Attachment A

SEWER SYSTEM MANAGEMENT PLAN (SSMP)

for the

Laguna County Sanitation District

Updated August 28th, 2017

Board of Directors Approval Date:
XXXX

LCSD

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Introduction

The Laguna County Sanitation District is a county sanitation district formed in December 1958 pursuant to the provisions of Health & Safety Code Section 4700 et seq. The County of Santa Barbara Board of Supervisors acts as its ex-officio board of directors. The district serves the Orcutt area including unincorporated portions of Santa Maria south and east of the Santa Maria Public Airport District.

The district has approximately 125 miles of sewer system, 21 miles of which are trunk sewers. The sewer system ranges in date of installation from 1905 (Orcutt Sanitary District) to the present. The majority of the collection system is located within public roads although there is a certain amount of the system is located off-site from developed areas including portions located along Orcutt (Solomon) Creek. In October 2004, the district employed two full time maintenance workers to perform routine maintenance, system evaluation, and to respond to system problems. To fully staff video inspection efforts and keep up an aggressive flushing schedule, the district employed two more full time maintenance workers in 2016. With four total maintenance workers, two workers focus on routine and repetitive flushing maintenance and the other two focus on sewer video inspections. Rotations occur periodically.

This Sewer System Management Plan (SSMP) is intended to describe measures for implementation that will formally manage the district's sewer system under the State of California's *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (Order No. 2006-0003) as adopted by the State Water Resources Control Board on May 2, 2006 and *Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (Order No. WQ 2008-0002-EXEC) as issued by the executive director of the State Water Resources Control Board on February 20, 2008. While agencies responsible for sewer systems, including the Laguna County Sanitation District, have in the past provided for certain levels of maintenance, upkeep, and planning of their sewer systems, the state has implemented these orders to cause uniformity in these activities and to ensure a base level of effort. This plan aids the district in utilizing its resources to achieve the goals of the plan and also demonstrate where improvements can be made. It should be understood that state staff has estimated that the increased cost to implement a formal SSMP per residential connection may average $71.86 per year depending on the size of the agency's customer base and sewer system. In order to minimize additional costs to the rate payer, the district compared aspects of the SSMP already employed to aspects that needed to be implemented. The costs for implementing the SSMP are incorporated into the annual budget. Costs may vary from year to year depending upon contractor costs, new equipment, staffing needs, or consulting services that may be necessary to implement certain parts of the plan.

I. Goals

The SSMP is intended to:

1. Provide a mechanism to manage, operate, and maintain all portions of the publicly owned portions of the wastewater collection system.

2. Ensure the wastewater collection system has adequate capacity to convey peak flows.

3. Minimize the frequency and magnitude of sewer overflows.

4. Protect the public and prevent damage to public and private property.

5. Address causes of overflows and implement preventative measures.

6. Comply with statutory and regulatory requirements.

The state mandated SSMP formalizes and enhances the district's past collection system management activities. The statewide permit further implements a uniform approach for all agencies owning sewer systems.

II. Organization

a) Responsible and authorized representatives:

The primary ranking elected officials representing the customers of the Laguna County Sanitation District are the Third and Fourth District County Supervisors acting as ex-officio members of the board of directors.

Principal executive officers include the County of Santa Barbara public works director, and the deputy director of the Resource Recovery and Waste Management Division.

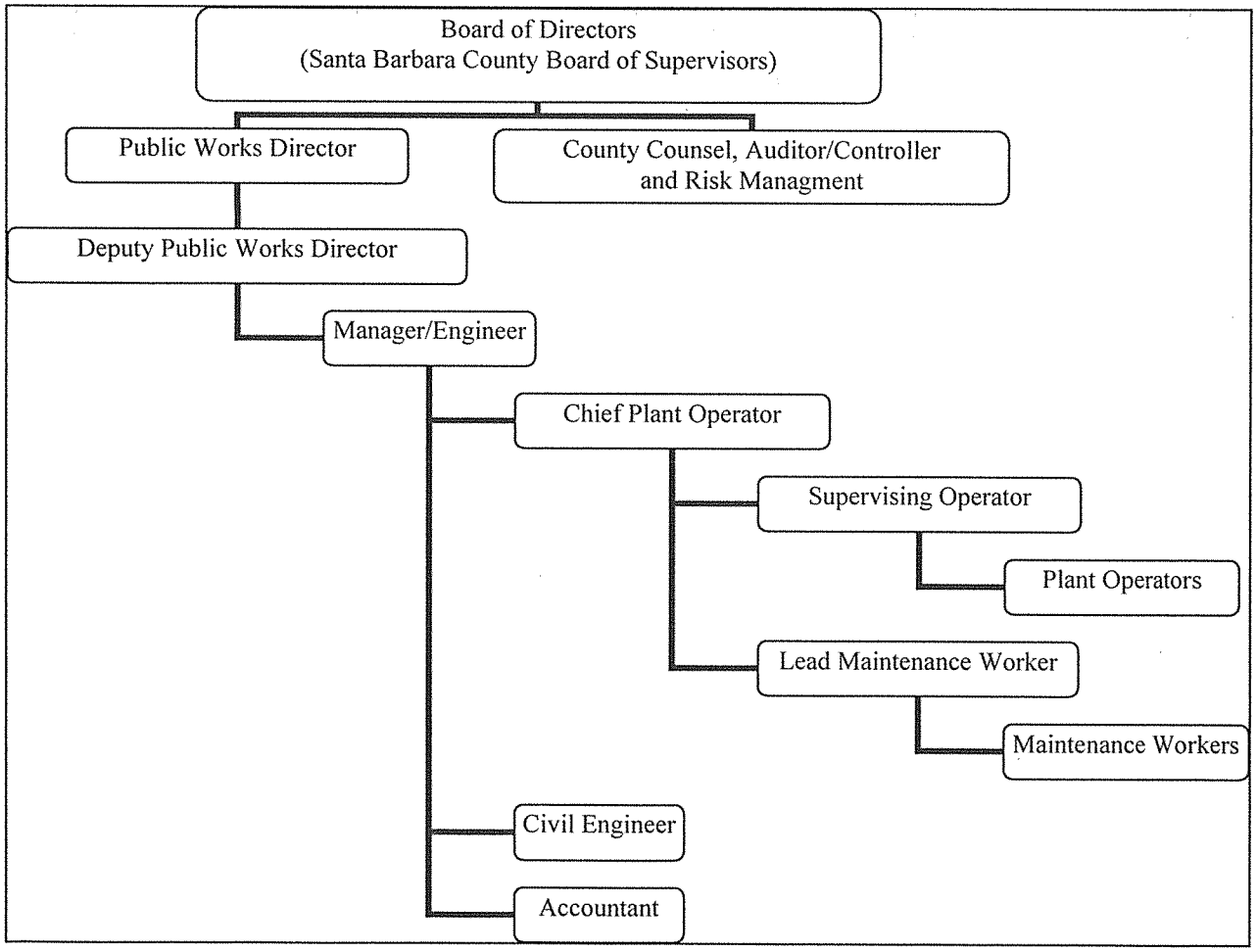
Authorized representatives include the department utilities manager, acting as the district manger and engineer, the chief plant operator, and the supervising plant operator.

b) Names and telephone numbers for management, operational, maintenance, and administrative positions responsible for implementing the SSMP:

Name	Position	Office or Plant Phone	Cell Phone
Martin Wilder	Manager/Engineer	739-8755	310-1171
Jeremy Chaja	Chief Plant Operator	934-6282	310-1163
Jesse Padfield	Supervising Operator	934-6282	
Kevin Thompson	Civil Engineer	739-8756	

Name	Position	Office or Plant Phone	Cell Phone
Angela Arredondo	Accountant	739-8757	
Robbie Anderson	Operator	934-6282	310-2359
Stephen Barnard	Operator	934-6282	310-1162
Patrick Higgins	Operator	934-6282	310-1166
Lee Lorance	Operator	934-6282	
Jeff Minyard	Operator	934-6282	310-1165
Jerry Nichols	Operator	934-6282	310-1161
Aaron Pusser	Operator	934-6282	310-1169
Cory Smith	Operator	934-6282	310-1160
Bill Haro	Maintenance	934-6282	
Joe Teniente	Maintenance	934-6282	310-1164
Daniel Ramirez	Maintenance	934-6282	
Curtis Gregory	Maintenance	934-6282	

Lines of authority are shown in the following organizational chart:



Responsibilities for collection system related activities are distributed as follows:

The manager/engineer and civil engineer are responsible for plan checking new and establishing conditions for proposed collection systems, manages the capital collection system maintenance and repair projects, and oversees the tracking of maintenance activities.

The chief plant operator is responsible for organizing and tracking the maintenance activities such as flushing, root cutting, CCTV inspection, and other activities as necessary to perform the goals of the SSMP. This position assigns work tasks to the lead maintenance worker.

The supervising operator assists the chief plant operator in carrying out the tasks to perform the goals of the SSMP.

Plant operators assist maintenance worker staff when necessary for job assistance or during emergencies.

The lead maintenance worker receives tasks assigned by the chief plant operator and delegates the tasks amongst the maintenance workers.

Maintenance workers perform the majority of the work associated with the goals of the SSMP.

The civil engineer coordinates the data collected for tracking performance measures associated with the collection system, and uses the data collected from sewer pipe video inspections to schedule follow-up repair activities.

The accountant and manager/engineer manage the finances of collection system capital improvement projects, materials, equipment, labor, professional services, and training.

c) The chain of communication for the reporting of sewer overflows from receipt of a complaint or other information may follow under two scenarios:

   During working hours (daily from 6:30 am through 5:00 pm), the office or plant may be contacted directly either by a member of the public or an agency such as road maintenance staff, the water company, or the Sheriff's Department. In this scenario district staff responds to the site and takes appropriate action.

   Outside of working hours, or if plant personnel cannot be reached, the office phone and plant phone directs the caller to call the collections emergency cell phone (805) 310-2252 carried by plant staff personnel assigned to stand-by duty.

   Upon performing the necessary tasks required to put the collection system into proper working order and cleaning the effected areas or facilities, field staff

gathers the appropriate information for filling out a sewer overflow report form. The overflow is electronically submitted within the required time and hard copies are forwarded to other agencies that may be applicable. The person routinely responsible for reviewing and submitting overflow reports will be the chief plant operator, but other authorized personnel include the manager/engineer, and the supervising operator.

III. Legal Authority

The Laguna County Sanitation District has adopted a sewer use ordinance as written into Chapter 29 of the Santa Barbara County Code. Article I pertains to general topics and Article III specifically pertains to discharge into the Laguna County Sanitation District treatment system. Article II pertains to on-site sewage disposal systems and is administered by a separate administrative authority within the County of Santa Barbara. In addition, the district has other powers related to sewer systems pursuant to the county sanitation district act as described in Sections 4738-4767 of the Health & Safety Code. Development and design standards must comply with *Standard Specifications for the Construction of Sanitary Sewers* as adopted by the district board.

a) The authority to prevent illicit discharges into the collection is found in Sections 29-2, 29-4, 29-5, 29-26 and 29-27 of the county code.

b) The authority to require sewers and connections to be properly designed and constructed is found in Sections 29-3, 29-7, 29-27, 29-31, and 29-32 of the County Code, the district's *Standard Specifications for the Construction of Sanitary Sewers*, and per applicable sections of the California Plumbing Code.

c) The authority to insure access for maintenance, inspection, and repairs of the publicly owned sewer systems is found in Sections 29-23 and 29-35 of the county code as well as in the district's *Standard Specifications for the Construction of Sanitary Sewers.* All laterals extending from a structure to the sewer main are privately owned and maintained per Section 29-27.1 of the County Code.

d) The authority to specifically limit the discharge of fats, oils, and grease is found in Section 29-27 of the County Code.

e) The authority to enforce violations of the sewer use ordinances and to administer penalties is found in Sections 29-22, and 29-24 of the County Code.

Modifications or additions to existing ordinance may be necessary to update or improve the district's ability to manage and protect its collection system. Such changes if any will be proposed prior to the state mandated completion date for this element.

IV. Operations and Maintenance Program

The district utilizes several tools and activities in order to operate and maintain the publicly owned sewer system. These include:

a) Collection system map - The collection system map has changed over time from record drawings, to atlas maps, to electronic format. Record drawings are kept on file showing developer and district improvements. Atlas maps showing collection system facilities are used for maintenance staff to manage work activities and track work progress. Daily activities are recorded in log sheets kept at the plant and weekly copies at the offices. This information is periodically entered into a database file at the office. Electronic mapping using ArcGIS software is kept on a computer network and is accessible from a GIS/Autodesk computer at the office. The system has been numbered to identify manholes, cleanouts and pipe segments. Observed discrepancies in the maps by field will be submitted to the civil engineer for correction. Four sets of atlas map sets are kept up to date including page replacements as needed. Each page will include a date of print or last revised date stamp. Maps of the storm drain system in the area were obtained from the Transportation Division of the County Public Works Department, which are used in determining potential overflow direction and containment.

b) O&M activities - Historically, operator staff had performed cleaning maintenance but in October 2004 two dedicated maintenance worker positions were created to perform these functions on a full time basis. In 2016, two more maintenance workers were added to fully staff video inspection and flushing maintenance activities. Routine activities by the maintenance workers include the flushing of sewer lines with a goal of cleaning the entire sewer system every two years. Routine priority maintenance areas are cleaned on a more frequent basis such as monthly, quarterly, or biannually. Siphons are maintained quarterly. Off-site manholes that are not accessible by vehicle are spot checked periodically. Lift stations (currently only one tract specific lift station) are checked daily. Pipe cleaning and overflow responses are tracked as performance measures. Video inspection to assess system condition is also tracked as a performance measure with a goal of about 12.5 miles per year.

c) Rehabilitation and replacement plan – The district owned collection system is comprised of approximately 125 miles of gravity sewer lines. Some portions are from three older sanitary districts absorbed by Laguna County Sanitation District. However, the majority of the system has been constructed since 1959. Maintenance worker personnel generally follow cleaning with video inspection in order to facilitate a condition assessment of the sewer system. The list of inspected pipelines grows with each effort and is prioritized based on integrity evaluation. The list is prepared annually and used to derive scopes of work and cost estimates to generate a capital improvement program (CIP) for significant repair or replacement projects. Minor repairs are funded through the district's

annual budget while significant projects may need to be budgeted in future years. Video inspection of the entire sewer system is expected to take 10 years.

d) Training program – Operator and maintenance worker personnel have been field trained in the use of sewer system maintenance equipment. In addition, safety training such as confined space entry, blood borne pathogens, CPR/first aid, traffic control, and hazardous communications is required. Certification of collection system maintenance personnel as collection system operators through the California Water Environment Association (CWEA) is encouraged.

e) Equipment and replacement parts – Sewer system maintenance equipment used by the district includes two jetter/vacuum trucks, a jetter trailer, an easement machine, video van and push camera. Maintenance of these pieces of equipment is scheduled in the district's work order program. In the event essential equipment is not available, the district provides and receives backup from collection staff with the City of Santa Maria Public Works Department. Back up parts are available for the district's one lift station.

f) Root treatment program – In 2015, 2016, and 2017, the district hired a contractor to apply a root foaming agent to pipes with a history of root intrusion. The goal is to inhibit root growth within the selected sewer pipes. The district plans to continue the root treatment program, on an as needed basis.

g) Manhole level sensors – Manhole level sensors were installed in 2016 in 25 key locations. The sensors are designed to alert a stand-by district operator in the event of sewer beginning to back up into the shaft of a manhole. The goal is to eliminate the occurrence of a SSO by responding to an alarm when the water level surcharges and before outletting. Periodic maintenance and tests are performed to these sensors to insure functionality.

V. Design and Performance Provisions

a) Design and construction standards – The design and construction of sewer pipelines, manholes, and appurtenances are governed by the Laguna County Sanitation District *Standard Specifications for the Construction of Sanitary Sewers* as adopted by the district board in 2014. Revisions to these standards are proposed to address the Standard Specifications for Public Works Construction and material updates.

b) Procedures - Standards for inspection and testing the installation of sewer pipelines, manholes and appurtenances are described in the Laguna County Sanitation District *Standard Specifications for the Construction of Sanitary Sewers* as adopted by the district board. Examples of inspection and testing of sewer systems include CCTV review, backfill compaction, pressure testing, mandrel testing, and cleaning before acceptance. Startup testing on mechanical equipment such as lift stations is also required.

VI. Overflow Emergency Response Plan

The Laguna County Sanitation District has prepared an overflow emergency response plan included as Appendix A that:

a) Includes notification procedures that alert responders.

b) Ensures appropriate response to overflows.

c) Provides for notification to the applicable regulatory agencies and other potentially affected entities.

d) Ensures that staff and contractor personnel are appropriately trained to respond to an overflow and aware of the response plan procedures.

e) Addresses emergency operations such as traffic control, crowd control, securing the work area, etc.

f) Ensures that reasonable steps are taken for overflow containment, stop or prevent discharge to water courses, correct and mitigate impacts to the environment, and monitor overflow effects.

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

The majority of Laguna County Sanitation customers are residential with approximately 12,000 connections. Of the 353 commercial customers, 39 are restaurants or other food service establishments. FOG control measures such as grease control devices and inspections of applicable commercial facilities including food service establishments, schools, rest homes, car washes, churches, veterinarian offices, and penitentiaries are in place. Industrial permits are in place for two breweries, for periodic self-monitoring of effluent water constituents and pre-treatment requirements if necessary.

A formal POTW Pretreatment Program is generally required pursuant to 40 CFR 403.8 for plants with design flows greater than 5 mgd and receiving from industrial users pollutants which pass through or interfere with the POTW or are otherwise subject to pretreatment standards. The district's current design capacity is 3.7 mgd and there are no industrial customers. However, pretreatment to control fats, oils, and grease is required in the form of a source control program when these substances are determined to cause operational problems. Regulated facilities per Section 1014.0 of the California Plumbing Code (CPC) include commercial food service establishments. Grease control is not mandatory for residential dwelling units. The district's FOG source control program is intended to:

a) Provide for public outreach and education on the proper techniques for FOG disposal. Fliers are included with annual mail outs and door hangers are distributed in areas where grease discharges appear excessive. Commercial establishments involved with food services have been contacted and are routinely inspected for compliance with FOG source control measures. This inspection and compliance program is ongoing.

b) Address the collection and disposal of fats, oil and grease. The proper disposal of these materials involves the collection of the objectionable material from traps and interceptors by contractors and transported to a facility that accepts this waste. Collection and inspections of traps and interceptors is based on a schedule for each facility to ensure that these facilities are properly operated and maintained. A list of contractors and facilities that accept grease can be found at calfog.org.

c) Demonstrate legal authority to prohibit FOG discharges and identifies measures to prevent FOG caused blockages. Section 29-26 of the County Code prohibits the discharge of fats, oil, and grease exceeding concentrations of 100 mg/l. Measures to prevent FOG discharges includes implementing the control program with appropriate commercial dischargers, managing and tracking the control program, and educating residential customers on the FOG program. Preventative maintenance of the sewer system is another measure to prevent grease related blockages.

d) Require the use of grease removal devices for certain dischargers. Section 29-27 of the County Code authorizes the district to require grease interceptors and requires the discharger to maintain interceptor equipment. Section 29-28 authorizes the district to require discharge reports and Section 29-28 authorizes the district to require waste discharge permits for users discharging waste described in Section 29-26, which includes FOG discharges. Best management practices (BMPs) for FOG dischargers is provided by site inspectors. District staff or its consultants maintain records and reporting documentation.

e) Provide for the authority to inspect facilities and premises where FOG is generated. This authority is described in Section 29-35 of the County Code. Enforcement and penalties are described in Section 29-24. The district has hired a consultant to conduct the FOG source control program.

f) Identify locations in the sewer system that appear to have excessive discharges of grease or are subject to grease accumulation. These locations would be placed on a regular maintenance schedule. These areas are marked on the system map and cleaned on a regular frequency. Maintenance activities are tracked by location using manhole and pipe numbering.

g) Develop and implement source control measures. Because any sewer connection has the potential to contribute FOG, notification describing the FOG program is

distributed to all customers through mailers annually. Verbal and written communication is provided through site inspections and enforcement actions to all applicable commercial customers. Maintenance activities and effectiveness of the FOG source control program will be tracked.

Modifications or additions to current ordinances may be proposed from time to time to further implement a more effective FOG source control program.

VIII. System Evaluation and Capacity Assurance Plan

The intent of this section of the SSMP is to address sewer overflows that may result from inadequate sewer system capacity. When designing a sewer system, the peak flow must be determined in order to properly size the pipe system. Flow contributions from existing and proposed development in addition infiltration and inflow (I and I), are used to design new pipe systems in order to prevent hydraulic overloads. Comparison of service areas, as planned in 1959, appears to include much of the current community plan development overlay, but may not have addressed similar development densities. In addition, design standards at the time may have varied. While the district's system to date has not experienced overflows resulting from capacity limitations, flow observations indicate that improvement may be necessary in certain locations. In order to ensure adequate capacity in the existing system, a flow model of the entire system was prepared in 2009. The model provides information as to where conveyance deficiencies exist and where deficiencies may occur as a result of development. Existing deficiency areas were assessed and recommendations for correction were presented. Elements of the capacity study included:

a) A review of existing sewer system pipe lines. Existing deficiencies were found in 6 locations based on peak flow depth to diameter (d/D) ratios that exceeded design criteria. Recommended actions varied from more frequent flushing, confirmation of flow lines and slopes, and pipe upsizing. Since the 2009 report, 1 of the 6 locations was upsized and 2 locations were removed from the deficiency list due to a re-analysis of the model. Because upsizing of the remaining 3 locations is significant in cost, they will be programmed into the collection system CIP. Locations that would experience increased d/D ratios above acceptable design criteria as a result of development were also identified. These locations would ordinarily be addressed when the development occurs and would include a cost sharing analysis with the developments in question. The flow model is planned to be re-calibrated and re-analyzed to produce an updated deficiency list.

   As pipes are routinely video inspected, deficiencies such as sags or breaks are observed. These defects are prioritized for future repair.

b) Sewer system design standards. The Laguna County Sanitation District *Standard Specifications for the Construction of Sanitary Sewers* prescribes design criteria for designing new sewer systems. This includes engineering criteria such as peak

flow rates, minimum slope, velocity, and depth to diameter criteria, and flow generation rates.

c) Capacity enhancement. Capacities of the sewer system have been modeled. With a few exceptions, the model indicated that the system has adequate capacity for current uses. Proposed development is anticipated to exceed design capacity in certain areas. Planned development will be conditioned to provide its share in the cost of system improvements to provide adequate flow capacity.

   Another aspect of capacity evaluation includes the control of infiltration and inflow (I&I) of rain and groundwater. The district purchased smoke testing equipment in 2017. The smoke testing equipment is used periodically to check for illicit storm drain to sewer connections. More smoke testing of residential and commercial customers is planned for the future.

d) Schedule for capacity improvement projects. The flow capacity study prepared in 2009 identified areas that may require pipe upsizing or system modifications. These improvements are planned for further investigation and implementation.

IX. Monitoring, Measurement, and Plan Modifications

An effective SSMP maintains records, monitors activities, plans for emergencies, and measures performance. In addition, the SSMP should be periodically updated and/or modified to correct deficiencies, add programs or reprioritize efforts and capital planning. Mechanisms to achieve these actions include:

a) Maintaining information that can be used to focus and prioritize efforts that attempt to eliminate overflows. Examples include pipe cleaning, integrity evaluation, deficiency corrections, FOG control, capacity evaluation and correction, and using design standards for new construction. The planning for costs associated with these efforts affect the ability to prioritize work but unless determined to be an emergency (imminent failure), can be planned over a period of successive fiscal year budget cycles.

b) The measurement of how effective each effort is in preventing overflows. Certain aspects of sewer overflow prevention are considered complete upon onetime implementation. These types of efforts include CCTV inspection and repair/replacement prioritization, I/I testing, and capacity evaluation. Once implemented, the effects of these programs can be compared to the number of sewer overflows, and the reduction in daily plant flows during rainfall events and high groundwater periods.

c) The assessment of the success of preventative maintenance. Preventative maintenance efforts are those that are recurring such as sewer pipeline cleaning and FOG source control inspections at commercial food service establishments. Tracking of the number of miles of pipeline cleaned per year compared to the

number of sewer overflows is one the district currently employs. Tracking the number of FOG source control inspections per year compared to sewer overflows can also be implemented.

d) Updating programs based on performance evaluation. Aspects of certain elements of the SSMP can require periodic adjustments such as repair and replacement prioritization and funding needs.

e) The effectiveness of all efforts to eliminate sewer overflows can be measured based on trending over time. For example, showing a decrease in the number of overflows throughout the entire service territory as well as at specific locations would validate the efforts taken to prevent overflows. Reductions in overflows based on the cause (grease, roots, debris, pipe failure, etc.) would further indicate improvement in the function of the sewer system. Performance measurement based on the number of overflows per year compared to pipeline cleaning is one such way to measure maintenance activities.

X. SSMP Program Audits

The Laguna Sanitation District is required under the terms of the WDR to perform an audit of sewer overflows that occur. A summary report will be generated annually and kept on file. The report evaluates the effectiveness of the programs implemented and lists tracked performance measures during the reporting period. The report also indicates what measures and programs have been implemented to demonstrate compliance with the SSMP, identifies completion dates, and addresses deficiencies with recommended corrections. The audit will be performed by collection maintenance staff, the civil engineer, the accountant, the supervising plant operator, the chief plant operator, and the district manager/engineer.

Elements of the audit may include a description of record keeping, evidence of staff training and familiarity with the SSMP, listing of proposed actions (number of miles cleaned, completed repair projects, etc.) during the audit period and whether or not those actions were completed, report of performance measures, identification of potential SSMP modifications, and budget considerations.

XI. Communication Program

The public must be adequately informed of the development, implementation, and performance of the SSMP. The public is defined as the customer receiving district services. The fact that the SSMP is being implemented pursuant to a state mandated program, namely the SWRCB WDR for Sanitary Sewer Systems (Order No. 2006-0003) will be included in the district's annual rate setting notice. The SSMP, the capacity model report, and sewer construction standards are posted on the district's website.