0	$0	$475,000
31			City Hall HVAC Replacement	$327,983	$0	$0	$0	$0	$0	$327,983
32			Senior and Scout Community Center Renovation	$6,507,734	$0	$0	$0	$0	$0	$6,507,734
33			Annual Citywide Security Cameras Program	$172,460	**$1,000,000**	**$1,000,000**	$1,000,000	**$500,000**	**$500,000**	$4,172,460
34			Biennial Slurry Seal Program	$51,663	$100,000	$0	$100,000	$0	**$100,000**	$351,663
35	**Total CIP Fund**			**$10,137,310**	**$4,200,000**	**$4,633,000**	**$1,868,000**	**$1,568,000**	**$2,068,000**	**$24,474,310**
36										
37	**Gas Tax Fund**	**Street, Sidewalks, ROW**	Annual Street Resurfacing Program	$1,957,310	**$450,000**	$650,000	$350,000	$650,000	**$350,000**	$4,407,310
38			Triennial Pavement Management System Update	$40,000	$0	$0	$80,000	$0	$0	$120,000
39			Ocean Drive Walk Street Crossings	$50,000	$400,000	$0	$0	$0	$0	$450,000
40			Annual Citywide Concrete Repair Program	$538,156	$365,000	$365,000	$365,000	$365,000	**$365,000**	$2,363,156
41			Biennial Slurry Seal Program	$1,021,125	**$800,000**	$0	**$1,300,000**	$0	**$1,500,000**	$4,621,125
42	**Total Gas Tax Fund**			**$3,606,591**	**$2,015,000**	**$1,015,000**	**$2,095,000**	**$1,015,000**	**$2,215,000**	**$11,961,591**
43										
44										
45	**Measure M Fund**	**Street, Sidewalks, ROW**	Annual Street Resurfacing Program	$500,000	$500,000	$500,000	$500,000	$500,000	**$475,000**	$2,975,000
46			Annual Citywide Traffic Signal Replacements	$0	$300,000	$300,000	$300,000	$300,000	**$300,000**	$1,500,000
47			Manhattan Beach Advanced Traffic Signal (MBATS) System	$11,414,713	**$4,963,000**	$0	$0	$0	$0	$16,377,713
48			MBB and Pacific Ave Improvements	$860,000	$320,000	$0	$0	$0	$0	$1,180,000
49			ADA Transition Plan within Public Rights of Way	$12,431	**$75,000**	$0	$0	$0	$0	$87,431
50			MBB Eastbound Left-Turn Improvement at Aviation Blvd. (Measure M)	$966,849	$0	$0	$0	$0	$0	$966,849
51	**Total Measure M Fund**			**$13,753,993**	**$6,158,000**	**$800,000**	**$800,000**	**$800,000**	**$775,000**	**$23,086,993**
52										
53	**Measure R Fund**	**Street, Sidewalks, ROW**	Annual Street Resurfacing Program	$142,980	**$400,000**	**$1,000,000**	$500,000	$500,000	**$500,000**	$3,042,980
54			**Artesia & Aviation SB Right-Turn Improvement**	$60,783	**$350,000**	$0	$0	$0	$0	$410,783
55			Rosecrans Bike Lane Improvements (Partial Grant CPF)	$240,000	$510,000	$0	$0	$0	$0	$750,000
56			**MBB Pavement Rehabilitation from Sepulveda Blvd. to Dianthus St.**	$0	**$1,000,000**	$0	$0	$0	$0	$1,000,000
57			Aviation Blvd and 33rd Missing Sidewalk (Partial Grant 5310)	$487,124	**$150,000**	$0	$0	$0	$0	$637,124
58	**Total Measure R Fund**			**$930,887**	**$2,410,000**	**$1,000,000**	**$500,000**	**$500,000**	**$500,000**	**$5,840,887**
59										
60	**Prop C Fund**	**Street, Sidewalks, ROW**	Annual Street Resurfacing Program	$977,242	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$800,000**	$5,777,242
61			MBB and Sepulveda Intersection Improvements	$1,624,328	$0	$0	$0	$0	$0	$1,624,328
62	**Total Prop C Fund**			**$2,601,570**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$800,000**	**$7,401,570**

Schedule of Capital Improvement Projects by Fund

	A	C	D	F	H	I	J	K	L	M
1	**Funding Source**	**Category**	**Request Title**	**Prior Year Appropriation**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**	**Total**
63										
64	**Parking Fund**	**Parking**	**Paint Metlox Parking Structure**	$0	$0	**$450,000**	$0	$0	$0	$450,000
65			**Annual Parking Payment Facilities Improvements Program**	$0	$0	**$300,000**	**$700,000**	**$200,000**	**$200,000**	$1,400,000
66			**Annual Parking Facilities Capital Improvements Program**	$0	$0	$0	**$100,000**	**$100,000**	**$100,000**	$300,000
67			Wayfinding Program - Phase 1	$390,415	$0	$0	$0	$0	$0	$390,415
68			**Waterproofing City Hall and Police/Fire Parking Structures**	$0	**$100,000**	**$400,000**	$0	$0	$0	$500,000
69			Parking Structure Lot 3 Replacement* - Feasibility/Design	$771,033	$0	**$1,000,000**	$0	$0	$0	$1,771,033
70			**Redesign and Repurpose of Metlox Slab Fountain Area**	$240,000	$0	$0	$0	$0	$0	$240,000
71			**Replace Escalators in Metlox Plaza (Cost Share)**	$0	**$1,125,000**	$0	$0	$0	$0	$1,125,000
72			Biennial Slurry Seal Program	$0	**$100,000**	$0	**$100,000**	$0	**$100,000**	$300,000
73	**Total Parking Fund**			**$1,401,448**	**$1,325,000**	**$2,150,000**	**$900,000**	**$300,000**	**$400,000**	**$6,476,448**
74										
75	**State Pier and Lot Fund**	**State Pier and Lot**	Pier Structural Inspection Update	$0	**$350,000**	$0	$0	$0	$0	$350,000
76			Pier Railing Replacement	$156,120	$0	$0	$0	$0	$0	$156,120
77	**Total State Pier and Lot Fund**			**$156,120**	**$350,000**	**$0**	**$0**	**$0**	**$0**	**$506,120**
78										
79	**Grants and Other Outside Funds**	**Grants**	**Sports Court at Marine Avenue Park - Pay N Play (Partial Measure A)**	$0	**$400,000**	$0	$0	$0	$0	$400,000
80			MBB Complete Streets Corridor - Feasibility/Design (Measure M)	$390,000	$0	$0	$0	$0	$0	$390,000
81			**Highland Corridor Complete Streets Design (Measure M)**	$0	**$500,000**	$0	$0	$0	$0	$500,000
82			Annual ADA Improvements Program (CDBG)	$20,000	$100,000	$100,000	$100,000	$100,000	**$100,000**	$520,000
83			El Porto Water Infrastructure Improvements - Phase 1 (Partial CPF)	$0	**$3,500,000**	$0	$0	$0	$0	$3,500,000
84			Peck Avenue Storm Drain Improvements (Partial Grant CPF)	$0	**$200,000**	$0	$0	$0	$0	$200,000
85			Rosecrans Bike Lane Improvements (Partial Grant CPF)	$1,000,000	$0	$0	$0	$0	$0	$1,000,000
86			**Replace Escalators in Metlox Plaza (Cost Share)**	$0	**$375,000**	$0	$0	$0	$0	$375,000
87			**Intersection Improvements Project (Cycle 11 HSIP)**	$0	**$245,000**	$0	$0	$0	$0	$245,000
88	**Total Grants Fund**			**$1,410,000**	**$5,320,000**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	**$7,130,000**
89										
90	**Measure W Fund**	**Storm Drain**	TMDL Trash Treatment	$1,760,000	$0	$0	$0	$0	$0	$1,760,000
91			Shelley Street Storm Drain Improvements	$0	$0	$310,000	$920,000	$0	$0	$1,230,000
92			**Beach Cities Green Streets Stormwater Infiltration**	$0	**$100,000**	$0	$0	$0	$0	$100,000
93			28th Street Stormwater Infiltration	$25,799,832	$0	$0	$0	$0	$0	$25,799,832
94	**Total Measure W Fund**			**$27,559,832**	**$100,000**	**$310,000**	**$920,000**	**$0**	**$0**	**$28,889,832**
95										
96	**Storm Drain Fund**	**Storm Drain**	CCTV Storm Drain System	$150,000	$0	$0	$0	$0	$0	$150,000
97			**Manhattan Beach Dominguez Channel Stormwater Infiltration - Feasibility**	**$250,000**	$0	$0	$0	$0	$0	$250,000
98			Golf Course Storm Drain Lift Station Electrical Upgrades	$0	$50,000	$300,000	$0	$0	$0	$350,000
99			Beach Cities Green Streets Stormwater Infiltration	$362,500	$0	$0	$0	$0	$0	$362,500
100			Peck Avenue Storm Drain Improvements (Partial Grant CPF)	**$533,006**	$0	$0	$0	$0	$0	$533,006
101			Shelley Street Storm Drain Improvements	$0	$0	$100,000	$600,000	$0	$0	$700,000
102			Annual Storm Drain Repairs	$0	$500,000	**$200,000**	**$150,000**	$500,000	**$500,000**	$1,850,000
103			Storm Drain Capital Best Management Practices (BMPs)	$0	$210,000	$210,000	**$110,000**	$210,000	**$210,000**	$950,000
104			**TMDL Trash Treatment**	**$1,969,666**	$0	$0	$0	$0	$0	$1,969,666
105	**Total Storm Drain Fund**			**$3,265,172**	**$760,000**	**$810,000**	**$860,000**	**$710,000**	**$710,000**	**$7,115,172**

Schedule of Capital Improvement Projects by Fund

	A	C	D	F	H	I	J	K	L	M
1	**Funding Source**	**Category**	**Request Title**	**Prior Year Appropriation**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**	**Total**
106										
107	**Street Lighting and Landscape Fund**	**Street Lighting and Landscape**	Annual Streetlight Replacement Program	$0	$75,000	$75,000	$75,000	$75,000	**$75,000**	$375,000
108	**Total Street Lighting and Landscape Fund**			**$0**	**$75,000**	**$75,000**	**$75,000**	**$75,000**	**$75,000**	**$375,000**
109										
110	**Sewer Fund**	**Sewer**	**Sewer Lift Stations PLC Upgrades**	$0	**$125,000**	$0	$0	$0	$0	$125,000
111			Sewer Master Plan Update	$291,380	$0	**$330,000**	$100,000	$0	$0	$721,380
112			Annual Rehabilitation of Gravity Sewer Mains	$3,085,869	$0	$0	$0	**$335,000**	**$500,000**	$3,920,869
113			Bell Lift Station Upgrade	$0	**$55,000**	$0	$0	**$495,000**	**$2,000,000**	$2,550,000
114			Palm Lift Station Upgrade	$0	**$55,000**	**$260,000**	$0	$1,500,000	$0	$1,815,000
115			Meadows Lift Station Upgrade	$0	**$55,000**	**$350,000**	**$2,570,000**	$0	$0	$2,975,000
116			Voorhees Lift Station Upgrade	$3,761,962	**$300,000**	$0	$0	$0	$0	$4,061,962
117			Pacific Lift Station Replacement (Gravity Sewer)	$1,932,764	**$4,790,000**	$0	$0	$0	$0	$6,722,764
118			Poinsettia Ave Sewer Lift Station and Force Main Replacement	$2,982,380	$0	**$350,000**	$0	$0	$0	$3,332,380
119	**Total Sewer Fund**			**$12,054,355**	**$5,380,000**	**$1,290,000**	**$2,670,000**	**$2,330,000**	**$2,500,000**	**$26,224,355**
120										
121	**Water Fund**	**Water**	**Recycled Water Feasibility Study and MBB Medians**	**$20,000**	$0	$0	$0	$0	$0	$20,000
122			Larsson Street Booster Station Improvements	$0	$0	**$1,360,000**	$0	$0	$0	$1,360,000
123			**Water Lift Station PLC Upgrades**	$0	**$50,000**	$0	$0	$0	$0	$50,000
124			Electronics Automation - SCADA, etc.	$0	**$100,000**	$0	$0	$0	$0	$100,000
125			Generator Upgrades - Well 15 and Block 35	$250,000	$250,000	$0	$0	$0	$0	$500,000
126			Block 35 Ground Level Reservoir Replacement	$0	$0	$0	$1,200,000	$0	$0	$1,200,000
127			Block 35 Elevated Tank Improvements	$39,051	$0	$0	$0	$0	$0	$39,051
128			Water Meter Upgrade and Automation	$226,028	$0	$0	$0	$0	$0	$226,028
129			Water Master Plan Update	$0	**$100,000**	$0	$100,000	$0	$0	$200,000
130			**Annual Groundwater Wells Capital Maintenance Program**	$0	**$900,000**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	$1,300,000
131			El Porto Water Infrastructure Improvements - Phase 2	$0	$0	$0	$0	$200,000	**$2,000,000**	$2,200,000
132			Duncan Drive and Sepulveda Blvd Fire Flow Improvements	$80,000	$0	$450,000	$0	$0	$0	$530,000
133			El Porto Water Infrastructure Improvements - Phase 1 (Partial CPF)	$0	$0	$0	**$1,100,000**	$0	$0	$1,100,000
134			2nd Street Booster Station Improvements	$1,350,626	$0	$0	$0	$0	$0	$1,350,626
135			Annual Water Infrastructure Improvements	$2,185,818	$2,450,000	**$2,250,000**	$2,200,000	$4,000,000	**$4,000,000**	$17,085,818
136	**Total Water Fund**			**$4,151,523**	**$3,850,000**	**$4,160,000**	**$4,700,000**	**$4,300,000**	**$6,100,000**	**$27,261,523**
137	**Total Funding Sources**		**Total**	**$81,253,801**	**$32,943,000**	**$17,343,000**	**$16,488,000**	**$12,698,000**	**$16,243,000**	**$176,968,801**

Appendix 12 – Spill Report Form

City of Manhattan Beach
Department of Public Works
3621 Bell Avenue, Manhattan Beach, CA 90266
Phone: (310) 802-5313 Fax: (310) 802-5301 TDD: (310) 546-3501

SANITARY SEWER OVERFLOW REPORT FORM

1. Date Reported: _____/_____/_____ (MM/DD/YY)

   Time Reported: _____ ☐ AM ☐ PM *(Time received call of SSO)*

   Time of Arrival* _____ ☐ AM ☐ PM (Estimated *time of arrival at SSO site*)

   Name of Person responding: _____

2. Name of person who reported SSO: _____

   Telephone No. and/or City Department: _____

   If Manhattan Beach Resident, Address of resident: _____

3. Private Lateral Spill? ☐ Yes ☐ No

4. Name of responsible party *(for private lateral spill only, if known)*: _____

5. Did the spill discharge to a drainage channel? ☐ Yes ☐ No
   Did the spill discharge to a water surface? ☐ Yes ☐ No

6. Did the spill discharge to a storm drain pipe that was not fully captured and returned to the sanitary sewer system? ☐ Yes ☐ No

7. Street Address: _____
   (Include number such as 123 & street type such as: Avenue, Boulevard, Court, Drive, Lane, Place, Road, Street, Way, etc.)

8. Cross Streets: _____
   (Write the street address and nearest street intersection. **Example:** 123 Myrtle Avenue/Foothill Boulevard)

9. Spill Location Description: _____

   _____

   _____

   _____

   _____

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City of Manhattan Beach
Department of Public Works
3621 Bell Avenue, Manhattan Beach, CA 90266
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10. Manholes working from and footage:_____

11. Action Taken: _____

12. Damage to Private Property: _____

13. Estimated spill start time: _____ ☐ AM ☐ PM

14. Estimated spill end time: _____ ☐ AM ☐ PM

15. Estimated spill rate (if applicable): _____ (Gallons per Minute)

16. Estimated spill volume: _____ (Gallons)

17. Estimated volume of spill recovered: _____ (Gallons)

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18. *If spill is caused by wet weather, choose size of storm:

❒ 1year ❒ 2 year ❒ 5year ❒ 10 year ❒ 25year ❒ 50 year ❒ 100 year

19. Diameter of the sewer pipe at the point of blockage or spill cause: _____ (inches)

20. Material of sewer pipe at the point of blockage or spill cause: _____ (vcp, etc.)

21. Estimated age of sewer pipe at the point of blockage of spill cause: _____ (years)

22. Description of terrain surrounding the point of blockage or spill cause:

❒ Flat ❒ Mixed ❒ Steep

23. Spill cause:

❒ Roots ❒ Grease (FOG) ❒ Pipe Line Break ❒ Infiltration
❒ Rocks ❒ Blockage ❒ Power Failure ❒ Pump Station Failure
❒ Debris ❒ Vandalism ❒ Flood Damage ❒ Manhole Failure
❒ Operator Error ❒ Construction ❒ Flow exceeded capacity
❒ Rainfall Exceeded design storm event ❒ Other

24. Spill Cause Explanation (if cause by "other"): _____

_____

_____

_____

_____

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Department of Public Works
3621 Bell Avenue, Manhattan Beach, CA 90266
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25. Spill appearance point:

❒ Manhole ❒ Cleanout ❒ Grounds ❒ Diversion Structure
❒ Pipe ❒ Riser ❒ Rodding Inlet ❒ Lamp Hole
❒ Pump Station ❒ Other

26. Spill appearance point explanation (if "other" selected above): _____

_____

_____

_____

_____

27. Did you take pictures of area? ❒ Yes ❒ No

28. Final spill destination:

❒ Beach ❒ Building or structure ❒ Other paved surface
❒ Storm Drain ❒ Street/curb & gutter ❒ Surface Water
❒ Unpaved Surface ❒ Other (specify) _____

29. Explanation of final spill destination (if the spill destination is "other"): _____

_____

_____

_____

_____

30. Did you take pictures of area? ❒ Yes ❒ No

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3621 Bell Avenue, Manhattan Beach, CA 90266
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31. Spill Response Activities:

- ☐ Cleaned-up (mitigated effects of spill)
- ☐ Contained all of portion of spill
- ☐ Inspected sewer using CCTV to determine cause
- ☐ Restored flow
- ☐ Returned all or portion of spill to sanitary sewer system
- ☐ Other (specify) _____

32. Explanation of spill response activities (if "other" is selected): _____

_____

_____

_____

_____

33. *Visual Inspection results from impacted receiving water: _____

_____

_____

_____

_____

City of Manhattan Beach
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NOTIFICATION:

34. Was the local health services agency notified? ❒ YES ❒ NO ❒ Not Applicable

35. *If the overflow was over 1000 gallons, was the Office of Emergency Services (OES) notified?

❒ YES ❒ NO ❒ Not Applicable

AFFECTED AREA POSTING:

36. Were signs posted to warn of contamination? ❒ YES ❒ NO ❒ Not Applicable

37. Location of posting (if posted): _____

38. Remarks: _____

_____

_____

_____

_____

Technician:

Signature: _____

Print Name: _____

Position/Title: _____

Date: _____

By: _____
Supervisor

Approved: _____
Utilities Manager

City of Manhattan Beach
Department of Public Works
3621 Bell Avenue, Manhattan Beach, CA 90266
Phone: (310) 802-5313 Fax: (310) 802-5301 TDD: (310) 546-3501

Supervisor fill out the CHECK LIST below prior to signing this report.

❒ Yes ❒ No Did you take a lot of pictures?
❒ Yes ❒ No Did you download the pictures in the Utilities folder?
❒ Yes ❒ No Did you CCTV the sewer line?

❒ Yes ❒ No ❒ N/A Did you notify LA County Department of Health and OES?
❒ Yes ❒ No ❒ N/A Did you take note of the date and time you notified LA County Department of Health and OES?

Date & Time of Notification: _____

❒ Yes ❒ No Did you make a copy of the maintenance record of the sewer pipe *(date last cleaned or last CCTV'd)* and attached to this report :

Date last cleaned: _____ Date last CCTV'd: _____

What immediate action did you do to avoid (or mitigate) this incident from recurring in the future?

_____

_____

_____

_____

_____

By: _____
Supervisor

Appendix 13 – Spill Map & Reports

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

California Integrated Water Quality System Project (CIWQS)

Spill Public Report – Spill Event ID(s) Page

Here is the detail page of your Sanitary Sewer System Spill Report search for selected Regional Board, county, responsible agency, or sanitary sewer system. These results correspond to the following search criteria:

SEARCH CRITERIA: [REFINE SEARCH]

- Collection System (**Manhattan Beach City CS (SSO program)**)
- Spill Type (**Category 1; Category 2; Category 3**))
- Start Date (**12/31/2021**)
- End Date (**6/5/2025**)
- Agency (**Manhattan Beach City**)

The table below presents important details from Enrollee-submitted certified spill events, as submitted through individual spill reports, which meet the search criteria selected on the Sanitary Sewer System (SSS) Spill Report Form. If data is not shown for a particular field, it means the Enrollee did not provide the information and was not required to do so. To view the entire spill report, select the corresponding “Spill Event ID”.

DRILLDOWN HISTORY: [GO BACK TO SUMMARY PAGE]

REGION: **4**

[VIEW PRINTER FRIENDLY VERSION] [EXPORT THIS REPORT TO EXCEL]

Event ID	Region	Responsible Agency	Sewer System	WDID	Spill Category	Spill Start Date	Spill Vol (gal)	Spill Vol Recovered (gal)	Spill Vol Reached Surface Water (gal)	System Failure Location	Spill Appearance Point
901307	4	Manhattan Beach City	Manhattan Beach City CS (SSO program)	4SSO10408	Monthly Category 3 Spill	2025-04-04 13:13	500	500		Gravity Mainline	Lateral Clean Out (Private)
900484	4	Manhattan Beach City	Manhattan Beach City CS (SSO program)	4SSO10408	Monthly Category 3 Spill	2025-02-19 18:33	100	100		Gravity Mainline	Lateral Clean Out (Private)
894098	4	Manhattan Beach City	Manhattan Beach City CS (SSO program)	4SSO10408	Category 2 Spill	2024-03-11 10:40	9,000	9,000		Force Main	Force Main
886959	4	Manhattan Beach City	Manhattan Beach City CS (SSO program)	4SSO10408	Category 3	2023-02-11 14:55	90	90	0	Gravity Mainline	Inside Building or Structure
885881	4	Manhattan Beach City	Manhattan Beach City CS (SSO program)	4SSO10408	Category 3	2023-01-20 18:34	72	72	0	Gravity Mainline	Manhole
881336	4	Manhattan Beach City	Manhattan Beach City CS (SSO program)	4SSO10408	Category 3	2022-05-03 11:20	10	10	0	Gravity Mainline	Inside Building or Structure
879189	4	Manhattan Beach City	Manhattan Beach City CS (SSO program)	4SSO10408	Category 3	2022-01-19 18:50	3	1	0	Gravity Mainline	Inside Building or Structure

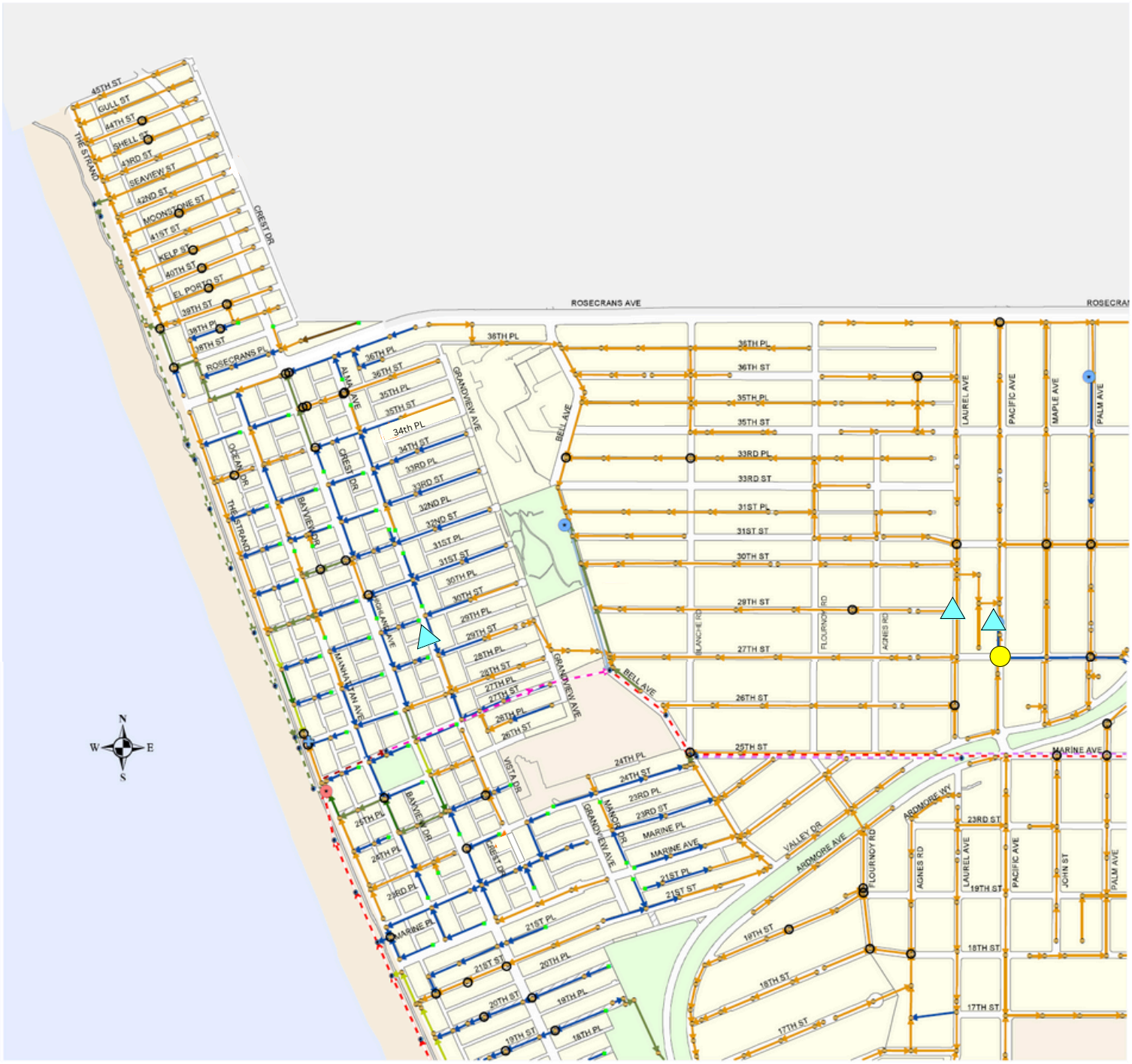
Page 1 of 1 Go To Page: 1 25 Records/Page

The current report was generated with data entered by Enrollees on the previous day.

Back to Main Page | Back to Top of Page

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CITY OF MANHATTAN BEACH
SEWER SYSTEM SPILL
LOCATION MAP (NW QUADRANT)



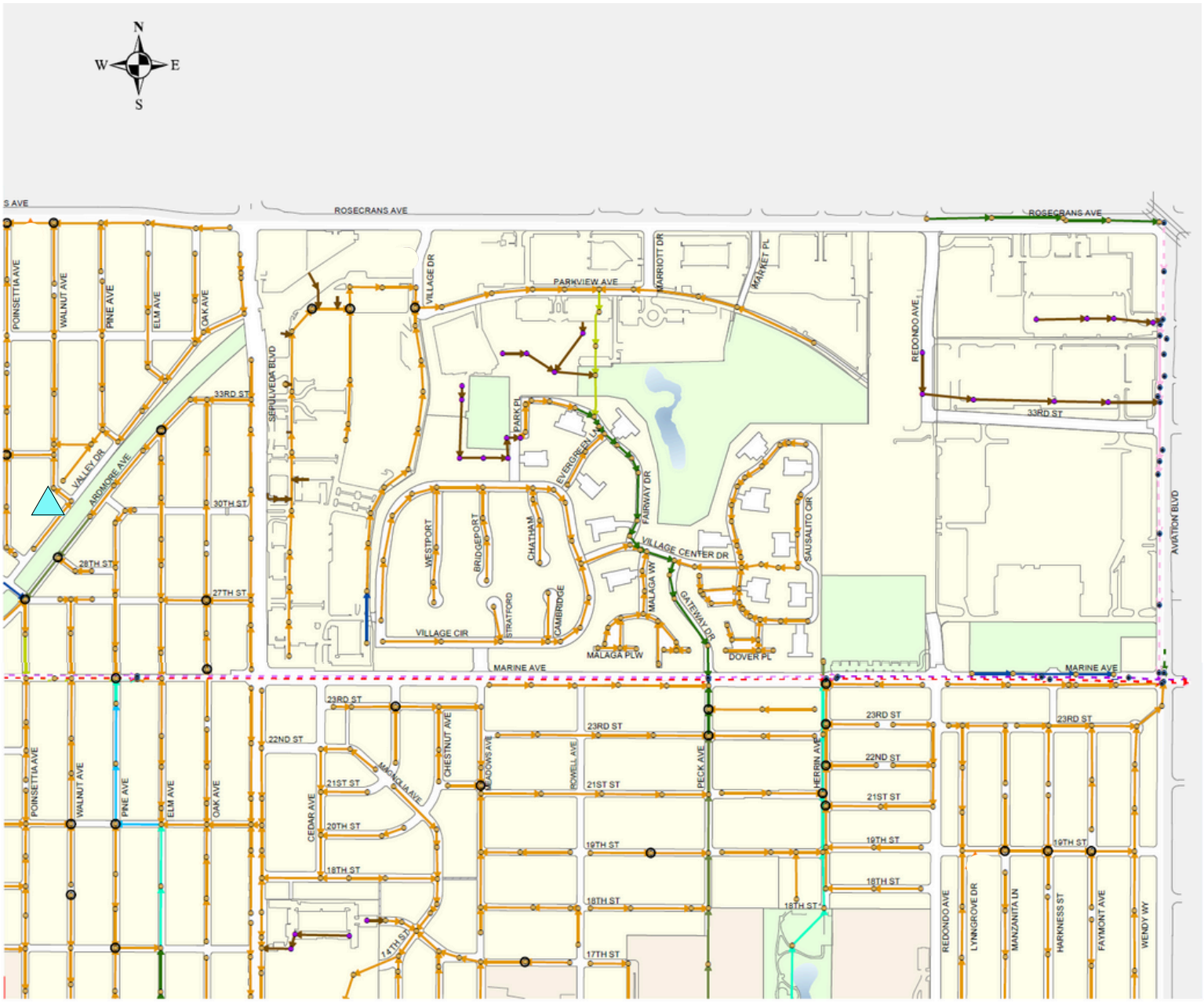
SANITARY SEWER OVERFLOWS (SSO)

CATEGORY 1

CATEGORY 2

CATEGORY 3

CITY OF MANHATTAN BEACH
SEWER SYSTEM SPILL
LOCATION MAP (NE QUADRANT)



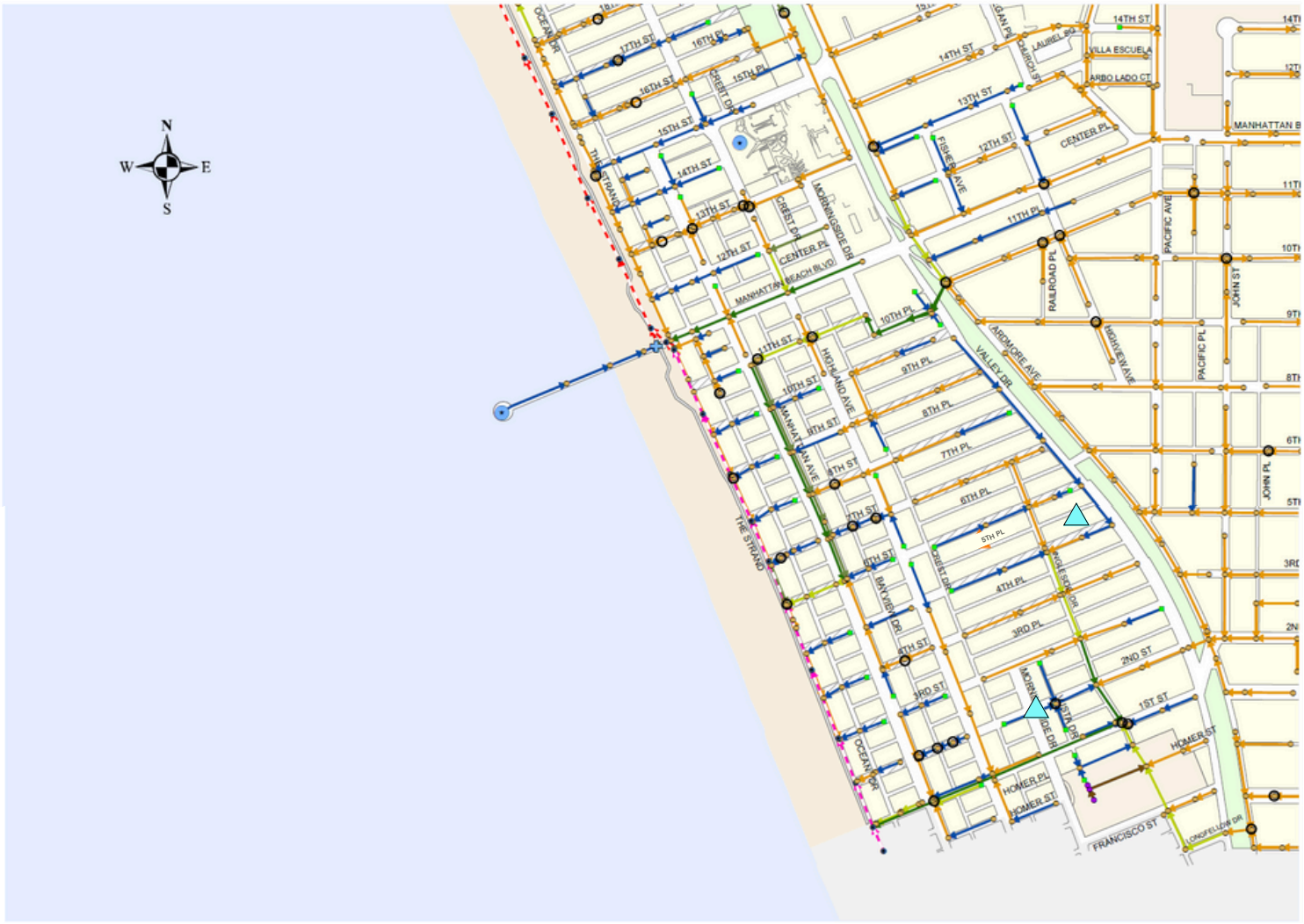
SANITARY SEWER OVERFLOWS (SSO)

CATEGORY 1

CATEGORY 2

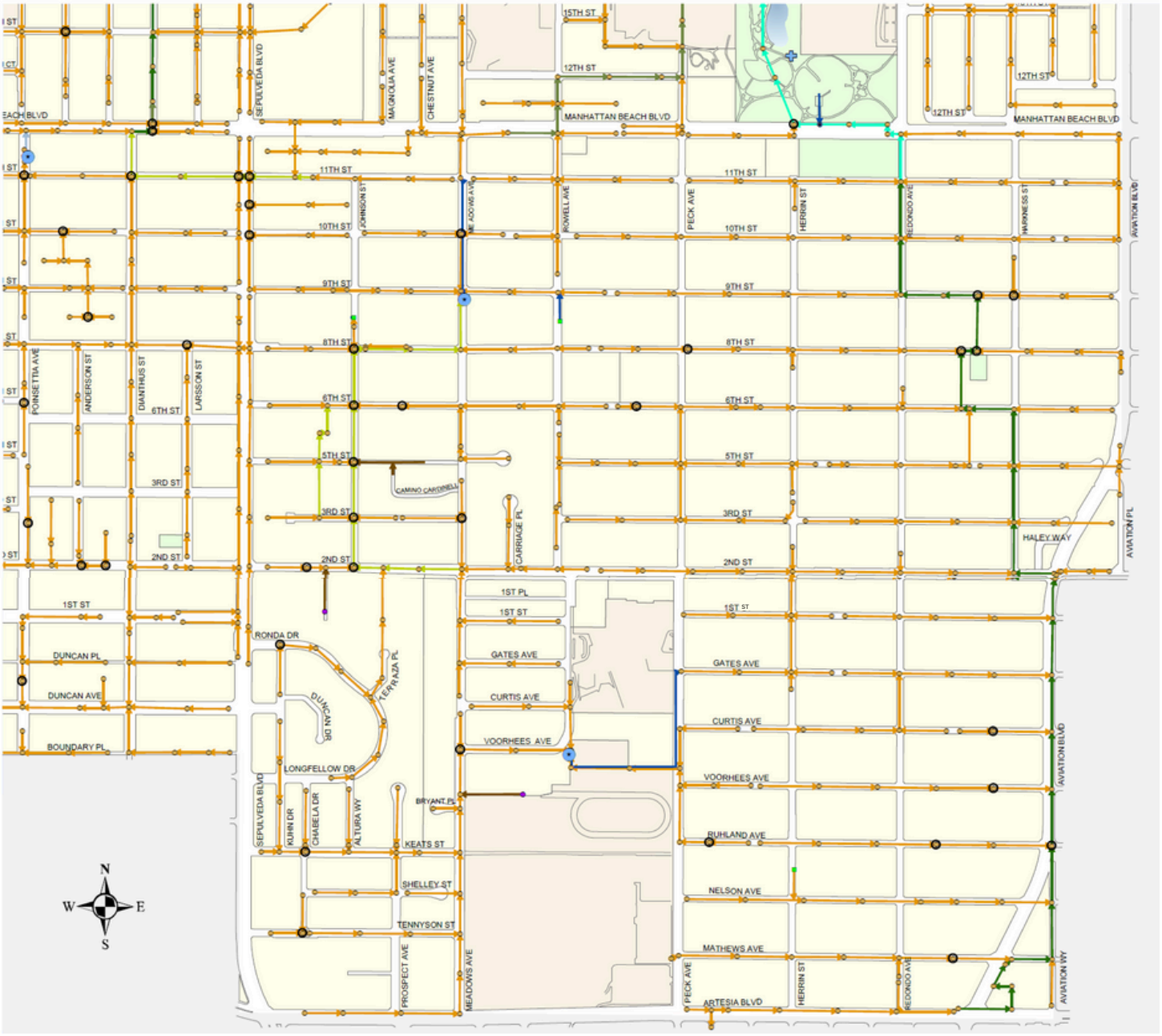
CATEGORY 3

CITY OF MANHATTAN BEACH
SEWER SYSTEM SPILL
LOCATION MAP (SW QUADRANT)



SANITARY SEWER OVERFLOWS (SSO)	
CATEGORY 1	✚
CATEGORY 2	●
CATEGORY 3	▲

CITY OF MANHATTAN BEACH
SEWER SYSTEM SPILL
LOCATION MAP (SE QUADRANT)



**No spills occurred in the South East quadrant.*

SANITARY SEWER OVERFLOWS (SSO)	
CATEGORY 1	✚
CATEGORY 2	●
CATEGORY 3	▲

Certified Spill Report for Category 3 Spills

Spill Event ID:	901307	**Spill Location Name:**	29th and Alma
Sanitary Sewer System:	Manhattan Beach City CS (SSO program)	**Agency:**	Manhattan Beach City
Spill Report Type:	Monthly Category 3 Spill	**Spill Report Status:**	Certified
Initial Draft Submitted On:		**Certified On:**	05/20/2025
Spill Report Version Number:	1.1		

File Name	File Description	Uploaded Date	Status
901307_Version_1.1.pdf	Certified spill pdf : 901307_Version_1.1.pdf	2025-05-20	OK
29th and Alma Cat 3 Photos.pdf	Photos demonstrating the spill point, travel area, and the cause of the spill.	2025-05-20	OK

Spill Report General Information	
1. Name of Enrollee contact person to respond to spill-specific questions:	Jeffrey Page
1.a. Telephone number of Enrollee contact person to respond to spill-specific questions:	(424) 445-6577
2. Spill Location Name:	29th and Alma
3. Date and time the Enrollee was notified of, or self-discovered, the spill:	04/04/2025 12:36
4. Operator arrival time:	04/04/2025 12:44
5. Estimated spill start date and time:	04/04/2025 13:13
6. Description, photographs, and GPS coordinates of the system location where the spill originated: If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field:	In front of 409 29th Street, Manhattan Beach
6.a. Lattitude:	33.89637
6.b. Longitude:	-118.41435
6.c. Appearance points:	Lateral Clean Out (Private)
6.d. If other, describe:	
6.e. Additional spill appearance point(s) explanation:	
7. Estimated total spill volume exiting the system:	500
8. Description and photographs of the extent of the spill and spill boundaries:	Spill contained in a stretch of gutter along 29th Street and intercepted (vacuumed).
9. Did the spill reach a drainage conveyance system?:	N
9.a. Description of the drainage conveyance system transporting the spill and photographs of the drainage conveyance system entry location(s):	
9.b. Estimated spill volume fully recovered from the drainage conveyance system:	
9.c. Estimated spill volume discharged to a groundwater infiltration basins or facility:	
10. Estimated total spill volume recovered:	500
11. Spill Destination(s):	Street/Curb and Gutter (2 3)
11.a. If other, describe:	
11.b. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill:	Spill traveled 75 feet along the curb and gutter to the west of the spill point where it was contained.
11.c. Coordinates available?	
11.d. Lattitude:	
11.e. Longitude:	
11.f. Lattitude:	
11.g. Longitude:	
11.h. Lattitude:	
11.i. Longitude:	
11.j. Lattitude:	
11.k. Longitude:	
12. Spill end date and time:	04/04/2025 13:13
13. Description of how the spill volume estimations were calculated, including at a minimum: The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information, used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered):	Observed estimated spill rate in gallons per minute times the elapsed spill time in minutes.
13.a. Description of the methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time:	Spill point located in a well-traveled area; the assumption is that the spill was reported quickly after it had materialized. The end time was recorded by a responding staff member.

14. Spill cause(s):	Root Intrusion
14.a. If other, describe:	
15. System failure location:	Gravity Mainline
15.a. If other, describe:	
16. Description of the pipe material, at the failure location:	Vitrified Clay
16.a. If other, describe:	
16b. Estimated age of pipe material, at the failure location:	50
17. Description of the impact of the spill:	Nominal impacts as the spill was completely recovered and clean-up occurred immediately after.
18. Was the spill associated with a storm event?	N
19. Spill response activities:	Cleaned Up (specify below), Contained All or Portion of Spill
19.a. If other, describe:	
19.b. Description of spill response activities including description of immediate spill containment and cleanup efforts:	Scrubbed the area with street sweeper and disinfected afterward.
20. Spill corrective action:	Added Sewer to Preventive Maintenance Program
20.a. If other, describe:	
20.b. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps:	Location put on the extra attention list along with additional CCTV monitoring to identify other rooted portions of the mains in the area.
20.c. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable:	n/a
20.d. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including:	Rooted locations such as this are put on the root control list to receive treatments quarterly.
20.d.1. Adjusted schedule/method of preventive maintenance:	Quarterly root treatments, cleaning, and monitoring.
20.d.2. Planned rehabilitation or replacement of sanitary sewer asset:	Sewer main replacements and rehabilitations are on a prioritized schedule in the Capital Improvement Plan.
20.d.3. Inspected, repaired asset(s), or replaced defective asset(s):	CCTV inspected this line and others in the surrounding area.
20.d.4. Capital improvements:	n/a
20.d.5. Documentation verifying immediately implemented system modifications and operating/maintenance modifications:	Currently updating the Sewer System Management Plan. Revised mitigation plans to be included in this document.
20.d.6. Description of spill response activities modifications:	A review of spills is regularly discussed amongst the team to evaluate what went right, what went wrong, and where improvements can be made. The team is comprised of field staff, their supervisor, and the division manager.
20.d.7. Spill response completion date:	04/04/2025 13:13
20.d.8. Ongoing investigation efforts:	n/a
20.d.9. Expected completion date of investigation to determine the full cause of spill:	04/04/2025 13:13
21. Detailed narrative of investigation and investigation findings of cause of spill:	Hydrojetting the entire main on 29th Street recovered a root ball indicating the cause of the spill.

Certification

I certify under penalty of perjury under the laws of the State of California that the electronically submitted information was prepared under my direction or supervision. Based on my inquiry of the person(s) directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete, and complies with the Statewide Sanitary Sewer Systems General Order. I am aware that there are significant penalties for submitting false information.

Certifier Name:	Jeff Page	**Certifier Title:**	Utilities Manager
Certifier Initials:	JP	**Certification Date:**	05/20/2025

Certified Spill Report for Category 3 Spills

Spill Event ID:	900484	**Spill Location Name:**	2901 Pacific Ave. Manhattan Beach
Sanitary Sewer System:	Manhattan Beach City CS (SSO program)	**Agency:**	Manhattan Beach City
Spill Report Type:	Monthly Category 3 Spill	**Spill Report Status:**	Certified
Initial Draft Submitted On:		**Certified On:**	03/26/2025
Spill Report Version Number:	1.2		

File Name	File Description	Uploaded Date	Status
900484_Version_1.2.pdf	Certified spill pdf : 900484_Version_1.2.pdf	2025-03-26	OK
2901 Pacific Ave. Root Intrusion Areas.pdf	2901 Pacific Ave. Root Intrusion Areas	2025-03-26	OK
2901 Pacific Ave. Spill Area.pdf	2901 Pacific Ave. Spill Area	2025-03-26	OK

Spill Report General Information	
1. Name of Enrollee contact person to respond to spill-specific questions:	Jeff Page
1.a. Telephone number of Enrollee contact person to respond to spill-specific questions:	(424) 445-6577
2. Spill Location Name:	2901 Pacific Ave. Manhattan Beach
3. Date and time the Enrollee was notified of, or self-discovered, the spill:	02/19/2025 18:33
4. Operator arrival time:	02/19/2025 19:06
5. Estimated spill start date and time:	02/19/2025 18:33
6. Description, photographs, and GPS coordinates of the system location where the spill originated: If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field:	Private lateral discharge caused by root intrusion in 6-inch gravity main. See attachment for specific areas.
6.a. Lattitude:	33.89704
6.b. Longitude:	-118.40376
6.c. Appearance points:	Lateral Clean Out (Private)
6.d. If other, describe:	
6.e. Additional spill appearance point(s) explanation:	
7. Estimated total spill volume exiting the system:	100
8. Description and photographs of the extent of the spill and spill boundaries:	Spill contained to private property and gutter-line to the north. Please see the attached photos.
9. Did the spill reach a drainage conveyance system?:	N
9.a. Description of the drainage conveyance system transporting the spill and photographs of the drainage conveyance system entry location(s):	
9.b. Estimated spill volume fully recovered from the drainage conveyance system:	
9.c. Estimated spill volume discharged to a groundwater infiltration basins or facility:	
10. Estimated total spill volume recovered:	100
11. Spill Destination(s):	Unpaved Surface, Paved Surface
11.a. If other, describe:	
11.b. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill:	Destination confined to the gutter just to the north.
11.c. Coordinates available?	
11.d. Lattitude:	
11.e. Longitude:	
11.f. Lattitude:	
11.g. Longitude:	
11.h. Lattitude:	
11.i. Longitude:	
11.j. Lattitude:	
11.k. Longitude:	
12. Spill end date and time:	02/19/2025 19:30
13. Description of how the spill volume estimations were calculated, including at a minimum: The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information, used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered):	Field staff observations of discharge flowrate and total time elapsed. All 100 gallons were recovered.
13.a. Description of the methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time:	Spill located in a highly visible area. The assumption is the spill was reported soon after it started.

14. Spill cause(s):	Debris-wipes/Non-disposables, Root Intrusion
14.a. If other, describe:	
15. System failure location:	Gravity Mainline
15.a. If other, describe:	
16. Description of the pipe material, at the failure location:	Vitrified Clay
16.a. If other, describe:	
16b. Estimated age of pipe material, at the failure location:	72
17. Description of the impact of the spill:	Portions of the resident's driveway, side area of yard, and curb and gutter in front of the house and neighboring property to the north.
18. Was the spill associated with a storm event?	N
19. Spill response activities:	Cleaned Up (specify below), Restored Flow, Mitigated Effects of Spill (specify below)
19.a. If other, describe:	
19.b. Description of spill response activities including description of immediate spill containment and cleanup efforts:	Vacuumed spill, cleaned and disinfected the affected areas.
20. Spill corrective action:	Adjusted Schedule/Method of Preventive Maintenance, Post Spill CCTV, Inspected Sewer Using CCTV to Determine Cause
20.a. If other, describe:	
20.b. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps:	The line segments were jetted, and a root ball was retrieved. These segments are on our hot spot list. Additional monitoring and cleaning to take place along with increased frequency of root control.
20.c. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable:	n/a
20.d. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including:	To be evaluated during our SSMP update due this August.
20.d.1. Adjusted schedule/method of preventive maintenance:	To be evaluated during our SSMP update due this August.
20.d.2. Planned rehabilitation or replacement of sanitary sewer asset:	To be evaluated during our SSMP update due this August.
20.d.3. Inspected, repaired asset(s), or replaced defective asset(s):	Areas inspected with CCTV equipment.
20.d.4. Capital improvements:	To be evaluated during our SSMP update due this August.
20.d.5. Documentation verifying immediately implemented system modifications and operating/maintenance modifications:	Internal documents updated. Updates to be memorialized in the upcoming SSMP update.
20.d.6. Description of spill response activities modifications:	n/a
20.d.7. Spill response completion date:	02/19/2025 20:00
20.d.8. Ongoing investigation efforts:	n/a
20.d.9. Expected completion date of investigation to determine the full cause of spill:	02/19/2025 20:00
21. Detailed narrative of investigation and investigation findings of cause of spill:	Root intrusion from trees in the area coupled with debris related to flushables and non-flushables found to be the cause.

Certification

I certify under penalty of perjury under the laws of the State of California that the electronically submitted information was prepared under my direction or supervision. Based on my inquiry of the person(s) directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete, and complies with the Statewide Sanitary Sewer Systems General Order. I am aware that there are significant penalties for submitting false information.

Certifier Name:	Jeff Page	**Certifier Title:**	Utilities Manager
Certifier Initials:	JP	**Certification Date:**	03/26/2025

Certified Spill Report for Category 2 Spills

Spill Event ID:	894098	**Spill Location Name:**	27th and Pacific Ave.
Sanitary Sewer System:	Manhattan Beach City CS (SSO program)	**Agency:**	Manhattan Beach City
Spill Report Type:	Category 2 Spill	**Spill Report Status:**	Certified
Initial Draft Submitted On:	03/21/2024	**Certified On:**	03/21/2024
Spill Report Version Number:	1.2		

File Name	File Description	Uploaded Date	Status
894098_Version_1.2.pdf	Certified spill pdf : 894098_Version_1.2.pdf	2024-03-21	OK
March_11, 2024_SSO.jpg	The sewer spill is being vacuumed as the force main is being charged.	2024-03-21	OK
March_11, 20224_SSO(c).jpg	Sandbags contain sewer spills to minimize the sewer drainage into the storm drain system. The sewer was followed downstream to return to the sewer system.	2024-03-21	OK
March_11, 2024_SSO(d).jpg	Auger bit piercing through the force main.	2024-03-21	OK

Spill Report General Information	
1. Name of Enrollee contact person to respond to spill-specific questions:	Rudy Hurtado
1.a. Telephone number of Enrollee contact person to respond to spill-specific questions:	(310) 802-5310
2. Spill Location Name:	27th and Pacific Ave.
3. Date and time the Enrollee was notified of, or self-discovered, the spill:	03/11/2024 10:40
4. Operator arrival time:	03/11/2024 10:46
5. Estimated spill start date and time:	03/11/2024 10:40
6. Date and time the Enrollee notified the California Office of Emergency Services:	03/11/2024 12:35
6.a. Assigned control number:	24-1459
7. Description, photographs, and GPS coordinates of the system location where the spill originated: If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field:	SoCal Gas Company has a drilling project to relocate their gas mainline from the west side of Pacific Ave to the east side. During the drilling process, they drilled through a force main in the middle of the 27th & Pacific Ave intersection.
7.a. Lattitude:	33.89637
7.b. Longitude:	118.4033
7.c. Appearance points:	Force Main
7.d. If other, describe:	
7.e. Additional spill appearance point(s) explanation:	The spill was being vacuumed by a combination truck to reduce the spill amount onto the street.
8. Estimated total spill volume exiting the system:	9000
9. Description and photographs of the extent of the spill and spill boundaries:	The spill was intermittent and only when the pumps ran and charged the force main.
10. Did the spill reach a drainage conveyance system?:	Y
10.a. Description of the drainage conveyance system transporting the spill and photographs of the drainage conveyance system entry location(s):	The affected catch basin was 370ft away from the spill point.
10.b. Estimated spill volume fully recovered from the drainage conveyance system:	300
10.c. Estimated spill volume remaining within the drainage conveyance system:	0
10.d. Did the spill discharge to a groundwater infiltration basin or facility?:	0
10.e. Estimated spill volume discharged to a groundwater infiltration basin or facility:	0
11. Estimated total spill volume recovered:	9000

Certification Questionnaire	
1. Spill Destination(s):	Street/Curb and Gutter (2 3)
1.a. If other, describe:	
1.b. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill:	The spill originated at the intersection of Pacific Ave. and 27th Street and traveled 370 feet towards a nearby catch basin.
1.c. Coordinates available?	Y
1.d. Lattitude:	33.89736
1.e. Longitude:	118.40342
1.f. Lattitude:	

1.g. Longitude:	
1.h. Lattitude:	
1.i. Longitude:	
1.j. Lattitude:	
1.k. Longitude:	
2. Spill end date and time:	03/11/2024 12:00
3. Description of how the spill volume estimations were calculated, including at a minimum: The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information, used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered):	5 cu/yd = 1,009 gal x 4 fill ups = 4,036 gal 7 cu/yd = 1,413 gal x 3 fill ups = 4,239 gal sandbag containment = 725 gal total = 9,000 gal
3.a. Description of the methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time:	Two combination vehicles were working in tandem with one having a 5 cu/yd tank and the other a 7 cu/yd tank and the rest measured by the pool pumped by a trash pump.
4. Spill cause(s):	Damage by Others Not Related to Collection System Construction/Maintenance
4.a. If other, describe:	
5. System failure location:	Force Main
5.a. If other, describe:	
6. Description of the pipe material, at the failure location:	Ductile Iron
6.a. If other, describe:	
6b. Estimated age of pipe material, at the failure location:	70
7. Description of the impact of the spill:	Street closure on Pacific Ave. between Valley Dr and 31st Street.
8. Was the spill associated with a storm event?	N
9. Spill response activities:	Contained All or Portion of Spill
9.a. If other, describe:	
9.b. Description of spill response activities including description of immediate spill containment and cleanup efforts:	Sandbags were set at the catch basin to prevent inflow, and two combination trucks vacuumed the spill when pumped by the lift station until a complete bypass of the lift station was performed.
10. Spill corrective action:	Repaired Facilities or Replaced Defect
10.a. If other, describe:	
10.b. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps:	The puncture to the force main was covered by a compression clamp. City staff will work closely with contractors in the future.
10.c. Schedule of major milestones:	Tail meeting topic.
11. Spill response completion date:	03/11/2024
12. Detailed narrative of investigation and investigation findings of cause of spill:	It was clear the boring machine hit the force main once the spill was stopped. (look at the picture submitted)
13. Is the Enrollee conducting an ongoing investigation?	N
13.a. Reasons for an ongoing investigation:	
13.b. Expected date of completion of investigation:	
14. Was the spill located within 1,000 feet of a municipal surface water intake?	Y

Certification

I certify under penalty of perjury under the laws of the State of California that the electronically submitted information was prepared under my direction or supervision. Based on my inquiry of the person(s) directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete, and complies with the Statewide Sanitary Sewer Systems General Order. I am aware that there are significant penalties for submitting false information.

Certifier Name:	Rodolfo Hurtado	**Certifier Title:**	Wastewater/Electrical Supervisor
Certifier Initials:	R.H.	**Certification Date:**	03/21/2024

You are logged-in as: PUBLIC.

SSO - General Information

SSO Event ID:	886959	**Regional Water Board:**	4
Spill Location Name:	120 Morningside Dr.	**Agency:**	Manhattan Beach City
WDID:	4SSO10408	**Sanitary Sewer System:**	Manhattan Beach City CS (SSO program)

File Name	File Description	Date/Time Uploaded	Status
886959_Version_1.1.pdf	Certified spill pdf : 886959_Version_1.1.pdf	03/11/2023 - 18:20:19	OK

General Info

Certified by Lourdes Vargas on 2023-03-11 00:00:00.0

1 - Spill Type:	Category 3

2 - Estimate Spill Volumes

a) Estimated spill volume that reached a separate storm drain that flows to a surface water body?	0
b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	0
c) Estimated spill volume that reached a drainage channel that flows to a surface water body?	0
d) Estimated spill volume recovered from a drainage channel that flows to a surface water body?	0
e) Estimated spill volume discharged directly to a surface water body?	0
f) Estimated spill volume recovered from surface water body?	0
g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.)	90
h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)	90

Estimated Total spill volume Reach Surface Water (a-b+c+e)	Estimated Total spill volume Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
0	90	90	90

3 - Did the spill discharge to a drainage channel and/or surface water?	No
4 - Did the spill reach a separate (i.e.,not combined) storm drainpipe?	No
5 - If spill reached to a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?	Not Applicable - Spill did not reach a separate storm drainpipe

Physical Location Details

6 - Spill location name:	120 Morningside Dr.
7 - Latitude of spill location:	33.87904
8 - Longitude of spill location:	-118.40526
9 - County:	Los Angeles
10 - Regional Water Quality Control Board:	4
11 - Spill location description:	

Spill Details

12 - Number Of appearance points:	1
13 - Spill appearance point:	Inside Building or Structure

14 - Spill appearance point explanation:	
15 - Final spill destination:	Building or Structure
16 - Explanation of final spill destination:	
17 - Estimated spill start date/time:	2023-02-11 14:55:00.0
18 - Date and time sanitary sewer system agency was notified of or discovered spill:	2023-02-11 14:55:00
19 - Estimated Operator arrival date/time:	2023-02-11 15:20:00
20 - Estimated spill end date/time:	2023-02-11 15:20:00.0
21 - Spill cause:	Root Intrusion
22 - Spill cause explanation:	
23 - Where did failure occur?	Gravity Mainline
24 - Explanation of Where failure occured:	
25 - Was this spill associcated with a storm event?	No
26 - Diameter of sewer pipe at the point of blockage or failure:	6
27 - Material of sewer pipe at the point of blockage or failure:	vcp
28 - Estimated age of sewer asset at the point of blockage or failure:	0
29 - Explanation of volume estimation method used:	eyeball method

Notification Details

30(a) - Name and Tittle (Contact person who can answer specific questions about this SSO)	Rodolfo Hurtado, wastewater supervisor
30(b) - Contact Person Phone Numner	3108025310



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You are logged-in as: PUBLIC.

SSO - General Information

SSO Event ID:	879189	**Regional Water Board:**	4
Spill Location Name:	536 Fifth Street	**Agency:**	Manhattan Beach City
WDID:	4SSO10408	**Sanitary Sewer System:**	Manhattan Beach City CS (SSO program)

File Name	File Description	Date/Time Uploaded	Status
879189_Version_1.2.pdf	Certified spill pdf : 879189_Version_1.2.pdf	02/15/2022 - 07:35:42	OK

General Info

Certified by Lourdes Vargas on 2022-02-15 00:00:00.0

1 - Spill Type:	Category 3

2 - Estimate Spill Volumes

a) Estimated spill volume that reached a separate storm drain that flows to a surface water body?	0
b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	0
c) Estimated spill volume that reached a drainage channel that flows to a surface water body?	0
d) Estimated spill volume recovered from a drainage channel that flows to a surface water body?	0
e) Estimated spill volume discharged directly to a surface water body?	0
f) Estimated spill volume recovered from surface water body?	0
g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.)	3
h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)	3

Estimated Total spill volume Reach Surface Water (a-b+c+e)	Estimated Total spill volume Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
0	3	1	3

3 - Did the spill discharge to a drainage channel and/or surface water?	No
4 - Did the spill reach a separate (i.e.,not combined) storm drainpipe?	No
5 - If spill reached to a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?	Not Applicable - Spill did not reach a separate storm drainpipe

Physical Location Details

6 - Spill location name:	536 Fifth Street
7 - Latitude of spill location:	33.8815385
8 - Longitude of spill location:	-118.404218
9 - County:	Los Angeles
10 - Regional Water Quality Control Board:	4
11 - Spill location description:	The spill location was inside the residence of 536 Fifth street, the backup was in the bathtub.

Spill Details

12 - Number Of appearance points:	1
13 - Spill appearance point:	Inside Building or Structure

14 - Spill appearance point explanation:	
15 - Final spill destination:	Building or Structure
16 - Explanation of final spill destination:	
17 - Estimated spill start date/time:	2022-01-19 18:50:00.0
18 - Date and time sanitary sewer system agency was notified of or discovered spill:	2022-01-19 18:50:00
19 - Estimated Operator arrival date/time:	2022-01-19 19:00:00
20 - Estimated spill end date/time:	2022-01-19 19:20:00.0
21 - Spill cause:	Root Intrusion
22 - Spill cause explanation:	
23 - Where did failure occur?	Gravity Mainline
24 - Explanation of Where failure occured:	
25 - Was this spill associcated with a storm event?	No
26 - Diameter of sewer pipe at the point of blockage or failure:	8
27 - Material of sewer pipe at the point of blockage or failure:	vcp
28 - Estimated age of sewer asset at the point of blockage or failure:	0
29 - Explanation of volume estimation method used:	The resident gave estimate of volume inside their bathtub to the responding crewmember

Notification Details

30(a) - Name and Tittle (Contact person who can answer specific questions about this SSO)	Rodolfo Hurtado, Wastewater Supervisor
30(b) - Contact Person Phone Numner	13108025310



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You are logged-in as: PUBLIC.

SSO - General Information

SSO Event ID:	881336	**Regional Water Board:**	4
Spill Location Name:	2829 N Valley Dr	**Agency:**	Manhattan Beach City
WDID:	4SSO10408	**Sanitary Sewer System:**	Manhattan Beach City CS (SSO program)

File Name	File Description	Date/Time Uploaded	Status
881336_Version_1.3.pdf	Certified spill pdf : 881336_Version_1.3.pdf	06/18/2022 - 07:18:10	OK

General Info

Certified by Lourdes Vargas on 2022-06-18 00:00:00.0

1 - Spill Type:	Category 3

2 - Estimate Spill Volumes

a) Estimated spill volume that reached a separate storm drain that flows to a surface water body?	0
b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	0
c) Estimated spill volume that reached a drainage channel that flows to a surface water body?	0
d) Estimated spill volume recovered from a drainage channel that flows to a surface water body?	0
e) Estimated spill volume discharged directly to a surface water body?	0
f) Estimated spill volume recovered from surface water body?	0
g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.)	10
h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)	10

Estimated Total spill volume Reach Surface Water (a-b+c+e)	Estimated Total spill volume Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
0	10	10	10

3 - Did the spill discharge to a drainage channel and/or surface water?	No
4 - Did the spill reach a separate (i.e.,not combined) storm drainpipe?	No
5 - If spill reached to a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?	Not Applicable - Spill did not reach a separate storm drainpipe

Physical Location Details

6 - Spill location name:	2829 N Valley Dr
7 - Latitude of spill location:	33.8972095
8 - Longitude of spill location:	-118.4000571
9 - County:	Los Angeles
10 - Regional Water Quality Control Board:	4
11 - Spill location description:	

Spill Details

12 - Number Of appearance points:	1
13 - Spill appearance point:	Inside Building or Structure

14 - Spill appearance point explanation:	
15 - Final spill destination:	Building or Structure
16 - Explanation of final spill destination:	
17 - Estimated spill start date/time:	2022-05-03 11:20:00.0
18 - Date and time sanitary sewer system agency was notified of or discovered spill:	2022-05-03 11:20:00
19 - Estimated Operator arrival date/time:	2022-05-03 11:30:00
20 - Estimated spill end date/time:	2022-05-03 11:40:00.0
21 - Spill cause:	Root Intrusion
22 - Spill cause explanation:	
23 - Where did failure occur?	Gravity Mainline
24 - Explanation of Where failure occured:	
25 - Was this spill associcated with a storm event?	No
26 - Diameter of sewer pipe at the point of blockage or failure:	8
27 - Material of sewer pipe at the point of blockage or failure:	vcp
28 - Estimated age of sewer asset at the point of blockage or failure:	0
29 - Explanation of volume estimation method used:	The plumber on site gave us the estimated spill from the basement.

Notification Details

30(a) - Name and Tittle (Contact person who can answer specific questions about this SSO)	Rodolfo Hurtado, wastewater supervisor
30(b) - Contact Person Phone Numner	13108025310



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Appendix 14 – Notice of Inspection – City of Manhattan Beach Collection System

California Water Boards

Los Angeles Regional Water Quality Control Board

January 8, 2015

Mr. Tony Olmos
Public Works Director
City of Manhattan Beach
1400 Highland Avenue
Manhattan Beach, CA 90266
tolmos@citymb.info

VIA CERTIFIED MAIL AND EMAIL
RETURN RECEIPT REQUESTED
CLAIM NO. 7012 3460 0002 9485 8380

NOTICE OF INSPECTION – CITY OF MANHATTAN BEACH COLLECTION SYSTEM, WDID NO. 4SSO10408, ORDER NOS. 2006-0003-DWQ AND WQ 2013-0058-EXEC

Dear Mr. Olmos:

The Los Angeles Regional Water Quality Control Board (Regional Board) is conducting inspections of sanitary sewer collection systems to evaluate compliance with "Waste Discharge Requirements for Sanitary Sewer Systems," Water Quality Order No. 2006-0003-DWQ[1] (SSSWDR), and the Amended Monitoring and Reporting Program (Amended MRP).[2]

The Regional Board intends to conduct an inspection to validate your compliance with the SSSWDR and Amended MRP on the following date and time:

TUESDAY JANUARY 27, 2015
9:00 am to 4:00 pm

To prepare for the inspection, please complete and return the attached Questionnaire electronically along with the additionally required documentation (see Part 3, Section 1 of the Questionnaire) on or before **January 21, 2015** to Ms. Pansy Yuen via email at pansy.yuen@waterboards.ca.gov.

In addition to completion of the Questionnaire and associated documentation described above, please have the following supplemental information ready at time of inspection:

1. Last page of the Questionnaire (the Certification page) completed in ink.
2. An overview map showing both the sanitary sewer and separate storm sewer system (combined on one map of possible), including identification of major pipelines and pump stations;

[1] http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf
[2] http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2013/wqo2013_0058exec.pdf

3. A copy of all collection system complaint records for past 3 years;

4. All sewer system rehabilitation and replacement records for the past 3 years;

5. All records describing the extent of closed-circuit television (CCTV) inspection activities undertaken over the past 3 years for sewer system assets to identify illicit connections, including but not limited to sewer main lines, service laterals and manholes;

6. A copy of the latest Capital Improvement Plan approved by your local Governing Board; and

7. Records to document communication with sewer system(s) tributary to your sewer system.

Please confirm receipt of this letter to Ms. Pansy Yuen at (213) 620-6367 or via email at pansy.yuen@waterboards.ca.gov.

Sincerely,

Hugh Marley
Compliance and Enforcement Section

Attachment:
Sewer Collection System Pre-Inspection Questionnaire

cc: [via email only]
Mr. Hugh Marley, LA RWQCB hugh.marley@waterboards.ca.gov
Mr. Russ Colby, LA RWQCB russ.colby@waterboards.ca.gov
Ms. Pavlova Vitale, LA RWQCB - pavlova.vitale@waterboards.ca.gov
Mr. Matthew Buffleben, SIU, OE, SWRCB matthew.buffleben@waterboards.ca.gov
Mr. Jim Fischer, SIU, OE, SWRCB jim.fischer@waterboards.ca.gov
Ms. Julia Hooten, SIU, OE, SWRCB julia.hooten@waterboards.ca.gov
Mr. Bryan Elder, SIU, OE, SWRCB bryan.elder@waterboards.ca.gov
Mr. Eric Magnan, ED, WS, USEPA9 magnan.eric@epa.gov
Mr. Adam Howell, ED, WS, USEPA9 howell.adam@epa.gov
Ms. Mayumi Okamoto, OE, SWRCB mayumi.okamoto@waterboards.ca.gov
Ms. Laura Drabandt, OE, SWRCB laura.drabandt@waterboards.ca.gov
Mr. Noah Golden-Krasner, NRS-LA, CDOJ noah.goldenkrasner@doj.ca.gov
Ms. Christina Lopez, City of Manhattan Beach, Public Works Department Utilities Division cmlopez@citymb.info
Mr. Raul Saenz, City of Manhattan Beach, Public Works Department Utilities Division rsaenz@citymb.info
Mr. Justin Gervais, City of Manhattan Beach, Public Works Department Engineering Division jgervais@citymb.info



SEWER COLLECTION SYSTEM

PRE-INSPECTION QUESTIONNAIRE

Version 1.7

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PART 1 — DESCRIPTION

This Sewer Collection System Pre-Inspection Questionnaire (Questionnaire) includes questions specific to the requirements in the Sanitary Sewer System Waste Discharge Requirements Water Quality Order No. 2006-0003-DWQ (hereafter SSSWDR), and its accompanying Amended Monitoring Plan Order No. 2008-0002-EXEC (hereafter Amended MRP).

All of the questions in this Questionnaire must be answered by the Enrollee to demonstrate how the agency is complying with the SSSWDR and the Amended MRP. All responses provided in the Questionnaire along with the documentation required to be submitted by each Enrollee (see Part 3, Section 1) will be collected by the Water at the time of the inspection.

PART 2 — INSTRUCTIONS

1. Complete all questions in the Questionnaire.
2. Save an electronic copy of the completed Pre-Inspection Questionnaire (in MS Word), and the other documentation required for your collection system (see Part 3, Section 1). Print the last page of this Questionnaire and sign it in ink.

PART 3 — REQUIRED INFORMATION

1 DOCUMENTATION

Please have the following documentation available during the inspection:

1.1 Sewer System Management Plan [(SSMP) [Sanitary Sewer System General Waste Discharge Requirements (SSSWDR), Sect. D.13] and any documents referenced within the SSMP. Also include documentation showing approval of the SSMP by your agency's local governing board (e.g., Board Resolution or other documentation).

1.2 SSMP Program Audit[1] [SSSWDR, Sect. D.13(x)], if not contained within your agency's SSMP

1.3 Sewer System Area Map [SSSWDR, Sect. D.13(iv)], if not contained within your agency's SSMP

1.4 Local Sewer Use Ordinance [SSSWDR, Sects. D.13(iii) and D.13(vi)], if not contained within your agency's SSMP

1.5 Evidence of Agency's SSO Field Response Documentation [SSSWDR, Amended MRP, B.5], if not contained within your agency's SSMP

1.6 Rehabilitation and Replacement Plan [SSSWDR, Sect. D.13(iv)(c)], if not contained within your agency's SSMP

[1] To satisfy SSSWDR, Sect. D.13(x), the SSMP Audit must occur at least every two years following the original approval date of the agency's SSMP by the local governing board. The SSMP Audit must measure the effectiveness and compliance of an Enrollee's SSMP.

1.7 Capital Improvement Plan (CIP) Schedule for System Evaluation and Capacity Assurance Plan (SECAP) [SSSWDR, Sect. D.13(viii)], if not contained within your agency's SSMP

2 Basic Information

2.1 Collection System Waste Discharge ID number (WDID) and Collection System Name: **4SS010408/City of Manhattan Beach**

2.2 Collection System Main Point(s) of Contact (name, title, address, email, and telephone number): **RAUL SAENZ, UTILITIES MANAGER 3621 Bell AVE, MANHATTAN BEACH, CA 90266 – rsaenz@citymb.info – 310.802.5315**

2.3 Type of Sanitary Sewer System (select ONE of the following: Municipal, Park, School, Military, Hospital, Prison, Airport, Port, Other) **MUNICIPAL**

2.4 What is the population served by your agency's sanitary sewer system? **36,726**

2.5 What is this fiscal year's budget for operation and maintenance sanitary sewer system facilities? **$1,396,966**

2.6 What is this fiscal year's budget for capital expenditures for sanitary sewer system facilities? **$439,250**

For questions 2.7 - 2.10, please identify the total number of employees (technical and mechanical) for your agency's sanitary sewer system (including pump station operations) working within the different classifications listed below.

2.7 Entry Level (Less than 2 years experience) **NONE**

Number of agency employees? **5**

2.8 Journey Level (Greater than or equal to 2 years experience) **5**

Number of agency employees? **5**

2.9 Supervisory Level 1

Number of agency employees? **4**

2.10 Managerial Level 1

Number of agency employees? **6**

For questions 2.11 – 2.14, please identify the total number of employees who hold CWEA Certification for Collection System Maintenance for your agency's sanitary sewer system (including pump station operations) for the various Certificates and Grades levels listed below.

2.11 Grade I

Number of certified (Grade I Collection System Maintenance) agency employees: **0**

Number of certified (Grade I Plant Maintenance Technologist) agency employees: **0**

2.12 Grade II

Number of certified (Grade II Collection System Maintenance) agency employees: **0**

Number of certified (Grade II Electrical/Instrumentation Technologist) agency employees: **0**

Number of certified (Grade II Mechanical Technologist) agency employees: **0**

2.13 Grade III

Number of certified (Grade III Collection System Maintenance) agency employees: **0**

Number of certified (Grade III Electrical/Instrumentation Technologist) agency employees: **0**

Number of certified (Grade III Mechanical Technologist) agency employees:

2.14 Grade IV

Number of certified (Grade IV Collection System Maintenance) agency employees: **0**

Number of certified (Grade IV Electrical/Instrumentation Technologist) agency employees: **0**

Number of certified (Grade IV Mechanical Technologist) agency employees: **0**

2.15 Estimated Size Distribution of Assets

Diameter of sewer pipe	Gravity Sewers (miles)	Force Mains (miles)
6 inches or less	10.3	0.03
8 inches	63.4	0.94
9 - 18 inches	7.8	0
19 - 36 inches	0.2	0
> 36 inches	0	0
Unknown Diameter	0	0
Totals	81.7	0.97

2.16 For which portion of sewer service laterals is your agency responsible? **NONE**

(If None, skip question 2.17.)

2.17 Estimated total miles of sewer service laterals (upper and lower) for which your agency is responsible? **N/A**

2.18 Number of sewer service lateral connections? **13,500**

2.19 Estimated total miles of easements within your sanitary sewer system? **0**

2.20 What is your total easement sewer system cleaning production in miles/year? **0**

2.21 What is your total gravity sewer system cleaning production in miles/year? **81.7 MILES TO 163.4**

2.22 Does your agency own any separately enrolled collection systems? [Y/N] **NO**

2.23 If yes to question 2.22, which collection system(s) does your agency own?

Collection System name(s): **N/A**

Collection System WDID(s): **N/A**

2.24 Which wastewater treatment plant(s) (WWTPs) ultimately receive wastewater from this collection system?

Receiving Treatment Plant name(s): **LOS ANGELES COUNTY SANITATION DISTRICT – JOINT WATER POLLUTION CONTROL PLANT**

Receiving Treatment Plant WDID(s): **4B190107013**

2.25 For question 2.24, does your agency own this/these WWTP(s)? [Y/N] **NO**

2.26 Does your collection system discharge into any other collection system(s)]? [Y/N] **NO**

2.27 If yes to question 2.26, which collection system(s) receive wastewater from this collection system?

Receiving Collection System name(s): **N/A**

Receiving Collection System WDID(s): **N/A**

2.28 Do any upstream collection systems greater than 25,000 gallons/day (gpd) discharge into this collection system? [Y/N] **NO**

2.29 If yes to question 2.28, which collection system(s) discharge into this collection system?

Upstream Collection System name(s): **N/A**

Upstream Collection System WDID(s): **N/A**

2.30 Estimated Collection System Flow Characteristics for your collection system:

Average Daily Dry Weather Flow (MGD)	Peak Daily Wet Weather Flow (MGD)
UNKNOWN	**UNKNOWN**
Enter description here how info. is derived (based on EDUs measured, etc.)	Enter description here how info. is derived (based on EDUs measured, etc.)

2.31 How many pump stations are there throughout the sewer collection system? **6**

2.32 How many feet of above ground gravity pipelines are there throughout the sewer collection system? **0**

2.33 How many feet of above ground pressurized pipelines are located throughout the sewer collection system? **0**

2.34 How many air relief valves (ARVs) are located throughout the sewer collection system? **0**

2.35 How many siphons are there throughout the sewer collection system? **0**

2.36 Specify the percentage of piping and the number of pump stations constructed in the following table below:
(note: total percentage must equal 100%)

2.37 Has your agency ever conducted any historic flow monitoring for the sewer system to evaluate hydraulic characteristics during weather conditions? **YES**

2.38 If yes to question 2.37 above, please list all specific dates when flow monitoring was conducted. **DECEMBER 21, 2008 THRU MARCH 14, 2009**

2.39 Does your agency have any permanently installed flow monitor(s) in the collection system? **NO**

2.40 If yes to question 2.38 above, please specific total number of monitor(s) installed.

Age	Source of Age Info. (records, estimated, etc.)	Gravity & Pressure Sewers (%)	Pump Stations[2] 25k Gal/day & Over (number of stations)	Pump Stations[1] Under 25k Gal/day (number of stations)
2000 - Present	N/A	0	0	0
1980 - 1999	RECORDS	7.4	0	0
1960 - 1979	RECORDS	4.7	0	0
1940 - 1959	RECORDS	63.5	5	0
1920 - 1939	RECORDS	22.7	1	0
1900 - 1919	N/A	[%]	0	0
Before 1900	N/A	[%]	0	0
Unknown Age	RECORDS	1.7	0	0
Totals		100	6	0

[1] For pump stations, flow categories are the maximum flow rate occurring over a 24-hr period based on annual operating data. Age is date asset was originally constructed.

3 ORGANIZATION

Local Governing Board Information

3.1 [SSSWDR, Sect. D.13(ii)]: Is/are your agency's Legally Responsible Official(s) and Data Submitter(s) registration information up-to-date with the State Water Board? [Y/N] **YES**

3.2 [SSSWDR, Sect. D.13(ii)]: If your local governing board has an internet website, please specify the internet address here: **www.citymb.info**

3.3 [SSSWDR, Sect. D.13(ii)]: Please list the names and titles of each of your agency's current governing board members: **WAYNE POWELL, MAYOR – MARK BURTON, MAYOR PRO TEM – DAVIS LESSOR, COUNCILMEMBER – TONY D'ERRICO, COUNCILMEMBER – AMY HOWORTH, COUNCILMEMBER**

Sewer System Management Plan Information

3.4 [SSSWDR, Sect. E.]: Is your agency's SSMP available on your agency's website? **YES**

3.5 [SSSWDR, Sect. E.]: If yes to question 3.4, please provide the internet address here: **http://www.citymb.info/city-officials/public-works/utilities-division/sewer-system/sewer-system-management-plan**

4 SEWER SYSTEM ASSETS

General System Information

4.1 [SSSWDR, Findings 2 & 3]: Please specify the basis for the population estimate in question 2.4 (e.g., official census data, estimated by agency, etc.)? **CENSUS DATA**

4.2 [SSSWDR, Sects. D.8, D.10]: What is the approximate size of the service area served by the sewer collection system for your agency, in square miles? **3.9 SQUARE MILES**

4.3 [SSSWDR, Sects. D.8, D.10]: Please describe the terrain within your agency's sewer service area (Mountainous, Hilly, Flat, Valley, etc.)? **HILLY**

4.4 [SSSWDR, Sects. D.8, D.10]: Please specify what percentage of the collection system's flow comes from residential, commercial, industrial, and institutional sources. **78% RESIDENTIAL, 12% COMMERCIAL, 7% INDUSTRIAL, 3% INSTITUTIONAL**

Asset Mapping

4.5 [SSSWDR, D.13(iv)]: Has your agency identified and mapped all the gravity sewer line segments, public access points (manholes, lamp holes, rod holes, etc.), pumping facilities, pressure pipes and valves, and stormwater-related facilities? **YES**

4.6 [SSSWDR, D.13(iv)]: Does your agency currently have sewer system assets mapped in a Geographic Information System (GIS)? **YES**

4.7 [SSSWDR, D.13(iv)]: Does your agency currently have stormwater-related facilities mapped in GIS? **YES**

4.8 [SSSWDR, D.8 and D.10]: What is the estimated number of gravity sewer line pipe segments located throughout the collection system? **APPROXIMATELY 900**

4.9 [SSSWDR, D.13(iv)]: Does your agency have a formal review process in place to ensure that any mapping issues noted by field staff or others are addressed? **YES**

4.10 [SSSWDR, D.13(iv)]: Please indicate the total number of public access points (manholes, lamp holes, rod holes, etc.) located within your sewer collection system. **1,827**

Sewer Service Laterals [SSSWDR, D.8, D.13(iv)]

4.11 Has your agency ever historically owned or maintained any portion of sewer service laterals? **NO**

4.12 Does your agency have a voluntary sewer service lateral incentive program in place? **NO**

4.13 How many incoming complaints did your agency receive for privately-owned sewer service lateral problems in the previous fiscal year? **UNKNOWN**

4.14 How many service calls did your agency respond to in the field for privately-owned service lateral problems in the previous fiscal year? **12**

4.15 Does your agency track all installation locations of sewer backflow prevention devices installed on sewer assets owned and/or maintained by your agency? **NO**

4.16 If yes to 4.15, list number of known sewer backflow prevention devices installed on sewer assets owned and/or maintained by your agency. **N/A**

Pumping Facility Assets

For questions 4.16 – 4.33 refer to your pump station assets from question 2.31 (above)

4.16 [SSSWDR, D.8, D.13(iv)]: Has your agency mapped each pump station's actual GPS coordinates? **YES**

4.17 [SSSWDR, D.8, D.13(iv)]: Has your agency conducted a risk assessment for each asset? **IN PROGRESS**

4.18 [SSSWDR, D.8 and D.10]: How many of these assets have redundant pipelines installed? **0**

4.19 [SSSWDR, D.8 and D.10]: How many have dedicated emergency stand-by power generators located onsite? **6**

4.20 [SSSWDR, D.8 and D.10]: Has your agency developed standard and emergency operating procedures for each asset in the event of a power and/or pumping failure? **IN PROGRESS**

4.21 [SSSWDR, D.8 and D.10]: Has your agency determined the lowest hydraulic overflow point(s) and calculated the longest possible holding time(s) for each asset? **YES**

4.22 [SSSWDR, D.6(iii) and (vi), D.8 and D.10]: Has your agency identified critical spare parts for each asset? **YES**

4.23 [SSSWDR, D.6(iii) and (vi), D.8 and D.10]: For question 4.21, does your agency maintain the spare parts identified for each asset? **YES**

4.24 [SSSWDR, D.8 and D.10]: How many facilities are located within 100 feet of a surface water, creek or drainage channel? **0**

4.25 [SSSWDR, D.8 and D.10]: How many are located within 20 feet of a storm drain inlet? **0**

4.26 [SSSWDR, D.8 and D.10]: How many pump stations are equipped with audible and/or visual alarms located in public view to expedite notification to your agency in the event of an SSO? **0**

4.27 [SSSWDR, D.8 and D.10]: How many pump stations are equipped with an Auto Dialer Alarm System(s) for detecting pump failure and/or high wet well levels? **6**

4.28 [SSSWDR, D.8 and D.10]: How many have a supervisory, control and data acquisition system (SCADA) installed and operational? **6**

4.29 [SSSWDR, D.8 and D.10]: For question 4.28, how many can be remotely operated? **6**

4.30 [SSSWDR, D.8 and D.10]: How many pump stations display emergency notification signage, including agency contact information, in public view to expedite notification to your agency in the event of an SSO? **IN PROGRESS**

4.31 [SSSWDR, D.8 and D.10]: Does your agency implement vandalism control efforts to discourage unauthorized access and/or vandalism to these assets? **6**

4.32 [SSSWDR, D.8 and D.10]: How many pump stations have built-in pumping bypass capability for emergency use? **6**

4.33 [SSSWDR, D.8 and D.10]: How many have electrical power connections installed to allow for the use of portable emergency generators? **6**

Force Main Sewer Assets

4.34 [SSSWDR, D.8, D.13(iv)]: How many sewer force mains are owned by your agency? **6**

4.35 [SSSWDR, D.8, D.13(iv)]: For the assets in question 4.34, has your agency conducted a risk assessment for each asset? **IN PROGRESS**

4.36 [SSSWDR, D.8 and D.10]: For the assets in question 4.34, how many have a dedicated corrosion protection system(s) installed? **0**

4.37 [SSSWDR, D.8 and D.10]: For the assets in question 4.34, what is the total number of air relief valves installed? **0**

5 FINANCIAL INFORMATION

Funding Sources and Revenues [SSSWDR, D.9]

5.1 Does your agency utilize an Enterprise Fund for services provided to the public? **YES**

5.2 If yes to question 5.1, what are the total estimated annual revenues generated from this fund? **$3,638,994**

5.3 If yes to 5.1, what is the current fund balance? [#] **PENDING**

5.4 Please provide a brief description of all sewer collection system funding source(s) (e.g., user fees, annual budget allocation, property taxes, etc.). **USER FEES - BIMONTHLY FIXED RATE ACCORDING TO WATER METER SIZE, PLUS $1.27 FOR EVERY 100 CUBIC FEET OF POTABLE WATER USED**

5.5 What is your agency's total number of billed sewer connections? **14,402**

5.6 What is your agency's total number of billed customers for sewer service? **14,402**

5.7 What is your agency's current average monthly household user fee for sewage collection only? [$ or Unknown] **J**

5.8 For the answer in 5.7, what is your agency's sewer fee rate basis (e.g., measured flow, calculated flow, flat fee, etc.) **MEASURED AS A FUNCTION OF POTABLE WATER USE**

5.9 Has your local governing board approved any future sewer use fee increase(s)? **NO**

Operations, Maintenance and Capital Funds and Expenditures [SSSWDR, Sects. D.9]

5.10 How much did your agency spend in the last fiscal year for operations and maintenance activities (O&M) of sewer assets? [$] **PENDING**

5.11 How much did your agency spend in the last fiscal year on capital expenditures for sewer assets (e.g., new pipelines or equipment)? **BIMONTHLY FIXED RATE ACCORDING TO WATER METER SIZE, PLUS $1.27 FOR EVERY 100 CUBIC FEET OF POTABLE WATER USED**

6 LOCAL SEWER USE ORDINANCE [SSSWDR, D.13(iii) and/or D.13(vii)]

6.1 Does your agency have an adopted sewer use ordinance (Ordinance)? **YES**

If no to question 6.1, skip to question 7.1

6.2 Specify the date of last update/change of your agency's local Ordinance approved by your agency's local governing board. **JULY 21, 2009**

6.3 Specify the time frequency in which the Ordinance is reviewed. **AS NEEDED**

6.4 Does your agency have legal authority within the Ordinance to limit and enforce illicit discharges from upstream public and/or private satellite collection system(s)? **YES**

6.5 If no to question 6.4, does your agency have service agreements or other procedures to limit and enforce illicit discharges from upstream public and/or private satellite collection system(s)? **N/A**

6.6 Does the Ordinance ban inflow from stormwater sources? **YES**

6.7 Does the Ordinance specify who owns and/or maintains the sewer service lateral from the building foundation to the property line (upper lateral portion)? **YES**

6.8 Does the Ordinance specify who owns and/or maintains the sewer service lateral from the property line to the sewer main line (lower lateral portion)? **YES**

6.9 Does the Ordinance require testing and/or inspection of the sewer service lateral upon remodeling, renovations and/or transfer of property/residence? **NO**

6.10 Does the Ordinance prohibit illicit discharges from service connections into the sewer? **YES**

6.11 Does the Ordinance require sewers and connections to be properly designed and constructed? **YES**

6.12 Does the Ordinance require proper maintenance, inspection and repairs of laterals? **YES**

6.13 Does the Ordinance limit the discharge of fats, oils and grease (FOG) and other debris that may cause blockages? **YES**

6.14 Does the Ordinance give your agency the authority to inspect grease producing facilities? **YES**

6.15 Does the Ordinance reference the Uniform Building Code? **NO**

6.16 Does the Ordinance reference the California Plumbing Code? **YES**

6.17 Does the Ordinance give your agency the authority to inspect, maintain and repair assets located within sewer easements? **NO**

6.18 Does the Ordinance provide your agency with the proper authority to issue notices of violation (NOVs)? **YES**

6.19 If yes to question 6.18, how many NOVs has your agency issued in the past 3 years? **0**

6.20 Does the Ordinance provide your agency with the proper authority to issue enforcement penalties for violators? **YES**

6.21 If yes to question 6.20, how many enforcement penalties has your agency issued in the past 3 years? **0**

6.22 Does Ordinance provide your agency with the proper authority to ban connections and/or disconnect services for violators? **NO**

6.23 If yes to question 6.22, how many actions has your agency undertaken in the past 3 years? **0**

6.24 Does the Ordinance provide your agency with the authority to limit future development and/or building? **NO**

6.25 If yes to question 6.24, how many actions has your agency undertaken in the past 3 years? **0**

7 CAPITAL IMPROVEMENT PLAN

7.1 [SSSWDR, D.9]: What is the approval date of your Sewer Capital Improvement Plan (Sewer CIP) by your agency's local governing board? **JULY 1, 2014**

7.2 [SSSWDR, D.8 and D.13(iv)]: For question 7.1, is your Sewer CIP available on the internet for public review? **YES**

7.3 [SSSWDR, D.8 and D.13(iv)]: If yes to question 7.2, please specify the internet address: **http://www.citymb.info/city-officials/public-works/capital-improvement-program**

7.4 [SSSWDR, D.8 and D.13(iv)]: What is the projected date of your next Sewer CIP update? **JULY 1, 2015**

8 OPERATIONS AND MAINTENANCE PROGRAM

Computerized Maintenance Management System (CMMS)

8.1 [SSSWDR, D.8 and D.13(iv)]: Does your agency use a computerized maintenance management system (CMMS) to generate work orders and track sewer maintenance, operations and management information? **NO**

8.2 [SSSWDR, D.7 and D.13(iv)]: If yes to question 8.1, is CMMS data used for ongoing strategies to eliminate/reduce SSOs? **N/A**

8.3 [SSSWDR, D.7 and D.13(iv)]: If yes to question 8.1, is the CMMS data used to evaluate cleaning production rates? **N/A**

8.4 [SSSWDR, D.7, D.13(iv) and D.13(ix)]: If yes to question 8.1, does your agency use the CMMS information to provide data for tracking system trends, problems and/or performance? **N/A**

8.5 [SSSWDR, D.7, D.13(iv) and D.13(ix)]: If no to question 8.1, does your agency have a different method in place to provide data for tracking system trends, problems and/or performance? **MANUAL**

Inspections, Operations and Management Activities

8.6 [SSSWDR, D.8, D.13(iv)]: What was your agency's total gravity sewer collection system cleaning production (hydro flushing, mechanical and hand rodding) over the past 12 months (miles per year)? **120.7 MILES**

8.7 [SSSWDR, D.8, D.13(iv)]: What is your agency's total gravity sewer collection system cleaning production scheduled (hydro flushing, mechanical and hand rodding) for the next 12 months (miles per year)? **170 MILES**

8.8 [SSSWDR, D.8, D.13(iv)]: What was your agency's total video (CCTV) inspection production in the past 12 months (miles)? **8 MILES**

8.9 [SSSWDR, D.8, D.13(iv)]: What is your agency's total video (CCTV) inspection production scheduled for the next 12 months (miles)? **NONE**

8.10 [SSSWDR, D.8, D.13(iv)]: Does your agency have a method in use for reviewing and analyzing force main sewers and their components? **NO**

8.11 [SSSWDR, D.7 and D.13(iv)]: What is the total number of focused problem areas ("SSO hot spots") located throughout the collection system? **48**

8.12 [SSSWDR, D.8 and D.10]: Does your agency have a program to inspect and maintain air relief valves (ARVs)? **N/A**

8.13 [SSSWDR, D.8 and D.10]: How many ARVs are not accessible for inspection/maintenance? **N/A**

8.14 [SSSWDR, D.7 and D.13(iv)]: What was the total number of ARVs exercised and cleaned in past 12 months? **N/A**

8.15 [SSSWDR, D.7 and D.13(iv)]: What is the total number of ARVs planned to be exercised and cleaned in the next 12 months? **N/A**

8.16 [SSSWDR, D.13(iv)]: What is the total number of public access points (manholes, lamp holes, rod holes, etc.) inspected in the past 12 months? **APROXIMATELY 300**

8.17 [SSSWDR, D.13(iv)]: What is the total number of public access points (manholes, lamp holes, rod holes, etc.) scheduled to be inspected in the next 12 months? **0**

8.18 [SSSWDR, D.13(iv)]: Does your agency visually inspect pipeline routes at least annually, and after major storms, earthquakes or other events that could damage these assets, to check for sink holes or leaks along force main(s)? **NO**

8.19 [SSSWDR, D.13(iv)]: How many above ground crossings (if applicable) were inspected in the past 12 months? **N/A**

8.20 [SSSWDR, D.13(iv)]: How many siphons (if applicable) were inspected in the past 12 months? **N/A**

8.21 [SSSWDR, D.13(iv)]: Does your agency have a process to identify areas subject to excess hydrogen sulfide corrosion? **NO**

8.22 [SSSWDR, D.13(iv)]: Does your agency have a formal pipe grading process in place to identify pipe discontinuities? **YES**

8.23 [SSSWDR, D.13(iv)]: Does your agency require video (CCTV) inspections before and after cleaning to measure the effectiveness of these activities? **NO**

8.24 [SSSWDR, D.13(iv)]: Does your agency video (CCTV) inspect pipes after all SSO(s)? **NO**

8.25 [SSSWDR, D.13(iv)]: Does your agency conduct smoke, dye or other tests to check for illicit connections? **NO**

8.26 [SSSWDR, D.13(iv)]: If yes to question 8.25, how many miles of sewer system were tested in the past 12 months? **N/A**

8.27 [SSSWDR, D.13(iv)]: Does your agency use video (CCTV) to monitor discharger compliance for illicit connections? **NO**

8.28 [SSSWDR, D.13(iv)]: If yes to question 8.27, list the total number of miles of video (CCTV) inspection conducted for this purpose in the past 12 months. **N/A**

8.29 [SSSWDR, D.13(iv) and D.13(viii)]: Does your agency have formal agreements in place to increase resources through established mutual assistance agreements with other agencies/contractors for wet weather episodes or for SSO response activities? **YES**

8.30 [SSSWDR, D.13(iv) and D.13(viii)]: Does your agency have a program in place to identify areas with inflow and infiltration (I/I) ? **NO**

8.31 [SSSWDR, D.13(iv) and D.13(viii)]: If yes to question 8.30, estimate the total number of miles identified by this program. **N/A**

8.32 [SSSWDR, D.13(iv)]: Does your agency have an active root control program in place? **NO**

8.33 [SSSWDR, D.13(iv)]: If yes to question 8.32, please list the type(s) of control efforts in place (e.g., chemical, mechanical, etc.). **N/A**

8.34 [SSSWDR, D.13(iv)]: If your agency uses chemical(s) for root control, please list chemical(s) used. **N/A**

Fats, Oils and Grease [SSSWDR, D.13(iv) and D.13(viii)]

8.35 Does your agency have a commercial FOG program in place? **YES**

8.36 If no to question 8.35, has your agency justified in its SSMP why a FOG program is not needed? **N/A**

8.37 If yes to question 8.35, does your agency have a FOG Ordinance separate from the sewer use ordinance? **YES**

8.38 If yes to question 8.37, please list the FOG Ordinance citation number: **CITY OF MANHATTAN BEACH MUNICIPAL CODE Chapter 5.38 - FATS, OILS AND GREASE MANAGEMENT AND DISCHARGE CONTROL**

8.39 If yes to question 8.35, approximately how many food service establishments (FSEs) such as restaurants, schools, hospitals, jails, and convalescent homes are subject to FOG control. **155**

8.40 If yes to question 8.35, what is the total number of FSE permits issued for FOG control? **155**

8.41 If yes to question 8.35, what is the total number of dedicated FSE FOG inspectors? **1 THROUGH CONTRACT**

8.42 If yes to question 8.35, how many FSE FOG inspections were conducted in past 12 months? **155**

8.43 If yes to question 8.35, how many FSE FOG enforcement action(s) were initiated in the past 12 months? **0**

8.44 If yes to question 8.35, how many FSE FOG inspections are planned for the next 12 months? **155**

8.45 Does your agency have a residential FOG program in place? **NO**

8.46 If yes to question 8.45, briefly describe the program: **N/A**

Sewer Contract Services

8.47 [SSSWDR, D.8 and D.13(iv)]: Does your agency retain contract service(s) for sewer collection system maintenance, operations, and/or management? **NO**

8.48 [SSSWDR, D.8 and D.13(iv)]: If yes to question 8.47, for services in excess of $10,000/year, please provide some basic information about these services in the table below: **N/A**

Contractor Name	Description (cleaning, root control, repairs, , etc.)	Frequency of Contract	Budget (annual $)

9 SSO EMERGENCY RESPONSE PROGRAM [SSSWDR, D.13(vi)]

9.1 Does your agency's SSO Emergency Response Plan incorporate procedures for pump stations/force main sewers? **IN PROGRESS**

9.2 Does your agency have a dispatcher(s) within your agency to handle, dispatch and document incoming complaints from your sewer system customers? **YES**

9.3 If yes to 9.2, does your agency utilize a dispatch radio system for notifying collection crews who respond to SSOs? **NO. USE CELL PHONES**

9.4 If yes to 9.3, please list the frequency(s) in use for the dispatch radio system: **N/A**

9.5 Does your agency have standard operating procedures (SOPs) in place to test and document, at least once per year, the performance of its after-hours emergency notification system(s)? **NO**

9.6 Does your agency provide and document any scenario-based SSO emergency response simulation training for collections staff at least on an annual basis to ensure staff are properly trained and prepared in the event of an SSO? **NO**

9.7 If yes to 9.6, does this training include practical exercises including researching SSO start times and calculating the SSO volume spilled and recovered? **N/A**

9.8 Do your emergency operating procedures (EOPs) include requirements to determine the impact of an SSO, including accelerated or additional environmental monitoring? **YES**

10 SSO REDUCTION PERFORMANCE AND MONITORING PROGRAM [SSSWDR, D.13(ix)]

10.1 Does your agency have a process in place to collect data to monitor performance of its SSMP and efforts in reducing SSOs? **NO**

10.2 If yes to question 10.1, does your agency use the data collected to update SSMP program elements? **NO**

11 COLLECTIONS STAFFING AND TRAINING

11.1 [SSSWDR, D.9]: What is the total number of dedicated sewer maintenance crews in place at your agency? **2**

11.2 [SSSWDR, D.9]: For question 11.1, how many staff are typically in each maintenance crew? **2**

11.3 [SSSWDR, D.9 and D.13(iv)(d)]: Does your agency have a program in place to identify and document the core competencies/capabilities of collections staff at least on an annual basis (examples include sewer line cleaning, point repairs, video (CCTV) inspection, pump station maintenance, excavation, utility line locating, etc.)? **NO**

11.4 [SSSWDR, D.9]: If yes to question 11.3, does this program identify gap(s) in competencies/capabilities of collections staff? **N/A**

11.5 [SSSWDR, E]: Does your agency require collections staff to review the SSSWDR and the agency's SSMP at least annually? **NO**

11.6 [SSSWDR, D.9]: Does your agency use a workforce planning/retention program to ensure adequate future collections staff? **NO**

11.7 [SSSWDR, D.8 and D.13(iv) and (vi)]: Does your agency provide initial and recurrent training to appropriate staff [including outside contractor(s)] regarding your agency's SSO Emergency Response Plan and O&M programs? **YES**

11.8 [SSSWDR, D.8 and D.13(iv) and (vi)]: If yes to 11.7, what is the total number of individuals trained in the past 12 months. **4**

11.9 [SSSWDR, D.8 and D.13(iv) and(vi)]: For contracted sewer services, do your contracting specifications contain specific language requiring initial and recurrent training of contractor staff regarding your agency's SSO Emergency Response Plan and O&M programs? **N/A**

12 MAJOR EQUIPMENT INVENTORY [SSSWDR, D.4, D.7, D.8, D.13(iv)]

12.1 How many combination truck(s) (hydro flush/vacuum models) are owned and/or leased by your agency? **1**

12.2 For question 12.1, how many have a dedicated logbook(s) to document fieldwork activities? **1**

12.3 How many hydro flusher(s) are owned and/or leased by your agency? **1**

12.4 How many mechanical rodder(s) are owned and/or leased by your agency? **0**

12.5 How many video (CCTV) inspection vehicle(s) are owned and/or leased by your agency? **1 IS ON ORDER**

12.6 How many utility truck(s) are owned and/or leased by your agency? **2**

12.7 How many portable sewage pump(s) are owned and/or leased by your agency? **3**

12.8 How many portable generator(s) are owned and/or leased by your agency? **1 PORTABLE – NOTE: ALL SEWER LIFT STATIONS ARE EQUIPPED WITH DEDICATED EMERGENCY GENERATORS**

12.9 Does your agency own equipment designed to block the storm drain system, in an emergency, to prevent untreated or partially treated wastewater from reaching surface waters? **YES**

13 EXTERNAL COMMUNICATIONS PROGRAM

13.1 [SSSWDR, D.13(xi)]: Does your agency have a program in place for communicating on a regular basis with the public regarding the development, implementation, and performance of its SSMP? **NO**

13.2 [SSSWDR, D.13(xi)]: Does your agency have a program in place for communicating with upstream or downstream satellite sewer system(s) connected to its collection system? **N/A**

13.3 [SSSWDR, D.11]: Does your agency participate in responding to Underground Service Alert(s) (USA) or other similar organizations to identify and mark sewer lines? **YES**

13.4 [SSSWDR, D.7, D.13(iv), G, and Amended MRP]: Does your agency's communication program give the public the opportunity to provide input as your SSMP is being implemented? **NO**

14 NOTIFICATION, REPORTING AND RECORD KEEPING

14.1 [SSSWDR, Amended MRP B(5)]: Are all the records required in the Amended MRP, B(5) ("Record Keeping") readily available for review by the Water Boards? **YES**

14.2 [SSSWDR, Amended MRP, B(5)]: Does your agency maintain a list and description of all sewer-related complaints from customers for the past 5 years, including calls received after normal working hours? **YES**

14.3 [SSSWDR, Amended MRP, B(5)]: If yes to question 14.2, does this include information for privately owned sewer laterals? **YES**

14.4 [SSSWDR, G, and Amended MRP]: Does your agency have a quality assurance/quality control (QA/QC) procedure in place for review of technical information collected by field staff prior to certification of the SSO report(s) in the Water Board's online reporting system (CIWQS) by the Legally Responsible Official(s)? **YES**

14.5 [SSSWDR, G and Amended MRP]: Does your agency require crews to take photos of all SSOs? **NO**

14.6 [SSSWDR, G and Amended MRP]: If no to question 14.5, does your agency at least require crews to take photos of SSOs that result in backups into structures? **NO**

14.7 [SSSWDR, G and Amended MRP]: Does your agency have a procedure(s) in place for collecting field information to assist in determining the actual SSO start time? **NO**

14.8 [SSSWDR, G and Amended MRP]: Does your agency use SOPs to estimate SSO volume spilled, recovered and not recovered, including estimation of cleanup water used? **YES**

14.9 [SSSWDR, G and Amended MRP]: Does your agency regularly update initial reports given to the California Emergency Management Agency, local health department, and Regional Board as information develops regarding SSOs requiring notification? **NO**

14.10 [Amended MRP, B.6]: Does your agency maintain water quality monitoring records as required by the Amended MRP, section B(6)? **NONE NEEDED TO DATE**

15 SSO PREVENTION AND MITIGATION

15.1 [SSSWDR, D.13(ix)]: Does your agency generate SSO reduction performance metric(s) for its collection system for use in future planning? **NO**

15.2 [SSSWDR, D.13(ix)]: Does your agency have a program in place to conduct periodic video (CCTV) inspections of areas throughout the collection system that have never been evaluated by video (CCTV) to date? **N/A**

15.3 [SSSWDR, D.13(ix)]: Does your agency document meetings between O&M and source control staff, if applicable? **YES**

15.4 [SSSWDR, 8 and D.6]: Does your agency document meetings between O&M and engineering staff to discuss system problem areas and projects, if applicable? **YES**

15.5 [SSSWDR, 8 and D.6]: Does your agency hold post-SSO briefings with collections staff, management and others involved, to evaluate root cause of SSOs and document service changes necessary to be prepared in responding to SSOs in the future? **NO**

15.6 [SSSWDR, 8 and D.6]: Does your agency pursue investigation of upstream satellite(s) or potential illicit dischargers as part of the SSO cause determination process? **NO**

15.7 [SSSWDR, 8 and D.6]: Does your agency adjust sewer collection system cleaning interval(s) for problem areas based on review and analysis of each past SSO? **YES**

15.8 [SSSWDR, 8 and D.6]: How many of the SSOs over the past 12 months were preventable through more proactive maintenance? **UNKNOWN**

15.9 [SSSWDR, 8 and D.6]: How many of the SSOs over the past 4 years occurred at repeat locations? **1**

15 DECLARATION

I, RAUL SAENZ *, the approved Legally Responsible Official (LRO) of collection system (name and Waste Discharge ID#)* 455010408 *certify under penalty of law that based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information in this Pre-Inspection Questionnaire (Version 1.0) is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine or imprisonment, for knowing violations.*

Legally Responsible Official Signature

01/26/15
Date

COMPLIANCE INSPECTION REPORT

Facility Name and Location			CIWQS Inspection ID:	Inspection Date:
City of Manhattan Beach [CIWQS Place ID: 631191] 1400 Highland Avenue Manhattan Beach, CA 90266			20052254	01-27-2015
			Inspection Report Author:	Title:
			Bryan Elder	WRCE
			Signature:	Date:
				04-14-2015

WDID No.	Order No.	Legally Responsible Person:	Permit Effective Date:	Permit Expiration Date:
4SSO10408	2006-0003-DWQ	Raul Saenz	09-27-2006	NA

Inspection Team:	Agency	Entry Date/Time:	Exit Date/Time:
Bryan Elder	SWRCB – Office of Enforcement	01-27-2015 / 0900	01-27-2015 / 1700
Julia Hooten	SWRCB – Office of Enforcement		
Eric Magnan	US EPA, Region IX		
Pansy Yuen	RWQCB – Los Angeles		

Facility Representatives

Name:	Title:	Point of Contact:	Phone/Email:
Raul Saenz	Utilities Division Manager	X	(310) 802-5315 / rsaenz@citymb.info
Justin Gervais	Wastewater Supervisor		
Joe Parco	City Engineer		

Inspection Consent Approved By:	Date/Time:
Raul Saenz	01-27-2015 / 0915

Collection System General Information

Service Population:	Miles of Gravity Pipe:	Miles of Force Main Pipe:	No. of Pump/Lift Stations:	Relative Age of Collection System
36,726	81.7	0.97	6	>90% pre-1980

Note: General Information provided by facility in the Pre-Inspection Questionnaire provided to the inspection team via email from Mr. Raul Saenz on 01-26-2015.

Inspection Detail

On January 27, 2015, we (the inspection team listed above) performed a scheduled compliance inspection of the sanitary sewer collection system in Manhattan Beach, California, owned and operated by the city of Manhattan Beach (City). The purpose of the inspection was to evaluate the City's compliance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems specified in State Water Resources Control Board Order No. 2006-0003-DWQ (Order). As this was a scheduled inspection, we requested the City complete and submit a Pre-Inspection Questionnaire (Questionnaire) by January 21, 2015 for review (**Attachment 1 – Notice of Inspection – City of Manhattan Beach Collection System**). The City was unable to submit the Questionnaire by the requested due date because the annual Fiscal Year 2015-2016 budgets meeting and deadlines were scheduled during the week of January 26, 2015. We received the completed Questionnaire on January 26, 2015 (**Attachment 2 – Pre-Inspection Questionnaire**). In addition to the completed questionnaire, we requested a number of documents be made available to the team during the inspection.

PART A: PRE-FIELD INSPECTION CONFERENCE

1. INTRODUCTION AND RECORDS REVIEW

We arrived at the City's Public Works Facility Administrative Buildings (3621 Bell Avenue, Manhattan Beach) at

approximately 0850 on January 27, 2015. We were greeted by Mr. Saenz who introduced us to Mr. Tony Olmos, Manhattan Beach Public Works Director. Mr. Olmos did not participate in the inspection activities. We started introductions after being joined by Mr. Justin Gervais at 0900 and Ms. Julia Hooten proceeded to explain the scope of the inspection and the general agenda for the day. A sign-in sheet was used to document inspection participants (**Attachment 3 – Sign-In Sheet**). Ms. Hooten asked for consent to conduct the inspection including reviewing documents, photographing inspection activities, and interviewing City personnel, which was provided by Mr. Saenz at 0915.

Ms. Hooten thanked Mr. Saenz for submitting the Questionnaire and providing several documents for us to review. Prior to the inspection, I (Mr. Bryan Elder) noted that several of the documents we needed to review were available on the City's website, however, there were some inconsistencies, such as asset documentation: the 2010 Sewer System Management Plan (SSMP) indicated six pump stations in one section, and eight in another. The questionnaire completed in CIWQS indicated eight pump stations, while the Questionnaire submitted on January 26 indicated six. Mr. Saenz explained that the City has six pump stations and two small lift stations: the basement at City Hall and the Manhattan Beach Pier. According to Mr. Saenz, these lift stations should not be included as part of the City's "pump stations", but are included in the periodic maintenance program.

Ms. Hooten then asked Mr. Saenz for a copy of the SSMP and SSMP audit. Mr. Saenz explained that the SSMP was last updated in 2009 and the City has not performed any audits to date. I addressed the Order requirement that audits must be conducted every two years (Order section D.13.x) and the SSMP must be updated every five years (Order section D.14). Mr. Saenz did not provide a reason for why the audits or SSMP update have not been completed.

2. STAFFING AND SERVICE CALLS

Ms. Hooten then asked Mr. Saenz and Mr. Gervais about collection system staffing. Mr. Gervais explained that he has four maintenance workers dedicated to the collection system, one of which is on call for 24 hours. The on-call staff person is rotated between members of the field crew. On-call staff is required to live within 10-12 miles of City Hall and staff has a typical 15-minute response time during business hours. The City vactor truck must be used during routine daily work to reduce response time. Typical maintenance shifts are 10 hours, from 0645 to 0515, four days per week. Currently, Mr. Gervais' field staff consists of two members with more than 24 years of experience, and two less experienced staff. Maintenance staff is responsible for cleaning and maintaining both sewer and storm drain systems, in addition to inspecting and servicing pump stations twice per week on Mondays and Fridays.

Mr. Saenz and Mr. Gervais then discussed how call-ins are handled by the City. During regular business hours, calls may be received by the fire department, City Hall, and the Public Works yard. All calls are forwarded to the Public Works yard, which are answered by a secretary for the utilities or streets divisions. The secretary is then responsible for call outs made to the standby phone or Mr. Gervais who would then coordinate the response. For after-hours sewer and water emergency calls, the City utilizes a Regional Communications Center (RCC). The dispatchers are trained to page the on-call maintenance phone for water, sewer, or street-related incidents. The most common type of call received is for raw sewage backups into homes, which Mr. Gervais indicated they want to know about regardless of the cause so that they can track where potential root or structural issues may exist. Mr. Gervais explained that not all calls are logged (specifically private laterals, which they are not responsible for); however, all calls are followed-up and "extraordinary" work might be logged on private lines.

Ms. Hooten and Ms. Yuen separated from the inspection meeting to interview the two staff persons, Ms. Christina Lopez and Ms. Bridget Brambil, secretaries in charge of receiving and logging phone complaints. Ms. Lopez showed Ms. Hooten and Ms. Yuen the complaint phone log which is a carbon copy paper system. Ms. Lopez logs each call by taking down the caller's name, location, time of call, time of incident, and a brief description of the incident. When Ms. Lopez is unable to receive the incoming phone calls, Ms. Brambil will follow the same phone log process as Ms. Lopez. Any phone complaints outside of business hours are redirected to the RCC. Ms. Hooten asked which is the most common complaint received and it is clogs within residences.

3. OPERATIONS AND MAINTENANCE

Ms. Hooten then asked Mr. Gervais about day-to-day operations. Mr. Gervais explained that he prepares a daily log for his field crews that identifies the work to be performed and that allows the crewmember to write down notes. These paper logs serve as a record of routine and emergency response that is kept in binders in the possession of Mr. Gervais. The City does not currently use a computerized maintenance management system. For routine cleaning, the collection system is organized into 25 districts based on their tributary area. No apparent priority is given to any one district and the goal is to clean each district, twice per year. According to Mr. Gervais, the maintenance crews were able to clean approximately 120 miles of pipe, manhole to manhole over the last 12 months. Mr. Gervais updates an "Extra Attention Lines" list based on the notes collected by field crew during cleaning operations. He then highlights the results from the last cleaning to prioritize (or deprioritize) pipe sections for the next month's cleaning schedule. Cleaning of these sections may occur as frequently as four times per year to once per month.

Mr. Saenz also provided us with a copy of the City of Manhattan Beach Standard Operating Procedures for the Sanitary Sewer System dated 9-19-2007. The document includes general operations information for maintenance, emergency/non-emergency repair work, spill response, training, and recordkeeping. The procedure also identifies 10 lift stations under the responsibility of the City, including two stations not identified in other City documents: Public Safety Facility (400 15th Street) and Metlox (1220 Morningside).

4. CLOSED-CIRCUIT TELEVISION (CCTV) AND HOT SPOT LOCATIONS

CCTV was performed by Empire Pipe Cleaning and Equipment, Inc. between October 2008 and August 2009, which documented and condition-graded approximately 222,714 feet (~52%) of the collection system. The information gathered from this event was used to generate the Capital Improvement Plan (CIP) for the 2010 Wastewater Master Plan. According to Mr. Gervais and Mr. Saenz, no routine CCTV has been conducted since 2009, however, Mr. Gervais explained that a camera has been purchased by the City that will allow them to investigate locations of sanitary sewer overflows (SSOs), hotspot causes, and plan future CIPs. The camera, a CUES, has the ability to be inserted into 6 – 24" diameter pipe and will be capable of extending 1,000 feet from the point of deployment.

In addition, Mr. Saenz provided us with a proposal dated June 9, 2014 from AKM Consulting Engineers (AKM) detailing a cleaning and closed circuit television (CCTV) inspection of the City's known hot spot locations (~50 locations). Mr. Saenz confirmed that AKM performed the service in 2014 on approximately 2.3 miles of sewer pipe. AKM generated a "Hydro Maintenance Record" binder photo-documenting the hotspot lines and detailing problem areas as distances from the entry manhole. This tool is now used by field crews to clean these "extra attention lines". Gervais also identifies recurring root or grease problems following routine cleanings and gives a monthly list of hotspots to field crew members, highlighting those areas that require extra attention.

5. EMERGENCY OPERATIONS

According to the 2009 SSMP, the City conducts disaster training exercises twice per year. According to Mr. Saenz, the disaster training exercise is conducted once per year, city-wide. The exercise is a live disaster simulation, which includes outside contractors. The collection system trains for this exercise by setting up a bypass scenario for a pump station. The City is currently working with AKM to revise the Overflow Emergency Response Plan. We were provided with a proposal from AKM dated June 9, 2014 outlining the general contents of the future plan. Saenz said he expects this document to be available for use by the City in 2015.

6. UTILITY RADIO TELEMETRY

Mr. Saenz and Mr. Gervais explained that the six main pump stations communicate with the Water Department Supervisory Control and Data Acquisition (SCADA) monitoring center via a telecommunication and fiber optic system provided by Verizon. According to Mr. Gervais, the City has elected to upgrade the SCADA network with utility radio

telemetry and RCC will be providing the extra bandwidth for their communication needs. This effort is being undertaken as the current communications network has been unreliable and potentially a contributing factor at the Los Angeles County Sanitation District's pump station failure on Manhattan Beach in January 2006.

At 1015, we requested a break from the inspection to allow ourselves time to review the documents provided by the City and discuss amongst ourselves any follow-up questions, or specific topics needing to be addressed upon reconvening. We reconvened with Mr. Saenz and Mr. Gervais at 1055.

7. FATS, OILS, AND GREASE (FOG)

Mr. Gervais explained to us that FOG is not a major issue for the City and has not been a significant contributor to SSOs in recent times. One known restaurant area that used to be problematic was a lateral tied to a Houston's steak house restaurant, which did not have a grease interceptor. The restaurant is no longer in business at this location and therefore is no longer an issue, according to Mr. Gervais. More so than FOG issues is the "flushable" wipes that can cause blockages. The City reiterated that regular cleaning has virtually eliminated blockages in the main lines.

According to Mr. Saenz, the City conducted 153 inspections on food service establishments (FSEs) in the past 12 months. The City contracts with John Hunter & Associates for one dedicated FSE inspector every year, starting typically in February. Funding for this inspector is generated through licensing fees for FSEs. If the inspector finds violations, the establishment will not pass the inspection until best management practices (BMPs) are implemented and corrections are made. Follow-up inspections are typically completed within three months. According to Mr. Saenz, the City does not have any current unresolved issues; however, they have had to use "persuasion" on one business owner, which was effective. The City has held outreach meetings with the restaurant industry, but has had little turnout. The City has not had significant grease issues related to stoppages and recommended we look at a manhole near Manhattan Beach and The Strand, which is downstream from several local restaurants, to get an idea of the cleanliness of the collection system.

8. ROOT INTRUSION

Ms. Hooten then asked about preventative root intrusion efforts being implemented by the City. Mr. Gervais explained that roots are the main issue the City faces, as the sandy soil conditions allow the roots to grow quickly in search of a water source. Mr. Gervais described the City's root control program as an extensive cleaning schedule. This schedule has prevented major root issues such as veil-type and root balls originating from private laterals. According to Mr. Gervais, some issues have been related to plumber's cutting roots in private laterals and flushing the debris into the main line. This debris can cause blockages and potentially SSOs. For problematic private laterals identified during routine cleaning, the maintenance staff will often contact the property owner/tenant at their home. Mr. Gervais explained that the recent camera purchase may be used in the future to identify private lateral issues and collect photographic evidence that can then be shown to the property owner.

Mr. Saenz informed us that the City has contracted to perform a "pilot" root intrusion control program on approximately five miles of main line at approximately $20,000. The program involves chemical foaming as well as budget being designated for public outreach. Mr. Gervais explained that RootX has provided foaming services to the City in the past, but the debris generated by the herbicide and accidental pipe cleaning of treated sections made the program unsuccessful. Instead, Mr. Gervais and his field crew rely on a "Warthog" for mechanical root control. This jetting tool provides radial hydraulic cutting and has allowed the City to do away with mechanical rodding that typically caused damage to the City's aging pipe infrastructure.

9. SANITARY SEWER OVERFLOW (SSO) RESPONSE

Mr. Magnan asked Mr. Gervais to describe the activities involved with two SSO events occurring in 2012. The first event took place on May 8, 2012 at 29th Street and Blanche Road. Mr. Gervais informed us that he was on vacation during

that event, but reviewed the field logs with us. He explained that Chris and Don were the field crew members on the call, and the cause of the SSO was roots and paper products. The spill volume was approximately 2,000 gallons.

The second event took place on January 19, 2012 where 2,100 gallons overflowed from a manhole into a storm water retention basin owned by the school district. The overflow reached the county storm drain, but did not impact surface water. Mr. Magnan then inquired as to how the City field crew estimate discharge amounts. Mr. Gervais explained that all field crew use the California Water Environment Association picture reference guide to estimate the spill flow rate, and estimate the spill start time as the time the service call is received unless more information is available, such as through interviews, the dispatch call-in information, or door-knocking.

10. CAPITAL IMPROVEMENT PLAN (CIP)

I asked Mr. Saenz about the CIP outlined in the 2009 Sewer Master Plan. He indicated that the CIP will never be realized in its entirety, particularly due to the residents in Manhattan Beach who has little tolerance for public works projects within the small city. Mr. Saenz explained that future improvement projects are chosen based on vitality and through direct communications with the City engineers. Mr. Magnan and I inquired as to what projects have been completed to date. Mr. Saenz and Mr. Gervais showed us two manhole segment main replacement projects along 7th Street. The total pipe replaced was between five and six hundred feet. MR. Saenz provided us the City's financial records showing that sewer spot repair projects had been performed in fiscal years 2011/2012 and 2012/2013. He also showed us a Notice of Completion for sewer main rehabilitation projects completed in 2012/2013 amounting to approximately $308,000. No CIPs were completed in fiscal year 2013/2014. According to Mr. Saenz, rate increases starting in 2006 had been halted in 2014 by the city council until the City starts to spend down the existing reserves.

According to an updated approved budget plan, the Poinsettia pump station is currently in the design phase for replacement and construction should begin in fiscal year 2015/2016 (**Attachment 4 – FY2015-2019 Capital Improvement Plan Budget**). According to Mr. Saenz, the design phase is behind schedule (due in fiscal year 2014/2015), but will incorporate larger wet wells for increased holding time in the event of a catastrophic power outage. As a result of the delay, other CIPs will also be delayed. For example, the replacement of the Bell Pump Station (PS) will not occur until the next five year plan. Mr. Saenz invited us to speak with the City Engineer, Joe Parco, following our afternoon field inspection.

PART B: FIELD INSPECTION

1. BELL AVENUE PUMP STATION

The field portion of the inspection began at 1350 at the Public Works Facility Administrative Building (**Photo 1**). Mr. Gervais provided a city vehicle to escort us to several predetermined locations of interest. Mr. Saenz accompanied us on the field inspection. The first location we arrived at was the Bell Avenue PS located on Bell Avenue, adjacent to Sand Dune Park (**Photo 2**). The Bell PS was constructed in 1938 and rehabilitated in 1997. We were met by City field crew members Mr. Chris Smith and Mr. Mitko Peltekov. Mr. Smith and Mr. Peltekov started by explaining the back-up diesel generator. Service on the generator is performed by a contractor, Power Plus, who mechanically inspect the engine and electrical semiannually. The City tests the generator by running it once per month under no-load conditions, in compliance with local Air Quality Management District regulations. Gervais explained that Mr. Steve Andrade, a City Electrician, comes out once per week to inspect the electrical components of the transfer switch, pump station, and address any other operator concerns.

We then discussed the dry well and pump station control room, which are located approximately 10-15 feet subgrade. Mr. Smith and Mr. Peltekov explained that ventilation for the dry well vault is run continuously, regardless of occupation, and the crew always uses a gas meter to check atmospheric conditions prior to entry. I observed Mr. Smith and Mr. Peltekov operate the Industrial Scientific Ventis 4-gas meter (lower explosive limit, hydrogen sulfide, carbon monoxide, oxygen) with no vapor issues. Mr. Gervais and Mr. Smith explained that the meters are "disposable" on

approximately a quarterly basis. Coastline Utilities manages the five meters currently in use by the City, and calibration is only conducted by the factory. We observed the calibration decal on the meter and determined it was recently calibrated and in compliance.

I proceeded downstairs to the dry well/pump control room with Mr. Peltekov and I asked him to walk me through the station operations. He showed me the control panels for each pump, which allow the system to run in manual or automatic mode based on the level in the wet well (**Photo 3**). A profile schematic of the pump station, which includes the level sensor/switch locations and inlet/outlet locations within the wet well is available in the dry well (**Photo 4**). I asked Mr. Peltekov about the SCADA system and he explained that all SCADA alarm call-outs go to "Block 35", a division of the Water Department that manages SCADA operations. This division also monitors trends in pump cycling, which is frequently reported to Mr. Gervais. A call is also automatically routed to the standby phone, which has an automated information system to explain the alarm condition and what pump station is sending it.



Photo 1: Public Works Facility corporate yard and administrative buildings



Photo 2: Bell Avenue PS compound with backup diesel generator



Photo 3: Bell Avenue PS control panels



Photo 4: Bell Avenue PS profile schematic

Mr. Peltekov then explained the twin pump system to me (**Photo 5**). The pumps are cycled automatically and routine maintenance includes weekly inspections of the pumps for heat or abnormal operating issues, and confirmation that the check valves are actuating correctly during cycling. According to Mr. Peltekov, the check valves are opened and cleaned four times per year as part of the periodic maintenance program. Mr. Peltekov also explained that the pumps

are routinely serviced, but did not know when the last repairs were made. I noticed that an air bleed on the check valve was only present on one of the force mains and asked Mr. Peltekov about it (**Photo 6**). He indicated that one would be installed soon and that the check valve was recently replaced. No maintenance records were available for review and no routine documentation is performed for the pump stations that I was made aware of.

We exited the dry well and Mr. Gervais and Mr. Saenz showed me the bypass valve box locations for use during an emergency station failure. Mr. Smith opened the wet well access point to show us the intake basket and condition of the wet well (**Photo 7**). From the wet well vault opening, we could see a basket around the intake pipe to prevent debris from entering the pumps. Smith said the debris in this basket is removed twice per week. Significant corrosion of the wet well metal vault collar and exposed concrete aggregate suggest hydrogen sulfide corrosion. In addition, we noticed substantial rag and debris buildup on the access rungs of the wet well. Mr. Gervais and Mr. Saenz initially thought this may be result of a recent cleaning event where the debris may have been jetted upward. Mr. Smith believed the levels in the wet well may come to within a few feet of grade, which from our observations, it looked to be an indicator of the high water mark in the wet well vault. Mr. Magnan asked about the level switches in the wet well. The pump operations are controlled by an ultrasonic level sensor, which has the capability to signal an alarm in a high level situation. In addition, a paddle float switch is located near the top of the wet well, which serves as a backup switch for pump control. Activation of this switch will activate both pumps simultaneously for a set interval of time (unknown). If after that interval the switch is still activated (up), the pumps will restart simultaneously. This action will continue until the switch is deactivated (drops). It was unclear whether these switches are actively maintained and the switches/level sensors could not be seen from our vantage point.



Photo 5: Bell PS dry well pumps and valves



Photo 6: Bell PS missing air bleed valve on check valve for Pump 2 (right)

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Photo 7: Bell PS wet well inlet basket and access rungs with debris buildup, and exposed concrete agregate at surface.



Photo 8: Blanche Road/Bell Avenue/25th Street manhole and hand-off point to LACSD main trunk line

2. BLANCHE ROAD/BELL AVENUE/ 25TH STREET

We were then escorted to the intersection of Bell Avenue/Blanche Road and 25th Street. This location is one of the hand off points from the City's collection system to the Los Angeles County Sanitation District's (LACSDs) trunk line. The manhole had heavy root intrusion and corrosion was evident on the access rungs (**Photo 8**). The manhole did not appear to have any surcharging issues, however, it was difficult to fully evaluate the condtions with the amount of roots that had accumulated near the bottom. Flows at the time of inspection did not appear to exceed 25% of the pipe capacity.

3. ARDMORE AVENUE/POINSETTIA AVENUE/27TH STREET

We travelled to the intersection of Ardmore Avenue, Poinsettia Avenue and 27th Street to inspect the discharge manhole of the Pacific PS force main (**Photo 9**). The brick-lined manhole riser appeared to have significant mortar loss, possibly due to hydrogen sulfide corrosion, as evidenced by the access rung condition. We observed the force main discharge on an approximately 15-minute interval (**Photo 10**). No surcharge issue was identified during the inspection.



Photo 9: Poinsetta Avenue/Ardmore Avenue/27th Street – manhole gravity flow



Photo 10: Poinsetta Avenue/Ardmore Avenue/27th Street – manhole gravity flow plus force main dishcharge

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4. MANHATTAN BEACH BOULEVARD

Our next location was a manhole located on Manhattan Beach Boulevard, near "The Strand House" restaurant (**Photo 11**). We identified this shallow manhole based on its downgradient location from several local restaurants and its proximity to the beach. The manhole, at approximately 3-feet deep, was in very good condition, with no sign of FOG or accumulated debis. We observed a relatively high velocity flow coming downhill from Manhattan Avenue, however, the capacity in the 8-inch pipe was more than adequate.

5. THE STRAND LOW FLOW DIVERSION SYSTEM

At the intersection of The Strand and Manhattan Beach Boulevard, the City showed us a low flow diversion system in use to transfer stormwater directly to the LACSD trunk line (**Photo 12**). Mr. Gervais explained that the system uses a three-chambered weir system to direct stormwater flows to the county during dry weather, and to the ocean during wet weather. A level senser and pump are used to pump stormwater into the sanitary sewer main. I asked what prevents wastewater from backflowing into the diversion system (and evenutally the ocean-bound storm drain) from the county line. Mr. Saenz and Mr. Gervais said that the pump has a built-in check valve that would prevent backflow. According to Mr. Gervais, the pump and diversion structure are included in periodic maintenance conducted every two weeks. A rain gauge that prevents pumping during significant rain events is maintained monthly.



Photo 11: Manhattan Beach Boulevard near "The Strand House" Restaurant



Photo 12: Low Flow Diversion System at Manhattan Beach Boulevard and The Strand

6. MANHATTAN BEACH PIER LIFT STATION

We next visited the lift station at the termination of the Manhattan Beach pier. Mr. Saenz had told us that the pier lift station is not considered a pump station as it is only associated with the pier services and discharges directly to the county trunk line. Mr. Saenz and Mr. Gervais did confirm that it is included in the periodic maintenance program. The wet well consists of a concrete vault below the pier and two submersible pumps (**Photo 13**). During the inspection, we noticed significant solids floating in the well and Mr. Gervais explained that periodic maintenance consists of cleaning "as needed" with a rake and a 5-gallon bucket.

7. POINSETTA PUMP STATION

We were then escorted to our final destination, Poinsettia Avenue PS between the intersections of Poinsettia Avenue and 11th Street, and Poinsettia Avenue and Manhattan Beach Boulevard (**Photo 14**). We identified this pump station as it is the first to be redesigned as part of the future CIP. The station was orginially constructed in 1949 and was

upgraded in 1995. The pump station is ventilated by a manually operated switch located in the light pole adjacent to the entry hatch. Following proper ventilation and completion of atmospheric testing, I proceeded into the subgrade dry well with Mr. Smith. He showed me the control panel upgrades made during the last retrofit (1995). The pump station is divided into two levels. The upper mezzanine acts as the pump control room (**Photo 15**), and also houses the diesel generator (**Photo 16**).

Located on the automatic transfer switch (ATS) door (**Photo 17**), was a "temporary" procedure for manually operating the switch in the event of a power outage dated 8-21-01. The procedure prescribed that "until [the] ATS can be repaired…the automatic transfer switch will need to be switched manually". The posted sign was not noticed until post-inspection during the review of the photographs and therefore, no additional information as to whether repairs to the ATS have been made since 2001.

On the lower level, the twin lift pumps are installed (**Photo 19**) in addition to a sump and sump pump (**Photo 20**). Mr. Smith explained to me that the check valves at this location are opened and cleaned once per year, however, this will be increasing based on efficiency issues noticed by the the field crew and SCADA monitoring. I also noticied neither of the pumps had an air relief valve installed, but Smith said they did not have issues with cavitation or rough operation.



Photo 13: Manhattan Beach Pier Lift Station wet well



Photo 14: Poinsetta Avenue PS entry hatch



Photo 15: Poinsettia Avenue PS control room



Photo 16: Poinsettia Avenue PS backup diesel generator



Photo 17: Poinsettia Avenue PS transfer switch with SOP affixed to door



Photo 18: Poinsettia Avenue PS transfer switch SOP for manual power transfer from grid to generator (Onan GenSet 7.5)



Photo 19: Poinsettia Avenue PS dry well pumps



Photo 20: Poinsettia Avenue PS dry well sump pump with HHLS

8. FIELD CREW INTERVIEW

Following inspection of the Poinsettia Avenue PS, we had the opportunity to interview Mr. Smith (24 years with City) and Mr. Peltekov (8 years with City) in the absence of Mr. Saenz and Mr. Gervais. In summary, they had the following comments to say of the City's operations:

- They are satisfied with the resources the City provides them to do their jobs: e.g. two new service trucks, camera to assess lines after SSOs, adequate personal protective equipment, adequate training.
- They explained that the City gives them up to $2,000 per year for training or courses, but they have to complete them on their own time (as opposed to potable water staff complete training during working hours).
- Good communication and rapport with their Field Supervisor (Mr. Gervais).
- Feel like they are being heard, and their suggestions help drive corrective actions.
- Some of their engineering suggestions are not necessarily being addressed and there may be a disconnect between the utilities division and engineering.
- They explained that representatives from engineering have rarely been in the field with them to see the issues

they are dealing with.
- They are looking forward to future upgrades to the pump stations.

Following the interview, we ended the field portion of the inspection at 1630 and drove back to the Public Works Administrative Building.

PART C: POST-FIELD INSPECTION CONFERENCE

1. CIP FOLLOWUP WITH PUBLIC WORKS ENGINEERING DIVISION

After a short break, we reconvened with Mr. Saenz and Mr. Gervais at 1635 who introduced us to City Engineer Mr. Joe Parco who then walked us through the status of the CIPs. Mr. Parco has been with the City for 10 months. Mr. Parco explained that the engineering division has three senior civil engineers and one engineering technican. He summarized the projects that the City is currently undertaking including several private and public works development projects, the city yard cover, and the Sepulevda water main and widening projects. For the collection system projects, the strategy will be to submit a Request for Proposal (RFP) to consultants and utilize city engineers as project managers in order to lessen the design workload for the City. As for the current CIP, the Poinsettia Avenue PS redesign has not made any progress as the RFP is currently being prepared by the City. According to Mr. Parco, the design timeline is already six to eight months behind schedule.

2. INSPECTION WRAP-UP

Following the interview with Parco, we conducted a brief post-inspection summary highlighting the following:

1. We went through the intial scope and purpose of the inspection.
2. We thanked the City for their time and effort to complete the preinspection questionairre, provide requested documents, and assist with the field inspection.
3. We explained that further review of available documents and future requests for information may be necessary to complete our investigation and develop our findings.
4. We described some of the key findings and concerns encountered and identified during the day's events:
    a. SSMP has not been updated within five years
    b. SSMP audits have not been conducted
    c. Annual questionairre update due February 4, 2015
    d. CIP does not have a clear schedule/prioritization
    e. Lack of standard procedures and clear maintenance records
    f. Inconsistent identification of pump stations – specifically the pier and city hall lift stations
5. We explained that an inspection report will be prepared, and the Regional Board will make decisions related to future enforcement activities with input from the State Board.
6. We asked the City to provide an example copy of the daily logs used for field activities and that the City clarify some of the answers provided in the questionnaire.
7. Saenz requested that we send him some examples of the SSMP Audit and confirmed that we can email him directly for any additonal information we were not able to gather during our visit.

The inpseciton concluded at approximately 1700.

City of Manhattan Beach Date: 1/27/15

Sign-In Sheet

Name	Agency	Phone #	Email
Julia Hoaken	SWRCB	916-322-6010	julia.hoaken@waterboards.ca.gov
Justin Gervais	City of Manhattan Beach	(310) 802-5320	jgervais@citymb.info
RACHEL SAENZ	MANHATTAN BCH	310.802.5315	RSAENZ@CITYMB.INFO
Pansy Yuen	LA-RWQCB	213-620-6367	pansy.yuen@waterboards.ca.gov
Eric Magnan	U.S. EPA	415-947-4179	magnan.eric@epa.gov
Bryan Elder	SWRCB	916-327-8368	bryan.elder@waterboards.ca.gov

Appendix 15 - Notice of Violation – City of Manhattan Beach Collection System





Los Angeles Regional Water Quality Control Board

September 29, 2015

Mr. Tony Olmos
Director of Public Works
City of Manhattan Beach
1400 Highland Avenue
Manhattan Beach, CA 90266

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Claim No. 7014 2120 0004 7561 5821

NOTICE OF VIOLATION – CITY OF MANHATTAN BEACH, CITY OF MANHATTAN BEACH COLLECTION SYSTEM – MANHATTAN BEACH, CALIFORNIA (ORDER NOS. 2006-0003-DWQ AND 2013-0058-EXEC, WDID NO. 4SSO10408)

Dear Mr. Olmos:

The City of Manhattan Beach ("Enrollee") operates a sanitary sewer collection system ("collection system"), regulated under waste discharge requirements contained in State Water Resources Control Board Order No. 2006-0003-DWQ Statewide General Waste Discharge Requirements for Sanitary Sewer Systems ("SSS WDR"), adopted by the State Water Resources Control Board on May 2, 2006.

The SSS WDR contains waste discharge requirements and a monitoring and reporting program for the operation of the Enrollee's collection system referenced above. Wastewater conveyed by the Enrollee's collection system is susceptible of containing high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease, and other pollutants which can degrade water quality and impact beneficial uses of water, and which are defined as wastes under the Porter-Cologne Water Quality Control Act (CWC § 13000 et seq.).

The SSS WDR prohibits any Sanitary Sewer Overflow ("SSO") that results in a discharge of untreated or partially treated wastewater to waters of the United States. Furthermore, the Enrollee is required to report all SSOs to the statewide California Integrated Water Quality System ("CIWQS") SSO Online Database[1]. As of August 20, 2015, the Enrollee has reported one (1) Category 1 SSO (Event ID No. 751064) totaling 1,500 gallons illegally discharged to waters of the United States.

On January 27, 2015, United States Environmental Protection Agency Region 9, State Water Resources Control Board ("State Water Board"), and Los Angeles Regional Water Quality Control Board ("Regional Water Board") staff conducted an inspection of the Enrollee's collection system to evaluate compliance with the SSS WDR. The inspection findings (enclosed as Exhibit 1) and the inspection report (enclosed as Exhibit 2) are both attached for your reference.

[1] Available at: https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main

You are hereby notified that the Enrollee s in violation of the Sanitary Sewer Collection System Order No. 2006-0003-DWQ and has violated California Water Code ("CWC") §§ 13350 and 13333 as cited in in Exhibit 1 – Table 1:

You are required to immediately:

1. Ensure full implementation of all required reporting requirements contained in the Amended Monitoring and Reporting Program;

2. Immediately implement corrective and preventative actions to bring the Enrollee's collection system into compliance with the Sanitary Sewer Collection System Order No. 2006-0003-DWQ;

3. Submit by **October 29, 2015**, a report to the Regional Board detailing the corrective actions being taken to bring the Enrollee's collection system into compliance with the Sanitary Sewer Collection System Order No. 2006-0003-DWQ. This report should address the violations and the Areas of Concern listed in Exhibit 1 – Inspection Findings attached to this notice. The report must be submitted as a pdf via email to pansy.yuen@waterboards.ca.gov or as a compact disk via U.S. postal mail to Ms. Pansy Yuen, 320 W. 4th Street, Suite 200, Los Angeles, CA 90013-2343.

Pursuant to CWC § 13350, subdivision (e), the Enrollee is subject to penalties of up to $5,000 for each day in which a violation occurs or $10 for each gallon of waste discharged, but not both. Pursuant to CWC § 13385, the Enrollee is subject to penalties of up to $10,000 for each day in which a violation occurs plus $10 multiplied by the number of gallons by which the volume discharged but not cleaned up exceeds 1,000 gallons. The Regional Board may refer this matter to the Attorney General for judicial enforcement. The Regional Board reserves its right to take any enforcement actions authorized by law.

If you have any questions regarding this matter, please contact Ms. Pansy Yuen at (213) 620-6367 or by email at pansy.yuen@waterboards.ca.gov or Ms. Pavlova Vitale at (213) 576-6751 or by email at pavlova.vitale@waterboards.ca.gov.

Sincerely,

Paula Rasmussen
Assistant Executive Officer

Enclosures:
Exhibit 1 – Inspection Findings
Exhibit 2 – Sanitary Sewer Collection System Inspection Report

cc: [via e-mail]
Mr. Jim Fischer, State Water Resources Control Board, Office of Enforcement
Mr. Bryan Elder, State Water Resources Control Board, Office of Enforcement
Ms. Julia Hooten, State Water Resources Control Board, Office of Enforcement
Mr. Eric Magnan, U.S. EPA, Region IX [Magnan.eric@Epa.gov]
Mr. Raul Saenz, City of Manhattan Beach [rsaenz@citymb.info]

Ms. Rita Kampalath, Heal the Bay, Science and Policy Director
[rkampalath@healthebay.org]
Ms. Rachel Stich, Los Angeles Water Keeper, Events and Communication Director
[Rachel@lawaterkeeper.org]

The followirg audit findings in Tables 1 and 2 are inclusive of the inspection and post-inspection review process.

TABLE 1: VIOLATIONS		
FINDING	**REQUIREMENT**	**SUPPORTING EVIDENCE**
SSO DISCHARGES TO SURFACE WATERS		
1) *Based on the review of CIWQS[1] data reported by the City between 1/2/07 and 1/27/2015, the City certified that* ***1,500 gallons*** *of untreated sewage reached surface waters.*	Prohibition C.1 of Sanitary Sewer Order (see page 7)	All of the Sanitary Sewer Overflows (SSOs) that discharged to waters of the United States are in violation of Prohibition C.1 of the Sanitary Sewer Order.
SEWER SYSTEM MANAGEMENT PLAN (SSMP)		
2) *The City's existing SSMP Capital Improvement Program (CIP) is deficient.*	Provisions D.13(iv)(c)&(d) of Sanitary Sewer Order (see page 14)	Page 8-7 of the 2010 City Wastewater Master Plan identifies **218** Grade 5 defects in approximately 53% of the sewer system inspected by CCTV in 2008 and 2009. Although spot repair has been conducted throughout the city since that time and a 5-year budget for capital improvement was provided during the inspection, a formal schedule or prioritization strategy for specific projects has not been developed. It is also unknown how many priority projects identified in the Master Plan have been completed to date.
3) *The City failed to conduct SSMP 2-year Audit.*	D.13(x) of Sanitary Sewer Order (see page 14)	The City did not conduct the required 2-year audits in 2011 and 2013.
4) *The City failed to update the SSMP every five years.*	D.14 of Sanitary Sewer Order (see page 15)	The City's last update to the SSMP was completed and certified in September 2009.
5) *The City failed to update the "Collection System Questionnaire" in CIWQS at least every 12 months.*	G.3 of the Sanitary Sewer Order (see page 18)	The City last updated the Collection System Questionnaire on February 3, 2014.

[1] California Integrated Water Quality System (CIWQS), hosted by the State Water Board.

TABLE 2: AREA OF CONCERN[2]		
FINDING	**REQUIREMENT**	**SUPPORTING EVIDENCE**
1) Equipment potentially not operating as designed.	Provisions D.8 of the Sanitary Sewer Order (see page 9)	A sign posted on the automatic transfer switch at the Poinsettia Pump Station indicates defective automated operation of the emergency power backup system. The sign, dated August 21, 2001, advises field personnel to manually operate the transfer switch during a power failure. The inspection staff discovered this written procedure during the post-inspection review of photographs and therefore did not verify that this procedure is still in effect/necessary.
2) Significant manhole root intrusion identified during inspection.	Provision D.8 of the Sanitary Sewer Order (see page 9)	The manhole located at the intersection of Blanche Road, Bell Avenue, and 25th Street was observed to have heavy root intrusion at the base indicating infrequent/inadequate maintenance/cleaning at this location.
3) Wet well capacity may be undersized for influent flow.	Provision D.10 of the Sanitary Sewer Order (see page 9)	Evidence of high wastewater levels in the wet well at the Bell Pump Station indicates a lack of capacity during some periods of operation. The capacity analysis prepared by AKM Consulting Engineers as part of the 2010 Wastewater Master Plan indicated that the wet well "has no emergency storage" and that "the firm pumping capacity is somewhat lower than the estimated peak wet weather flow".
4) The City's Operation and Maintenance Program lacks specific standard operating procedures related to routine preventative maintenance for pressurized systems.	Provision D.13(iv)(b) of the Sanitary Sewer Order (see page 11)	No standard operating procedures or other written documentation were available for review during the inspection. The City operates eight pump/lift stations of varying design and complexity. Several include check valves, air relief valves, and pumps which require regular cleaning, maintenance and exercise to ensure proper operation. Based on the inspection interviews, the City relies on staff experience to maintain these system components.
5) The City inaccurately identifies the number of pump station facilities in various documents	Provision D.13(iv)(b) of the Sanitary Sewer Order (see page 11)	The number of pump stations is inconsistently identified across various documents. The Questionnaire uploaded to CIWQS and the 2010 Wastewater Master Plan indicate eight facilities while the SSMP indicates six in the Operations and Maintenance section. The City explained that two lift stations (City Hall basement and Manhattan Beach Pier) are not considered pump stations based on their size and contributory area. The City ascertains that these lift stations are included in regular periodic maintenance.

[2] Areas of Concern are issues identified in the audit that could lead to future violation(s) if not properly addressed.

Appendix 16 – Notice of Violation Response

City of Manhattan Beach
Department of Public Works
3621 Bell Avenue, Manhattan Beach, CA 90266
Phone: (310) 802-5313 Fax: (310) 802-5301 TDD: (310) 546-3501

October 29, 2015

Pansy Yuen
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, California 90013-2343

Notice of Violation – City of Manhattan Beach, City of Manhattan Beach Collection System – Manhattan Beach, California (Order Nos. 2066-0003-DWQ and WDID No. 4SSO10408

Dear Ms. Yuen,

Please find attached the City of Manhattan Beach's responses addressing the Violations (Table 1) and Areas of Concern (Table 2) listed in Exhibit 1 – Inspection Findings of your letter dated September 29, 2015.

If you have any questions, please contact Raul Saenz at (310) 802-53105, or rsaenz@citymb.info

Regards,

Tony Olmos
Director of Public Works

City of Manhattan Beach
Responses to Regional Board Letter September 29, 2015 by the Los Angeles Regional Water Quality Control Board

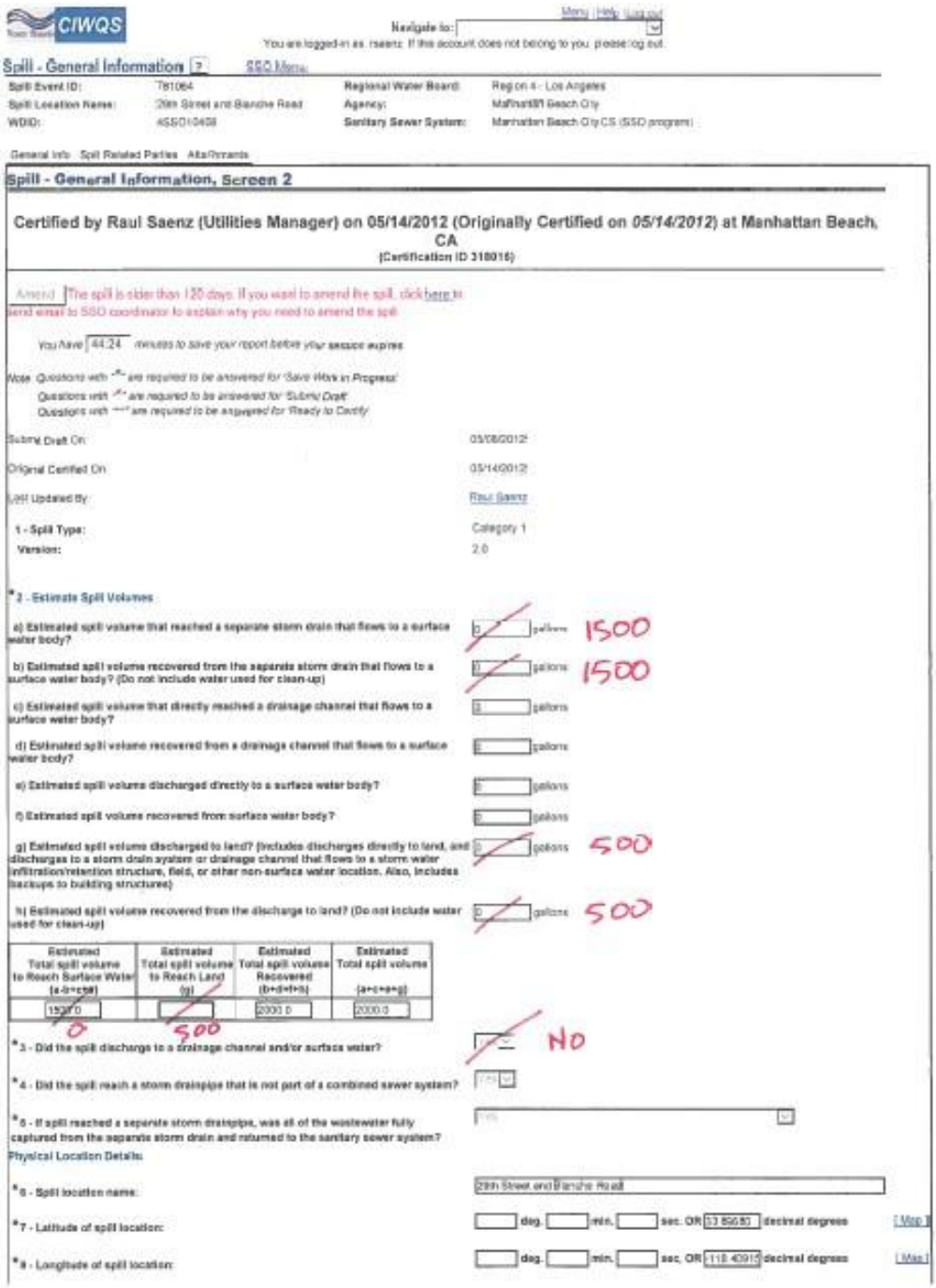
TABLE 1: VIOLATIONS

Regional Board Findings	City of Manhattan Beach Response
1.) Base o the review of the CIQS's data reported between 01/02/07 and 01/27/15, the City certified that 1,500 gallons of untreated sewage reached surface waters. (SSO Event ID No. 781064)	Once the Regional Board SSO Coordinator unlocks access to SSO Event No. 781064, it will be amended as shown in **Attachment 1.** In that event, no sewage reached "surface water". The original SSO was incorrectly completed and approved by City Staff. Amendment justifications for the SSO Report Lines are as follows: 1. <u>Line 2, Estimated Spill Volumes</u> – A total 2,000 of sewage overflowed from a manhole on to land and flowed into a storm line. 100% of that sewage was recovered, 500 gallons recovered from the street gutter and 1,500 gallons recovered from the storm line. The Wastewater Crew installed a dam of sand bags at the manhole immediately downstream from the catch basin into which the sewage entered. Potable water was used to flush the storm line and a VacCon was used to capture all of the combined sewage and flushing water from the dammed manhole. 2. <u>Line 3 – Did the spill discharge to a drainage channel and/or surface water?</u> – Given the action taken as described in Line 2, this response was changed from "YES" to "NO".
2.) The City's existing SSMP Capital Improvement Program (CIP) is deficient. A.) A formal schedule or priority strategy for specific projects has not been developed; B.) It is also unknown how many priority projects identified in the Master Plan have been completed to date	A.) The priority strategy for specific projects was developed and will be executed through the City's rolling 5-year CIP - **Attachment 2**. The strategy is based the Watewater Master Plan recommendations and involves construction of a combination of projects , all of which include Grade 5 Spot Repairs, Grade 5 Line Replacements and a sequenced replacement of six Sewer Lift Stations. B.) **Attachment 3** identifies all of the priority projects identified in the Master Plan that have been completed to date at a cost of $1,472,864: * FY 10/11 - 13 spot repairs @ $179,107 * FY 11/12 - 1,820 lf of vitrified clay pipe @ 3 locations @ $1,026,721 and 60 manhole rehabilitation, repair and/or replacement @ $267,036 * FY 12/13 - 540 lf of vitrified clay pipe @ 34 locations @ $336,610 Final design is complete for replacement of 2,180 lf of vitrified clay pipe at an estimated cost of $1.66M. Project is scheduled to go out to bid in December, with construction planned for Spring, 2016.
3.) The City failed to conduct 2-year SSMP audit.	The SSMP Audit work has been awarded to AKM Engineers - **Attachment 4**. Date of completion is December, 2015.
4.) The City failed to update the SSMP every five years	The required estimated cost to perform the update SSMP is $200,000, which is not budgeted for the current FY July-2015/June-2016 budget. SSMP Requests For Proposals will be solicited by April, 2016. The SSMP contract will be awarded by June, 2016. Work on the SSMP will begin by July 1, 2016. The exact date of completion will not be know until after the SSMP is awarded. The City will notify the Water Boards of that date once it is known.
5.) The City failed to update the "Collection System Questionnaire" in CIWQS at least every 12 months.	The Collection System Questionnaire was updated on May 21, 2015. The previous update was done on February 3rd, 2014. Henceforth, all questionnaires will be complete on intervals not to exceed 12 months.

City of Manhattan Beach
Responses to Regional Board Letter September 29, 2015 by the Los Angeles Regional Water Quality Control Board

TABLE 2: AREAS OF CONCERN

Regional Board Findings	City of Manhattan Beach Response
1.) Equipment potentially not operating as designed.	This procedure is no longer "*in effect/necessary* ". The automatic transfer switch is fully operational.
2.) Significant manhole root intrusion identified during inspection.	This root problem was addressed through routine maintenance on March 10,2015 - **Attachment 5**. Please see **Attachment 6** of Hydro Cleaning Daily Report, which identifies this manhole in yellow highlight and the date of last cleaning on March 10, 2015. The Next cleaning date is scheduled after mid-November.
3.) Wet well capacity may be undersized for influent flow.	Bell Pump Station is on the City's 2015-2019 CIP schedule. The new facility will include new pump station, emergency storage and force main replacement.
4.) The City's operations and maintenance program lacks specific standard operating procedures related to routine preventative maintenance for pressurized systems.	A written standard operation/maintenance procedures manual that will address all of the critical components of each pump/lift stations, including valves, pumps, motors and motor control centers will be complete by May, 2016. While the City does not have written standard operations/maintenance procedures for its pump/lift stations, the City does use a standardized check list for the weekly pump/lift station inspections - **Attachment 7.**
5.) The City inaccurately identifies the number of pump station facilities in various documents.	The City recognizes the "*inconsistently identified across various documents* " regarding the number of pump stations. The City will take direction from the Regional Board on how best to label/identify these facilities. For clarification purposes, the: 1.) Six pump stations (Bell, Poinsettia, Palm, Pacific, Vorhees and Meadows) listed in the SSMP manage large geographic/tributary areas in the City. 2.) Two other pump stations listed in the CIWQS and Wastewater Master Plan serve *single structures* - the Civic Center station serves the two sets of male/female restrooms, and Pier serve one set of male/female restrooms.



CIWQS

Navigate to:

You are logged-in as rsaenz. If this account does not belong to you, please log out.

Spill - General Information 2

SSO Menu

Spill Event ID:	781064	Regional Water Board:	Region 4 - Los Angeles
Spill Location Name:	28th Street and Blanche Road	Agency:	Manhattan Beach City
WDID:	4SSO10408	Sanitary Sewer System:	Manhattan Beach City CS (SSO program)

General Info Spill Related Parties Attachments

Spill - General Information, Screen 2

Certified by Raul Saenz (Utilities Manager) on 05/14/2012 (Originally Certified on 05/14/2012) at Manhattan Beach, CA
(Certification ID 318016)

Amend The spill is older than 120 days. If you want to amend the spill, click here to send email to SSO coordinator to explain why you need to amend the spill.

You have 44:24 minutes to save your report before your session expires.

Note: Questions with "*" are required to be answered for 'Save Work in Progress'
Questions with "*" are required to be answered for 'Submit Draft'
Questions with "*" are required to be answered for 'Ready to Certify'

Submit Draft On: 05/08/2012

Original Certified On: 05/14/2012

Last Updated By: Raul Saenz

1 - Spill Type: Category 1

Version: 2.0

*2 - Estimate Spill Volumes

a) Estimated spill volume that reached a separate storm drain that flows to a surface water body? 0 gallons 1500

b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up) 0 gallons 1500

c) Estimated spill volume that directly reached a drainage channel that flows to a surface water body? 0 gallons

d) Estimated spill volume recovered from a drainage channel that flows to a surface water body? 0 gallons

e) Estimated spill volume discharged directly to a surface water body? 0 gallons

f) Estimated spill volume recovered from surface water body? 0 gallons

g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location. Also, includes backups to building structures) 0 gallons 500

h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up) 0 gallons 500

Estimated Total spill volume to Reach Surface Water (a+b+c+d)	Estimated Total spill volume to Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
1500.0 0	500	2000.0	2000.0

*3 - Did the spill discharge to a drainage channel and/or surface water? No

*4 - Did the spill reach a storm drainpipe that is not part of a combined sewer system?

*5 - If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?

Physical Location Details

*6 - Spill location name: 28th Street and Blanche Road

*7 - Latitude of spill location: deg. min. sec. OR 33.8568 decimal degrees [Map]

*8 - Longitude of spill location: deg. min. sec. OR 118.4091 decimal degrees [Map]

Planned Amendments to SSO ID No. 781064

FY 2015-2019 Capital Improvement Plan Budget

City of Manhattan Beach
FY2015-2019 Capital Improvement Plan by Type

City of Manhattan Beach, Capital Improvement Plan FY2015-2019 — **BY TYPE**
PROJECTS BY TYPE FOR FY2014-15 THRU FY2018-19

WASTEWATER PROJECTS

	PROJECT TITLE	Carryover Project Number	Carryover Project Original Funding Yr	Status as of 05/12/14	Carryover Project Funds Remaining	FY2014-15	FY2015-16	FY2016-17	FY2017-18	FY2018-19	FIVE YEAR TOTAL (Includes Carryover Project Funds Remaining & New Funds)	FUND SOURCE($)
	WASTEWATER PROJECTS											
1	Utility Radio Telemetry	11838E	FY 2010-11	work in progress	$ 114,849						$ 114,849	Wastewater Fund
2	FY11-12 Rehabilitation of Gravity Sewer Mains (Phase 2)	13835E	FY2011-12	design	$ 1,683,221						$ 1,683,221	Wastewater Fund
3	FY14-15 Rehabilitation of Gravity Sewer Mains (Spot Repairs)					$ 100,000	$ 1,200,000				$ 1,300,000	Wastewater Fund
4	FY15-16 Rehabilitation of Gravity Sewer Mains						$ 150,000	$ 1,400,000			$ 1,550,000	Wastewater Fund
5	FY17-18 Rehabilitation of Gravity Sewer Mains (area 5, 6, 7)								$ 150,000	$ 1,000,000	$ 1,150,000	Wastewater Fund
6	Poinsettia Sewage Lift Station Replacement and Force Main Replacement					$ 300,000	$ 2,900,000				$ 3,200,000	Wastewater Fund
7	Pacific Lift Station Upgrade, Emergency Storage, and Force Main Replacement						$ 250,000	$ 2,150,000			$ 2,400,000	Wastewater Fund
8	Voorhees Lift Station Upgrade, Emergency Storage, and Force Main Replacement							$ 250,000	$ 1,900,000		$ 2,150,000	Wastewater Fund
9	Meadows Lift Station Upgrade, Emergency Storage, and Force Main								$ 250,000	$ 1,700,000	$ 1,950,000	Wastewater Fund
10	Palm Lift Station Upgrade, Emergency Storage, and Force Main									$ 200,000	$ 200,000	Wastewater Fund
	Wastewater Projects TOTAL				**$ 1,798,070**	**$ 400,000**	**$ 4,500,000**	**$ 3,800,000**	**$ 2,300,000**	**$ 2,900,000**	**$ 15,698,070**	

Completed Priority Projects



1,820 lf VCP
@
$1,026,721

City of Manhattan Beach

2011 - 2012 Sewer Main Rehabilitation Project



City of Manhattan Beach

2012 - 2015

Rehabilitation of Sewer Manholes



540 lf VCP
@
$336,610

City of Manhattan Beach

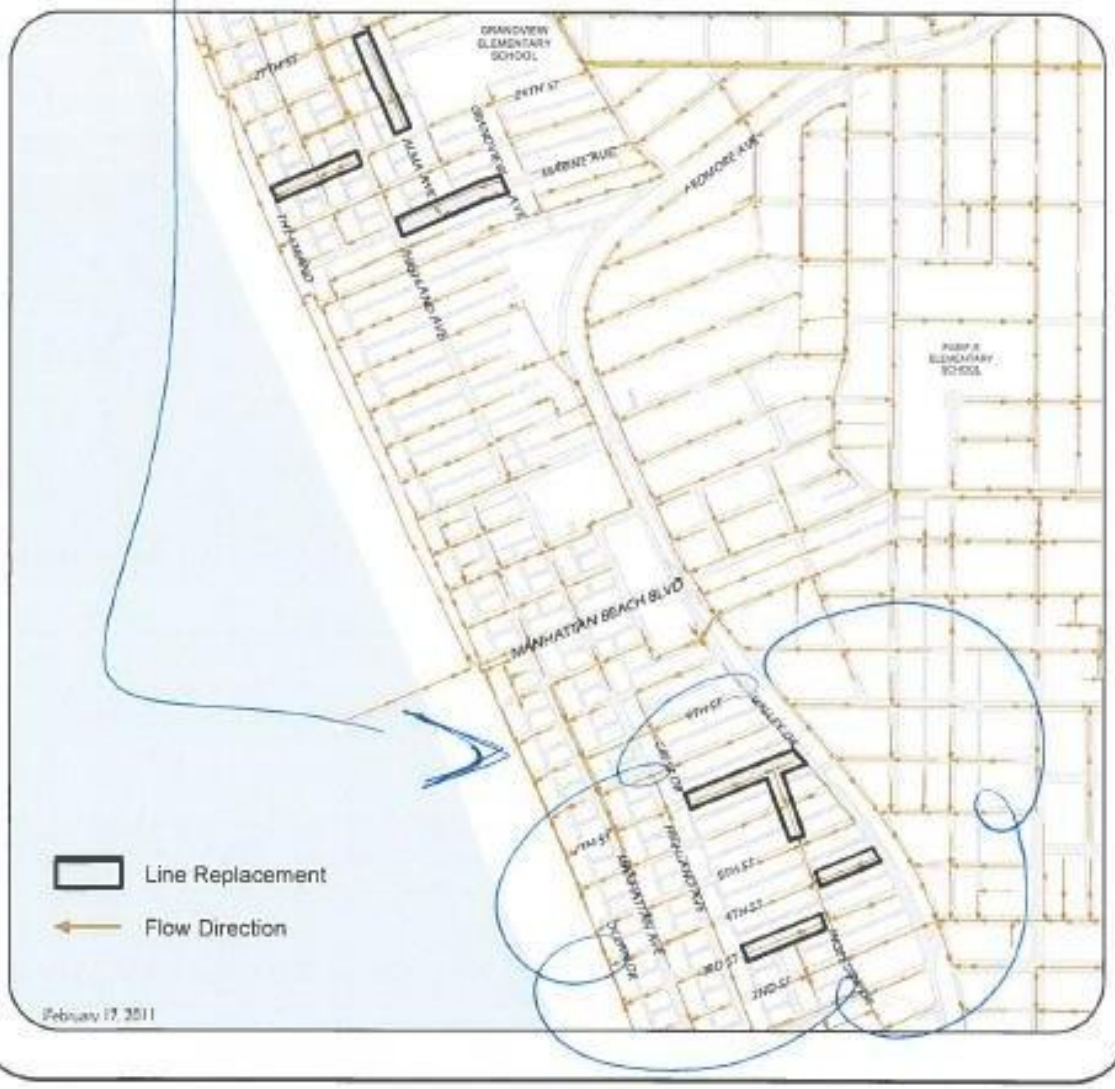
2012 - 2013 Rehabilitation of Gravity Sewer Mains



2,180 ft VCP
@
$1,600,000
scheduled for
Spring 2016.

City of Manhattan Beach

2011 - 2012 Sewer Main Rehabilitation Project



SSMP Audit Proposal

Element X, SSMP Program Audits, requires SSMP enrollees to conduct periodic internal audits. It states "***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 identifying any deficiencies in the SSMP and steps to correct them***". The City desires to conduct an audit of its SSMP to comply with the WDRs.

SCOPE OF SERVICES

The scope of work for conducting the SSMP audit will include the following:

1. With City assistance, AKM will collect and review all documentation related to the SSMP program. Documentation will include:
    a. City's approved SSMP (downloaded from City website)
    b. Operation & Maintenance Program document, including sewer and storm drain system maps, preventative maintenance plan, rehabilitation and replacement plan, and staff training records
    c. Sewer cleaning log database for past 2 years
    d. Sewer pump station logs for past 2 years
    e. Records of pump station emergency system testing for the past 2 years
    f. Records of pump station wet well cleaning, valve cleaning and testing, force main cleaning, etc. for the past 2 years
    g. Hot spot cleaning logs
    h. CCTV inspections conducted and condition assessments in the past 5 years (AKM has this data)
    i. Capital Improvement Program list indicating projects completed, designed, in construction and/or planned
    j. Design and Performance Provisions, including Design Standards and Standard Plans for Sewer Facilities
    k. Overflow Emergency Response Plan
    l. Fats, Oil and Grease Control Program
    m. System Evaluations and Capacity Assurance Plan (*AKM has copy of Sewer Master Plan*)
    n. SSO reports for past 5 years
    o. Complaint records related to sewer system for past 5 years
    p. Emergency sewer repair records for past 5 years
    q. Monitoring, Measurement, and Program Modifications implemented in the since the adoption of the SSMP
    r. Communication / educational materials regarding sewer system

2. Interview City staff to discuss problems or concerns regarding the sewer system and staff recommendations for improvements to the SSMP.

3. Prepare audit report that will describe the evaluation of each element, verify compliance with the adopted SSMP, and provide recommendations for changes where necessary. The evaluations will be based on the effectiveness of each element in reducing the number of public SSOs. We will submit a draft report for City's review, and incorporate comments into a final audit document. We will submit five (5) hard copies of the final report, and one pdf copy.

SCHEDULE

We will complete the first draft within six weeks of receipt of all information from the City. We will complete the final report within two (2) weeks of receiving City's comments on the draft report.

WORK HOUR AND FEE ESTIMATE

We propose to complete the scope of work on a time and materials for a fee not to exceed $18,496 as detailed in the following table.

Task	Description	Project Manager	Senior Engineer	Clerical	Total Hours	Total Cost
1	Collect and Review Data	8	32		40	$6,840
2	Interview City Staff	4	4		8	$1,440
3	Prepare Audit Report	8	40	16	64	$9,216
	Total Hours	20	76	16	112	
	Hourly Rate	*$195*	*$165*	*$66*		
	Expenses					***$1,000***
	TOTAL	**$3,900**	**$12,540**	**$1,056**		**$18,496**

We appreciate the opportunity submit this proposal and look forward to being of service to the City of Manhattan Beach. Should you have any questions or require additional information, please do not hesitate in contacting the undersigned.

Very truly yours,

AKM Consulting Engineers

Zeki Kayiran, P.E.
Principal

Manhole Showing Root Issue Resolved



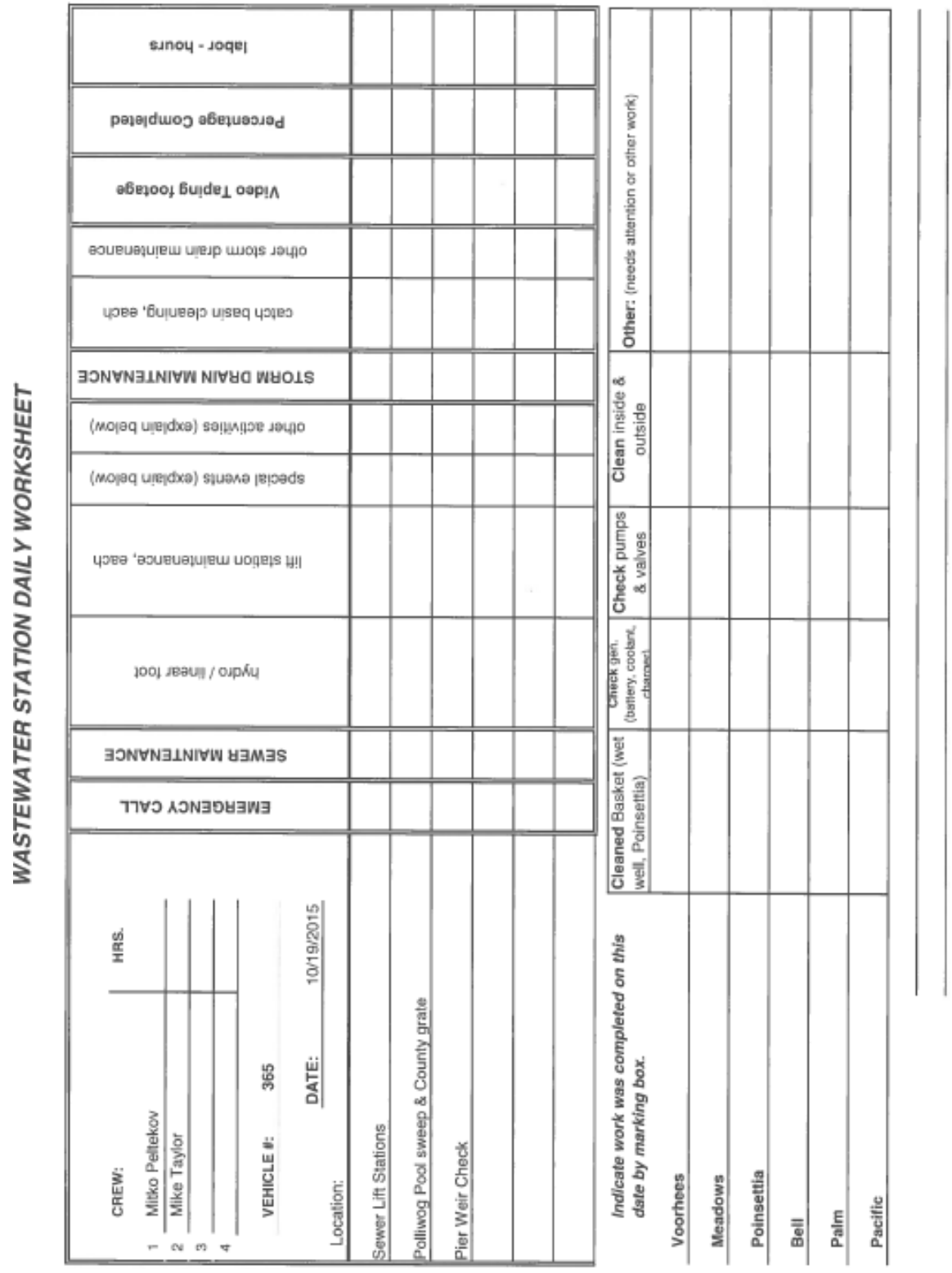
Hydro Cleaning Daily Report

PUBLIC WORKS
HYDRO CLEANING DAILY REPORT - SEWER DIVISION
DISTRICT # 1601
DATE: 3-10-15

CREW: Mitko
Martin

Mh	Mh	LOCATION	DIA.	FEET	ROOTS	GREASE	SHELLS	MISC.	Age	M/H #	M/H Depth	Slope
16-1	16-2	25th ST. & VALLEY - 743 25th ST.	8"	283				X		16-1		
16-2	16-3	743 25th ST. - 713 25th ST.	8"	304				X		16-2		
16-3	16-4	713 25th ST. - 657 25th ST.	8"	302				X		16-3		
16-4	16-5	657 25th ST. - 629 25th ST.	8"	300			/	X		16-4		
16-5	16-6	629 25th ST. - 25th ST. & BLANCHE	8"	308		3443		X		16-5		
16-6	Cnty	25th ST. & BLANCHE - COUNTY LINE	10"	11			/	X		16-6		
16-7	16-8	746 26th ST. - 724 26th ST.	8"	208				X		16-7		
16-8	16-9	724 26th ST. - 26th ST. & FLOURNOY	8"	301				X		16-8		
16-9	16-10	26th ST. & FLOURNOY - 640 26th ST.	8"	300				X		16-9		
16-10	16-11	640 26th ST. - 610 26th ST.	8"	301		3.11.15 mike mitko	/	X		16-10		
16-11	16-12	610 26th ST. - 26th ST. & BELL	8"	301				X		16-11		
16-12	CNTY	26th ST. & BELL - COUNTY LINE	10"	64			/	X		16-12		
16-13	16-14	754 27th ST. - 742 27th ST.	8"	110				X		16-13		
16-14	16-15	742 27th ST. - 708 27th ST.	8"	350				X		16-14		

Wastewater Station Daily Worksheet – SAMPLE



WASTEWATER STATION DAILY WORKSHEET

CREW: HRS.
1 Mitko Pelitekov
2 Mike Taylor
3
4

VEHICLE #: 365 DATE: 10/19/2015

Location:

Location:	EMERGENCY CALL	SEWER MAINTENANCE	Hydro / linear foot	lift station maintenance, each	special events (explain below)	other activities (explain below)	STORM DRAIN MAINTENANCE	catch basin cleaning, each	other storm drain maintenance	Video Taping footage	Percentage Completed	labor - hours
Sewer Lift Stations												
Polliwog Pool sweep & County grate												
Pier Weir Check												

Indicate work was completed on this date by marking box.

	Cleaned Basket (wet well, Poinsettia)	Check gen. (battery, coolant, charge)	Check pumps & valves	Clean inside & outside	Other: (needs attention or other work)
Voorhees					
Meadows					
Poinsettia					
Bell					
Palm					
Pacific					