



**DISTRICT OF COLUMBIA  
WATER AND SEWER AUTHORITY**

**Board of Directors**

*Audit Committee*

*Thursday, June 27, 2013*

9:30 a.m.

1. **Call to Order** ..... Bradford Seamon, Chairperson
  
2. **Follow-Up Discussion on Items from the May Committee meeting**..... Bradford Seamon  
A. IT Asset Inventory – Remediation Plan and Implementation Schedule
  
3. **Review of Internal Audit Status** ..... Joseph Freiburger  
A. **Sewer – Emergency Maintenance**
  
4. **Review of Internal Audit Plan – Remainder of the Year** .....Joseph Freiburger
  
5. **Update on Fraud Hotline Activity**..... Joseph Freiburger
  
6. **Executive Session**..... Bradford Seamon
  
7. **Adjournment**



*Internal Audit Update*  
*Audit Committee Meeting*  
*June 27, 2013*

The following represents a summary of the activities and achievements since the May 30, 2013 meeting.

## I. Highlights

Performance of scheduled internal audits – Internal Audit performed audit work in five separate audit areas. A final audit report was issued relative to the planned audit - - Sewer – Emergency Maintenance. Three audits, Process Control System; Engineering – High Priority; and Utilities – Repairs & Flushing are each in the fieldwork phase. The IT Network Security audit is complete, discussions have been held with management and the report is being finalized. The chart below depicts the planned projects and their status for the fiscal year.

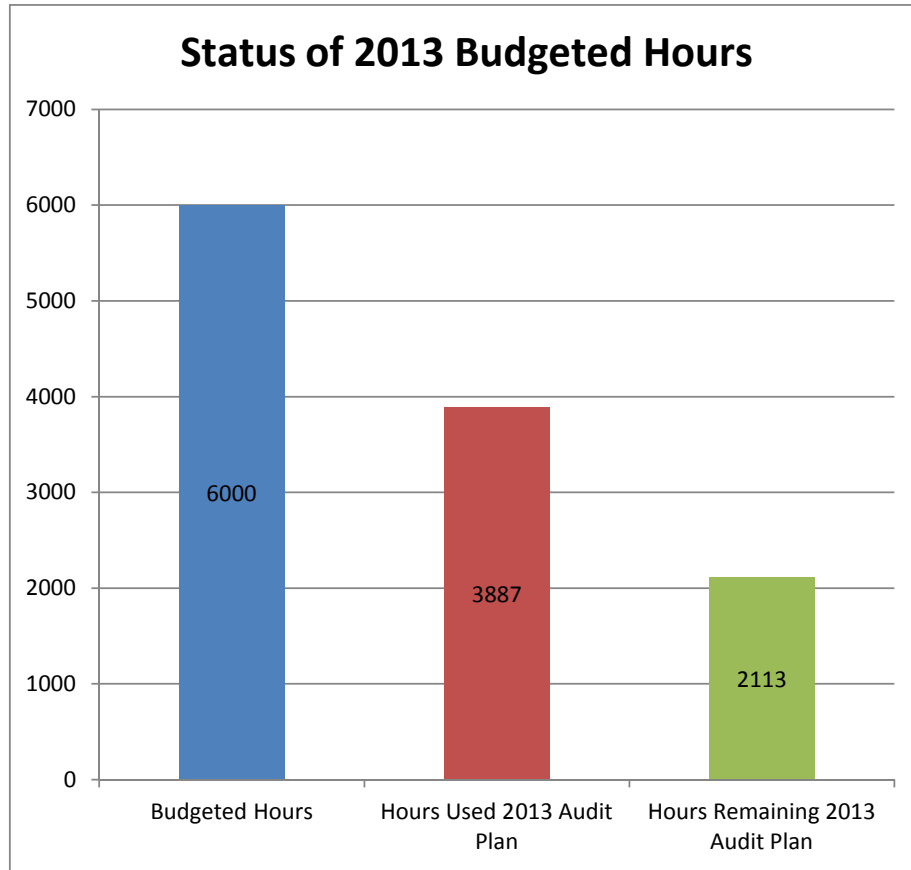
A. **Stage of Audits & Special Projects** – The following represents an indication of the stage of completion for each scheduled audit and requested special project.

PROJECT	PLANNING / SCOPING	FIELDWORK	DRAFT REPORT	FINAL REPORT
Regulatory Compliance				
P-Card				
Chemicals Purchasing				
Cashiering Remote Site				
Investments & Cash Management				
Fleet Management				
IT Network Security				
Sewer – Emergency Services				
Engineering – High Priority				
PCS				
Utilities – Repairs & Flushing				
Maintenance Services				
Warehouse Operations				
IT – SDLC & Change Management				

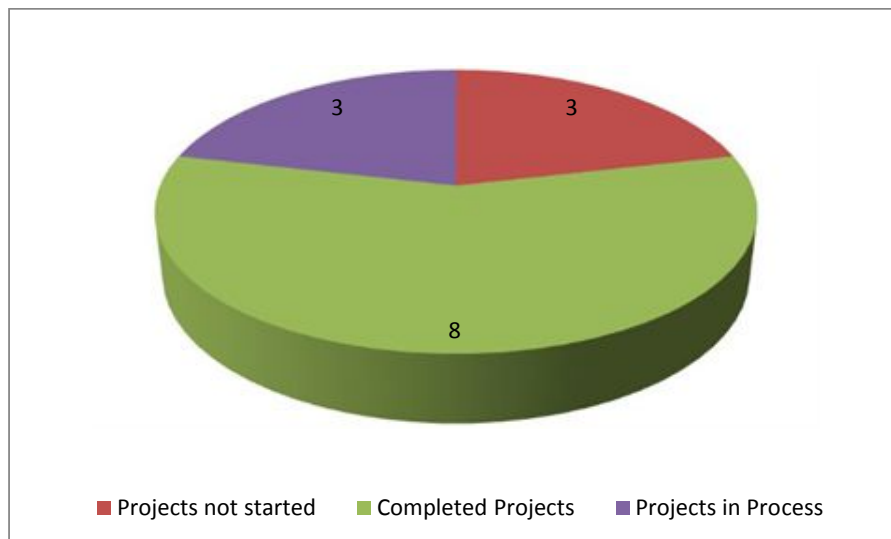
B. **Analysis of key milestone dates** – The following represents an indication of the date of completion of key project milestones.

PROJECT	START DATE	FIELD-WORK END DATE	DRAFT REPORT ISSUANCE DATE	FINAL REPORT
Regulatory Compliance	12/7/2012	1/10/2013	1/22/2013	2/14/2013
P-Card	10/12/2012	1/10/2013	2/8/2013	4/17/2013
Chemicals Purchasing	11/14/2012	1/18/2013	2/5/2013	2/19/2013
Cashiering Remote Site	12/11/2012	1/7/2013	1/15/2013	2/15/2013
Investments & Cash Management	1/15/2013	3/1/2013	3/8/2013	4/15/2013
Fleet Management	1/22/2013	4/5/2013	4/10/2013	4/17/2013
IT Network Security	3/28/2013	5/31/2013	6/14/2013	
Sewer – Emergency Services	4/8/2013	5/29/2013	6/3/2013	6/18/2013
Engineering – High Priority	6/12/2013			
PCS	4/15/2013			
Utilities – Repairs & Flushing	6/7/2013			
Maintenance Services				
Warehouse Operations				
IT – SDLC & Change Management				

C. **Analysis of Hours** – The chart below indicates the actual hours used through May 31, 2013 toward completion of the internal audit plan, along with an indication of the total hours included in the FY2013 plan.



## II. 2013 Audit Plan Status



## **A. Reports Issued Since Last Audit Committee Meeting**

### **1. Sewer – Emergency Maintenance**

Our overall audit objective was to evaluate the effectiveness and efficiency of the operations and activities of Sewer Emergency Maintenance and to ensure compliance with applicable laws and regulations. Specific audit objectives included:

- Ensuring that sewer emergency maintenance activities are in compliance with internal policies and procedures, as well as applicable laws and regulations;
- Determining the efficiency and effectiveness of the system capabilities surrounding sewer emergency maintenance work orders;
- Ensuring sewer emergency maintenance activities are operating effectively and that personnel are adequately trained; and,
- Ensuring that proper controls exist to monitor the sewer emergency maintenance inventory and to track the performance of equipment.

Internal Audit concludes that the Department of Sewer Services effectively monitors emergency maintenance work orders and efficiently responds to reported incidents. Internal Audit concludes that the internal controls surrounding the operational aspects of sewer emergency maintenance activities are effective.

Internal Audit has identified some items that should be addressed by management in order to further strengthen DC Water’s Sewer Emergency Maintenance processes.

In particular, there is a need to address the following:

- Develop and implement a detailed quality control “scorecard” that will allow supervisors to assess each job based on multiple criteria;
- Assure that all required training courses for each position are captured and that the successful completion of all training courses by each required employee is monitored;
- Implement a process to assure that the calculations associated with all performance goals are independently prepared or reviewed by someone independent of the employee being evaluated;
- Review and update employee performance evaluations to more accurately reflect goals that can be quantitatively assessed to verify employee achievement; and,
- Update, approve and distribute the policy and procedure documents on an annual basis to reflect any changes and remove outdated information.

This audit resulted in the addition of four Management Action Items in the chart in Section III Follow Up.

### III. Follow Up

In addition to our work performed relative to the audit projects identified in the 2013 Internal Audit Plan, Internal Audit conducted follow-up activity relative to previously reported audit comments. The table below summarizes the issues by area of responsibility and the current status of the action plan proposed by Management.

	Chief Engineer	AGM Blue Plains	AGM Consumer Services	Chief Financial Officer	General Counsel	Chief Information Officer	AGM Support Services	General Manager	Total
New Management Action Plans Since Previous Meeting	-	-	4	-	-	-	-	-	4
Management Action Plans Implementation Date Not Expired	-	7	-	3	-	4	21	-	35
Management Action Plans Implementation Date Expired	-	1	1	-	-	3	-	1	6
Total	-	8	5	3	-	7	21	1	45

**Listed Below are the Details of the Management Action Plans with Expired Implementation Dates**

**AGM Blue Plains**

1. 2012 Maintenance Services Audit – A current, accurate inventory of on-hand critical spare parts and equipment is not maintained. It was recommended that management update the critical spare parts report to include newly constructed assets and review the methodology used to determine what spare parts and equipment are “critical” to ensure the department can perform timely and cost-effective maintenance to the plant's critical assets. Management committed to review and update the critical spare parts list, assuring that all critical spare parts are included on the list, and that the list considers lead times for ordering spare parts, as well as the failure rates of critical parts.

### **AGM Consumer Services**

1. 2011 Pumping & Storage - Water Leakage – An active leak detection program was not implemented, although multiple leak detection technologies and programs have been evaluated. Management indicates that they have selected an active leak detection program and have begun implementation; however, the implementation has not been completed.

### **Chief Information Officer**

1. 2012 IT Governance Internal Audit – Current policies could not be readily identified and a number of draft documents were still in need of approval and distribution. An IT Governance Committee has been formed that meets bi-weekly to review IT standards, policies, and procedures documents; however, the review, approval and implementation of all documents has not yet been completed.
2. 2012 IT Helpdesk & Computer Operations – Periodic reviews of physical access rights to DC Water data centers are not being performed. On at least a quarterly basis, IT Management should determine who has access rights to each of the five DC Water data centers and verify that all access rights are based on a valid business need. Periodic access reviews of physical access rights to the DC Water data centers should be formally documented and retained on file.
3. 2012 IT Helpdesk & Computer Operations – DC Water does not require outside contractors serving as DC Water help desk technicians to provide evidence of ongoing training and continued professional education as it relates to information technology. Management committed to incorporate an assessment of ongoing technical training and continued professional education of those outside contractors serving as DC Water help desk technicians into the annual vendor management process.

### **Office of the General Manager:**

1. 2010 Corporate Policies and Procedures – Revised DC Water Policy and Procedure documents have not been officially approved by the General Manager and made available to all DC Water employees.

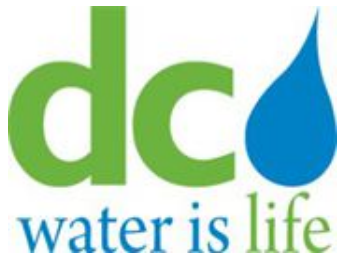
## **IV. Other Topics**

Internal Audit continues to collaborate with DC Water’s Human Capital Management and Finance departments to facilitate additional employee Fraud and Abuse hotline awareness training sessions.



Following the May 30 Audit Committee meeting, three additional allegations were reported through the Fraud and Abuse hotline. Two of the three reports have been resolved; the remaining report is currently being investigated.

To date, a total of five reports of Fraud and Abuse have been received through the hotline; all alleging violations of HCM policies.



**Sewer – Emergency Maintenance  
Internal Audit Report**

June 18, 2013

**INTERNAL AUDIT TEAM**

Director: Joe Freiburger

Manager: Russell Ojers

Associate: Dominic Usher

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## EXECUTIVE SUMMARY

### Background

DC Water's Department of Sewer Services operates one of the oldest sewer systems in the United States, which began operating in the early 1800's. Today, DC Water services over 1,800 miles of sanitary, combined and storm sewers, 16 storm water stations, 25,000 catch basins and 50,000 manholes along with 22 flow-metering stations. DC Water operates a wastewater collection system comprised of a combined sewer system, which combines sewer water and storm water, and a separate sewer system, which separates sewer and storm water. The Department of Sewer Services is continually updating its sewer system by replacing out-of-date piping and infrastructure, exploring new, efficient and more effective methods to maintain the sewer system and updating current processes and equipment used in the sewer operation.

Cuthbert Braveboy, Director of Sewer Services, has been with DC Water and its predecessors for over 30 years. Mr. Braveboy is responsible for the operation and maintenance of the sewer infrastructure in the District of Columbia and the Potomac Interceptor that serves the Dulles Airport and surrounding jurisdictions. Mr. Braveboy is also responsible for a staff of over 150 employees which includes engineers, managers, technicians, pumping station personnel, sewer workers and administrative staff. Mr. Braveboy assures that the Department of Sewer Services is compliant with the regulatory requirements of all appropriate jurisdictional agencies, such as the Environmental Protection Agency (EPA).

The Department of Sewer Services' emergency maintenance function provides for a critical, timely response to sewer-related problems. There are three types of crews that comprise Sewer emergency maintenance: lateral crews, investigation crews, and combined sewer regulator crews. These crews work together to respond to emergency incidents ranging from simple manhole cover replacement and catch basin cleaning to major sewer backups inside homes or businesses and sewer leaks or sinkholes in the street or other public spaces. The Department of Sewer Services works closely with other departments such as Customer Service, which is responsible for receiving the customer complaints and dispatching them to available crews, and Engineering and Technical Services, who develop long-term solutions to infrastructure or recurring problems identified by Sewer emergency maintenance crews as they investigate emergency issues.

### **Objectives**

Our overall audit objective was to evaluate the effectiveness and efficiency of the operations and activities of Sewer Emergency Maintenance and to ensure compliance with applicable laws and regulations. Specific audit objectives included:

- Ensuring that sewer emergency maintenance activities are in compliance with internal policies and procedures, as well as applicable laws and regulations;
- Determining the efficiency and effectiveness of the system capabilities surrounding sewer emergency maintenance work orders;
- Ensuring sewer emergency maintenance activities are operating effectively and that personnel are adequately trained; and,
- Ensuring that proper controls exist to monitor the sewer emergency maintenance inventory and to track the performance of equipment.

### **Audit Scope and Procedures**

This audit was conducted based on the approved FY2013 internal audit plan. The audit was initiated in April, 2013 and completed in May, 2013. The audit included an evaluation of the physical controls, as well as the processes and procedures of the Department of Sewer Services and other DC Water departments, where applicable; as they pertain to sewer emergency maintenance. The audit process included interviews with appropriate members of Sewer Services, Customer Service and Human Capital Management personnel. The audit process also included data analysis and the substantive testing of a sample of emergency work orders, performance metrics, quality control of sewer emergency maintenance jobs, employee training and employee performance evaluations. Emphasis was placed on the identification of risks that could adversely affect sewer emergency maintenance activities and the efficient performance of these activities.

### **Summary of Work**

Internal Audit concludes that the Department of Sewer Services effectively monitors emergency maintenance work orders and efficiently responds to reported incidents. Internal Audit concludes that the internal controls surrounding the operational aspects of sewer emergency maintenance activities are effective.

Internal Audit has identified some items that should be addressed by management in order to further strengthen DC Water's Sewer Emergency Maintenance processes.

In particular, there is a need to address the following:

- Develop and implement a detailed quality control “scorecard” that will allow supervisors to assess each job based on multiple criteria;
- Assure that all required training courses for each position are captured and that the successful completion of all training courses by each required employee is monitored;
- Implement a process to assure that the calculations associated with all performance goals are independently prepared or reviewed by someone independent of the employee being evaluated;
- Review and update employee performance evaluations to more accurately reflect goals that can be quantitatively assessed to verify employee achievement; and,
- Update, approve and distribute the policy and procedure documents on an annual basis to reflect any changes and remove outdated information.

SC&H Consulting

By:

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Joe Freiburger, CPA, CIA

## II. DETAILED OBSERVATIONS & RECOMMENDATIONS

I. Quality Control		
<p><b>Observation:</b> The Department of Sewer Services (DSS) monitors the quality of work performed by emergency maintenance personnel. Supervisors visit job sites during and after work is performed to ensure that work is performed appropriately. The DC Water Department of Sewer Services Supervisor “Quality Assurance Inspection Form” has two measurements of overall work quality: Satisfactory or Follow up Required. The current DSS (Emergency Maintenance) quality control process does not provide a scored quality control result for each job reviewed to give an accurate measurement of the quality of work being performed. Further, the current quality control process does not categorize specific aspects of the work being conducted in order to identify opportunities for improvement within each review that is performed.</p>	<p><b>Recommendation:</b> Internal Audit recommends that Management develop and implement a detailed quality control “scorecard” that will allow supervisors to assess each job based on multiple criteria. The scorecard should be detailed enough to allow for the identification of the quality of the work performed throughout the process, rather than only assigning an aggregated pass/fail score to the overall job.</p> <p>Each employee or crew should have their work scored on multiple occasions throughout each month. The results of the quality control scorecards should be communicated back to the employees and appropriate corrective action should be discussed, as needed. Quality control scorecards should be retained as evidence of the historical performance of each employee or crew.</p>	<p><b>Management’s Action Plan:</b> The update of DSS’ Standard Operating Procedures will include a requirement to prepare a quality control scorecard to assess each job based on multiple criteria. Presently, an interim scorecard will be created and used. Implementation of the interim scorecard will be aligned with the introduction of the 2014 employee Performance Improvement plans.</p> <p><b>Implementation Date:</b> Interim QC scorecard implemented: April 1, 2014.</p> <p>Implementation of the final QC Scorecard and the related business process: Three to five years.</p>

<p><b>Risk:</b> Failing to have a detailed, comprehensive Quality Control process prevents management from accurately assessing the overall job quality of the work being performed, identifying opportunities for performance improvement, isolating the sources of recurring problems, and determining the need for additional training.</p>		
<p><b>II. Monitoring of Training Requirements and Completion</b></p>		
<p><b>Observation:</b> Human Capital Management (“HCM”) tracks the required training courses and monitors successful employee completion, only as it relates to those trainings that are required from an HCM perspective, and are applicable to employees throughout the organization. HCM does not currently track the training courses that are required as part of specific positions within individual departments – such as the courses required for Customer Service’s command center dispatchers, or the Department of Sewer Services’ emergency maintenance crew workers. HCM records the successful completion of any position-specific courses taken and passed by employees, but does not compare this list against a list of position-specific course requirements.</p>	<p><b>Recommendation:</b> Internal Audit recommends that the Department of Sewer Services and Customer Service Management work directly with HCM to assure that all required training courses for each position are captured and that the successful completion of all training courses by each required employee is monitored.</p>	<p><b>Management’s Action Plan:</b> DSS will work with HCM to identify all required training courses for each position and implement a method to monitor the successful completion of all such courses. Monitoring should utilize the Learning Management System that was recently introduced by HCM.</p> <p><b>Implementation Date:</b> September 30, 2014</p>



<p>Internal Audit observed that DSS does not currently track employee completion of training courses that are required for emergency maintenance positions. Furthermore, DSS does not have a list of required courses for each position, nor a list of employees that have taken each course.</p> <p>Similarly, Internal Audit observed that Customer Service does not track employee completion of training courses that are required for command center customer service representative or dispatch positions. Customer Service does not have a list of which courses are required for each position, or a listing of employees that have taken each course.</p> <p><b>Risk:</b> Without adequate tracking and monitoring related to employee completion of required training courses, the Department of Sewer Services and Customer Service create a risk of poor customer service, inefficient operations, inability to properly address emergency issues, and perhaps creating an unsafe working environment.</p>		
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**III. Performance Evaluations**

**Observation:**

Management of DSS (Emergency Maintenance) completes annual performance evaluations for all supervisors. A component of the evaluation on which Supervisor performance is gauged is the achievement of their “field performance goals” such as “the inspection of 200 miles of sewer lines” or “the investigation of 2000 laterals”. The success or failure of the emergency maintenance supervisors to achieve their target goals affects their performance ratings for the year.

Supervisors are responsible for calculating and tallying their own performance against the different field performance goals contained in their evaluations. These calculations are not independently prepared or reviewed prior to their inclusion in the performance evaluations.

**Risk:**

A lack of independent preparation or review of employee achievement versus established performance goals creates a risk that the information reported on annual employee evaluations may contain errors and prevent an accurate assessment of the employee.

**Recommendation:**

Internal Audit recommends that Management implement a process to assure that the calculations associated with all performance goals are independently prepared or reviewed by someone independent of the employee being evaluated. This will allow for an accurate assessment of employee achievement versus established performance goals.

**Management’s Action Plan:**

Each manager will perform a review of performance goals for supervisors in their Branches and create a process to assure that the calculations associated with all performance goals are independently prepared or reviewed by someone independent of the employee being evaluated. The plan may include the roles of the Manager, the General Foreman, or other independent parties in verification, measurements, calculations and tallying of different field performance goals contained in the evaluations.

Implementation of the revised process for the review of supervisor performance goals will be aligned with the introduction of the 2014 employee Performance Improvement plans.

**Implementation Date:**

April 1, 2014

<p><b>Observation:</b> The DSS (Emergency Maintenance) supervisors conduct on-site daily quality inspection checks of field crews work performances. Supervisors prepare a Quality Assurance Inspection Form each day and submit the completed forms to the Inspection and Maintenance Manager. The annual evaluation for supervisors includes a performance goal to submit the completed inspection forms by the end of each business day. In order for supervisors to meet this target goal, they have to submit the completed inspections forms by COB 90% of the time. To exceed the target goal, the completed inspection forms need to be submitted by COB 95% of the time.</p> <p>There is no method in place to calculate the percentage of time in which the completed inspection forms are submitted timely. The annual evaluation forms are completed using an overall impression as to the frequency with which each supervisor submits the completed inspection forms by the end of each day.</p>	<p><b>Recommendation:</b> Internal Audit recommends that Management review and update supervisor performance evaluations to more accurately reflect goals that can be quantitatively assessed to verify their achievement by the supervisors.</p>	<p><b>Management’s Action Plan:</b> Review the goal and evaluate how to address the fact that supervisors may still be on a job site, dealing with customers, or attending meetings or classes at the end of the regular shift. Adjust required submission time to reflect findings if needed. Prepare a plan to verify the time completed inspection forms are submitted to verify accurately if established deadlines are met. Consider procurement of a date/time stamping machine.</p> <p>Implementation of the revised process for the review of supervisor performance goals will be aligned with the introduction of the 2014 employee Performance Improvement plans.</p> <p><b>Implementation Date:</b> April 1, 2014</p>
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<p><b>Risk:</b> Failing to accurately capture employee achievement relative to established performance goals makes an accurate assessment of their performance ineffective.</p>		
<p><b>IV. Policies and Procedures</b></p>		
<p><b>Observation:</b> The Department of Sewer Services maintains policies and procedures related to all sewer activities and documented in Appendix A - T. However, these policies and procedures are not evaluated on a periodic basis to determine whether they accurately reflect the correct activities that need to be performed. The most recent updates of these documents occurred from 2001-2007. For example, The Centralized Dispatch Process and Procedures Manual was last updated in April, 2004. The current practice is for DSS to update their policies and procedures only when major changes to requirements occur.</p>	<p><b>Recommendation:</b> Internal Audit recommends that Management update, approve and distribute the policy and procedure documents on an annual basis to reflect any changes and remove outdated information.</p>	<p><b>Management’s Action Plan:</b> DSS/DETS hired Hatch Mott Macdonald (HMM) to conduct the Standard Operating Procedures Visioning Workshops. The first of four scheduled workshops to identify best management practices was conducted on June 3, 2013. Upon Completion of these workshops, a Request for Proposal to revise current SOPs and to create additional SOPs as required will be prepared and advertised. A consultant will then be contracted to prepare the updates. Further, HMM has been instructed to include a requirement for annual updates and will ensure that this is done.</p> <p><b>Implementation Date:</b> DSS/DETS expects HMM to finalize the work plan for the revision of existing SOPs and creating new SOPs for DWS and DSS assets by December 31, 2013.</p>

<p><b>Risk:</b> Failure to update policy and procedure documents on a regular basis may allow for inconsistent practices across the department, or adversely impact the timely communication of essential procedural changes and modifications to Sewer Services staff.</p>		<p>The work plan will include scope, schedule and budget for each SOP to be revised and created. The Sewer Emergency Maintenance SOP Update will be part of this work plan and the schedule for its update will be provided as part of the work plan.</p>
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