THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Texas v. San Antonio Water System.

FOR UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Date: 6·4·13

JOHN BLEVINS
Division Director
Compliance Assurance and Enforcement Division
U.S. EPA, Region 6
1445 Ross Ave., Suite 1200 (6EN-W)
Dallas, TX 75202
Phone: (214) 665-2266

Date: 6/4/13

EFREN ORDONEZ
Office of Regional Counsel
U.S. EPA, Region 6
1445 Ross Ave., Suite 1200 (6RC-EW)
Dallas, TX 75202
Phone: (214) 665 2181

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Texas v. San Antonio Water System.

FOR PLAINTIFF STATE OF TEXAS:

Date: 7-3-2013

MARK L. WALTERS
Assistant Attorney General
Office of the Attorney General
P.O. Box 12548
Austin, TX 78711-2548
Phone: (512) 463-2012

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Texas v. San Antonio Water System.

FOR DEFENDANT SAN ANTONIO WATER SYSTEM:

Date: 6-5-13

ROBERT R. PUENTE
President and Chief Executive Officer
San Antonio Water System
2800 U.S. Highway 281 North
San Antonio, TX 78212

APPENDIX A

APPENDIX A

TRAINING PROGRAM IN CMOM

SAWS Employee Training Categories

Following is a summary of the different types of employees and wastewater collection system crews that SAWS utilizes to perform operation and maintenance activities related to SSO reduction and mitigation in the SAWS wastewater collection system. Following each employee or crew type is a summary of the typical technical and skills training topics that SAWS may typically offer to each employee or crew type. The specific training received by each employee or crew will depend on the actual types of work assigned to each employee or crew.

1. Typical training topics that may be offered to specific types of wastewater collection system operations and maintenance employees or crews:
    a. Sewer Cleaning Crews:
        i. sewer cleaning
        ii. mechanical proofing
        iii. collection of manhole inspection data
        iv. collection of sewer visual inspection data
    b. Sanitary sewer overflow (SSO) response Crews:
        i. sewer cleaning (for blockage removal)
        ii. SSO containment
        iii. SSO clean-up
    c. Sewer construction and/or repair crews:
        i. sewer repair methods
        ii. sewer pipe patching
    d. Sewer and manhole inspection crews:
        i. NASSCO PACP defect code training (or other sewer defect coding system training) for sewer CCTV camera operators
        ii. collection of manhole inspection data
        iii. collection of visual sewer inspection data
    e. FOG Inspectors
        i. grease removal equipment inspection procedures
        ii. inspection data collection
    f. Lift station operations and maintenance crews
        i. lift station equipment maintenance
    g. Lift station emergency response crews
        i. lift station alarm response procedures
        ii. SSO containment
        iii. SSO clean-up
    h. Crew supervisors
        i. when appropriate, attend training attended by crews they supervise
    i. Crews or employees responsible for SSO documentation and reporting:
        i. data collection for SSO events
        ii. SSO volume estimation

APPENDIX B

Appendix B
SAWS System-Wide Cleaning Program Process and Guidelines

Small Diameter (SD) Pipes – Less than 24-inch Diameter

Plan, Schedule, and Conduct System Wide SD Cleaning and Visual Inspection Program

Implement SD Gravity Sewer Main Cleaning and Visual Inspection Activities

- Clean all SD pipes on a 10 year cycle. Clean a minimum of 12% of the total SD pipe mileage annually. Repeat SD pipe cleaning mileage is counted towards the 12% annual minimum.

Assess Visual Inspection Data

- Evaluate whether pipe should be referred for a more detailed inspection

Implement Repeat ("Hot Spot") Gravity Sewer Cleaning and Visual Inspection Activities

- Pipes will be selected for repeat cleaning and cleaning frequencies will be determined as warranted based on:
  - SAWS best professional judgment
  - Utilizing SSO information
  - CCTV findings
  - Previous sewer cleaning findings.

Refer for CCTV inspection if warranted

- Guidelines for referral include:
  - Cleaning Tools will not pass through pipe
  - Pieces of broken pipe or significant quantities of fresh soil observed at downstream manhole

Evaluate Cleaning Findings

Guidelines for evaluation of gravity sewer cleaning findings

Pipes Included in "Hot Spot" Program:

- Clear – Reduce Frequency
- Light – Keep at current frequency
- Medium/Heavy – Increase Frequency

Pipes Not in the "Hot Spot" Program:

- Medium/Heavy – Add Pipe to the Hot Spot Program

Note: These are computer generated recommendations based on business logic that a human reviews to accept/ reject/revise.

Review and Implement Cleaning Frequency Changes

- Human will review computer generated recommendations:
  - Accept recommendation
  - Reject recommendation
  - Revise recommendation
- Update the Preventive Maintenance Cleaning module in CMMS with Accepted changes

Appendix B
SAWS System-Wide Cleaning Program Process and Guidelines

Large Diameter (LD) Pipes – Greater than or Equal to 24-inch Diameter

Plan, Schedule, and Conduct LD Inspection Activities

- Inspect all LD pipes per requirements listed in Paragraph 14.c of the Consent Decree

Evaluate LD Pipe Inspection Data

Inspection Data Evaluation Guidelines to Determine Cleaning Needs

- SAWS inspection results must indicate that the average depth of debris exceeds twenty percent of that pipe's diameter. In addition, for any such pipe, SAWS will use its professional judgment to decide whether to clean the pipe if the model indicates that the pipe is able to convey peak flows with the observed debris.

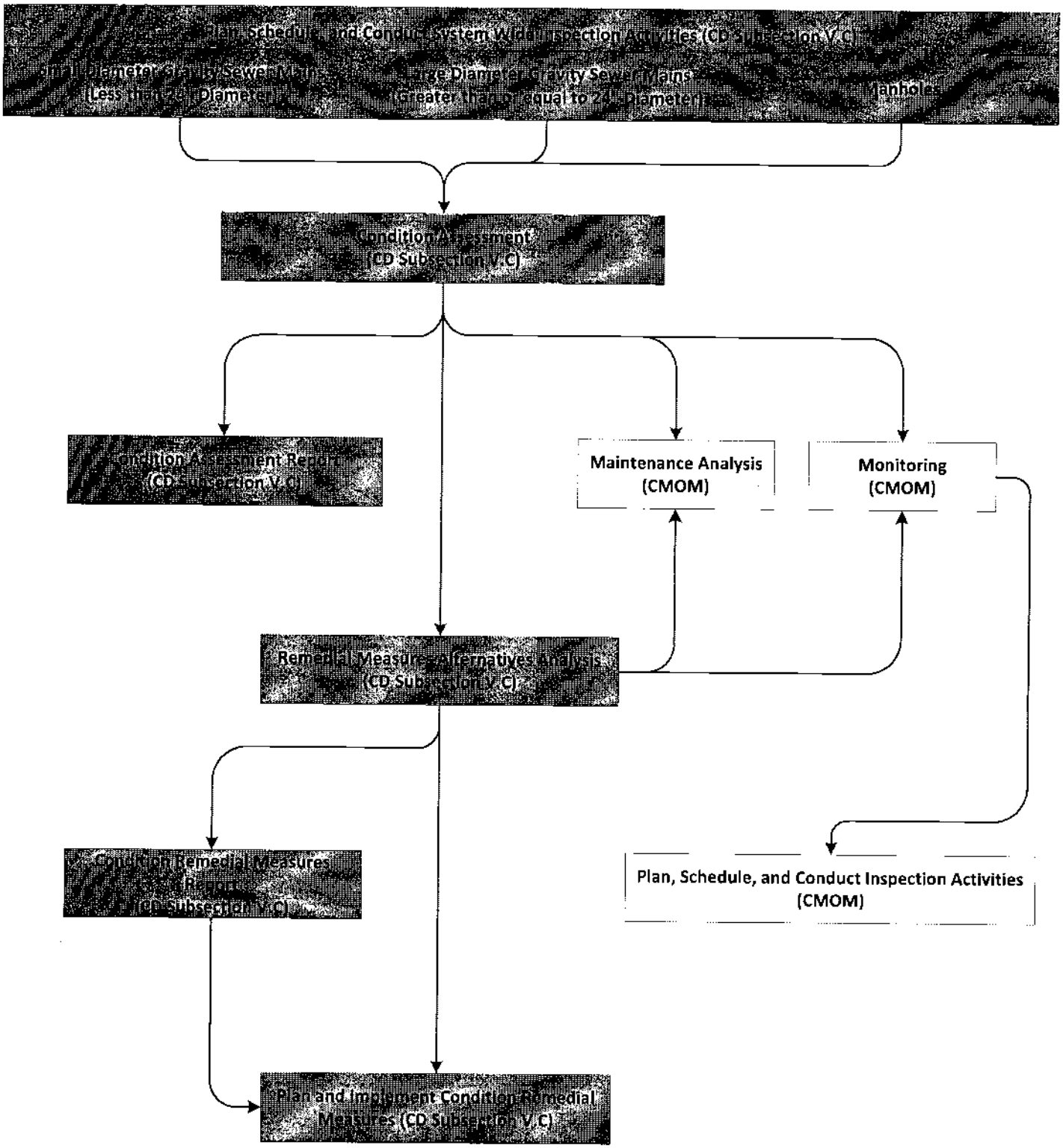
Implement LD Cleaning Activities

- Schedule and Implement LD Cleaning.

APPENDIX C

Appendix C

SAWS Condition Assessment and Remediation Program Process and Guidelines Overview



Appendix C

SAWS Condition Assessment and Remediation Program Process and Guidelines

Plan, Schedule, and Conduct System Wide Inspection Activities (CD Subsection V.C)

Small Diameter Gravity Sewer Mains (Less Than 24" Diameter)

- Inspection methods:
  - CCTV (Clay pipe installed prior to 1973, concrete pipe, and EAR pipe)
  - [illegible] pipe installed from 1973 [illegible]
  - Visual inspection methods may include:
    - Smoke testing,
    - Mechanical probing,
    - Sewer cleaning findings, or
    - Dye testing
  - Other techniques (such as new technologies or methods that become available)
- Prioritize pipes for inspection
  - Generally prioritize pipe selected for CCTV and pole camera by age, materials, analysis of past SSO frequency and volumes, proximity of sewer pipe to surface waters, and other appropriate factors
  - Group pipes for EAR inspections
  - Additional inspections as needed for investigations
- Schedule and conduct inspection activities
  - Generally schedule visual inspection in conjunction with small diameter gravity sewer main cleaning

Large Diameter Gravity Sewer Mains (Greater than or equal to 24" Diameter)

- Inspection Methods
  - CCTV, Sonar, [illegible] video, laser imaging, physical entry
  - Other methods normally utilized by other sewer management agencies
  - Other techniques (such as new technologies or methods that become available)
- Select and prioritize pipes for inspection
  - Generally prioritize pipes by age, material, analysis of past SSO frequency and volumes, proximity of sewer pipes to surface waters and other appropriate factors
  - Group pipes for EARZ inspections
  - Additional inspections as needed for investigations
- Schedule and conduct inspection activities

Manholes

- Inspection Methods
  - Visual
  - Other techniques (such as new technologies or methods that become available)
- Schedule and conduct inspection activities
  - Generally schedule inspection in conjunction with small and large diameter gravity sewer main inspections

Condition Assessment (CD Subsection V.C)

- Perform condition assessment based on these guidelines
  - Prioritize the review of inspection data based on the severity of findings - Prioritize review of small diameter gravity sewer pipes using PACP Quick Ratings. In general, review pipes with grade 5 and 4 defects first, followed by pipes with grade 3, 2, or 1 defects.
  - Categorize assets based on the following table:

Category	Example Structural Conditions SAWS Anticipates for Each Category	Likely Outcome
E - Very Poor Condition	Structural collapse, which has or could likely cause SSOs or collapse imminent	Alternatives Analysis
D - Poor Condition	Significant missing material or broken material, severe corrosion with exposed pipe wall reinforcement, or pipe wall deformation greater than 25% from structural deterioration combined with hinge fractures	Alternatives Analysis or Monitoring
C - Fair Condition	Pipe wall deformation less than 25% from structural deterioration combined with hinge cracks, displaced fractures, or moderate corrosion but no pipe wall reinforcement visible	Monitoring or Maintenance Analysis
B - Good Condition	Pipe wall deformation from construction impacts or less than 10% of diameter from structural deterioration, minor corrosion, slightly open non-displaced fractures, or other moderate material degradation	Maintenance Analysis
A - Very Good Condition	Mild defects which may include tight non-displaced cracks or other mild material degradation	Maintenance Analysis

- Perform condition assessment on inspection data and consider appropriate criteria which shall include factors such as the following:
  - Type and severity of structural defects
  - Historical operation and maintenance data: Overflows, inspections, cleaning findings, cleaning frequency, previous remediation, customer complaints, and other unique circumstances for each individual asset
  - Site conditions: Property rights, access for maintenance and construction, depth, soil type, environmental sensitivity, surface restoration requirements, and other unique circumstances for each individual asset
- Inspection data may also be used to analyze maintenance type and frequency per Appendix B (System Wide Cleaning Program Process and Guidelines).

See Page 3

Appendix C
SAWS Condition Assessment and Remediation Program Process and Guidelines

See Page 2

Condition Assessment Summary Report
(CD Subsection V.C)
See Condition Assessment Report Template in Appendix G

Remedial Measures Alternatives Analysis (CD Subsection V.C)
SAWS shall determine which solution is most likely to resolve the structural defects with the most practical solution and timeframe for repairing structural defects considering both the long-term performance of gravity sewer mains/manholes and the life-cycle cost for the gravity sewer mains/manholes. Such solutions and techniques may include, but are not limited to:
- Gravity Sewer Mains
  - Point Repairs: Grouting, Sleeve system, CIPP sleeve and lining, Robotic sewer pipe repairs, Open trench
  - Pipe Rehabilitation: Slip lining, CIPP
  - Pipe Replacement: Open trench, Pipe bursting, Jack and bore, Directional drilling, Micro tunneling
  - Other remediation techniques (such as new technologies or methods that become available)
  - Monitoring or Maintenance Analysis (performed as part of CMOM)
- Manholes
  - Manhole Repair or Rehabilitation: Poured in place liner, Cured in place liner, Cementitious coating, Polymer coating, Mechanical seals and insert replacement, Bolt replacement, Cover replacement, Manhole frame adjustment and resealing
  - Manhole Replacement
  - Other remediation techniques (such as new technologies or methods that become available)
  - Monitoring or Maintenance Analysis (performed as part of CMOM)

Maintenance Analysis
(CMOM)
- Adjust maintenance type or frequency as warranted according to Appendix B.
**Notes*
- Analysis will be performed as part of CMOM

Monitoring
(CMOM)
- Update inspection method and schedule next inspection date as warranted.
**Notes*
- Monitoring will be performed as part of CMOM

Plan, Schedule, and Conduct Future Monitoring Activities (CMOM)

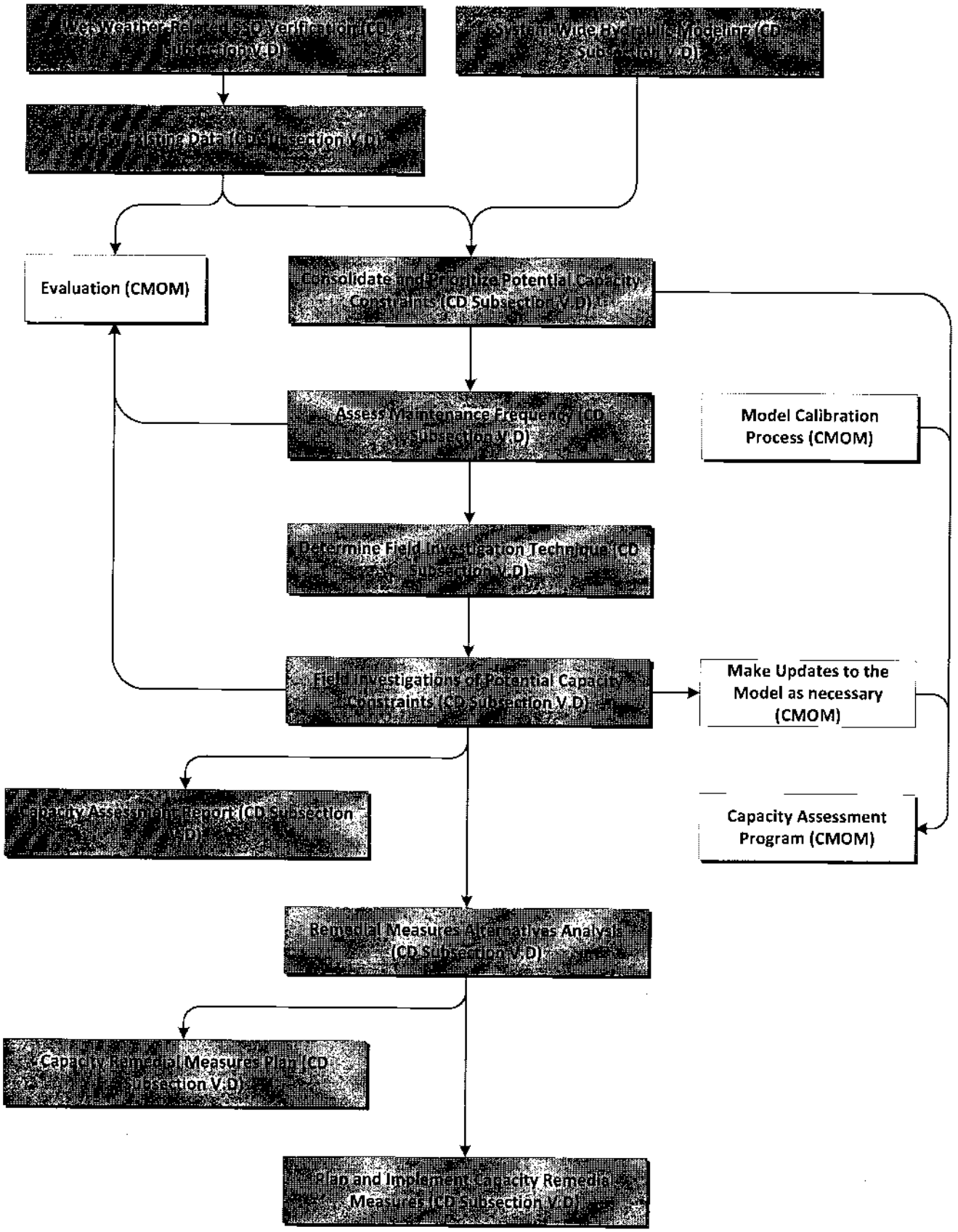
Plan and Implement Condition Remedial Measures
(CD Subsection V.C)
- Prioritize remedial measures and periodically evaluate priorities
  - Generally, prioritize by severity of defects identified during inspections, frequency and history of SSOs, pipe age and material, size, maintenance history, or other factors determined to be appropriate
- SAWS may implement any Condition Remedial Measures work generated consistent with this appendix prior to submittal of the Condition Remedial Measures Report and this work shall be credited towards SAWS compliance
- Coordinate with capacity remedial measures as needed
- Allocate budget
- Design as needed
- Implement remedial measures

Condition Remedial Measures Plan (CD Subsection V.C)
See Condition Remedial Measures Report Template in Appendix G

APPENDIX D

Appendix D

SAWS Capacity Assessment and Remediation Program Process and Guidelines Overview



Appendix D
SAWS Capacity Assessment and Remediation Program Process and Guidelines

Wet Weather-Related SSO Verification (CD Subsection V.D)
[illegible] list of historical SSOs that occurred during wet weather events
*Notes
- Wet weather events are rainfall events that exceed 1 inch in a 24-hour period
- This process will also be followed for future wet weather related SSOs*

Review Existing Data (CD Subsection V.D)
- Review historical cleaning, CCTV, SSO, flow monitoring, modeling, and other data applicable to each SSO identified above
- Categorize SSO as follows:
  - A) Most likely a capacity-related SSO: Existing data indicates that there does not appear to be a history of maintenance or structural issues that may have led to the SSO
  - B) Most likely maintenance related: Existing data indicates that the cause is most likely a maintenance related cause such as FOG, Roots or Debris, but there may also be a Capacity Constraint at the SSO location
  - C) Clearly not a capacity related SSO: Existing data indicates the SSO was not capacity related. Examples include isolated events such as pools or cooling towers being drained into the sewer system or cleaning maintenance related issues such as significant FOG, roots, or debris

System-Wide Hydraulic Modeling (CD Subsection V.D)
- Apply assessment storm to existing population scenario to identify potential capacity constraints
*Notes
- Capacity Constraints are discrete areas of the WCS that are determined by SAWS, consistent with this appendix, to have a verified capacity issue that is determined to be likely to cause or materially contribute to SSOs due to wet weather events that are within design parameters. See Consolidate and Prioritize Potential Capacity Constraints for Potential Capacity Constraint criteria.
- SAWS uses a 5-year, 6-hour storm in the model as the assessment storm.
- The model is system-wide and generally includes all pipes for flow allocation purposes. Pipes that are 12 inches in diameter and larger are generally modeled, although the model may on occasion include smaller diameter pipes for unique circumstances.*

Evaluation (CMOM)
- Maintenance frequency
- Structural Repair
- Monitor
**Notes
- Evaluation will be performed as part of CMOM*

Consolidate and Prioritize Potential Capacity Constraints (CD Subsection V.D)
Priority 1: Category A SSO per Review of Existing Data and where model also predicts a SSO
Priority 2: Where model predicts SSO, but with no observed SSO; Category A SSO per Review of Existing Data but model does not predict a SSO
Priority 3: Where model predicts Hydraulic Grade Line (HGL) near ground elevation
Priority 4: Category B SSO per Review of Existing Data
Priority 5: Where pipe design capacity is exceeded for sustained 60 minutes or more but the HGL is not near the ground elevation
**Notes
- The list above represents criteria for SAWS prioritizing the potential Capacity Constraints that may warrant field investigation. This list will be used to prioritize field investigations, in general starting at the top of the list and working towards lower priorities as higher priority field investigations are concluded. SAWS may reprioritize potential Capacity Constraints as new information becomes available or adjustments to the model are made.
- Typically Priorities 1-4 are more likely than 5's to warrant Field Investigation work, though this will always be determined based upon a case-by-case engineering assessment. (For example, some pipes may be designed for the HGL to be above the crown of the pipe)
- Priority 5's shall be kept on a monitoring list or go to Field Investigation as warranted based upon a case-by-case engineering assessment. Priority 5's that do not go to Field Investigation are kept on the potential Capacity Constraint list and monitored as updates are made to the model.*

Assess Maintenance Frequency Data (CD Subsection V.D)
- Evaluate and modify as needed the maintenance frequency for each pipe under investigation to prevent blockages that would significantly reduce design capacity during the investigation

See Page 3, Determine Field Investigation Technique

Model Calibration Process (CMOM)
- Collect additional flow metering data over time
- Collect additional rain gauge data over time
- Apply appropriate observed storm events to model
- Calibrate the model to match measured flows (for both dry and wet weather flows)
- Assess calibration anomalies and adjust model
**Notes
- This process currently occurs on each of the 5 basins approximately once every 4 to 6 years (in general, one basin per year). The frequency may increase or decrease depending on growth in basins.
- Model calibration will be performed as part of CMOM*

See Page 3, Capacity Assessment Program

Appendix D
SAWS Capacity Assessment and Remediation Program Process and Guidelines

See Page 2

See Page 2

Determining Field Investigation Technique (CD Subsection V.D)

- Determine which Field Investigation Technique is most appropriate for each identified potential Capacity Constraint
  - Flow Metering (Generally used for Priority 1 or 2 potential Capacity Constraints)
  - Smart Covers (Generally used for Priority 1 or 2 potential Capacity Constraints)
  - Chalking (Generally used for Priority 3, 4 or 5 potential Capacity Constraints)
  - Visual Inspections (may be used as needed for Priority 1-5 potential Capacity Constraints)
  - Other

Field Investigations of Potential Capacity Constraints (CD Subsection V.D)

- Implement selected field investigation technique at each location until a wet weather event is experienced and determine whether there is a significant wet weather response

**Notes*

- Generally, if the HGL is at or near ground surface elevation during a wet weather event less than 1 inch over a 24 hour period, identify as a potential remedial measure and refer for remedial measures alternatives analysis.

- Generally, for wet weather events that exceed 1 inch over a 24 hour period and are less than the "assessment storm":

- If the location is in the model, SAWS should follow the below guidelines:

- Apply observed storm to model and determine predicted HGL at the potential capacity constraint location. Compare predicted HGL from model to observed HGL. SAWS shall use its best professional judgment to adjust the model if appropriate.

- If observed HGL is at or above the model's predicted HGL at the observed storm:

a. For Priority 1, 2 and 3, typically identify as a potential remedial measure and refer for alternatives analysis as appropriate.

b. For Priority 4 and 5, evaluate on a case-by-case basis as appropriate.

- If observed HGL is less than the model's predicted HGL at the observed storm:

a. For Priority 1 and 2:

i. If model predicts an overflow at the "assessment storm," evaluate on a case-by-case basis as appropriate.

ii. If model does not predict an overflow at the "assessment storm," typically remove the site from the Field Investigation program as appropriate. These sites shall be monitored in the future as part of CMOM.

b. For Priority 3, 4, and 5, typically remove the site from the Field Investigation program as appropriate. These sites shall be monitored in the future as part of CMOM.

- If the location is not in the model, SAWS shall model the location or conduct an empirical hydraulic analysis using the Rational Method or other professionally recognized storm water flow rate calculation method to determine whether the location should be identified as a potential remedial measure and referred for alternatives analysis.

- If a wet weather event is approximately equal to or exceeds the "assessment storm," and an overflow does not occur, this would not be considered a Capacity Constraint. These sites shall be monitored in the future as part of CMOM as growth occurs.

- If there is not a significant wet weather response, remove location from the Field Investigation program.

Capacity Assessment Program (CMOM)

SAWS will determine appropriate storm durations, calibrate the model for the appropriate storm durations if sufficient rain events occur, and use the storm durations to identify Potential Capacity Constraints

Make Updates to the Model as necessary (CMOM)

- Such updates may include calibration opportunities based on flow meter data, updates to attributes found during the field investigation, accounting for debris loading, or other relevant new data

**Notes*

- Updates will be performed as part of CMOM

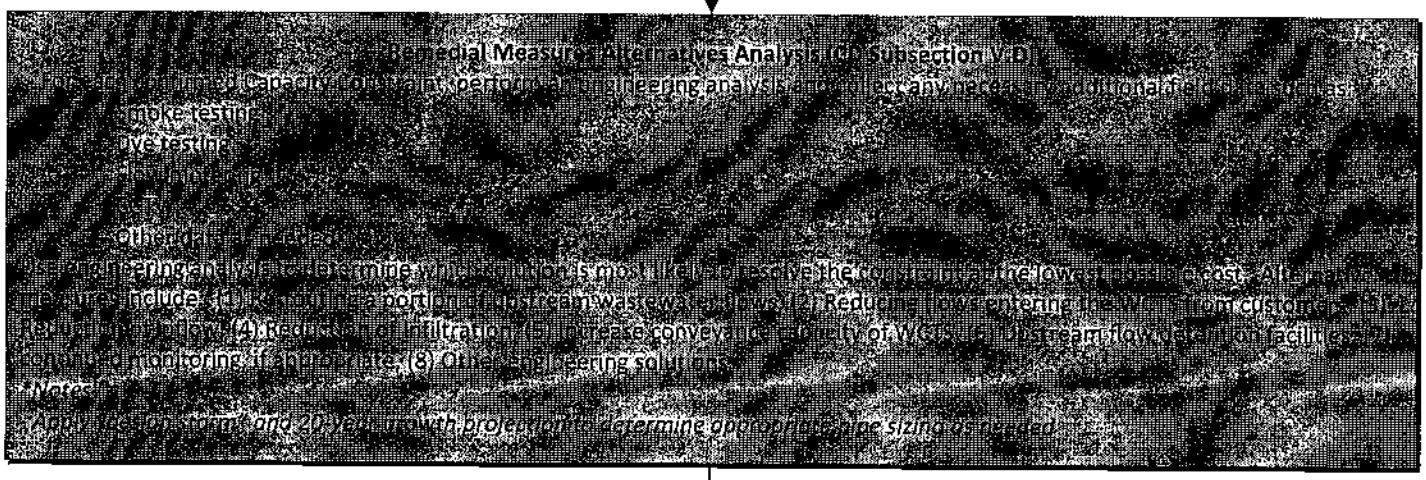
See Page 4

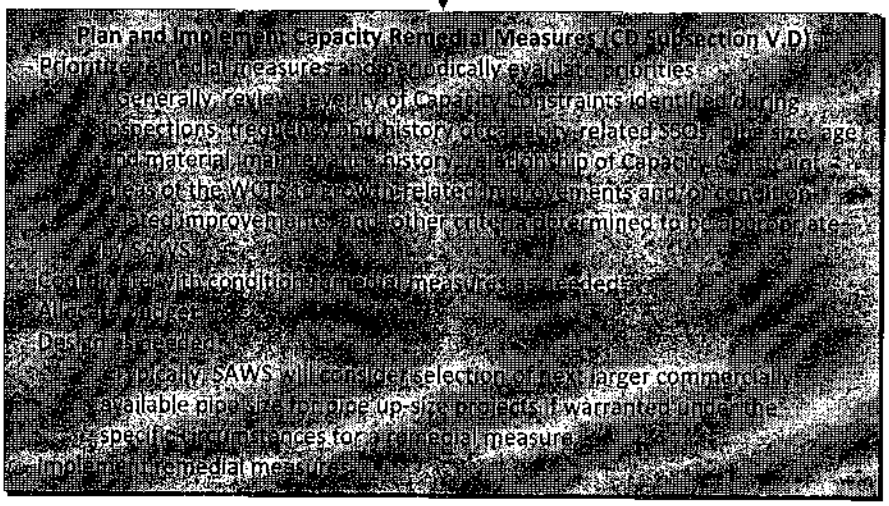
Capacity Assessment Summary Report (CD Subsection V.D)

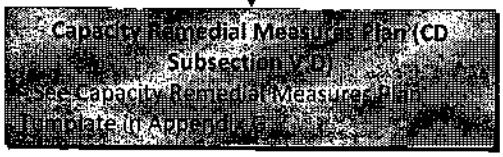
See Capacity Assessment Report Template in Appendix [illegible]

Appendix D
SAWS Capacity Assessment and Remediation Program Process and Guidelines

See Page 3







APPENDIX E

APPENDIX E

LIFT STATION REHABILITATION AND ELIMINATION PROGRAM

SAWS has been implementing a phased lift station rehabilitation and elimination program since 2005. Under this program SAWS assesses each lift station in its collection system (totaling approximately 170 lift stations from 2005 through June 2012). Based on each lift station assessment, SAWS makes a determination regarding 1) which lift stations can be eliminated by the diversion of flow to gravity mains and 2) for the remaining lift stations, what if any measures are warranted to upgrade the lift station. While SAWS lift station assessments are conducted on a case-by-case basis, a number of typical evaluation factors are routinely considered. These factors are described below. In addition, decisions to eliminate or upgrade a lift station are made on a case-by-case basis, applying the types of considerations described below.

Generally, the primary consideration in determining whether a lift station will be eliminated is the feasibility and merits of diverting flow to Gravity Sewer Mains. For those lift stations that will not be eliminated, an assessment is conducted to determine what repairs or rehabilitation may be warranted. The assessment process develops information and considers a wide variety of factors to determine the condition, capacity and operating performance of a lift station and identifies potential measures to improve condition, capacity and/or operating performance. Not all considerations are applicable to each lift station, nor does each consideration apply to each lift station in the same way, since each lift station is unique. Thus, the improvements selected for each lift station will vary, although in each case SAWS 1) installs a SCADA system for each lift station that is to be upgraded and 2) compares the lift station attributes to the Texas regulations for the design and construction of new lift stations in 30 Tex.

Admin. Code, Chapter 217. These Texas regulations provide numerous design and construction requirements including, among many others, wet well capacity, pump capacity and velocities, provisions for power quick connect facilities for portable electric generators, pump cycle times and criteria for air release valves and vaults. The purpose of the comparison is to determine for each lift station whether upgrades to conform to these new lift station regulations are appropriate. SAWS is not required by law to retrofit its lift stations to new lift station design or construction standards.

Generally, the assessment process examines the condition, capacity and operating performance of the lift station including the following types of considerations:

1. Drawdown tests are performed to determine pump capacity.
2. The condition of the wet well is inspected for structural defects.
3. The condition of the wet well liner is inspected to determine if lining repair is necessary.
4. The condition of the pumps and motors is determined.
5. Determination of the need for secondary pumps is made.
6. The condition of all inlet piping is examined.
7. Upgrading the power supply to 480 volts is analyzed.
8. The addition of soft start motor starters is considered.
9. The addition of surge arrestors for power surge protection is considered.
10. The condition of pump suction pipes is determined.
11. An analysis of site security features is made.
12. Settings on any floats or switches that operate based on fluid level are inspected.
13. The condition of wet well suction piping is examined.
14. The pump priming system is examined.

Based upon the information developed in the assessment process, SAWS identifies recommendations for each lift station for potential upgrades. Such recommendations are unique to each lift station, based upon the results of the assessment. Improvements that SAWS determines to make are then planned, funded and implemented, typically through contracts subject to the public bidding process that SAWS is required by law to follow.

The current status of the lift station rehabilitation and elimination program is described in the attached table.

Station ID	Construction or Rehabilitation Date	Construction or Rehab Note	Date of Most Recent SSO	Assessment for I.I Elimination or Rehab	Field Measured Peak Hydraulic Capacity	Model-Predicted Peak Hydraulic Flowrate (MGD)	Availability and Type of Backup Power	Equipped with SCADA	Overall Condition	Risk of Failure	Consequence of Failure	Date of Anticipated Upgrade or Decommission	Date of Upgrade Note	Comments
4	7/1/1956		N/A	3/27/2007	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
11	12/5/1983		6/21/2011	9/16/2004	4.878	3.195	QC	No	Adequate	Low	High	12/31/2016	D	
16	4/30/2012	R	9/24/2003	3/28/2007	1.21	0.878	Generator	Yes	Good	Low	High	Completed		
20	9/22/2009	R	N/A	9/14/2004	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
23	5/8/2012	R	9/7/2010	3/26/2007	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
26	1/1/1961		N/A	3/27/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2018		
35	8/24/1970		N/A	3/28/2007	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
52	11/12/2009	R	N/A	9/14/2004	1.412	N/M	QC	Yes	Good	Low	Low	Completed		
57	5/24/1990		N/A	3/28/2007	N/M	1.237	QC	No	Adequate	Low	High	8/31/2013		
61	5/22/2012	R	N/A	3/26/2007	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
73	4/22/1977		N/A	3/29/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2017	D	
74	4/22/1977		5/14/2011	3/29/2007	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
80	7/29/1976		N/A	9/16/2004	N/M	N/M	QC	No	Good	Low	Low	12/31/2019		Lift station is not in operation
94	11/15/1979		N/A	4/5/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2017	D	
100	10/19/2009	R	6/20/2006	9/1/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
102	10/19/2009	R	N/A	9/1/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
103	8/29/1980		N/A	4/26/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2017	D	
105	2/23/1981		N/A	9/14/2004	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2018		
111	12/29/1981		7/22/2010	3/26/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2016	D	
121	1/25/2012	R	5/27/2012	9/30/2004	3.386	1.481	Generator	Yes	Good	Low	High-EARZ	Completed		
126	10/22/2010		N/A	8/31/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
131	1/1/1985		4/7/2003	9/1/2004	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2015	D	
132	10/19/2009	R	N/A	9/1/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
134	1/22/2010	R	N/A	8/31/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
135	11/20/1985		N/A	8/21/2004	N/M	N/M	QC	No	Adequate	Low	High-EARZ	12/31/2017	D	
137	11/12/1985		N/A	3/27/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2018		
144	2/1/2012	R	N/A	9/9/2004	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
145	1/31/1975		N/A	4/5/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2017	D	
147	11/29/2011	R	N/A	9/1/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
148	11/12/1986		10/10/2009	3/29/2007	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
150	3/14/2012	R	N/A	8/31/2004	0.796	0.294	Generator	Yes	Good	Low	High-EARZ	Completed		
151	10/27/2010	R	3/4/2008	8/31/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
156	12/10/2011	R	N/A	3/28/2007	0.856	0.374	QC	Yes	Good	Low	High	Completed		
162	1/13/1988		N/A	3/26/2007	1.789	1.359	QC	No	Adequate	Low	High	9/30/2014		
163	3/10/1988		12/23/2009	9/16/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
164	8/4/1988		N/A	3/26/2012	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
165	10/27/1987		4/19/2012	9/16/2004	1.051	1.051	QC	No	Adequate	Low	High-EARZ	9/30/2014		
166	6/15/1988		N/A	3/28/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2018		
167	6/15/1988		N/A	3/28/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2018		
169	10/27/2010	R	8/14/2010	9/1/2004	N/M	N/M	Generator	Yes	Good	Low	Low	Completed & 12/31/2020	D	
170	6/9/1989		6/6/2011	3/29/2007	N/M	N/M	QC	No	Adequate	Low	Low	8/31/2013		
171	5/2/2012	R	N/A	9/1/2004	N/M	N/M	QC	Yes	Good	Low	High-EARZ	Completed		
172	8/1/1988		10/26/2009	9/14/2004	23.342	10.315	Generator	No	Adequate	Low	High	9/30/2014		
175	10/18/1993		N/A	9/9/2004	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
176	11/13/1990		N/A	9/11/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		

178	10/10/1991		N/A	3/29/2007	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2015		
179	10/10/1991		N/A	3/29/2007	NPD	NPD	QC	No	Adequate	Low	High	12/31/2013		
180	10/10/1991		N/A	3/29/2007	0.936	0.346	QC	No	Adequate	Low	High	8/31/2013		
182	5/8/1981		N/A	9/17/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2018	D	
187	10/6/1986		7/18/2012	Not assessed	NPD	NPD	Generator	No	Adequate	Low	High	12/31/2018		
188	5/17/2001		8/19/2012	9/9/2008	2.463	2.49	QC	No	Adequate	Low	High	12/31/2014		
189	8/23/1968		7/26/2007	9/26/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
190	4/29/1992		N/A	3/27/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
191	3/14/2012	R	12/27/2010	8/31/2004	3.168	9.001	Generator	Yes	Good	Low	High-EARZ	Completed		
192	8/2/2012	R	3/27/2012	3/29/2007	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
193	1/22/1993		N/A	10/1/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2016	D	
194	1/22/2012	R	N/A	9/9/2004	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
197	6/7/1994		N/A	9/15/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2018	D	
198	2/16/2007		9/9/2010	Not assessed-to be eliminated	NPD	NPD	Generator	No	Adequate	Low	High	12/31/2019	D	
199	11/21/1994		9/16/2012	Not assessed-to be eliminated	NPD	NPD	Generator	No	Adequate	Low	High	12/31/2019	D	
200	11/21/1994		8/4/2012	Not assessed-to be eliminated	NPD	NPD	Generator	No	Adequate	Low	High	12/31/2019	D	
201	11/21/1994		9/14/2012	Not assessed	NPD	NPD	Generator	No	Adequate	Low	High	12/31/2018		
202	11/17/2011	R	N/A	9/1/2004	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
203	7/19/2012	R	N/A	3/28/2007	N/M	N/M	QC	Yes	Good	Low	Low	8/31/2014		
205	11/9/1995		6/14/2010	9/16/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
206	3/5/1996		N/A	9/1/2004	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
207	5/6/1996		N/A	9/15/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
208	7/1/1996		N/A	9/1/2004	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
209	4/14/1997		7/27/2010	9/1/2004	N/M	N/M	QC	No	Adequate	Low	High-EARZ	9/30/2014		
210	2/14/1997		N/A	9/18/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
211	6/24/1997		N/A	9/23/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
213	12/1/1984		N/A	9/9/2004	N/M	N/M	QC	No	Adequate	Low	Low	8/31/2013		
215	10/8/2009	R	N/A	8/31/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
217	8/19/1998		N/A	3/29/2007	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2017	D	
218	5/2/2000		N/A	9/1/2004	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
219	10/13/1999		8/18/2012	9/22/2008	2.914	0.2665	Generator	No	Adequate	Low	High	12/31/2016	D	
220	6/24/1999		N/A	3/27/2007	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2014		
221	8/25/1999		N/A	3/27/2007	3.199	1.803	Generator	No	Adequate	Low	High	9/30/2013		
222	6/13/2012	R	1/23/2012	3/28/2012	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
223	6/21/2012	R	N/A	3/28/2007	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
224	8/18/2000		N/A	9/22/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2019	D	
225	8/10/2007		8/17/2007	9/14/2004	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2019	D	
226	1/23/2001		N/A	8/31/2004	N/M	N/M	QC	Yes	Adequate	Low	High-EARZ	9/30/2014		
228	9/28/2001		N/A	9/18/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
230	11/3/2000		N/A	9/9/2004	N/M	N/M	QC	No	Adequate	Low	High-EARZ	9/30/2014		
231	2/15/2002		N/A	8/31/2004	N/M	N/M	QC	No	Adequate	Low	High-EARZ	9/30/2014		
232	11/26/2002		10/3/2010	9/1/2004	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2020	D	
233	4/11/2003		5/29/2008	9/9/2004	N/M	N/M	Generator	No	Adequate	Low	Low	9/30/2014		
234	4/23/2003		N/A	3/27/2004	N/M	N/M	QC	No	Adequate	Low	Low	9/30/2013		
235	5/31/2012	R	10/31/2010	9/16/2004	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		

236	8/20/2003		N/A	9/16/2004	N/M	N/M	QC	No	Adequate	Low	High-EARZ	9/30/2014		
237	5/26/2003		N/A	9/17/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
238	3/9/2004		2/18/2009	3/27/2007	4.076	2.193	Generator	No	Adequate	Low	High	9/30/2013		
239	8/25/1999		8/31/2007	9/23/2008	N/M	N/M	Generator	No	Adequate	Low	Low	12/31/2014		
240	6/7/2004		7/5/2006	9/1/2004	N/M	N/M	QC	No	Adequate	Low	High-EARZ	9/30/2014		
241	12/30/2010		12/21/2010	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
242	12/30/2010	R	N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
243	12/30/2010	R	N/A	NC	N/M	N/M	Generator	Yes	Good	Low	Low	Completed		
244	12/30/2010	R	N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
245	7/1/2005		N/A	9/23/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
246	10/6/2006		N/A	NC	NPD	NPD	Generator	Yes	Good	Low	High	NR		
247	12/30/2010	R	N/A	NC	N/M	N/M	QC	Yes	Good	Low	High-EARZ	Completed		
248	8/23/2005		N/A	NC	N/M	N/M	Generator	No	Good	Low	Low	9/30/2014		
249	9/8/2005		N/A	NC	NPD	NPD	Generator	No	Good	Low	High-EARZ	9/30/2014		
250	12/30/2010	R	N/A	NC	NPD	NPD	Generator	Yes	Good	Low	High	Completed		
251	12/30/2010	R	N/A	NC	N/M	N/M	Generator	Yes	Good	Low	Low	Completed & 12/31/2019	D	
252	2/3/2006		N/A	NC	N/M	N/M	QC	No	Good	Low	High-EARZ	12/31/2014		
253	2/7/2006		N/A	9/26/2008	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2014		
254	12/30/2010	R	9/11/2007	NC	N/M	N/M	Generator	Yes	Good	Low	Low	Completed & 12/31/2016	D	
255	12/30/2010	R	N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
256	12/30/2010	R	N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
257	7/24/2006		N/A	NC	N/M	N/M	QC	No	Good	Low	Low	12/31/2014		
258	8/14/2006		N/A	NC	NPD	NPD	Generator	No	Good	Low	High	12/31/2014		
259	12/30/2010	R	N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
260	12/30/2010	R	N/A	NC	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	Completed		
261	12/30/2010	R	6/22/2011	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
262	12/30/2010	R	N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	Completed		
263	4/25/2007		N/A	NC	N/M	N/M	Generator	No	Good	Low	High-EARZ	12/31/2014		
264	10/9/2007		N/A	NC	N/M	N/M	Generator	No	Good	Low	Low	12/31/2014		
265	1/3/2008		N/A	NC	N/M	N/M	Generator	No	Good	Low	High-EARZ	12/31/2014		
266	7/3/2008		N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	NR		
267	7/9/2008		N/A	NC	N/M	N/M	QC	No	Adequate	Low	Low	12/31/2019	D	
268	9/23/2008		N/A	NC	N/M	N/M	Generator	Yes	Good	Low	High-EARZ	NR		
269	11/3/2008		6/16/2009	NC	NPD	NPD	Generator	Yes	Good	Low	High	NR		
270	10/7/2009		N/A	NC	N/M	N/M	Generator	No	Good	Low	Low	12/31/2014		
271	5/21/2009		N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	NR		
272	12/22/2009		N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	NR		
273	2/3/2009		N/A	NC	N/M	N/M	Generator	Yes	Good	Low	Low	NR		
274	3/22/2010		N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	NR		
276	12/13/2010		N/A	NC	N/M	N/M	Generator	Yes	Good	Low	Low	NR		
277	5/24/2011		N/A	NC	N/M	N/M	Generator	Yes	Good	Low	Low	NR		
278	9/15/2011		N/A	NC	N/M	N/M	QC	Yes	Good	Low	Low	NR		
300	6/1/1965		N/A	9/5/2008	N/M	N/M	Generator	No	Adequate	Low	Low	10 years after Date of Lodging		
303	8/9/1996		N/A	9/11/2008	N/M	N/M	Generator	No	Adequate	Low	Low	10 years after Date of Lodging		
304	6/1/1965		N/A	9/4/2008	N/M	N/M	Generator	No	Adequate	Low	Low	10 years after Date of Lodging		

305	6/1/1965		N/A	Not assessed	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
307	6/1/1965		N/A	9/4/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
308	6/1/1965		N/A	9/4/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
309	6/1/1965		N/A	9/4/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
310	6/1/1965		N/A	9/10/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
311	8/9/1996		N/A	9/23/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
312	8/9/1996		N/A	9/23/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
313	6/1/1965		N/A	9/5/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
315	6/1/1965		N/A	9/5/2008	N/M	N/M	QC	No	Adequate	low	Low	10 years after Date of Lodging		
316	6/1/1965		N/A	9/5/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
317	8/9/1996		N/A	9/23/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
318	8/9/1996		N/A	9/23/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
319	8/9/1996		N/A	9/23/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
320	6/1/1965		N/A	9/10/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
321	6/1/1965		N/A	9/24/2008	N/M	N/M	Generator	No	Adequate	Low	Low	10 years after Date of Lodging		
322	6/1/1965		N/A	9/10/2008	N/M	N/M	Generator	No	Adequate	Low	Low	10 years after Date of Lodging		
323	6/1/1965		1/23/2012	9/9/2008	N/M	N/M	Generator	No	Adequate	Low	Low	10 years after Date of Lodging		
324	6/1/1965		N/A	9/9/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
325	6/1/1965		N/A	9/9/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
326	6/1/1965		N/A	9/9/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
328	6/1/1965		N/A	9/9/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
329	6/1/1965		N/A	9/10/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
330	6/1/1965		N/A	9/24/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		
331	10/26/2004		N/A	9/18/2008	N/M	N/M	QC	No	Adequate	Low	Low	10 years after Date of Lodging		

1 "N/A" indicates that a lift station has not had an SSO.
2 "N/M" indicates that a lift station is not individually modeled in the hydraulic model and therefore no comparison of field measured and model predicted flow is available.
3 Flow from field measured pump drawdown tests was aggregated and converted from GPM to MGD.
4 "R" refers to the date that rehabilitation was completed
5 "Adequate" indicates that a lift station is fully performing, but that it will be rehabilitated/upgraded as described in this Appendix.
6 All lift stations have a low risk of failure. Any risks identified by SAWS lift station maintenance department are corrected.
7 Lift stations that do not have a generator either have, or will have on completion of rehabilitation, quick- connect facilities for portable power generation.
8 All lift stations will have SCADA on completion of rehabilitation. A Verbatim alert system is in operation pending SCADA installation.
9 A "High" consequence indicates a lift station that is located over the Edwards Aquifer Recharge Zone (EARZ) or that is a large volume flow (2MGD and greater) lift station.
10 "D" indicates the date of anticipated decommissioning.
11 "Completed" indicates that rehabilitation of a lift station has been completed.
12 "NPD" indicates that a field pump drawdown test for all pumps in a lift station is not available. A comparison with model predicted flow is, therefore, not possible.
13 Rehabilitation/upgrade has been completed, but the lift station will also be decommissioned.
14 "NC" indicates that a lift station was recently constructed and met TCEQ and SAWS guidelines at the time of SAWS acceptance, or required only SCADA installation that has now been completed. No further assessment was necessary.
15 "NR" indicates lift stations that have been recently constructed and that meet TCEQ and SAWS guidelines. No rehabilitation, upgrade, or assessment is necessary.
16 300 series lift stations were inherited from the U.S Air Force and are located on Lackland A.F.B. and the former Kelly A.F.B.
17 Determined to be a holding tank for aircraft waste.
18 SAWS intends to eliminate or rehabilitate the 300 series lift stations. A final determination on the appropriate action has not yet been made.
19 "QC" indicates a quick connect facility is installed for portable generation.

APPENDIX F

Appendix F
Phase I Early Action Program

I. Overall Description of Remedial Measures

SAWS Early Action Program (EAP) Phase I consists of the following types of Remedial Measures:

- Large Diameter Condition Remedial Measures
- Large Diameter Capacity Remedial Measures
- Small Diameter Condition Remedial Measures
- Manhole Condition Remedial Measures

The projects associated with these Remedial Measures are summarized in the Table in Part II of this Appendix F. Following is a general description of the EAP Phase I Remedial Measures.

Large Diameter Condition Remedial Measures

Through SAWS CCTV program, SAWS has identified approximately 13.3 miles of large diameter mains for alternatives analysis. The 13.3 miles were identified due to structural defects that have caused, or may cause, structural SSOs in the future.

Prior to the establishment of Appendix C, this process was called issuing a "Design Request." After the establishment of Appendix C, this step is called a request to conduct "remedial measures alternatives analysis," which could either result in a remedial measure, monitoring, or maintenance.

Of the 13.3 miles, approximately 6.3 miles has been assessed and designed as of March 31, 2013, and approximately 7 miles awaits alternatives analysis. Of the 6.3 miles which has been designed, 4.4 miles is the San Antonio River Outfall Project Phase 1 and 2. For the remaining 1.9 miles SAWS is in the process of packaging the pipes into bid packages, or "projects," as well as prioritizing the projects over the five years of the EAP Phase I. SAWS has identified two projects for the 1.9 miles of the pipe that have been assessed and designed. For the 7 miles awaiting alternatives analysis, those pipes which result in a remedial measure will be added to these two projects (which is why the total project mileage adds up to 13.3 miles of pipe for EAP Phase I). If certain pipes from the 7 miles do not result in remedial measures, a similar mileage of higher risk pipe that has yet to be identified will be added to the EAP Phase I mileage to make up the difference. Projects may be divided into smaller projects to further prioritize projects related to SSOs, address contractor bidding constraints, or to reduce construction inspector drive-time per project, but the cumulative mileage of the projects will not be reduced. If the projects are divided into smaller projects, this will be reported in the Annual Report.

The Summary of Remedial Measures for EAP Phase I Table in Part II of this Appendix F shows the status of SAWS alternatives analysis and design process. The Remediation Project List for EAP Phase I table in Appendix F shows the status of Large Diameter Condition Remedial Measures projects for the EAP Phase I.

Appendix F
Phase I Early Action Program

Large Diameter Capacity Remedial Measures

Through SAWS capacity assessment activities, SAWS has identified approximately 25 miles of large diameter mains to be constructed as Capacity Remedial Measures as part of EAP Phase I.

All 25 miles have been grouped into 4 projects outlined in the table in Part II of this Appendix F to be completed under the large diameter capacity EAP Phase I schedule as set forth in the Consent Decree.

The Summary of Remedial Measures for EAP Phase I Table in Part II of this Appendix F shows the status of SAWS alternatives analysis and design process. The Remediation Project List for EAP Phase I Table in Part II of this Appendix F shows the status of Large Diameter Capacity Remedial Measures projects for the EAP Phase I.

Small Diameter Condition Remedial Measures

Through SAWS CCTV program, SAWS has identified approximately 62.5 miles of small diameter mains for alternatives analysis. The 62.5 miles were identified due to structural defects that have caused, or may cause, structural SSOs in the future, as well as less significant defects on pipes that were in close proximity to the structural defect SSO pipes. While these less significant defect pipes are not required to be remediated per Appendix C, SAWS is bundling these pipes with less significant defects with higher priority pipes in order to potentially reduce unit bid costs, and diminish future disruption to its customers.

Prior to the establishment of Appendix C, this process was called issuing a "Design Request." After the establishment of Appendix C, this step is called a request to conduct "remedial measures alternatives analysis," which could either result in a remedial measure, monitoring, or maintenance.

Of the 62.5 miles, approximately 39 miles has been assessed and designed as of March 31, 2013, and approximately 23.5 miles awaits alternatives analysis. Of the 39 miles which has been designed, SAWS is in the process of packaging the pipes into bid packages, or "projects," as well as prioritizing those projects over the three year schedule for small diameter condition projects under EAP Phase I. SAWS has identified two small diameter projects (each involving several miles of pipe) per year for completion as part of Phase I. These 6 projects include the 39 miles of pipes that have been designed. For the 23.5 miles of pipe that is awaiting alternatives analysis, those pipes which result in a remedial measure will be added to these six projects (which is why the total project mileage adds up to 62.5 miles of pipe for EAP Phase I). If certain pipes from the 23.5 miles do not result in remedial measures, a similar mileage of higher risk pipe that has yet to be identified will be added to the EAP Phase I mileage to make up the difference. Projects may be divided into smaller projects to further prioritize projects related to SSOs, address contractor bidding constraints, or to reduce construction inspector drive-time per project, but the cumulative mileage of the projects will not be reduced. If the projects are divided into smaller projects, this will be reported in the Annual Report.

Appendix F
Phase I Early Action Program

The Summary of Remedial Measures for EAP Phase I Table in Part II of this Appendix F shows the status of SAWS alternatives analysis and design process. The Remediation Project List for EAP Phase I Table in Part II of this Appendix F shows the status of Small Diameter Condition Remedial Measures projects for the EAP Phase I.

Manhole Remedial Measures

The manhole project shown in the Table in Part II of this Appendix F consists of high priority manholes which have been identified through SAWS manhole condition assessment activities completed as of January 2, 2013. These are shown in the Remediation Project List for EAP Phase I Table in Part II of this Appendix F.

II. Tables Summarizing EAP Phase I Work

Summary of Remedial Measures for EAP Phase I

Remediation Type	Miles	Summary of Remedial Measures
1. Small Diameter (SD) Condition Remediation		
SD Remediation – Design Completed	39	Identified through SAWS CCTV program that have been assessed and designed. See Project List Below.
SD – Awaiting Remedial Measures Alternatives Analysis	*23.5*	Mileage that has been identified through SAWS CCTV program, but has not gone through the alternatives analysis process. This mileage will continue through alternatives analysis and has been incorporated into the EAP Phase I Project List below.
Total	*62.5*	
2. Large Diameter (LD) Condition Remediation		
LD Remediation – Design Completed	6.3	Identified through SAWS CCTV program that have been assessed and designed. See Project List Below.
LD – Awaiting Remedial Measures Alternatives Analysis	7	Mileage that has been identified through SAWS CCTV program, but has not gone through the alternatives analysis process. This mileage will continue through alternatives analysis and has been incorporated into the EAP Phase I Project List below.
Total	*13.3*	
3. LD Capacity Remediation		
LD Projects	25	See Project List Below.
4. MH Remediation	**Manholes (Number)**	
Manholes	25	Manholes identified through SAWS condition assessment activities that have been assessed and designed.

Appendix F
Phase I Early Action Program

Remediation Project List for EAP Phase I

Project Name	Miles	Target Project Completion Schedule
1. Small Diameter (SD) Condition Remediation		
EAP Phase I – Project 1 – 2013 SD Re-hab Program	12	1 Year from Date of Lodging
EAP Phase I – Project 2 – 2013 SD Re-hab Program	11	1 Year from Date of Lodging
EAP Phase I – Project 3 – 2014 SD Re-hab Program	12	2 Years from Date of Lodging
EAP Phase I – Project 4 – 2014 SD Re-hab Program	11	2 Years from Date of Lodging
EAP Phase I – Project 5 – 2015 SD Re-hab Program	8.5	3 Years from Date of Lodging
EAP Phase I – Project 6 – 2015 SD Re-hab Program	8	3 Years from Date of Lodging
Total	*62.5*	
2. Large Diameter (LD) Condition Remediation		
EAP Phase I – Project 7 – LD Re-hab Program	4.4	5 Years from Date of Lodging
EAP Phase I – Project 8 – LD Re-hab Program	4.5	5 Years from Date of Lodging
San Antonio River Outfall Project Phase 1 and 2	4.4	5 Years from Date of Lodging
Total	*13.3*	
3. LD Capacity Remediation		
Donaldson Terrace	4.6	6 years from Date of Lodging
Broadway Corridor – Josephine to South Alamo Street	4	6 years from Date of Lodging
Broadway Corridor – Carnahan to Mulberry Streets	10	6 years from Date of Lodging
Leon Creek – Highway 90 to New Laredo Highway	6.4	6 years from Date of Lodging
Total	*25*	
4. MH Remediation	**Manholes (Number)**	**Manholes (Number)**
Manhole Project 1	*25*	3 years from Date of Lodging

APPENDIX G

Appendix G
Condition Assessment Report Template

I. Cover

II. Certification Declaration

[Required certification, with language specified by the Consent Decree, signed by a responsible official of SAWS]

III. Table of Contents

[List of sections, tables, figures and appendices included in this report]

IV. Acronyms and Abbreviations

[Definitions of abbreviations and acronyms included in this report]

V. Introduction

A. Purpose

This Report was prepared and submitted pursuant to Paragraph 28 of the Consent Decree.

B. Regulatory Requirements

This Report summarizes Condition Assessment inspections completed by SAWS as of four years after the Date of Lodging pursuant to Paragraphs 23 through 28 of the Consent Decree. These Condition Assessment requirements include Large Diameter Gravity Main Sewer Inspections, Small Diameter Gravity Sewer Main Inspections and Manhole Inspections.

VI. System-Wide Inspection Activities

A. Inspection Method Overview

[Provide a brief description of each inspection method utilized by SAWS; with a reference to the Condition Assessment and Remediation Process and

Guidelines Appendix. Add a discussion of any new inspection technologies utilized, if applicable]

B. Gravity Sewer Main Inspection Map

[Include a map showing the location of the inspections, small diameter and large diameter pipe, inspection method (CCTV, Pole Camera, Visual Inspection), and type of visual inspection (Smoke testing, mechanical proofing, cleaning, dye testing).]

Appendix G
Condition Assessment Report Template

C. Gravity Sewer Main Inspection Status

Gravity Sewer Main Inspection Progress Summary

Asset Description	Inspection Method	Miles of Inspections Required Under Consent Decree[1,3]	Miles Completed Prior to Date of Lodging[2,3]	Miles Completed since Date of Lodging[3]	Miles of Inspections Completed[3]	% Complete[1]
Small Diameter Gravity Sewer - Concrete Pipe and Clay Pipe Installed Prior to 1973	CCTV or other approved techniques	XX				
Small Diameter Gravity Sewer - Clay Pipe Installed from 1973 through 1982	Pole Camera, CCTV, or other approved techniques	XX				
Small Diameter Gravity Sewer - Other Pipe	Pole Camera, CCTV or other approved techniques	N/A				
	Visual Inspection – Smoke Testing	N/A				
	Visual Inspection – Mech. Proofing	N/A				
	Visual Inspection – Sewer Cleaning Findings	N/A				
	Visual Inspection – Dye Testing	N/A				
	Subtotal	N/A				
	Unique Subtotal[4]	XX				
Large Diameter Gravity Sewer	CCTV/other approved method	XX				

Note 1: Visual Inspection, and Large Diameter CCTV Inspection are not required under the Consent Decree to be completed prior to submittal of this report. These inspection types will be completed as part of CMOM after submittal of this report per CD Requirements.

Note 2: Includes small diameter gravity sewer inspections since January 1, 2009 and large diameter gravity sewer inspections since inception of the large diameter program in 2005.

Note 3: Full pipe length is included in mileages.

Note 4: Since some gravity sewer mains may be inspected with multiple visual inspection techniques, this subtotal includes unique miles of small diameter gravity sewer main inspections in order demonstrate compliance for visual inspection.

D. Manhole Inspection Map

[Include a map showing the location of the inspections.]

E. Manhole Inspection Status

Manhole Inspection Summary

Asset Description	Inspection Method	Number of Manhole in System [1]	Manholes Inspected Prior to Date of Lodging[2]	Manholes Inspected Since Date of Lodging	Inspections Completed	% Complete[1]
Manholes	Visual Inspection	XX				
Note 1: Manhole Inspection is not required under the Consent Decree to be completed prior to submittal of this report. Manhole inspections will be completed as part of CMOM after submittal of this report per CD Requirements.						
Note 2: Includes manhole inspections since January 1, 2009.						

VII. Categorization of Sewer Main and Manhole Condition

A. Guidelines

[Provide a brief description of the guidelines used for categorizing condition; consistent with the Condition Assessment and Remediation Process and Guidelines Appendix]

B. Condition Categorization Summary

Condition Categorization Summary

Condition Category	Miles of Small Diameter Sewer Mains [1]	Miles of Large Diameter Sewer Mains [1]	Number of Manholes
Category A – Very Good	XX	XX	XX
Category B – Good	XX	XX	XX
Category C – Fair Condition	XX	XX	XX
Category D – Poor	XX	XX	XX
Category E – Very Poor	XX	XX	XX
Note 1: Full pipe length is included in mileages.			

C. Maps of Condition Categories

[Include one map for small diameter pipe, one map for large diameter pipe, and one map for manholes showing the location of the assets and the Condition Category.]

VIII. Condition Assessment Results

A. Condition Assessment Guidelines

[Provide a brief description of the guidelines used for condition assessment activities; consistent with the Condition Assessment and Remediation Process and Guidelines Appendix. Provide a brief description of how SAWS applied the guidelines to develop the quantities of structural defects selected for Remedial Measures Alternative Analysis, Monitoring (CMOM) and Maintenance Analysis (CMOM).]

B. Condition Assessment Results

Condition Assessment Result	Miles of Small Diameter Sewer Mains [1]	Miles of Large Diameter Sewer Mains [1]	Number of Manholes
Remedial Measures Alternatives Analysis	XX	XX	XX
Monitoring (CMOM)	XX	XX	XX
Maintenance Analysis (CMOM)	XX	XX	XX
Note 1: Full pipe length is included in mileages.			

C. Maps of Condition Assessment Results

[Include one map for small diameter pipe, one map for large diameter pipe, and one map for manholes showing the location of the assets and the Condition Assessment Result.]

Appendix G
Condition Remedial Measures Plan Template

I. Cover

II. Certification Declaration

[Required certification, with language specified by the Consent Decree, signed by a responsible official of SAWS]

III. Table of Contents

[List of sections, tables, figures and appendices included in this report]

IV. Acronyms and Abbreviations

[Definitions of abbreviations and acronyms included in this report]

V. Introduction

A. Purpose

This Plan was prepared and submitted pursuant to Paragraph 30 of the Consent Decree.

B. Regulatory Requirements

This Plan summarizes SAWS recommended Condition Remedial Measures that have been prioritized and selected in accordance with Appendix C to address verified structural defects in the SAWS WCTS that cause or significantly contribute to Condition-related SSOs. This Plan describes SAWS plans to implement the selected Condition Remedial Measures on a balanced annual basis during the remaining term of this Decree. SAWS has prioritized and selected these Condition Remedial Measures based on appropriate factors reflected in Paragraph 30 and in Appendix C of the Consent Decree and in accordance with the requirements of Paragraph 8 of the Decree. The implementation time-frames in this Plan reflect practical planning requirements such as those stated in Paragraph 30 of the Consent Decree.

Appendix G
Condition Remedial Measures Plan Template

VI. Summary of Condition Assessment Summary Report

[Brief summary of the Condition Assessment Summary Report and how it relates to this Plan.

VII. Remedial Measures Alternatives Analysis

A. Guidelines for Alternatives Analysis

The Plan for Condition Remedial Measures follows SAWS completion of the Condition Remedial Measures Alternatives Analysis as described in Paragraph 29 and in Appendix C of the Consent Decree.

B. Remedial Measures Alternatives Analyses Results

[Provide a brief description of the guidelines used for performing alternatives analysis; consistent with Condition Assessment and Remediation Process and Guidelines Appendix. Include a description of guidelines used to select monitoring or maintenance results.]

Results of Completed Remedial Measures Alternatives Analyses

Result	Miles of Gravity Main Sewer[1]	Number of Gravity Sewer Main Pipe Segments	Number of Manholes
Replace[2]	X	X	X
Rehabilitate[2,3]	X	X	X
Repair[2,3]	X	X	X
Monitoring	X	X	X
Maintenance Analysis	X	X	X
Other (Specify)	X	X	X
Totals:	**X**	**X**	**X**

Note 1: Full pipe length is included in mileage

Note 2: Approach for actual implementation may be different than alternatives analysis result per Paragraph 31 of the Consent Decree and Appendix C (Condition Assessment and Remediation Process and Guidelines Appendix)

Note 3: Repairs include spot repairs or remediation of a short section of the pipe segment using trenchless or open-trench remediation. Rehabilitation includes trenchless sewer remediation from manhole to manhole such as CIPP lining or slip-lining.

C. Maps of Alternatives Analyses Results

[Include one map for small diameter pipe and large diameter pipe and one map for manholes showing the location of the assets and the Remedial Measures Alternatives Analysis Results.]

VIII. Remediation Completed

A. Remedial Measures Progress

[Summarize the mileage and number of manholes for which Condition Remedial Measures have been completed prior to submittal of this report.]

	Remedial Measure Technique	Early Action Program - Phase I	Early Action Program - Phase II	Other	Total
Large Diameter Sewer Mains (miles)[1,2]	Replace				
	Rehabilitate				
	Repair				
Small Diameter Sewer Mains (miles)[1,2]	Replace				
	Rehabilitate				
	Repair				
Manholes (number)	Replace				
	Rehabilitate				
	Repair				

Note 1: Full pipe length is included in mileage

Note 2: Repairs include spot repairs or remediation of a short section of the pipe segment using trenchless or open-trench remediation. Rehabilitation includes trenchless sewer remediation from manhole to manhole such as CIPP lining or slip-lining.

B. Maps of Remedial Measures Completed

[Include a color coded map for Phase I, a map for Phase II, and another map for Other completed remediation by remediation method and asset type (small

diameter pipe, large diameter pipe, and manholes that identifies and distinguishes between replaced and repaired manholes in Phase I and Phase II of the Early Action Program.]

IX. Remedial Measures Plan

A. Anticipated Remediation Timeframes

[Summarize target remediation quantities for completion each year.]

	Remedial Measure Technique	**Calendar Year X**	**Calendar Year X**	**Calendar Year X**	**Calendar Year X**	**Calendar Year X**	**Total**
Large Diameter Sewer Mains (miles)[1]	Replace						
	Rehabilitate						
	Repair						
Small Diameter Sewer Mains (miles)[1]	Replace						
	Rehabilitate						
	Repair						
Manholes (number)	Replace						
	Rehabilitate						
	Repair						
Note 1: Full pipe length is included in mileage							
Note 2: SAWS may make day-to-day operational changes to Remedial Measures consistent with the Consent Decree, including Appendices C and D of the Consent Decree.							

B. Maps of Anticipated Remediation Timeframe

[Include a color coded map for each year identifying the small diameter pipes, large diameter pipes, and manholes that will be Replaced, Rehabilitated, or Repaired.]

Appendix G
Condition Remedial Measures Plan Template

C. Remediation Project List

Remediation Project List

Project Name	Project Miles	Completion Date	For large diameter pipes, schedule Justification for Completion Date After 4.5 years from EPA Approval of Remedial Measures Plan (Pursuant to Paragraph 31 of the Consent Decree)

Appendix G
Capacity Assessment Report Template

I. Cover

II. Certification Declaration

[Required certification, with language specified by the Consent Decree, signed by a responsible official of SAWS]

III. Table of Contents

[List of sections, tables, figures and appendices included in this report]

IV. Acronyms and Abbreviations

[Definitions of abbreviations and acronyms included in this report]

V. Introduction

A. Purpose

This Report was prepared and submitted pursuant to Paragraph 39 of the Consent Decree.

B. Regulatory Requirements

This Report summarizes Capacity Assessment activities pursuant to Paragraph 33 through 38 of the Consent Decree. These Capacity Assessment requirements include Wet Weather SSO Verification, Hydraulic Modeling Evaluation and Field Investigation activities.

Appendix G
Capacity Assessment Report Template

VI. Wet-Weather Related SSO Categorization

A. Guidelines

[Provide a brief description of the guidelines used; with a reference to the Capacity Assessment and Remediation Process and Guidelines Appendix. Include the range of dates for historical SSOs that this section covers. Include a summary of the activities performed to address Category C SSOs.]

B. Wet-Weather SSO Categorization Summary

Wet Weather SSO Categorization

Category	Number of SSOs
Category A – Most likely a capacity-related SSO	X
Category B – Most likely maintenance-related	X
Category C – Clearly not a capacity related SSO	X
Total	**X**

C. Map of Wet-Weather SSOs

[Include a map showing the location of Category A, B, and C Wet-Weather SSOs, a map showing the location of Category A Wet-Weather SSOs, a map showing the location of Category B Wet-Weather SSOs, and a map showing the location of Category C Wet-Weather SSOs.]

VII. System-wide Hydraulic Modeling Evaluation

A. Model Overview

[Provide a brief description of the model including software and existing population scenario, consistent with the Capacity Assessment and Remediation Process and Guidelines Appendix.]

B. Model Maps

[Include a map showing the location of pipes in the model.]

C. Model Calibration and Updates

[Provide a summary of any model updates and calibration performed after Date of Lodging of the Consent Decree (e.g. weather permitting) and prior to submittal of the Capacity Assessment Report consistent with the Capacity Assessment and Remediation Process and Guidelines Appendix.

D. Prioritization of Potential Capacity Constraints

[Provide a brief description of the guidelines used to prioritize potential capacity constraints; consistent with the Capacity Assessment and Remediation Process and Guidelines Appendix].

Potential Capacity Constraints Summary

Category	Number of Potential Capacity Constraints
Priority 1 – Category A SSO per Wet-Weather SSO Categorization and where model also predicts a SSO	X
Priority 2 – Where model predicts SSO, but with no observed SSO. Or a Category A SSO per Wet-Weather SSO Categorization, but model does not predict a SSO.	X
Priority 3 – Where model predicts Hydraulic Grade Line (HGL) near ground elevation	X
Priority 4 – Category B SSO per Wet-Weather SSO Categorization	X
Priority 5 – Where pipe design capacity is exceeded for sustained 60 minutes or more but the HGL is not near the ground elevation	X
Total	**X**

E. Map of Potential Capacity Constraints

[Include a map showing potential Capacity Constraints for all Priority Categories. Include separate maps for each Priority Category showing the location of Potential Capacity Constraints.]

Appendix G
Capacity Assessment Report Template

VIII. Field Investigations of Potential Capacity Constraints

A. Guidelines

[Provide a brief description of the guidelines used for selecting the type of field investigation technique for each potential capacity constraint; consistent with Capacity Assessment and Remediation Process and Guidelines Appendix.]

B. Field Investigation Status

Completed Field Investigations

Technique	Number of Potential Capacity Constraints				
	Priority 1	**Priority 2**	**Priority 3**	**Priority 4**	**Priority 5**
Flow Metering	X	X	X	X	X
Smart Covers	X	X	X	X	X
Chalking	X	X	X	X	X
Visual Inspection – Smoke Testing	X	X	X	X	X
Visual Inspection – Mechanical Proofing	X	X	X	X	X
Visual Inspection – Sewer Cleaning Findings	X	X	X	X	X
Visual Inspection – Dye Testing	X	X	X	X	X
Other *(if applicable)*	X	X	X	X	X
Monitor in Future per Capacity Assessment and Remediation Process and Guidelines Appendix (CMOM)	X	X	X	X	X
Total	**X**	**X**	**X**	**X**	**X**

Appendix G
Capacity Assessment Report Template

In-Progress Field Investigations

Technique	Number of Potential Capacity Constraints				
	Priority 1	**Priority 2**	**Priority 3**	**Priority 4**	**Priority 5**
Flow Metering	X	X	X	X	X
Smart Covers	X	X	X	X	X
Chalking	X	X	X	X	X
Visual Inspection – Smoke Testing	X	X	X	X	X
Visual Inspection – Mechanical Proofing	X	X	X	X	X
Visual Inspection – Sewer Cleaning Findings	X	X	X	X	X
Visual Inspection – Dye Testing	X	X	X	X	X
Other *(if applicable)*	X	X	X	X	X
Total	**X**	**X**	**X**	**X**	**X**

C. Map of Completed Field Investigations

[Include a map for each Priority Category showing the location of each field investigation by technique.]

D. Map of In-Progress Field Investigations

[Include a map for each Priority Category showing the location of each field investigation by technique.]

Appendix G
Capacity Assessment Report Template

IX. Capacity Assessment Results

A. Capacity Assessment Guidelines

[Provide a brief description of the guidelines used for assessing field investigation results; consistent with Capacity Assessment and Remediation Process and Guidelines Appendix.

B. Capacity Assessment Results

Capacity Assessment Result	Number of Potential Capacity Constraints
Remedial Measures Alternatives Analysis	X
Monitor in the Future per Capacity Assessment and Remediation Process and Guidelines Appendix (CMOM)	X
Not a Capacity Constraint	X
Total	**X**

C. Map of Capacity Assessment Results

[Include a color coded map showing the location of the Capacity Assessment Results.]

Appendix G
Capacity Remedial Measures Plan Template

I. Cover

II. Certification Declaration

[Required certification, with language specified by the Consent Decree, signed by a responsible official of SAWS]

III. Table of Contents

[List of sections, tables, figures and appendices included in this report]

IV. Acronyms and Abbreviations

[Definitions of abbreviations and acronyms included in this report]

V. Introduction

A. Purpose

This Plan was prepared and submitted pursuant to Paragraph 41 of the Consent Decree.

B. Regulatory Requirements

This Plan summarizes SAWS recommended Capacity Remedial Measures that have been prioritized and selected in accordance with Appendix D to address verified Capacity Constraints in the SAWS WCTS that cause or significantly contribute to Capacity-related SSOs. This Plan describes SAWS plans to implement the selected Capacity Remedial Measures on a balanced annual basis during the remaining term of this Decree. SAWS has prioritized and selected these Capacity Remedial Measures based on appropriate factors reflected in Paragraph 41 and in Appendix D of the Consent Decree and in accordance with the requirements of Paragraph 8 of the Decree. The implementation time-frames in this Plan reflect practical planning requirements such as those stated in Paragraph 41 of the Consent Decree.

Appendix G
Capacity Remedial Measures Plan Template

VI. Summary of Capacity Assessment Summary Report

[Brief summary of the Capacity Assessment Summary Report and how it relates to this Plan.

VII. Remedial Measures Alternatives Analysis

A. Guidelines for Alternative Analysis

The Plan for Capacity Remedial Measures follows SAWS completion of the Capacity Remedial Measures Alternatives Analysis as described in Paragraph 40 and in Appendix D of the Consent Decree

B. Remedial Measures Alternatives Analysis Results

[Provide a brief description of the guidelines used for performing alternatives analysis; consistent with Capacity Assessment and Remediation Process and Guidelines Appendix. Include a description of guidelines used to select continued monitoring results.]

Results of Remedial Measures Alternatives Analyses

Remedial Measures Alternatives Analysis Result *	Number of Potential Capacity Constraints
Re-route a portion of upstream wastewater flows	X
Reduce flows entering the WCTS	X
Reduce inflow	X
Reduce infiltration	X
Increase conveyance capacity	X
Upstream flow detention facilities	X
Continued monitoring	X
Other (Specify)	X
Totals:	**X**

* Note: Approach for actual implementation may be different than alternatives analyses result pursuant to Paragraph 42 and Appendix D of the Consent Decree. Some Capacity Constraints may require more than one remedial measure technique. The predominant remedial measure technique will prevail for reporting purposes.

C. Map of Alternatives Analysis Results

[Include a color coded map showing the location of each type of result.]

Appendix G
Capacity Remedial Measures Plan Template

VIII. Remediation Completed

A. Remedial Measures Progress

[Summarize the mileage for which Capacity Remedial Measures have been completed prior to submittal of this report.]

Completed Remedial Measures

	Remedial Measure Technique	Phase I	Phase II	Other	Total
Large Diameter Sewer Mains (miles)[1]	Re-route a portion of upstream wastewater flows				
	Reduce flow entering WCTS				
	Reduce inflow				
	Reduce infiltration				
	Increase conveyance capacity				
	Upstream flow detention facilities				
	Other (specify)				
Small Diameter Sewer Mains (miles)[1]	Re-route a portion of upstream wastewater flows				
	Reduce flow entering WCTS				
	Reduce inflow				
	Reduce infiltration				
	Increase conveyance capacity				
	Upstream flow detention facilities				
	Other (specify)				
Manholes (number)	Replace				
	Rehabilitate				
	Repair				
Note 1: Full pipe length is included in mileage					
Note 2: Some Capacity Constraints may require more than one remedial measure technique. The predominant remedial measure technique will prevail for reporting purposes.					

B. Map of Remedial Measures Completed

[Include a color coded map for Phase I, a map for Phase II, and another map for Other completed remediation by remediation method and asset type (small diameter pipe, large diameter pipe, and manholes) that identifies and distinguishes between replaced and repaired manholes in Phase I and Phase II of the Early Action Program.]

Appendix G
Capacity Remedial Measures Plan Template

IX. Remedial Measures Plan

A. Anticipated Remediation Timeframes

[Summarize target remediation quantities for completion each year. Include a list of Lift Stations that require capacity upgrades per the Remedial Measures Plan.]

Anticipated Remediation Timeframes

	Remedial Measure Technique	Calendar Year X	Calendar Year X	Calendar Year X	Calendar Year X	Total
Large Diameter Sewer Mains (Number of constraints addressed)	Re-route a portion of upstream wastewater flows					
	Reduce flow entering WCTS					
	Reduce inflow					
	Reduce infiltration					
	Increase conveyance capacity					
	Upstream flow detention facilities					
	Other (specify)					
Small Diameter Sewer Mains (Number of constraints addressed)	Re-route a portion of upstream wastewater flows					
	Reduce flow entering WCTS					
	Reduce inflow					
	Reduce infiltration					
	Increase conveyance capacity					
	Upstream flow detention facilities					
	Other (specify)					
Manholes (number)	Replace					
	Rehabilitate					
	Repair					
Note 1: SAWS may make day-to-day operational changes to Remedial Measures consistent with the Consent Decree, including Appendices C and D of the Consent Decree.						
Note 2: Some Capacity Constraints may require more than one remedial measure technique. The predominant remedial measure technique will prevail for reporting purposes.						

Appendix G
Capacity Remedial Measures Plan Template

B. Maps of Anticipated Remediation Timeframe

[Include a color coded map for each year identifying the capacity constraints and the remedial measure method that will be utilized to address each capacity constraint.]

C. Remediation Project List

Remediation Project List

Project Name	Project Miles	Completion Date	For Large Diameter Pipes, Schedule Justification for Completion Date After 4.5 Years from EPA Approval of Remedial Measures Plan (Pursuant to Paragraph 42 of the Consent Decree)

Appendix G
Annual Report Template

I. Cover

II. Certification Declaration

[Required certification, with language specified by the Consent Decree, signed by a responsible official of SAWS]

III. Table of Contents

[List of sections, tables, figures and appendices included in this report]

IV. Acronyms and Abbreviations

[Definitions of abbreviations and acronyms included in this report]

V. Introduction

A. Purpose

This Report was prepared and submitted pursuant to Paragraph 52 of the Consent Decree.

B. Regulatory Requirements

This Report summarizes activities completed during the previous calendar year for the following requirements in Section V of the Consent Decree: Early Action Program, Condition Assessment, Condition Remedial Measures, Capacity Assessment, Capacity Remedial Measures, Lift Station Rehabilitation and Elimination Program, Force Main Assessment Program, CMOM Program (including Private Laterals) and Water Quality Program.

Appendix G
Annual Report Template

VI. Early Action Program

Phase I Early Action Program Remediation

Asset Description	Completed in Calendar Year X	Cumulative Completed [2]
Small Diameter Gravity Sewer (Miles)[1]	X	X
Large Diameter Gravity Sewer (Miles)[1]	X	X
Manholes (Number)	X	X
Note 1: Full pipe length is included in mileages.		
Note 2: Includes all work completed since xx/xx/xx.		

Status of Phase I Multi-Year Large Diameter Projects

Project Name	Description of Status

Phase II Early Action Program Remediation

Asset Description	Completed in Calendar Year X	Cumulative Completed [2]
Small Diameter Gravity Sewer (Miles)[1]	X	X
Large Diameter Gravity Sewer (Miles)[1]	X	X
Manholes (Number)	X	X
Note 1: Full pipe length is included in mileages.		
Note 2: Includes all work completed since xx/xx/xx.		

Status of Phase II Multi-Year Large Diameter Projects

Project Name	Description of Status

VII. CMOM

A. SSO Reporting

[Reference attached SSO documentation pursuant to Paragraph 12.c and 12.d of the Consent Decree]

Appendix G
Annual Report Template

B. Fats, Oils, and Grease Program

[Report pursuant to Paragraph 52.b.ii of the Consent Decree]

Inspections and Enforcements Actions in Calendar Year X

Number of Permitted Food Service Establishments	Number of Inspections	Number of Enforcement or Compliance Assistance Actions
XX	XX	XX

C. Sewer Cleaning

[Report pursuant to Paragraph 52.b.iii of the Consent Decree]

Small Diameter System-Wide Cleaning Program Status in Calendar Year X

[This mileage includes Repeat Cleaning Program pursuant to Paragraph 14.b of the Consent Decree.]

Total Small Diameter Miles	Miles Cleaned in Calendar Year X	% Cleaned in Calendar Year X	% Required per Calendar Year
XX	XX	XX	12%

Small Diameter System-Wide Cleaning Program Cumulative Status

Unique Small Diameter Cleaning Completed – Year X Through Year X

	Unique Small Diameter Cumulative Percent Completed
January 1, 2009 through Date of Lodging	X
January 1, 2009 through Year 1	X
...	X
January 1, 2009 through Year 10	X

Appendix G
Annual Report Template

Large Diameter Cleaning Program Status

Total Large Diameter Miles	Miles Cleaned in Calendar Year X	% Cleaned in Calendar Year X
XX	XX	XX

Large Diameter Cleaning Program Cumulative Status

Unique Large Diameter Cleaning Completed – Year X Through Year X

	Unique Large Diameter Cumulative Percent Completed
January 1, 2009 through Date of Lodging	X
January 1, 2009 through Year 1	X
...	X
January 1, 2009 through Year 10	X

D. Private Laterals

[Report pursuant to Paragraphs 12.d,17, and 52 of the Consent Decree]

VIII. Condition Assessment

A. Gravity Sewer Main Inspection Map

[Include a map showing the location of the inspections. The map will differentiate between inspections completed during the calendar year reported in the annual report and inspections completed prior to the calendar year reported in the annual report. Inspections completed prior to the calendar year reported in the annual report will include inspections after January 1, 2009 for small diameter pipe and after inception of the large diameter inspection program in 2005 for large diameter pipe.]

Appendix G
Annual Report Template

B. Gravity Sewer Main Inspection Status

Gravity Sewer Main Inspection Completed Through Calendar Year X

Asset Description	Method	Miles of Inspections Required Under Consent Decree[2]	Miles Completed Prior to Date of Lodging[1,2]	Miles Completed in Calendar Year X[1]	Miles Completed since Date of Lodging[2]	Cumulative Miles of Inspections Completed[2]	Cumulative % Complete
Small Diameter Gravity Sewer - Concrete Pipe and Clay Pipe Installed Prior to 1973	CCTV or other approved techniques	XX	XX	XX	XX	XX	XX
Small Diameter Gravity Sewer - Clay Pipe Installed from 1973 through 1982	Pole Camera, CCTV, or other approved techniques	XX	XX	XX	XX	XX	XX
Small Diameter Gravity Sewer - Other Pipe	Visual Inspection, Pole Camera, CCTV, or other approved techniques	XX	XX	XX	XX	XX	XX
Large Diameter Gravity Sewer	CCTV and other approved techniques	XX	XX	XX	XX	XX	XX

Note 1: Includes small diameter gravity sewer inspections since January 1, 2009 and large diameter gravity sewer inspections since inception of the large diameter program in 2005.

Note 2: Full pipe length is included in mileages.

C. Manhole Inspection Map

[Include a map showing the location of the inspections. The map will differentiate between inspections completed during the calendar year reported in the annual report and inspections completed prior to the calendar year reported in the annual report. Inspections completed prior to the calendar year reported in the annual report will include inspections after January 1, 2009.]

D. Manhole Inspection Status

Manhole Inspection Summary

Inspection Method	Manhole Inspections to be Completed Under Consent Decree	Inspected Prior to Date of Lodging[1]	Inspected in Calendar Year X	Inspected Since Date of Lodging	Cumulative Inspections Completed[1]	Cumulative % Complete[1]
Visual Inspection	XX	XX	XX	XX	XX	XX
Note 1: Includes manhole inspections since January 1, 2009.						

E. Condition Categorization Summary

Condition Categorization Summary

Condition Category	Miles of Small Diameter Sewer Mains [1]	Miles of Large Diameter Sewer Mains [1]	Number of Manholes
Category A – Very Good	XX	XX	XX
Category B – Good	XX	XX	XX
Category C – Fair Condition	XX	XX	XX
Category D – Poor	XX	XX	XX
Category E – Very Poor	XX	XX	XX
Note 1: Full pipe length is included in mileages.			

F. Map of Condition Categories

[Include a map showing the location of the categorized assets for assets categorized during the calendar year reported in the annual report.]

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Annual Report Template

G. Condition Assessment Guidelines

[Reference Consent Decree Appendix C, Condition Assessment and Remediation Process and Guidelines Appendix. Brief description of how SAWS applied these guidelines to develop the quantities of structural defects selected for Remedial Measures Alternative Analysis, Monitoring (CMOM) and Maintenance Analysis (CMOM).]

H. Condition Assessment Results During Calendar Year X

Condition Assessment Result	Miles of Small Diameter Sewer Mains [1]	Miles of Large Diameter Sewer Mains [1]	Number of Manholes
Remedial Measures Alternatives Analysis	XX	XX	XX
Monitoring (CMOM)	XX	XX	XX
Maintenance Analysis (CMOM)	XX	XX	XX
Note 1: Full pipe length is included in mileages.			

I. Map of Condition Assessment Results

[Include a map showing the location of the results for results determined during the calendar year reported in the annual report.]

IX. Condition Remedial Measures

A. Status of Multi-Year Large Diameter Condition Remediation

Project Name	Description of Status

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Annual Report Template

B. Condition Remediation Completed

[Summarize the mileage of gravity sewer mains and number of manholes for which Condition Remedial Measures have been completed (Not including Early Action Program work)]

Remediation Completed

	Miles of Small Diameter Gravity Sewer Main [1]	Miles of Large Diameter Gravity Sewer Main [1]	Number of Manholes
Completed in Calendar Year X	X	X	X
Note 1: Full pipe length is included in mileage			

[After EPA approval of the Condition Remedial Measures Plan, include a description of day-to-day operational changes to Remedial Measures consistent with of the Consent Decree and Appendices C and D of the Consent Decree.]

C. Map of Condition Remedial Measures Completed

[Include an overview map of remedial measures completed. The map will differentiate between remedial measures completed during the calendar year reported in the annual report and remedial measures completed pursuant to the consent decree prior to the calendar year reported in the annual report.]

D. Asset Information for Condition Remedial Measures Completed During Calendar Year X

[Attach the following information to this report:

a. The asset identification number and type of asset;
b. Whether the asset was rehabilitated, repaired or replaced;
c. The length of the sewer line at issue, if applicable;
d. The pipe material, if applicable;
e. The diameter of the pipe, if applicable;
f. The manhole type, if applicable;
g. The original installation date of the asset;
h. Project name]

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X. Capacity Assessment

A. Wet-Weather Related SSO Categorization

1. Guidelines

[Reference Consent Decree Appendix D, Capacity Assessment and Remediation Process and Guidelines Appendix. Include the range of dates for historical SSOs that this section of the Annual Report covers. Include a summary of the activities performed to address Category C SSOs.]

2. Wet-Weather SSO Categorization Summary

Wet Weather SSO Categorization for Calendar Year X

Category	Number of SSOs
Category A – Most likely a capacity-related SSO	X
Category B – Most likely maintenance-related	X
Category C – Clearly not a capacity related SSO	X
Total	**X**

3. Wet-Weather SSO Categorization Summary Map

[Include a map showing the location of the wet-weather SSO categories for SSOs categorized during the calendar year reported in the annual report.]

B. System-wide Hydraulic Modeling Evaluation

1. Model Maps

[Include a map showing the location of pipes in the model.]

2. Model results identifying potential Capacity Constraints

[Provide a summary of any model results that identify potential Capacity Constraints, including any lift station results]

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C. Prioritization of Potential Capacity Constraints

[Provide a brief description of how SAWS used Consent Decree Appendix D to prioritize potential Capacity Constraints, consistent with the Capacity Assessment and Remediation Process and Guidelines Appendix].

Potential Capacity Constraints Summary

Category	Number of Potential Capacity Constraints Identified in Calendar Year X
Priority 1 – Category A SSO per Wet-Weather SSO Categorization and where model also predicts a SSO	X
Priority 2 – Where model predicts SSO, but with no observed SSO. Or a Category A SSO per Wet-Weather SSO Categorization, but model does not predict a SSO.	X
Priority 3 – Where model predicts Hydraulic Grade Line (HGL) near ground elevation	X
Priority 4 – Category B SSO per Wet-Weather SSO Categorization	X
Priority 5 – Where pipe design capacity is exceeded for sustained 60 minutes or more but the HGL is not near the ground elevation	X
Total	**X**

1. Map of Potential Capacity Constraints

[Include a map showing the location of potential capacity constraints identified during the calendar year reported in the annual report.]

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Annual Report Template

XI. Field Investigations of Potential Capacity Constraints

A. Field Investigation Status

Completed Field Investigations

Technique	Number of Completed Field Investigations in Calendar Year X				
	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
Flow Metering	X	X	X	X	X
Smart Covers	X	X	X	X	X
Chalking	X	X	X	X	X
Visual Inspection	X	X	X	X	X
Other *(if applicable)*	X	X	X	X	X
Monitor in Future per Capacity Assessment and Remediation Process and Guidelines Appendix (CMOM)	X	X	X	X	X
Total	**X**	**X**	**X**	**X**	**X**

B. Map of Completed Field Investigations

[Include a map showing the location of each field investigation.]

XII. Capacity Remediation

A. Status of Multi-Year Large Diameter Capacity Remediation

Project Name	Description of Status

B. Capacity Remediation Completed

[Summarize the mileage for which Capacity Remedial Measures have been completed (Not including Early Action Program work)]

	Miles of Small Diameter Gravity Sewer Main [1]	Miles of Large Diameter Gravity Sewer Main [1]
Completed in Calendar Year X	X	X

Note 1: Full pipe length is included in mileage

[After EPA approval of the Condition Remedial Measures Plan, include a description of day-to-day operational changes to Remedial Measures consistent with of the Consent Decree and Appendices C and D of the Consent Decree.]

C. Map of Capacity Remedial Measures Completed

[Include an overview map of remedial measures completed. The map will differentiate between remedial measures completed during the calendar year reported in the annual report and remedial measures completed pursuant to the consent decree prior to the calendar year reported in the annual report.]

D. Asset Information for Completed Capacity Remedial Measures

[Attach the following information to this report:

a. The asset identification number and type of asset;
b. Whether SAWS addressed the Capacity Constraint through pipe rehabilitation/replacement, increased conveyance capacity, increased storage, or other Capacity Remedial Measures;
c. The length of the sewer line at issue, if applicable;
d. The pipe material, if applicable;
e. The diameter of the pipe, if applicable;
f. The original installation date of the asset at issue;
g. Project name]

E. Potential Capacity Constraints Removed from Field Investigation Program

[Report pursuant to Consent Decree paragraph 52.f.viii.]

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XIII. Remedial Measures Coordinated Between Capacity and Condition Remedial Measures

[Description of Remedial Measures that were coordinated between Condition and Capacity Remedial Measures]

XIV. Lift Station Rehabilitation and Elimination Program

[Report updates to Consent Decree Appendix E pursuant to paragraphs 44 and 52.g of the Consent Decree.]

XV. Force Main Assessment Program

[Report pursuant to requirements of paragraphs 46 and 52.h of the Consent Decree.]

Force Main Inspection Progress Summary

	Inspections to be Completed Under Consent Decree	Inspections Completed in Year X	Cumulative Inspections Completed	Cumulative % Complete
Number of Force Mains Visually Inspected	XX	XX	XX	XX

Force Main Condition Assessment Summary

Condition Assessment Result	Miles of Force Mains
Remedial Measures Alternatives Analysis	XX
Monitoring (CMOM)	XX
Maintenance Analysis (CMOM)	XX

Appendix G
Annual Report Template

Force Main Remedial Measures Completed in Calendar Year X

Miles Completed in Calendar Year X
XX

XVI. Water Quality Program

[Report pursuant to Consent Decree paragraph 52.i]

XVII. Work Completed in Low Income Areas

[Report pursuant to Consent Decree paragraph 52.j. Include the following:

a. *Narrative summary of miles of gravity sewer main inspected, cleaned or remediated in low income areas per summaries in Sections VI, VII.C, VIII.B, IX.B, and XII.B herein;*
b. *All maps required by this Annual Report Template shall show the low income areas in which work was completed using a map consistent with Attachment 1 hereto for the work categories specified in Consent Decree paragraph 52.j.]*

XVIII. Modifications

[Include a summary of written agreements pursuant to Consent Decree paragraph 110 and other changes made pursuant to Consent Decree paragraph 111.]

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Appendix for

SSO Documentation

Appendix G
Annual Report Template

Appendix for Updated

Lift Station Table (Consent Decree Appendix E)

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Appendix for

Asset Information for Completed Condition Remedial Measures

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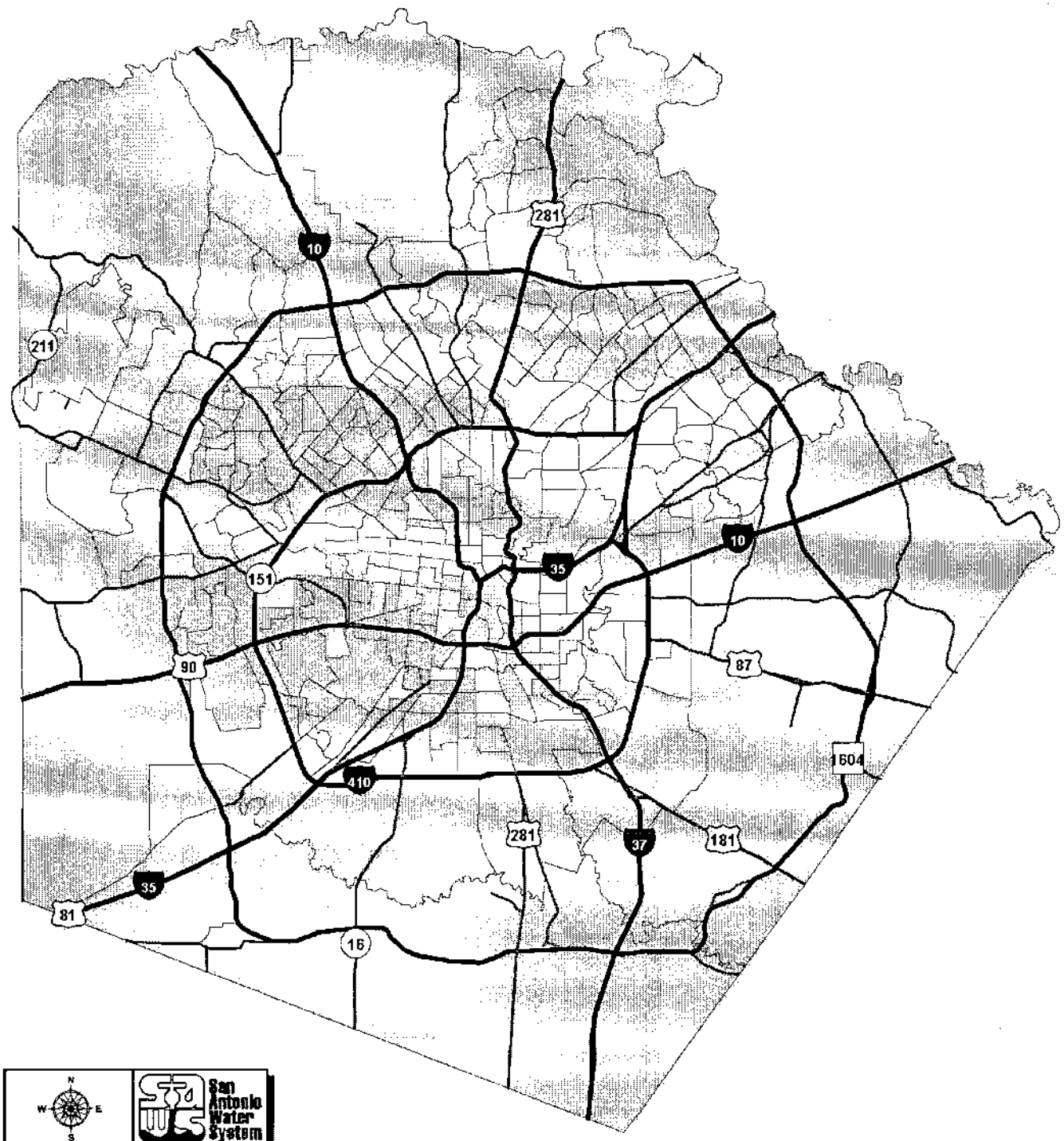
Appendix for

Asset Information for Completed Capacity Remedial Measures

SAWS Census Tracts Estimated Below Poverty Level

Annual Report Template Attachment 1



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San Antonio Water System

Date: May 03, 2013 GIS Division

This utility map is for reference only. The information may not represent what actually has been constructed. SAWS explicitly disclaims any representation of the accuracy of the information and assumes no liability for any errors, omissions, or inaccuracies in the map regardless of how caused. Field verification should be conducted to determine SAWS jurisdiction. Any reproduction or sale of this document. This utility map may not under any circumstances, be copied, reproduced or published in any form or media, or transferred to another without written permission of the San Antonio Water System.

Source: 2010 ACS 5 year dataset C17002

SAWS Residential Accounts
Estimated at Below 125% Poverty
Qualifying Census Tracts

APPENDIX H

APPENDIX H

WWTP AND MITCHELL LAKE EFFLUENT VIOLATIONS SUMMARY (2003-DECEMBER 31, 2012)

SAN ANTONIO WATER SYSTEM

EFFLUENT LIMIT VIOLATIONS

Leon Creek Waste Water Treatment Plant (TX0052639)-Major

DATE	OUTFALL	PARAMETER	VIOLATION	PERMIT LIMIT	NO. OF VIOLATIONS
10/03	001	DO, min.	4.1 mg/l	5.0 mg/l	1
10/03	001	NH3-N, max.	17.64 mg/l	7 mg/l	2
10/03	001	CBOD, max.	53.0 mg/l	17 mg/l	1
10/05	001	NH3-N, max.	7.42 mg/l	7 mg/l	1
12/05	001	NH3-N, avg.	2.03 mg/l	2 mg/l	31
12/05	001	NH3-N, max.	7.25 mg/l	7 mg/l	1
09/08	002	pH, min.	5.9 s.u.	6.0 mg/l	1
02/09	002	pH, min.	5.7 s.u.	6.0 mg/l	1
12/09	001	NH3-N, avg.	2.37 mg/l	2 mg/l	31
12/09	001	NH3-N, max.	9.39 mg/l	7 mg/l	1
06/11	001	NH3-N, max	8.18 mg/l	7 mg/l	1
06/11	002	NH3-N, max.	8.18 mg/l	7 mg/l	1
12/11	001	E.Coli, max	1160 CFU/100	394 CFU/100	1

Salado Creek Waste Water Treatment Plant (TX0052647)-Major

DATE	OUTFALL	PARAMETER	VIOLATION	PERMIT LIMIT	NO. OF VIOLATIONS
03/03	001	TRC, min.	0.95 mg/l	1.0 mg/l	1
03/03	004	TRC, min.	0.95 mg/l	1.0 mg/l	1
05/03	004	TRC, min.	0.60 mg/l	1.0 mg/l	1
07/06	001	NH3-N, avg.	3.24 mg/l	2 mg/l	31
07/06	001	NH3-N, max.	8.18 mg/l	7 mg/l	1
07/06	002	NH3-N, avg.	3.24 mg/l	2 mg/l	31
07/06	002	NH3-N, max.	8.18 mg/l	7 mg/l	1
07/06	002	TRC, max.	1.10 mg/l	.099 mg/l	31
07/06	004	NH3-N, avg.	3.24 mg/l	2 mg/l	31
07/06	004	NH3-N, max.	8.18 mg/l	7 mg/l	1

Medio Creek Waste Water Treatment Plant (TX0055689)

DATE	OUTFALL	PARAMETER	VIOLATION	PERMIT LIMIT	NO. OF VIOLATIONS
07/07	001	Flow, avg.	15,573 gpm	14,757 gpm	1
08/07	001	Flow, avg.	16,506 gpm	14,757 gpm	1
03/09	001	CBOD, max.	> 10 mg/l	25 mg/l	1
03/09	001	NH3-N, avg.	2.28 mg/l	2 mg/l	31
03/09	001	TSS, max.	119 mg/l	40 mg/l	1

Dos Rios Waste Water Treatment Plant (TX0077801)

DATE	OUTFALL	PARAMETER	VIOLATION	PERMIT LIMIT	NO. OF VIOLATIONS
12/06	004	DO, min.	4.9 mg/l	5.0 mg/l	1
12/06	005	pH, min.	5.9 s.u.	6.0 s.u.	1
01/07	002	pH, min.	5.9 s.u.	6.0 s.u.	1
01/07	005	pH, min.	5.9 s.u.	6.0 s.u.	1
08/07	001	Flow, avg.	202,431 gpm	173,611 gpm	31
12/07	004	TRC, max.	.79 mg/l	.099 mg/l	1
3/08	001	TRC, max.	1.4 mg/l	.099 mg/l	1
1/09	002	TRC, max.	.5 mg/l	.099 mg/l	1
1/09	006	TRC, max.	.8 mg/l	.099 mg/l	1
09/09	001	NH3-N, max.	11 mg/l	7 mg/l	1
09/09	002	TRC, max.	.099 mg/l	.16 mg/l	1
09/09	004	NH3--N, max.	11 mg/l	7 mg/l	1
09/09	005	NH3-N, max.	11 mg/l	7 mg/l	1
01/10	001	CBOD,max.	20 mg/l	9 mg/l	1
01/10	001	TSS, max.	93 mg//l	40mg/l	1
01/10	002	COB, max	25 mg/l	9 mg/l	1
01/10	002	TSS, max	93 mg/l	40 mg/l	1
01/10	004	CBOD, max	25 mg/l	9 mg/l	1
01/10	004	TSS, max	40 mg/l	93 mg/l	1
01/10	005	COB, max.	25 mg/l	9 mg/l	1
01/10	005	TSS, max.	93 mg/l	40 mg/l	1
01/11	001	CBOD, avg.	11988 lb/d	5213 lb/d	31
01/11	001	NH3-N, avg.	2.35 mg/l	2 mg/l	1
01/11	001	NH3-N, max.	7.62 mg/l	7 mg/l	1
01/11	002	NH3-N, max.	2.84 mg/l	2 mg/l	1

Dos Rios Waste Water Treatment Plant (TX0077801)

DATE	OUTFALL	PARAMETER	VIOLATION	PERMIT LIMIT	NO. OF VIOLATIONS
01/11	002	NH3-N, max.	7.62 mg/l	7 mg/l	1
01/11	004	NH3-N, avg.	2.35 mg/l	2 mg/l	31
01/11	004	NH3-N, max.	7.62 mg/L	7 mg/L	1
01/11	005	NH3-N, avg	3.06 mg/L	2 mg/L	31
01/11	005	NH3-N, max.	7.62 mg/L	7 mg/L	1
09/11	001	NH3-N, max.	7.41 mg/L	7 mg/L	1
09/11	002	NH3-N, max.	7.41 mg/L	7 mg/L	1
09/11	004	NH3-N, max.	7.41 mg/L	7 mg/L	1
09/11	005	NH3-N, max.	7.41 mg/L	7 mg/L	1
10/11	001	NH3-N, avg.	2.21 mg/L	2 mg/L	31
10/11	001	NH3-N, max.	7.35 mg/L	7 mg/L	1
10/11	002	NH3-N, max.	7.35 mg/L	7 mg/L	1
10/11	004	NH3-N, max.	7.35 mg/L	7 mg/L	1
10/11	005	NH3-N, max.	7.35 mg/L	7 mg/L	1
01/12	001	NH3-N, avg	2.31 mg/L	2 mg/L	31
01/12	001	NH-N, max.	13 mg/L	7 mg/L	1
01/12	005	NH-N, max.	13 mg/L	7 mg/L	1
03/12	001	E.Coli, max.	680CFU/100	394 CFU/100	1
05/12	001	TRC, max.	.12 mg/L	.1 mg/L	1
05/12	001	TRC, min.	.8 mg/L	1 mg/L	1
05/12	002	TRC, min.	.8 mg/L	1 mg/l	1
05/12	004	TRC, min.	.8 mg/L	1 mg/L	1
10/12	001	E.Coli, max.	770 CFU/100	394 CFU/100	1
10/12	002	E.Coli, max.	770 CFU/100	394 CFU/100	1
10/12	005	E.Coli., max.	770 CFU/100	394 CFU/100	1

Mitchell Lake (TX0065641)-Minor

DATE	OUTFALL	PARAMETER	VIOLATION	PERMIT LIMIT	NO. OF VIOLATIONS
01/05	001	ph, max.	9.6 s.u.	9.0 s.u.	1
02/05	001	ph, max.	9.6 s.u.	9.0 s.u.	1
03/05	001	ph, max.	9.5 s.u.	9.0 s.u.	1
01/07	001	ph, max.	9.1 s.u.	9.1 s.u.	1
01/07	001	tss, avg.	114 mg/l	90 mg/l	31
03/07	001	ph, max.	9.6 s.u.	9.0 s.u.	1
03/07	001	tss, avg.	97 mg/l	90 mg/l	31
04/07	001	DO, min.	3.8 mg/l	4.0 mg/l	1

Mitchell Lake (TX0065641)

DATE	OUTFALL	PARAMETER	VIOLATION	PERMIT LIMIT	NO. OF VIOLATIONS
04/07	001	ph, max.	9.8 s.u.	9.0 s.u.	1
04/07	001	tss, avg.	103 mg/l	90 mg/l	31
05/07	001	DO, min.	.2 mg/l	4 mg/l	1
05/07	001	ph, max.	9.7 s.u.	9.0 s.u.	1
05/07	001	tss, avg.	104.5 mg/l	90 mg/l	31
06/07	001	ph, max.	10.2 s.u.	9 s.u.	1
06/07	001	tss, avg.	109.6 mg/l	90 mg/l	31
07/07	001	DO, min.	2.2 mg/l	4 g/l	1
07/07	001	ph, max.	9.8 s.u.	9 s.u.	1
08/07	001	DO, min.	3.2 mg/l	4 mg/l	1
08/07	001	ph, max.	9.5 s.u.	9.0 mg/l	1
09/07	001	DO, min	1 mg/l	4 mg/l	1
09/07	001	ph, max.	9.9 s.u.	9.0 s.u.	1
10/07	001	DO, min.	.5 mg/l	4 mg/l	1
02/10	001	ph, max.	9.1 s.u.	9.0 mg/l	1
03/10	001	ph, max.	9.8 s.u.	9.0 s.u.	1
04/10	001	DO, min.	1.4 mg/l	4 mg/l	1
04/10	001	ph, max.	9.7 s.u.	9.0 s.u.	1
04/10	001	tss, avg.	92 mg/l	90 mg/l	31
04/10	001	DO.min.	1.91 mg/l	4 mg/l	1
05/10	001	ph, max.	9.2 s.u.	9.0 s.u.	1
09/10	001	ph, max.	10.8 s.u.	9.0 s.u.	1
10/10	001	ph, max.	10.84 s.u.	9.0 s.u.	1
10/10	001	tss, avg.	128.1 mg/l	90 mg/l	31
06/11	001	ph, max.	9.78 s.u.	9.0 s.u.	1
06/11	001	tss, avg.	127 mg/l	90 mg/l	31
07/11	001	BOD, avg.	33.25 mg/l	30 mg/l	31
07/11	001	DO, min.	2 mg/l	4 mg/l	1
07/11	001	ph, max.	9.46 s.u.	9.0 s.u.	1
07/11	001	tss, avg.	225 mg/l	90 mg/l	31

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
SAN ANTONIO DIVISION

UNITED STATES OF AMERICA,

and

STATE OF TEXAS

Plaintiffs,

v.

SAN ANTONIO WATER SYSTEM,

Defendants.

Civil Action No. 5:13-cv-00666-DAE

MODIFIED CONSENT DECREE

WHEREAS, on October 15, 2013, the United States District Court for the Western District of Texas approved and entered a Consent Decree between Plaintiffs, the United States of America and the State of Texas, and Defendant San Antonio Water System ("SAWS"). (Doc. No. 8).

WHEREAS, the objective of the Consent Decree is for SAWS to achieve and maintain compliance with the Clean Water Act and the Texas Water Quality Control Act and the regulations promulgated thereunder, including the elimination of Sanitary System Overflows ("SSOs").

WHEREAS, Section V of the Consent Decree (Compliance Requirements) requires SAWS to conduct a system-wide Condition Assessment to inspect and assess the structural condition of its sewer mains system for the purpose of identifying structural defects that have caused SSOs or may significantly contribute to the future occurrence of SSOs. SAWS is then required to prepare a Condition Remedial Measures Plan and implement remedial measures to remedy the identified structural defects. Section V also requires SAWS to conduct a system-wide Capacity Assessment to identify capacity constraint issues within its sewer system that have caused SSOs, or may significantly contribute to future SSOs. SAWS is required to prepare a Capacity Remedial Measures Plan and implement remedial measures consistent with the objectives of the Consent Decree.

WHEREAS, SAWS completed the Condition Assessment program on July 23, 2017, inspecting over 76,000 manholes and hundreds of miles of sewer lines and is on schedule to implement the Condition Remedial Measures Plan in accordance with the Consent Decree.

WHEREAS, SAWS has completed the system-wide Capacity Assessment and is actively working on implementing the Capacity Remedial Measures Plan, submitted in January 2019, in accordance with the Consent Decree.

WHEREAS, the Capacity Remedial Measures Plan requires SAWS to complete construction projects to alleviate capacity constraints in the system. SAWS developed a Remediation Project List, which includes the W6, W9, and W52 construction projects. The W6 Project consists of six phases of work to replace existing sewer pipeline with approximately 8.8 miles of new or upsized pipes. Phases one to four of the W6 Project have been constructed. Phases five and six of the W6 Project were designed to cross Lackland Air Force Base (or Joint Base San Antonio), replacing existing 54-inch diameter sewer pipes with a new 104-inch diameter sewer main. The W9 and W52 construction projects are located upstream of the final phases of the W6 construction project. In order to minimize the risk of misalignment of active sewer pipelines with newly constructed upstream sewer pipelines, SAWS represents that good engineering practice dictates that construction begin at the lowest elevation and proceed upstream. Therefore, the final phases of the W6 construction project should be completed before the upstream W9 and W52 construction projects.

WHEREAS, SAWS represents that construction of the W9 and W52 construction projects has been delayed due to SAWS' inability to secure an easement from the United States Air Force ("USAF") necessary for the final phases of the W6 construction project, which was designed to route the W6 sewer line through the Lackland Air Force Base.

WHEREAS, SAWS represents that it has engaged in negotiations with the USAF to obtain an easement for the W6 construction project since 2008, prior to the approval of the Consent Decree, but has not secured the easement.

WHEREAS, SAWS represents that it has reviewed more than fifteen alternative routes to achieve the objectives of the final phases of the W6 construction project, without routing the W6 sewer line through the Lackland Air Force Base, with only one alternative route being feasible from an engineering perspective.

WHEREAS, SAWS estimates that its selected alternative route (around Lackland Air Force Base) and new design of the final phases of the W6 construction project will require SAWS to invest approximately $100 million in additional construction costs.

WHEREAS, SAWS represents that the original route for the W6 sewer line through Lackland Air Force Base was approximately 3.5 miles and would have allowed significant stretches of open-trench excavation for the new piping.

WHEREAS, SAWS represents that the new design of the W6 construction project, requiring the W6 sewer line to be constructed around Lackland Air Force Base, requires approximately 5.3 miles of piping, most of it being installed by tunneling at depths of up to 140 feet.

WHEREAS, SAWS represents that the new design of the W6 sewer line is approximately 1.8 miles longer than the original route through Lackland Air Force Base with significantly more complicated construction.

WHEREAS, SAWS represents that the new design of the W6 sewer line will further alleviate capacity issues within the system and help minimize wet weather SSOs.

WHEREAS, SAWS represents that the new design and route of the final phases of the W6 construction project will require SAWS to obtain over 2,500 linear feet of additional easements.

WHEREAS, the Consent Decree requires that Capacity Remedial Measures Plan projects that require the acquisition of easements or property be completed within 6 ½ years after EPA's written approval of the Capacity Remedial Measures Plan.

WHEREAS, EPA approved the Capacity Remedial Measure Plan on March 25, 2020 thereby requiring all Capacity Remedial Plan projects that require the acquisition of easements or property to be completed by September 25, 2026.

WHEREAS, SAWS has requested a modification of the Consent Decree to extend the deadline for the completion of the W9 and W52 construction projects to July 22, 2027.

WHEREAS, the modified deadline to complete the W9 and W52 construction projects will not increase the likelihood of SSOs because SAWS will continue to use and operate the existing sewer pipelines while constructing the replacement sewer pipelines.

WHEREAS, SAWS has met all Consent Decree deadlines, and is projected to complete 99% of all Remedial Plan projects no later than the original September 25, 2026 deadline.

WHEREAS, The Parties agree that the requested modification is fair, reasonable, and in the public interest.

WHEREAS, Paragraph 110 of the Consent Decree requires that any material modification of the Consent Decree, and any attached appendices, be effective only upon the approval of the Court. The Parties have determined that a modification to the implementation deadlines of the Capacity Remedial Measure Plan is a material modification.

NOW THEREFORE, upon the consent and agreement of the Parties IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

Paragraph 42 of the Consent Decree is now replaced as follows:

42. Capacity Remedial Measures Implementation. In general, SAWS shall plan and implement the approved Capacity Remedial Measures in accordance with the process and guidelines identified in Appendix D. Following receipt of EPA's written approval, SAWS shall begin implementation of the Capacity Remedial Measures Plan on a balanced annual basis. SAWS shall complete all approved Small Diameter and Large Diameter Gravity Sewer Main Capacity Remedial Measures within four (4) and a half (1/2) years of receipt of EPA's written approval of the Capacity Remedial Measures Plan. Should a specific Large Diameter Capacity Remedial Measure project require SAWS to obtain new easements and/or acquire land for more than twenty-five (25) percent of the length of that project or more than 2,500 feet, whichever is less, SAWS may at its option elect to complete that Large Diameter Capacity Remedial Measures project ~~within six (6) and a half (1/2) years of receipt of EPA's written approval of the Condition Remedial Measures Plan~~ **by no later than July 22, 2027**. SAWS ~~shall~~ has advised EPA in the Capacity Remedial Measures Plan of any Large Diameter Capacity Remedial Measures projects that SAWS wishes to complete ~~in a maximum of six (6) and a half (1/2) years instead of four (4) and a half (1/2) years~~ **by no later than July 22, 2027**. For those projects that SAWS wishes to complete ~~within six (6) and a half (1/2) years~~ **by no later than July 22, 2027**, SAWS has advised in the Capacity Remedial Measures Plan the reasons why the need for new easements or land acquisition could not be avoided. Any modifications to the

approved Capacity Remedial measures Plan shall be in accordance with Section XVIII (Modification).

SO ORDERED this 2nd day of August 2021.

David Alan Ezra
Senior United States District Judge

Signature Page for Amended Consent Decree in the matter of United States and State of Texas v. San Antonio Water System

FOR THE UNITED STATES OF AMERICA:

JEAN E. WILLIAMS
Acting Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

/s/ Asia A. McNeil-Womack
ASIA MCNEIL-WOMACK (Ga Bar #821002)
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
(202) 305-0544

ASHLEY C. HOFF
United States Attorney
Western District of Texas

Liane Noble
Assistant United States Attorney
Western District of Texas
903 San Jacinto Blvd., Suite 334
Austin, Texas 78701
Phone: (512) 370-1252

Signature Page for Amended Consent Decree in the matter of United States and State of Texas v. San Antonio Water System

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Dated: 11-16-2020

MARK POLLINS, Director
Water Enforcement Division
Enforcement and Compliance Assurance Division
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Signature Page for Amended Consent Decree in the matter of United States and State of Texas v. San Antonio Water System

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Dated: February 11, 2021

Digitally signed by CHERYL SEAGER
DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=CHERYL SEAGER, 0.9.2342.19200300.100.1.1=68001003691793
Date: 2021.02.11 17:15:08 -06'00'

CHERYL T. SEAGER
Division Director
Enforcement and Compliance Assurance Division
U.S. EPA, Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270

Dated: _____

EFREN ORDONEZ Digitally signed by EFREN ORDONEZ
Date: 2021.02.09 11:55:03 -06'00'

EFREN ORDÓÑEZ
Office of Regional Counsel
U.S. EPA, Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270

Signature Page for Amended Consent Decree in the matter of United States and State of Texas v. San Antonio Water System

FOR THE STATE OF TEXAS ON BEHALF OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:

Dated: March 8, 2021

KEN PAXTON
Attorney General of Texas

BRENT WEBSTER
First Assistant Attorney General

GRANT DORFMAN
Deputy First Assistant Attorney General

SHAWN COLES
Deputy Attorney General for Civil Litigation

PRISCILLA M. HUBENAK
Chief, Environmental Protection Division

/s/ Phillip Ledbetter
PHILLIP LEDBETTER
Assistant Attorney General
State Bar No. 24041316
Phillip.Ledbetter@oag.texas.gov
OFFICE OF THE ATTORNEY GENERAL
ENVIRONMENTAL PROTECTION DIVISION
P.O. Box 12548, MC-066
Austin, Texas 78711-2548
(512) 475-4152 | Fax: (512) 320-0911

ATTORNEYS FOR THE STATE OF TEXAS

Signature Page for Amended Consent Decree in the matter of United States and State of Texas v. San Antonio Water System

FOR SAN ANTONIO WATER SYSTEM

Dated: 9-1-2020

ROBERT R. PUENTE
President and Chief Executive Officer
San Antonio Water System
2800 U.S. Highway 281 North
San Antonio, TX 78212

2021 SAWS Consent Decree Annual Report

June 30, 2022

San Antonio Water System

II. CERTIFICATION DECLARATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Jeffrey J. Haby, P.E.
Vice President, Production & Treatment

6-24-2022
(Date)

2021 Annual Report

III. TABLE OF CONTENTS

APPENDICES & ATTACHMENTS

Appendix A Section VII.A SSO Documentation

Appendix B-1 Section VII.D SAWS Information Regarding Private Lateral Discharges

Appendix B-2 Section VII.D City of San Antonio Information Regarding Private Lateral Notifications

Appendix C Section IX.D Asset Information for Condition Remedial Measures

Appendix D Section XII.D Asset Information for Capacity Remedial Measures

Appendix E Section XIV Lift Station Rehabilitation & Elimination Program Table

Attachment 1 SAWS Census Tracts Estimated Below Poverty Level

IV. ACRONYMS AND ABBREVIATIONS

CCTV	Closed-Circuit Television
CD	Consent Decree
CI	Cast Iron
COSA	City of San Antonio
CMOM	Capacity, Management, Operation, and Maintenance
CT	Clay Tile
CP	Concrete Pipe
EARZ	Edwards Aquifer Recharge Zone
EAA	Edwards Aquifer Authority
EPA	Environmental Protection Agency
FFAC	Final Field Acceptance Checklist
FOG	Fats, Oils and Grease
FRP	Fiberglass Reinforced Plastic
HDPE	High-Density Polyethylene
HGL	Hydraulic Grade Line
LD	Large Diameter
LS	Lift Station
NOV	Notice of Violation
NTP	Notice to Proceed
PACP	Pipeline Assessment Certification Program
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
SAWS	San Antonio Water System
SSO	Sanitary Sewer Overflow
TCEQ	Texas Commission on Environmental Quality
VCP	Vitrified Clay Pipe

LIST OF TABLES

V. INTRODUCTION

A. Purpose

On October 15, 2013 a Consent Decree (CD) between the San Antonio Water System (SAWS) and the United States of America and the State of Texas was entered in Civil Action No. 5:13-cv-00666-DAE in the United States District Court for the Western District of Texas, San Antonio Division.

This Report was prepared and submitted pursuant to Paragraph 52 of the Consent Decree and documents the Work, as defined in the Consent Decree, which was completed during Calendar Year 2021. *Note: Capitalized terms, like Work or Calendar Year, are defined in the Consent Decree*.

B. Regulatory Requirements

This Report summarizes activities completed during the previous Calendar Year, 2021, for the following requirements in Section V of the Consent Decree: Early Action Program, Condition Assessment, Condition Remedial Measures, Capacity Assessment, Capacity Remedial Measures, Lift Station Rehabilitation and Elimination Program, Force Main Assessment Program, Capacity, Management, Operation, and Maintenance (CMOM) Program (including private laterals) and Water Quality Program.

VI. EARLY ACTION PROGRAM

Consent Decree Appendix F defines the Phase I Early Action Program. The following tables provide the status of projects and work being conducted under the Phase I Early Action Program. Table VI-1 shows the length of the rehabilitation work completed. Table VI-2 shows the status of the multi-year large diameter pipe projects.

As shown in tables VI-1 through VI-4, all Early Action Program projects have been completed.

Table VI-1:
Phase I Early Action Program Remediation

Asset Description	Completed in Calendar Year 2021	Cumulative Completed[2]
Small Diameter Gravity Sewer (Miles)[1,3]	0.00	66.37
Large Diameter Gravity Sewer (Miles)[1,3]	0.00	38.74
Manholes (Number)[3]	0	1,664
Note 1: Full pipe length is included in mileages.		
Note 2: Includes all work completed prior to January 1, 2022.		
Note 3: Individual Asset IDs were reported in Appendices C and D as noted in Sections IX.D and XII.D.		

Table VI-2: Status of Phase I Early Action Program Multi-Year Large Diameter Projects	
Project Name	**Description of Status**
Phase I EAP – Project 7 – Large Diameter (LD) Rehab Program	Project 7 completed prior to 2015. Assets reported in 2013 and 2014 Annual Reports.
Phase I EAP – Project 8 – LD Rehab Program	Project 8 is complete. Assets reported in 2017 and prior Annual Report.
San Antonio River Outfall Project Phase 1 and 2	All phases completed in calendar year 2017.
Donaldson Terrace	Donaldson Terrace construction was completed on 3/28/2019. Seeling Channel improvements were constructed in two phases. Phase I construction completed 02/26/2016. Phase II construction was completed 10/9/2018.
Broadway Corridor – Josephine to South Alamo Street	Construction package A completed 4/29/2016. Construction package B completed 6/11/2020; a minor modification request was submitted on 5/10/2019. Construction packages C1 and C3 were completed 5/26/2017. Construction Packages C2 and C4 were completed 11/7/2017.
Broadway Corridor – Carnahan to Mulberry Streets	Construction package 1 completed in 2015 and reported in the 2015 Annual Report. Construction package 2 completed in 2016. Construction package 3 completed 9/1/2017. Construction Package 5 was completed 11/14/2018.
Leon Creek – Highway 90 to New Laredo Highway	Phase 1 construction was completed in 2014. Phase 2 construction was completed 10/07/2015. Phases 3 and 4 assets were placed in service on 11/30/2018 and project completed 6/3/2020.
C-5/C-28 – S Laredo/W Houston	Construction package 1A assets are in service 12/22/2017. Package 1B assets are in service 7/3/2019. Package 2 completed 3/15/2019.
W-1 Leon Creek Emergency	Project is complete. Reported in 2013 Annual Report.
W-31 IH 10 Western Extension B	Assets placed in service 11/07/2018 and project completed 7/28/2019.
Note: "Project complete" indicates all close out activities related to the project are complete. "Assets placed in service" indicates that all sewer assets are in service, but project close out activities are incomplete.	