CMOM Program Self-Assessment 2023

CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE (CMOM) Program Self-Assessment

Albuquerque Bernalillo County Water Utility Authority

Compiled By
Mark S. Holstad, PE
Collection Section Chief Engineer / Manager

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Executive Summary

This is a Self-Assessment of the Albuquerque Bernalillo County Water Utility Authority (Water Authority) Collection System. This Self-Assessment is a part of the Water Authority's CMOM Plan as described in the most recent CMOM Annual Report. All previous reports, as well as the most recent, can be accessed at https://www.abcwua.org/sewer-system-cmom-reports/.

EPA states (see https://www3.epa.gov/npdes/pubs/cmomselfreview.pdf): "An important component of a successful CMOM program is to periodically collect information on current systems and activities and develop a "snapshot-in-time" analysis. From this analysis, the utility establishes its performance goals and plans its CMOM program activities."

Because the data provided in the Self-Assessment does not significantly change year-to-year, the next update will coincide with the CY2023 CMOM Report.

This Self-Assessment format is based on the EPA template found at: https://www3.epa.gov/npdes/pubs/cmomselfreview.pdf. The pdf was converted to Word for editing. The basic format and structure were kept, and portions were modified as appropriate to the Water Authority system.

General Information

Utility Contact Information

Mark S. Sanchez
Executive Director
505-289-3101
msanchez@abcwua.org

Stan Allred
Chief Operating Officer
505-289-3080
sallred@abcwua.org

Danielle Shuryn
Compliance Division
Manager
505-289-3382
dshuryn@abcwua.org

Merat Zarreii
NPDES Program Manager
505-289-3414
mzarreii@abcwua.org

Hobert S. Warren
Field/Plant Division
Manager - Field
505-289-3535
hwarren@abcwua.org

Mark S. Holstad
Collection System Manager
505-289-3450
mholstad@abcwua.org

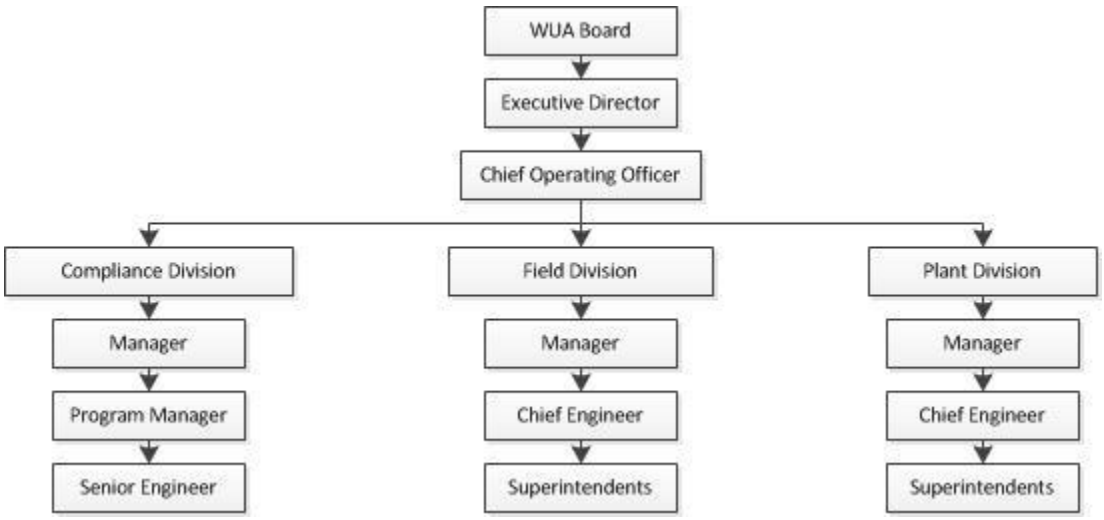
Angelo R. Baca
Operations and Maintenance
Superintendent - Field
505-289-3435
arbaca@abcwua.org

Mark S. Gallegos
Operations and Maintenance
Superintendent - Field
505-289-3428
mgallegos@abcwua.org

Joel Berman
Engineering Division
Manager - Plant
505-289-3524
jberman@abcwua.org

Gregory S. Larson
Chief Engineer - Plant
505-289-3448
glarson@abcwua.org

Kenneth E. Lipe
Operations and Maintenance
Superintendent - Plant
505-289-3412
klipe@abcwua.org



Permitted Treatment, Collection Facilities, and Collection Systems

NPDES Permit # NM0022250

Collection System Description

System Inventory

Treatment Facilities

# of Treatment Facilities	2 NUMBER	WWTP design capacity	76 MGD
Average Daily Flow	45 MGD	Average dry weather flow	45 MGD

Access & Maintenance

Manholes	50,095 NUMBER	Number of air vacuum relief valves	51 NUMBER

Conveyance & Pumping

			Pump Stations			Vacuum Stations		
	Gravity Sewers		Stations	Force Mains		Stations	Vacuum Lines	Force Mains
Pipes and pumps: Length/quantity	2,305		62	31.4		10	248.8	11.34
	MILES		NUMBER	MILES		NUMBER	MILES	MILES
Age of system: 0-25 years old	27%		44	67%		6	87%	100.0%
	PERCENT		NUMBER	PERCENT		NUMBER	PERCENT	PERCENT
26-50 years old	41%		14	30%		4	13%	-
	PERCENT		NUMBER	PERCENT		NUMBER	PERCENT	PERCENT
51-75 years old	31%		4	3%		-	-	-
	PERCENT		NUMBER	PERCENT		NUMBER	PERCENT	PERCENT
>75 years old	-		-	-		-	-	-
	PERCENT		NUMBER	PERCENT		NUMBER	PERCENT	PERCENT
Number of Inverted siphons	20							
	NUMBER							

Service Area Characteristics

Service area	199^	Service population	649,135 (not including satellite communities)
	SQ. MILES		PEOPLE
Annual precipitation	8.67 inches*		
	NUMBER		

Notes

+ Total pipe length 2,596 miles is used for computing the SSO Rate.

Ages are based on installation dates. Older facilities have been upgraded and rehabilitated.

^ Does not include 91 square miles of satellite communities. See SUO-02.

* http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nmalbu

Number of Service Connections

Residential	183,794	Commercial	9,848
Industrial	100	Institutional	1,015
Multi-Family	7,648	Other	334
	NUMBER		NUMBER
Total		202,739	
		NUMBER	

Collection system service lateral responsibility (check one)	
At main line connection only	
From main line to property line or easement/cleanout	
Beyond property line/clean out	
Other: Main line only. Not connection	X
Comments: See Water Authority Sewer Use and Wastewater Control Ordinance	

Combined Sewer System

What percent of sewer system is served by combined sewers (i.e., sanitary sewage and storm water in the same pipe)?	0 %
	PERCENT

Pipe Diameter

	Gravity Sewers	Force Mains	Vacuum Lines
8 inches or less	82.0%	62.2%	98.5%
	PERCENT	PERCENT	PERCENT
9 - 14 inches	7.0%	21.1%	1.5%
	PERCENT	PERCENT	PERCENT
15 - 36 inches	8.2%	16.7%	-
	PERCENT	PERCENT	PERCENT
> 36 inches	2.7%	-	-
	PERCENT	PERCENT	PERCENT

Pipe Materials

	Gravity Sewers	Force Mains	Vacuum Lines
Prestressed concrete cylinder pipe (PCCP)	-	-	-
	PERCENT	PERCENT	PERCENT
High density polyethylene (HDPE)	6%	1%	-
	PERCENT	PERCENT	PERCENT
Reinforced concrete pipe (RCP)	2.8%	-	-
	PERCENT	PERCENT	PERCENT
Polyvinyl Chloride (PVC)	44.4%	76%	100%
	PERCENT	PERCENT	PERCENT
Vitrified Clay Pipe (VCP)	30.7%	-	-
	PERCENT	PERCENT	PERCENT
Cast Iron Pipe (CI), Ductile Iron Pipe (DIP), Steel Pipe (SP), Corrugated Metal Pipe (CMP)	1.0%	23%	-
	PERCENT	PERCENT	PERCENT
Non-reinforced concrete pipe	12%	-	-
	PERCENT	PERCENT	PERCENT
Asbestos Cement Pipe (AC)	1.5%	-	-
	PERCENT	PERCENT	PERCENT
Brick	-	-	-
	PERCENT	PERCENT	PERCENT
Spiral Wound (SW)	0.002%	-	-
	PERCENT	PERCENT	PERCENT
Fiberglass (FG)	0.8%	-	-
	PERCENT	PERCENT	PERCENT
Cured in Place (CIP)	1.3%	-	-
	PERCENT	PERCENT	PERCENT

Engineering Design (ED)

Checklist Item		Yes	No	N/A
ED-01	Is there a document which includes design criteria and standard construction details?	X		
	Comments:			
ED-02	Is there a document that describes the procedures that the utility follows in construction design review?	X		
	Comments:			
ED-03	Are WWTP and O&M staff involved in the design review process?	X		
	Comments:			
ED-04	Is there a procedure for testing and inspecting new or rehabilitated system elements both during and after the construction is completed?	X		
	Comments:			
ED-05	Are construction sites supervised by qualified personnel (such as professional engineers or certified engineering technicians) to ascertain that the construction is taking place in accordance with the agreed upon plans and specifications?	X		
	Comments:			
ED-06	Are new manholes tested for inflow and infiltration?	X		
	Comments:			
ED-07	Are new gravity sewers checked using closed circuit TV inspection?	X		
	Comments:			
ED-08	Does the utility have documentation on private service lateral design and inspection standards?		X	
	Comments: Service lines are private property and as such fall under the jurisdiction of the code enforcement of the governing entity for each industry.			
ED-09	Does the utility attempt to standardize equipment and sewer system components?	X		
	Comments: E.g., Flygt pumps and Vactor combination units.			

Satellite Communities and Sewer Use Ordinance (SUO)

Checklist Item		Yes	No	N/A
SUO-01	Does the utility receive flow from satellite communities? IF NO, GO TO NEXT SECTION	X		
	Comments:			
SUO-02	What is the total area from satellite communities that contribute flow to the collection system? *(Acres or square miles)*			
	Comments: Sandia Heights = 1,912 acres; KAFB = 50,352 acres; Tierra West = 102 acres; Village of Tijeras = 20 acres; Village of Corrales = 6,158 acres Total acreage = 58,544			
SUO-03	Does the utility require satellite communities to enter into an agreement? IF NO, GO TO QUESTION SUO-06	X		
	Comments: Pursuant to the Water Authority's System Expansion Ordinance, all new developments or communities are required to enter into a development agreement for service. The Water Authority will review its agreements with existing satellite communities.			
SUO-04	Does the agreement include the requirements listed in the sewer use ordinance?	X		
	Comments: Agreements for all new developments or communities state that the user is subject to the ordinances, policies and regulations of the Water Authority and payment of the rates and charges imposed by the Water Authority for wholesale wastewater service. The Water Authority will review its agreements with existing satellite communities.			
SUO-05	Do the agreements have a date of termination and allow for renewal under different terms?		X	
	Comments: These agreements are in effect unless one of the parties desires to terminate the agreement. The Water Authority will review its agreements with existing satellite communities.			
SUO-06	Does the utility maintain a legal authority to control the maximum flow introduced into the collection system from satellite communities?		X	
	Comments: This is not considered a problem in the Water Authority system. Systems are sized to receive the maximum possible for the development density. The flows are typically metered and/or the user is billed based on the Water and Sewer Rate Ordinance. The Water Authority will review its agreements with existing satellite communities.			
SUO-07	Are standards, inspections, and approval for new connections clearly documented in a SUO?	X		
	Comments: Significant industrial users are required to do so as a condition of their Wastewater Discharge Permit.			

Checklist Item		Yes	No	N/A
SUO-08	Does the SUO require satellite communities to adopt the same industrial and commercial regulatory discharge limits as the utility?	X		
	Comments: Each new contract requires the satellite system to comply with all appropriate ordinances, including the SUO. The Water Authority will review its agreements with existing satellite communities.			
SUO-09	Does the SUO require satellite communities to adopt the same inspection and sampling schedules as required by the pretreatment ordinance?	X		
	Comments: Each new contract requires the satellite system to comply with all appropriate ordinances, including the SUO. The Water Authority will review its agreements with existing satellite communities.			
SUO-10	Does the SUO require that satellite communities or the utility to issue control permits for significant industrial users?	X		
	Comments: Each new contract requires the satellite system to comply with all appropriate ordinances, including the SUO. The Water Authority will review its agreements with existing satellite communities.			
SUO-11	Does the SUO contain provisions for addressing overstrength wastewater from satellite communities?	X		
	Comments: Each new contract requires the satellite system to comply with all appropriate ordinances, including the SUO. The Water Authority will review its agreements with existing satellite communities.			
SUO-12	Does the SUO contain procedures for the following?			
	Inspection standards			X
	Pretreatment requirements	X		
	Building/sewer permit issues	X		
	Comments: Inspection forms are a Pretreatment requirement and are part of the Water Authority Pretreatment Program.			
SUO-13	Does the SUO contain general prohibitions of the following materials?			
	Fire and explosion hazards	X		
	Corrosive materials	X		
	Obstructive materials	X		
	Oils or petroleum	X		
	Material which may cause interference at the wastewater treatment plant	X		
	Comments:			
SUO-14	Does the SUO contain procedures and enforcement actions for the following?			
	Fats, oils, and grease (FOG)	X		
	Infiltration and inflow	X		

Checklist Item		Yes	No	N/A
	Building structures over the sewer lines			X
	Storm water connections to sanitary lines (downspouts)	X		
	Defects in service laterals located on private property			X
	Sump pumps, air conditioner connections	X		
	Comments: Service lines are private property and as such fall under the code enforcement of the governing entity having jurisdiction over the user.			

Organizational Structure (OC)

Checklist Item		Yes	No	N/A
OC-01	Is an organizational chart available that shows the overall personnel structure for the utility, including operation and maintenance staff?	X		
	Comments: Yes. The Water Authority's Human Resources Division maintains an organization chart for all employees in a program called OrgPlus which is available on the utility's SharePoint site.			
OC-02	Are up-to-date job descriptions available that delineate responsibilities and authority for each position?	X		
	Comments:			
OC-03	Are the following items discussed in the job descriptions?			
	Nature of work to be performed	X		
	Minimum requirements for the position	X		
	Necessary special qualifications or certifications	X		
	Examples of the type of work	X		
	List of licenses required for the position	X		
	Performance measures or promotion potential			X
	Comments: Performance measures are part of the Employee Performance Evaluation process which is based on competencies aligned with the utility's organization strategies.			
OC-04	What percent of staff positions are currently vacant?	6.75		
	Comments:			
OC-05	On average how long do positions remain vacant? *(months)*			X
	Comments: From advertisement to recommendation to hire was 45 days average in FY2023. The Water Authority does not specifically track length of vacancy. All positions are funded and are replaced as quickly as possible. For many positions when it is known a vacancy is impending, a duplicate position is created and the replacement person works for months in parallel with the person to soon retire.			
OC-06	What percent of utility work is contracted out?	Varies		

Checklist Item		Yes	No	N/A
	Comments: 0% Preventive maintenance cleaning. Most pipe rehab is contracted out. In-house construction crews replace manhole covers and perform some pipe repairs.			

Internal Communications (IC)

	Checklist Item	Yes	No	N/A
IC-01	Which of the following methods are used to communicate with utility staff?			
	Regular meetings	X		
	Bulletin boards	X		
	E-mail	X		
	Other (walkie talkie/pager)	X		
	Comments: SharePoint provides up-to-date news and events. The employee newsletter called the Flow is published and provided on a quarterly basis. Bulletin boards are used to keep employees informed of programs. The Public Affairs Manager keeps all employees informed on recent events related to the Water Authority. Employee Online is where employee checks, benefits, W-2, Forms and other employment information now reside.			
IC-02	How often are the staff meetings held? *(e.g., Daily, Weekly, Monthly, etc.)*			
	Comments: Within the Collection Section, each manager meets informally or formally with their staff on a daily basis. Project specific meetings are held regularly as needed.			
IC-03	Are incentives offered to employees for performance improvements?	X		
	Comments:			
IC-04	Does the utility have an "Employee of the Month/Quarter/Year" program?	X		
	Comments: Every quarter, employees can submit Employee of the Quarter nominations. An internal panel reviews the nominations and allocates reward money and/or vacation time.			
IC-05	How often are performance reviews conducted? *(e.g. Semi-annually, Annually, etc.)*			
	Comments: Annually.			
IC-06	Does the utility regularly communicate/coordinate with other municipal departments?	X		
	Comments:			

Budgeting (BUD)

	Checklist Item	Yes	No	N/A
BUD-01	What is the average annual fee for residential users?			
	Comments: The average monthly bills are Water = $31.90; Sewer = $20.22. The average annual bills are therefore Water = $382.80; Sewer = $242.64.			
BUD-02	How often are user charges evaluated and adjusted? *(e.g. annually, biannually. etc.)*			X
	Comments: Every two years, the utility reviews and updates its rates based on a rate study which is reviewed by the utility's Technical Customer Advisory Committee which is received by the utility governing board. User charges may be adjusted every two to three years. Connection charges (UEC) and water supply charges may be adjusted annually by building cost or construction cost indices.			
BUD-03	Are utility-generated funds used for non-utility programs?		X	
	Comments: The Water Authority is a state created entity separate from any other governmental entity. The utility operates similar to an enterprise fund. Therefore, no utility-generated funds are used for non-utility programs.			
BUD-04	Are costs for collection system operation and maintenance (O&M) separated from other utility services such as water, storm water, and treatment plants? IF NO, GO TO BUD-07	X		
	Comments:			
BUD-05	What is your average annual (O&M) budget?			
	Comments: $7.07 million (Collection Section)			
BUD-06	What percentage of the utility's overall budget is allocated to maintenance of the collection system?			
	Comments: Total collections budget is $7,077,000 which is 3.06% of the overall Utilities Operating Budget.			
BUD-07	Does the utility have a Capital Improvement Plan (CIP) that provides for system repairs/replacements on a prioritized basis?	X		
	Comments: The Water Authority has a robust asset management program which assists in CIP prioritization.			
BUD-08	What is your average annual CIP budget?			
	Comments: Currently total average annual basic CIP Budget (for FY24) is $100 million.			
BUD-09	What percentage of the maintenance budget is allotted to the following maintenance?			
	Predictive maintenance - tracking design, life span, and scheduled parts replacements	11%		

Checklist Item		Yes	No	N/A
	Preventive maintenance - identifying and fixing system weakness which, if left unaddressed, could lead to overflows	66%		
	Corrective maintenance - fixing system components that are functioning but not at 100% capacity/efficiency; for example, partially blocked lines	13%		
	Emergency maintenance - reactive maintenance, overflows, equipment breakdowns	6%		
	Comments: Approximate ratios based on assignments of staff within Collection Section.			
BUD-10	Does the utility have a budgeted program for the replacement of under-capacity pipes?			X
	Comments:			
BUD-11	Does the utility have a budgeted program for the replacement of over-capacity pipes?			X
	Comments:			

Training (TR)

Checklist Item		Yes	No	N/A
TR-01	Does the utility have a formal job knowledge, skills, and abilities (KSA) training program?	X		
	Comments: Formal training programs are available for the Wastewater workers and new supervisors.			
TR-02	Does the training program address the fundamental mission, goals, and policies of the utility?	X		
	Comments:			
TR-03	Does the utility have mandatory training requirements identified for key employees?	X		
	Comments: Supervisor training (see TR-01). Also maintain required licenses or certifications, e.g., PE or Operator Certification.			
TR-04	What percentage of employees met or exceeded their annual training goals during the past year?			
	Comments: Typically, 100% of personnel requiring Water Authority training receive that training.			
TR-05	Does the utility provide training in the following areas? (See Comments)			
	Safety	X		
	Routine line maintenance	X		
	Confined space entry	X		

Checklist Item		Yes	No	N/A
	Traffic control	X		
	Record keeping	X		
	Electrical and instrumentation	X		
	Pipe repair	X		
	Bursting / CIPP	X		
	Public relations		X	
	SSO/Emergency response	X		
	Pump station operations and maintenance	X		
	CCTV and trench/shoring	X		
	Other			
	Comments: Answer for Collection Section. Formal training is provided through the wastewater workers training program. Specialized training is also provided through attendance at workshops, equipment shows, factory training, etc.			
TR-06	Are operator and maintenance certification programs used? IF NO GO TO TR-08	X		
	Comments: For appropriate personnel.			
TR-07	Are operator and maintenance certification programs required?	X		
	Comments: For appropriate personnel.			
TR-08	Is on-the-job training progress and performance measured?	X		
	Comments: For affected personnel.			
TR-09	Which of the following methods are used to assess the effectiveness of the training?			
	None			X
	Periodic testing	X		
	Drills	X		
	Demonstrations	X		
	Comments:			
TR-10	What percentage of the training offered by the utility is in the form of the following?			
	Manufacturer training	10%		
	On-the-job training	40%		
	In-house classroom training	40%		
	Industry-wide training	10%		
	Comments: Approximate			

Safety (SAF)

	Checklist Item	Yes	No	N/A
SAF-01	Does the utility have a written safety policy?	X		
	Comments:			
SAF-02	How often are safety procedures reviewed and revised?			
	Annually			X
	Quarterly			X
	Comments: As appropriate.			
SAF-03	Does the utility have a safety committee?	X		
	Comments:			
SAF-04	Are regular safety meetings held with the utility employees?	X		
	Comments:			
SAF-05	Does the utility have a safety training program?	X		
	Comments:			
SAF-06	Are records of employee safety training kept up to date?	X		
	Comments:			
SAF-07	Does the utility have written procedures for the following?			
	Lockout/tagout	X		
	Material safety data sheets (MSDS)	X		
	Chemical handling	X		
	Confined spaces permit programs	X		
	Trenching and excavations safety	X		
	Biological hazards in wastewater	X		
	Traffic control and work site safety	X		
	Electrical and mechanical systems	X		
	Pneumatic and hydraulic system safety	X		
	Comments: Written procedures are utilized in the training that every Wastewater Worker receives through the Water Authority's in-house training program.			
SAF-08	What is your agency's lost-time injury rate?			
	Comments: 3.40			
SAF-09	Are the following equipment items available and in adequate supply?			
	Rubber/disposable gloves	X		
	Confined space ventilation equipment	X		
	Hard hats, safety glasses, rubber boots	X		
	Antibacterial soap and first aid kit	X		
	Tripods or non-entry rescue equipment	X		
	Fire extinguishers	X		
	Equipment to enter manholes	X		
	Portable crane/hoist	X		

Checklist Item		Yes	No	N/A
	Atmospheric testing equipment and gas detectors	X		
	Oxygen sensors	X		
	H2S Monitors	X		
	Full body harness	X		
	Protective clothing	X		
	Traffic/public access control equipment	X		
	5-minute escape breathing devices		X	
	Life preservers for lagoons	X		
	Life preservers at activated sludge plants	X		
	Fiberglass or wooden ladders for electrical work	X		
	Respirators and/or self-contained breathing apparatus	X		
	Methane gas or optical vector (OVA) analyzer	X		
	Lower explosion limit (LEL) metering	X		
	Comments:			
SAF-10	Are safety monitors clearly identified?	X		
	Comments: Presume this is in reference to personal gas monitors used in confined space entries. In the AVOPS group, each Operator has own gas monitor. In the Gravity group, three gas monitors are maintained by the Construction Supervisor. The gas monitors are regularly calibrated by SWRP Instrumentation which also provides this service for gas monitors used by SWRP staff.			

Customer Service (CS)

Checklist Item		Yes	No	N/A
CS-01	Does the utility have a customer service and public relations program? IF NO GO TO CS-03	X		
	Comments: The Water Authority has a customer service division, dispatch, and a public affairs manager.			
CS-02	Does the customer service program include giving formal presentations on the wastewater field to the following?			
	Schools and universities	X		
	Community gatherings	X		
	Local officials	X		
	Businesses	X		
	Media	X		
	Citizens	X		
	Building Inspector(s)	X		
	Public utility officials	X		

	Checklist Item	Yes	No	N/A
	Comments: The Water Authority's education program provides formal presentations on the whole wastewater system.			
CS-03	Are employees of the utility specifically trained in customer service?	X		
	Comments: Particularly in Dispatch and Customer Services.			
CS-04	Are there sample correspondence, Q/A's, or "scripts" to help guide staff through written or oral responses to customers?	X		
	Comments: Customer Care Representatives (CCRs) are provided "quick scripts" and trained in the use thereof. Scripts are learned/practiced during new employee onboarding. Customer Services Division also has a virtual library available to CCRs. Dispatch utilizes a "Dispatch Work Guide".			
CS-05	What methods are used to notify the public of major construction or maintenance work?			
	Door hangers	X		
	Public radio or T.V. announcements	X		
	Newspaper		X	
	Flyers	X		
	Signs	X		
	Other			X
	None			X
	Comments: Answers for typical projects.			
CS-06	Is a homeowner notified prior to construction that his/her property may be affected?	X		
	Comments:			
CS-07	Do you provide information to residents on cleanup and safety procedures following basement backups and overflows from manholes when they occur?	X		
	Comments: In the event of a spill into private property that is determined to be caused by a blockage in the Water Authority main, the resident is immediately contacted by the Water Authority's claims contractor and cleanup is assured.			
CS-08	Does the utility have a customer service evaluation program to obtain feedback from the community?	X		
	Comments:			
CS-09	Do customer service records include the following information?			
	Personnel who received the complaint or request	X		
	Nature of the complaint or request	X		
	To whom the follow-up action was assigned	X		
	Date of the complaint or request	X		
	Date the complaint or request was resolved	X		

Checklist Item		Yes	No	N/A
	Total days to end the problem	X		
	Name, address, and telephone number of the customer	X		
	Location of the problem	X		
	Date the follow up action was assigned	X		
	Cause of the problem	X		
	Feedback to customer	X		
	Comments: Answer for calls to Dispatch.			
CS-10	Does the utility have a goal for how quickly customer complaints (or emergency calls) are resolved? IF NO, GO TO NEXT SECTION			X
	Comments: This is not considered a problem in the Water Authority system. Many types of calls are received. Emergency items are addressed and resolved immediately. Odor complaints are addressed immediately or the next day, depending on the type. Information requests, e.g. service line location, and roach spraying are scheduled.			
CS-11	What percentage of customer complaints (or emergency calls) are resolved within the timeline goals?			X
	Comments: This is not considered a problem in the Water Authority system. All emergency calls are issued from Dispatch immediately and a crew is immediately sent to address the issue.			

Equipment and Collection System Maintenance (ESM)

Checklist Item		Yes	No	N/A
ESM-01	Is a maintenance card or record kept for each piece of mechanical equipment within the collection system? IF NO, GO TO ESM-03	X		
	Comments: A modern CMMS program (Maximo) has replaced old style cards. Each piece of mechanical equipment within the collection system is an asset within Maximo.			
ESM-02	Do equipment maintenance records include the following information?			
	Maintenance recommendations	X		
	Instructions on conducting the specific maintenance activity	X		
	Other observations on the equipment	X		
	Maintenance schedule	X		
	A record of maintenance on the equipment to date	X		
	Comments:			
ESM-03	Are dated tags used to show out-of-service equipment?	X		
	Comments: Typical practice is to remove out-of-service equipment for repair or to identify with a LOTO (Lock Out Tag Out) tag.			
ESM-04	Is there an established system for prioritizing equipment maintenance needs?	X		
	Comments:			
ESM-05	What percent of repair funds are spent on emergency repairs?			
	Comments: Answer varies by component. Pump station repairs have not been due to failure, therefore 0%. Piping repairs may be identified due to failure, therefore, ~10%			
ESM-06	Are corrective repair work orders backlogged more than six months?		X	
	Comments:			
ESM-07	Do collection system personnel coordinate with state, county, and local personnel on repairs, before the street is paved?	X		
	Comments: Work in streets requires a barricade permit. Pavement is replaced by a licensed contractor.			

Equipment Parts (EPI)

Checklist Item		Yes	No	N/A
EPI-01	Have critical spare parts been identified?	X		
	Comments: Examples are: A stockpile of root saws and selected spare pumps.			
EPI-02	Are adequate supplies on hand to allow for two point repairs in any part of the system?	X		
	Comments: Answer is based on point repairs to which the Collection Section will respond, e.g. for a break in an 8" VCP gravity line or the 8" or 10" diameter force mains or any vacuum lines.			
EPI-03	Is there a parts standardization policy in place?	X	X	
	Comments: Depends on the part. All pumps are Flygt.			
EPI-04	Does the utility have a central location for storing spare parts?	X		
	Comments: Location varies. Many parts are stored at the warehouse. Construction materials are stored in a covered and locked location. Spare pumps are stored at Lift Station 24 where space is available under the control of AVOPS Group.			
EPI-05	Does the utility maintain a stock of spare parts on its maintenance vehicles?	X		
	Comments: To maintain inventory control and to assign costs to the appropriate asset, a large stockpile of spare parts is not carried on each vehicle. The trucks only carry consumables but amount of parts such as couplings may be carried.			
EPI-06	Does the utility have a system in place to track and maintain an accurate inventory of spare parts?	X		
	Comments: Maximo.			
EPI-07	For those parts which are not kept in inventory, does the utility have a readily available source or supplier?	X		
	Comments:			

Management Information System (MIS)

	Checklist Item	Yes	No	N/A
MIS-01	Does the utility have a management information system (MIS) in place for tracking maintenance activities? *(Either electronic or good paper files)* IF NO, GO TO NEXT SECTION	X		
	Comments: Maximo			
MIS-02	Are the MIS records maintained for a period of at least three years?	X		
	Comments: Maximo			
MIS-03	Is the MIS able to distinguish activities taken in response to an overflow event?	X		
	Comments:			
MIS-04	Are there written instructions for managing and tracking the following information? (See Comments)			
	a. Complaint work orders	X		
	b. Scheduled work orders	X		
	c. Customer service	X		
	d. Scheduled preventive maintenance	X		
	e. Scheduled inspections	X		
	f. Sewer system inventory	X		
	g. Safety incidents	X		
	h. Scheduled monitoring/sampling	X		
	i. Compliance/overflow tracking	X		
	j. Equipment/tools tracking	X		
	k. Parts inventory	X		
	Comments: Answers are for the Collection Section. Answers will differ for other portions of the Water Authority. a. Flow chart for Maximo work orders b. General Maximo work order process flow chart c. Dispatch has the "Dispatch Work Guide". Also, see comment for MIS-05. d. General Maximo work order process flow chart e. General Maximo work order process flow chart f. General Maximo work order process flow chart g. In worker's comp data base. h. Pretreatment does have a method of scheduling monitoring of Grease Removal Devices (GRDs), and while visually inspecting, does not sample GRDs. Pretreatment does monitoring and sampling of industrial users for which written procedures (SOPs) are used and samples are scheduled and tracked in LINKO. i. Flow charts j. Each person responsible for Pump Station maintenance, are provided a hand tool allowance and are responsible for those tools. k. The Warehouse maintains minimum inventory of specific parts.			

Checklist Item		Yes	No	N/A
MIS-05	Do the written instructions for tracking procedures include the following information?			
	Accessing data and information	X		
	Instructions for using the tracking system	X		
	Updating the MIS	X		
	Developing and printing reports	X		
	Comments: Written instructions are contained in the Waste Water Worker training program. However, no written guide can keep up with the continuing updates and modifications of a modern CMMS like Maximo. The Collection Section Planner/Scheduler/Assistant Superintendent is a Maximo "Super User" and, along with WUA-IT, is responsible and available to train and mentor the Collection Section staff.			
MIS-06	How often is the management information system updated?			
	Immediately	X		
	Monthly			
	Within one week of the "incident"			
	As time permits			
	Comments: Upon receipt of a public report, e.g., an SSO, Dispatch creates a Service Request. This updates Maximo.			

System Mapping (MAP)

Checklist Item		Yes	No	N/A
MAP-01	Are "as built" plans (record drawings) or maps available for use by field crews in the office and in the field?	X		
	Comments: Record drawings are available via Image Repository.			
MAP-02	Is there a procedure for field crews to record changes or inaccuracies in the maps and update the mapping system?	X		
	Comments: This is reported to and updated by the in-house Research Analyst.			
MAP-03	Do the maps show the date the map was drafted and the date of the last revision?			X
	Comments: GIS mapping is via computer access.			
MAP-04	Do the sewer line maps include the following? (See comments)			
	Scale	X		
	North arrow	X		
	Date the map was drafted	X		
	Date of last revision			X
	Service area boundaries	X		
	Property lines	X		

Checklist Item		Yes	No	N/A
	Other landmarks (Roads, water bodies, etc.)	X		
	Manhole and other access points	X		
	Location of building laterals		X	
	Street names	X		
	SSOs occurrences/CSOs outfalls		X	
	Flow monitors			X
	Force mains	X		
	Pump stations	X		
	Lined sewers	X		
	Main, trunk, and interceptor sewers	X		
	Easement lines and dimensions		X	
	Pipe material	X		
	Pipe diameter	X		
	Installation date	X		
	Slope	X		
	Manhole rim elevation	X		
	Manhole coordinates	X		
	Manhole invert elevation	X		
	Distance between manholes	X		
	Comments: Answers are for the GIS-based mapping accessed using mobile devices. For clarity in field use, some items, e.g., manhole coordinates are not shown but are available.			
MAP-05	Are the following sewer attributes recorded?			
	Size	X		
	Shape	X		
	Invert elevation	X		
	Material	X		
	Separate/combined sewer			X
	Installation date	X		
	Comments: In GIS			
MAP-06	Are the following manhole attributes recorded?			
	Shape	X		
	Type (e.g., precast, cast in place, etc.)	X		
	Depth	X		
	Age	X		
	Material	X		
	Comments: In GIS			
MAP-07	Is there a systematic numbering and identification method/system established to identify sewer system manhole, sewer lines, and other items (pump station, etc.)?	X		

Checklist Item		Yes	No	N/A
	Comments:			

Internal TV Inspection (TVI)

Checklist Item		Yes	No	N/A
TVI-01	Does the utility have a standardization pipeline condition assessment program?	X		
	Comments: PACP			
TVI-02	Is internal TV inspection used to perform condition assessment? IF NO, GO TO NEXT SECTION	X		
	Comments:			
TVI-03	Are there written operation procedures and guidelines for the internal TV inspection program?	X		
	Comments:			
TVI-04	Do the internal TV record logs include the following?			
	Pipe size, type, length, and joint spacing	X	X	
	Distance recorded by internal TV	X		
	Results of the internal TV inspection (including a structural rating)	X		
	Internal TV operator name	X		
	Cleanliness of the line	X		
	Location and identification of line being televised by manholes	X		
	Comments: Joint spacing is not recorded but can be determined from observation of the CCTV. Joint spacing is an issue for grouting programs, which are neither needed nor utilized in Albuquerque. See MAN-06 for further discussion. Structural rating is determined through the Asset Management program.			
TVI-05	Is a rating system used to determine the severity of the defects found during the inspection process?	X		
	Comments: PACP			
TVI-06	Is there documentation explaining the codes used for internal TV reporting?	X		
	Comments: PACP			
TVI-07	Approximately what percent of the total defects/issues determined by TV inspection during the past 5 years were the following?			
	Debris			X
	Debris/Grease			X
	Debris/Roots			X
	Grease			X

Checklist Item		Yes	No	N/A
	Grease/Roots/Debris			X
	Grease/Sag In Line			X
	Intruding Tap/Roots			X
	Intruding Tap			X
	Line Failure			X
	Offset Joint/Grease			X
	Roots			X
	Roots/Debris			X
	Roots/Grease			X
	Roots/Grease/Debris			X
	Roots/Intruding Tap			X
	Roots/Line Failure			X
	Surcharged			X
	Sag In Line/Debris			X
	Sag In Line/Grease			X
	Total			**X**
	Comments: This information is updated annually. See the current CMOM Annual Report.			
TVI-08	Are main line and lateral repairs checked by internal TV inspection after the repair(s) have been made?	X		
	Comments: Laterals are private and therefore repairs are typically the responsibility of property owner and not CCTVed after repair.			

Sewer Cleaning (CLN)

Checklist Item		Yes	No	N/A
CLN-01	What is the system cleaning frequency? (the entire system is cleaned every "X" years)			
	Comments: In accordance with Core Attribute 5: Collection System Maintenance of *Core Attributes of Effectively Managed Wastewater Collection Systems*, the Water Authority has cleaning programs to clean problem locations (Short Interval) and to clean the entire system from top to bottom (Sub Basin). Both programs address the small diameter, 12-inch and smaller, gravity pipes. Via its CMOM Plan, the Water Authority has set a temporary goal of cleaning the entire small diameter system every fifteen years.			
CLN-02	What is the utility's plan for system cleaning (% or frequency in years)?			
	Comments: The Water Authority tracks the length of line cleaned and reports this each year in CMOM Report posted at			

Checklist Item		Yes	No	N/A
	http://www.abcwua.org/Sewer_System.aspx. The plan for system-wide cleaning is to accomplish the ten-year goal (see CLN-01) in approximately ten years.			
CLN-03	What percent of the sewer lines are cleaned, even high/repeat cleaning trouble spots, during the past year?			
	Comments: This is described in the CY2023 CMOM Report. The total small diameter cleaned in CY2023, between the Short Interval and Sub-Basin programs, was ~413 miles. When divided by the total small diameter length of ~2053 miles, this results in the equivalent of 20% of the system cleaned in CY2023, although some lines were cleaned more than once.			
CLN-04	Is there a program to identify sewer line segments, with chronic problems, that should be cleaned on a more frequent schedule?	X		
	Comments: Short Interval			
CLN-05	Does the utility have a root control program?	X		
	Comments: Roots are managed through preventive maintenance (PM) including advanced data collection, management, and utilization. Though CCTV utilizing PACP coding, roots impacting a pipe segment are attributed to the specific Maximo asset, i.e. pipe segment. A custom software evaluates the pipe conditions and, where appropriate, recommends specific nozzles for the next PM cleaning, i.e. sub-basin or short interval. Repeat issues of any kind, including roots, that do not require replacement of an asset, are addressed through the short interval program.			
CLN-06	Does the utility have a fats, oils, and grease (FOG) program?	X		
	Comments:			
CLN-07	What is the average number of stoppages experienced per 100 miles of sewer pipe per year?			
	Comments: This information is updated annually. See the current CMOM Annual Report.			
CLN-08	Has the number of stoppages increased, decreased, or stayed the same over the past 5 years?			
	Increased			X
	Decreased			X
	Stayed the same			X
	Comments This information is updated annually. See the current CMOM Annual Report.			
CLN-09	Are stoppages plotted on maps and correlated with other data such as pipe size and material or location?	X		
	Comments: SSOs are carefully studied by the SSO Study Team and are correlated to many factors, including pipe parameters and location. Stoppages (10-40s, -42s, and -48s) are plotted using GIS. The Water Authority is a leader in			

Checklist Item		Yes	No	N/A
	the study of blockages relative to location in a system. See the recent feature article (”SSO Risks Increase with Flow”) in the May 2019 Water Environment & Technology magazine.			
CLN-10	Do the sewer cleaning records include the following information?			
	Date and time	X		
	Cause of stoppage	X		
	Method of cleaning	X		
	Location of stoppage or routine cleaning activity	X		
	Identity of cleaning crew	X		
	Further actions necessary/initiated	X		
	Comments:			
CLN-11	If sewer cleaning is done by a contractor are videos taken before and after cleaning?	X		
	Comments:			

Manhole Inspection and Assessment (MAN)

Checklist Item		Yes	No	N/A
MAN-01	Does the utility have a routine manhole inspection and assessment program? IF NO, GO TO MAN-06	X		
	Comments: The Water Authority has implemented a program of typically collecting manhole condition data for each manhole opened for cleaning or CCTV. The worker provides data on channel/bench and ring/cover condition and makes a recommendation on the need for follow-up work of any kind. The forms are reviewed by office staff under the Assistant Superintendent and follow-up work orders are created. CCTV inspections include a down-view at the beginning to inspect and document channel/bench conditions.			
MAN-02	Are the results and observations from the routine manhole inspection recorded?			X
	Comments: See MAN-01.			
MAN-03	Does the utility have a goal for the number of manholes inspected annually?			X
	Comments: See MAN-01.			
MAN-04	How many manholes were inspected during the past year?			X
	Comments: See MAN-01.			
MAN-05	Do the records for manholes/pipe inspection include the following?			
	Conditions of the frame and cover	X		
	Evidence of surcharge			X
	Offsets or misalignments			X

Checklist Item		Yes	No	N/A
	Atmospheric hazards measurements (especially hydrogen sulfide)	X		
	Details on the root cause of cracks or breaks in the manhole or pipe including blockages	X		
	Recording conditions of (corbel, walls, bench, trough, and pipe seals)	X		
	Presence of corrosion			X
	If repair is necessary	X		
	Manhole identifying number/location			X
	Wastewater flow characteristics (flowing freely or backed up)			X
	Accumulation of grease, debris, or grit			X
	Presence of infiltration, location, and estimated quantity			X
	Inflow from manhole covers			X
	Comments: Answers only for manholes as pipe inspections are addressed elsewhere – see TVI. See MAN-01 for discussion of routine manhole inspection. Regarding hydrogen sulfide, measurements are made and stored for the odor control program - see HSC. For root cause of blockages, the Water Authority studies each blockage and determines a cause and mitigation - see the latest CMOM Report.			
MAN-06	Does the utility have a grouting program?		X	
	Comments: Grouting programs address infiltration at pipe joints. This would address a problem the Water Authority does not experience, therefore no.			

Pump Stations (PS)

Checklist Item		Yes	No	N/A
PS-01	Are Standard Operating Procedures (SOPs) and Standard Maintenance Procedures (SMPs) used for each pump station?	X		
	Comments: The Water Authority does have an Operator training program that standardizes procedures. SOJPs are utilized while making many of the standard maintenance repairs at the pump stations. Maintenance uses SMJP's for preventative and repetitive maintenance actions. All PM'S have a job plan attached to the work order. For corrective maintenance and repairs, the maintenance section uses general maintenance troubleshooting and product manufacturer's technical documents (equipment O&M Manuals).			
PS-02	Are there enough trained personnel to properly maintain all pump stations?	X		
	Comments:			

Checklist Item		Yes	No	N/A
PS-03	Is there an emergency operating procedure for each pump station?	X		
	Comments: The Overflow Emergency Response Plan (OERP) addresses all spills including those at pump stations. See comments for PS-01: Each of these SOPs includes emergency operating procedures. For Lift Stations 20 and 24, the two main pump stations with standby generators, shunt trips have been installed and loss of power is tested using the Shunt Trip SOP.			
PS-04	Is there an alarm system to notify personnel of pump station failures and overflow?	X		
	Comments:			
PS-05	Percent of pump stations with backup power sources	100%		
	Comments: Seven (LS13, LS14, LS20, LS24, LS27, VS62, VS63) have standby generators on-site. The remainder have connections to portable generators.			
PS-06	Does the utility use the following methods when loss of power occurs?			
	On-site electrical generators	X		
	Portable electric generators	X		
	Vacuum trucks to bypass pump station	X		
	Alternate power source	X		
	Other			
	Comments:			
PS-07	Is there a procedure for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows?			X
	Comments:			
PS-08	Are wet well operating levels set to limit pump start/stops?	X		
	Comments:			
PS-09	Are the lead, lag, and backup pumps rotated regularly?	X		
	Comments:			
PS-10	Are operation logs maintained for all pump stations?	X		
	Comments:			
PS-11	Are the original manuals that contain the manufacturers recommended maintenance schedules for all pump station equipment easily available?	X		
	Comments: Required manufacturer information is included in the Maximo Job Plans utilized for PM / CM work.			
PS-12	On average, ~how often were pump stations inspected during the past year?			X
	Comments: 3 times/week / per station is a reasonable estimate.			
PS-13	Are records maintained for each inspection?		X	

Checklist Item		Yes	No	N/A
	Comments:			
PS-14	Average annual labor hours spent on pump station inspections			X
	Comments: This information is not available from the current CMMS.			
PS-15	Percent of pump stations with pump capacity redundancy	98%		
	Comments: All but one.			
PS-16	Percent of pump stations with dry weather capacity limitations	0%		
	Comments:			
PS-17	Percent of pump stations with wet weather capacity limitations	0%		
	Comments:			
PS-18	Percent of pump stations calibrated annually			
	Comments: 1) At the non-manhole stations, pump meters allow the Operator to periodically check the pump discharge and, if the rate drops, something needs to be fixed. Generally, this is a wear ring. 2) In the AirVac system, pit controllers are routinely calibrated (approximately every workday) and balanced when a lack of vacuum is detected at the end of the system. Chart recorders are checked at each station during every Operator visit to check for vacuum levels.			
PS-19	Percent of pump stations with permanent flow meters	~9%		
	Comments: Typically only large stations, and one which we bill by volume pumped, have flow meters.			

Capacity Assessment (CA)

	Checklist Item	Yes	No	N/A
CA-01	Does the utility have a flow monitoring program?	X		X
	Comments: The Water Authority owns and maintains a sewer model. Flow monitoring was performed to calibrate the model initially. Additional flow monitoring has been obtained to support specific rehab projects and in CY2018, to calibrate the WATS model (see HSMC-01). However, flow rates do not change quickly enough to justify on-going monitoring and, in fact, flow rates have been moderately decreasing due to water conservation.			
CA-02	Does the utility have a comprehensive capacity assessment and planning program?	X		
	Comments: The Water Authority owns and maintains a sewer model. This model has been calibrated to existing conditions and has the capability to project future flow conditions under various scenarios selected by the modeler.			
CA-03	Are flows measured prior to allowing new connections?			X
	Comments: There are no capacity limitations in the system that would make this appropriate.			
CA-04	Do you have a tool (hydraulic model, spreadsheet, etc.) for assessing whether adequate capacity exists in the sewer system? IF NO, GO TO CA-06.	X		
	Comments:			
CA-05	Does your capacity assessment tool produce results consistent with conditions observed in the system?	X		
	Comments:			
CA-06	What is the ratio of peak wet weather flow to average dry weather flow at the wastewater treatment plant?			
	Comments: No difference is noted by SWRP O&M.			
CA-07	How many permanent flow meters are currently in the system? *(Include meters at pump stations and wastewater treatment plants)*			
	Comments: There are no flow meters on pump stations in the Collection System. All flow to the SWRP is measured by a single influent magnetic flow meter (FT-7100). Two ultrasonic meters on the channels to the Rio Grande provide a measurement of flow discharged from the SWRP.			
CA-08	How frequently are the flow meters checked?			
	Comments: Each flow meter has one-year annual PM in Maximo.			
CA-09	Do the flow meter checks include the following?			
	Independent water level			X
	Checking the desiccant			X
	Velocity reading		X	
	Cleaning away debris			X

Checklist Item		Yes	No	N/A
	Downloading data			X
	Battery condition			X
	Comments: The meters are checked per manufacturer recommendations.			
CA-10	Are records maintained for each inspection? IF NO, GO TO CA-12	X		
	Comments:			
CA-11	Do the flow monitoring records include the following?			
	Descriptive location of flow meter	X		
	Type of flow meter	X		
	Frequency of flow meter inspection	X		
	Frequency of flow meter calibration	X		
	Comments:			
CA-12	Does the utility maintain any rain gauges or have access to local rainfall data?		X	
	Comments: Other than the publicly accessible Weather Service data on the Internet.			
CA-13	Does the utility have any wet weather capacity problems?		X	
	Comments:			
CA-14	Are low points or flood-plain areas monitored during rain events?	X		
	Comments: Rainfall in Albuquerque is associated with electrical power failures; therefore, crews and operators are aware that rainfall likely means stations will need power to be reset. Therefore, the Pump Station Supervisor and AVOPS Superintendent do proactively monitor conditions.			
CA-15	Does the utility have any dry weather capacity problems?		X	
	Comments:			
CA-16	Is flow monitoring used for billing purposes, capacity analysis, and/or inflow and infiltration investigations?	X		
	Comments: Flow monitoring is described in CA-01. Inflow and infiltration are not considered a problem in the Water Authority system.			

Tracking SSOs (TRK)

Checklist Item		Yes	No	N/A
TRK-01	How many SSO events have been reported in the past 5 years?			X
	Comments: This information is updated annually. See the current CMOM Annual Report.			
TRK-02	What percent of the SSOs were less than 1,000 gallons in the past 5 years?			X

Checklist Item		Yes	No	N/A
	Comments: This information is updated annually. See the current CMOM Annual Report.			
TRK-03	Does the utility document and report all SSOs regardless of size?	X		
	Comments:			
TRK-04	Does the utility document basement backups?	X		
	Comments:			
TRK-05	Are there areas that experience frequent basement or street flooding?		X	
	Comments: However, repeat locations receive additional study beyond normal SSO study.			
TRK-06	Approximately what percent of SSOs discharges were from each of the following in the last 5 years?			
	Manholes			X
	Lift/Vacuum Systems (Revised term)			X
	Main and trunk sewers			X
	Lateral and branch sewers			X
	Grand Total			**X**
	Comments: This information is updated annually. See the current CMOM Annual Report.			
TRK-07	Approximately what percent of SSOs discharges were caused by each of the following in the last 5 years? (Revised terms)			
	Construction			X
	Cause Unknown			X
	Debris			X
	Debris/Grease			X
	Debris/Roots			X
	Equipment Failure			X
	Grease			X
	Grease/Roots/Debris			X
	Grease/Sag In Line			X
	Intruding Tap/Roots			X
	Intruding Tap			X
	Line Failure			X
	Manhole/Surcharged			X
	Offset Joint/Grease			X
	Roots			X
	Roots/Debris			X
	Roots/Grease			X
	Roots/Grease/Debris			X

Checklist Item		Yes	No	N/A
	Roots/Intruding Tap			X
	Roots/Line Failure			X
	Surcharged			X
	Sag In Line/Debris			X
	Sag In Line/Grease			X
	Grand Total			**X**
	Comments: This information is updated annually. See the current CMOM Annual Report.			
TRK-07A	What percentage of SSOs were released to:			
	Ultimate Discharge Location			
	Arroyo (Concrete)			X
	AD - Arroyo (Dirt)			X
	Street (Dirt)			X
	Private Property			X
	Street (Pavement)			X
	Storm Sewer			X
	Yard			X
	Grand Total			**X**
	Comments: This information is updated annually. See the current CMOM Annual Report.			
TRK-07B	For surface water releases, what percent are to areas that could affect:			
	Contact recreation (beaches, swimming areas)			X
	Drinking water sources			X
	Shellfish growing areas			X
TRK-08	How many chronic SSO locations are in the collection system?			X
	Comments: This information is updated annually. See the current CMOM Annual Report.			
TRK-09	Are pipes with chronic SSOs being monitored for sufficient capacity and/or structural condition?			X
	Comments: System does not have chronic capacity issues. Structural condition issues are examined and evaluated by post-SSO CCTV.			
TRK-10	Prior to collapse, are structurally deteriorating pipelines being monitored for renewal or replacement?	X	X	
	Comments: Some lines are identified and rehabilitated prior to collapse. Others are not.			

Overflow Emergency Response Plan (OERP)

Checklist Item		Yes	No	N/A
OERP-01	Does the utility have a documented OERP available for utility staff to use? IF NO, GO TO OERP-04	X		
	Comments:			
OERP-02	How often is the OERP reviewed and updated? *(Annually, Biannually, etc.)*			X
	Comments: As appropriate.			
OERP-03	Are specific responsibilities detailed in the OERP for personnel who respond to emergencies?	X		
	Comments:			
OERP-04	Are staff continuously trained and drilled to respond to emergency situations?	X		
	Comments: Substitute "regularly" for "continuously".			
OERP-05	Do work crews have immediate access to tools and equipment during emergencies?	X		
	Comments:			
OERP-06	Does the utility have standard procedures for notifying state agencies, local health departments, the NPDES authority, the public, and drinking water authorities of significant overflow events?	X		
	Comments:			
OERP-07	Does the procedure include a current list of the names, titles, phone numbers, and responsibilities of all personnel involved?	X		
	Comments:			
OERP-08	Does the utility have a public notification plan?	X		
	Comments: Public notification is addressed in page 10 of the OERP. Water Authority crews, or in rare cases the On-Call contractor, will remain onsite to continuously recover the spill until removal is completed.			
OERP-09	Does the utility have procedures to limit public access to and contact with areas affected with SSOs? *(procedure can be delegated to another authority)*			X
	Comments: Per the OERP, the Water Authority utilizes two Vactors to respond to a spill. The first to unblock and the second is to intercept and capture the spill. Removal of ponded sewage is typically continuous until complete.			
OERP-10	Does the utility use containment techniques to protect the storm drainage system?	X		X
	Comments: See response to OERP-09. The use of a second Vactor to interceptor and capture a spill is superior to containment techniques: 1) It is			

Checklist Item		Yes	No	N/A
	much faster in that Vactors are typically dispatched from a field location rather than bringing a crew from the field to then drive a seldom used truck containing sand bags or equivalent; 2) The spill is removed rather than ponding in a street and becoming another issue. Where spills reach a drainage channel spills are contained typically with a berm. This typically occurs in a cooperative response with the MS4 impacted by the spill.			
OERP-11	Do the overflow records include the following information?			
	Date and time	X		
	Cause(s)	X		
	Names of affected receiving water(s)	X		
	Location	X		
	How it was stopped	X		
	Any remediation efforts	X		
	Estimated flow/volume discharged	X		
	Duration of overflow	X		
	Comments:			
OERP-12	Does the utility have signage to keep public from affected area?			X
	Comments: See OERP-08.			

Smoke and Dye Testing (SDT)

Checklist Item		Yes	No	N/A
SDT-01	Does the utility have a smoke testing program to identify sources of inflow and infiltration?			X
	Comments: The smoke testing program is utilized but not to identify inflow and infiltration which is believed to not be issue in this system.			
SDT-01A	Does the utility have a smoke testing program to identify sources of inflow and infiltration in illegal connectors?			X
	Comments: The smoke testing program is utilized but not to identify inflow and infiltration which is believed to not be an issue in this system.			
SDT-01B	Does the utility have a smoke testing program to identify sources of inflow and infiltration in house laterals (private service laterals)?			X
	Comments: The smoke testing program is utilized but not to identify inflow and infiltration which is believed to not be an issue in this system.			
SDT-02	Are there written procedures for the frequency and schedule of smoke testing?			X
	Comments:			

Checklist Item		Yes	No	N/A
SDT-03	Is there a documented procedure for isolating line segments?			X
	Comments:			
SDT-04	Is there a documented procedure for notifying local residents that smoke testing will be conducted in their area?	X		
	Comments:			
SDT-05	What is the guideline for maximum amount of the line to be tested at one time? *(Feet or Miles)*			X
	Comments:			
SDT-06	Are there guidelines for the weather conditions under which smoke testing should be conducted?			X
	Comments:			
SDT-07	Does the utility have a goal for the percent of the system smoke tested each year?			X
	Comments:			
SDT-08	What percent of the system has been smoke tested over the past year?			X
	Comments:			
SDT-09	Do the written records contain location, address, and description of the smoking element that produced a positive result?			X
	Comments:			
SDT-10	Does the utility have a dye testing program?	X		
	Comments: The dye testing program is utilized as needed but not to identify inflow and infiltration which is believed to not be an issue in this system.			
SDT-11	Are there written procedures for dye testing?	X		
	Comments:			
SDT-12	Does the utility have a goal for the percent of the system dye tested each year?			X
	Comments:			
SDT-13	What percent of the main collection system had been dye tested over the past year?			X
	Comments:			
SDT-14	Does the utility share smoke and dye testing equipment with another utility?		X	
	Comments:			

Hydrogen Sulfide Monitoring and Control (HSMC)

Checklist Item		Yes	No	N/A
HSMC-01	How would you rate the system vulnerability for hydrogen sulfide corrosion?			
	Not a problem			
	Only in a few isolated areas			
	A major problem		X	
	Comments: The Water Authority is aggressively addressing corrosion through the application of chemicals (ferric chloride; hydrogen peroxide for PRI-SC; Bioxide; magnesium hydroxide; calcium hydroxide) for odor and corrosion reduction. The Water Authority is completing development of a WATS model to identify cost effective control programs and to locate future stations, including air phase.			
HSMC-02	Does the utility have a corrosion control program?	X		
	Comments: See HSMC-01.			
HSMC-03	Does the utility take hydrogen sulfide corrosion into consideration when designing new or replacement sewers?	X		
	Comments: Only corrosion resistant pipe materials are used. Manholes are coated where corrosion is anticipated.			
HSMC-04	Does the utility have written procedures for the application of chemical dosages?			X
	Comments: 1) The Water Authority utilizes a sophisticated system of odor control in which specific chemicals are implemented based on the system needs. The largest system is the Peroxide Regenerated Iron – Sulfide Control (PRI-SC) process in which ferric chloride is dosed from four stations and regenerated with hydrogen peroxide. Dosing sufficiency is determined by monitoring that is uploaded on a bi-weekly basis. 2) Written procedures are utilized: in the off-loading of railcars; in the transfer of ferric chloride from Station 70 to the SJCWTP; operation of the leak detection at Station 51; work plans at all stations.			
HSMC-05	Are the chemical dosages, dates, and locations documented?	X		
	Comments:			
HSMC-06	Does the utility document where odor is a continual problem in the system?			X
	Comments: All odor complaints (10-52s) are documented in Maximo. Complaints are resolved and while some are recurring, none are continual.			
HSMC-07	Does the utility have a program in place for renewing or replacing severely corroded sewer lines to prevent collapse?	X		
	Comments:			

HSMC-08	Are the following methods used for hydrogen sulfide control?			
	Aeration		X	
	Iron Salts	X		
	Enzymes		X	
	Activated charcoal canisters	X		
	Chlorine		X	
	Sodium hydroxide		X	
	Hydrogen peroxide	X		
	Potassium permanganate		X	
	Biofiltration	X		
	Other	X		
	Comments: Other currently includes the following: Magnesium hydroxide; Bioxide; residual iron from the SJCWTP.			
HSMC-09	Does the system contain air relief valves at the high points of the force main system?	X		
	Comments:			
HSMC-10	How often are the valves maintained and inspected? *(Weekly, Monthly, etc.)*	X		
	Comments: On an annual basis, the Water Authority inspects all force main alignments. Valves found are compared to GIS and this information is stored in Maximo.			
HSMC-11	Does the utility enforce pretreatment requirements?	X		
	Comments:			