SACRAMENTO AREA SEWER DISTRICT

SASD Sewer System Management Plan 2013 Audit Report

Developed in compliance with Waste Discharge Requirement Water Quality Order Number 2006-0003

04/08/2013

Approved By:

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District Engineer,
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Signature

4-3-13
Date

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SASD Operations Department

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4/2/2013
Date

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Executive Summary

Regulatory Requirement

On May 2, 2006, the State Water Resources Control Board (SWRCB) enacted Order No. 2006-0003 (Order), Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WDR). The WDR requires any public agency that owns or operates a sanitary sewer system more than one mile in length that collects and/or conveys untreated or partially treated wastewater to a publicly owned treatment facility in the State of California to comply with the requirements of the WDR. The Sacramento Area Sewer District (SASD) operates a sanitary sewer system as described, therefore is subject to the WDR.

The requirements identified in the SWRCB WDR Order No. 2006-0003 subsection (D.13) requires that at a minimum, an internal audit occurs every 2 years and a report must be prepared and kept on file. SASD meets these requirements by conducting periodic internal audits, appropriate to the size of the system and the number of SSOs, through the SASD Process titled, "SSMP Audit Procedures."

Project Approach and Structure

The audit will focus on evaluating the effectiveness of the SASD SSMP and SASD's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them.

There are three main sections to the audit:

- Document review of the current publicly posted SSMP for WDR compliance
- Practices review "spot check" to determine how closely SASD is following the intent of its SSMP
- Interviews of key staff and management to determine the effectiveness of SASD's SSMP in meeting the goals of the WDR

The structure of the internal audit report will be in the order of the WDR SSMP mandatory elements. Each element will be broken down by the three main audit sections: Audit Review, Document Review, and Practices Review (when applicable). Each of these sections will have a general narrative on the specific element; a list of documents included in or related to the District SSMP; materials that apply directly to the element such as graphs, charts, PowerPoint presentations, reports, etc; and a list that identifies the deficiencies found during the review process.

Conclusion

SASD has a rigorous SSO monitoring and reporting system that provides the District valuable insight into the system's SSOs, and regular reporting of overflow rates on both a monthly and annual basis. Based on this reporting, SASD has successfully accomplished the goal stated in the 2011 SSSMP Audit "to focus new actions on the reduction of mainline overflows" as in 2012 the reduction in mainline overflows surpassed SASD's internal reduction target. Backups into structures (BIS) have not attained SASD's internal reduction target, and in response SASD management has significantly increased focus on BIS mitigation programs. Lower lateral overflow rates have attained SASD's internal overflow

reduction target, but not to the degree that any current efforts will be redirected away from lower lateral overflows, and instead, given the prevalence of BIS associated with lower lateral stoppages, SASD management has chosen to significantly increase focus on lower lateral overflow reductions in order to help drive down the BIS rate.

SASD has continued the management practice of reviewing a detailed monthly report for the causes of the overflows and BISs. Graphs and trends are produced, analyzed and presented to management for review and direction relative to overflow and BIS reduction. Once a decision is made to augment or accelerate an SSO/BIS reduction strategy, the associated SSMP overflow reduction strategy is revised as needed, reviewed, and then updated. Monitoring of the results of the changes is reported back to the SASD management, showing an active and integrated SSMP.

In conclusion, the SASD SSMP is considered by this audit to be effective. The reduction in mainline overflow rate to surpass the reduction target is a strong indication of this effectiveness. The SSMP and associated strategies are central to the SASD approach to managing the collection system, and are actively implemented and improved upon. Since the last SSMP audit, SASD management has made several improvements in tracking systems that are allowing them to spot optimization opportunities, provide direction and monitor the implementation efforts. This audit identified only a few minor deficiencies, and the management tools in place at SASD (via the SSMP implementation, the SSO reporting mechanisms and the service level reporting) drive the District toward continued SSO reduction.

SSMP Mandatory Elements Review

I. Goal

Audit Interview

A general overview of the goal of the SASD SSMP was discussed at the audit interviews. Section 1, page 1 of the SASD SSMP, states *"The purpose of this document is to provide the District a system-wide living management plan for the operation, maintenance, expansion, repair, and replacement of the District's sewer collection system. The intent of this document is to be the a day-to-day working management plan that also meets the requirements of addressing mandatory elements defined in the WDR section D 13. In order to accomplish this goal, the District's SSMP is arranged to best meet the business needs as a living management plan. The District Engineer is authorized to make non-consequential changes to the SSMP."*

SASD believes their SSMP lives up to the stated purpose. The SASD SSMP provides a plan and schedule to properly manage and maintain all parts of the sanitary sewer system. The plan and schedule are laid out in the Board Approved Section of the SSMP and in the reference documents to the SSMP. As an example, the Main Line Stoppage Failure Mode Strategy defines the strategy that is used to cost effectively reduce the frequency of main line stoppages caused by SSO's. The plan to reduce SSO's is found in the proactive and reactive approaches. Each strategy has its own independent schedule of how it is implemented.

To ensure that SASD is meeting their goal *"…to provide a plan and schedule to continue to properly manage, operate, and maintain all parts of the sanitary sewer system"* , established service levels are used as tools to track performance and drive changes to all programs in the SSMP. Service levels, such as the Main Line and Lateral Overflow Rates, reduce every year to be consistent with the WDR requirement to reduce overflows and SASD's SSMP goal to*" help reduce and prevent SSO's, as well as mitigate any SSO's that occur."*

Deficiency Identification
• No deficiencies were identified in the interview for this element.

Document Review

Document List:

- SASD SSMP

Deficiency Identification
• No deficiencies were identified in the document review for this element.

Practices Review

- A review of practices was not applied to this element of the SSMP.

II. Organization

Audit Interview

Section 1, page 4 of the SASD SSMP, identifies the responsible authorized representative as described in Section J of the WDR. SASD's organizational chart outlining the roles and responsibilities, including LRO'S as well as names and phone numbers of SASD staff for implementing the District SSMP can be found in Figure 1, on page 5 of the SSMP. For implementation of specific measures of the SSMP, each of the SSMP supporting policy documents has a narrative that explains what the program is doing and what staff is responsible for.

The Management Plan Assessment Program describes the activities that explain how the District manages decision making processes. SASD has an Organization Planning Team (OPT), which is a decision-making body, who meets twice a month and takes in the best available information to make decisions for the organization as they arise.

Chain of communication for reporting SSOs is clearly defined in the SSMP as being located in the SASD SSO Emergency Response Procedures Manual (SSOERPM) and the Customer Call Handling and Customer Service Request Policy. Sections 2 through 6 of the SASD SSOERPM documents the receipt of the complaint (Event Initiation); Assessing the complaint; Site Investigation and Categorization; and Notification to the responsible authorities. Section 11, CMMS Data Collection and Reporting and Section 12, CIWQS/RWQCB Reporting, outlines the steps taken to record and report the information. The M&O Org Chart states the staff responsible for SSO QC and the weekly published stand-by response list states the staff responsible for responding to an SSO event that week.

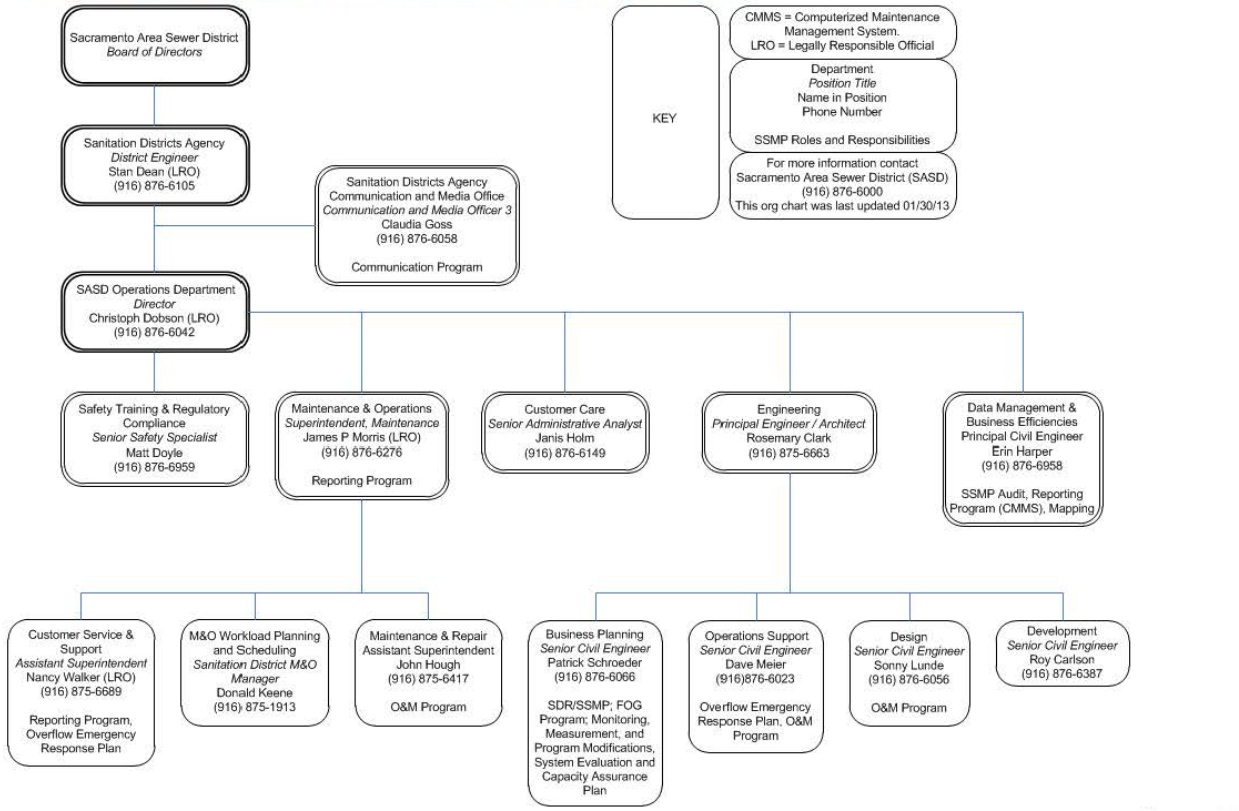
The SASD Organizational Chart, a living document that is kept on the SASD intranet, shows the functional sections and classifications of staff in the District. The functions of each section are listed in detail, under District Sections, on the SASD Intranet. The managers listed on the organizational chart can be tied back to page 5, Figure 1 of the SSMP.

For staffing projections, SASD looks at previous performance using work orders and job plans in Maximo, the CMMS for SASD; work expected for regulatory compliance requirements; service level performance; and the work that could be changing through the OPT to meet performance measures. SASD trends this information, looks for correlations, and then projects the next 5 years out. The work as well as the staff needed to perform the work is projected. To determine what type of staff is needed, for example in M&O, staff looks at the previously tracked job plan information in Maximo which tracks what crew performed what type of job. This information is then organized by activity and program for the M&O Superintendant to determine what staff is needed.

Materials:

- SASD SSMP Figure 1: *Staff Responsible for Implementing the District SSMP*

Figure 1: Staff Responsible for Implementing the District SSMP



- SASD Organization Chart (*Page left blank for PDF copy of document*)

SACRAMENTO AREA SEWER DISTRICT

SASD OPERATIONS DEPARTMENT
Director
Christoph Dobson

SAFETY TRAINING & REGULATORY COMPLIANCE
Senior Safety Specialist
Matt Doyle

SAFETY
Safety Specialist
Michael T Redfern
Safety Technician
Mark S Gustavson
Vacant

ENVIRONMENTAL REGULATORY COMPLIANCE
Environmental Specialist 3
Yolanda Grigsby
Bob L Price

MAINTENANCE & OPERATIONS
Superintendent, Maintenance
James P Morris

M&O WORKLOAD PLANNING & SCHEDULING
Sanitation Dist. M&O Manager
Donald Keene

LINEAR PM
Underground C&M Supervisor
Bill M Crooks
Underground C&M Specialist
Mark L Langley

LINEAR REPAIR
Underground C&M Supervisor
Brian E Allen
Underground C&M Specialist
Mark H Fauver

Mechanical Maint Supervisor
Alan W Pearson
Supervising Electrician
Allan Tilja

CUSTOMER SERVICE & SUPPORT
Asst Superintendent
Nancy Walker

PRECHECK, SSO & SUPPORT
Sanitation Dist. M&O Manager
Craig L Hill

PRE-CHECK SOUTH
Underground C&M Supervisor
Wendell Duncan

PRE-CHECK NORTH
Underground C&M Supervisor
Jerry J. Carnahan

CUSTOMER SERVICE NORTH
Underground C&M Supervisor
Dave R Leamer
Underground C&M Specialist
Jack E Thompson
James E Thompson
Asst. Underground C&M Spec.
James R Fluker
Brandon R Hart

CUSTOMER SERVICE SOUTH SWING SHIFT
Underground C&M Supervisor
Paul Sutphin
Underground C&M Specialist
Spencer Miyamoto
Asst. Underground C&M Spec.
Corey Chambers

CUSTOMER SERVICE NORTH SWING SHIFT
Underground C&M Supervisor
Bruce E O'Roak
Underground C&M Specialist
Paul W Hamm
Asst. Underground C&M Spec.
Thomas F Ganley

LOWER LATERAL TV WORK
Underground C&M Supervisor
Rick J Vargas
Underground C&M Specialist
Dave Chalmers
Robert J Coyne
Robert Cook
Tim Foster
Paul Hoffman
Jason Paiva
Steve R Sanchez
Juan Yanez
Asst. Underground C&M Spec.
Keenan Deplitch
Roy Garcia Jr
Victor Hernandez
Jiri Kasparek
Ronald R McCormack
Wilton Reynolds
Marco A Uriarte

VFI & SRV
Underground C&M Supervisor
Stacey J. Breese
Underground C&M Specialist
Matt Buechner
Jim Corriea
Michael J Hahn
Benjamin C Hawkins
Kevin McAdams
Sebastian Tabajdi
Asst. Underground C&M Spec.
Donald Jaco

SSO QC
Senior Engineering Technician
Alan M Hansen
Arthur Lee
Joanna Poulter

CAT 1 RESPONSE TEAM (from other groups as needed)
Jay Y Cha
Gayleen R Darting
Michael J Grinstead
Jennifer T Swinney
James R Thompson
Randy R Wood

MAINTENANCE & REPAIR
Asst SuperIntendent
John J Hough

FACILITY MAINTENANCE
Mechanical Maint Manager
Don Hoth

MECHANICAL MAINTENANCE
Mechanical Maint Supervisor
Paul N Baker
Mechanical Maint Tech
Douglas Bartholomew
Norman Bauer
Bill R. Brown
Michael Dunbar
Brian Houlf
Alan W Pearson
Sean Schwarze
Craig Troughton
Erick V Viduya
Asst. Mechanical Maint Tech
Logan Bailey
Justin Corner
Jim Eberhardt
James Farnsworth
Thomas M Kane
Dale A Miller

CONTROL SYSTEMS
WQ Control System Supervisor
Philip C Allen
Senior WQ Control Systems Tech
Thomas Ross Jr.
Michael J Thomas
WQ Control Systems Tech
Stephen Jerue
Darrin Satterfield

EMERG GEN
Senior Equipment Mechanic
Robert Cristoni
Dave A Goettle

ELECTRICIANS
Electrical Supervisor
Allan Tilja
Electrician
Kent Eleskar
Jason A Hunziker
Manoj Narayan

Information Technology Analyst 2
Angela Guo

Stationary Engineer 2
Al B Curtis

FACILITY MANAGEMENT
Administrative Services Officer 2
Dianne I Livingston

FACILITY MANAGEMENT SUPPORT
Administrative Services Officer 1
Arthur L Krummes

FACILITY MAINTENANCE
Building Maintenance Worker
Dave P Wallace

M&O SOUTH PIPELINES
Sanitation Dist. M&O Manager
Vacant

Underground C&M Supervisor
Doug D. Beckham
Underground C&M Specialist
Nicholas Lomack
Tom G Newell
Jeramie Ohler
Ralph Rangel
Noe Vela
Asst. Underground C&M Spec.
Manuel Gamboa
Christopher J Gutierrez
Daniel J Lucero
Allen Martin

Underground C&M Supervisor
Steve C Mayhew
Underground C&M Specialist
Mike J. Bowers
Mitchell Corbett
Ricardo Galvan
Dennis Johnson
Jim W Knox
Asst. Underground C&M Spec.
Ricardo Cruz
Jeff L Koehn
Ricardo Molina
Craig Wallis

Underground C&M Supervisor
Chris Beckham
Underground C&M Specialist
Jesse Alonzo Jr.
Richard J. Arruda
Brian J Castaneda
Shawn M Green
John Sprague
Asst. Underground C&M Spec.
Tony Blancet
Michael Green
Forest H Mackey
Mike Pilliken
Richard R Utley

Underground C&M Supervisor
Keith S Dann
Underground C&M Specialist
Rodolfo Esquivel
Anthony Roa
John P Walsh
Asst. Underground C&M Spec.
Todd T Coleman
Derrell J Ellis
David Gonzalez
Ben Hauschild
Jack Ortega

M&O NORTH PIPELINES
Sanitation Dist. M&O Manager
Randy W Cannedy

Underground C&M Supervisor
Eugene E. Chambers
Underground C&M Specialist
Matthew DeVilbiss
Greg Estrada
Steven Gillgrass
Paul A Page
Asst. Underground C&M Spec.
Barry Brady
Robert Goldsmith
Paul Marsant
Mark A Willingham

Underground C&M Supervisor
Rock A Esparsa
Underground C&M Specialist
Terry Boyle
Mark H. Dwerlkotte
Mark Hill
Adam Starks
Asst. Underground C&M Spec.
Vito Aiello
Jim R. Brown
Kymberly-Renee Gamboa
Dev'n S Midnight
Wayne Pak

Underground C&M Supervisor
Ed V Quesada
Underground C&M Specialist
David A. Alaskin
Kelly Anderson
Scott Christner
Castle A Dains
Jean Parker
Asst. Underground C&M Spec.
Joe Espineta
Michael Rania
Dean D Scott

Underground C&M Supervisor
Charlie B McGhee
Underground C&M Specialist
Chris Gregory
Ken G Kenobbie
Joel Swanson
Asst. Underground C&M Spec.
Daniel J Goodwin Jr
Aaron Lowery
Jerod Ranallo

Underground C&M Supervisor
Ken P Rowell
Underground C&M Specialist
Mark Brady
Rich M. Barner
Ken Conder Jr
Jason M Gandy
Asst. Underground C&M Spec.
Tracy Biebel
Victor Claborne
Robert L McCormack
Patrick O'Neill
Lance J Smith
Mike A Stein

DATA MANAGEMENT & BUSINESS EFFICIENCIES
Principal Civil Engineer
Erin E Harper

ASSET DATA APPLICATIONS
Senior Civil Engineer
Melenie J Davis
Principal Engineering Tech
Anthony De La Garza
Zane R Dobson
Senior Engineering Tech
Jack Bos
Vacant

BUSINESS EFFICIENCIES
San. Dist., Sr. Bus. Analyst
Vacant
San. Dist. Assoc. Bus. Analyst
Vacant
San. Dist., Asst. Bus. Analyst
Vacant

GIS & MAPPING APPLICATIONS
Senior GIS Systems Analyst
Eric D Smallwood
GIS Systems Analyst 1\2
Raul Rodriguez
Pauline M Lin
Senior GIS Technician
Vacant
Vacant
GIS Technician 1\2
Vacant
Senior Engineering Tech
Vitaliy Kisel
Tam La
Steven A Martinez
Engineering Tech 1\2
Eugene A New

HANGING PLANS RECORDS MANAGEMENT
Supervising Engineering Tech
Will A Henderson
Engineering Tech 2
Sandra Francis
Kobi R Katayanagi

Engineering Technician 2
Shelly J Kukulka

ENGINEERING
Principal Engineer / Architect
Rosemary Clark

OPERATIONS SUPPORT
Senior Civil Engineer
David A Meier

TV REVIEW & PM PROGRAM ADJUSTMENTS

MAINLINE TV AND PM ADJUST
Supervising Engineering Tech
Randy R Wood
Assistant Civil Engineer 2
Dave D Aebersold
Principal Engineering Technician
Nga Nguyen

LOWER LATERAL TVI REVIEW
Underground C&M Supervisor
George Nordgreen
Assistant Civil Engineer 2
Celeste D Mondor
Assistant Civil Engineer 1
Oscar M Guerrero
Principal Engineering Technician
Kim-Loan Dao
Engineering Tech 1\2
Jackie M Groover
Candy Spiers
Students
Cody R Carnahan

TRENDS, PERFORMANCE MEASURES & DATA ANALYSIS
Associate Electrical Engineer
Wayne Zhuang

BCE DECISIONS & ANNUAL WORKLOAD PLANNING
Associate Civil Engineer
Jay Y Cha
Assistant Civil Engineer 2
Dane A Coyle
Assistant Civil Engineer 1
Ryan C Mitchell

Associate Civil Engineer
Salam A Khan
Assistant Civil Engineer 2
James J Rabang

Supervising Engineering Tech
James R Thompson
Principal Engineering Technician
Richard A Robert

FLOW MONITORING
Supervising Engineering Tech
David Pitts
Principal Engineering Technician
John Krueger
Senior Engineering Technician
Justin J. Ball

DESIGN
Senior Civil Engineer
Sonny N Lunde

DESIGN TEAM 1
Associate Civil Engineer
Linda M Peters
Assistant Civil Engineer 2
Ryan Shewry
Asst Electrical Engineer 2
Drew L Gilpen

DESIGN TEAM 2
Associate Civil Engineer
Amber Parmer
Assistant Civil Engineer 2
My Huynh
Students
Jordan Mai-Duc

DESIGN TEAM 3
Associate Civil Engineer
Agustin J Lopez
Assistant Civil Engineer 1
Jose M Campos

DESIGN TEAM 4
Associate Civil Engineer
Dillon Miele
Assistant Civil Engineer 1
Vacant
Students
Lennard Bravo

PROGRAM SUPPORT
Supervising Engineering Tech
Debbie A Myers
Senior Engineering Technician
Steve I Kiyama
Engineering Technician 2
Chris S Nicolls

AUTOCAD SUPPORT
Principal Engineering Technician
Bob A Schultz

DEVELOPMENT
Senior Civil Engineer
Roy F Carlson

COLLECTOR DESIGN VERIFICATION
Supervising Engineering Tech
Robert E Espinoza
Principal Engineering Technician
Marshall Caston
Corey N Papais
Eric C Scholtz
Anthony R Vasseli

TRUNK DESIGN VERIFICATION
Associate Civil Engineer
Terry H Lee
Assistant Civil Engineer 2
Samsor H Safi

DEVELOPMENT REVIEW / STANDARDS
Associate Civil Engineer
Gayleen R Darting
Assistant Civil Engineer 2
Amandeep Singh
Senior Engineering Technician
Amber L Schalansky

BUSINESS PLANNING
Senior Civil Engineer
Patrick K Schroeder

ASSET PLANNING & REVENUE NEEDS PROJECTION
Associate Civil Engineer
Jennifer T Swinney
Assistant Civil Engineer 2
Anntonette J Duncan
Assistant Civil Engineer 1
Yadira I Downing
Principal Engineering Technician
Casey J McCutcheon
Students
Anthony C Albayalde
Gregory M Gillenwaters
Jim Ngo

SSMP STRATEGY ANALYSIS
Associate Civil Engineer
Michael J Grinstead
Assistant Civil Engineer 2
Catherine B Hernandez
Reed B Koeber
Principal Engineering Technician
Rhonda Musallam
Students
Robert A Black

FLOW MONITORING COORDINATION & ANALYSIS
Associate Civil Engineer
Li-Kai Huang
Assistant Civil Engineer 2
Kenneth R Murray
Chris W Penales
Marva E Thompson

MODEL BUILDING, DEVELOPMENT SERVICES COORDINATION
Associate Civil Engineer
Xuyen N Phung
Assistant Civil Engineer 2
Katie M Nham
Mark R Wilcox

CUSTOMER CARE
Senior Administrative Analyst
Janis Holm

BIS CLAIMS
SPLM - Contractor

PERMIT SERVICES / DISPATCH
Supervising Engineering Tech
Jim S Edwards
Principal Engineering Technician
Dolores Ross
Senior Engineering Technician
Marjorie Alpizar
Patricia L Thompson
Engineering Technician 2
Anthony T Simms
Emma S Tamayo

CUSTOMER LIAISON
Bus. Citizen Assistance Rep 2
Aimee C Norman
Senior Engineering Technician
Sam Foster

USA
Supervising Engineering Tech
Dorie A. Anderson
Senior Engineering Technician
Thomas Bogni
Vacant
Vacant

7/30/12

Deficiency Identification
• See the document deficiency which was identified during the interview for this element.

Document Review

Document List:

- SASD SSMP
- SASD SSO Emergency Response Procedures Manual
- Customer Call Handling and Customer Service Request Policy (*located in the SASD SSMP*)
- M&O Staffing Projections Fiscal Year

Deficiency Identification
• Chain of Communication for Reporting SSOs is unclear: Information is located in SSMP & SSOERPM. SSMP references the SSOERPM, but the LRO contact information is listed in the SSMP under *Figure 1: Staff Responsible for Implementing the District SSMP.*

Practices Review

- A review of practices was not applied to this element of the SSMP.

III. Legal Authority

Audit Interview

As of the date of the audit interview (January 30, 2013), SASD was currently in the process of updating several of their documents that outline legal authority; the SASD Sewer Ordinance and the SASD Standards and Specifications. The SASD Sewer Ordinance was adopted to be effective on February 23, 2013. For the purpose of this audit, only the currently board approved versions were reviewed.

The SASD Sewer Ordinance *"defines uniform requirements for design, construction, and use of the sewer collection system; provides for the enforcement of these requirements, establishes penalties for violations; and defines responsibility for sewer collection system maintenance."* SASD's Sewer Ordinance refers directly to the SRCSD Consolidated Ordinance throughout all sections of the Board approved document; specifically sewer use and enforcement requirements. Section 2, Sewer Use, of the SASD Sewer Ordinance outlines the prohibited activities and prohibited discharges into the SASD sewer system. Chapter 2, Sewer Use, of the SRCSD Consolidated Ordinance details the uniform requirements for users of the wastewater collection and treatment system.

Service Requests are generated in Maximo when staff has identified through investigations, field or CCTV; complaints; incident responses; non compliance or violations to the sewer ordinance. Depending on the situation and severity, SASD's Enforcement Response Plan details what steps are taken by staff to identify, document, track and respond to non-compliance and to select the enforcement action most appropriate for the given violation. Staff levels of responsibility for enforcement actions are located in the Enforcement Response Plan. Through the structure of Maximo, service requests are tracked from the start of when an issue was identified, when an advisory letter/notice of violation was sent and any follow up actions, such as a CCTV. The follow-up action verifies whether the customers are or are not repeating the same action and what level of enforcement is needed, if applicable.

Chapter 2.9, Enforcement, in the SRCSD Ordinance and Section 9, Enforcement, of the SASD Sewer Ordinance details the enforcement provisions and mechanisms used if there are violations to the sewer ordinance. These sections detail the measures taken by SASD when there are violations such as FOG related blockages or other discharges of wastewater that cause damage to facilities.

To ensure access to SASD facilities, SASD's easement language, located in SASD's Standards and Specifications, requires new SASD facilities, outside the public right-of-way, to have permanent easements. The District Standards also outline the location and width of easements; types of easements; prohibited easements and the acquisition as well as the abandonment of easements. The requirements for maintenance of the easements are located in Section 2.11 of the SASD Sewer Ordinance. The SASD Sewer Ordinance requires that owner must allow for an unobstructed pathway access to all easement areas and if access to an easement is needed, District staff will at their discretion obtain access.

SASD's Easement Access Procedures provide specific instruction to District staff and clear expectations for customers around private property easement access. For example, if a customer is not present when non-emergency access is needed, the first step is to leave a Notice of Sewer Work Performed door hanger to contact SASD to schedule an appointment. If an appointment is not set within 3 days, SASD will make another attempt and leave a second door hanger. If on the 3rd attempt (7 business days after the first attempt) no contact has been made, SASD staff will attempt to gain the necessary access to perform the work. The SASD Customer Service Liaison (CSL) will assist with gaining easement access and communicating with the customer. The CSL keeps track of all interactions with customers, including legal action notification, through service requests in Maximo.

SASD Engineering Operations Support Section identifies through CCTV and field investigations various violations to the Sewer Ordinance such as FOG, storm water connections, building structures over the sewer lines, defects in the service laterals located on private property, and sump pumps. Once an impact or violation has occurred, a service request will be sent to the section responsible to investigate the impact further. District staff utilizes the SASD Enforcement Response Plan and the Sewer Ordinance to determine what enforcement actions are needed based upon the situation. SASD works directly with the Wastewater Source Control Section (WSCS) when impacts to the systems have been identified in commercial or industrial properties. WSCS uses both the Enforcement Response Plan and SASD Ordinance to determine what actions to take when a violation has occurred. Coordination meetings are held monthly with WSCS and SASD to determine what actions were taken for each incident and discuss if those actions were successful.

SASD noted in the interview that the Sewer Ordinance does not cover all scenarios for ownership delineation, specifically non-single family residences. To determine the delineation, staff looks at the documentation that approved the project such as improvement plans or maintenance agreement. SASD is currently in the process of clarifying ownership delineation specific to non-single family residences for the next SASD Sewer Ordinance update.

The SASD Sewer Ordinance is updated on an as needed basis. Staff meets regularly to talk about revisions and updates to the Ordinance. The SASD Sewer Ordinance Update Flow Diagram in the SSMP describes the update process for the Sewer Ordinance update.

Deficiency Identification
• Ownership Delineation: SASD is inconsistent with their approach and interpretation to certain ownership situations, specific to non-single family residences.

Document Review

Document List:

- SASD Sewer Ordinance
- SRCSD Consolidated Ordinance
- SASD Enforcement Response Plan
- SASD Easement Access Procedures
- SASD Sewer Use Ordinance Update Flow Diagram (*located in the SASD SSMP*)

Deficiency Identification
• No deficiencies were identified in the document review for this element.

Practices Review

- A review of practices was not applied to this element of the SSMP.

IV. Operation and Maintenance Program

Audit Interview

SASD Data Management Group operates and maintains an up-to-date mapping system of collected data through electronic databases that have spacial and tabular asset attribute information. SASD utilizes a Geographical Information System (GIS) to exhibit these asset attributes such as pipe locations, sizes, materials, lengths, pump stations, force mains, and lateral locations. GIS is considered an up-to-date system based upon the documentation that is received by the District through service requests generated through SASD's CMMS, Maximo. The asset information is received from multiple sources such as improvement plans, CCTV inspections and field reports from the maintenance crews. The Data Management Group processes the data with the assumption that data verification has been done prior to staff sending the service request instructing the group to add the information to the system. Storm water facilities can also be viewed through the mapping system through a layer borrowed from the Department of Water Resources. These jurisdictions are responsible for accuracy of their facility information found in GIS or on paper maps.

SASD is able to generate maps for various business needs such as flood information for SASD's Business Continuity Plan which needed a map with all SASD assets located in the 100 year flood plain. Sewer traces are performed to create maps of areas affected by a collapse or blockage.

The SASD GIS mapping system is used by SASD on a daily basis through routine maintenance and operations activities and through the design and review process of new facilities. The mapping system is used to identify asset location, asset attribute information, and for any special instructions associated with the asset or location. Storm water information is used during emergency events to assist with isolation and containment of a sewer spill that has entered a storm drain.

There are some operating lower lateral assets that are known to have not been recorded in the mapping system as of yet based on comparison reports between customers served, and laterals associated with the parcel, and a data clean-up project is underway to address these situations. In addition, previous mapping practices removed abandoned lines, but these are being redrawn on a separate archive layer in order to provide geospatial location of where SASD had at some point in time ownership and operational responsibility. Because there are no checks and balances system between the group that approves new plans for SASD and what ends up mapped, there may situations where sewer systems have been approved and built, but the drawings and data were never entered into the GIS system.

As part of the SASD Asset Management Plan, a data completeness score was developed through weighting the asset attributes by how important that are to SSO regulatory reporting; if they were used to trigger a program, strategy, or maintenance; if the information was used for other business needs or not used at all.

Routine preventive operation and maintenance activities performed by staff and contractors consist of operations detailed in the following failure mode strategies in the SASD SSMP:

- Loss of Support Failure Mode Strategy
- Crush Collapse Failure Mode Strategy
- Pump Station Structural Assessment Strategy
- Main Line Stoppage Failure Mode Strategy
- Lower Lateral Stoppage Failure Mode Strategy
- Manhole Stoppage Failure Mode Strategy
- Pump Station Component Failure Mode Strategy
- Damage by Others Failure Mode Strategy
- Under Capacity Failure Mode Strategy

SASD's preventive maintenance program which includes inspections ensures gravity assets are cleaned, pump stations are inspected and maintenance is performed, assets at risk of structural deficiency are visually or CCTV inspected; and the system for regularly scheduled cleaning of the sewer system as well as historical information is documented in Maximo. The Preventive Maintenance Program identifies assets where maintenance frequency of 12 months or greater is needed and where past failures have occurred and prevention is needed or through statistical analysis the assets met certain criteria to be placed on a schedule.

The work orders for the preventive maintenance work are generated in advance of the month the work is due to be performed. The work orders go through the SASD Planning and Scheduling Group to assign to Maintenance and Operations supervisors who then assign the work to field crew leads to perform the work within the allotted timeframe. Not all sewer assets have a routing preventive maintenance schedule, but all 6" and 8" main lines will be cleaned and those not scheduled to be cleaned at that time will be visually inspected through the Visual Flow Inspection Program (VFI).

In the SASD Asset Management Plan, SASD breaks their main line pro-active strategies, planned maintenance and programs, into two types of work; preventive and predictive.

Preventive Programs are:

- Main line Scheduled Maintenance
- Lower Lateral Scheduled Maintenance
- Facilities Scheduled Maintenance
- Root Foaming Pilot
- Crown Spraying Program

Predictive Programs are:

- Visual Flow Inspection
- 25 Year Main Line Maximum Interval Cleaning Program
- Lower Lateral Overflow Reduction Program
- Creek Protection Plans and Inspections

- Structural Assessment Program Inspection
- Condition Assessments
- Main Line Overflow Reduction Program

Additionally, SASD's main line reactive strategies, performing unscheduled event driven work or scheduled remedial actions, are also broken into two types of work: response and corrective.
Response work includes:

- SSO Response
- Customer Calls
- Pre-checking
- Clearing Stoppages
- Event response repairs

Corrective work includes:

- Scheduled event response repairs
- Creek Projects
- Functional Renewal driven by proactive strategies
- Point repairs

For all SASD assets, work orders to perform reoccurring activities, such as jetting, balling, rodding, and tv'ing, are tracked through the Maximo (SASD currently uses IBM's Maximo 6.2.5). Target completion dates for work orders are set and implemented by the priority; each priority setting (1, 2, 3 and 4) has an established time frame for completion. For pump stations and force mains, monthly inspections of the facilities are performed; service requests and work orders are generated by these inspections, and tracked through Maximo. The SCADA (Supervisory Control and Data Acquisition) system provides continuous monitoring of the stations.

SASD uses asset specific evaluations for conditional assessments on their assets. SASD determines the priority for repairs or rehabilitation of their assets through CCTV inspections and a cost effective asset management approach is used to make decisions. For example, a deficiency would be identified through the CCTV and trigger the Generic Business Case Evaluation (BCE) Process to identify possible solutions, recommend a specific action and SASD staff would then implement the solution on an asset by asset basis. The work orders generated by the conditional assessment process are completed either in-house or contracted out.

SASD performs structural assessments on SASD assets for several failure modes such as crush collapse, loss of support, and pump station failures. As an example, when an asset has been identified as having a higher risk of failing through corrosion, cracking, or breaking, SASD utilizes the Crush Collapse Failure Mode Strategy. Maintenance defects that could cause blockages, such as roots, can be put on a frequent cleaning schedule or be part of a specific projects such as root foaming or lining.

To measure the effectiveness of the preventive maintenance work as well as the equipment used, SASD utilizes the Quality Control for Sewer Pipe Cleaning

Procedure/Policy. This policy outlines the procedures used to review Main Line Scheduled Maintenance CCTV work orders completed by SASD field staff and contracted companies for equipment and operator performance.

Rehabilitation and replacement projects are identified and tracked from conceptual planning through project closeout. The overall capital project list is sorted into four different lists.

- Annual Budget List - Projects included in the Districts' budgets include the total project costs and estimates of dollars expected to be spent in the fiscal year. The list also includes the current phase of the project. The list is approved by the applicable Board of Directors as part of the annual budget approval. A list of projects is included SASD's Annual Budget Report and approved by SASD's Board of Directors each spring.

- Capital Improvement Plan (CIP) – Projects included on the CIP are approved for funding and scheduling. The intent of this list is to include projects that have a very high certainty of being completed. Typically, projects will be started within the next 5 years. Approval is per the PAC process or Department procedures, as applicable.

- Capital Funding Projections (CFP) – The intent of this list is to provide a mid-range estimate of funding needs in addition to those listed on the CIP. Projects on this list are anticipated within 10 years of the start of the next fiscal year. Inclusion on the CFP does not guarantee funding will be provided or expenses will be incurred. Projects included on the CFP are further vetted to determine if the project will move forward to the next level of approval. A list of projects is submitted to SASD's Board of Directors each fall.

- Long Range Planning (LRP) – Projects on this list are anticipated within 11 to 50 years of the start of the next fiscal year. Projects on the list may be based on the useful life of existing assets, their expected rehabilitation, or replacement costs. Inclusion on the LRP does not guarantee funding will be provided or expenses will be incurred. Projects included on the LRP are further vetted to determine if the project will move forward to the next level of approval. A list of projects is including in SASD's Asset Management Plan and updated each year.

SASD's Maintenance and Operations training program consists of on the job training, in-house training, and extensive SSO response procedure training. The SSO Emergency Response Procedures Manual (SSOERPM) is updated quarterly or as needed. Training is provided when any new updates occur to the SSOERPM as well as refresher training on existing sections. To ensure competency of the Maintenance and Operations Pre-Checkers, staff is required to take a written test and must pass with a 90% or better. Additionally, staff is evaluated on every SSO response. Category 1 SSO Responders monitor the primary Pre-Checker activities. Category 1 SSO Responders also attend Pre-Checker and SSO response training and testing. Responders typically attend 4 to 7 SSO events before being certified.

To ensure contractors used by SASD are adequately trained, the District first requires the contractor to be licensed and have the appropriate certification to perform the work. SASD provides training at every pre-construction meeting on SSO response procedures; best management practices to prevent SSO's; project specific emergency response plans and provides the contractor with checklists to prevent operator caused SSO's.

The Compass Purchasing System tracks parts and equipment for SASD staff. Maintenance and Operations Supervisors identifies the equipment or parts that are critical to perform work and are required to be kept in stock.

SASD uses their established service levels as operational and maintenance indicators to monitor their success in dealing with SSO's.

Materials:

- SASD Maintenance Terminology

SACRAMENTO AREA SEWER DISTRICT

Maintenance Terminology

March 15, 2011

Proactive Strategies– These strategies include performing scheduled or planned work on assets.

***Routine Work** is a **proactive** detailed course of action(s) prescribed when performing work or inspection on an asset with specific attributes such as specific age, material type, or pipe diameter, determined to have the potential of a future stoppage or failure. Routine work can be either preventive or predictive.*

Two proactive work types are:

- **Preventive** – This includes performing work on a predetermined schedule to prevent sewer overflows or functional failures, and allow the asset to reach its useful life or return to original operating characteristics. This work is often triggered by a stoppage or functional failure. The routine maintenance schedule and activity depends on asset performance and risk factors, maintenance history and latest available information. This work includes planned maintenance of hot spots which are defined as pipes cleaned at least annually.

- **Predictive** – This work includes and relies on predetermined failure indicator status that is gathered by inspections and monitoring, and initiated when the monitored indicator signals maintenance is due. This predetermined maintenance is then scheduled to take place prior to this predicted time.

Reactive Strategies – These strategies include performing unscheduled event driven work or scheduled remedial actions.

Two reactive work types are:

- **Response** – Performing unscheduled work as a result of a stoppage, functional failure, or customer inquiry. Work may include repairing or mitigating found defects during an event.

- **Corrective** – The scheduled remedial actions performed on known defects prior to a functional failure, to restore an item to a specified condition, or functional renewal driven by proactive strategies. Corrective maintenance may or may not be a part of a program.

Page **1** of **2**

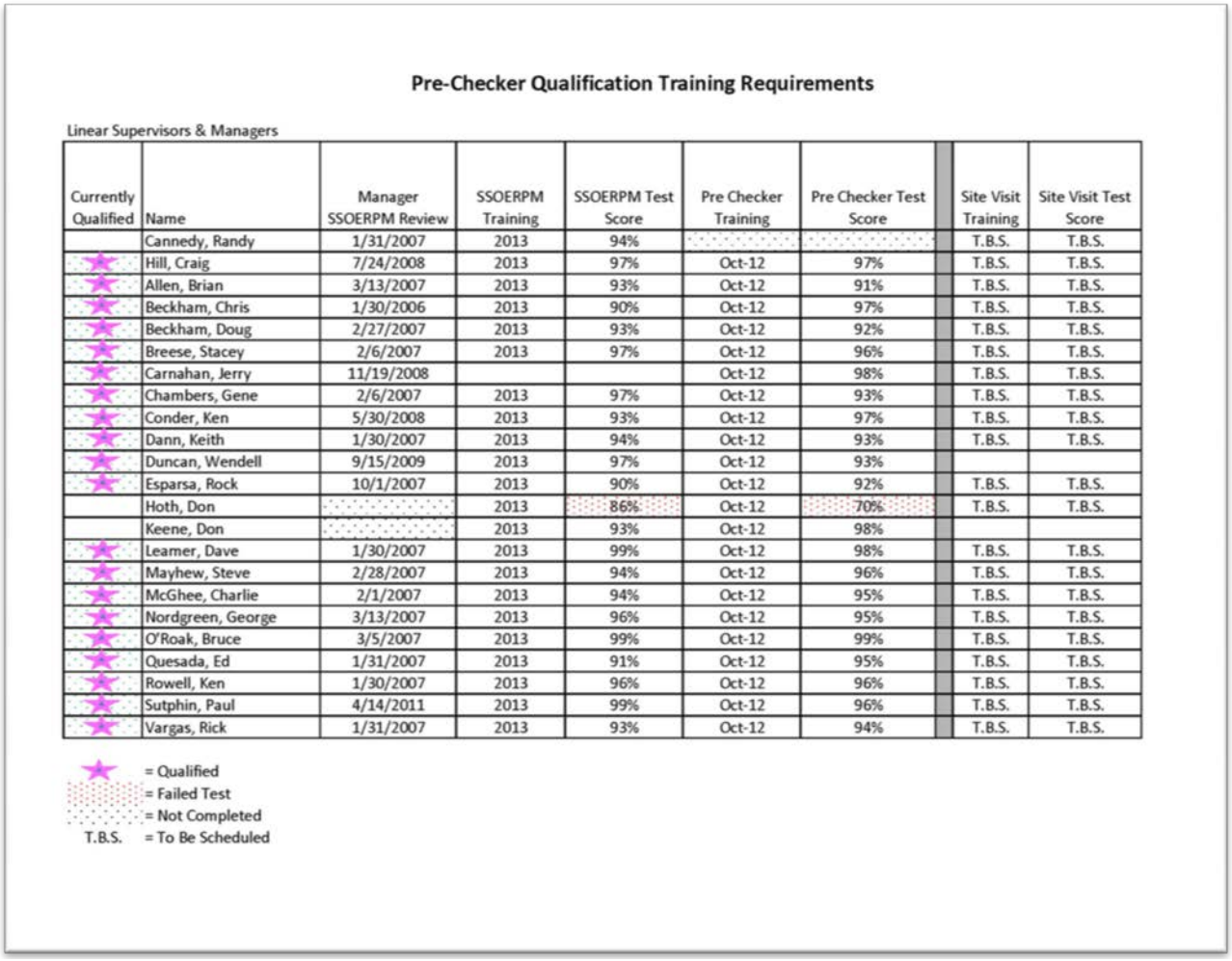
- Preventive Maintenance Program Snapshots

Main Line PMs	
Frequency (Months)	Count
3	286
4	4
6	3602
12	4898
18	1
24	9498
36	17
48	7878
60	15
96	8

Lower Lateral PMs	
Frequency (Months)	Count
3	4
4	2
6	32
12	1129
18	538
24	2079
30	1
36	1480
48	1641
60	129

Pump Station PMs	
Frequency	Tasks
Biweekly	Generator Run and Inspection
Monthly	Pump Station Inspection
	Generator Transfer Switch Inspection
Quarterly	ARV Inspection
Annual	Pump Station Inspection
	RTU Cabinet and Level Transmitter Inspection
	Electrical Inspection
	Backflow Prevention Testing
	Generator Load Bank Testing
	ARV Inspection

- Pre-Checker Qualification Training Requirements Snapshot



Pre-Checker Qualification Training Requirements

Linear Supervisors & Managers

Currently Qualified	Name	Manager SSOERPM Review	SSOERPM Training	SSOERPM Test Score	Pre Checker Training	Pre Checker Test Score		Site Visit Training	Site Visit Test Score
	Cannedy, Randy	1/31/2007	2013	94%				T.B.S.	T.B.S.
★	Hill, Craig	7/24/2008	2013	97%	Oct-12	97%		T.B.S.	T.B.S.
★	Allen, Brian	3/13/2007	2013	93%	Oct-12	91%		T.B.S.	T.B.S.
★	Beckham, Chris	1/30/2006	2013	90%	Oct-12	97%		T.B.S.	T.B.S.
★	Beckham, Doug	2/27/2007	2013	93%	Oct-12	92%		T.B.S.	T.B.S.
★	Breese, Stacey	2/6/2007	2013	97%	Oct-12	96%		T.B.S.	T.B.S.
★	Carnahan, Jerry	11/19/2008			Oct-12	98%		T.B.S.	T.B.S.
★	Chambers, Gene	2/6/2007	2013	97%	Oct-12	93%		T.B.S.	T.B.S.
★	Conder, Ken	5/30/2008	2013	93%	Oct-12	97%		T.B.S.	T.B.S.
★	Dann, Keith	1/30/2007	2013	94%	Oct-12	93%		T.B.S.	T.B.S.
★	Duncan, Wendell	9/15/2009	2013	97%	Oct-12	93%			
★	Esparsa, Rock	10/1/2007	2013	90%	Oct-12	92%		T.B.S.	T.B.S.
	Hoth, Don		2013	86%	Oct-12	70%		T.B.S.	T.B.S.
	Keene, Don		2013	93%	Oct-12	98%			
★	Learner, Dave	1/30/2007	2013	99%	Oct-12	98%		T.B.S.	T.B.S.
★	Mayhew, Steve	2/28/2007	2013	94%	Oct-12	96%		T.B.S.	T.B.S.
★	McGhee, Charlie	2/1/2007	2013	94%	Oct-12	95%		T.B.S.	T.B.S.
★	Nordgreen, George	3/13/2007	2013	96%	Oct-12	95%		T.B.S.	T.B.S.
★	O'Roak, Bruce	3/5/2007	2013	99%	Oct-12	99%		T.B.S.	T.B.S.
★	Quesada, Ed	1/31/2007	2013	91%	Oct-12	95%		T.B.S.	T.B.S.
★	Rowell, Ken	1/30/2007	2013	96%	Oct-12	96%		T.B.S.	T.B.S.
★	Sutphin, Paul	4/14/2011	2013	99%	Oct-12	96%		T.B.S.	T.B.S.
★	Vargas, Rick	1/31/2007	2013	93%	Oct-12	94%		T.B.S.	T.B.S.

★ = Qualified
= Failed Test
= Not Completed
T.B.S. = To Be Scheduled

Deficiency Identification
• Mapping: No current process to confirm all assets are being entered into the mapping system.
• Training for M&O Staff: Training policy has not been updated since 2008. This is an on-going task from the 2011 SSMP Audit Action Plan.
• Training for M&O Staff: On the job training programs for rodding and balling, require better documentation of who has been trained in what activities.
• Is some form of Category 1 responder training documentation available? (i.e., certification, pass/fail qualification, OJT check off list, or some other training topic tracking mechanism)

Document Review

Document List:

- Pre-Checker Service Request & Work Order Field Guide

(*The following list of documents can be found in the SASD SSMP*)

- Loss of Support Failure Mode Strategy
- Crush Collapse Failure Mode Strategy
- Pump Station Structural Assessment Strategy
- Main Line Stoppage Failure Mode Strategy
- Lower Lateral Stoppage Failure Mode Strategy
- Manhole Stoppage Failure Mode Strategy
- Pump Station Component Failure Mode Strategy
- Damage by Others Failure Mode Strategy
- Incorrect Cleaning Frequency Failure Mode Strategy
- Televised Inspection Policy
- Generic Business Case Evaluation (BCE) Process
- Main Line Cracked-Broken- Missing and Collapsed Pipe Policy
- Lower Lateral Repair-Maintain-Replace Decision Policy
- Mapping Updates Policy
- Quality Control for Sewer Pipe Cleaning Procedure/Policy
- Training Policy

Maintenance Management System Applications and Tools

- Maximo
- CMMS
- GIS WQ Viewer
- Compass

Deficiency Identification
• See the document deficiency which was identified during the interview for this element.

Practices Review

- Refer to the 2013 SASD SSMP Audit Practices Review Section of this report.

V. Design and Performance Provisions

Audit Interview

The SASD Standards and Specifications were developed from the requirement of the WDR SSMP. Originally, SASD used the County Construction Standards before using the approved SASD Standards and Specifications. The current standards and specifications are specifically focused on SASD requirements for design, construction, and rehabilitation of sewer facilities as well as incorporating the jurisdictional requirements. The District Standards and Specifications go through both an internal and external review for comment before going to the Board for approval. The public can review the document on-line on the SASD website and provide comments through an on-line form. External staff can also submit changes, comments, and questions on-line through the SASD intranet. SASD is currently working on an update, which will be going to the Board for approval in 2013. For the purpose of this audit, only the currently board approved version was reviewed.

SASD tracks all deviations to the District Standards and Specifications using the Deviation to Standards Procedure. This procedure documents the process the engineer must go through when the materials or methods of design and/or construction does not meet minimum requirements in the SASD Standards and Specifications.

To ensure construction compliance with the District Standards and Specifications, SASD utilizes the services of the County of Sacramento's Construction Management Inspection Division (CMID) inspectors for both design projects as well as developer constructed projects. Additionally, District staff performs internal inspections on the installation of new cleanouts. SASD has a Service Level Agreement with CMID which outlines the roles and responsibilities for construction inspection of sewer related projects, both contract and developer projects. CMID works in partnership with the District to ensure all facilities are built to District Standards.

In addition to field inspections, specific testing as well as CCTV is required for newly constructed sewer facilities prior to acceptance of a project. SASD reviews all new construction CCTV and provides notification to CMID when a project has been found in or out of compliance with District Standards and Specifications.

Both CMID and the consultants are aware of the SASD Standards and Specifications and the jurisdictional standards. Technical training as well as SSO awareness training is provided to both consultants and CMID on specific elements of a design project. SASD Engineering Design Section staff oversees these inspections to make sure CMID is enforcing the standards and that the contractor is complying with the standards.

Various mechanisms are used to drive changes to the District Standards and Specifications, such as internal staff input from monthly coordination meetings, results from the Generic BCE Process, deviation to standards and regulation changes identified by the Policy and Planning Department. Additionally, when the Maintenance and Operations staff encounter challenging situations, they work with the Engineering Operations Support group to determine what action is needed to best resolve the issue and address any changes that need to occur in the Standards as a result of that encounter.

In regards to rehabilitation and repair work, the Engineering Design Section uses qualified licensed contractors for all projects; these contractors are governed by the District Standards and any special provisions. Additionally, the District provides specialized training to the contractors, when applicable. When a project is complete, a feedback workshop is usually conducted with all parties involved with the design project, to talk about lessons learned.

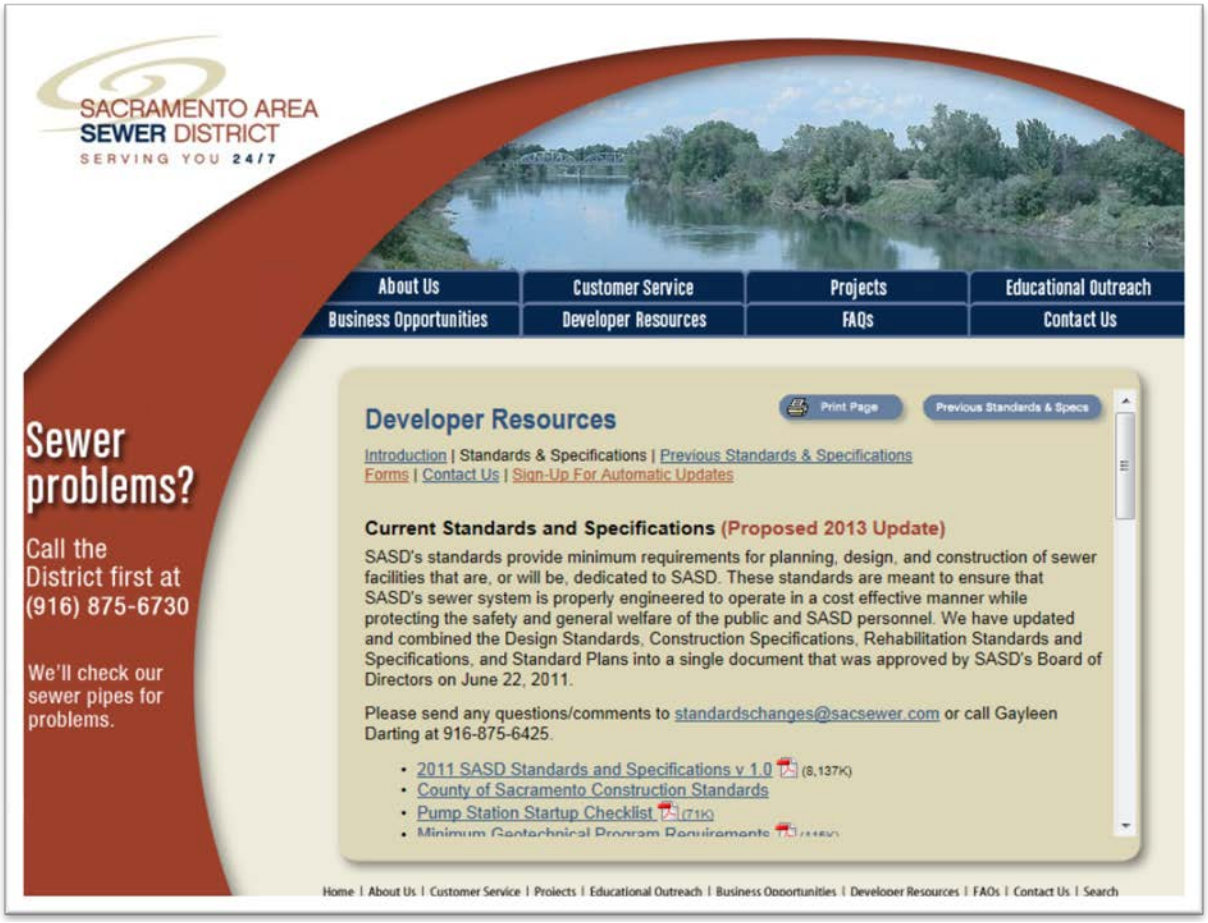
Through the District's Access Permit Process, SASD can ensure that rehabilitation, repair, and new construction projects will not disrupt or disturb existing District-owned facilities. As part of the Access Permit Process, if by-pass pumping or plugging is part of the scope of work, the Engineering Business Planning Section will perform a capacity analysis before access is approved. Based upon the results of the capacity analysis, SASD can condition the permit to restrict activities to a certain period of time to ensure an overflow does not occur.

If work is not being done per SASD requirements, the District or CMID on behalf of the District can issue a stop work notice to the Contractor. If internal staff is not working per SASD requirements, work is stopped, corrected and put into compliance. Construction is monitored by CCTV and if installation defects are identified, whether the work was done by District staff or contractor, the pipe is dug up and replaced. A one year warranty period is placed on all new construction work; if corrections are needed during the one year period, it is the contractor's responsibility to make the repair.

SASD performs trend analysis on the types of failures that occur during or after construction. If a failure, such as a stoppage is identified during CCTV review, District Maintenance and Operations staff or contractor, can record what caused the stoppage as well as where the stoppage occurred, through the District CMMS system. Corrective, non-emergency work orders are initiated by BCE requests from the Engineering Operations Support Section. Staff will run queries and perform data mining on the types of failures that occur, how often, and in what types of situations. These findings are brought to the OPT for regular review. In addition to event driven analysis, SASD also performs monthly review of their service levels through the SASD Service Level Bands Policy. The Policy outlines how the District responds to trends identified through the service levels and what means or resources need to be adjusted if the District is not meeting the established levels.

Materials:

- SASD Website



Deficiency Identification
• No deficiencies were identified in the interview for this element.

Document Review

Document List:

- SASD Standards and Specifications
- SASD Procedure for Deviations from the District Standards and Specifications
- SASD Standards and Specifications Strategy (*located in the SASD SSMP*)
- SASD Access Permit Process
- SASD Service Level Bands Policy

Deficiency Identification
• No deficiencies were identified during the document review of this element.

Practices Review

- Refer to the 2013 SASD SSMP Audit Practices Review Section of this report.

VI. Overflow Emergency Response Plan

Audit Interview

SASD uses the SSO Emergency Response Procedures Manual (SSOERPM) as their primary tool to ensure appropriate responses to all overflows. The manual documents SASD responses to emergency situations and procedures to identify, investigate, and report SSO's in compliance with the WDR requirements. The SSOERPM outlines the roles and responsibilities of staff when an SSO occurs; this includes contact information of SASD staff as well as other agencies, jurisdictions, and departments. The SSOERPM is a supporting document to the SASD SSMP.

SASD holds monthly stakeholder coordination meetings to discuss any changes that might need to occur to the SSOERPM such as new entities identified, change in contact information, or new procedures. Quarterly updates are performed and training is provided on all changes. SASD can give direction before the manual is changed to staff through tail-gate training sessions. In addition to the monthly meetings, SASD conducts regular debriefing meetings after large or unusual SSO events to review what lessons were learned, discuss any unusual circumstances, and implement any training methods or updates to procedures due to the event.

Tab 2 of the SSOERPM, Event Initiation, outlines how SASD staff as well as primary responders are notified of a SSO event. The public is aware of who to call through the "Call the District First" message that displays SASD's phone number on all vehicles, billing inserts, website, white pages, and all other outreach materials. Tab 5 covers the procedures to ensure that prompt notification is given to the appropriate agencies per the State Monitoring and Reporting Program. The table in Section 5.2 lists the people who need to be notified during a Category 1 SSO event which includes spills that reach the waterway. Agencies such as Cal-EMA, Environmental Health and the Regional Water Quality Control Board (RWQCB) must be notified within two hours of discovering the SSO reached a waterway. In addition to the phone call to the Regional Water Control Board, the SSO Responder must send an email notification to the RWQCB contact no more than 24 hours after becoming aware that the SSO reached the waterway.

Tab 13, Public Interface, outlines how SASD staff will handle media interest, crowd control and traffic control. SASD works with the Sacramento County Construction Management and Inspection Division (CMID) when scheduling and setting up traffic control for emergency situations. All Maintenance and Operations staff are trained in traffic control measures and procedures.

Training is provided to SASD staff, in such sections as Maintenance and Operations, Customer Care, Flow Monitoring and other staff who conduct field work, on the procedures used to respond to SSO's. Annual training is conducted for Pre-Checker and SSO Responders. Training for contractors is conducted primarily at the pre-construction meeting on general awareness and special project provisions; SSO response procedures; reporting and containment procedures.

To ensure adequate clean-up has been performed on SSO's that reach waterways, water sampling is conducted at the time of the event on an un-impacted area to get a baseline reading. A sample is then taken at the entry point as well as downstream until a spot is found where the results are similar to the baseline, that area is then used for the dam location and clean-up is performed. Follow-up sampling is performed after the event, if sampling results are consistent with the baseline samples; clean-up is determined complete. In addition to sampling, any time SASD introduces water not natural from a stream; it is de-chlorinated to ensure chemicals are not being added that might damage the environment.

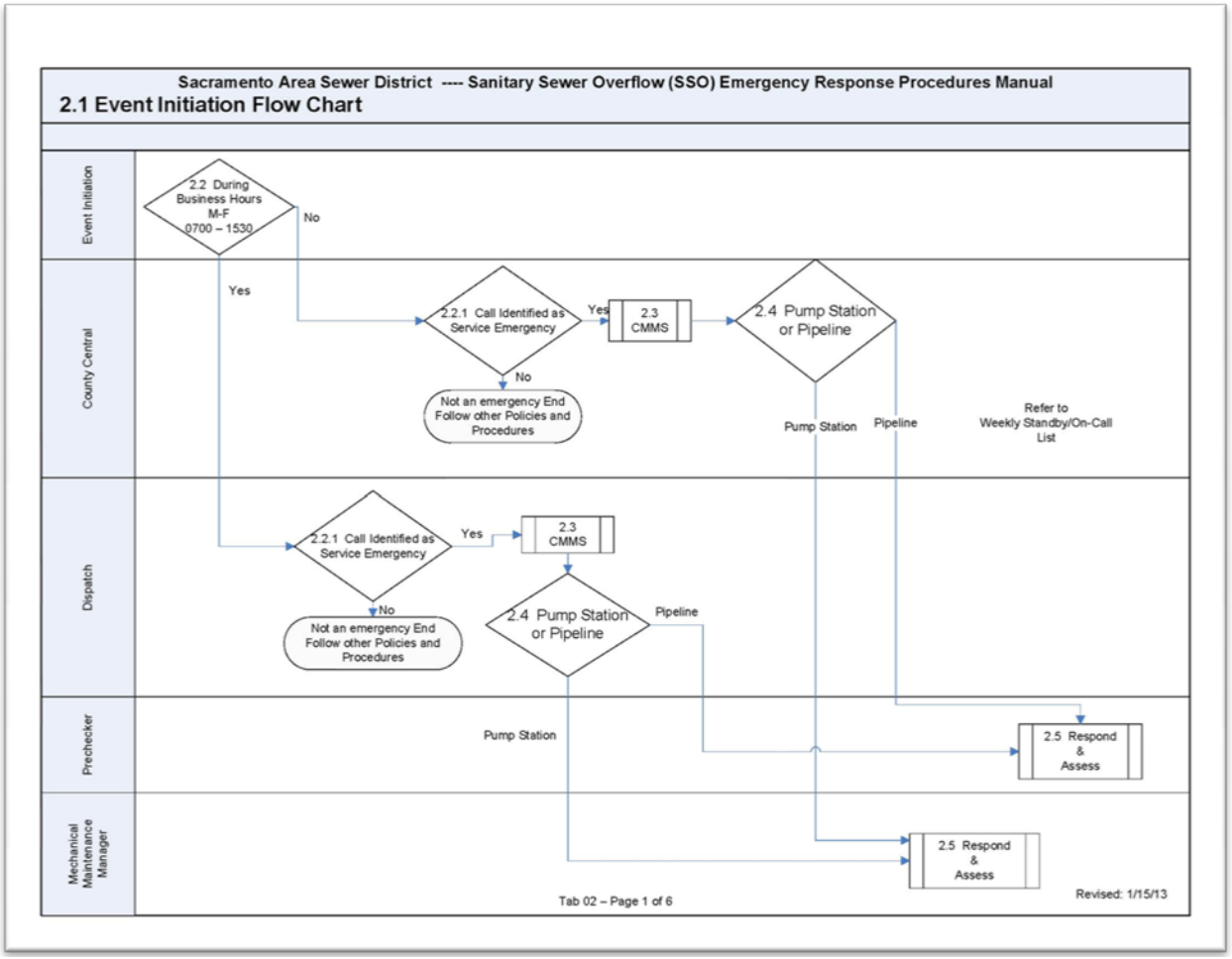
How SASD reports all SSO's in accordance with State Monitoring and Reporting Program and other state laws is outlined in Tab 12, CIWQS/RWQCB Reporting, in the SSOERPM. For Category 2 SSO's, The Maintenance and Operations Superintendent certifies the data entered in the CIWQS database within 30 days after the end of the calendar month in which the SSO occurs. Five-day reports for Category 1 SSOs are submitted to the Regional Water Quality Control Board. Reports consist of a cover letter; photographs; chronology of events; Sanitary Sewer Overflow Report Form; water sample results, if necessary; and detailed overflow volume calculations, if necessary. This report is reviewed and approved by the Director of Operations before being submitted to the RWQCB. For Category 1 SSOs a report is created in the on-line SSO system no later than 3 business days after SASD is notified of the SSO and a final certified report is completed within 15 calendar days of the completion of the SSO response and remediation.

In addition to the CIWQS reporting, SASD Maintenance and Operations staff run weekly reports in Maximo of all service requests and work orders associated with a SSO that the District is responsible for and what status they are currently in. Additional monthly reports are run for a quality control check to ensure all information was captured in the appropriate timeframe.

SASD uses their Board approved service levels to track performance in SSO emergency responses as well as determine staffing levels. SASD's Service Call Response Time service level measures the percentage of on-time arrivals, with a 95% target, to a customer service request call, which SASD staff have established a two hour response target. SASD's Service Restoration Time service level measures the percentage, with a 90% target, of customers whose sewer service is restored within the on-time window, four hours if a dig-up is not required, and six hours if a dig-up is required, with no sewer use limitation for the customer. To determine that the response was adequate to the public, customer service surveys are distributed to every customer on every call responded to. To be consistent with other collection system agencies, SASD also participates with other industry groups to develop best management practices for response time and activities.

Materials:

- SSOERPM – Figure 2.1 - Event Initiation Flow Chart



Deficiency Identification
• No deficiencies were identified in the interview for this element.

Document Review

Document List:

- SASD SSO Emergency Response Procedures Manual
- SASD SSO Emergency Response Procedures Manual Training 2013

Deficiency Identification
• Traffic Control Plan Policy and Procedure: Policy is referenced in SSOERPM, but is not located in manual or SSMP. Policy is located on Policies and Procedures SharePoint site, but has not been updated since 2007.

Practices Review

- Refer to the 2013 SASD SSMP Audit Practices Review Section of this report.

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

Audit Interview

SASD determined that they do have a FOG issue that led to the development and implementation of the SASD's FOG Control Program. In 2012, SASD conducted an updated FOG Source Control Study specific to FOG stoppages in main lines, which confirmed the data from previous studies that indicates the majority of SASD's overflow problems were due to FOG produced by residential areas.

Over the past 10 years, SASD has maintained and regularly updates their website created for their FOG Control Program, www.stoptheclog.com. The website provides educational content on how to prevent and dispose of FOG; a list of FOG Disposal Stations and best management practices for residential, commercial and industrial customers. Areas of the website are dedicated to Residents, Food Service Establishments, Rental Owners, Educators and Kid's. The website also gives the public an opportunity to comment and contact the District. In 2012, the SASD FOG Program won two national Publication Excellence awards for the website as well as the program logo, slogan and key message from the 2012 APEX awards.

In addition to the stoptheclog website, SASD staff attends scheduled public outreach events within the District service area with educational FOG materials. SASD also conducts annual media relations which includes social media to educate the public on FOG control. The District has community partnerships with the Rental Housing Association to educate tenants on the proper disposal of FOG as well as with the Sacramento Bee Media and Education Program to provide outreach to school children.

The SASD Sewer Ordinance provides the District with the legal authority to prohibit discharges into the sewer system. Section X.X Prohibited Discharges, prohibits discharge to the District sewer system for *"Fats, oils, and grease in amounts, either alone or combined with other discharges, that cause any build-up in any portion of the District sewer collection system*". Section X.X Grease Management Practices and Section X.X Grease Interceptors describe the District requirements for installing and maintaining grease removal devices and grease interceptors as well as record keeping of maintenance performed. The SASD Standards and Specifications also reference the SASD Sewer Ordinance on the requirement of grease interceptors. Additionally, the Fats, Oils, and Grease Control Program Information Kit for Food Service Establishments and the stoptheclog website contain the best management practices for grease trap and interceptor maintenance. The Wastewater Source Control Section's Standard Operating Procedures outline the reporting requirements for FOG incidents.

The SASD Sewer Ordinance provides the District the authority to inspect and the right to enter grease producing facilities. Section X states the District has the *"Authority to monitor discharge and take enforcement action for inadequate control of fats, oil, and grease and ineffective facility maintenance practices*". SASD utilizes the Wastewater Source Control Section staff to inspect as well as provide enforcement for grease producing facilities. SASD meets monthly with the FOG Control Manager, enforcement staff, and CCTV review staff to discuss recent incidents and actions taken as well as any upcoming educational events.

These meetings assist SASD with advance planning and budgeting for staff. Presently, SASD is developing a pro-active inspection program that will enhance the Food Establishment portion of the FOG Control Program.

In January of 2013, SASD implemented their Emergency Response Plan which is used by staff to identify, track and respond to non-compliance and to select he enforcement action most appropriate for a given violation. When FOG has been identified as the source of an SSO through field or CCTV inspections, SASD staff can trace where the incident occurred and advise the customer directly of the incident through advisory or notice of violation notifications. If a the source of the FOG is not clearly identifiable, SASD sends notification letters to customers to inform them of the FOG related overflow and best management practices for reducing FOG output. All advisory letters and notice of violations for FOG incidents are tracked in SASD'S CMMS, Maximo.

SASD identifies areas of their system that are subject to FOG through monthly main line stoppage reports of SSOs or blockages. Once an inspection identifies a FOG accumulation, SASD crews will clean the line, perform a follow up CCTV inspection and review and through the SASD TVI Policy a preventive maintenance schedule is determined for the pipe segment.

SASD uses various implemented source control measures including the SASD and SRCSD Ordinances; District Standards and Specification; SASD Enforcement Response Plan and other strategies, policies and procedures and preventive maintenance and CCTV programs to control sources of FOG discharges to the sewer system.

Materials:

- www.stoptheclog.com (*see the website for the following information*)
    - StoptheClog.com website media relations awards
    - Best Management Practices Poster
    - Fat Facts Training Video
    - Food Services Establishment Information Sheets
    - FOG Disposal Stations

Please refer to the Appendix of this report for the following documents:

- 2012 Special Events calendar
- Safetyville Sponsorship –SASD Building Visitors
- School Outreach Reports for 2011 and 2012
- SASD Scope of Work Proposal 2012-2013 with Crocker and Crocker
- Fats, Oils, and Grease Control Program Information Kit
- Wastewater Source Control Section FOG Response Log
- Samples of Wastewater Source Control Responses' to Food Service Establishment
- Sample Commercial Advisory Letter
- List of FOG Haulers
- 2011-2012 Main Line Stoppage Report Analysis
- 2012 FOG Source Study – FOG Stoppages – Main lines

- 2012 SASD State of the District Report – Community Outreach and Events

COMMUNITY OUTREACH AND EVENTS

Education and awareness efforts about SASD services and programs continued in 2012 through participation in six community events within the Sacramento region. SASD's outreach booth was visited by over 45,000 attendees who asked a broad range of questions and received information from staff. Over 7,500 pieces of promotional items and 2,500 sets of educational materials were disseminated to booth visitors during all six events.

Booth visitors pledged to properly dispose of FOG at the Elk Grove Giant Pumpkin Festival

Young booth visitor enjoying SASD's interactive maze during Yarmarka Russian Festival

FATS, OILS AND GREASE PROGRAM

Fats, oils and grease (FOG) combined with roots in the sewer system can become massive, cement-like clogs and cause over half of SASD's sewer backups and overflows. These problems can disrupt customers, are expensive to clean and can harm the environment. To address this, SASD has a vigorous, proactive, award-winning FOG Public Education and Outreach Program that utilizes a multi-faceted approach to educate the local community about proper FOG disposal methods. Elements of the program conducted annually include:

stop the clog | can your fats oils & grease

- Strong program identity
- Interactive website (StopTheClog.com)
- Participation at community events
- Distribution of residential and commercial outreach materials
- Media relations, social media and advertising
- Stakeholder and school outreach via partnerships (i.e. Rental Housing Association, Sacramento Bee's Media in Education Program, Safetyville-USA)
- Food service establishment training module

2012 FOG Data Analysis

An analysis of FOG-related sewer overflows and stoppages was completed in March 2012. The analysis reaffirmed earlier studies, which indicate that the majority of FOG-related sewer overflows and stoppages occur in residential areas. Thus, SASD's FOG Program efforts in 2012 continued to focus primarily on public education and outreach.

- FOG Disposal Tips Flyer

TENANT COOPERATION STARTS WITH INFORMATION.

Residents make the biggest difference when it comes to reducing sewer backups and overflows. Why? The majority of FOG-related sewer backups and overflows originate in residential areas.

Encourage your tenants to follow these FOG-related tips to reduce clogs, sewer backups and keep maintenance costs down:

DO

Pour cooled fats, oils and grease (FOG) into their original container or another sealable container like a coffee can. Once solidified, place the container in the trash. If you have a lot of FOG, mix it with kitty litter and dispose of it in a trash bag.

Scrape all fatty and greasy food scraps into the trash before washing your dishes.

Use a sink strainer while rinsing dishes to catch any remaining fatty food items or other trimmings.

DON'T

Don't put FOG down the drain.

Don't use hot water and soap to "dissolve" FOG and wash it down the drain. The FOG will harden when cooled.

Don't use your garbage disposal to wash fatty and greasy food scraps away. Meat scraps and other fatty items tossed down the drain can clog sewer pipes.

Don't put egg shells down your drain or disposal. The shells mix with FOG to create a plaster-like substance that blocks sewer pipes.

Look for more tips and tools for tenants in the future from the Rental Housing Association and the Sacramento Area Sewer District.

For more information on FOG prevention, visit **www.stoptheclog.com**.

Sewer Problems? For more help and information, call your local sewer service provider. If you are served by SASD, call us at 916-875-6730.

SACRAMENTO AREA SEWER DISTRICT
SERVING YOU 24/7

Deficiency Identification
• No deficiencies were identified in the interview for this element.

Document Review

Document List:

- Wastewater Source Control Section FOG Incident Response Standard Operating Procedures
- SASD Comprehensive FOG Control Program (draft version)
    - Companion Document

Deficiency Identification
• No deficiencies were identified during the document review for this element.

Practices Review

- A review of practices was not applied to this element of the SSMP.

VIII. System Evaluation and Capacity Assurance Plan

Audit Interview

SASD's system capacity evaluation starts with the SASD five-year interval Sewer Capacity Plan (formally referred to as the Master Plan). The Sewer Capacity Plan (SCP) has two major components: 1) An evaluation of the existing system's capacity performance and 2) Updates to potential sewer trunk system expansion plans to serve future development. The SCP details how SASD selected the flow generation criteria, including land use assumptions and design storm conditions. The SCP outlines how the dynamic model is used and what parameters and criteria are used in the model. The modeling results help identify potential capacity deficiencies that lead to identifying and developing a list of projects (short term and mid-range) that can be used for SASD's Capital Funding Projection (CFP). The CFP is used to evaluate the amount of capital funding that may be needed to ensure collection system reliability and sustain operation.

To evaluate the physical system relative to the model, model calibration is performed using active flow data collected by SASD's Flow Monitoring group from at least 70 active flow metering devices in SASD's system. SASD determines what types of meters are needed in certain situations to collect the data needed for the specific projects or studies.

Capacity Management utilizes a 5-year performance storm (determined from SASD's response to 70-years of historic storm data) to evaluate the performance of existing facilities. A conservative 10-year synthetic storm is used to size new facilities. SASD's Capacity Management uses the SASD Design Standards, which details the formulas used to calculate peak wet weather flows (used to size new facilities).

To ensure that the design criteria set in the SASD Standards is providing sufficient capacity, correlation is performed when new facilities are designed with the design standards equation that developers use with the model prediction of flow to determine if SASD is designing their facilities appropriately. SASD also designs for build-out using the performance storm model. SASD's design criteria have proven to be sufficient due to the very few capacity related events, no events occurred in 2011 or 2012.

In regards to I&I reduction, if the model predicts RDI percentage greater or equal to 5%, it requires SASD to look at a RDI reduction alternative. SASD has developed a RDII Reduction Strategy which considers evaluating the cost effectiveness of RDII reduction alternatives. The cost effectiveness of an RDII reduction option is determined from the comparison of RDII reduction alternatives versus non –RDII reduction alternatives.

SASD's pro-active response to identify areas of capacity constrained is through the Under Capacity Failure Mode Strategy (UCFMS). The UCFMS's investigation process is triggered in three ways: 1) SCP model predicts an overflow under existing conditions; 2) Review of a development's sewer study indicates predicted capacity deficiencies in the existing system (due to new development connections); or 3) Through a reported overflow (or significant surcharge) from the M & O Section that may be caused by capacity deficiencies. The results from the screening and hydraulic assessments performed in this

strategy establish whether corrective action is required. If corrective action is required, a project is further developed through the Project Development Process. Areas that are identified as having possible capacity constraints are put on new preventive maintenance schedules or if previously identified, the maintenance timing and/ or frequency will be shifted through the Preventive Maintenance (PM) Program.

The Project Development Process, which is a decision process for SASD Capital Projects, determines the most cost effective alternative as well as determining a timeline for design and construction of the project. Projects that have been identified through the UCFMS as having the higher amount of predicted SSOs will be scheduled first. Project schedules are based on various factors including project complexity, size, and season. During the project initiation phase, the project schedule and budget are developed.

The SASD Annual Budget Book contains the CFP Budget Summary and Schedule as well as the CIP List. The SASD Revenue Model also contains updated schedules and budget needs. Updates are performed annually to the funding and budget schedules. SASD's long range projections capture the costs and cash needs from the CFP as well as the recommendations for build-out projects from the SCP for the Long Term Financial Plan. The Long Term Financial Plan also identifies the factors that may possibly affect the outlook of expenses and funding needs which includes sensitivity analysis and benchmarking with other similar agencies.

For new SASD pump stations, the SASD Design Standards require 4 hour peak wet weather storage in case the pumps shut down or electricity is not provided, this ensures that SASD has adequate time to get generator out to the site to restart the pump. For existing pump stations, SASD has on-site and portable generators if storage is not available. For existing pump stations that are not at current design standards, money has been earmarked to upgrade these stations to provide for better reliability.

SASD's Maintenance and Operations Section monitors the pumping stations' operations and has criteria in place to ensure redundancy in pumping operation. If an emergency storage issue arises, M & O could determine whether the pumps have been running for an extended period of time (based on the pumping station's run time). Capacity Management receives the pump station capacity information from the SASD M & O Section and inputs the information into the model.

Materials:

- Summary of Findings from Continuous Simulation Modeling for SASD Performance Storm Development – January 2008.
    - Please refer to the Appendix of this report for this document.

Deficiency Identification
• No deficiencies were identified during the interview for this element.

Document Review

Document List:

- 2010 System Capacity Plan
- Under Capacity Failure Mode Strategy (*located in the SASD SSMP*)
- PDP-1 RDII Reduction Strategy
- SASD Annual Budget Book

Deficiency Identification
• No deficiencies were identified during the document review for this element.

Practices Review

- A review of practices was not applied to this element of the SSMP.

IX. Monitoring, Measurement, and Program Modifications

Audit Interview

SASD uses their service levels to monitor and measure the activities outlined in the various programs and strategies in the SSMP. The service levels assist the organization in making management decisions which leads to the development or improvement of programs to meet the goal of reducing and preventing SSOs.

SASD's OPT was established as the primary decision making body for all District business related decisions. Before a strategy is brought before the OPT, SASD staff monitor and analyze trends on their service levels as it relates to existing programs and strategies; from the results of the data analysis staff determines whether a new strategy needs to be developed or an existing strategy needs to be revised; the strategy is then developed or revised and presented to the OPT. The OPT will determine funding, staffing, and schedule for the approved strategy. SASD reviews their strategies and programs on an annual basis and revise every 24 months. Event activity may also trigger the review and revision of strategies before the revise cycle change.

The SASD Incorrect Cleaning Frequency Failure Mode Strategy is a prime example of how monitoring and measurement is used to support the goal of reducing SSO's. This strategy was put in place to reduce the number of SSO's based upon incorrect cleaning frequency, the incorrect activity selected for the cleaning, poor technique or the incorrect selection of cleaning as the solution. Staff records the information during the cleaning process, the data collected is analyzed and reported and a decision is made to adjust the preventative maintenance frequency.

SASD is primarily data driven; therefore all work done, asset by asset, is recorded in the District's CMMS, Maximo. Maximo is structured to provide reports on any and all data collected, which includes failure reports which are used extensively to determine the need to develop or improve strategies. To ensure the effectiveness of the data applications used, SASD has developed an Asset Data Applications User's Group and Project Team, which allows users to provide feedback and request training and configuration changes. The applications are monitored and are continuously improved to provide the most up-to-date and accurate information accessible to District staff.

To monitor the line of authority and chain of communication, SASD ensures the roles and responsibilities defined in the SSMP and supporting documents match the current organization structure. If there are areas where efficiencies can be gained to run the business, the District will make the appropriate changes.

The SASD Sewer Ordinance is updated on a regular basis. The public and internal staff can comment on the proposed revisions as well as make suggestions for additional changes. The District Standards and Specifications are updated on an annual basis and similar to the Ordinance, the public and District staff can provide comments and suggestions.

The effectiveness of the SASD's operation and maintenance program is measured through the results of the preventive maintenance programs. The causes of the overflows are identified; data is analyzed; changes and modifications are made to the programs and service level results indicate the effectiveness of the programs. For large scale rehabilitation and replacement projects, the Project Development Plan Process reviews whether the correct action was taken.

One method to gauge the effectiveness of the SASD Design Standards is through the Deviation from District Standards and Specifications Procedure. Deviations are put through a thorough review and approval process. If the same type of request is repeatedly submitted, District staff will determine if there is a need to make a change to the Standards. Additionally, if during testing and inspection, an ineffective mechanism or method is identified by crews or contractors this could trigger a change to the Standards.

SASD conducts monthly stakeholder coordination meetings and performs quarterly updates to monitor and measure the effectiveness of the SSO Emergency Response Procedures Manual (SSOERPM). SASD uses the CIWQS Performance Report to review net percent of volume spilled to measure their performance versus the state in recovering SSO's. Performance results could trigger a change to the containment and recovery procedures outlined in the SSOEPRM.

SASD continually improves their FOG Control program. Data analysis collected from FOG related SSO's assist in identifying deficiencies so that SASD can develop and implement solutions. All enforcement measures for FOG incidents are tracked in Maximo.

The effectiveness of SASD's System Capacity Plan has been measured through the positive results from the relief projects in place and low amount of capacity related overflows.

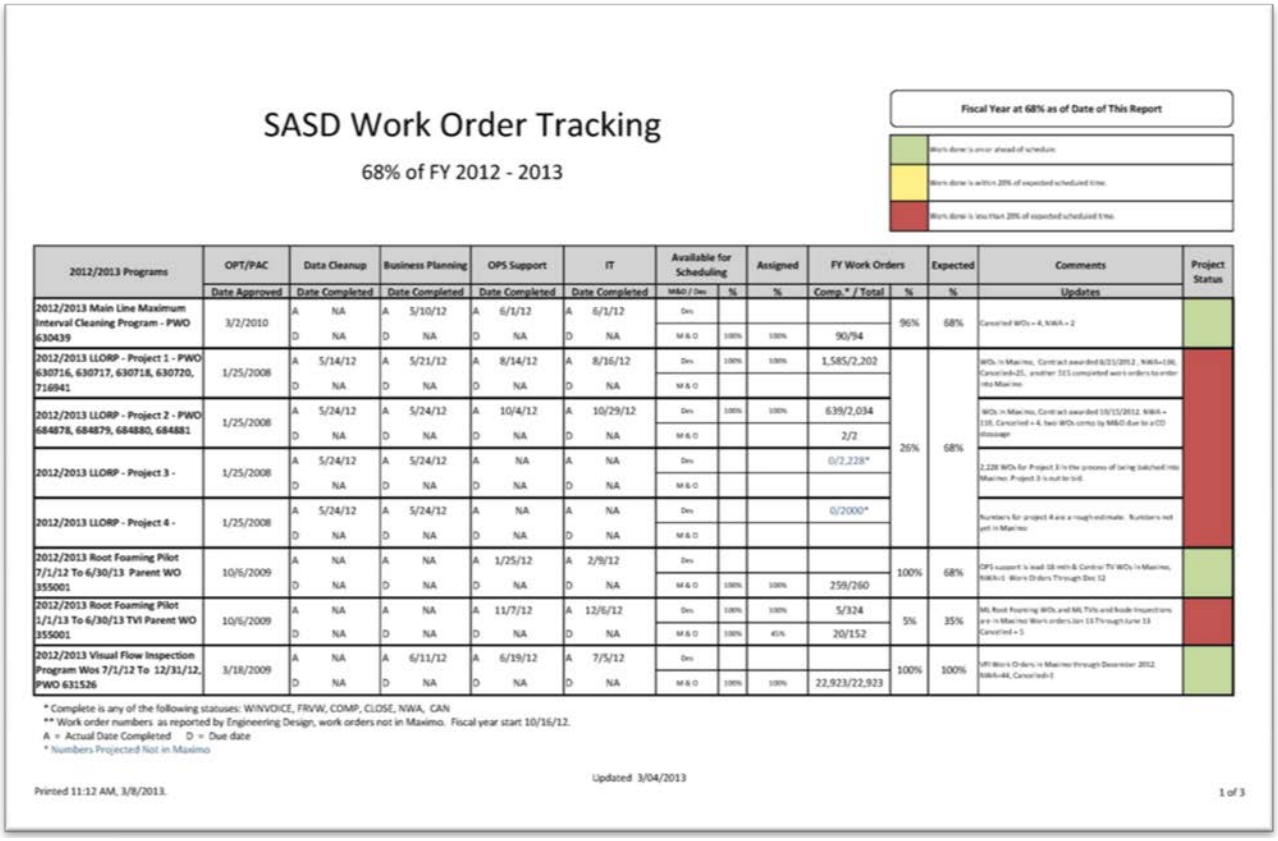
SASD's Management Plan Assessment Program was developed to meet the requirements of the Monitoring, Measurement, and Program Modification element of the SSMP. SASD measures the effectiveness of its monitoring and measuring programs through their service levels. The service levels measure the outcome of SASD's practices which directly relates to the effectiveness of the programs in the SASD SSMP.

SASD conducts an internal audit, every two years, to measure the effectiveness of their SSMP. Through the audit, deficiencies are identified, solutions are developed, and an action plan is then created and implemented.

SASD's Communication Program effectively provides information to its customers and stakeholders about the SSMP and its elements; provides public review and comment on the SSMP, ordinances, and standards and specifications through the website; conducts public outreach through community events, workshops, and seminars; and provides annual service level reports to the public and the Board. SASD recently created several social media site as another avenue for public outreach. The sites can track the number visitors and give the public an opportunity to contact the District.

Materials:

- 2012-2013 Program Work Order Tracking Report Snapshot



SASD Work Order Tracking

68% of FY 2012 - 2013

Fiscal Year at 68% as of Date of This Report

2012/2013 Programs	OPT/PAC	Data Cleanup	Business Planning	OPS Support	IT	Available for Scheduling		Assigned	FY Work Orders		Expected	Comments	Project Status
	Date Approved	Date Completed	Date Completed	Date Completed	Date Completed	M&O / Dev	%	%	Comp * / Total	%	%	Updates	
2012/2013 Main Line Maximum Interval Cleaning Program - PWO 630439	3/2/2010	A NA D NA	A 5/10/12 D NA	A 6/1/12 D NA	A 6/1/12 D NA	Dev M & O	100%	100%	90/94	96%	68%	Canceled WOs = 4, NWA = 2	
2012/2013 LLORP - Project 1 - PWO 630716, 630717, 630718, 630720, 716941	1/25/2008	A 5/14/12 D NA	A 5/21/12 D NA	A 8/14/12 D NA	A 8/16/12 D NA	Dev M & O	100%	100%	1,585/2,202	26%	68%	WOs in Maximo. Contract awarded 6/21/2012., NWA=106, Canceled=25., another 315 completed work orders to enter into Maximo	
2012/2013 LLORP - Project 2 - PWO 684878, 684879, 684880, 684881	1/25/2008	A 5/24/12 D NA	A 5/24/12 D NA	A 10/4/12 D NA	A 10/29/12 D NA	Dev M & O	100%	100%	639/2,034 2/2			WOs in Maximo. Contract awarded 10/15/2012. NWA = 116, Canceled = 4, two WOs comp by M&O due to a CO closeup	
2012/2013 LLORP - Project 3 -	1/25/2008	A 5/24/12 D NA	A 5/24/12 D NA	A NA D NA	A NA D NA	Dev M & O			0/2,228*			2,228 WOs for Project 3 is the process of being batched into Maximo. Project 3 is out to bid.	
2012/2013 LLORP - Project 4 -	1/25/2008	A 5/24/12 D NA	A 5/24/12 D NA	A NA D NA	A NA D NA	Dev M & O			0/2000*			Numbers for project 4 are a rough estimate. Numbers not yet in Maximo	
2012/2013 Root Foaming Pilot 7/1/12 To 6/30/13 Parent WO 355001	10/6/2009	A NA D NA	A NA D NA	A 1/25/12 D NA	A 2/9/12 D NA	Dev M & O	100%	100%	259/260	100%	68%	OPS support is lead: 16 min & Control TV WOs in Maximo, NWA=1 Work Orders Through Dec 12	
2012/2013 Root Foaming Pilot 1/1/13 To 6/30/13 TVI Parent WO 355001	10/6/2009	A NA D NA	A NA D NA	A 11/7/12 D NA	A 12/6/12 D NA	Dev M & O	100%	100% 45%	5/324 20/152	5%	35%	ML Root Foaming WOs and ML TVIs and Node Inspections are in Maximo Work orders Jan 13 Through June 13 Canceled = 5	
2012/2013 Visual Flow Inspection Program Wos 7/1/12 To 12/31/12, PWO 631526	3/18/2009	A NA D NA	A 6/11/12 D NA	A 6/19/12 D NA	A 7/5/12 D NA	Dev M & O	100%	100%	22,923/22,923	100%	100%	VFI Work Orders in Maximo through December 2012. NWA=44, Canceled=1	

* Complete is any of the following statuses: WINVOICE, FRVW, COMP, CLOSE, NWA, CAN

** Work order numbers as reported by Engineering Design, work orders not in Maximo. Fiscal year start 10/16/12.

A = Actual Date Completed D = Due date

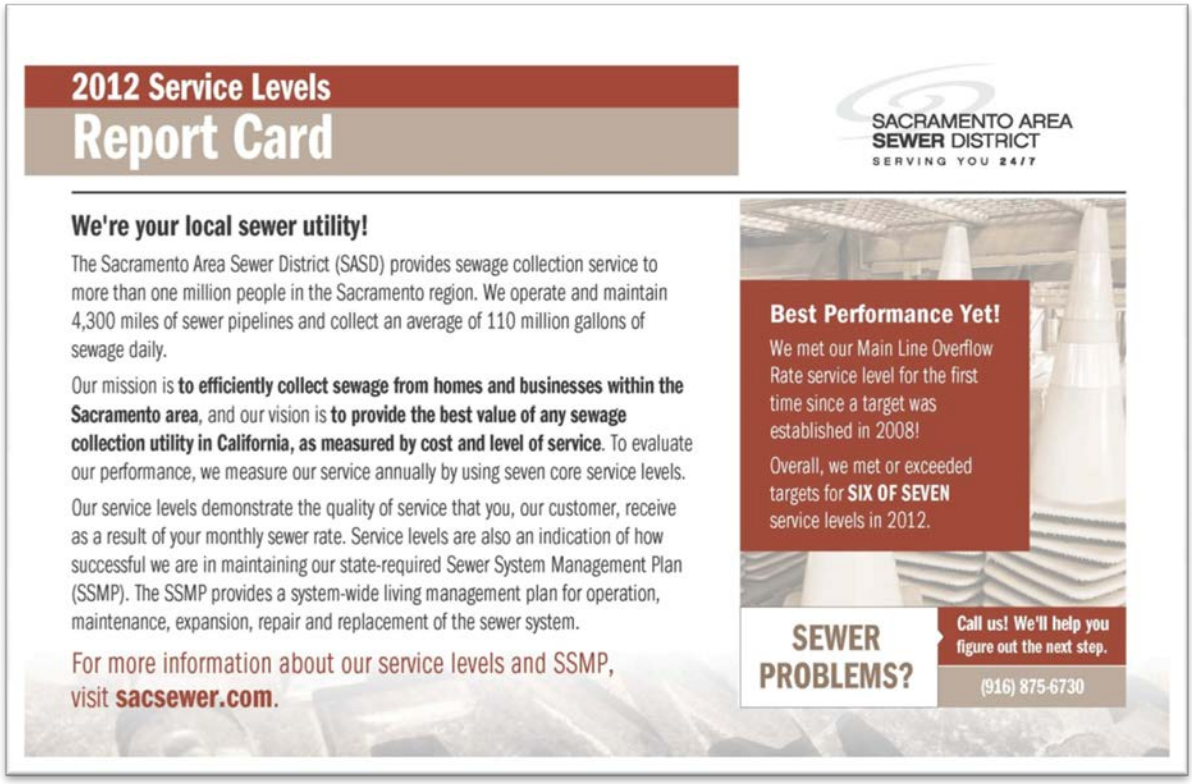
* Numbers Projected Not in Maximo

Updated 3/04/2013

Printed 11:12 AM, 3/8/2013.

1 of 3

- 2012 SASD Annual Service Level Report Card
  - The SASD Annual Report card can be found on the SASD website: http://www.sacsewer.com/reportcard.html



2012 Service Levels
Report Card

SACRAMENTO AREA SEWER DISTRICT
SERVING YOU 24/7

We're your local sewer utility!

The Sacramento Area Sewer District (SASD) provides sewage collection service to more than one million people in the Sacramento region. We operate and maintain 4,300 miles of sewer pipelines and collect an average of 110 million gallons of sewage daily.

Our mission is **to efficiently collect sewage from homes and businesses within the Sacramento area**, and our vision is **to provide the best value of any sewage collection utility in California, as measured by cost and level of service**. To evaluate our performance, we measure our service annually by using seven core service levels.

Our service levels demonstrate the quality of service that you, our customer, receive as a result of your monthly sewer rate. Service levels are also an indication of how successful we are in maintaining our state-required Sewer System Management Plan (SSMP). The SSMP provides a system-wide living management plan for operation, maintenance, expansion, repair and replacement of the sewer system.

For more information about our service levels and SSMP, visit **sacsewer.com**.

Best Performance Yet!

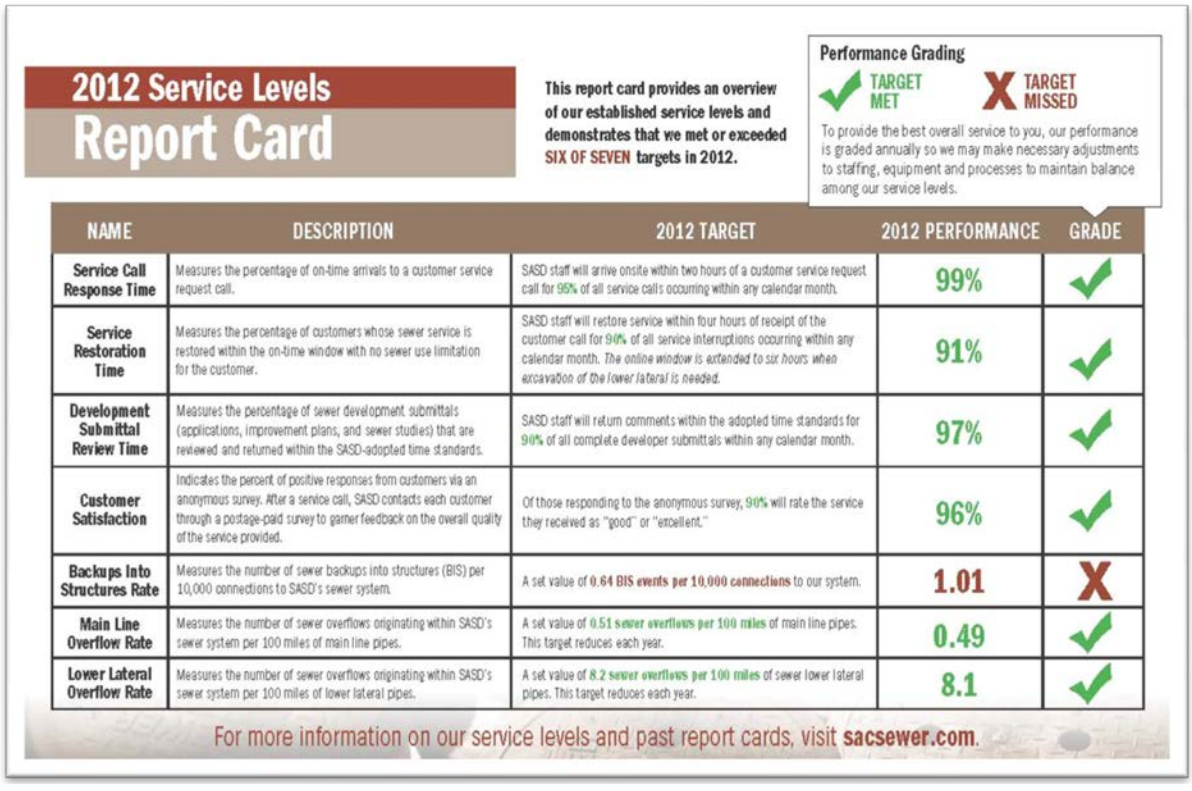
We met our Main Line Overflow Rate service level for the first time since a target was established in 2008!

Overall, we met or exceeded targets for **SIX OF SEVEN** service levels in 2012.

SEWER PROBLEMS?

Call us! We'll help you figure out the next step.

(916) 875-6730



2012 Service Levels
Report Card

This report card provides an overview of our established service levels and demonstrates that we met or exceeded SIX OF SEVEN targets in 2012.

Performance Grading

✓ TARGET MET X TARGET MISSED

To provide the best overall service to you, our performance is graded annually so we may make necessary adjustments to staffing, equipment and processes to maintain balance among our service levels.

NAME	DESCRIPTION	2012 TARGET	2012 PERFORMANCE	GRADE
Service Call Response Time	Measures the percentage of on-time arrivals to a customer service request call.	SASD staff will arrive onsite within two hours of a customer service request call for 95% of all service calls occurring within any calendar month.	99%	✓
Service Restoration Time	Measures the percentage of customers whose sewer service is restored within the on-time window with no sewer use limitation for the customer.	SASD staff will restore service within four hours of receipt of the customer call for 90% of all service interruptions occurring within any calendar month. *The online window is extended to six hours when excavation of the lower lateral is needed.*	91%	✓
Development Submittal Review Time	Measures the percentage of sewer development submittals (applications, improvement plans, and sewer studies) that are reviewed and returned within the SASD-adopted time standards.	SASD staff will return comments within the adopted time standards for 90% of all complete developer submittals within any calendar month.	97%	✓
Customer Satisfaction	Indicates the percent of positive responses from customers via an anonymous survey. After a service call, SASD contacts each customer through a postage-paid survey to garner feedback on the overall quality of the service provided.	Of those responding to the anonymous survey, 90% will rate the service they received as "good" or "excellent."	96%	✓
Backups Into Structures Rate	Measures the number of sewer backups into structures (BIS) per 10,000 connections to SASD's sewer system.	A set value of **0.64 BIS events per 10,000 connections** to our system.	1.01	X
Main Line Overflow Rate	Measures the number of sewer overflows originating within SASD's sewer system per 100 miles of main line pipes.	A set value of **0.51 sewer overflows per 100 miles** of main line pipes. This target reduces each year.	0.49	✓
Lower Lateral Overflow Rate	Measures the number of sewer overflows originating within SASD's sewer system per 100 miles of lower lateral pipes.	A set value of **8.2 sewer overflows per 100 miles** of sewer lower lateral pipes. This target reduces each year.	8.1	✓

For more information on our service levels and past report cards, visit **sacsewer.com**.

Deficiency Identification
• No deficiencies were identified during the interview for this element.

Document Review

Document List:

- SASD Service Level Report for December 2012
- Organizational Planning Team Charter
- Management Plan Assessment Program (*located in the SASD SSMP*)

Deficiency Identification
• No deficiencies were identified during the document review of this element.

Practices Review

- A review of practices was not applied to this element of the SSMP.

X. SSMP Program Audits

Audit Interview

SASD uses their established service levels and the related SASD Service Level Bands Policy as an indicator to ensure that SASD is providing the reliable service they have committed to. Additionally, SASD annually produces the SASD Asset Management Plan which outlines the District's objectives, intended activities, performance, income and expenditure required to meet those service levels.

To maintain and improve the condition of the collection system infrastructure, SASD has both reactive and proactive approaches. Specific to main lines, the SASD Structural Assessment Program is a proactive strategy that identifies which main lines, on a yearly basis, will have a CCTV inspection performed. The CCTV is the driver for asset specific evaluations to determine whether the District repairs, replaces, or maintains an asset. Through this program every main line will be CCTV inspected, which means every main line will receive an asset specific evaluation and a determination will be made if action needs to be taken.

To maintain and improve pump stations, annual inspections are performed in addition to monthly preventive maintenance work. As for lower laterals, the Lower Lateral Overflow Reduction Program identifies and prioritizes areas where cleaning needs to be performed in attempt to reduce overflows. The Asset Management Plan outlines other proactive programs such as the Visual Flow Inspection Program for manholes, Main Line Maximum Interval Cleaning Program and the Creek Protection Plan.

To ensure that SASD cost effectively provides adequate sewer capacity, the District relies on the System Capacity Plan to identify sewer capacity deficiencies. If a deficiency is identified it moves through a specific evaluation process using the Under Capacity Failure Mode Strategy and if action needs to be taken, it will move to the Project Development Plan Process where solutions are evaluated and ranked. A recommended action is proposed; often the action is to develop a project, which would then go to the Project Authorization Committee for approval for implementation.

For new facilities, SASD ensures adequate sewer capacity by being involved at initial development planning. The District evaluates the land use projections and ensures the system is designed to accommodate the land use criteria as well as making sure the facilities are sized properly when being constructed.

All of the programs contained in the SASD SSMP are designed towards minimizing the number and impact of SSO's. The SASD SSO Emergency Response Procedures Manual (SSOERPM) dictates to staff how to assess, respond and contain SSO's. Tab 6 of the SSOERPM specifically outlines the containment, recovery, and cleanup efforts. In the CIWQS Performance Report, there is a specific area that measures net to volume spill and spill to waterways; SASD has consistently been one of the highest ranked agencies in the state in the percentage of overflows that have been recovered and returned back to the sewer system.

SASD'S service levels are used as a tool to trigger the decision process on what action to take and where funding is expended relative to reducing the number as well as the size of SSO's. Once a determination has been made to take action, SASD performs a trend analysis to identify any correlations and identify what number is needed to meet the service level. A program is created, funding is developed and the program is presented to the Organizational Planning Team (OPT) for review and approval. SASD's service levels are evaluated and presented to the OPT annually through the Service Levels Bands Policy. The Service Level Bands Policy determines an increase or decrease of programs to reduce SSO's.

To demonstrate the effectiveness of the Service Level Bands Policy, the District gave the example of their recent success with meeting the Main Line Overflow Rate. SASD identified through the Service Level Bands Policy that the Main Line Overflow Rate was not being met and to resolve this issue, the District added the Main Line Maximum Interval Cleaning Program to the Main Line Stoppage Failure Mode Strategy, which proactively cleans main lines of a certain age. SASD also made modifications to the existing preventive maintenance program that assumed lines of certain age would be added to a preventive maintenance schedule and that lines in a certain location would have their preventive maintenance schedule reduced. Due to these changes, SASD was able to meet their meet their service level and reduce the number of SSO's.

SASD is currently developing a data driven Backup into Structures (BIS) Reduction Program. At the time of the audit interview, SASD was formulating alternatives to see which would be the most cost effective way to lower the rate. While the program is in the development phase, SASD did implement a Lower Lateral Backup into Structure Reduction Program in their Lower Lateral Stoppage Failure Mode Strategy to clean lower laterals in specific areas and install Sewer Relief Valves (SRV) where needed. Through this program, SASD identifies and documents the lower laterals that do not have cleanouts and will retroactively install them. To date, 70% of SASD's lower laterals identified as having cleanouts have SRV's installed which assists in reducing SSO's.

The Creek Protection Program effort was an example of SASD's process on deciding what is done and where funding is used in reducing the impact of SSOs in environmentally sensitive areas. To develop the Creek Protection Program a model was ran of all the creeks in the SASD service area to determine and rank the most critical creeks. For the high criticality creeks, SASD developed emergency response plans as a supplement to the SSOERPM to help identify where and how to recover sewer. SASD also participates in Creek Week activities to provide outreach to the public.

Deficiency Identification
• No deficiencies were identified during the interview for this element.

Document Review

Document List:

- SASD SSMP Audit Procedures
- SASD SSMP Audit Questionnaire
- SASD Structural Assessment Program (*located in the SASD SSMP*)

Deficiency Identification
• No deficiencies were identified in the document review for this element.

Practices Review

- A review of practices was not applied to this element of the SSMP.

XI. Communication Program

Audit Interview

SASD effectively communicates the development, implementation, and performance of the SASD SSMP to the public and stakeholders through a variety of methods including the SASD website, SASD Facebook page, SASD State of the District Report SASD monthly Service Levels Report and SASD Annual Service Levels Report Card.

The SASD website has the most current version of the SASD SSMP document for public review and comment. The website also contains the SWRCB WDR Order for Sanitary Sewer Systems as well as a link to the SWRCB site. Additionally, SASD provides other agencies and jurisdictions links to the SASD website. Currently, the SASD website welcomes public comments on the SSMP through a comment submittal form. This form allows the customer to submit comments and questions on any portion of the SSMP as well as request an appointment to review the Internal Audit.

SASD reports to the public and its stakeholders the status of SASD's Board approved Service Levels on a monthly basis through the SASD website. The monthly report describes the service level and the District established target. SASD's Public Affairs Office generates monthly service level posters that are posted throughout District offices. Annually, SASD publishes a report card on the SASD website of all the SASD service levels and how SASD measured up to the established targets. Various stakeholders receive an email notice and all SASD customers receive a utility bill insert from SASD when the report card is available on the website.

In regards to public outreach and education to SASD customers and stakeholders on SSO response activities, SASD advertises the message "Call the District First" on SASD's website, literature, vehicles and materials distributed at public events. SASD participates in multiple community outreach events throughout each year to promote its services and programs such as FOG. At these community events, SASD distributes public outreach materials such as SASD's fact sheet and brochure, which educates residents on if and when they encounter sewage. Additionally, when the public calls SASD Dispatch or County Central when encountering sewage, staff will instruct the customer on the correct steps to take.

SASD monitors the effectiveness of their communication program through various methods including impression tracking, number of website "hits", news coverage and the number of "likes" on their Facebook site. These methods, such as the impression tracking that were conducted during the 2012 FOG Media Campaign, tracks information to help SASD determine what communication methods are most successful.

SASD stated in the interview that they are in compliance per the WDR's definition of satellite when it relates to communication with tributary or satellite systems. SASD does not currently have any satellite systems; SASD is a satellite to SRCSD as a contributing agency. SASD's public outreach is focused on a customer level which means that any customer upstream, who is connected, whether it is a single lower lateral or a strip mall

with a series of businesses that are connected through a tributary private system, receives the same communication that SASD's individual customers would receive.

In relation to SASD's FOG Program, communication is specifically targeted to customers upstream of areas that have been identified as having grease stoppages. Notices are sent to advise customers that FOG has been identified in the area and steps the customers can take to reduce FOG.

Communication to the public and other stakeholders on SSO problems, including cost impacts and level of effort, is done through various efforts including the SASD SSMP Communication Program; SASD website; SASD Annual Service Levels Report Card; rate increase outreach (Proposition 218 Public Notification Process); SASD State of the District Report; and targeted outreach for specific programs (root foaming and main line lining projects).

Deficiency Identification
• No deficiencies were identified in the audit interview for this element.

Materials:

- Impression Tracking example from the 2012 FOG Media Campaign
  - Facebook (FB) Ads: 6,630,141 impressions = total # of times ads show up & 1,399 clicks = total # of clicks on ad & directing people to stoptheclog.com
  - FB Posts: 368 people = total # of people who saw post on News Feed, ticker or District's FB page
  - Sac Bee Ad: 80,000+ households & 100,000+ digital impressions = total # of times ad showed up on Sacbee.com
  - Electronic billboards: 52,500 displays = total # of times ad was displayed on billboard network & 3,265,642 impressions = total # of sets of "eyes" ad reached throughout commutes

- Community Outreach Events Schedule

Community Outreach Events

Employee Sign-Up Form

SACRAMENTO AREA SEWER DISTRICT
SERVING YOU 24/7

SASD needs support from staff to help fill shifts at various scheduled 2013 community outreach events. Employees will be compensated for their participation with either CTO or OT. Please mark the event(s) you are interested in and circle the shift you desire. Final scheduling will be confirmed later.

To participate in any event, this form must be filled out and returned to Paula Sanders in the Public Affairs Office by Friday, February 22, 2013.

REQUESTED EVENT(S) *(Mark desired events)*	EVENT/ACTIVITY	DATE	PARTICIPANTS NEEDED	MORNING SHIFT *(Circle desired shift)*	AFTERNOON SHIFT *(Circle desired shift)*
	Creek Week Celebration *(Carmichael Park – 5750 Grant Ave.)* *SASD Outreach Booth*	Sat., April 13	2 participants needed per shift	8:30 a.m. – 11:30	11:30 – 2:30 p.m.
	Creek Week Celebration *(Carmichael Park – 5750 Grant Ave.)* *SASD Manhole Labeling/Stenciling Program & Creek Clean-Up Activities*	Sat., April 13	4 participants needed all day *(must be able to read maps and identify manholes)*	9:00 a.m. – Noon	
	TWO DAY EVENT **Fair Oaks Spring Festival** *(Plaza & Village Park – 4150 Temescal St., Fair Oaks)*	Sat., May 4	2 participants needed per shift	9:30 a.m. – 12:30 p.m.	12:30 – 4:30 p.m.
		Sun., May 5	2 participants needed per shift	9:30 a.m. – 12:30 p.m.	12:30 – 4:30 p.m.
	Russian Yamarka *(Southside Park – 2115 6th St., Sacramento)*	Sat., May 18	2 participants needed per shift	8:30 a.m. – 1:00 p.m. 10 a.m. – 2 p.m.	1– 5:30 p.m.
	Safetyville Family Safety & Health Expo *(Safetyville, USA – 3909 Bradshaw Rd., Sacramento)*	Sat., June 15	2 participants needed per shift	9:30 a.m. – Noon 11 a.m. – 1 p.m.	Noon – 3:30 p.m.
	TWO DAY EVENT **Elk Grove Giant Pumpkin Festival** *(Elk Grove Regional Park – 9950 Elk Grove-Florin Rd., Elk Grove)*	Sat., Oct. 5	2 participants needed per shift	9 a.m. – 1 p.m. 11 a.m. – 3 p.m.	1– 5 p.m.
		Sun., Oct. 6	2 participants needed per shift	9 a.m. – 1 p.m. 11 a.m. – 3 p.m.	12:30 – 5:30 p.m.
	Safetyville Halloween Haunt *(Safetyville, USA – 3909 Bradshaw Rd., Sacramento)*	Sat., Oct. 19	2 participants needed per shift	9:30 a.m. – Noon 11 a.m. – 1 p.m.	Noon – 4:30 p.m.

PARTICIPANT NAME: (please print) _____ PHONE NUMBER: _____

LANGUAGES: (circle all that apply) Spanish, Russian, Hmong, Vietnamese, and/or other (please indicate) _____

SUPERVISOR NAME: (please print) _____ SUPERVISOR INITALS: _____

Employees will be compensated for their participation with either CTO or OT. Time should be coded to SASD Operations on all timesheets. If you have any questions about your compensation, please contact your supervisor. If you have specific questions about the events or shifts, please contact Paula Sanders in the Public Affairs Office at 876-6064.

Document Review

Document List:

- SSMP Communication Program (*located in the SASD SSMP*)
- SASD State of the District Report 2012
    - The State of the District Report can be found on the SASD website: http://www.sacsewer.com/pdf/rpt-sod-2012.pdf

Deficiency Identification
• No deficiencies were identified during the document review of this element.

Practices Review

- A review of practices was not applied to this element of the SSMP.

2013 SASD SSMP Audit Practices Review Section

2013 SASD SSMP Audit Practices Review Questions
Engineering: Design – Contract Work

Job Specific Questions:

1. What are the qualifications for a Contractor to perform work on SASD assets?
    - General engineering contractor's license
    - Financial strength and insurance and bonding capability
    - Experience and knowledge with underground utility work
    - Demonstration of sound judgment to protect workers, public, and the environment
    - Competence and compliance with safety regulations

2. How do you prepare contractors to successfully complete the work?

    Design
    - Researching work and identifying specific constraints or unique conditions which may hinder a contractor's ability to execute the work
    - Providing adequate documentation (contract drawings, specifications, special provisions, etc.) for the project

    Pre-Construction
    - Meeting before work starts to go over expectations and discuss questions or concerns that the project manager, inspection staff, or contractor may have
    - Review of SSO response, BMP's, and contract specifications
    - Discussing public outreach expectations

    Construction
    - Reviewing and responding to submittals (IIPP, Stormwater Control Plans, Confined Space Certification, Materials, etc.)
    - Providing continuous support by quickly addressing changing field conditions

3. How do you ensure quality control with contract work?
    - Performance based contract awarding
    - Performance requirements (plans and specifications)
    - Construction oversight through inspection staff
    - Training of staff
    - Materials testing by 3rd parties
    - Post construction CCTV
    - Field visits and regular progress meetings

4. How do you know the contractors know what to do when there is a burped toilet and what steps need to be taken to prevent them from occurring?
    - Including procedures and actions to be taken in the special provisions
    - SSO response training (reporting) – pre-construction meeting
    - Communication of BMP's (HVVC 101 Training)
    - Communication of asset alerts

General Questions:

1. What is your role in helping to reduce SSOs?
    - Implementation of projects and programs focused on meeting service levels
    - Communication of BMP's and SSO response requirements
    - Training of staff

2. Do you have the resources you need to accomplish this work?
    - Yes. Appropriate funding, training, management support
    - Experienced and well qualified contractors
    - Access to operating manuals, and procedures (SSO, HVVC 101, etc.)

2013 SASD SSMP Audit Practices Review Questions
Maintenance and Operations: Pre-Checker

Job Specific Questions:

1. What questions do you ask to determine the SSO start time?
    - When did you notice the spill?
    - What were you doing when you noticed the spill?

2. What level of training has been provided for the job you are assigned to?
    - Yearly refresher training on the following:
        - SSO Emergency Response
        - Pre-Checker Training
    - Pre-Checker Training requires a passing percentage of 90% or higher.
    - Basic Safety Training

3. Are you using established procedures while performing your work?
    - Yes – SSO Emergency Response Procedures Manual
        - Notified, trained, and tested on each update
    - Basic Safety Procedures which include:
        - Traffic Control
        - Customer Service

General Questions:

1. What is your role in helping to reduce SSOs?
    - Reduce SSOs by resolving current issues/problems
    - Prevent SSOs by correcting problems out in the field
    - Prevent BISs with SRV either by Pre-Checker install or crew install
    - Writing work orders (WO) for any work that needs to be done

2. Do you have the resources you need to accomplish this work?
   Yes

Comments:

- If the GPS could be integrated into our response system in order to locate the most appropriate Pre-Checker to respond and the most appropriate crew(s) as well.

2013 SASD SSMP Audit Practices Review Questions
Customer Care: Dispatch

Job Specific Questions:

1. What QA/QC measures are in place to ensure accuracy and timeliness of an SR?
    - Minute by minute real time quality control check of new service requests.
    - Hourly quality control check is performed on SRs that are:
        - In Progress
        - New
        - Dispatched
    - Staff checks the type of call, that the reported problem matches the details of the BIS information taken at the time of the call, and ensures that the location of the reported problem is within the SASD service area.
    - Staff checks the availability of pre-checkers based upon Primary Customer Service List.
    - Cisco System is used to record and track all phone calls.

2. What questions do you ask when a call comes in?
    - Caller is asked to identify if they have a SSO, BIS, or slow drain:
        - Is sewer coming from the outside? (SSO)
        - Is sewer draining or not? (Slow drainage)
        - Is the sewer coming out of another fixture? (BIS)
        - Has any sewage reached the floors if BIS
    - Caller is asked to cease all water usage.
    - Caller is asked if someone over the age of 18 will be at home within the next 2 hours.
    - Caller may be asked additional follow up questions depending on answers given to the basic questions.

3. What direction do you give the calling party to mitigate an SSO?
    - Cease all water usage

4. How is the Pre-Checker notified that work is needed?
    - During the SR creation, the Pre-Checker is called and staff person must verbally speak with the Pre-Checker.
        - If Pre-Checker cannot be reached the next available Pre-Checker is called after a voice mail is left advising that Dispatch has a call from them and the time we are calling.

5. How do you ensure the Pre-Checker has the information to respond in time?
    - Staff receives a verbal acknowledgement from Pre-Checker
    - SR is assigned and placed in dispatch mode.
        - SR is reassigned if necessary. When reassigning an SR, the Pre-Checker is verbally notified of the time left to respond to the call.

6. What questions do you ask when there has been a burped toilet?
    - Has anything hit the floors and/or wall?
    - Does/has the person seen any SASD or contracting crews in the area if called in by resident.
    - These calls are usually received from District personnel and contractors.

General Questions:

1. What is your role in helping to reduce SSOs?
    - As a District employee:
        - Ensure staff has the most current and accurate information to respond to service calls.
        - To educate and inform employees.
        - When speaking to a member of the general public, I take the opportunity to educate them as well based on the questions, comments or inquires made by them.
    - As a citizen:
        - Educate those I come in contact with on FOG and the District's responsibilities and functions
        - Provide public outreach to schools. Wife is a teacher and has used SASD materials I have given her in her class.

2. Do you have the resources you need to accomplish this work?
    - Yes – More than adequate resources to accomplish this work.

Referenced Documents:

- SSMP Supporting Documents:
    - Customer Call Handling and Customer Service Request Policy
- Dispatch Guidelines
- SSO Emergency Response Procedures Manual

2013 SASD SSMP Audit Practices Review Questions
Data Management: Mapping

Job Specific Questions:

1. How are you notified of inaccuracies on plans/maps?
    - GIS Analyst I identifies inaccuracies through a quality control process that checks that fields are correctly formatted and information will fit into SDE which then syncs with multiple District asset applications.
    - If inaccuracies are found:
        - GIS Analyst I will conduct the needed research and correct the identified inaccuracies.
        - GIS Analyst I will contact the provider of the information to conduct needed research and correct the information.
            - Corrected data is then sent back to the GIS Analyst I for processing.
    - If problems persist, workarounds are developed and tested on a case by case basis.

2. How do you identify when a map/plan is complete?
    - Asset information received is considered complete when all possible inaccuracies have been corrected, the quality control process is finished, and information has been successfully published for use by SDA staff.

3. How do you receive storm drain location information?
    - SASD GIS & Mapping Applications Section has a connection to the Department of Water Resources SDE to export storm drain information to ArcPad. The information that is exported is not modified by SASD.

4. How do you know that the storm drain information is accurate?
    - Staff relies upon the Department of Water Resources to provide current and accurate information.

General Questions:

1. What is your role in helping to reduce SSOs?
    - Ensure that the intent of the asset information received is complete and correctly formatted is being published to the District mapping system for use by all SDA staff.

2. Do you have the resources you need to accomplish this work?
    - Occasionally, deadlines are not met due to such factors as sudden increases in work load, special work cases, and meetings.

Comments:

- Current staff member does not have a back-up staff person to cover work.

2013 SASD SSMP Audit Practices Review Questions
Engineering: Operations Support – TVI Review

Job Specific Questions:

1. What steps do you take to ensure that District assets are properly maintained?
   - Follow SASD Policies
   - Add PM's
   - Conduct repairs/replaces of assets
   - Conduct routine TV's.

2. How do you conduct a subjective TVI review of District assets?
   - Use of Granite SASD Code System used by both SASD crews & contractors.
   - Evaluate history of an asset, use appropriate policy to determine repair/replace/maintain decision needed.
   - Add or adjust PM's.

3. What steps do you take when FOG issues are identified during the review?
   - Start FOG process
   - Add PM's
   - Adjust PM's to reduce stoppages

4. What triggers a change in the PM schedule and frequency?
   - Mainline Scheduled Maintenance Inspection Program
   - VFI
   - Stoppage interval
   - History
   - Trending Policy
   - TV review
   - Staff notification from M&O and Engineering
   - Outside notification from other departments such as Water Resources

5. How do you know when a problem you have reported has been resolved?
   - TV's are conducted after every stoppage and every TVI gets reviewed. Based on the defects identified in the TV a PM will be added or adjust if needed. The TV reviewer will write a service request (SR) to have PM added or adjusted. Maximo (CMMS system) creates a work order (WO) off of that PM created for a crew to complete.

   OR

   - A corrective WO is written and scheduled by the Planning & Scheduling section to have either M&O or Engineering Design section complete. Work not completed goes back to manager of that section before being closed.

   OR

   - A WO is created for the BCE process, which can have the outcome of a corrective WO or a PM being added or modified.
   - Queries and QC reports are run daily/weekly to verify that work has been completed.
     - Types of queries and reports include:
       - WOs and SRs that are not completed within 5 days or have missing information.
       - Supervisors check weekly to review if any work needs to be revised.
       - Daily WO report is sent to all section supervisors.

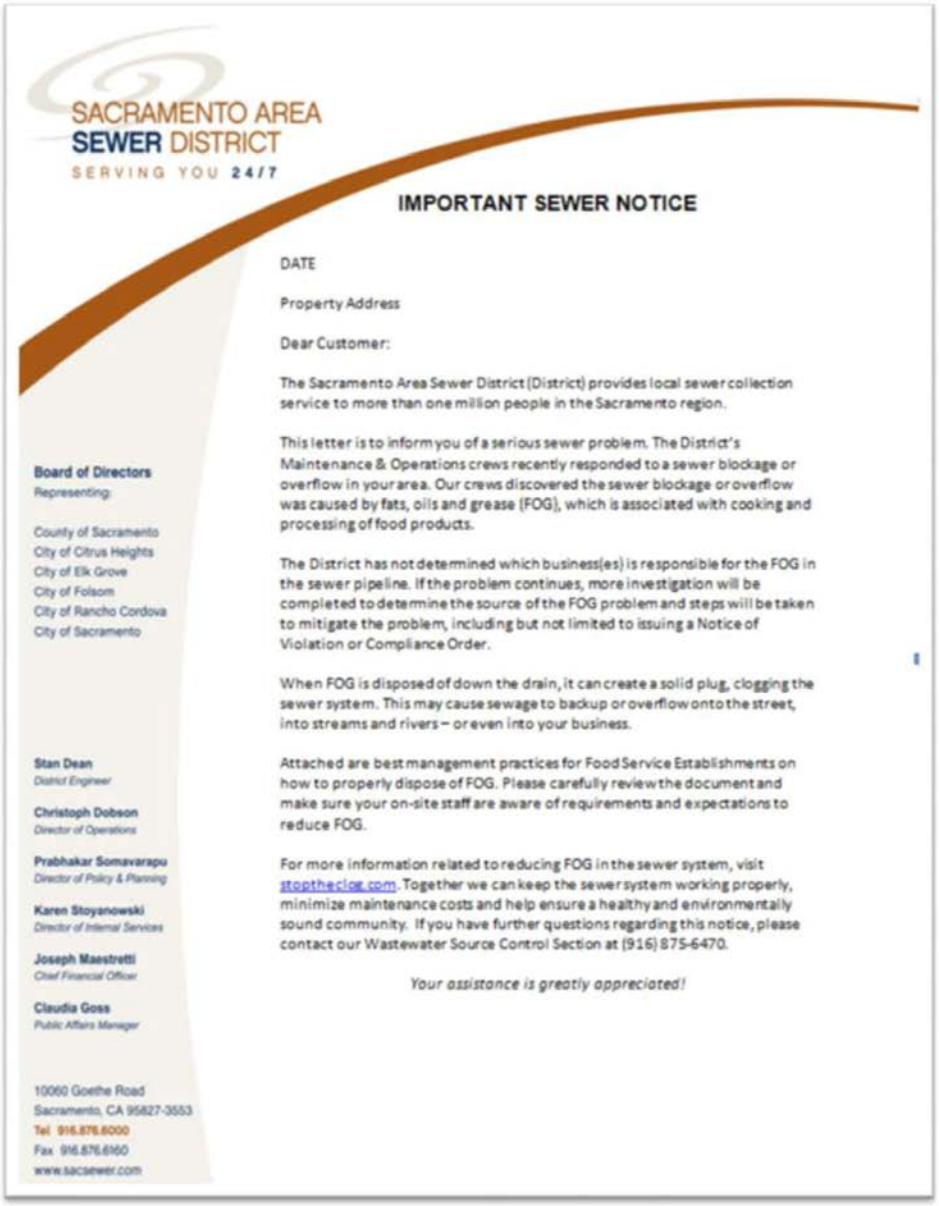
General Questions:

1. What is your role in helping to reduce SSOs?
   - Our role is evaluate TVI data to make the necessary PM's, PM adjustments, corrective work orders, and inspection work orders based from the SASD policies to reduce SSO's.

2. Do you have the resources you need to accomplish this work?
    - Yes

Reference Documents:

- 2011 SASD Standards and Specifications
- SASD SSMP Supporting Documents:
    - Main Line Stoppage Failure Mode Strategy
    - Manhole Stoppage Failure Mode Strategy
    - Gravity Assets Management Strategy
    - Incorrect Cleaning Frequency Failure Mode Strategy
    - Lower Lateral Stoppage Failure Mode Strategy
    - Televised Inspection Policy
    - Quality Control for Sewer Pipe Cleaning Procedure/Policy
    - Lower Lateral Repair – Maintain – Replace Decision Policy
    - Loss of Support Failure Mode Strategy
    - Crush Collapse Failure Mode Strategy
    - Generic Business Case Evaluation (BCE) Process
    - Main Line Cracked, Broken, Missing, and Collapsed Pipe Decision Policy
    - Management Plan Assessment Program
    - Root Control Program
    - Structural Assessment Program
    - FOG Program
    - Incorrect Cleaning Frequency Failure Mode Strategy
    - Exposed Double-Wye Replace Policy
- SASD FOG Customer Awareness Letter (Page 3)
- SASD FOG Outreach and WSCS Request Form (Page 4)



SACRAMENTO AREA
SEWER DISTRICT
SERVING YOU 24/7

IMPORTANT SEWER NOTICE

DATE

Property Address

Dear Customer:

The Sacramento Area Sewer District (District) provides local sewer collection service to more than one million people in the Sacramento region.

This letter is to inform you of a serious sewer problem. The District's Maintenance & Operations crews recently responded to a sewer blockage or overflow in your area. Our crews discovered the sewer blockage or overflow was caused by fats, oils and grease (FOG), which is associated with cooking and processing of food products.

The District has not determined which business(es) is responsible for the FOG in the sewer pipeline. If the problem continues, more investigation will be completed to determine the source of the FOG problem and steps will be taken to mitigate the problem, including but not limited to issuing a Notice of Violation or Compliance Order.

When FOG is disposed of down the drain, it can create a solid plug, clogging the sewer system. This may cause sewage to backup or overflow onto the street, into streams and rivers – or even into your business.

Attached are best management practices for Food Service Establishments on how to properly dispose of FOG. Please carefully review the document and make sure your on-site staff are aware of requirements and expectations to reduce FOG.

For more information related to reducing FOG in the sewer system, visit stopthecloq.com. Together we can keep the sewer system working properly, minimize maintenance costs and help ensure a healthy and environmentally sound community. If you have further questions regarding this notice, please contact our Wastewater Source Control Section at (916) 875-6470.

Your assistance is greatly appreciated!

Board of Directors
Representing:

County of Sacramento
City of Citrus Heights
City of Elk Grove
City of Folsom
City of Rancho Cordova
City of Sacramento

Stan Dean
District Engineer

Christoph Dobson
Director of Operations

Prabhakar Somavarapu
Director of Policy & Planning

Karen Stoyanowski
Director of Internal Services

Joseph Maestretti
Chief Financial Officer

Claudia Goss
Public Affairs Manager

10060 Goethe Road
Sacramento, CA 95827-3553
Tel 916.876.6000
Fax 916.876.6160
www.sacsewer.com

Fats, Oil and Grease Outreach and WSCS Response Request

STEP 1: SASD Request

Requester Name: _____ Date: _____

WSCS Incident Response Needed? Yes___ No___
(WSCS response only on commercial; if applicable, attach GIS Viewer Map, Field Report, and Maintenance History)

Manhole No(s). _____

Source of Request:
___ Overflow
___ Blockage
___ Maintenance & Operations
___ TV
___ Other: _____

*General Land Use: (If Known)
___ Commercial
___ Residential
___ Commercial/Residential

WSCS Response Needed: Then cc Request To: Linda Stevens, Charlie Duty

STEP 2: SASD FORWARDS REQUEST TO MIS/GIS (RAUL RODRIGUEZ)

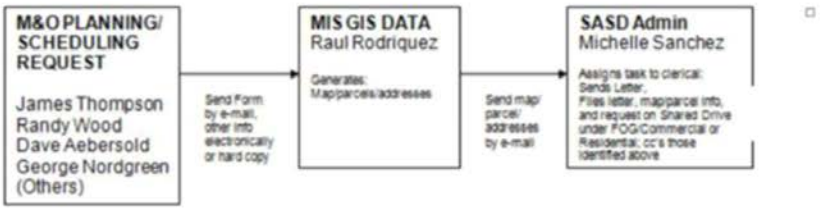
Date Map/Parcel Information Sent: _____

(If Commercial/Residential, make separate lists of commercial parcels/addresses and residential parcels/addresses)

STEP 3: MIS/GIS FORWARDS MAP/PARCEL/ADDRESSES TO SASD ADMIN (Randy Mackay)

*Date Letter Sent:
____ Commercial
____ Residential
____ Commercial/Residential

*Residential: cc Completed Request To: Requester, Aimee Norman, Jan Holm
*Commercial: cc Completed Request To: Requester, Aimee Norman, Linda Stevens, Charles Duty, Jan Holm



P: Shared FOG Templates FOG SASD Outreach and WSCS Request form 06-11 MASTER.docx

2013 SASD SSMP Audit Practices Review Questions
ISD Training and Development: Training

Job Specific Questions:

1. What methods are currently being used to keep track of training?
   - Employee (Wet) Signature Sign-In Sheets with tracking in the Learner Web (LMS), County training is also tracked in the Compos Training System.

2. How do you know staff has received adequate training for the job they are assigned to?
   - Management Prescribes Required Training for employees by Job Class, Facilities, Electricians, Underground Construction, etc.

3. What measures are in place to monitor the appropriate level of training?
   - Management Prescribes Required Training for Software, Policies, Procedures, Reporting, etc. Several methods are used to monitor training, Periodic Reviews, Cyclic Training, Updates to Policies & Procedures, informal internal audits, and annual reviews.

4. How do you identify when refresher training is needed and at what frequency?
   - Management Prescribes Required Training – Refresher Training is activated:
     - When equipment is modified, when a safety issue impacts work, when equipment maintenance is impacted by operational use, when employees are transferred to new work areas or returns to work after more than 30 days of absence (injury, military service, etc.)

5. How do you know the District is adequately resourced to properly perform training?
   - Training is adequately resourced when it can provide the required training within the prescribed time-frames or venders can be contracted to conduct the training.

General Questions:

1. What is your role in helping to reduce SSOs?
   - The SASD Training Office is responsible for the Design, Development, and Implementation of all SASD Training. Included in that definition is the specific training that relates to; SSO's, SSO-ERPM, Pre-Checker, Spill Estimates, and Computer Software Systems (Maximo & Syclo) that are used to report SSO's.
   - Additionally, the SASD Training Office is responsible for scheduling, tracking, and reporting all SSO Training as required by SASD Management.

2. How do you prioritize your work to ensure that you have completed all work assigned to you on time?
   - The Training Section attends Management Meetings with All levels of management where information is exchanged to set / revise current or needed training priorities. When / if training is needed beyond the scope or staffing levels of the training section, vendors are hired to provide the required training.

3. Has Management communicated best practices to you on your role in reducing SSOs?
   - Specifically Management Provides Subject Matter Experts SME's) to assist the Training Section in the Development and / or delivery of the required SSO Training. This typically includes SSO Estimates, SSO Site Investigations, SSO ERPM Training, etc.

2013 SASD SSMP Audit Practices Review Questions
Customer Care: USA Locator

Job Specific Questions:

1. What are the common causes that result in a "hit"?
    - When there is no USA ticket/not notified of the work.
    - Locator error
    - Mapping error
    - Contractor error

2. Do you track how often a conflict occurs in terms of a "hit"?
   When a "hit" occurs:
    1. Person causing the hit contacts USA North first
    2. USA North sends a ticket through ICUNet and contacts affected utility
    3. SASD Dispatch sends an SR to SASD Maintenance and Operations Supervisor to notify of hit
    4. SASD Dispatch notifies SASD USA Supervisor of hit.
    5. SASD USA Locator researches how the "hit" occurred and who was responsible
    6. SASD USA Supervisor prepares an investigation report of the conflict
    7. SASD Maintenance and Operations prepares a Damage Report

General Questions:

1. What is your role in helping to reduce SSOs?
    - Locate the lines correctly and to the best of staff's ability.

2. Do you have the resources you need to accomplish this work?
    - Yes.

2013 SASD SSMP Audit Practices Review Questions
Customer Care: USA Ticket Processing

Job Specific Questions:

1. What are the criteria for determining that there is a "no conflict"?
    - Staff uses the following applications when determining a "no conflict":
        - ArcPad
        - Google Maps
        - ICUNet
        - GIS
    - Staff pulls the ticket and reviews:
        - Start date
        - Scope of work situations that are considered no conflicts:
            - Project does not include street or sidewalk work
            - Extension ticket
                - Original ticket was identified as having no conflict
            - No sewer in the project area
            - Not SASD owned at the time of project
                - Abandoned sewer lines are not marked
    - Project contractors are notified every time a no conflict situation occurs.
    - If the Locator determines there is no conflict while out in the field, the Locator will:
        - Mark "No SASD" at project site
        - Call Contractor to notify of the no conflict
    - All no conflict tickets are resolved in ICUNet.

General Questions:

1. What is your role in helping to reduce SSOs?
    - Communicating with the public:
        - To call Dispatch if they have a slow drain
        - Cleanout location information
    - If a situation occurs while out in the field, such as a BIS, staff will call Dispatch to send out a crew.
    - Educate the public on FOG related issues.

2. Do you have the resources you need to accomplish this work?
    - Yes – All ideas and suggestions are considered and researched.

2013 SASD SSMP Audit Action Plan

Task	WDR Element	Audit Section	Deficiency	Action Steps	Assigned To	Milestones	Target Completion Date	Completion Date
1	Organization	Interview/ Document	Chain of Communication for Reporting SSOs is unclear: Information is located in SSMP & SSOERPM. SSMP references the SSOERPM, but the LRO contact information is listed in the SSMP under *Figure 1: Staff Responsible for Implementing the District SSMP.*	LRO name and contact information will be entered into SSOERPM			July 15, 2013	
2	Legal Authority	Interview	Ownership Delineation: SASD is inconsistent with their approach and interpretation to certain ownership situations, specific to non-single family residences.	SASD Ordinance Update: SASD staff is currently working specific situations of ownership delineation for 2013 SASD Ordinance update.			March 31, 2014	
3	Operation and Maintenance Program	Interview	Mapping: No current process to confirm all assets are being entered into the mapping system.	Developing a business process to outline the life of plans - Approved Improvement Plan (Engineer Plan) to *Collection System Plan* (District Map)			May 30, 2014	
4		Interview/ Document	Training for M&O Staff: Training policy has not been updated since 2008. This is an on-going task from the 2011 SSMP Audit Action Plan.				September 30, 2013	
5		Interview/ Document	Training for M&O Staff: On the job training programs for rodding and balling, require better documentation of who has been trained in what activities.				September 30, 2013	
6		Interview/ Document	Is some form of Category 1 responder training documentation available? (i.e., certification, pass/fail qualification, OJT check off list, or some other training topic tracking mechanism)	Document the training process for Cat 1 responders.			December 31, 2013	
7	Overflow Emergency Response Plan	Interview/ Document	Traffic Control Plan Policy and Procedure: Policy is referenced in SSOERPM, but is not located in manual or SSMP. Policy is located on Policies and Procedures SharePoint site, but has not been updated since 2007.	The Traffic Control Plan Policy and Procedures is being updated by Safety. Update may require Meet and Confers with Labor Unions.			December 31, 2013	

1 Legend: Grey=Completed / Green=In Progress / Yellow=Overdue

Appendix

Disk 1 of 1 contains the following documents:

- Pre-Checker Service Request & Work Order Field Guide November 2012
- SASD 2011-2012 Main Line Stoppage Report Analysis
- SASD 2012 FOG Source Study
- SASD Access Permit Process and Procedure
- SASD Annual Budget Book 2012 and 2013
- SASD Asset Frequency Adjustment Report March 2013 Snapshot
- SASD Asset Management Plan 2011
- SASD Comprehensive FOG Control Program
- SASD Easement Access Procedures March 2012
- SASD Enforcement Response Plan
- SASD Fats, Oils, and Grease Control Program Information Kit
- SASD FOG Haulers List
- SASD FOG Program - 2012 Special Events Calendar
- SASD FOG Program Safetyville Sponsorship –SASD Building Visitors
- SASD FOG School Outreach Report for 2011-12 School Year
- SASD Job Plan March 2013 Snapshots
- SASD Main Line Scheduled Maintenance Follow-up QC Report March 2013 Snapshot
- SASD Main Line Scheduled Maintenance QC Report March 2013 Snapshot
- SASD Maintenance and Operations Staffing Projections Fiscal Year 2012-2013
- SASD Organization Planning Team Charter August 2012
- SASD PDP-1 RDII Reduction Strategy
- SASD Sample Commercial and Residential Advisory Letters
- SASD Samples of Wastewater Source Control Responses' to Food Service Establishment
- SASD Scope of Work Proposal (Crocker and Crocker Fiscal Year 2012-13)
- SASD Service Level Bands Policy February 2012
- SASD Service Level Report December 2012
- SASD Sewer Ordinance February 2011
- SASD Sewer System Management Plan
- SASD SSO Emergency Response Procedures Manual
- SASD SSO Emergency Response Procedures Manual Training January 2013
- SASD SSO State Certification Report January 2013 Snapshot
- SASD Standards and Specifications June 2011
- SASD State of the District Report 2012
- SASD Summary of Findings from Continuous Simulation Modeling January 2008
- SASD System Capacity Plan 2010
- SRCSD Consolidated Ordinance September 2012
- SSMP Audit Interview Questions 2013
- SSMP Audit Procedures 2012
- Wastewater Source Control FOG Incident Response Standard Operating Procedures August 2012
- Wastewater Source Control Section FOG Response Log