



Sewer Maintenance Division: Environmental Management System Manual



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Revision History & EMS Document Control Log

Date	Revision No.	Change	Reference Section	Edited By
12/30/2013	0	<ol style="list-style-type: none"> 1. Added cover page 2. Added Table of Contents 3. Added Revisions Table and page 4. Formatting 5. Added Element numbering 6. Added; Continuously improving in overall environmental performance, compliance, and collection system wide operations and maintenance – Section 4.2 7. Added; Providing a framework for using pollution prevention practices to meet our legal regulatory requirements – Section 4.2 8. Added “for environmental performance, compliance, and collection system wide operations and maintenance” to the end of the following sentence: Establishing and reviewing goals, objectives, and targets – Section 4.2 9. Combined separate Critical Control Point documents into one document, some formatting still needed – Section 4.3.1; Refer to Appendix 1.1 10. Changed Document legal and other requirements in Appendix 1.1 to Appendix 1.2 – Section 4.3.2; Refer to Appendix 1.2 11. Added Appendix 1.2 Legal and Other Requirements 12. Added Goals, Objectives, and Targets refer to Appendix 2.1 	<p style="text-align: center;">Section 4.2</p> <p style="text-align: center;">Section 4.3.1</p> <p style="text-align: center;">Section 4.3.2</p>	D. McGowan
6/30/2014	0	Updated and added revisions to the manual per SMEMS team recommendations and findings in internal audit.		M. Gibson
7/10/2014	0	Original Version	All	
7/15/2014	0	Updated numbering/style of elements. Renumbered appendices		M. Gibson
7/29/2014	0	Added signature authorization page to manual		M. Gibson
9/25/14	0	<ol style="list-style-type: none"> 1. Updated manual per pre-audit findings. Added cross reference section. 2. Renumbered sections due to revisions 		M. Gibson
5/29/2015	1	<ol style="list-style-type: none"> 1. Added and modified graphics within the following sections: <ul style="list-style-type: none"> - 3.2 - 3.3 - 3.4 - 4.2 - 5.0 - 5.2 - 6.1 - 6.3 2. Published Revision 1 	<p style="text-align: center;">Section 3.2</p> <p style="text-align: center;">Section 3.3</p> <p style="text-align: center;">Section 3.4</p> <p style="text-align: center;">Section 4.2</p> <p style="text-align: center;">Section 5.0</p> <p style="text-align: center;">Section 5.2</p> <p style="text-align: center;">Section 6.1</p> <p style="text-align: center;">Section 6.3</p>	M. Gibson
09/23/2015	2	<ol style="list-style-type: none"> 1. Formatted document utilizing a multilevel number system for ease of reference 2. Added Revision History section 3. Formatted all graphics for uniformity as referenced follows: <ul style="list-style-type: none"> - 3.2.2 - 3.3.4 - 3.4.2 - 4.2.2 - 5.1.2 - 6.1.2 - 6.3.2 	All	C. Perez

Sewer Maintenance EMS Manual Cross-References

EMS Sections	Sections Referenced:
1.0 Introduction/EMS Manual 1.1 Scope 1.2 Desired Outcomes 1.3 Planned Arrangements 1.4 Authorizations & Responsibility	4.1, 4.4.1, 4.4.4
2.0 Management Directives 2.1 Management Policy 2.2 Roles & Responsibilities	4.2, 4.4.1, 4.4.4
3.0 Planning Processes 3.1 Process Control Points 3.2 Significant Environmental Aspects 3.3 Legal & Other Requirements 3.4 Objectives & Targets 3.5 Management of Change	4.3.1, 4.3.2, 4.3.3, 4.4.6, 4.5.1
4.0 Core Processes 4.1 Operational Control of Process Control Points 4.2 Emergency Preparedness 4.3 Monitoring & Measurement	4.4.6, 4.4.7, 4.5.1
5.0 Support Processes 5.1 Competence, Training & Awareness 5.2 Communication 5.3 Documentation, Document Control & Recordkeeping	4.2, 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, 4.5.2, 4.5.4
6.0 Improvement Processes 6.1 Corrective & Preventive Action 6.2 Internal Audit 6.3 Management Review	4.5.3, 4.5.5, 4.6

Approval Letter

The initial copy of this Sewer Maintenance Environmental Management System (SMEMS) Manual has been approved by the City of Raleigh Assistant Public Utilities Director for Wastewater (see below for signatures). Future revisions to the manual can be made by the EMS Coordinator/EMR in conjunction with the SMEMS Team.

All requirements of this manual apply to the Sewer Maintenance Program at the Utilities Field Operation Center and meet the minimum requirements of the ISO 14001:2004 National Standards.

Manual approval:

T. J. Lynch

Marti Gibson

T. J. Lynch
Assistant Public Utilities Director-Wastewater

Marti Gibson
EMS Coordinator

June 30, 2014

June 30, 2014

Date Approved

Date Approved

1.0 Introduction/EMS Manual

1.1 Scope

The scope of the City of Raleigh Public Utilities Department Sewer Maintenance Environmental Management System (SMEMS) covers the sanitary sewer collection system that serves the Raleigh service area.

1.2 Desired Outcomes

1.2.1 The primary focus/goals of the S MEMS is as follows:

1.2.1.1 Meet or exceed regulatory and environmental performance

1.2.1.2 Improve efficiency of the Sewer Maintenance training program

1.2.1.3 Improve communication with stakeholders and interested parties

1.2.2 The S MEMS is documented in this manual, and applies to the operation and maintenance of the sanitary sewer collection system in an effort to protect the environment from the release of wastewater (Appendix A). The sanitary sewer collection system consists of the network of municipally controlled pipes, manholes, force mains, siphons, and aerial crossings designed to convey wastewater from the customer to the wastewater plant for treatment. Easement inspections, maintenance, repair, and closed circuit television inspections (CCTV) are also included in the S MEMS scope. Engineering, design, capital improvements, customer services/laterals, warehousing, facility maintenance, pump station maintenance/repair, and wastewater treatment are not included in this scope.

1.3 Planned Arrangements

This S MEMS is designed to be consistent with the ISO 14001:2004 American National Standards

1.4 Authorizations and Responsibility

1.4.1 The overall responsibility for overseeing the S MEMS lies with the Environmental Management Representative (EMR). The EMR is sponsored and supported managerially by the Assistant Public Utilities Director (APUD) for Wastewater, who has the authority to commit resources and people to sewer maintenance and the S MEMS.

1.4.2 Under authority provided by the Raleigh City Council, this S MEMS manual has been approved by the Assistant Public Utilities Director (APUD) for Wastewater. Future revisions and maintenance of the manual can be made by the EMR in conjunction with the S MEMS Team.

1.5 Procedure

1.5.1 Review and Approval

1.5.1.1 Review manual at least annually.

1.5.1.2 Recommend and review any updates and other changes arising prior to the annual review at S MEMS team meetings.

1.5.1.3 Summarize changes to the manual and report to the APUD for Wastewater for review (EMR).

1.5.1.4 Update manual with approved changes. (EMR)

1.5.2 Communication of Revisions

1.5.2.1 Inform APUD for Wastewater and S MEMS team of any significant revisions to the S MEMS manual.

1.5.2.2 Post most recent version of the S MEMS manual on the City's intranet and website (www.raleighnc.gov).

1.5.2.3 Control manual so that changes can be made only by the EMR or designee.

1.6 References

ISO 14001:2004 American National Standard
Appendix A

2.0 Management Directives

2.1 Management Policy

2.1.1 Purpose

To establish the sewer maintenance management policy for the City of Raleigh's Sewer Maintenance Division.

2.1.2 Sewer Maintenance Management Policy Statement

2.1.2.1 *"To operate and maintain the sanitary sewer collection system in a sustainable manner."*

2.1.2.2 The Sewer Maintenance Division is committed to upholding this policy in the following areas:

2.1.2.2.1 Economic:

Manage assets and resources by setting goals, objectives, and targets for continual improvement.

2.1.2.2.2 Social

Communicate and educate stakeholders, interested parties and staff

2.1.2.2.3 Environmental

Comply with applicable laws, regulations and requirements Improve in performance, compliance, and system O&M for prevention of pollution.

Date Approved: June 30, 2014

Signed: TJ Lynch, Assistant Public Utilities Director for Wastewater

2.1.3 Procedure

2.1.3.1 Communicate policy to staff, contractors and to stakeholders.

2.1.3.2 Post the policy statement on the City's intranet and website (www.raleighnc.gov).

2.1.3.3 Policy shall be reviewed annually and when regulatory or process changes and/or corrective action dictates.

2.1.3.4 Recommended policy revisions shall be communicated to the SMEMS Team or through SMEMS Management Reviews via the EMR.

2.1.4 References

ISO 14001:2004 American National Standards

2.2 Roles and Responsibilities

2.2.1 Purpose

To define the roles and responsibilities of staff and contractors performing SMEMS functions. In addition, other sections and related documents describe roles and responsibilities where relevant to certain procedures. (Appendix B)

2.2.2 Procedure

2.2.2.1 Roles and responsibilities for various individuals (including contractors) that are specific to the SMEMS are assigned by Superintendent of Sewer Maintenance and the EMR. They are reviewed and updated as necessary on an annual basis.

2.2.2.2 The Superintendent of Sewer Maintenance and the EMR will also review existing roles/responsibilities whenever significant operation changes are made to ensure that roles/responsibilities are appropriately defined. Revisions to the roles and responsibilities tables are made by the EMR.

2.2.3 SMEMS Roles and Responsibilities

2.2.3.1 Raleigh City Council

Has authority to approve citywide budget and resources

2.2.3.2 Raleigh City Manager

Top management with responsibility and oversight of citywide budget and resources

2.2.3.3 Public Utilities Director

Top management for oversight of the Public Utilities Department.

2.2.3.4 Assistant Public Utilities Director (APUD) for Wastewater

Top management for oversight of wastewater system management for the department.

2.2.3.5 Sewer Maintenance Superintendent

Overall management of the Sewer Maintenance Division and the environmental performance of the collection system.

2.2.3.6 EMS Team

Reviews and implements EMS within the programs they manage

2.2.3.7 SMEMS Management Team

Participates in management reviews of SMEMS

2.2.3.8 EMS Coordinator and Environmental Management Representative (EMR)

Overall responsibility for implementing and monitoring the SMEMS and reporting the performance for management review.

2.2.3.9 Contractors, Vendors and Suppliers

Provides materials, supplies and services for the effective operation and maintenance of the collection system, and to comply with policies and procedures of the Sewer Maintenance Division as listed in service agreements for contracted activities relevant to sewer maintenance,

2.2.4 References

ISO 14001:2004 American National Standards

Appendix B

3.0 Planning Processes

3.1 Process Control Points

3.1.1 Purpose

To identify and update Process Control Points (PCPs) in the SMEMS under direct control or influence of the Sewer Maintenance Division where legal compliance and requirements, public acceptance and environmental impacts can be controlled.

3.1.2 Procedure

3.1.2.1 Identifying and updating PCPs

- 3.1.2.1.1 Evaluate unit process operations and management activities to identify and maintain up-to-date listings of PCPs. (Appendix C)
- 3.1.2.1.2 Consider legal, other and public acceptance requirements, significant environmental aspects, WEF manuals of practice and industry recognized BMPs, as well as personal experience of program staff when identifying and/or updating PCPs.
- 3.1.2.1.3 Document, evaluate and measure performance at PCPs (Appendix C).
- 3.1.2.1.4 Review information in Appendix C at least annually, when there are regulatory changes or whenever major operational changes occur.

3.1.3 References

WEF Manuals of Practice
ISO 14001:2004 American National Standards
Appendix C

3.2 Significant Environmental Aspects

3.2.1 Purpose

To identify environmental impacts and aspects in the SMEMS that can be controlled or influenced and that can be improved.

3.2.2 Procedure

3.2.2.1 Identifying of Environmental Impacts and Aspects

3.2.2.1.1 Identify environmental impacts and aspects using historical data, staff experience, system knowledge, public input, and legal requirements by operational programs.

3.2.2.1.2 Document identified environmental impacts and aspects. (Appendix D).

3.2.2.1.3 Review environmental impacts and aspects periodically, when there are regulatory changes or whenever major operational changes occur.

3.2.2.2 Identifying and Evaluating Significant Environmental Aspects

3.2.2.2.1 Consider the level of Sewer Maintenance control of influence, normal and abnormal conditions, reasonable and foreseeable emergency conditions and past environmental incidents when identifying environmental aspects.

3.2.2.2.2 Note occasions where Sewer Maintenance does not have a degree of management control or influence over the environmental aspects and impacts for future review.

3.2.2.2.3 Where reasonable, consider both direct and indirect impacts.

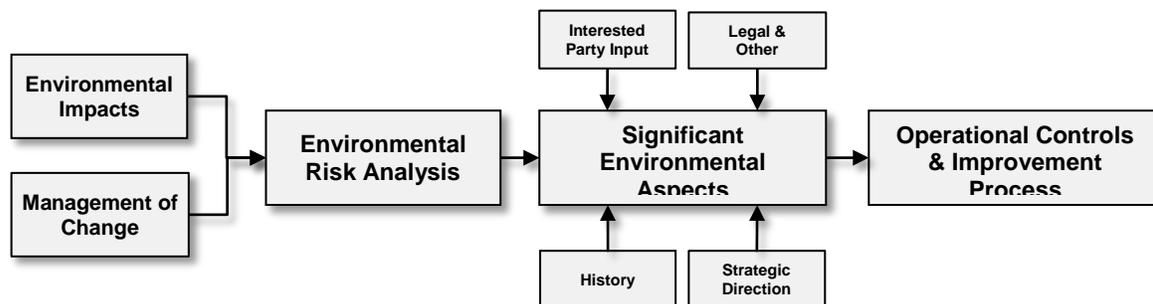
3.2.2.2.4 Following identification of aspects, assign a significance rating based on probability, severity and frequency per the chart below.

3.2.2.2.5 Document identified significant aspects (Appendix E).

3.2.2.2.6 Consider and incorporate significant aspects into objectives and targets.

3.2.2.2.7 Review and update significant aspects at least annually or when major changes occur to processes, equipment or other relevant areas.

Severity	Hig h	Medium	High	High
	Me d	Low	Medium	Medium
	Lo w	Low	Low	Low
		Low	Med	High
		Likelihood		



3.2.3 References

ISO 14001:2004 American National Standards

Appendix D

Appendix E

3.3 Legal and Other Requirements

3.3.1 Purpose

To identify, track and respond to existing legal and other requirements or to changes in legal and other requirements, regulatory compliance issues applicable to the sewer maintenance program, and monitor compliance of contractors.

3.3.2 Procedure

3.3.2.1 Identify legal and other requirements for the sewer maintenance program through regulatory agencies, professional associations and management review, and evaluate potential impacts; communicate issues and responses to interested parties.

3.3.2.2 Document legal and other requirements (Appendix C).

3.3.2.3 Contractors shall identify, track and implement changes in legal and other requirements that impact their involvement in the SMEMS and will be subject to internal audit.

3.3.2.4 Address all noncompliances through the CAPA process.

3.3.2.5 Legal and other requirements shall be reviewed annually and when regulatory process and/or corrective action dictates.

3.3.3 Monitoring Regulatory Compliance of Contractors

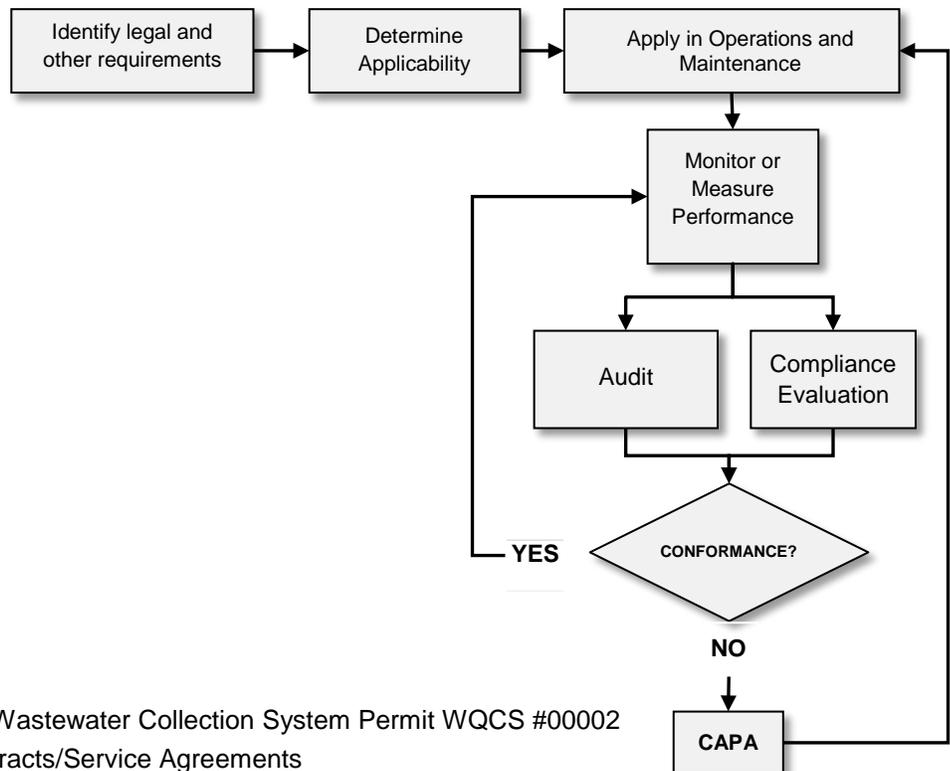
3.3.3.1 Contractors are to adhere to applicable regulatory and other requirements as stated in their contract agreement.

3.3.3.2 Contract liaisons will monitor, record, and identify regulatory and contractual compliance or noncompliance during site inspections.

3.3.3.3 Contractors must notify the EMR and appropriate SMEMS staff (contract liaison) of any regulatory noncompliance.

3.3.3.4 Address all noncompliances through the CAPA process.

3.3.4 Compliance with Legal and Other Requirements



3.3.5 References

City of Raleigh Wastewater Collection System Permit WQCS #00002
Contractor Contracts/Service Agreements
ISO 14001:2004 American National Standards
Appendix C

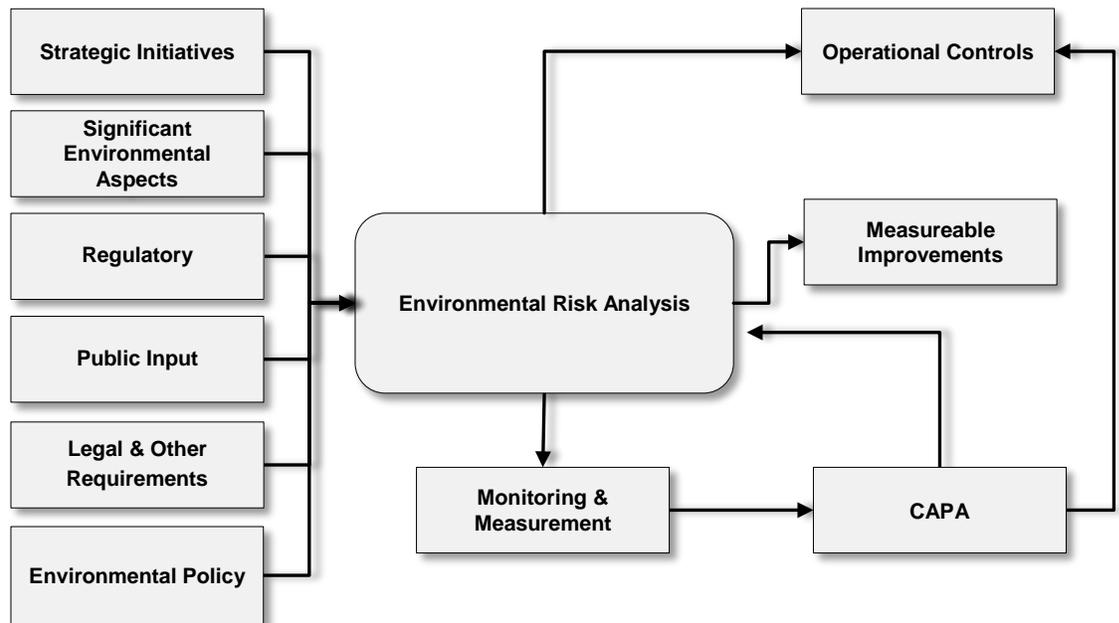
3.4 Objectives and Targets

3.4.1 Purpose

To establish objectives and targets for continuous improvement of the sewer maintenance management program (See Objectives and Targets Chart).

3.4.2. Procedure

- 3.4.2.1. Objective and targets shall be established annually considering management policy, significant environmental aspects and any input received from interested parties; using the SMART criteria and consistent with the SMEMS. (Objectives and Targets Chart).
- 3.4.2.2. Set objectives that support performance improvements in the desired outcome areas (goals).
- 3.4.2.3. Final objectives and targets will be posted on the City's intranet.
- 3.4.2.4. Document modifications or changes to objectives and targets, and the reason for the modification. Modifications may be made based upon changing priorities or circumstances.
- 3.4.2.5. Develop an action plan assigning responsibilities, necessary resources and milestones for established objectives and targets.
- 3.4.2.6. Designate an SMEMS workgroup to monitor progress and milestones related to achieving objectives and targets and evaluate at management reviews. Consider objectives and targets and make recommendations during annual budget development process for appropriate resources.
- 3.4.2.7. Use CAPA process. if progress is considered inadequate.
- 3.4.2.8. Summarize objectives and targets and include in the annual wastewater report.



3.4.3. References

- CORPUD Annual Wastewater Report
- ISO 14001:2004 American National Standards
- Objectives and Targets Chart

3.5 Management of Change

3.5.1 Purpose

To identify and address when changing conditions, requirements or new development occurs, or being planned, that affects operations of the Sewer Maintenance Division.

3.5.2 Procedure

3.5.2.1 Monitor for changing conditions and requirements that necessitate modification to the operations of the sewer maintenance management program.

3.5.2.2 Assess sewer maintenance management processes affected by changing conditions or requirements; and review initiation of those changes at SMEMS team meetings.

3.5.2.3 Assign staff to design and implement the changes.

3.5.2.4 Document the changes using the Management of Change form and implement approved changes.

3.5.2.5 Update procedures and documents per established procedures.

3.5.2.6 Retrain affected staff and contractors on revised EMS procedures and practices as soon as practical (SMEMS team and appropriate supervisors)

3.5.3. References

ISO 14001:2004 American National Standards
Management of Change Form

4.0 Core Processes

4.1 **Operational Control of Process Control Points**

4.1.1 **Purpose**

To identify and update operational controls for Process Control Points (PCPs) in the SMEMS. Operational controls are tools utilized to effectively manage PCPs. They may include Divisional Operating Procedures (DOPs), Departmental Operating Instructions (DOIs), employee skills, O&M manuals and other activities.

4.1.2 **Procedure**

4.1.2.1 **Identifying and updating Operational Controls**

- 4.1.2.1.1 SMEMS team will evaluate unit process operations and management activities to identify and maintain up-to-date listings of operational controls. (Appendix C)
- 4.1.2.1.2 Consider legal, other and public acceptance requirements, WEF manuals of practice and industry recognized BMPs, as well as personal experience of program staff when identifying and/or updating operational controls.
- 4.1.2.1.3 Use Management of Change procedure for operational and/or process changes.
- 4.1.2.1.4 If revisions to the process control points are made, information related to operational controls, monitoring and measurement and any other relevant areas of the SMEMS (including significant environmental aspects listed in Appendix E) will also be reviewed, modified and documented as appropriate.
- 4.1.2.1.5 Require contractors to establish their own operational controls consistent with their roles and responsibilities in the SMEMS activities as specified in their contracts. Sub-contractors must also adhere to the requirements of the contractor.

4.1.3 **References**

WEF Manuals of Practice
Contractor Contracts/Service Agreements
ISO 14001:2004 American National Standards
Appendix C
Appendix E

4.2 Emergency Preparedness & Response

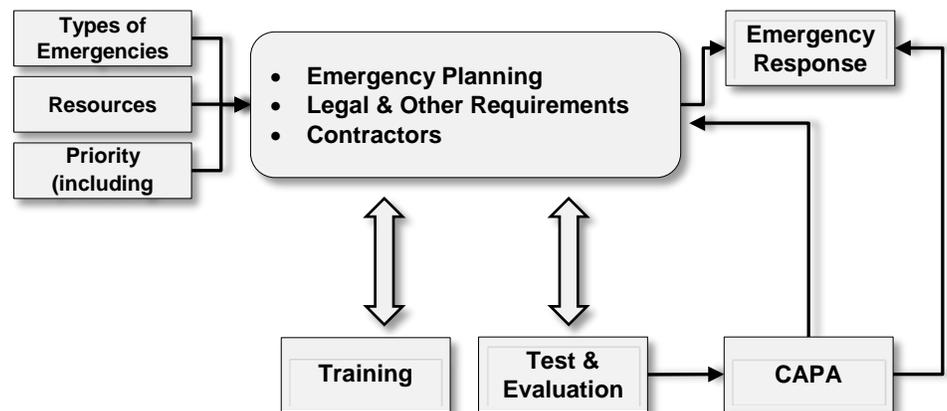
4.2.1 Purpose

To ensure effective response to accidents and emergency situations associated with sewer maintenance management activities, and to help minimize the risk associated with unusual or emergency situations that can potentially impact human health or environmental quality, including the activities of the sewer maintenance contractors. (ISO 14001 requirement – emergency plans to address significant aspects)

4.2.2 Procedure

Review and update the comprehensive Public Utilities Emergency Operations Plan (EOP) for Wastewater Collections, Wastewater Treatment, and Reclaimed Water at least every three years and make interim revisions as necessary.

- 4.2.2.1 Evaluate and update the Sewer Maintenance Emergency Action Plan (EAP) at least annually based on desktop exercises, actual incidents, actual exercises, drills or change in personnel.
- 4.2.2.2 Conduct testing and training with respect to safety and emergency response procedures on a periodic basis as determined by Process Control Training Officer and Sewer Maintenance Superintendent.
- 4.2.2.3 Conduct investigations of accidents and emergency situations associated with sewer maintenance management activities and document corrective action plans for accidents and emergency situations using the CAPA form.
- 4.2.2.4 Monitor contractors performing work related to sewer maintenance activities to verify they have on file the most current version of the Sewer Maintenance EAP and follow the guidelines applicable to sewer maintenance management activities as stated in their service agreements.
- 4.2.2.5 Contractors are required to incorporate relevant portions of Sewer Maintenance EAP as applicable to contracted activities and incorporate these into their own Emergency Response and Preparedness Plans.



4.2.3 References

Contractor Contracts/Service Agreements
ISO 14001:2004 American National Standards
Sewer Maintenance Emergency Action Plan (EAP)
CAPA Form

4.3 Monitoring and Measurement

4.3.1 Purpose

To monitor compliance with applicable legal/regulatory requirements, measure performance at PCPs, contractor performance and track progress toward achieving program objectives and targets.

4.3.2 Procedure

4.3.2.1 Monitoring Performance and Compliance at Process Control Points

- 4.3.2.1.1 Establish DOPs for monitoring and measuring operating performance and compliance with legal and other requirements at PCPs.
- 4.3.2.1.2 Monitor work performance data monthly for compliance.
- 4.3.2.1.3 Collect and record work performance data electronically and store in Sewer Maintenance shared drive.
- 4.3.2.1.4 Conduct review of monitoring and measurement activities for applicability on an annual basis or whenever significant changes in processes and/or operations occur. Revisions (if any) to Appendix C and associated DOPs and monitoring/measurement documents will be made by the EMR.
- 4.3.2.1.5 Monitor contractor performance on a regular basis for compliance with service agreements/contracts (Contract Liaison).

4.3.2.2 Monitoring Progress Toward Goals and Objectives

- 4.3.2.2.1 Establish objectives and targets for each program goal.
- 4.3.2.2.2 Review, track progress and prepare status update towards meeting objectives and targets at SMEMS team meetings.
- 4.3.2.2.3 Monitor progress toward achieving objectives and targets and notify SMEMS team if progress falls behind (EMR). Use CAPA form to document deficiencies in progress. Modifications to objectives and targets may have to be made to accommodate for changing circumstances.
- 4.3.2.2.4 Review progress of objectives and targets in internal audit process. Include summary in Sewer Maintenance program report.

4.3.3 References

Contractor Contracts/Service Agreements
ISO 14001:2004 American National Standards
Appendix C

5.0 Support Processes

5.1 **Competence, Training and Awareness**

5.1.1 Purpose

To identify, track and provide training activities to ensure competency of staff in the sewer collection system and SMEMS functions, including training activities of contractors.

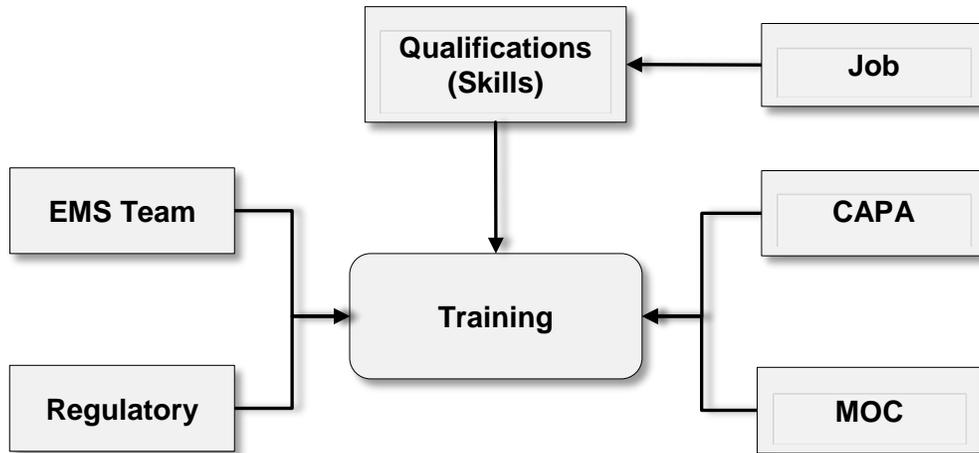
5.1.2 Procedures

5.1.2.1 Training

- 5.1.2.1.1 Conduct training on the SMEMS and general SMEMS awareness at least annually.
- 5.1.2.1.2 Maintain an up to date list of required training and track training received by staff (see Training Needs Analysis).
- 5.1.2.1.3 Evaluate competency and awareness of staff and identify appropriate training.
- 5.1.2.1.4 Post SMEMS policy at locations throughout the facility.
- 5.1.2.1.5 Promote awareness of environmental aspects, EMS policy, DOPs through discussions at staff meetings, pre-job meetings, DOP and Division meetings.
- 5.1.2.1.6 Train new employees on policy and SMEMS awareness as part of new employee orientation.
- 5.1.2.1.7 Process changes, CAPAs, MOCs or new DOPs can lead to training.
- 5.1.2.1.8 Train staff on facility emergency operation procedures, including the Emergency Action Plan (EAP) for sewer maintenance.
- 5.1.2.1.9 Notify contractors of the environmental policy and require establishment of their own training program consistent with the SMEMS.
- 5.1.2.1.10 Monitor training requirement of contractor personnel on a semi-annual basis and report to EMR (contract liaisons).
- 5.1.2.1.11 Train internal SMEMS auditors on internal audit procedures prior to performing audits.

5.1.2.2 Competency

- 5.1.2.2.1 Monitor, evaluate and record training activities.
- 5.1.2.2.2 Develop testing and evaluation procedures.
- 5.1.2.2.3 Assess staff competency in performing their assigned responsibilities using some or any of the following methods
 - Job descriptions
 - Oral or written tests
 - Peer reviews
 - Supervisor evaluations
 - Communication
 - On the job observations
 - Annual employee performance reviews
- 5.1.2.2.4 Provide additional training in areas where competency is determined to be inadequate



5.1.3. References

Contractor Contracts/Service Agreements
ISO 14001:2004 American National Standards
Training Needs Analysis

5.2 Communication

5.2.1 Purpose

To establish procedures to provide and receive external communication from interested parties and contractors, and internal communication from sewer maintenance staff in the sewer maintenance program performance process and the third party verification process.

5.2.2 Procedure

5.2.2.1 Receiving Public Input

- 5.2.2.1.1 Utilize a combination of both formal and informal mechanisms to receive and respond to input from interested parties.
- 5.2.2.1.2 Document contact, input and information received, both formal and informal record and respond to significant input received from interested parties.
- 5.2.2.1.3 Track and record, when possible, the names, addresses, phone numbers and e-mail addresses of interested parties regarding to complaints, concerns, or compliments.
- 5.2.2.1.4 Forward contact information to appropriate staff person who will respond to the contact.
- 5.2.2.1.5 Document, log and track staff response.
- 5.2.2.1.6 Contractors may also receive input while performing contracted services for the sewer maintenance program.

5.2.3 Response and Consideration of Public Input

- 5.2.3.1 Consider input received from stakeholders and interested parties (if any) when making decisions regarding the SMEMS, setting objectives and targets for gaining public support of maintenance activities.
- 5.2.3.2 Review records of public input received (if any) during SMEMS team meetings for relevancy to the program.
- 5.2.3.3 Review and update objectives and targets to help address and incorporate comments and concerns received when feasible and/or appropriate.
- 5.2.3.4 Discuss and incorporate public input during the review and update of the environmental aspects and impacts, PCPs and operational controls when feasible and/or appropriate.

5.2.4 Communication and Outreach (Internal & External)

- 5.2.4.1 Interested parties and stakeholders may include, but not limited to, COR sewer customers, public, contractors, regulators, other City departments / divisions and staff.
- 5.2.4.2 Provide opportunities, both formal and informal, for interested parties and staff to communicate their input on environmental impacts, program performance and areas in which the program can improve.
- 5.2.4.3 Review input received (if any) at SMEMS team meetings for relevancy and consideration into planning the sewer maintenance program.
- 5.2.4.4 Document sewer-related education and outreach efforts.
- 5.2.4.5 Prepare a written sewer maintenance program report at least annually of the performance of the SMEMS during the previous calendar year.
- 5.2.4.6 At a minimum, the report will contain the following information:
- 5.2.4.7 Summary of monitoring and measurement activities that demonstrate the program performance relative to established objectives and legal requirements.
- 5.2.4.8 Summary of relevant contractor activities.
- 5.2.4.9 Progress towards achieving program objectives and targets.
- 5.2.4.10 Results of internal audits and independent third-party audits.
- 5.2.4.11 Communicate and/or distribute copies of the sewer maintenance management program report via the annual sewer report, website and/or other forms of written, verbal and electronic communication.

5.2.4.12 Provide information on significant environmental aspects per regulatory requirements or upon request.

5.2.4.13 Media requests will be referred to and handled by the Public Information office.

5.2.4.14 Report required information to stakeholders and/or staff as detailed in Appendix F.

5.2.5 Internal Communication

5.2.5.1 Report relevant and required information as detailed in Appendix F about sewer maintenance activities to staff via emails, memos, staff meetings, postings, marlin boards or other methods. SMEMS information is also available on the City's intranet.

5.2.5.2 Provide opportunities for employee input into the SMEMS.

5.2.5.3 Employees communicate any relevant or required information to their supervisors via emails, memos, staff meetings, verbally or other methods.

5.2.6. Contractor Communication

5.3.1.1. Identify and incorporate the roles, duties and responsibilities of sewer maintenance contractors into service agreements and/or contracts.

5.3.1.2. Disseminate other SMEMS program information to contractors through contract negotiations or other standing and ad-hoc meetings, email and telephone conversations. Information also disseminated to contractors during semi-annual inspections for contract compliance. (contract liaisons)

5.3.1.3. Contractors communicate to Public Utilities via emails, memos, meetings, verbally or other methods.

5.2.7. References

CORPUD Annual Sewer Report

Contractor Contracts/Service Agreements

ISO 14001:2004 American National Standards

Appendix F

5.3 Documentation, Document Control & Recordkeeping

5.3.1 Purpose

To identify important documents and records required to support and demonstrate the performance of the SMEMS. This procedure applies to contractor activities within the SMEMS but does not apply to contractors' internal documents, which are controlled and managed according to contractors' internal procedures as appropriate.

5.3.2 Procedure

5.3.2.1 Documents Requiring Control

- 5.3.2.1.1 Identify documents requiring control, responsible person for controlled document and the location of the stored documents (Appendix G).
- 5.3.2.1.2 Maintain a master copy of each controlled document. Any copy of a controlled document other than the master copy is considered uncontrolled.
- 5.3.2.1.3 Controlled documents are approved, identified and dated, easily accessible and reviewed to ensure the document is correct, complete and up-to-date and available where needed.
- 5.3.2.1.4 Review of controlled documents will generally be made in response to one or more of the following:
 - Management of change (MOC)
 - Corrective and preventive actions (CAPA)
 - Regulatory requirements
 - Management review
 - Review of DOPs
 - Periodic review of management system
- 5.3.2.1.5 Notify affected persons of approved changes in controlled documents and make updated versions available.
- 5.3.2.1.6 Archive or destroy obsolete versions of the documents.
- 5.3.2.1.7 Version and revision history will be maintained for all controlled documents.
- 5.3.2.1.8 The responsible person may delegate document control responsibilities but retains the responsibility to ensure the document is effectively controlled.

5.3.3 EMS Records Requiring Control

- 5.3.3.1 Identify records that require control, the responsible person of the record, the location of the stored records and the retention requirement (Appendix H).
- 5.3.3.2 The responsible person will maintain each controlled record so it is identifiable, legible, easily accessible and secure.
- 5.3.3.3 Only the responsible person can alter or change a controlled record.
- 5.3.3.4 Changes to controlled records must note the reason for the change and the approval for making the change on the previous record.
- 5.3.3.5 Follow the NC Records Retention and Disposition Schedules for Counties and Municipalities and the USEPA records retention guidelines for controlled records.
- 5.3.3.6 The responsible person may delegate record control responsibilities but retains responsibility to ensure the document is effectively controlled.

5.3.4 References

Contractor Contracts/Service Agreements
NC Records Retention and Disposition Schedules for Counties and Municipalities
USEPA Records Retention Guidelines
ISO 14001:2004 American National Standards
Appendix G
Appendix H

6.0 Improvement Processes

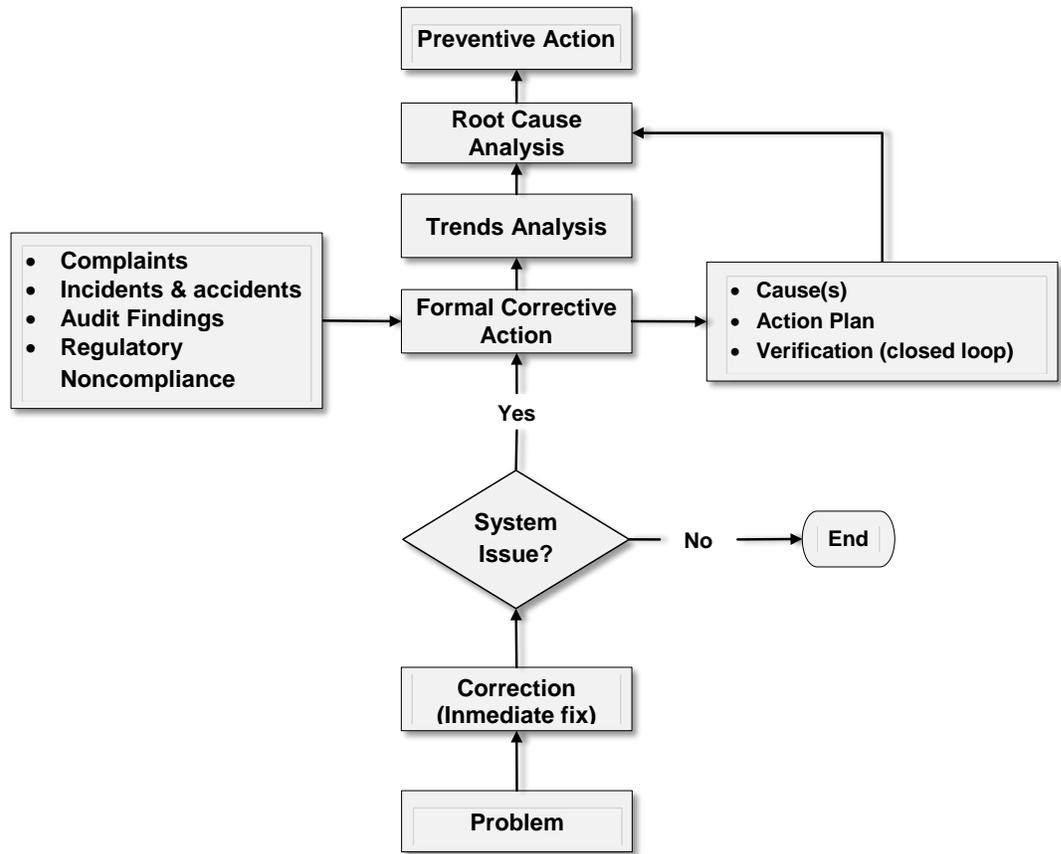
6.1 Corrective and Preventive Action

6.1.1 Purpose

To establish, document and maintain procedures for investigating nonconformances or noncompliances with SMEMS protocols, legal, regulatory and other requirements, including conformance issues that may arise from monitoring and measurement activities, or nonconformances noted as a result of internal or external SMEMS audits.

6.1.2 Procedure

- 6.1.2.1 Identify nonconformances or noncompliances or potential problems discovered during routine monitoring and measurement, emergency incidents, audits, experience or other methods.
- 6.1.2.2 Document problem or issue using SMEMS Corrective and Preventive Action (CAPA) form and report problem to EMR, Sewer Maintenance Superintendent and Assistant Superintendents.
- 6.1.2.3 Develop corrective action plan to implement necessary corrective and preventive actions.
- 6.1.2.4 Perform root cause analysis for problem or issue. Include root cause in corrective action plan.
- 6.1.2.5 Review and approve proposed corrective action plans, designate responsible staff for implementation and monitor progress of corrective action plans.
- 6.1.2.6 Monitor and review progress toward resolution and effectiveness of solution of CAPA through SMEMS team meetings. Completed CAPAs are closed by the appropriate program head, assistant superintendent, superintendent, internal or external auditors and/or EMR.
- 6.1.2.7 Document corrective actions performed in response to complaints or contacts from citizens and interested parties.
- 6.1.2.8 Maintain status tracking log of CAPAs (EMR).
- 6.1.2.9 CAPAs identifying a change in procedure, policy, workflow and/or equipment needs are addressed through the Management of Change (MOC) process and documented using the Management of Change form.
- 6.1.2.10 Report nonconformances, noncompliances and corrective actions to management as part of Management Review process.



6.1.3 References

ISO 14001:2004 American National Standards

CAPA Form

MOC Form

6.2 Internal Audit

6.2.1 Purpose

To conduct periodic reviews of the SMEMS to evaluate its performance and identify opportunities for improvement.

6.2.2 Procedure

- 6.2.2.1 Conduct periodic internal audits of the SMEMS processes (at least annually).
- 6.2.2.2 Develop scope and plan for internal audit (Internal Auditor) with input from EMR.
- 6.2.2.3 Conduct audits in accordance with auditing guidance for environmental management systems found in ISO 19011.
- 6.2.2.4 Develop and maintain audit schedule for conducting internal and process audits. (Internal Auditor)
- 6.2.2.5 Include assessments to evaluate sewer maintenance management system performance including management policy, progress toward objectives and targets, response to nonconformances, management review, communications and contractor performance. Specific SMEMS elements may be evaluated as a part of this review, at the discretion of the EMR and SMEMS team.
- 6.2.2.6 Review preliminary audit results with appropriate program head and EMR.
- 6.2.2.7 Report internal audit results to SMEMS team for review.
- 6.2.2.8 Nonconformances will be addressed using the CAPA process.
- 6.2.2.9 Communicate the internal audit report to staff.
- 6.2.2.10 Present internal audit report to management as part of the Management Review process.

6.2.3 Selecting and Training Internal Auditors

The internal audit will be conducted by the party(s) selected by the EMR with input from the SMEMS team. The EMR will periodically evaluate the need to provide training or guidance to the internal auditor(s). Auditor training necessary to complete the audit may be provided by the EMR or others. The EMR will be responsible for coordinating any subsequent activities related to training or guidance.

6.2.4 References

ISO 14001:2004 American National Standards
ISO 19011 Auditor Guidance

6.3 Management Review

6.3.1 Purpose

To conduct a strategic look into the SMEMS on an annual basis to address the possible need for changes to policy, objectives and targets, sewer maintenance operations and other SMEMS elements based on internal audit results, third-party audit results, changing circumstances, and commitment to continual improvement.

6.3.2 Procedures

6.3.2.1 Conduct periodic Management Reviews with SMEMS Management team to assess and review the SMEMS.

6.3.2.2 Management Review will include:

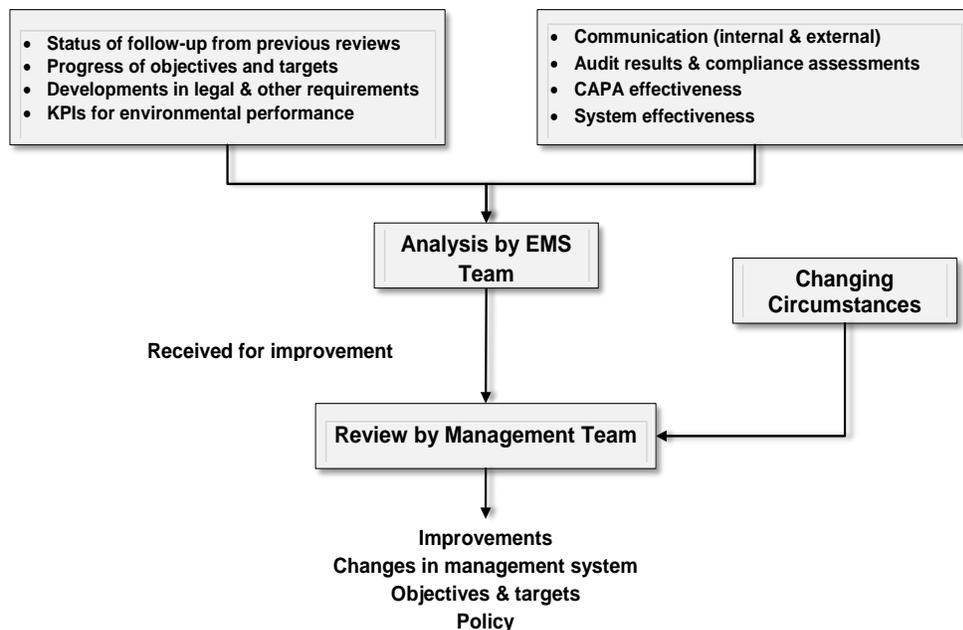
- Follow up from previous management reviews
- Sewer Maintenance program effectiveness
- Environmental performance
- Progress towards objectives and targets
- Internal and/or third-party audit results and compliance assessments
- Sewer Maintenance management policy
- Effectiveness of Corrective and Preventive Action (CAPA) process
- Recommendations for improvement to the system

6.3.2.3 Report results of the Management Review at SMEMS team meetings.

6.3.2.4 Prepare minutes of the Management Review and post on Public Utilities intranet shared drive.

6.3.2.5 Update the SMEMS manual as needed per recommendations.

6.3.2.6 The APUD for wastewater will communicate results of the Management Review with the Public Utilities Director.



6.3.3 References

CORPUD Annual Sewer Report

ISO 14001:2004 American National Standards

Glossary of Terms

Appendices - documents that relate more to the sewer maintenance management system as a whole. The manual is complete without the appendices but appendices add insight into the sewer maintenance management program.

APUD – Assistant Public Utilities Director

BMP – best management practice.

CAPA – Corrective and preventive action.

CORPUD – City of Raleigh Public Utilities Department.

DOP/DOI – divisional operating procedures/departamental operating procedures. Standard work instructions and practices for employees describing the “how to” steps in managing PCPs of a specific management activity affecting sewer maintenance activities, compliance with legal and other requirements.

DWR – Division of Resources (State of North Carolina).

EMR – Environmental Management Representative

EMS – Environmental Management System: management framework for integrating environmental considerations into day-to-day operations and decision-making, and for improving organizational performance over time.

Environmental Aspects – activities or services or products that can interact with the environment.

Environmental Impacts – any change to the environment whether adverse or beneficial, wholly or partially resulting from environmental aspects.

EAP – Emergency Action Plan.

EOP – Emergency Operating Plan.

Goals – desired outcomes and/or improvements to the system.

Interested Parties - those individuals or groups of individuals who have expressed, shown or demonstrated an interest in the sewer maintenance management program. Interested parties can include, but are not limited to, regulators, local media, neighbors, local communities, farmers and others who have relevant input.

Internal Audit – a systematic internal investigation process for objectively evaluating the conformance to the requirements of the SMEMS and identifying deficiencies to be corrected or resolved.

Intranet - the CORPUD shared drive.

NCDENR – North Carolina Department of Environment and Natural Resources.

ISO 14001:2004 American National Standards – ISO’s EMS blueprint; a guidance document designed to assist in the development and implementation of a management system that meets the requirements set forth in the ISO 14001 standards (EMS Elements).

Noncompliances – a deviation from federal, state and local laws, regulations and other compliance requirements applicable to sewer maintenance activities.

Nonconformances - a deviation from wastewater management policy, EMS procedures/requirements of the EMS Elements, ISO 14001:2004 American National Standards. They include circumstances that can create a noncompliance situation or significant environmental impacts.

O&M Manuals – operation and maintenance manuals.

Objectives – measureable improvements to established goals.

Operational Controls – include associated DOPs/DOIs, O&M manuals, maintenance procedures, contracts and employee skills that are required to effectively manage PCPs and meet legal and other requirements; including conformance with policy requirements and achievement of objectives and targets.

Other Requirements – other binding sewer maintenance management practices and requirements to which the Sewer Maintenance Division follows as part of the sewer maintenance management system. Examples include binding agreements with customers, suppliers, public organizations and commitments to going beyond compliance.

PCP – Process Control Point: the points in the processes where legal compliance and requirements, public acceptance and environmental impacts can be controlled.

Service Agreements – the contract between the City (Sewer Maintenance) and other person(s) to perform specific activities and services.

SMART Criteria – specific, measurable, achievable, relevant, time-bound; criteria that is used to define and evaluate the suitability of a goal or objective/target.

SME – Subject Matter Expert

SMEMS Senior Management Team – includes Assistant Director for Wastewater, Sewer Maintenance Superintendent Assistant Water/Sewer Superintendents, EMS Coordinator and the EMR.

SMEMS Team – includes Superintendent, Assistant Water/Sewer Superintendents, program supervisors and managers for the Sewer Maintenance Division. Also includes the EMS Coordinator and EMR

Third party Verification Audit – a systematic, structured audit of the SMEMS; performed by a qualified independent third party auditor using a standardized protocol for verification.

USEPA – United States Environmental Protection Agency.

Appendices

Appendix A SMEMS Program Structure

Appendix B SMEMS Lines of Authority

Appendix C Process Control Points, Environmental Aspects & Operational Controls

Appendix D Environmental Aspects and Impacts Analysis

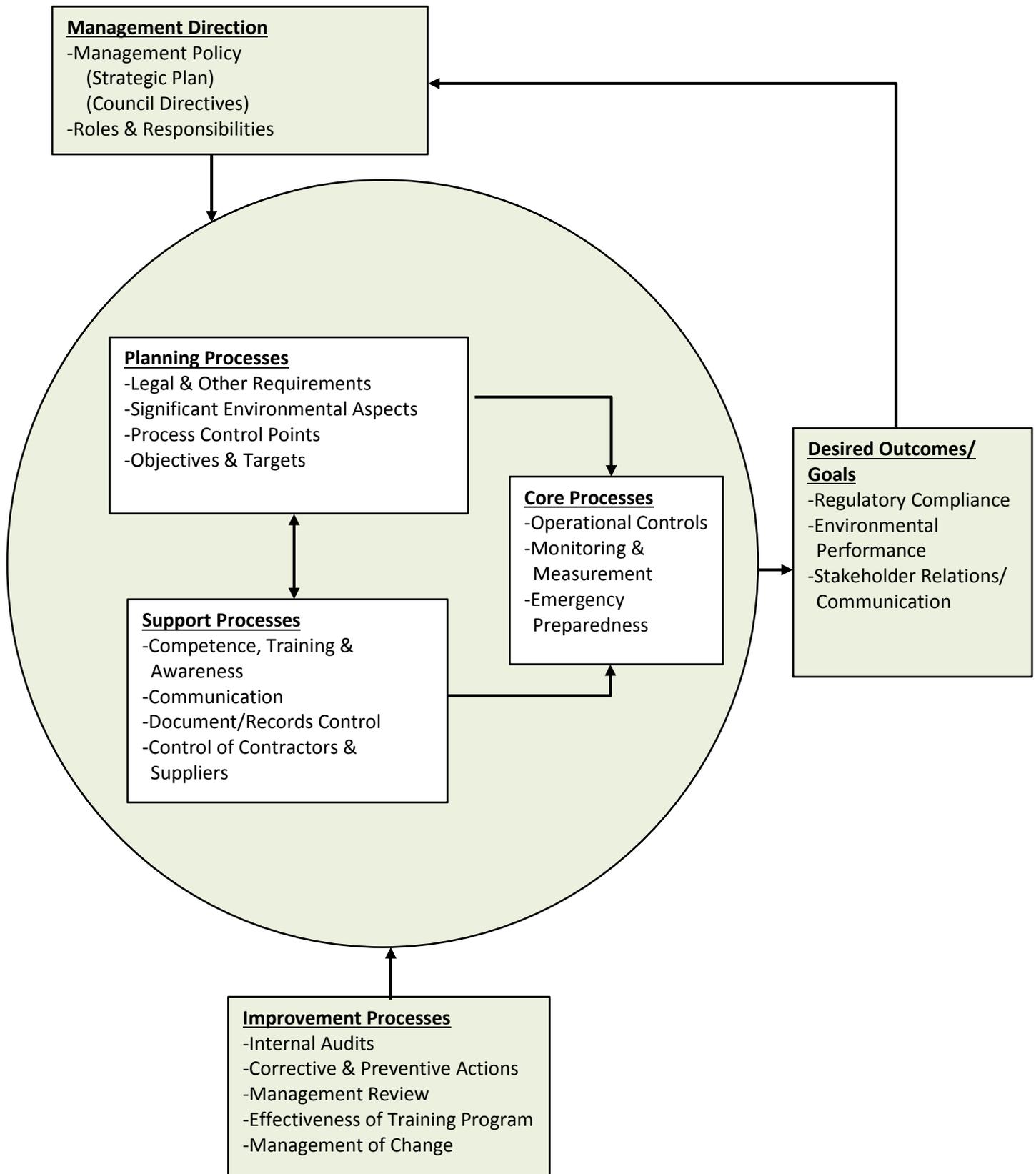
Appendix E Significant Aspects

Appendix F Required Communications

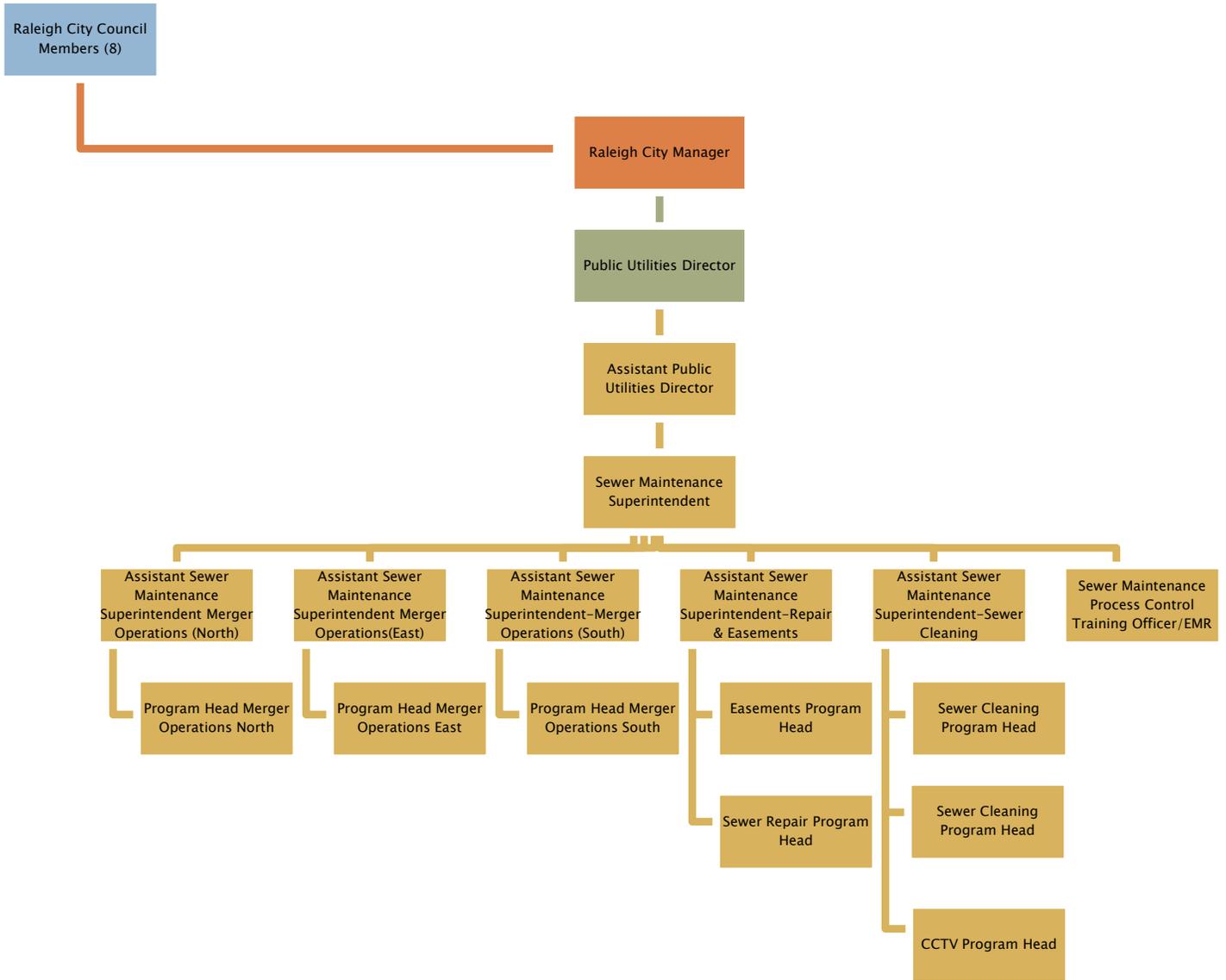
Appendix G Documents Requiring Control

Appendix H Records Requiring Control

Appendix A – SMEMS Program Structure



Appendix B – SMEMS Lines of Authority



Appendix C – Process Control Points, Environmental Aspects & Operational Controls

Process	Legal & Other Requirements	Significant Environmental Aspects	Quality	Safety	Process Control Points	Operational Controls
<p>Repairs</p> <p>*Sewer Main</p> <p>*Stream bank Stabilization</p> <p>*Sewer Service Connections</p>	<p>NC Collection System Permit (WQCS-00002)</p> <p>OSHA Requirements</p> <p>NCDOT Regulations</p> <p>Storm Water Permit</p> <p>Neuse Buffer Rules</p> <p>US Army Corp of Engineers Guidelines</p>	<p>SSO Discharge</p> <p>Erosion</p> <p>Vehicle Idling</p> <p>Fuel Consumption</p>	<p>Compaction</p> <p>Housekeeping</p> <p>Communication (before/after)</p> <p>Neighborhood Impact</p> <p>Ecosystem</p>	<p>Traffic</p> <p>Equipment Use</p> <p>Exposure to Hazardous Atmospheres</p> <p>Excavation</p> <p>Slips, Trips & Falls</p> <p>Terrain</p> <p>Ergonomics</p> <p>Confined Spaces</p> <p>Nature Exposures</p>	<p>Planning</p> <ul style="list-style-type: none"> • Notification • Utility impacts and locates • Encroachments <p>Traffic control</p> <p>Excavation, backfill & compaction</p> <p>Restoration and repaving</p> <p>Atmospheric Monitoring</p> <p>Erosion Control</p> <p>Vegetative clearing</p> <p>Easement Access</p> <p>Site Assessment</p> <p>Site Restoration</p>	<p>Employee skills (see Training Needs Analysis)</p> <p>DOPs and DOIs</p> <p>Encroachment Agreements</p> <p>Construction plans</p> <p>Environmental permits</p>
<p>Maintenance</p> <p>*Easement Maintenance</p> <p>*Clearing</p> <p>*Preventative Maintenance</p>	<p>NC Collection System Permit (WQCS-00002)</p> <p>OSHA Requirements</p> <p>NCDOT Regulations</p> <p>Storm Water Permit</p> <p>Neuse Buffer Rules</p> <p>US Army Corp of Engineers Guidelines</p>	<p>Hydraulic Leak</p> <p>Aerosol Cans</p> <p>Vehicle Idling</p> <p>Fuel Consumption</p> <p>SSO Discharge</p> <p>Erosion</p>	<p>Housekeeping</p> <p>Communication (before/after)</p> <p>Neighborhood Impact</p>	<p>Traffic</p> <p>Terrain</p> <p>Equipment Use</p> <p>Exposure to Hazardous atmospheres</p> <p>Confined Spaces</p> <p>Slips, Trips & Falls</p> <p>Chemicals</p> <p>Nature Exposures</p> <p>Ergonomics</p>	<p>CCTV Confirmation</p> <p>Atmospheric Monitoring</p> <p>Root Control Program</p> <p>Traffic Control</p> <p>Easement Access</p> <p>Site Assessment</p> <p>Site Restoration</p> <p>Pipe Clearing</p> <p>Restoration</p> <p>Grease Control Program</p> <p>Planning</p> <ul style="list-style-type: none"> • Notification • Utility impacts and locates 	<p>Sewer Use Ordinance</p> <p>Employee skills (see Training Needs Analysis)</p> <p>DOPs & DOIs</p> <p>Contracts</p> <p>Encroachment Agreements</p> <p>Construction Plans</p> <p>Environmental permits</p>

					<ul style="list-style-type: none"> • Encroachments • Surveying Erosion Control Vegetative clearing	
Process	Legal & Other Requirements	Significant Environmental Aspects	Quality	Safety	Process Control Points	Operational Controls
SSO s	NC Collection System Permit (WQCS-00002) OSHA Requirements NCDOT Regulations Storm Water Permit Neuse Buffer Rules US Army Corp of Engineers Guidelines	Vehicle Idling Fuel Consumption SSO Discharge Hydraulic Leak	Housekeeping Communication (before/after) Neighborhood Impact Ecosystem	Traffic Terrain Equipment Use Exposure to Hazardous Atmospheres Confined Spaces Slips, Trips & Falls Ergonomics Nature Exposures Chemicals (Lime)	Traffic Control Easement Access Site Assessment Site Restoration Vegetative Clearing Pipe Clearing Atmospheric Monitoring	Employee skills (see Training Needs Analysis) DOPs & DOIs SSO Response Plan Safety Data Sheets
Inspections *CCTV *Easement Maintenance Inspections *Fats, Oils & Grease (FOG) Inspections	NC Collection System Permit (WQCS-00002) OSHA Requirements NCDOT Regulations Storm Water Permit	Hydraulic Leak SSO Discharge Aerosol Cans Vehicle Idling Fuel Consumption	Housekeeping Communication (before/after) Neighborhood Impact Business Customer Impact	Traffic Terrain Equipment Use Exposure to Hazardous Atmospheres Confined Spaces Slips, Trips & Falls Nature Exposure Ergonomics	Pipeline Assessment Traffic Control Easement Access Site Assessment Atmospheric Monitoring Planning <ul style="list-style-type: none"> • Notification • Encroachments • Surveying • Scheduling/Routing Food Service Establishment	Employee skills (see Training Needs Analysis) DOPs & DOIs Encroachment Agreements Permits Inspection PU Handbook Sewer Use Ordinance

*FOG Plan Review					(FSE) Enforcement Stakeholder Outreach Assessment <ul style="list-style-type: none"> • Physical • Records Review • Sampling Accessibility Variances Encroachments Sizing Calculations Process Site Plan	
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Appendix D – Environmental Aspects & Impacts Analysis

Operation Assessed: Sewer Maintenance CCTV					
Environmental Impact	Environmental Aspect (Cause)	Normal / Abnormal	Likelihood (H,M,L)	Severity (H,M,L)	Risk
Air Emission	Vehicle Idling GHG	Normal	H	L	L*
	Generator GHG	Normal	H	L	L
Water Pollution	NA				-
Waste Generation (haz, nonhaz)	PPE Rubber Gloves	Normal	M	L	L
	Debris	Normal	L	L	L
	Aerosol Paint	Normal	L	L	L
Soil Contamination / Groundwater Pollution	NA				-
Energy Use	Fuel Consumption	Normal	H	L	L*
Nuisance	Equipment in Roadway	Normal	M	L	L

Operation Assessed: Sewer Maintenance Flushing					
Environmental Impact	Environmental Aspect (Cause)	Normal / Abnormal	Likelihood (H,M,L)	Severity (H,M,L)	Risk
Air Emission	Vehicle Idling GHG	Normal	H	L	L*
	Hydrogen Sulfide	Normal	L	L	L
Water Pollution/ Soil Contamination/ Groundwater Pollution	Wastewater spill from debris tank to surface water (Equipment failure)	Abnormal	L	H	M
	Chemical spill release from degreaser tank	Abnormal	L	L	L
	Hydraulic Leak	Abnormal	M	H	H*
	Fuel Leak	Abnormal	L	H	M
	Wastewater discharge (SSO)	Abnormal	H	H	H*
	Spill from Emptying Debris Tank (process failure)	Abnormal	L	L	L
	Waste Generation (haz, nonhaz)	Solids	Normal	H	H
	PPE Rubber Gloves	Normal	M	L	L
	Aerosol Paint	Normal	L	L	L
Energy Use	Fuel Consumption	Normal	H	L	L*
Nuisance – Odor	Odor from wastewater discharge (SSO)	Normal	H	L	L
	Odor from flush trucks	Normal	L	L	L
Nuisance – Noise	Blower noise from flush truck	Normal	H	L	L

Operation Assessed: Sewer Easement Maintenance & Clearing

Environmental Impact	Environmental Aspect (Cause)	Normal / Abnormal	Likelihood (H,M,L)	Severity (H,M,L)	Risk
Air Emission	Vehicle Idling GHG	Normal	L	L	L*
	Equipment GHG	Normal	H	L	L
Water Pollution and Soil Contamination / Groundwater Pollution	Erosion	Normal	L	H	M*
	Hydraulic Leak	Abnormal	L	H	M*
	Fuel Leak	Abnormal	L	H	M
	Chemical spill (herbicide)	Abnormal	L	H	M
	Over application of chemical (herbicide)	Abnormal	L	H	M
Waste Generation (haz, nonhaz)	Vegetative debris from cutting (left in place)	Normal	H	L	L
	Vegetative debris from cutting (hailed to landfill)	Normal	L	L	L
	Improperly dumped waste (tires, appliances, construction debris)	Normal	L	M	L
Energy	Fuel Consumption	Normal	H	L	L*
Nuisance – Noise	Equipment noise	Normal	H	L	L
	Equipment vibration	Normal	H	L	L

Operation Assessed: Sewer Maintenance Repair

Environmental Impact	Environmental Aspect (Cause)	Normal / Abnormal	Likelihood (H,M,L)	Severity (H,M,L)	Risk
Air Emission	Vehicle Idling GHG	Normal	M	L	L*
	Equipment GHG	Normal	H	L	L
Water Pollution and Soil Contamination / Groundwater Pollution	Erosion	Abnormal	L	H	M*
	Hydraulic Leak	Abnormal	L	H	M*
	Fuel Leak	Abnormal	L	H	M
	Wastewater discharge (SSO)	Abnormal	L	H	M*
	Bypass (sewer pump around)	Normal	L	H	M
	Bypass (creek/stream pump around)	Normal	L	L	L
	Submerged Aggregate	Normal	L	L	L
Waste Generation (haz, nonhaz)	Vegetative debris from cutting (hauled to landfill)	Normal	L	L	L
	Concrete and Asphalt spoils	Normal	H	M	M
	Spoils from trench excavation (soil)	Normal	H	L	L
	Pipe material	Normal	H	L	L
	Improperly dumped waste (tires, appliances, construction debris)	Normal	L	M	L
	Contaminated soil (Pollutants)	Abnormal	L	H	M
Energy Use	Fuel Consumption	Normal	H	L	L*
Nuisance – Odor	Odor from wastewater discharge (SSO)	Normal	H	L	L
	Odor from repair site	Normal	L	L	L
Nuisance – Noise	Equipment noise	Normal	H	L	L
	Equipment vibration	Normal	L	L	L
Nuisance – Light	Portable lighting	Normal	L	L	L
Nuisance – Dust	Jobsite Dust	Normal	L	L	L

Operation Assessed: Sewer Easements Inspections					
Environmental Impact	Environmental Aspect (Cause)	Normal / Abnormal	Likelihood (H,M,L)	Severity (H,M,L)	Risk
Air Emission	Vehicle Idling GHG	Normal	L	L	L*
Water Pollution and Soil Contamination / Groundwater Pollution	Fuel Leaks	Abnormal	L	H	M
Waste Generation (haz, nonhaz)	Aerosol paint cans	Normal	H	H	H
Energy Use	Fuel Consumption	Normal	L	L	L*
Nuisance – Odor	Odor from accessing sewer system	Normal	L	L	L

Operation Assessed: Fats, Oils, & Grease (F.O.G)					
Environmental Impact	Environmental Aspect (Cause)	Normal / Abnormal	Likelihood (H,M,L)	Severity (H,M,L)	Risk
Air Emission	Vehicle Idling GHG	Normal	H	L	L*
Water Pollution	Residual from testing equipment	Normal	H	L	L
Waste Generation (haz, nonhaz)	Disposable Gloves and Rags	Normal	H	L	L
Energy Use	Fuel Consumption	Normal	H	L	L*
Nuisance	Odor	Normal	H	L	L
	Vector Attraction	Normal	H	L	L

*indicates significant aspects

Appendix E

Significant Environmental Aspects

Significant Aspects/Risks	Process
Hydraulic Leak	Sewer Maintenance Flushing Sewer Easement Maintenance & Clearing Sewer Maintenance Repair
SSO Discharge	Sewer Maintenance Repair
Vehicle Idling	Sewer Maintenance CCTV Sewer Maintenance Flushing Sewer Easement Maintenance & Clearing Sewer Maintenance Repair Sewer Easement Inspections F O G
Fuel Consumption	Sewer Easement Maintenance & Clearing Sewer Maintenance Flushing Sewer Maintenance Repair Sewer Easement Inspections F O G
Erosion (beneficial)	Sewer Easement Maintenance & Clearing Sewer Maintenance Repair

Appendix F – Required Communications

External Communications		
Required Communication	Method	Frequency
Annual Waste Water System Report	<ol style="list-style-type: none"> 1. Brochure 2. Web Site 3. Newspaper Ad 4. Bill Stuffer 	Annually
SSO Notification (Reportable)	Newspaper Ad	As Needed
Easement Clearing Notice	<ol style="list-style-type: none"> 1. Public Meeting 2. Certified Mail 3. Site Visits 4. Customer Brochure 5. Web Page 	Ongoing
Road Closures / Detours	Public Notice (Website)	As Needed
Smoke Testing Notice	<ol style="list-style-type: none"> 1. Site Visits 2. Door Hangers 3. Phone Calls 	As Needed
Confined Space Entry	Web Based Form	As Needed
Internal Communication		
Procedure / Policy Changes	<ol style="list-style-type: none"> 1. Memos 2. Meetings 	As Needed
Regulatory Requirements	<ol style="list-style-type: none"> 1. Memos 2. Meetings 	As Needed
EMS Awareness Training	Meetings	At least annually
Safety Training & Correspondence	Meetings	<ol style="list-style-type: none"> 1. Weekly 2. Monthly 3. Annually 4. As Needed

APPENDIX G

Documents Requiring Control

Document Name	Location	Responsible Person(s)
EMS Manual including: -Appendix A SMEMS Program Structure -Appendix B Lines of Authority -Appendix C PCP chart -Appendix E Significant Aspects	EMR Office	EMR
Public Utilities EOP for Wastewater Collections, Wastewater Treatment and Reclaimed Water	Resource Recovery Division (NRWWTP)	Resource Recovery Superintendent
Divisional Operating Procedures (DOPs)	SMEMS Shared Drive	EMR
Contractor Service Agreements	City Clerk's Office	City Clerk
Job Descriptions	Human Resource Files	Human Resource Manager
Permits and Regulations	Sewer Maintenance Superintendent Office	Sewer Maintenance Superintendent
SDS -Inventory Items -Non-Inventory Items	-Public Utilities Utility Support Division - Safety Office	-Utilities Support Superintendent - Safety Coordinator
Training Program Documents *Divisional **Safety	*PCTO Office ** Department Safety Office	*PCTO **Safety Coordinator
Environmental Permits	SMEMS Shared Drive	Program Managers

APPENDIX H - Records Requiring Control

Name of Record	Location	Responsible Person(s)	Disposal/Retention
Citizen/Neighbor Contact Tracking Log	Sewer Maintenance Shared Drive	Administrative Support Specialist	7 Years
Customer Call Log	Meters Division Call Center Water or Sewer Treatment Plant	Meters Superintendent Water Treatment Superintendent Resource Recovery Superintendent	7 Years
Correspondence from regulators	System ORC Office	Permit Holder or /ORC	Life
External communication records -Annual sewer report - Affidavits of Publications for SSOs	Environmental/EMS Coordinator office System ORC Office	Environmental/EMS Coordinator Permit Holder or /ORC	Life At least 7 years
Regulatory notice of violation	System ORC Office	Permit Holder or /ORC	Life
Personnel performance evaluations *confidential	Human Resources Files	Human Resources Director	At least 3 years after termination of employment
Training and competency records required by EMS	Sewer Maintenance Shared Drive	Program Managers	At least 3 years after termination of employment
Emergency incident reports	Department Safety Office	Operations Safety Manager	Life
Maintenance reports & tracking	VFS Files	VFS Superintendent	Life of equipment
Corrective & preventive action reports (CAPAs)	EMR's Office	EMR	At least 5 years
Gas Monitor Calibration	External Vendor	Industrial Scientific iNet	External Vendor
Internal audit reports	SMEMS shared drive	EMR	At least 5 years
Third Party audit reports	SMEMS shared drive	EMR	At least 10 Years

Management review minutes	SMEMS shared drive	EMR	At least 5 Years
Daily Work Order Logs -Easement maintenance records -Main flushing records -Easement clearing records -SSO tracking record -CCTV Records	Program Hard Files	-Easement Program Manager -Maintenance Program Manager -Easement Program Manager -ORC -CCTV Program Manager -Repair Program Manager	At least 7 Years
FOG Inspection Database	XC2 Server	FOG Coordinator	At least 7 Years
Sewer Maintenance Monthly Report -Easement maintenance records -Main flushing records -Easement clearing records -SSO tracking record -CCTV Records -Repair	Sewer Maintenance Shared Drive	Administrative Support Specialist -Easement Program Manager -Maintenance Program Manager -Easement Program Manager -ORC -CCTV Program Manager -Repair Program Manager	At least 7 Years