



# DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

## Board of Directors

*Audit Committee*

*Thursday, July 27, 2017*

9:30 a.m.

1. **Call to Order**.....Nicholas A. Majett, Chairperson
2. **External Audit Status Update KPMG Update**.....KPMG
3. **Internal Audit Update**..... Dan Whelan, RSM, Auditor General
  - A. **Internal Audit Plan Status Update**
  - B. Status Update on Prior Audit Findings
  - C. **Automated Meter Reading Implementation Progress Report**
  - D. **Automated Meter Reading Management Update**
  - E. **Intermunicipal Agreement**
  - F. **Contract Monitoring and Compliance Part I**
  - G. Hotline Update
4. **Executive Session\*** ..... Nicholas A. Majett, Chairperson
5. **Adjournment**..... Nicholas A. Majett, Chairperson

\* The DC Water Board of Directors may go into executive session at this meeting pursuant to the District of Columbia Open Meetings Act of 2010, if such action is approved by a majority vote of the Board members who constitute a quorum to discuss: matters prohibited from public disclosure pursuant to a court order or law under D.C. Official Code § 2-575(b)(1); contract negotiations under D.C. Official Code § 2-575(b)(1); legal, confidential or privileged matters under D.C. Official Code § 2-575(b)(4); collective bargaining negotiations under D.C. Official Code § 2-575(b)(5); facility security under D.C. Official Code § 2-575(b)(8); disciplinary matters under D.C. Official Code § 2-575(b)(9); personnel matters under D.C. Official Code § 2-575(b)(10); proprietary matters under D.C. Official Code § 2-575(b)(11); decision in an adjudication action under D.C. Official Code § 2-575(b)(13); civil or criminal matters where disclosure to the public may harm the investigation under D.C. Official Code § 2-575(b)(14), and other matters provided in the Act.



# DC Water and Sewer Authority

## Financial Statement Audit & Uniform Guidance Audit Entrance Conference September 30, 2017

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July 27, 2017

# Agenda

## **1.0 Audit plan**

- Scope
- Principal auditor
- Client service team
- Materiality
- Deliverables and time line
- Auditing and accounting matters
- Involvement of others

## **2.0 Risk assessment**

## **3.0 Objectives of an audit**

## **4.0 Responsibilities**

## **5.0 KPMG's audit approach and methodology**

## **6.0 Independence**

## **7.0 KPMG's Ethics and Compliance Hotline and Government Institute**



1.0

# Audit plan

# Audit plan - Scope

<p><b>Scope of work</b></p>	<p>Audit of DC Water Financial Statements and on Compliance for Each Major Federal Program Required by the Uniform Guidance for the year ended September 30, 2017, which includes the following reports:</p> <ul style="list-style-type: none"> <li>• Report on financial statements</li> <li>• Report on Internal Control over Financial Reporting and Compliance with Laws and Regulations Based on Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i></li> <li>• Report on Compliance for Each Major Federal Program; Report on Internal Control Over Compliance; and Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance</li> </ul> <p>An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity’s internal control over financial reporting.</p>
<p><b>Applicable financial reporting framework</b></p>	<p>U.S. GAAP, Governmental Accounting Standards Board (GASB)</p>
<p><b>Applicable auditing standards</b></p>	<p>U.S. GAAS</p>
<p><b>Other terms of engagement</b></p>	<p>Management letter</p>



## Audit plan - Materiality

- Professional standards require that we exercise professional judgment when we consider materiality and its relationship with audit risk when determining the nature, timing, and extent of our audit procedures, and when evaluating the effect of misstatements.
- Information is material if its misstatement or omission could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.
- Judgments about materiality are made in light of surrounding circumstances and are affected by the size or nature of a misstatement, or a combination of both.
- Judgments about matters that are material to users of the financial statements are based on a consideration of the common financial information needs of users as a group. The possible effect of misstatements on specific individual users, whose needs may vary widely, is not considered.

# Audit plan - Deliverables and time line

- January 2018**
- Perform remaining audit procedures for Uniform Guidance Audit
  - Issue Uniform Guidance audit report
  - Issue GAGAS report on internal control
  - Issue management letter
  - Issue audit opinion on Consolidated Annual Financial Statements
  - Attend Audit Committee meeting and perform required communications
  - Debrief on audit process
  - Plan audit approach for upcoming year-end audit

- November-December 2017**
- Perform analytical or other procedures to roll forward account balances to year-end
  - Perform remaining audit procedures for financial statements
  - Discuss key issues and deficiencies identified with management
  - Review of financial statement disclosures
  - Obtain written representation from management
  - Issue audit opinion on liftable financial statements



- June-July 2017**
- Perform risk assessment procedures and identify risks
  - Determine audit approach
  - Evaluate entity-level controls
  - Determine planned audit approach
  - Understand accounting and reporting activities
  - Evaluate design and implementation of selected controls including general IT controls, where applicable.
  - Coordination with Internal Audit
  - Present audit plan to Audit Committee

- July 2017**
- Meetings with management to discuss key issues
  - Perform interim substantive audit procedures

## Audit plan - Deliverables and time line (continued)

Phase	Timeframe
Final audit opinion on liftable financial statements	12/20/2017
Final audit opinion on CAFR	1/19/2018
Final report on internal control and compliance in accordance with <i>Government Auditing Standards</i>	2/12/2018
Report on compliance with Uniform Guidance requirements	2/12/2018
Management letter	2/12/2018



2.0

# Risk assessment

# Risk assessment

Based on our risk assessment procedures, the following are significant risks/financial statement level risks that may result in a material misstatement (due to fraud or error) in the financial statements and our planned audit approach in response to such significant risks:

## **Significant Risks/financial statement level risks:**

### **Due to Error**

— *No significant risks identified*

### **Due to Fraud**

— Risk of management override of controls – *Management is in a unique position to perpetrate fraud because of management's ability to manipulate accounting records and prepare fraudulent financial statements by overriding controls that otherwise appear to be operating effectively. Although the level of risk of management override of controls will vary from entity to entity, the risk nevertheless is present in all entities.*

## Risk assessment (continued)

Significant audit areas	Significant estimates	Significant unusual transactions/other items
<ul style="list-style-type: none"> <li>— Treasury and Debt Management</li> <li>— Retail Revenue</li> <li>— Wholesale Revenue (IMA)</li> <li>— Capital Asset Management</li> <li>— Payroll Expenses</li> <li>— Operating Expenses</li> <li>— Grants Management</li> </ul>	<ul style="list-style-type: none"> <li>— None noted</li> </ul>	<ul style="list-style-type: none"> <li>— Implementation of new accounting pronouncements</li> </ul>



3.0

# Objectives of an audit

## Objectives of an audit of the financial statements

- The objective of an audit of financial statements is to enable the auditor to express an opinion about whether the financial statements that have been prepared by management with the oversight of the Audit Committee are presented fairly, in all material respects, in conformity with generally accepted accounting principles (GAAP).
- We plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or fraud. Although not absolute assurance, reasonable assurance is a high level of assurance.
- We will conduct the audit in accordance with auditing standards generally accepted in the U.S. and *Government Auditing Standards*, issued by the Comptroller General of the United States.
- Our audit includes:
  - Performing tests of the accounting records and such other procedures as we consider necessary in the circumstances to provide a reasonable basis for our opinion.
  - Assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation.
  - We will test and report on DC Water's internal controls to address the risk of material misstatement of the financial statements due to fraud or error, but not to opine.

## Objectives of a Uniform Guidance audit

- The objective of a Uniform Guidance audit (Single Audit) is to enable the auditor to express an opinion on the compliance requirements for each major Federal program.
- A single audit is designed to provide reasonable assurance about whether noncompliance with Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) compliance requirements could have a direct and material effect on each major Federal program.
- We will test and report on internal control over compliance in accordance with the Uniform Guidance, but not opine.
- We will conduct the audit in accordance with auditing standards generally accepted in the U.S. and *Government Auditing Standards*, issued by the Comptroller General of the United States.



4.0

Responsibilities

# Responsibilities

## **Management is responsible for:**

- Preparation and fair presentation of the financial statements, including disclosures, in conformity with generally accepted accounting principles (GAAP)
- For the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error
- Ensuring that the Authority operations are conducted in accordance with the provisions of laws and regulations, including compliance with the provisions of laws and regulations that determine the reported amounts and disclosures in the Authority's financial statements, and for informing the auditor of any known material violations of such laws and regulations
- To provide access to all information of which management is aware that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, and other matters, additional information that we may request from management for the purpose of the audit, and unrestricted access to persons within the entity from whom we determine it necessary to obtain audit evidence.
- Adjusting the financial statements to correct material misstatements and affirming that the effects of any uncorrected misstatements aggregated by the auditor are immaterial, both individually and in the aggregate, to the financial statements taken as a whole.
- Providing the auditor with a letter confirming certain representations made during the audit that includes, but is not limited to, management's:
  - Disclosure of all significant deficiencies, including material weaknesses, in the design or operation of internal controls that could adversely affect the Company's financial reporting
  - Acknowledgement of their responsibility for the design and implementation of programs and controls to prevent, deter, and detect fraud.

## Responsibilities (continued)

### **KPMG is responsible for:**

- Planning and performing our audit, with an attitude of professional skepticism, to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by fraud or error. Accordingly, there is some risk that a material misstatement of the financial statements will remain undetected. Although not absolute assurance, reasonable assurance is a high level of assurance. Our audit is not designed to detect error or fraud that is immaterial to the financial statements.
- Conducting the audit in accordance with professional standards and complying with the rules and regulations of the Code of Professional Conduct of the American Institute of Certified Public Accountants and the ethical standards of relevant CPA societies, and relevant state boards of accountancy
- Forming and expressing an opinion about whether the financial statements that have been prepared by management with the oversight of the Audit Committee are presented fairly, in all material respects, in conformity with GAAP
- An audit of the financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting.
- Communicating to the Audit Committee all required information, including significant matters, that are in our professional judgment, relevant to the responsibilities of those charged with governance in overseeing the financial reporting process.
- Communicating to management and the Audit Committee in writing all significant deficiencies and material weaknesses in internal control identified during the audit and reporting to management in writing all deficiencies noted during our audit that, in our professional judgment, are of sufficient importance to merit management's attention. The objective of our audit of the financial statements is not to report on the Company's internal control and we are not obligated to search for material weaknesses or significant deficiencies as part of our audit of the financial statements.
- Communicating to the Audit Committee circumstances that affect the form and content of the auditors' report, if any.

**The audit of the financial statements does not relieve management or the Audit Committee of their responsibilities.**



## Responsibilities for other information in documents containing audited financial statements

- The auditors' report on the financial statements does not extend to other information in documents containing audited financial statements, excluding required supplementary information.
- The auditors' responsibility is to make appropriate arrangements with management or the Audit Committee to obtain the other information prior to the report release date and to read the other information to identify material inconsistencies with the audited financial statements or material misstatements of fact.
- Any material inconsistencies or misstatements of facts that are not resolved prior to the report release date, and that require revision of the other information, may result in KPMG modifying or withholding the auditors' report or withdrawing from the engagement.
- We will perform the following procedures with respect to other information in documents containing audited financial statements (the Statistical Section and Letter of Transmittal in the CAFR):
  - Read the other information to identify material inconsistencies with the audited financial statements or material misstatements of fact, and
  - Make appropriate arrangements with management or the Audit Committee to obtain the other information prior to the report release date.

## Responsibilities – Independence Matters

**In order for us to fulfill our professional responsibility to maintain and monitor independence in relation to the Company, timely information is required from Company management regarding the following:**

- The Authority’s affiliates – This includes entities that are part of the consolidated financial statements and other entities that meet the definition of an affiliate under AICPA independence rules (e.g. sister companies under control of a common parent company where both the audit client and sister company are material to the controlling company, entities included in an investment company complex, etc.)

### **Payment of Fees – Audit and All Other Professional Services**

Professional standards require that fees for any previously rendered professional service provided more than one year prior to the date of the current year audit report have been paid.

**Further information regarding Independence matters is discussed in Section 6.0 Independence.**





5.0

# KPMG's audit approach and methodology

# KPMG's audit approach and methodology

## Technology-enabled integrated audit work flow

### Engagement Setup

- Tailor the eAudit work flow to your circumstances
- Access global knowledge specific to your industry
- Team selection and timetable

### Completion

- Update risk assessment
- Perform completion procedures and overall evaluation of results and financial statements
- Form and issue audit opinion on financial statements
- Obtain written representation from management
- Required Audit Committee communications
- Debrief audit process



### Risk Assessment

- Understand your business and financial processes
- Identify significant risks
- Plan involvement of specialists and others including experts, internal auditors, service organizations and other auditors
- Determine audit approach
- Evaluate design and implementation of internal controls, if applicable

### Testing

- Test effectiveness of internal controls, if applicable
- Perform substantive tests



6.0

Independence

## KPMG independence quality controls

### **KPMG maintains a comprehensive system of quality controls designed to maintain our independence and to comply with regulatory and professional requirements.**

- Pre-approval of all worldwide engagements by the audit engagement team through Sentinel, a KPMG independence and conflict checking system (includes services for/relationships with the audit client, its affiliates, and its affiliated persons)
- Tracking partner rotation requirements using PRS, the firm's automated partner rotation tracking system
- Automated investment tracking system used by all KPMG member firms (KICS)
- Training and awareness programs, including a required annual independence training deployed globally
- Annual independence confirmation required for all partners and employees and for all new joiners to the firm
- Compliance testing programs
- Formal disciplinary policy and process
- Annual reporting to the audit committee regarding independence

# Independence

Nonaudit services or other relationships that may reasonably be thought to bear on independence include:

- Green Bond Attestation
- 2<sup>nd</sup> Quarter Agreed Upon Procedures

In our professional judgment, we are independent with respect to DC Water, as that term is defined by the professional standards.



## Independence of Mind and in Appearance

- Independence consists of independence of mind and in appearance. Independence in appearance is the avoidance of circumstances that would cause a reasonable and informed third party who has knowledge of all relevant information, including safeguards applied, to reasonably conclude that the integrity, objectivity, or professional skepticism of the firm or members of the audit engagement team is compromised.
- Close personal relationships between firm personnel and audit client personnel can impact the appearance of independence or an auditor's independence of mind.
- KPMG has issued reminders and conducted training regarding KPMG's existing policies that require interactions between firm personnel and audit client personnel (including client entertainment) be directly related to a business purpose, reasonable, and infrequent (i.e., generally no more than four times a year). Additionally, firm policies prohibit the receipt or granting of any gift with a value in excess of \$100 between firm and audit client personnel.

# Communication Requirements - Breaches of Independence

## **KPMG policies regarding breaches of independence:**

- For any breaches of the Independence rules, as soon as practicable KPMG will:
  - Assess the impact of the breach
  - Identify the actions performed or to be performed to address the consequences of the breach
  - Communicate in writing and discuss the breach and actions to address the breach with those charged with governance
  - Obtain concurrence from those charged with governance on the auditor's conclusion regarding the breach (i.e., that the actions taken satisfactorily address the consequences of the breach and the impact of the breach on KPMG's objectivity and impartiality with respect to the audit)
  - Document the details of the breach, the actions described above and the result



7.0

# KPMG's Ethics and Compliance Hotline and Government Institute

# KPMG Ethics and compliance hotline, and Government Institute information

## **KPMG Ethics and compliance hotline**

- Scope – To provide a confidential, non-retaliatory, and anonymous hotline to the following individuals/organizations for the good faith reporting of concerns about possible violations of law, professional and ethical standards, and KPMG policy.
- Contact information
  - Phone: 1-877-576-4033
  - Website: [www.kpmgethics.com](http://www.kpmgethics.com)

## **KPMG Government institute\***

- Scope – To serve as a strategic resource for government at all levels, and also for higher education and non-profit entities seeking to achieve high standards of accountability, transparency, and performance. The institute is a forum for ideas, a place to share leading practices, and a source of thought leadership to help governments address difficult challenges such as effective performance management, regulatory compliance, and fully leveraging technology.
- Contact information
  - Jeff Steinhoff, Executive Director ([jsteinhoff@kpmg.com](mailto:jsteinhoff@kpmg.com))
  - Website: [www.kpmginstitutes.com/government-institute/](http://www.kpmginstitutes.com/government-institute/)

\*The KPMG Government Institute is a member of the KPMG Institute Network ([www.kpmginstitutes.com](http://www.kpmginstitutes.com)).





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# DC WATER

## Audit Committee Meeting



July 27, 2017

# Agenda

- Internal Audit Plan Status Update
- Status Update on Prior Audit Findings
  - COTR Training Update
  - Issue Tracker Implementation
- Automated Meter Reading Implementation Progress Report
- Automated Meter Reading Implementation Management Update
- Intermunicipal Agreement
- Contract Monitoring & Compliance Part I
- Hotline Update
  - Hotline Call Analysis

# FY 2017 Internal Audit Status Update

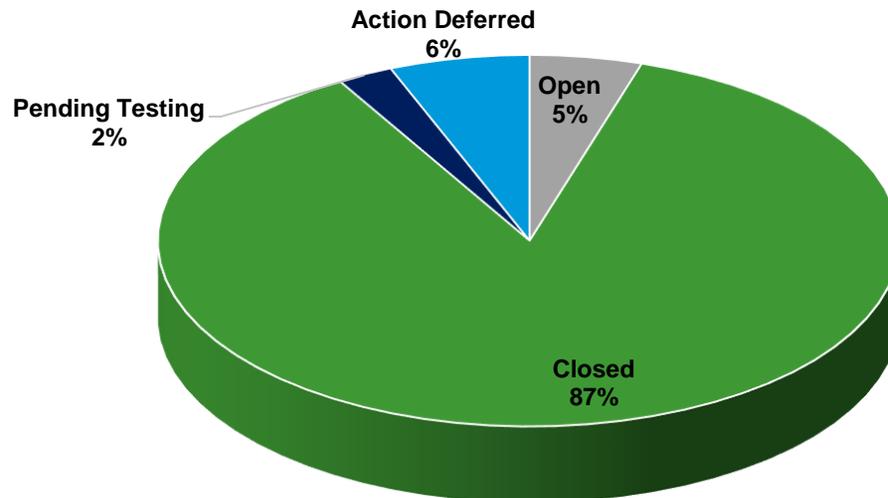
Audit	Status
FY 2017	
Department of Maintenance Services Work Order Management (Blue Plains)	Report Issued
Human Resource / Employee Privacy Review	Report Issued (executive session)
Purchasing Card (P-Card)	Report Issued
<b>Automated Meter Reading Implementation</b>	<b>Progress Report Complete</b>
<b>Intermunicipal Agreement</b>	<b>Report Complete</b>
<b>Contract Monitoring &amp; Compliance Review (Part 1)</b>	<b>Report Complete</b>
Contract Monitoring & Compliance Review (Part 2)	Reporting In-Process
Entity Level Assessment	Reporting In-Process
Vulnerability Management and Platform Technical Audit (Windows/UNIX)	Reporting In-Process (executive session)
Engineering - Contractor Management Phase III	Fieldwork In-Process
Materials Management – Operations and Inventory	Fieldwork In-Process
Fleet – Accident and Incident Reporting	Planning In-Process
IT Risk Management & Compliance	Delayed to FY18
Employee Recruitment and On-Boarding	Delayed to FY18
Remediation Follow Up Procedures	On-going
Hotline Management	On-going

# FY 2017 Audit Plan Modifications

Audit	Modification
Employee Recruitment & On-Boarding	Delayed project to Q1 of FY 2018 due to re-organization, new processes and new process owners.
IT Risk Management & Compliance	Delayed project to Q1 to allow management to address the IT/governance remediation actions.
Fleet – Accident and Incident Reporting	Project added in place of Employee Recruitment & On-Boarding.
Vulnerability Management Review and Platform Technical Audit (Windows/UNIX)	These two projects have been combined, as many of the people, processes, and technologies overlap. This has no effect on original objectives and budget.

# Status Update on Prior Audit Findings

Audit Report/Subject	Report Issue Date	Corrective Actions				
		Total	Open	Closed	Pending Testing	Action Deferred*
<b>Prior to FY 2015 Audit Findings</b>						
Organizational Policies & Procedures	02/23/2010	1	0	0	0	1
Safety Program Training & Compliance	10/07/2010	1	0	0	0	1
Human Capital Management	11/29/2011	1	0	0	0	1
Maintenance Services	04/18/2012	2	0	0	2	0
Fleet Management	04/17/2013	1	0	0	0	1
Water Services - Distribution Maintenance Branch	10/28/2013	1	1	0	0	0
Disposal of Assets	02/18/2014	1	0	0	0	1
Warehouse Operations	09/15/2014	1	1	0	0	0
GIS Mapping	06/23/2014	2	2	0	0	0
	<b>Total</b>	<b>11</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>5</b>



\*All action deferred items are policies pending union approval.

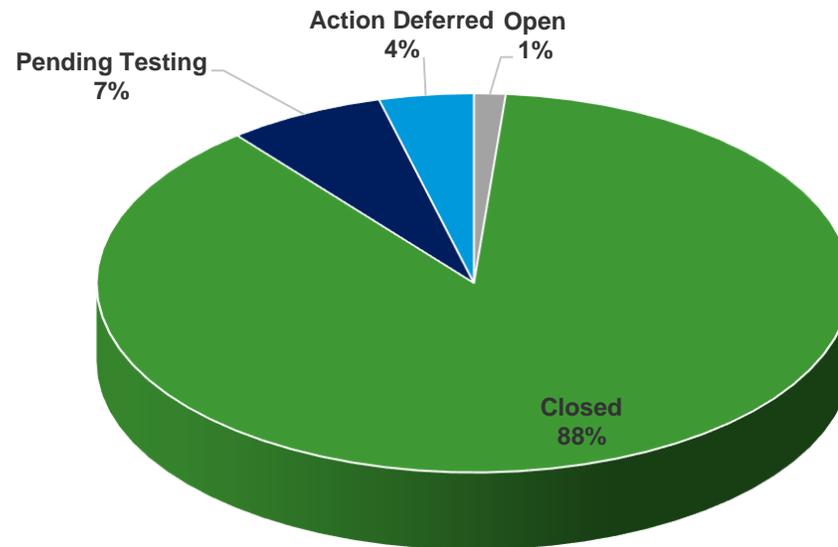
This pie chart represents the status of the 82 prior audit findings that RSM US LLP inherited October 2015.



# Status Update on Prior Audit Findings (continued)

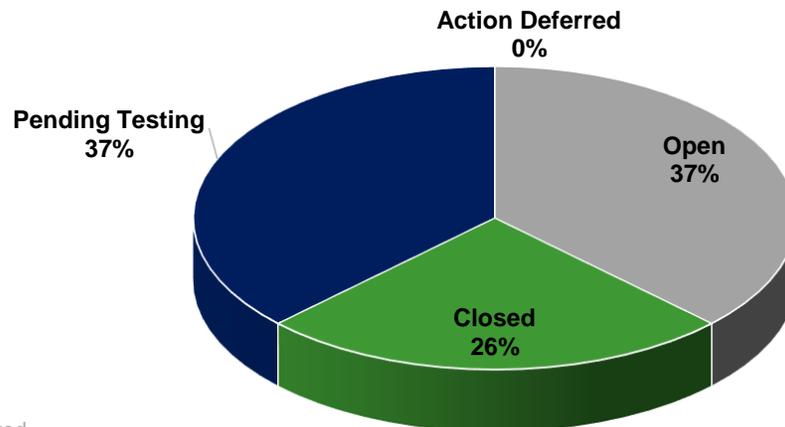
Audit Report/Subject	Report Issue Date	Corrective Actions				
		Total	Open	Closed	Pending Testing	Action Deferred*
<b>FY 2015 Audit Findings</b>						
Intellectual Property Program Assessment	01/08/2015	5	0	3	1	1
IT Policy and Procedure	01/21/2015	10	0	9	0	1
Timekeeping Audit	04/08/2015	4	0	4	0	0
Network Security Assessment	04/16/2015	26	1	25	0	0
Procurement – Pre-Award, Selection and Award	05/18/2015	2	0	2	0	0
SCADA / PCS Review	08/28/2015	21	0	18	2	1
IT Vendor Management	12/21/2015	6	0	4	2	0
	<b>Total</b>	<b>74</b>	<b>1</b>	<b>65</b>	<b>5</b>	<b>3</b>

\*All action deferred items are policies pending union approval.



# Status Update on Prior Audit Findings (continued)

Audit Report/Subject	Report Issue Date	Corrective Actions				
		Total	Open	Closed	Pending Testing	Action Deferred*
<b>FY 2016 Audit Findings</b>						
Overtime Audit and Analysis	01/21/2016	3	3	0	0	0
Contract Compliance and Monitoring Part I	04/28/2016	4	1	3	0	0
Contract Compliance and Monitoring Part II	07/28/2016	11	4	7	0	0
ROCIP Savings Analysis	07/28/2016	4	2	0	2	0
Training, Licensing & Certification	07/28/2016	7	1	2	4	0
Blue Horizon 2020 Strategic Plan Monitoring	11/18/2016	3	3	0	0	0
Incident Management and Response Review	11/18/2016	3	2	1	0	0
Engineering – Contractor Management Phase II	2/14/2017	4	0	0	4	0
Billing & Collection	2/14/2017	1	1	0	0	0
Business Development Plan	2/14/2017	10	1	0	9	0
Annual Budgeting and Planning	4/27/2017	1	1	0	0	0
	<b>Total</b>	<b>51</b>	<b>19</b>	<b>13</b>	<b>19</b>	<b>0</b>



# COTR Training Update

- Internal Audit presented to Audit Committee on 7/28/16 the findings from Contract Monitoring & Compliance Audit Part II.
- One of the high risk findings was a lack of COR/COTR training. Audit Committee requested a periodic update on the management action plan.

Authority-Wide Observations	Risk Rating
<b>1. COR/COTR Training</b>	<b>High</b>
<p>Management Action Plan: Department of Procurement will implement several steps to COR/COTR training and compliance monitoring:</p> <p><b><u>Phase I:</u></b> Procurement jointly with each COR/COTR for all active contracts will review and develop a contract compliance monitoring checklist for each of 160 active Goods and Services contracts. The items in the checklist will consist of key deliverables, milestones, key vendor performance, and key contractual obligations that should be actively monitored. Then COR/COTR will be responsible for monitoring the items in the checklist and submit a report to Procurement at the beginning of each quarter.</p> <p><b><u>Phase II:</u></b> Procurement along with the Office of Chief Operating Officer (OCCO), Learning and Development (L&amp;D), and Information Technologies (IT) will implement Vendor Performance Management Training programs for COR/COTR.</p> <p><b><u>Phase III:</u></b> Procurement will source and implement a Vendor Performance Management application (an added module to the eSourcing application that Procurement will source and implement in early FY2017) to automate the contract compliance and vendor performance monitoring and reporting.</p>	

# COTR Training Plan

<b>Phase I</b>	COTR Update for all active contracts. Implement initial COTR Vendor Report.	<ul style="list-style-type: none"> <li>Completed updating COTR list and issued new COTR Designation Letters for all 160 active contracts.</li> <li>100% complete on 1<sup>st</sup> COTR Vendor Report. Vendor Reports will be automated with the new application (reference phase III).</li> </ul>
<b>Phase II</b>	Provide COTR Training.	<ul style="list-style-type: none"> <li>COTR training has started and was held on 7/11/17 and 7/18/17 and more training are scheduled for 8/8/17 and 8/17/17 to complete the trainings of all COTRs.</li> </ul>
<b>Phase III</b>	Implement automated Vendor Performance Management and Reporting application.	<ul style="list-style-type: none"> <li>Selected vendor performance management application on 3/31/17.</li> <li>Implementation is in-progress with a target go-live in September 2017.</li> <li>Training COTRs in the use of the new application is planned for September and October 2017.</li> </ul>

# Issue Tracker Implementation

During this last quarter, we upgraded and implemented the DC Water Issue Tracker. Issue Tracker is a web-based tool for management to provide feedback on open internal audit findings, including requesting closure, extensions and providing supporting documentation.



Auditor Assistant | DC Water and Sewer Authority | Issue Tracking

Dashboard | Open Issues | Closed Issues | All Issues

Follow-up Auditor: [Dropdown] Responsible Manager: [Dropdown] Status: [Dropdown]

**Coming Due Issues ( Less than 30 Days )**

Subject	Target Date	Rating	Responsible Manager	Follow-up Auditor	Project Name
0299. Work order documentation is not complete and accurate	03ho 31-Jul-2017	Moderate	Anthony Mack	Chris Chomic	Work Order Management

**Coming Due Issues ( 30 - 89 Days )**

Subject	Target Date	Rating	Responsible Manager	Follow-up Auditor	Project Name
0075. Monitoring Progress and Completion of Strategic Plan	KJoh 30-Sep-2017	Moderate	Sarah Neiderer	Kelly Johnson	Blue Horizons 2020 - Strategic Plan Monitoring
0076. Committee and Board Reporting	KJoh 30-Sep-2017	Moderate	Sarah Neiderer	Kelly Johnson	Blue Horizons 2020 - Strategic Plan Monitoring
0077. Goal Champion and Implementation Champion Assignments	KJoh 20-Sep-2017	Low	Sarah Neiderer	Kelly Johnson	Blue Horizons 2020 - Strategic Plan Monitoring
0290. Business Development Plan M/WBE Participation Updates	KJoh 30-Sep-2017	Low	John Bosley	Ethan Bickford	Business Development Plan Audit
0297. Trade Foreman reviews and approves the work order for accuracy and completion	03ho 30-Sep-2017	High	Anthony Mack	Chris Chomic	Work Order Management

Status Update Request | History

5

3

New Status Request: \*  
Request Extension [Dropdown]

New Date Request: \*  
01-Nov-2016 [Calendar]

Request Explanation:  
Need more time

4

# AMR Implementation Progress Report

## Objectives

The purpose of this review is to gain an understanding of the business process transformation and evaluate the Automated Meter Reading (AMR) project implementation.

## Approach

In our approach we focused on obtaining an understanding of the AMR project through performing detailed walkthroughs with key members of Customer Service, Information Technology, M&S Parts Materials, including contracted personnel involved in the replacement and field operations of the project.

The audit scope is based on the objectives defined in the concurrently executed, two-phase approach below:

- Phase I: Project initiation and business process review
- Phase II: IT Design and implementation review

**This progress report is an update on the Phase I and Phase II of our AMR implementation review, which are occurring simultaneously.**

# AMR Implementation Progress Report: Accomplishments (as of July 10th, 2017)

- 9 of 11 functional areas are in “green” status, which means all goals and targets have been achieved and there are no outstanding deliverables due (reference slide 13)
  - The remaining 2 areas (Field Oversight and IT Support) are trending in the right direction and are expected to turn green before month end
- The installation vendor has surpassed contract production requirements as of 06/16/2017
- AMR readings are 96% for the program, which means the overall AMR is trending up
- Inside installations are now being scheduled accordingly (approximately 4,000 to complete)
- All costs are within the approved budget
- Forecasts and supplier coordination and disposal of legacy meters/MTUs is on-going
- Next round of ANC meetings are scheduled and outreach materials are being developed to address specific field issues
- Support of contracts is on-going with the Procurement Team

Total Completed	Remaining Work Orders
23,885	66,664

# AMR Implementation Progress Report: Background

## Oversight of the AMR Implementation

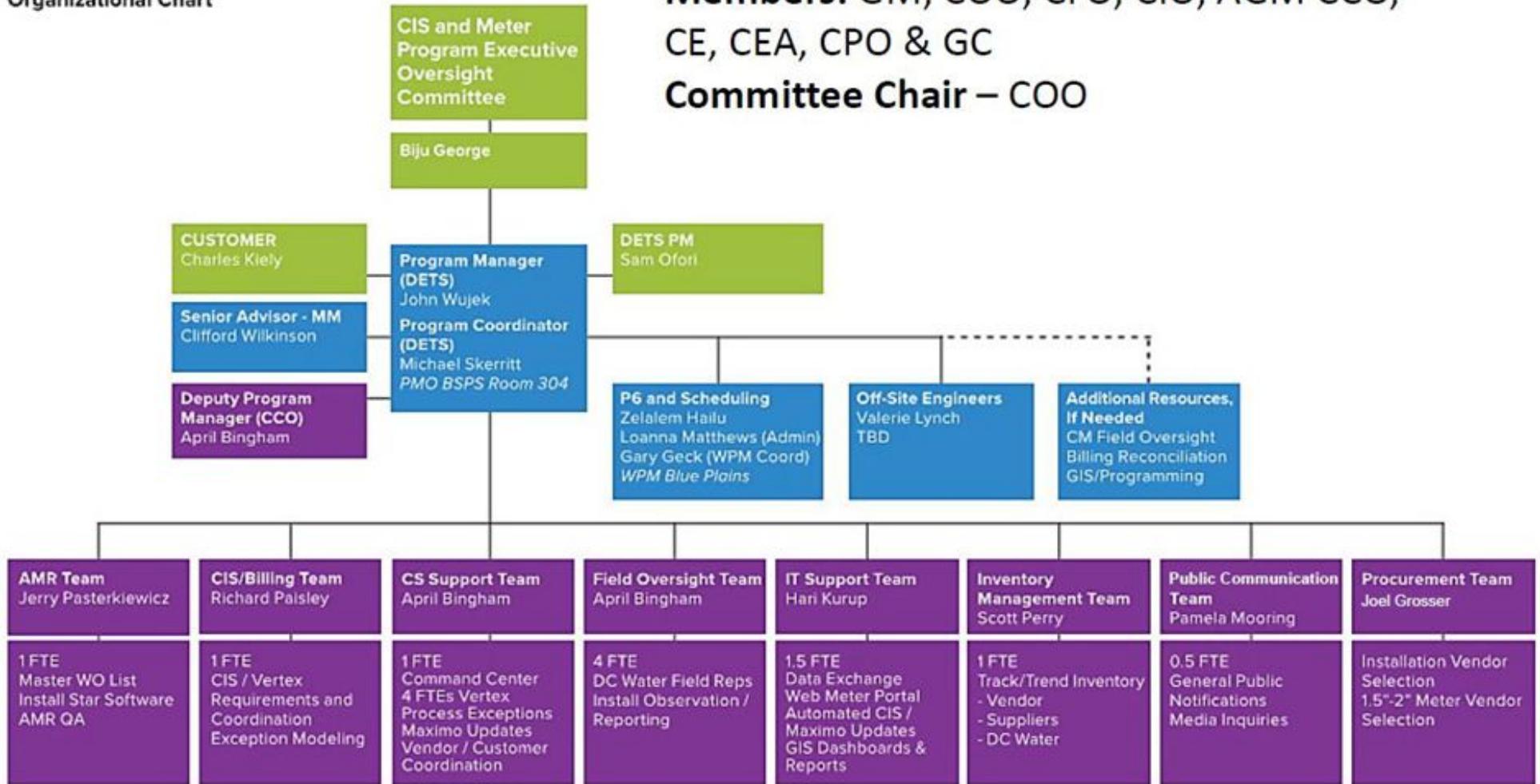
- In order to manage the replacement of over 85,000 meters and MTUs, DC Water established an Executive Oversight Committee and a Project Management Office (PMO).
- The PMO is comprised of individuals from various Departments throughout the Authority, including AMR, Customer Service Support, Field Oversight, CIS/Billing, IT, Inventory Management, Public Communications, and Procurement.

### Key Activities of PMO

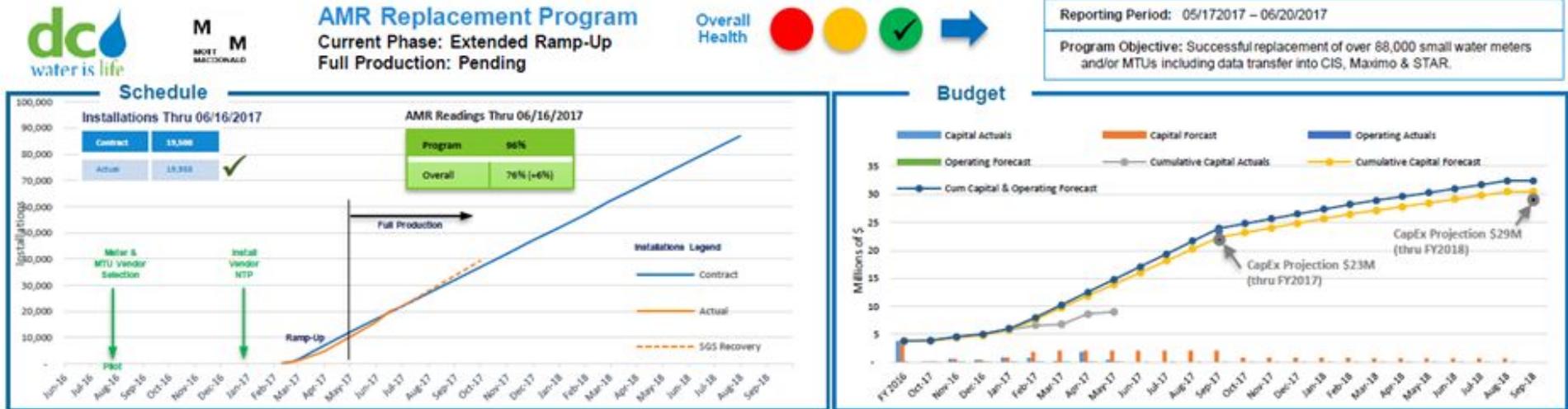
- Establish Team Charter to document roles and responsibilities, including a RACI chart
- Draft a project schedule, including identification of key performance indicators
- Develop a project risk register, which is reviewed monthly by the Executive Oversight Committee
- Hold weekly meetings with project team and with installation contractor to discuss the progress of the project, including tracking of planned and actual meter replacements

# AMR Implementation Progress Report: Background

## DC Water Meter Replacement Program Organizational Chart



# AMR Implementation Progress Report: PMO's Project Timeline



Area	Status	Key Status Items
Schedule	Green	• Last week, 23-28 crews and 1,434 completed • SGS to maintain increased number of crews • Plan to exceed FY 2017 contract production
Budget	Green	• Costs within Approved Budget • 06/19/2017 Projections - Spending Expected to Increase • Monthly CFO Report 06/12/2017 • Coordinating Purchases / Invoicing in FY2017
PMO	Green	• Weekly SGS progress meetings • Coordination with A2H PRV On-Going • Tripping Hazard ID Letter to DCORM 05/22/2017 – Mitigation of >2" Below Grade (900 of 2,405 completed) • LSR Notice Letter - Wards 2, 7 & 8 Mailed 06/01/2017 • Finalizing Proposed Contract Revisions (Operations & Data) • 7 Potential Risk Management Claims (0.035%) • Coordination with Project Triton On-Going • List of first 10k installations provided to CS for consumption review – Update Monthly
AMR Team	Green	• Data Validation (STAR / Maximo) and trending on-going • SGS Mitigating MTU Programming & Wiring Issues • Master File Updated – Additional Candidates (1,108)
Billing/CIS Team	Green	• Weekly Reporting of Exceptions • On-Going coordination with Vertex
CS Support Team	Green	• Coordination with DC Water & SGS Call Centers On-Going • Coordinating and tracking Customer Concerns / Inquiries (79)
Field Oversight Team	Amber	• Field & Photo QA on-going • SGS Resolving Backlog Photo Issue • Bi-Weekly tailboard meetings On-Going • Workshops with FO staff On-Going • Finalizing FO Guidelines • New & Legacy Meter Testing On-Going (2%) • Utilizing ProField for PERs and Data • UAT for Inside Install 06/20/2017 • Adding to FO (2 DETS Techs) • Analysis Inoperable Valves (300)
Inventory Management Team	Green	• Forecasts and Supplier Coordination On-Going – Accelerating Purchases in FY 2017 • Disposing Legacy Meters / MTUs On-going
IT Support Team	Amber	• Interactive Webpage Refined • Waiting on SGS to finalizes remaining data exchange files/testing • Coordinating with Internal Audit - Review of IT Systems / Interfaces with CIS
Public Communications Team	Green	• Next Round of ANC Meetings Being Schedule (Wards 2, 3, 7 & 8) • Webpage Updates On-Going • Meter Access Outreach Plan Being Developed
Procurement Team	Green	• Support of Contracts On-Going • MTU Disposal Agreement being finalized • Meetings with SGS to discuss non-base scope items and Contract Revisions



# Phase I: Objectives and Approach

## **Phase 1: Project initiation and business process review**

- Evaluate the meter program implementation plan and meter installation process, including the monitoring and reporting on the status of the implementation;
- Assess the inventory management process and controls implemented by the installation vendor, including:
  - Compliance with the contract requirements;
  - Confirm installation vendor is performing physical inventory counts to verify inventory balances and validate bi-weekly reports provided by the installer of inventory balances;
  - Confirm security of warehouse in which inventory is stored;
  - Confirm that meters are installed in the correct locations and that meters are tested appropriately;
- Assess the meter disposal process and controls, including:
  - Physical security of the meters and hazardous materials;
  - Determine compliance with DC Water’s Disposal of Scrap and Excess Property Policy;
- Review billing adjustments for customers with new meters (if applicable); and
- Provide timely recommendations regarding overall project risk management.

# Phase I: Billing Adjustment Process

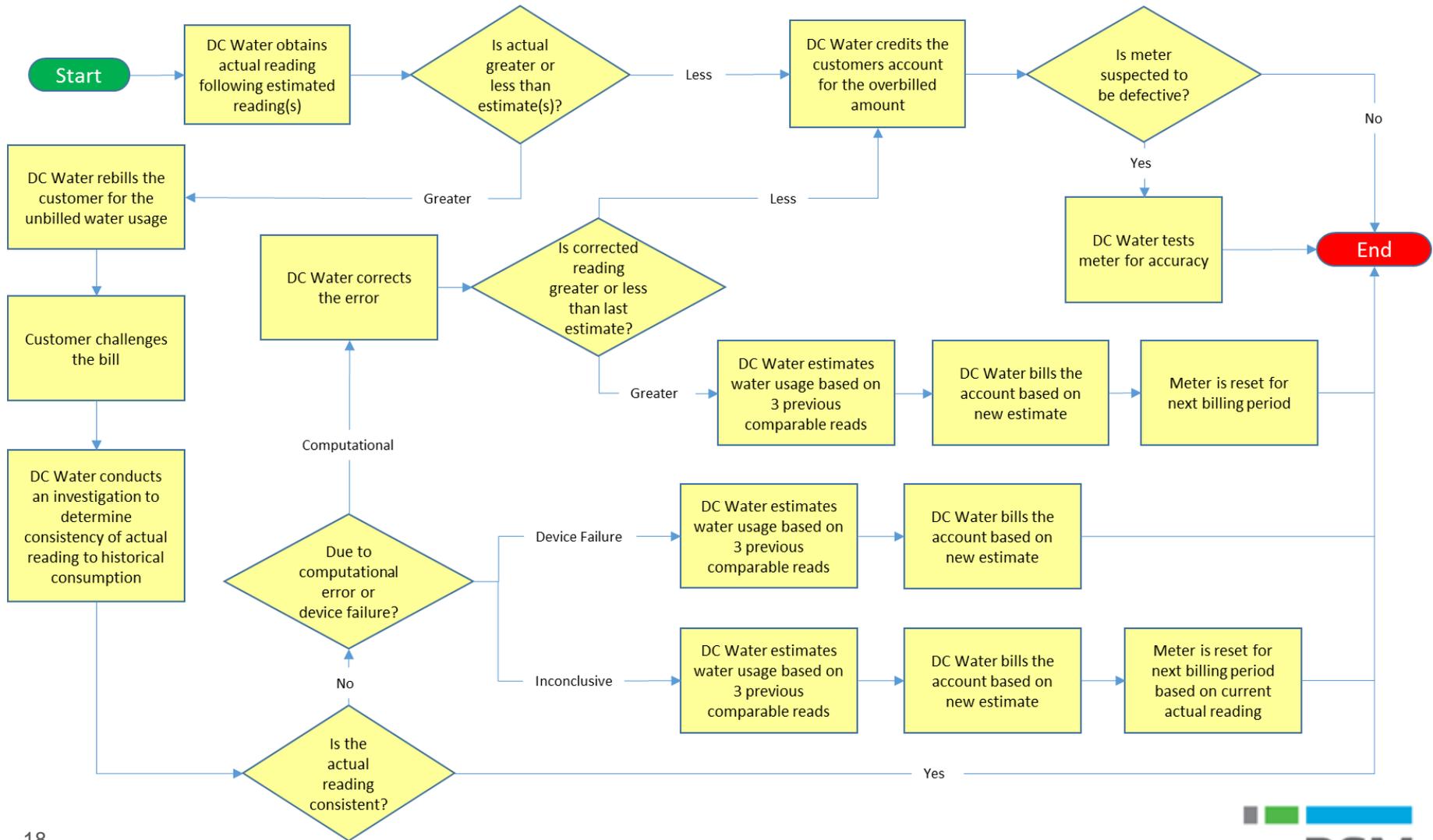
Billing adjustments may be required as part of the AMR implementation due to use of estimated bills:

- If DC Water obtains an actual meter reading after having estimated water usage, and that reading shows that DC Water overestimated the previous water usage, then the customer receives a credit. See DC Official Code §34-2202.03(12).
- However, if the actual meter reading shows that DC Water underestimated the water usage for 3 or more consecutive billing periods (26-34 days per billing period), and DC Water rebills the customer for the unbilled water usage, the customer may challenge the bill. When these bills have been challenged, DC Water reviews the bill and affirms the validity of the bill.

As of July 7, 2017, there have been 92 customer inquiries regarding the AMR implementation, that may or may not have resulted in a billing adjustment. Management is in process of developing a report to identify the quantity of billing adjustments that have occurred based on the AMR implementation.

The following slide provides a high-level overview of the billing adjustment process, regardless if the billing adjustment is related to the meter replacement program.

# Phase I: Billing Adjustment Process (continued)



# Phase I: Meter Disposal Process Review

Disposal of meters and MTUs in accordance with the approved process is key to safeguarding the Authority from misappropriation of assets removed from service due to installation of new equipment. The following are key requirements of the parties involved with meter replacement.

## Key Requirements

SGS, installation vendor, is required to send an inventory report to the P&M Manager on a bi-weekly basis. The PMO Manager is required to review this report for accuracy.

DMDC, disposal vendor, is required to send a monthly activity statement with the value of scrap and overall weight re-claimed.

The P&M Manager is required to provide a report of meter installations to team leaders on a monthly basis.

The P&M Manager is required to perform a monthly reconciliation of meter disposals, utilizing outbound meter reports from SGS and inbound meter reports from DMDC.

The PMO Manager is required to provide a monthly inventory report to the CFO.

***Internal Audit is in the process of assessing and testing the meter disposal process***

# Phase II: Objectives and Approach

## Phase 2: IT Design and implementation review

- **Project Governance & SDLC Adoption:** Assess the appropriateness of the SDLC (System Development Life Cycle) framework and key project documents (i.e., project timeline, project plan, project approvals, etc.).
- **Business Process Enablement Review:** Evaluate the design and operating effectiveness of future state business processes, proposed business requirements, technical requirements traceability, and automated controls that support the automated meter reading and customer billing processes.
- **Data Integrity & Migration Review:** Review the data migration strategy, contingencies, test plans, cutover, validation results and proposed data interfaces designed to transfer data between automated meter readers and the CIS applications.
- **Information Protection & Security Review:** Identify and assess the security risks involved with the AMR implementation by reviewing the business & technical requirements, security model, application roles, and the underlying security permissions. Additionally, we will review management's ability to identify segregation of duties conflicts and design / rely upon compensating controls.
- **Infrastructure Operations Review:** Examine the IT general controls that govern the underlying AMR technology, including the critical database(s) and operating system(s) that support the implementation, including but not limited to the security requirements and system configurations.
- **Third Party Management Review:** Identify risks related to the use and oversight of third party providers, including a review of the associated vendors, including SmartGrid Solutions regarding vendor management processes and underlying control considerations.

# Phase II: Program Implementation Consideration

## Element

## Description

 <p>Oversight</p>	<p>A structure through which an organization directs, manages and reports its security management activities. It encompasses clearly defined roles and responsibilities, decision rights, the risk governance operating model, and reporting lines. Further, allows for conscious decision to use risk management to enable the achievement of business plans, goals and strategic objectives. It includes a risk appetite statement supported by risk tolerances, limits and associated breach protocols to control risk levels throughout the organization.</p>
 <p>People</p>	<p>Values and behaviors present throughout an organization that shape security decisions. A security aware culture influences the decisions of management and employees, even if they are not consciously weighing risks and benefits. A strong security culture helps to encourage strategic decisions that are in the long-term best interest of the organization, its shareholders and employees.</p>
 <p>Process</p>	<p>The activities in place that allow an organization to identify, assess and quantify known and emerging security risks. The risk assessment and measurement processes allow organizations to consider the extent to which potential events may have an impact on achievement of objectives. It encompasses qualitative and quantitative approaches, processes, tools and systems that organizations develop and implement to identify, assess, and measure security risks.</p>
 <p>Technology</p>	<p>Management of risk data that can be translated into meaningful risk information for stakeholders. It includes the development and deployment of risk management tools, software, databases, technology architecture, and systems that support risk management activities.</p>

# Phase II: Program Implementation Scorecard

Project Name		AMR Implementation		As of Date	Project Health
				7/8/17	
Oversight Element	Evaluation Criteria	Health Rating	Observation		
Oversight 	Project Governance		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
	Business Process		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
Process 	Third Party Management		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
	Data Interfaces & Migration		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
Technology 	Information Protection & Application Security		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
	Infrastructure Operations		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		



# AMR Implementation Progress Report (continued)

Internal Audit will continue to monitor the progress of the AMR project by performing the following actions:

- Complete the Phase I of our objectives and approach, including:
  - Complete meter disposal testing
  - Review billing adjustment trends based on reporting provided by management
  
- Complete Phase II of our objectives and approach, including:
  - Evaluate the processes and controls around operations (e.g. billing)
  - Evaluate the impact of AMR and CIS Implementation

# Intermunicipal Agreement

The purpose of the Intermunicipal Agreement (IMA) review was to obtain an understanding of how the IMA billing process is initiated and completed at DC Water. The audit scope was based on the following objectives:

- Review and assess DC Water's billing process surrounding the IMA to identify risks, controls, and process improvements.
- Review the accuracy of DC Water's classification of capital contracts as IMA or non-IMA.
- Assess the adequacy of DC Water's review of IMA related bills generated for the quarter.
- Evaluate individual jurisdictions' audit results of DC Water for control gaps and process improvement opportunities.
- Review operating settlement bill adjustments including historical data and trends, and the approval process for adjustments, if applicable.
- Evaluate segregation of duties within the process.
- Determine and evaluate if records and documentation are sufficient to establish an audit trail for all transactions involving receipt of payment.

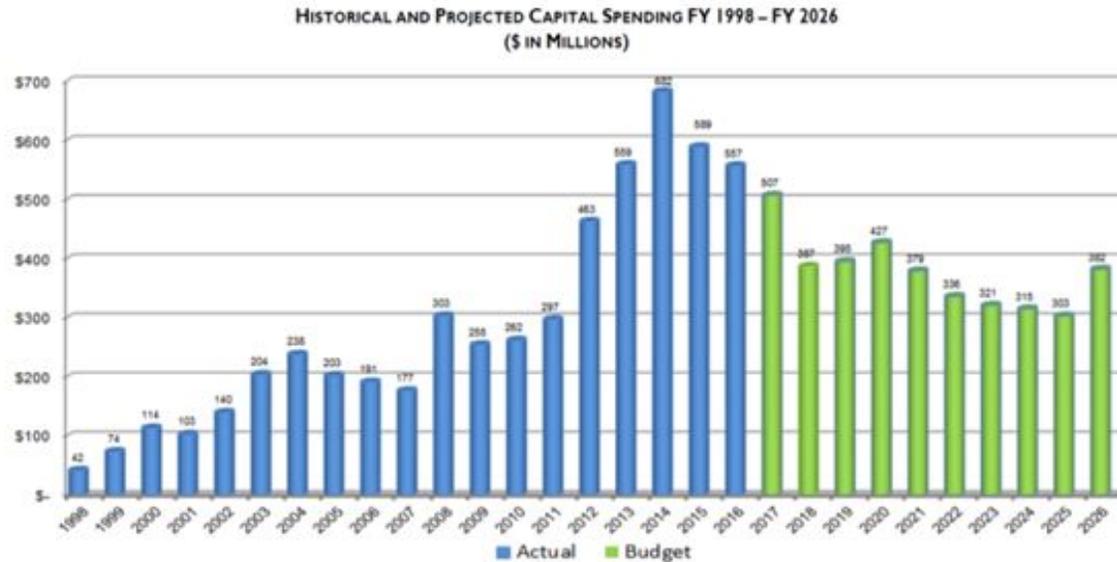
# Intermunicipal Agreement (Capital billing)

Capital expenditures in FY16 totaled \$557 million, of which \$133.3 million was allocated to other jurisdictions under the IMA agreement. Due to most capital projects spanning several years and phases, various contracts may be encompassed under one project. Internal Audit reviewed 8 out of 14 contracts executed in FY16 to determine whether they were correctly classified as IMA cost-split eligible or not. No exceptions were noted.

Internal Audit reviewed a sample of capital bills sent to jurisdictions for IMA-related costs, as well as invoices related to actual capital expenditures incurred and cash receipts. No exceptions were noted.

Internal Audit reviewed the Authority’s review process for capital cost accumulation and billing, including quarterly capital bills’ true-up of estimates to actuals. No exceptions were noted.

Internal Audit notes that capital spend has increased steadily throughout the past decade, reaching a peak of \$682 million in FY13. Capital spend is projected to decrease throughout the next decade however, as illustrated in the following graph:



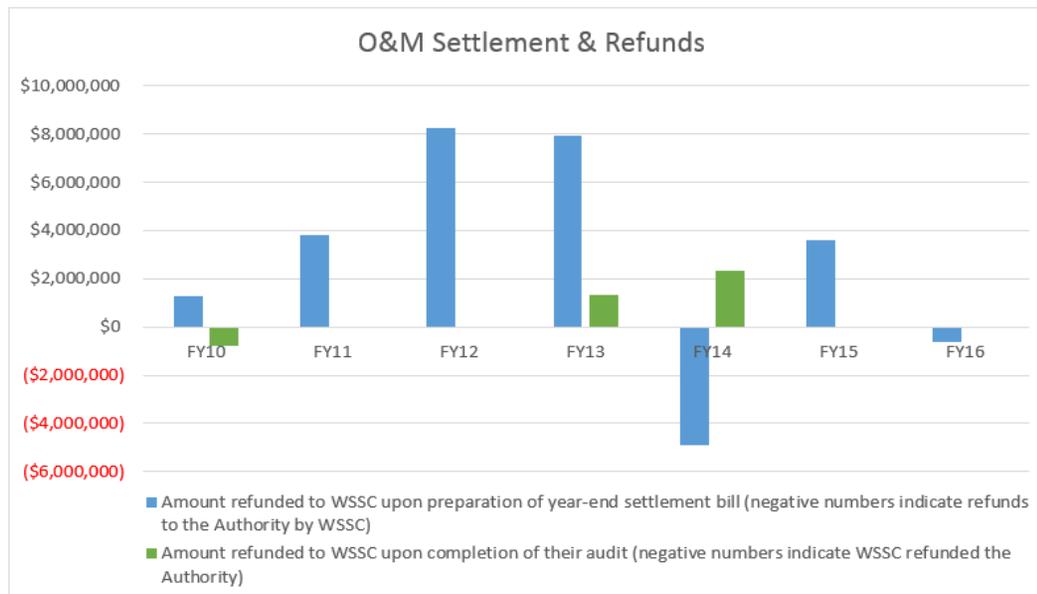
# Intermunicipal Agreement (Operating billing)

Operating expenditures in FY16 totaled \$322.4 million, of which \$73.8 million was allocated to other jurisdictions under the IMA agreement. Internal Audit noted no control gaps in the estimation and year-end settlement process of cost-split eligible operating and maintenance charges under the IMA agreement.

Internal Audit reviewed DC Water’s controls over refunds claimed by the Washington Suburban Sanitary Commission (WSSC) upon completion of their audit of the operating settlement bill, No exceptions were noted.

Internal Audit notes that the most recent audit conducted by WSSC was of FY14 operating and maintenance charges. WSSC is currently in the planning phase of auditing FY15 and FY16 operating and maintenance charges.

Internal Audit notes the trend in year-end operating and maintenance settlement charges and reimbursements to WSSC in the graph below:



# Contract Monitoring & Compliance Part I

The scope of the Contract Monitoring and Compliance Part I Internal Audit included the following:

- Determine contractor compliance with specific contract terms and provisions, as applicable;
- Identify the monitoring controls and evaluation process in place for these contracts, including follow-up of remediation of underperformance;
- Review invoice and change order approval processes, and
- Identify process improvement opportunities and recommend internal control enhancements to improve the contractor management process.

Internal Audit selected a sample of three contracts from various departments to evaluate contract monitoring and compliance. Part I of the Contract Monitoring & Compliance Audit contains two of the contracts selected by Internal Audit. Part II of this audit will contain the remaining contract. The Authority enters into many contracts each year, as illustrated by the contractual services expenditures in the following table:

<b>Contractual Services Operating Expenditures<sup>1</sup></b>	
<b>FY 2014 Actual</b>	\$68,172,000
<b>FY 2015 Actual</b>	\$66,241,000
<b>FY 2016 Actual</b>	\$74,086,000
<b>FY 2017 Approved</b>	\$82,760,000
<b>FY 2018 Approved</b>	\$79,354,000

<sup>1</sup>Source: DC Water Approved FY 2018 Operating Budget;  
FY 2016 Consolidated Annual Financial Report

# Contract Monitoring & Compliance Part I (continued)

## ***Contract # 15-PR-DWT-02: Department of Wastewater Treatment, Industrial Cleaning Services***

Charmay, Inc. dba ServiceMaster of Alexandria (ServiceMaster) was awarded the contract to perform industrial cleaning services for DC Water. The industrial cleaning services include power washing; cleaning of doors, windows, and piping; removing debris, dirt, scum, grease, solids, trash, and other cleaning services at the DC Water’s Blue Plains Advanced Wastewater Treatment Plant.

Contract Overview	
<b>Contractor</b>	Charmay, Inc. dba ServiceMaster of Alexandria
<b>Award Date</b>	October 19, 2015
<b>Original Contract Period</b>	October 19, 2015 – October 18, 2016
<b>Contract Award</b>	\$595,039.38
<b>Type of Contract</b>	Firm fixed price, four (4) one (1) year option periods
<b>COR/COTR</b>	Specialist, Wastewater Treatment OS

During the base year, DC Water had a contract modification that added the Primary Screening and Grit Conveyance Building No.1 (West) and Primary Screening and Grit Conveyance Building No.2 (East) to the scope of the contract. There are currently 54 locations covered in the scope of the contract, for which ServiceMaster are required to clean.

# Contract Monitoring & Compliance Part I (continued)

Observations	Risk Rating
<b>1. Invoice Review Process</b>	Moderate
<p><b>Management Action Plan:</b> The COTR will not approve invoices that do not contain full support for the total amount billed. If insufficient support is received, the COTR will reach out to ServiceMaster in order to obtain full details. If this causes payment to be made after the 30 day requirement, the issue will be documented by the COTR.</p>	
<b>2. Contract Requirements</b>	Low
<p><b>Management Action Plan:</b> The Department of Wastewater Treatment, along with Procurement, will write a revision to the contract. The revised contract language will include what is required to be documented in the work plan, such as the area to be cleaned, materials to be used, expected cost of the task, personnel working on the task, etc.</p>	
<b>3. Weekly Inspections</b>	Low
<p><b>Management Action Plan:</b> The Department of Wastewater Treatment, along with Procurement will write a revision to the contract to better reflect the reporting process between ServiceMaster and DC Water. The language will state that reports are only required for Schedule B and C cleaning tasks.</p>	

We are satisfied with management’s responses and planned actions, and will perform follow-up on the observations in the course of routine follow-up procedures.

# Contract Monitoring & Compliance Part I (continued)

## **Contract # 14-PR-OGC-01-AF: Office of the General Counsel, Environmental Law**

Beveridge & Diamond, P.C. provides outside counsel for environmental legal services upon request to DC Water. McGuireWoods LLP was also awarded a contract (Contract #14-PR-OGC-01-AF) through the same RFP for environmental legal services, and the contract award amount illustrated below represents the total combined contract value for the two firms for the contract base period. However, only the Beveridge & Diamond contract is in scope for this contract compliance audit.

Contract Overview	
<b>Contractor</b>	Beveridge & Diamond, P.C.
<b>Award Date</b>	July 1, 2015
<b>Original Contract Period</b>	July 1, 2015 – June 30, 2018
<b>Contract Award</b>	\$4,500,000 (\$1,500,000 per year per Contractor)
<b>Type of Contract</b>	Legal Services Agreement – fee for service
<b>COR/COTR</b>	Deputy General Counsel

There have been two contract modifications during the life of this contract. The first occurred on April 7, 2016 for additional funding of \$1,544,000. The second modification occurred July 1, 2016 for additional funding of \$1,000,000. Both contract modifications were approved by DC Water’s Board of Directors.

During FY 2015 and FY 2016, actual OGC contractual services expenditures exceeded the approved OGC contractual services budget by 34% and 89% respectively. See table below for OGC contractual services budget and expenditures over five fiscal years.

Office of the General Counsel Budget Requests <sup>1</sup>		
Fiscal Year	Approved Contractual Services Budget	Actual Contractual Services Expenditure
<b>FY 2014</b>	\$5,477,000	\$3,566,000
<b>FY 2015</b>	\$4,078,000	\$5,456,000
<b>FY 2016</b>	\$3,776,000	\$7,123,000
<b>FY 2017</b>	\$3,779,000	N/A – fiscal year ongoing
<b>FY 2018</b>	\$5,236,000	N/A – fiscal year not started

<sup>1</sup>Source: DC Water Approved Operating Budgets

# Contract Monitoring & Compliance Part I (continued)

Observations	Risk Rating
1. Access to Information Regarding Ongoing Cases	High
<p><b>Management Action Plan:</b> OGC will direct legal service providers to send a statement of the charges to Accounts Payable and to send the actual invoice to the managing attorney. One of the firms that represents DC Water in employment matters has already been following this process. OGC anticipates all firms will comply with this direction. Management will coordinate with AP to restrict access to prior invoices.</p>	
2. Invoicing and Payments	Moderate
<p><b>Management Action Plan:</b> OGC date stamps all correspondence received from outside of the office. There should be no discrepancies regarding the date any correspondence is received going forward. OGC will also explore the possibilities of using an e- invoicing portal. OGC will work with the Budget team to formulate a budget forecasting process that takes into account the unpredictable nature of outside counsel expenses and evaluate progress in implementing liability prevention practices to reduce litigation costs.</p>	

We are satisfied with management’s responses and planned actions, and will perform follow-up on the observations in the course of routine follow-up procedures.

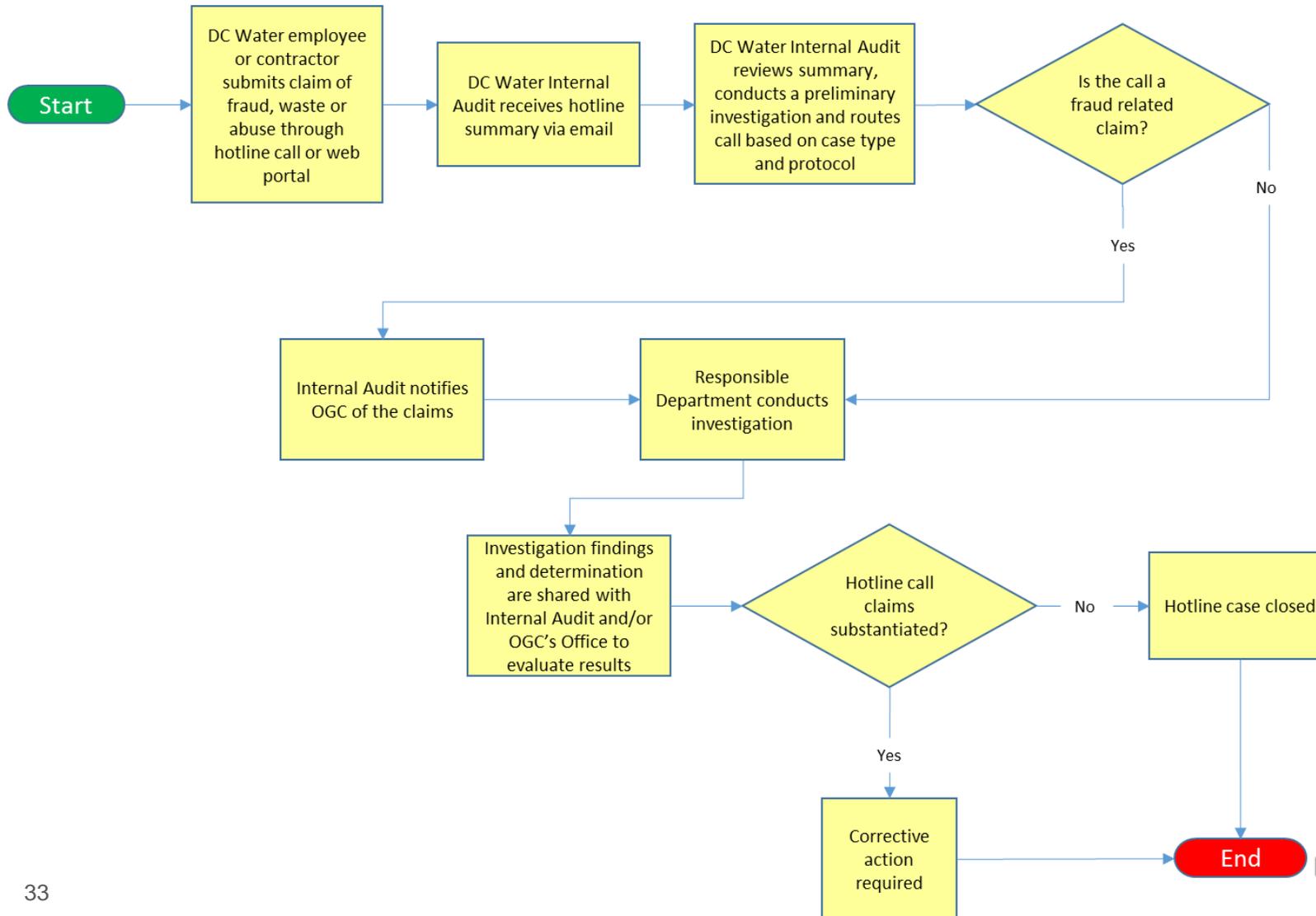
# Hotline Update

Last Audit Committee meeting we reported that 11 cases were open. Since the April 2017 Audit Committee meeting:

Hotline Calls	
Calls Received	8
Fraud Claims	3
Other	5
Cases Closed	12
Cases Currently Open	7

Additionally, in coordination with the Office of the General Counsel, we finalized our Fraud, Waste and Abuse Standard Operating Procedures. These procedures provide internal guidance for responding to complaints reported to the hotline.

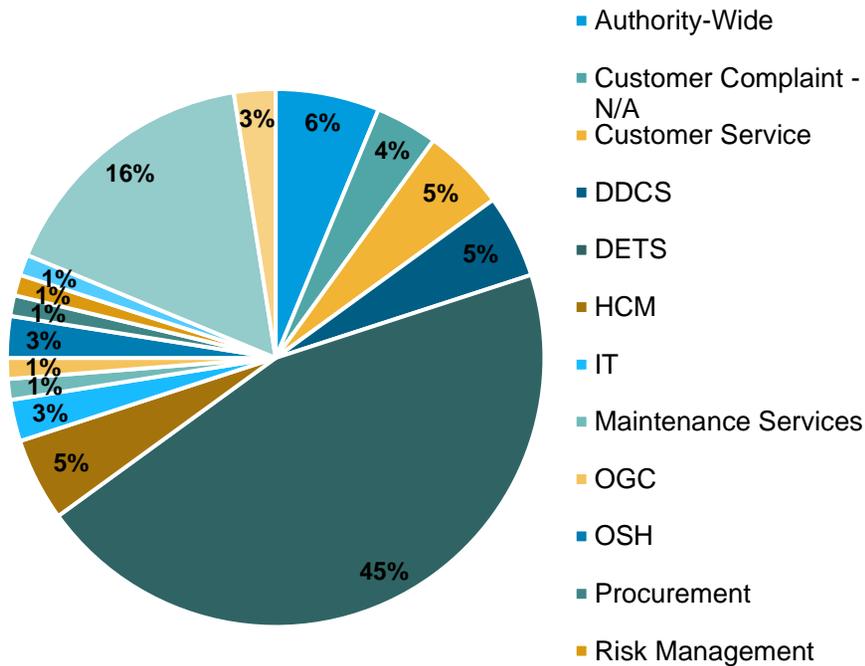
# Hotline Update (continued)



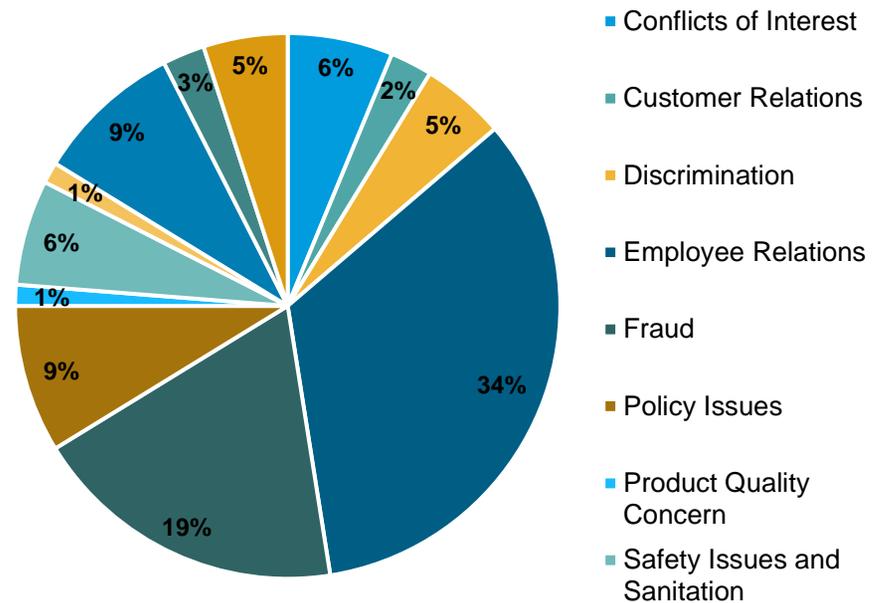
# Hotline Call Analysis

We conducted an analysis of the 80 hotline calls that have been received from FY 2015 – FY 2017, year-to-date, to determine if there are any trends, evaluate the quantity of calls that were substantiated, and other matrices. The following tables represent the breakdown of calls by Department and case type.

**Calls by Department**

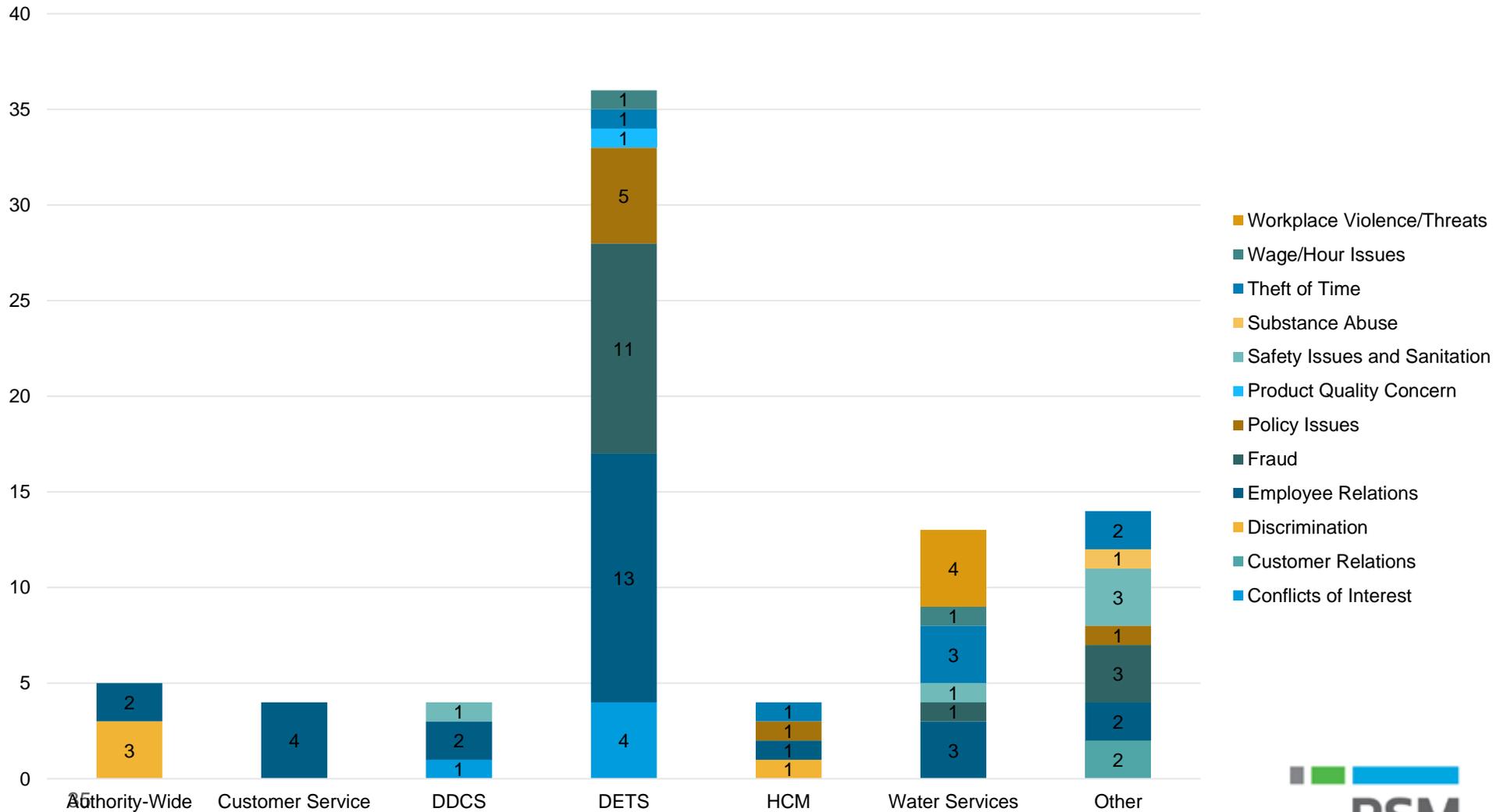


**Calls by Case Type**



# Hotline Call Analysis (continued)

Hotline Calls by Call Type and Department



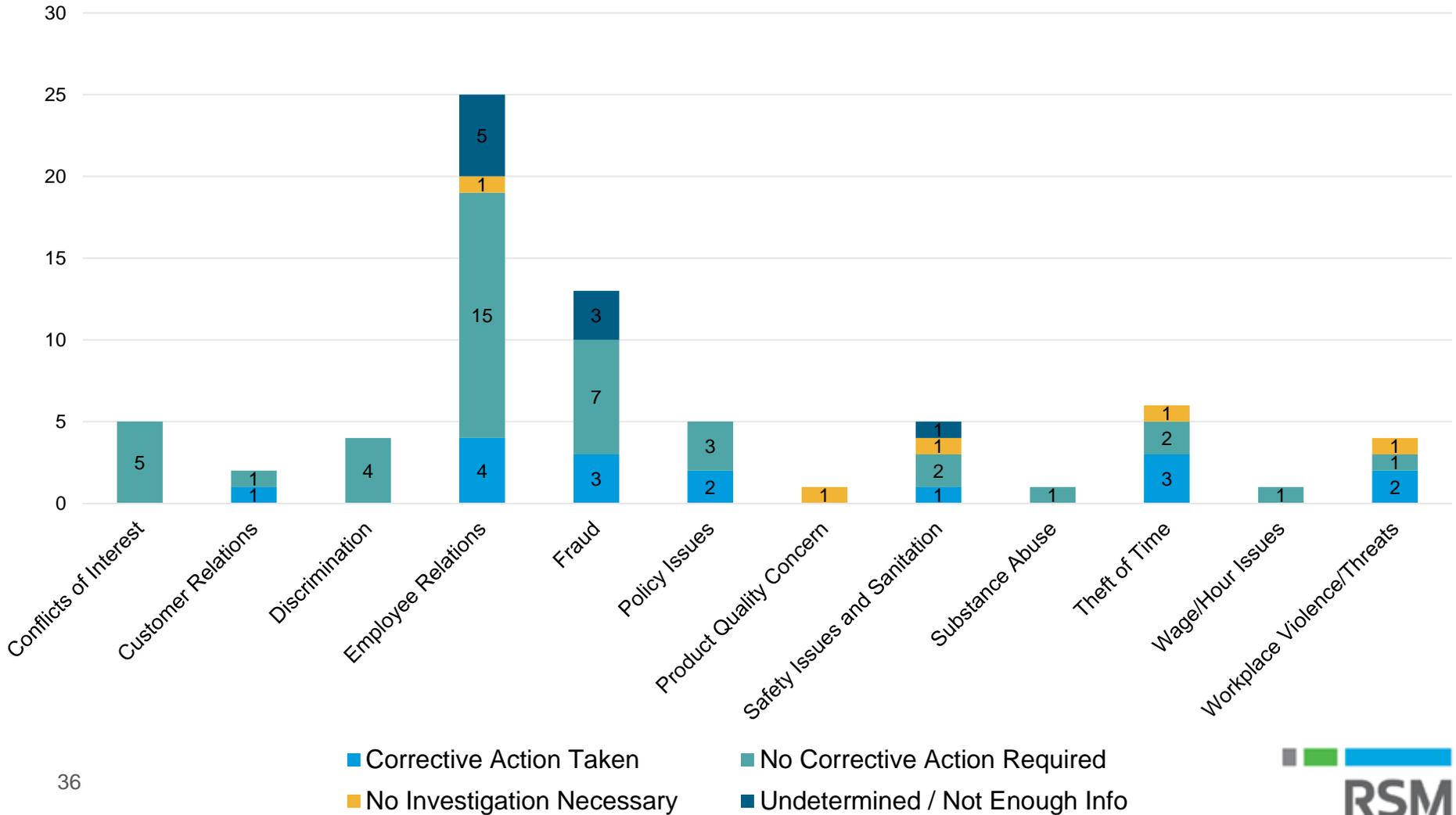
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Results as of July 14, 2017



# Hotline Call Analysis (continued)

Hotline Calls by Call Type and Outcome



36

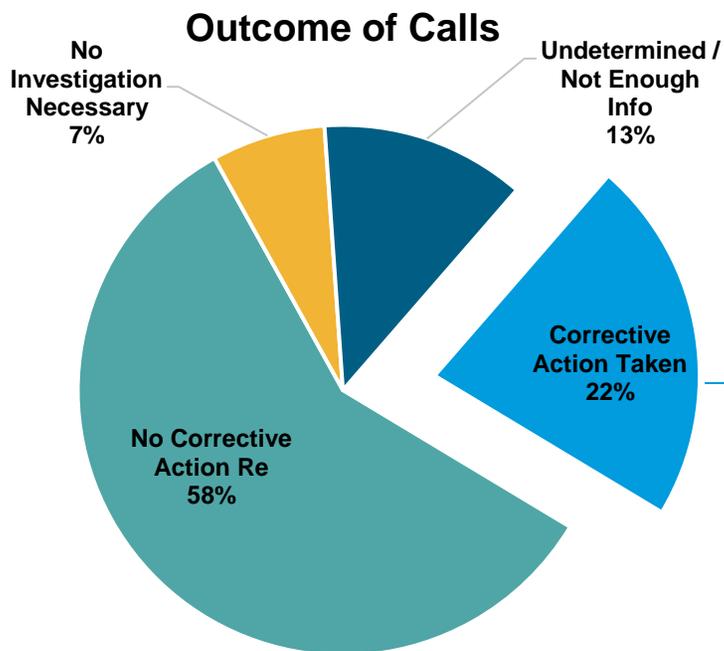
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Results as of July 14, 2017



# Hotline Call Analysis (continued)

The following tables represent the breakdown of hotline calls that were substantiated and required corrective action. Of the 72 cases closed, 22% or 16 calls resulted in corrective action.



Case Type	# of Calls
Customer Relations	1
Employee Relations	4
Fraud	3
Policy Issues	2
Safety Issues and Sanitation	1
Theft of Time	3
Workplace Violence/Threats	2
<b>Total</b>	<b>16</b>

Department	# of Calls
Customer Complaint - N/A	1
DDCS	2
DETS	5
HCM	1
IT	1
Maintenance Services	1
OSH	2
Water Services	3
<b>Total</b>	<b>16</b>

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 <b>DC Water &amp; Sewer Authority</b> Proposed Internal Audit Plan WORKING DRAFT - as of July 2017							
<b>Legend</b>							
X	Required Internal Audit Activity						
X	Proposed Future Audit						
X	Audit In Progress						
X	Audit Issued						
X	Follow Up In Progress						
X	Audit Closed						
	<b>Audit Universe</b>	<b>Last Audit</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Proposed 2017</b>	<b>Preliminary 2018</b>
<b>Overall Internal Audit Management</b>							
	Risk Assessment for Audit Plan Development			X			
	Update Risk Assessment and Audit Plan Development				X	X	X
	Quality Control - Board Meetings, Status Reporting		X	X	X	X	X
	Hotline Management		X	X	X	X	X
<b>Follow-up and Cycle Audits</b>							
	Open Action Items - Remediation and Follow-up Procedures			X	X	X	X
	Blue Horizons - Strategic Plan Monitoring				X		X
	Contract Monitoring & Compliance Reviews	2014	X		X	X	X
<b>Audits by Department and/or Division</b>							
<b>Office of the General Manager</b>							
	Entity-Level Assessment					X	
	Intellectual Property	2015		X			
	Organization Policies & Procedures	2010					
<b>Blue Plains (Wastewater Treatment)</b>							
<b>Maintenance Services</b>							
	Maintenance Services - Operations	2012					
	Maintenance Services - Work Order Management					X	
<b>Wastewater Treatment - Operations</b>							
	Chemical Purchasing	2013					
	Process Control System (PCS)	2013		X			
<b>Chief Procurement Office</b>							
<b>Procurement</b>							
	Materials Management - Disposal of Assets	2014	X				
	Materials Management - Operations and Inventory	2014	X			X	
	Procurement Operations	2010					
	Business Development Plan				X		
	Procurement Pre-Award Selection Process	2015		X			
	Purchasing Cards (P-Card Program)	2013				X	
<b>Customer Services</b>							
<b>Customer Services</b>							
	Automatic Meter Reading (AMR) Implementation (Integrated with MTU)					X	
	Customer Billing & Collections	2011			X		
	Retail Rates Pre- and Post-Implementation Monitoring	2016		X	X		
<b>Distribution and Conveyance Systems</b>							
	Integrated Work Order Management (Sewer Services & Water Services)						X
<b>Emergency Management</b>							
	Emergency Management - Mitigation & Response	2014	X				
	Emergency Management - Recovery	2014	X				
	Vulnerability Assessment						X
<b>Sewer Services</b>							
	Integrated Work Order Management (Sewer Services & Water Services)	2014	X				X
	Sewer Services - Construction & Repair	2013					
	Sewer Services - Emergency Maintenance	2013					
<b>Utility Services - Drinking Water</b>							
	Integrated Work Order Management (Sewer Services & Water Services)						X
	Pumping & Storage Water Leakage Review	2011					
	Utility Services - Water Distribution	2013					
	Utility Services - Water Maintenance	2013					
<b>Human Capital Management and Labor Relations</b>							
<b>Human Capital Management</b>							
	Employee Benefit Plans	2014	X				
	Employee Recruitment and On-Boarding						X
	Human Capital Management - Operations	2011					
	Training, Certification and Licensing				X		
<b>Support Services</b>							
<b>Fleet</b>							
	Fleet - Operations	2013					
	Fleet - Accident and Incident Reporting					X	
<b>Occupational Safety and Health</b>							
	OSHA	2014	X				
	Safety Programs, Training & Compliance	2010					X
<b>Department of Engineering &amp; Technical Services</b>							
<b>Long-Term Control Plan</b>							
	Clean Rivers Project Management	2014	X				
	Clean Rivers - Vendor / Contractor Monitoring & Project Administration			X			
<b>Engineering and Technical Services</b>							
	Engineering - Vendor / Contractor Monitoring & Project Administration	2015		X			
	Engineering - Construction Management Phase II				X		
	Engineering - Construction Management Phase III	2013				X	
<b>Finance</b>							
<b>Financial Accounting and Reporting</b>							
	Payroll - General Operations	2012					
	Timekeeping	2015		X			
	Overtime				X		
<b>Budget, Planning and Analysis</b>							
	Annual Budgeting & Planning				X		
	Intermunicipal Agreement (IMA)					X	
<b>Treasury, Debt and Risk Management</b>							
	Affordability Programs						X
	Cash Receipts	2013					
	Investments and Cash Management	2013					
	Rolling Owner Controlled Insurance Program (ROCIIP)				X		
<b>Information Technology</b>							
<b>Governance: Planning and Organization:</b>							
	Information Technology - Remediation and Follow-Up			X	X	X	X
	Vendor Risk Management / Compliance and Monitoring (Shadow IT)	2015		X			
	Information Security Policy Review	2015		X			
	IT Risk Management & Compliance						X
	Incident Management & Response Review				X		
	Human Resource/Employee Privacy Review					X	
	Enterprise SDLC Review	2013					X
	Enterprise Project Governance Maturity Assessment	2012			X		
	Records Management						X
	Crisis Management / Business Continuity Program	2014	X				X
	Vulnerability Management Review					X	
<b>Technical &amp; Operations: Information Security and Application Support:</b>							
	Operational Applications ITGC - SCADA	2015		X			
	Network Penetration Testing (Corp/SCADA/Wifi)	2015		X			
	DB/OS Privileged User	2010					X
	Software and Asset Management	2014	X				
	Help Desk Operations	2012					
	Business & Operating Applications	2012					
	GIS System	2014	X				
	Internal Network & Telecommunications	2013				X	
	Platform Technical Audit (Windows/UNIX)						X
	Wifi Security Review						X
	Mobile Platform Assessment						X
	MTU Implementation Review (Integrated with AMR)					X	
<b>General Counsel</b>							
	Legal Operations - Case Management	2014	X				X
	Regulatory Compliance Monitoring	2013					
<b>Contingency and Requested Audits and Projects</b>							
	Financial System Pre-Implementation Review						X
	CIS Pre-Implementation Review					X	X

# DC WATER INTERNAL AUDIT

## Automatic Meter Reading (AMR) Implementation Review Progress Report



## INTERNAL AUDIT UPDATE

Audit Committee Meeting

July 27, 2017

# Agenda

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# Transmittal Letter

July 27, 2017

The Audit Committee of DC Water  
5000 Overlook Avenue, SW  
Washington, DC 20032

Pursuant to the approved 2017 internal audit plan for the District of Columbia Water and Sewer Authority (“DC Water” or the “Authority”), we hereby present the following progress report related to the Automatic Meter Reading (AMR) Implementation Review, including our review of the billing adjustment process, disposal process and evaluation of IT Design. Our report is organized in the following sections:

Accomplishments	This section provides an overview of the DC Water accomplishments with the AMR Implementation project to date.
Objectives and Approach	The objectives of our procedures and our approach to the execution of those procedures are expanded upon in this section.
Review & Results Snapshot	This section provides an overview of the on-going review and results of certain areas subjected to our procedures.

Our work has and continues to assist management with facilitation of this project. We did not, nor does DC Water desire us to, perform management functions, make management decisions, or otherwise perform in a capacity equivalent to that of an employee or officer of DC Water.

We would like to thank the staff and all those involved in assisting the Internal Auditors in connection with this review.

Respectfully Submitted,

**INTERNAL AUDITORS**

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# DC Water Accomplishments (as of July 10th, 2017)

- 9 of 11 functional areas are in “green” status, which means all goals and targets have been achieved and there are no outstanding deliverables due
  - The remaining 2 areas (Field Oversight and IT Support) are trending in the right direction and are expected to turn green before month end.
- The installation vendor has surpassed contract production requirements as of 06/16/2017
- AMR readings are 96% for the program, which means the overall AMR is trending up
- Inside installations are now being scheduled accordingly (approximately 4,000 to complete)
- All costs are within the approved budget
- Forecasts and supplier coordination and disposal of legacy meters/MTUs is on-going
- Next round of ANC meetings are scheduled and outreach materials are being developed to address specific field issues
- Support of contracts is on-going with the Procurement Team

Total Completed	Remaining Work Orders
23,885	66,664

# Objectives and Approach

## Objectives

The purpose of this review is to gain an understanding of the business process transformation and evaluate the Automated Meter Reading (AMR) project implementation.

## Approach

In our approach we focused on obtaining an understanding of the AMR project through performing detailed walkthroughs with key members of Customer Service, Information Technology, M&S Parts Materials, including contracted personnel involved in the replacement and field operations of the project.

The audit scope is based on the objectives defined in the concurrently executed, two-phase approach below:

- Phase I: Project initiation and business process review
- Phase II: IT Design and implementation review

**This progress report is an update on the Phase I and Phase II of our AMR implementation review, which are occurring simultaneously.**

# PHASE I UPDATE

# Phase I: Objectives and Approach

## **Phase 1: Project initiation and business process review**

- Evaluate the meter program implementation plan and meter installation process, including the monitoring and reporting on the status of the implementation;
- Assess the inventory management process and controls implemented by the installation vendor, including:
  - Compliance with the contract requirements;
  - Confirm installation vendor is performing physical inventory counts to verify inventory balances and validate bi-weekly reports provided by the installer of inventory balances;
  - Confirm security of warehouse in which inventory is stored;
  - Confirm that meters are installed in the correct locations and that meters are tested appropriately;
- Assess the meter disposal process and controls, including:
  - Physical security of the meters and hazardous materials;
  - Determine compliance with DC Water’s Disposal of Scrap and Excess Property Policy;
- Review billing adjustments for customers with new meters (if applicable); and
- Provide timely recommendations regarding overall project risk management.

# Phase I: Billing Adjustment Process

Billing adjustments may be required as part of the AMR implementation due to use of estimated bills:

- If DC Water obtains an actual meter reading after having estimated water usage, and that reading shows that DC Water overestimated the previous water usage, then the customer receives a credit. See DC Official Code §34-2202.03(12).
- However, if the actual meter reading shows that DC Water underestimated the water usage for 3 or more consecutive billing periods (26-34 days per billing period), and DC Water rebills the customer for the unbilled water usage, the customer may challenge the bill. When these bills have been challenged, DC Water reviews the bill and affirms the validity of the bill.

As of July 7, 2017, there have been 92 customer inquiries regarding the AMR implementation, that may or may not have resulted in a billing adjustment. Management is in process of developing a report to identify the quantity of billing adjustments that have occurred based on the AMR implementation.

The following two slides provides a high-level overview of the billing adjustment process, regardless if the billing adjustment is related to the meter replacement program.

# Phase I: Billing Adjustment Process (continued)

The following process is followed for any billing adjustment, regardless if the billing adjustment is related to the meter replacement program:

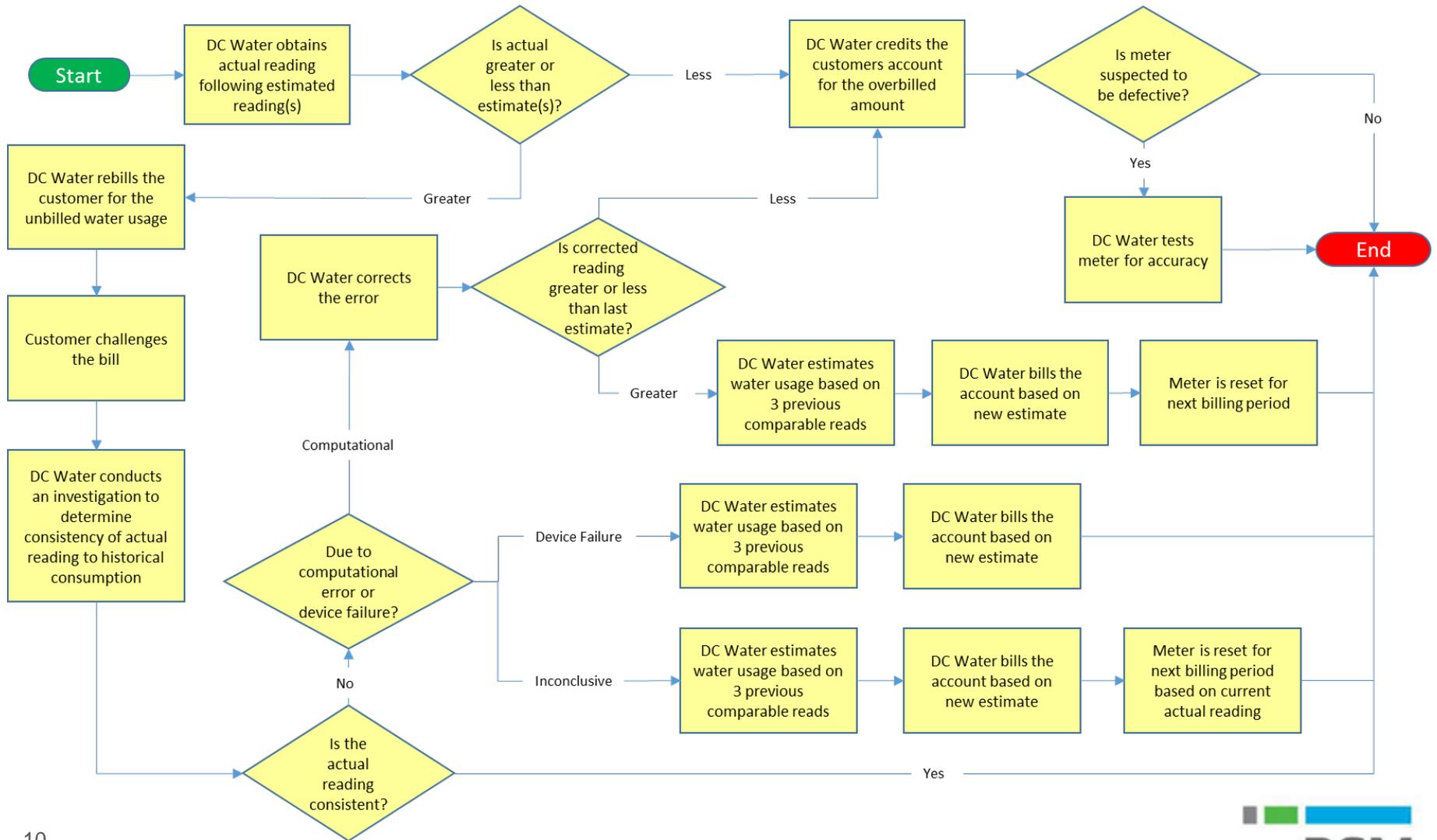
## **Accounts with Overestimated Meter Readings:**

- Occurs when the current actual reading is less than the estimate, even if water usage has been estimated for more than three (3) billing periods. The current actual reading is used to credit the account for the overbilled amount.
- If the meter is suspected of being defective due to an unusually low reading, the customer care associate shall request that the meter be tested for accuracy.

## **Accounts with 3 or More Consecutive Estimated Billing Periods:**

- If water usage has been estimated for 3 or more consecutive billing periods, the customer care associate shall **determine if actual reading is consistent with historical consumption.**
  - If not consistent, **confirm if this is due to computational error; or meter, data collective device, or transmitter malfunction.**
    - If computational error, then correct the error; and
      - If corrected reading is **less than the last estimate**, use the new reading to credit the account; or
      - If corrected reading is **more than the last estimate**, estimate water usage based on three comparable actual reads, bill the account, and reset the meter for the next billing period.
    - If meter, data collective, or transmitter fails to register correctly:
      - Estimate water usage based on 3 comparable actual reads, bill the account, and replace or repair the faulty device.
    - If inconclusive and reading seems to be correct:
      - No adjustment is to be made. Bill the account based on 3 comparable actual reads and reset the meter for the next billing period based on the current actual meter reading.

# Phase I: Billing Adjustment Process (continued)



# Phase I: Meter Disposal Process Review

Disposal of meters and MTUs in accordance with the approved process is key to safeguarding the Authority from misappropriation of assets removed from service due to installation of new equipment. The following are key requirements of the parties involved with meter replacement.

## Key Requirements

SGS, installation vendor, is required to send an inventory report to the P&M Manager on a bi-weekly basis. The PMO Manager is required to review this report for accuracy.

DMDC, disposal vendor, is required to send a monthly activity statement with the value of scrap and overall weight re-claimed.

The P&M Manager is required to provide a report of meter installations to team leaders on a monthly basis.

The P&M Manager is required to perform a monthly reconciliation of meter disposals, utilizing outbound meter reports from SGS and inbound meter reports from DMDC.

The PMO Manager is required to provide a monthly inventory report to the CFO.

***Internal Audit is in the process of assessing and testing the meter disposal process***

# PHASE II UPDATE

# Phase II: Objectives and Approach

## Phase 2: IT Design and implementation review

- **Project Governance & SDLC Adoption:** Assess the appropriateness of the SDLC (System Development Life Cycle) framework and key project documents (i.e., project timeline, project plan, project approvals, etc.).
- **Business Process Enablement Review:** Evaluate the design and operating effectiveness of future state business processes, proposed business requirements, technical requirements traceability, and automated controls that support the automated meter reading and customer billing processes.
- **Data Integrity & Migration Review:** Review the data migration strategy, contingencies, test plans, cutover, validation results and proposed data interfaces designed to transfer data between automated meter readers and the CIS applications.
- **Information Protection & Security Review:** Identify and assess the security risks involved with the AMR implementation by reviewing the business & technical requirements, security model, application roles, and the underlying security permissions. Additionally, we will review management's ability to identify segregation of duties conflicts and design / rely upon compensating controls.
- **Infrastructure Operations Review:** Examine the IT general controls that govern the underlying AMR technology, including the critical database(s) and operating system(s) that support the implementation, including but not limited to the security requirements and system configurations.
- **Third Party Management Review:** Identify risks related to the use and oversight of third party providers, including a review of the associated vendors, including SmartGrid Solutions regarding vendor management processes and underlying control considerations.

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# Phase II: Program Implementation Consideration

## Element

## Description

 <p>Oversight</p>	<p>A structure through which an organization directs, manages and reports its security management activities. It encompasses clearly defined roles and responsibilities, decision rights, the risk governance operating model, and reporting lines. Further, allows for conscious decision to use risk management to enable the achievement of business plans, goals and strategic objectives. It includes a risk appetite statement supported by risk tolerances, limits and associated breach protocols to control risk levels throughout the organization.</p>
 <p>People</p>	<p>Values and behaviors present throughout an organization that shape security decisions. A security aware culture influences the decisions of management and employees, even if they are not consciously weighing risks and benefits. A strong security culture helps to encourage strategic decisions that are in the long-term best interest of the organization, its shareholders and employees.</p>
 <p>Process</p>	<p>The activities in place that allow an organization to identify, assess and quantify known and emerging security risks. The risk assessment and measurement processes allow organizations to consider the extent to which potential events may have an impact on achievement of objectives. It encompasses qualitative and quantitative approaches, processes, tools and systems that organizations develop and implement to identify, assess, and measure security risks.</p>
 <p>Technology</p>	<p>Management of risk data that can be translated into meaningful risk information for stakeholders. It includes the development and deployment of risk management tools, software, databases, technology architecture, and systems that support risk management activities.</p>

# Phase II: Program Implementation Scorecard

Project Name		AMR Implementation		As of Date	Project Health
				7/8/17	
Oversight Element	Evaluation Criteria	Health Rating	Observation		
Oversight 	Project Governance		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
	Business Process		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
Process 	Third Party Management		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
	Data Interfaces & Migration		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
Technology 	Information Protection & Application Security		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		
	Infrastructure Operations		<ul style="list-style-type: none"> <li>No reportable observations</li> </ul>		

# Next Steps

Internal Audit will continue to monitor the progress of the AMR project by performing the following actions:

- Complete the Phase I of our objectives and approach, including:
  - Complete meter disposal testing
  - Review billing adjustment trends based on reporting provided by management
- Complete Phase II of our objectives and approach, including:
  - Evaluate the processes and controls around operations (e.g. billing)
  - Evaluate the impact of AMR and CIS Implementation

# APPENDICES



# Appendix A: Background

## Oversight of the AMR Implementation

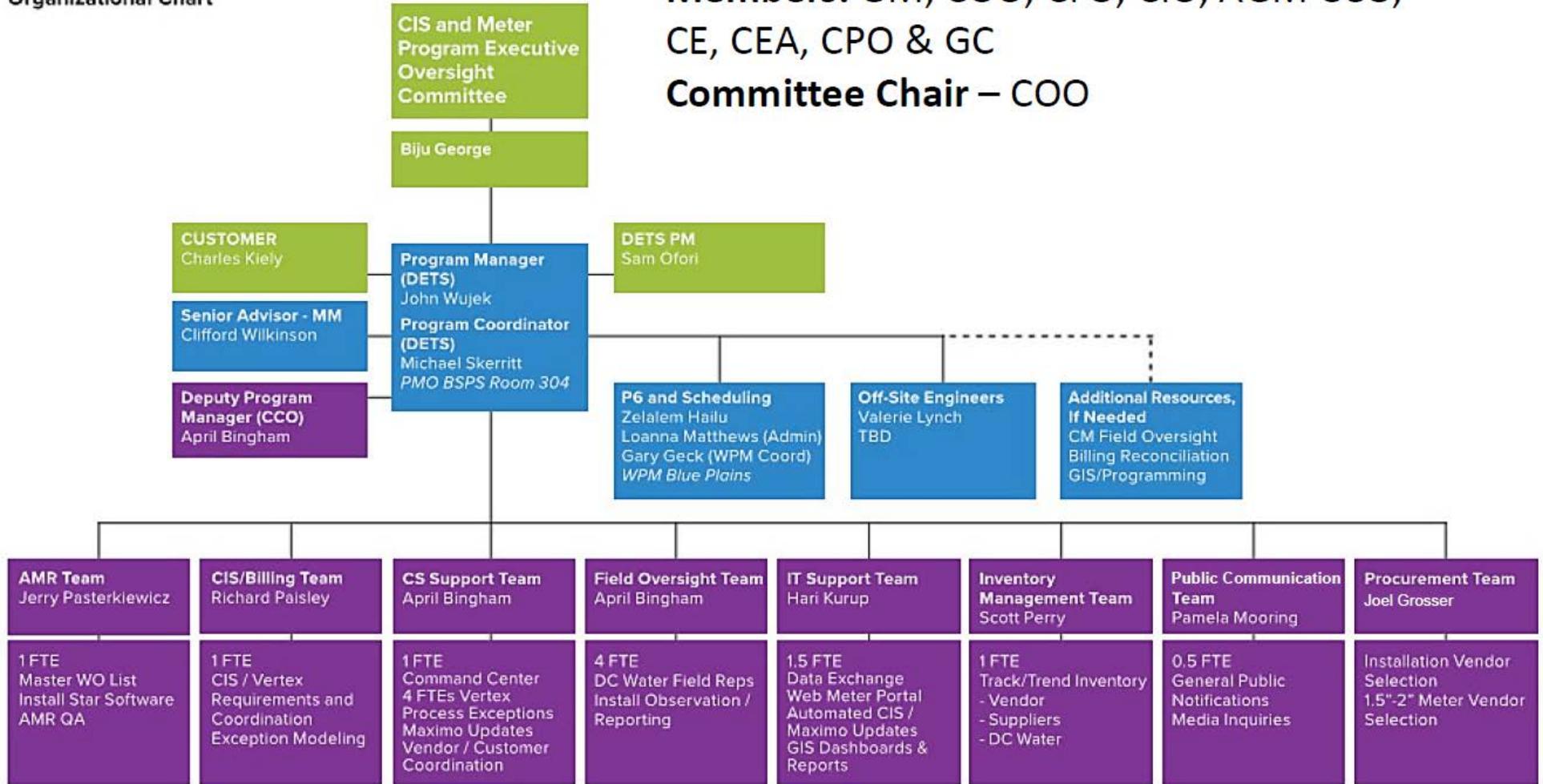
- In order to manage the replacement of over 85,000 meters and MTUs, DC Water established an Executive Oversight Committee and a Project Management Office (PMO).
- The PMO is comprised of individuals from various Departments throughout the Authority, including AMR, Customer Service Support, Field Oversight, CIS/Billing, IT, Inventory Management, Public Communications, and Procurement.

### Key Activities of PMO

- Establish Team Charter to document roles and responsibilities, including a RACI chart
- Draft a project schedule, including identification of key performance indicators
- Develop a project risk register, which is reviewed monthly by the Executive Oversight Committee
- Hold weekly meetings with project team and with installation contractor to discuss the progress of the project, including tracking of planned and actual meter replacements

# Appendix A: Background

## DC Water Meter Replacement Program Organizational Chart



# Appendix B: Program Implementation Evaluation Areas

Element	Evaluation Criteria	Description
<b>Oversight</b> 	Project Governance	<ul style="list-style-type: none"> <li>The governance review will focus on the overall project planning and organization of the project during the different phases of the systems development life cycle. Additionally, the review will evaluate the appropriateness of the SDLC framework and project adoption of key standards.</li> </ul>
<b>Process</b> 	Business Process Enablement	<ul style="list-style-type: none"> <li>Evaluation of the critical IT-enabled business processes and the planned operational improvements to identify opportunities to leverage application controls. This includes new / enhanced application controls, data interfaces and system generated reports introduced as part of the implementation.</li> </ul>
	Third Party Management	<ul style="list-style-type: none"> <li>Review of the third party / vendor management processes, contractual terms and conditions, and service delivery, including mechanisms in place to monitor agreed upon service levels.</li> </ul>
<b>Technology</b> 	Data Interfaces & Migration	<ul style="list-style-type: none"> <li>Conducting a risk-based analysis of the processes by which legacy and transaction data are managed and converted to the new application. Additionally, the review will focus on data interfaces to determine if key transactional data has transferred completely and accurately.</li> </ul>
	Information Protection & Application Security	<ul style="list-style-type: none"> <li>Review of the application security model, security roles and responsibilities, alignment of security permissions to business functions and the planned deployment of controls to maintain and update segregation of duties.</li> </ul>
	Infrastructure Operations	<ul style="list-style-type: none"> <li>Risk-based analysis of the IT general controls that govern the access, security and change controls of the supporting systems and databases deployed in the new implementation. Additionally, review of the operational processes that govern the backup of systems/data, scheduling/monitoring of key batch jobs, and the release management of software patches.</li> </ul>

# Appendix C: PMO's Project Timeline



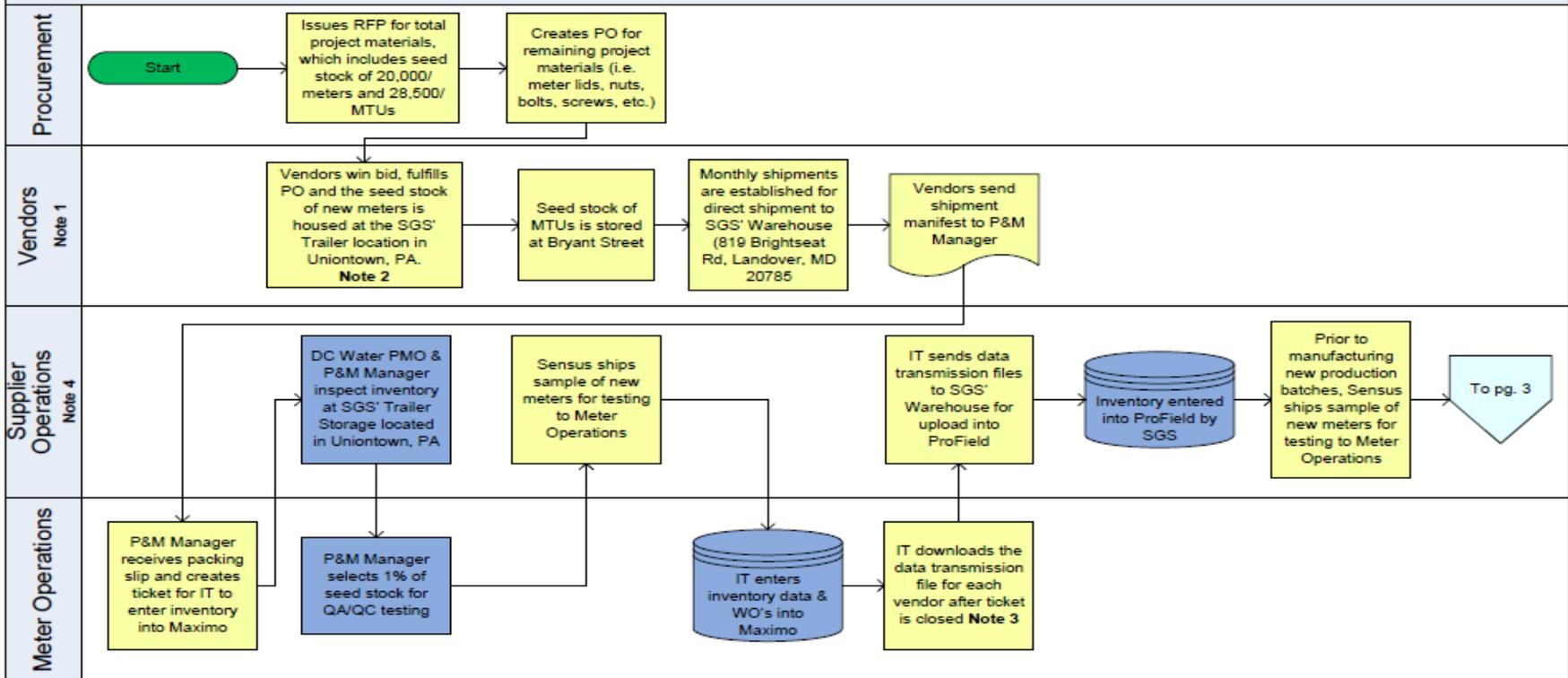
# Appendix D: AMR Flowcharts



## District of Columbia Water and Sewer Authority Automated Meter Reading (AMR) Implementation

Page 1 of 8

### Project Inventory Orders



**Note 1:** The contract for meters was won by Fasteners RX, Inc. The contract for MTUs was won by ACLARA Technologies and the contract for meter lids was won by Business Promotion Consultants. A host of other vendors were used to secure the remaining materials (i.e. nuts, bolts, screws, washers, gel caps, gaskets, nails, burial splice kits, UR connectors, etc.)

**Note 2:** In July 2016 the DC Water Board of Directors approved contract No. 16-PR-CCO-59 for Fasteners, RX (i.e. Sensus meters) and contract No. WAS-12-002-AA-SH-1 for ACLARA Technologies (i.e. upgraded MTUs).

**Note 3:** The data transmission file contains all WO #'s, Meter #'s, and MTU #'s.

**Note 4:** SGS is a company owned by ACLARA Technologies, SGS maintains the inventory and performs the meter replacements in the field for the AMR Implementation project. Sensus is the manufacturer of the new meters used in the AMR Implementation project.

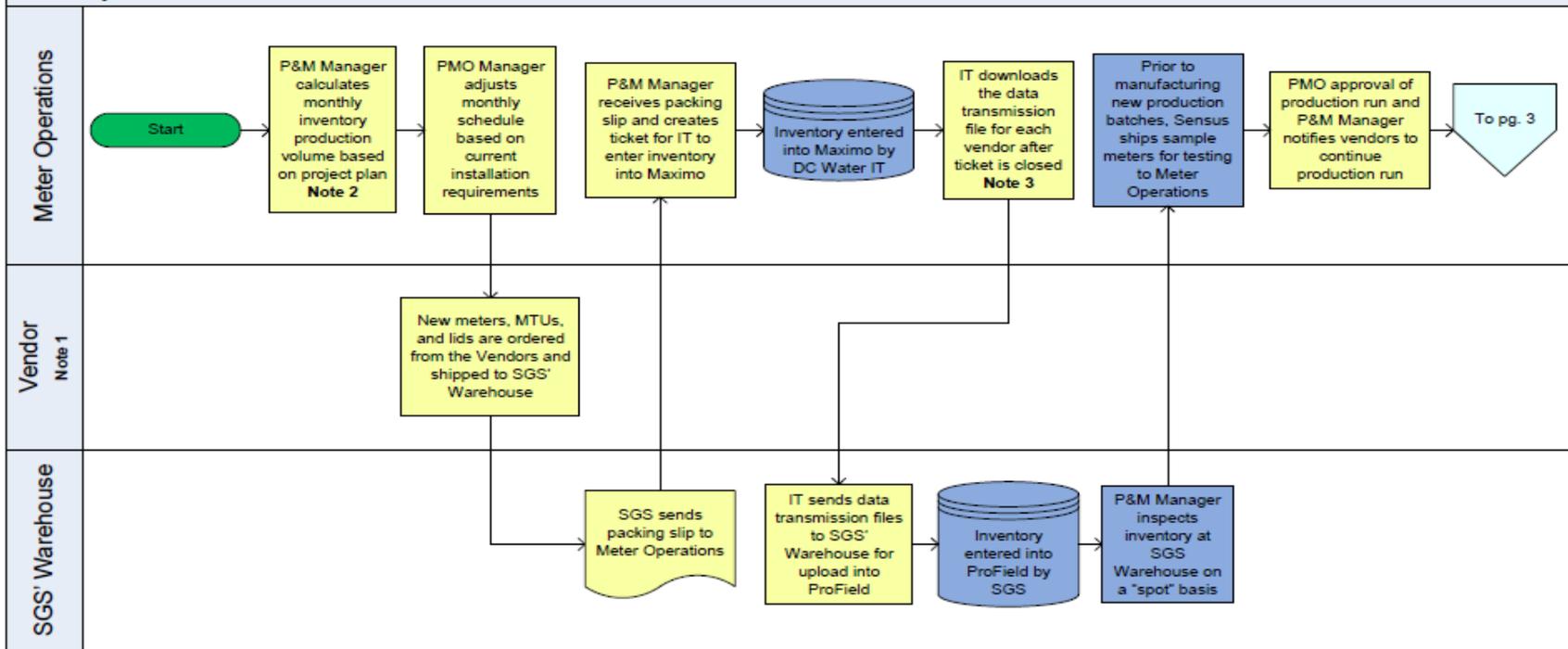


# Appendix D: AMR Flowcharts (continued)

District of Columbia Water and Sewer Authority  
 Automated Meter Reading (AMR) Implementation  
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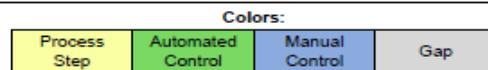
## Inventory Re-Production



**Note 1:** The contract for meters was won by Fasteners RX, Inc. The contract for MTUs was won by ACLARA Technologies and the contract for meter lids was won by Business Promotion Consultants. A host of other vendors were used to secure the remaining materials (i.e. nuts, bolts, screws, washers, gel caps, gaskets, nails, burial splice kits, UR connectors, etc.)

**Note 2:** The seed stock is used to cover production plan vs. actual variance in meter replacement. The P&M Manager works with the vendors and SGS to create a production schedule each month.

**Note 3:** The data transmission file contains all WO #'s, Meter #'s, and MTU #'s.

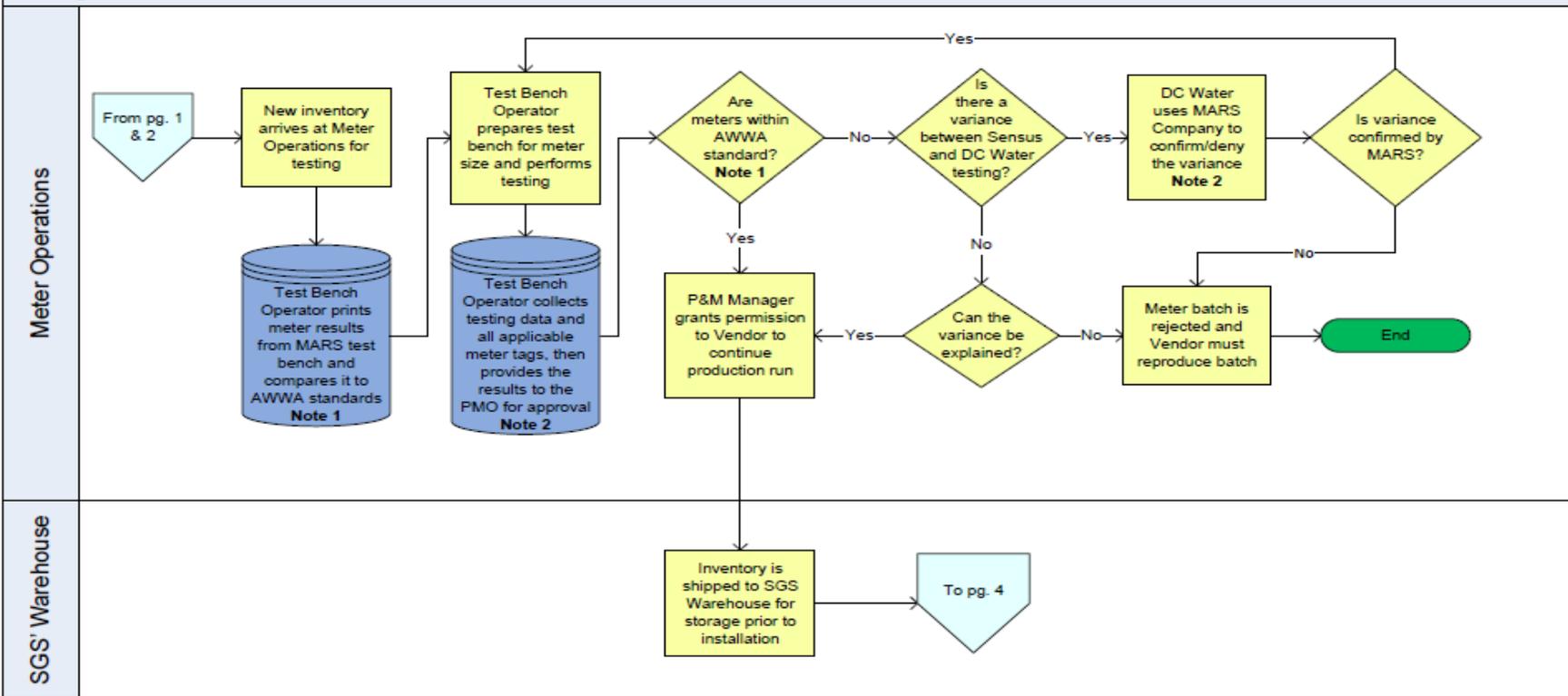


# Appendix D: AMR Flowcharts (continued)

District of Columbia Water and Sewer Authority  
 Automated Meter Reading (AMR) Implementation  
 Page 3 of 8



## Testing of New Meters



**Note 1:** The AWWA standard of meter reading accuracy is 98.5% - 101.5%.

**Note 2:** DC Water utilizes MARS Company in two separate ways. (1) The Authority owns and operates two MARS Test Benches for testing meters. (2) If there is a variance between the Sensus meter readings and DC Water Test Bench readings, Meter Operations will send the meters to a satellite MARS location to be tested at production facility.

**Flowchart Legend:**

24

						<b>Colors:</b>			
Start/ End	Off-Page Connector	Database	Document	Decision Point	Sub process/Function	Process Step	Automated Control	Manual Control	Gap

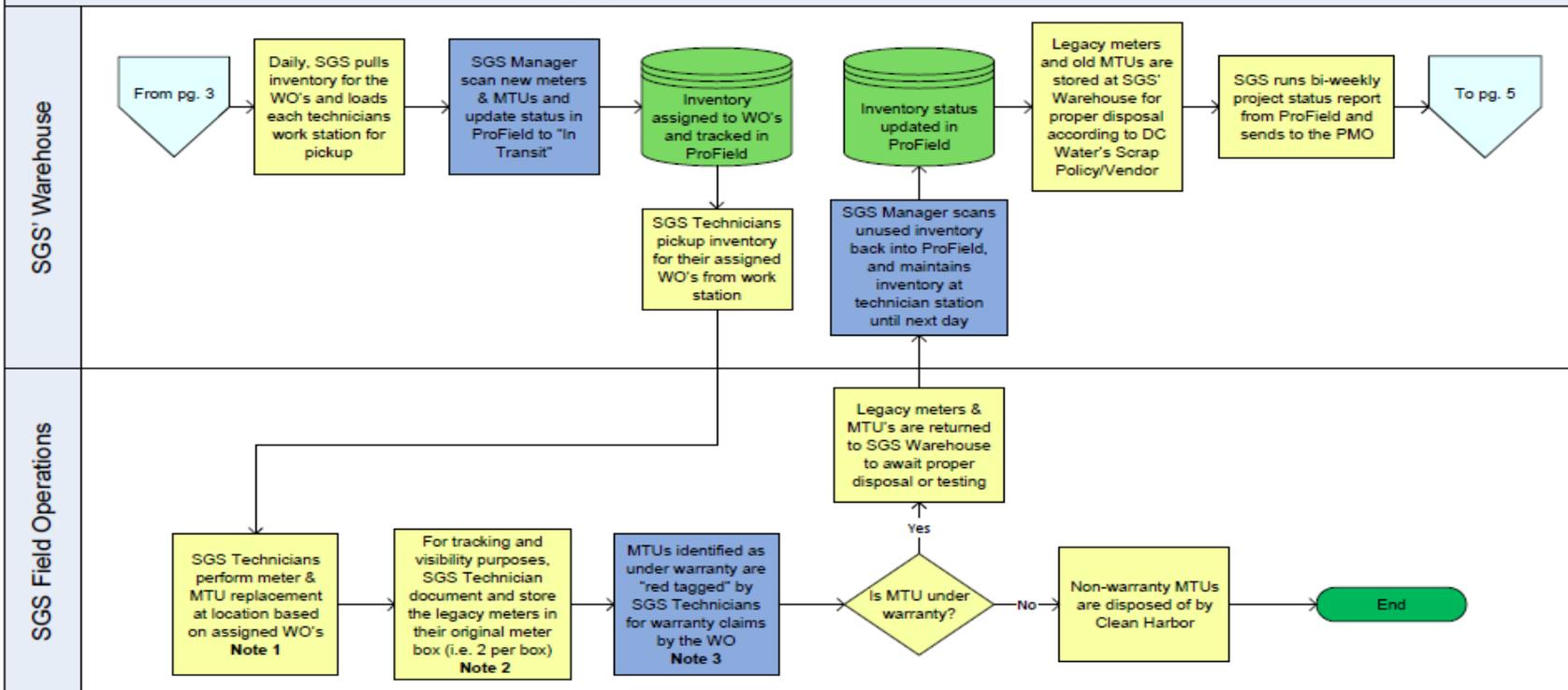


# Appendix D: AMR Flowcharts (continued)

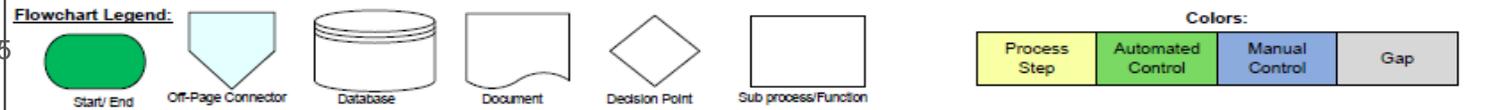
District of Columbia Water and Sewer Authority  
Automated Meter Reading (AMR) Implementation  
Page 4 of 8



## Installation of New Meters and Replacement of Legacy Meters



**Note 1:** DC Water Security will perform unannounced spot checks at meter replacement sites. Additionally, they will shadow SGS Field Operators after the meter is replaced in the field back to the warehouse location to ensure oversight and security of physical assets.  
**Note 2:** During replacement the SGS Technician tags the Sensus meters, records the tag #, location, date, and signs the technicians name on Sensus meter box. Each Legacy meter that was replaced is stored in the box of the Sensus meter it was replaced with, boxes can store 2 Legacy meters each.  
**Note 3:** WO's can be "red tagged" by DC Water prior to a replacement to mark that the old MTU is still covered under warranty and should be shipped to Meter Operations. (See pg. 7, Disposal of Legacy Meters & MTUs)



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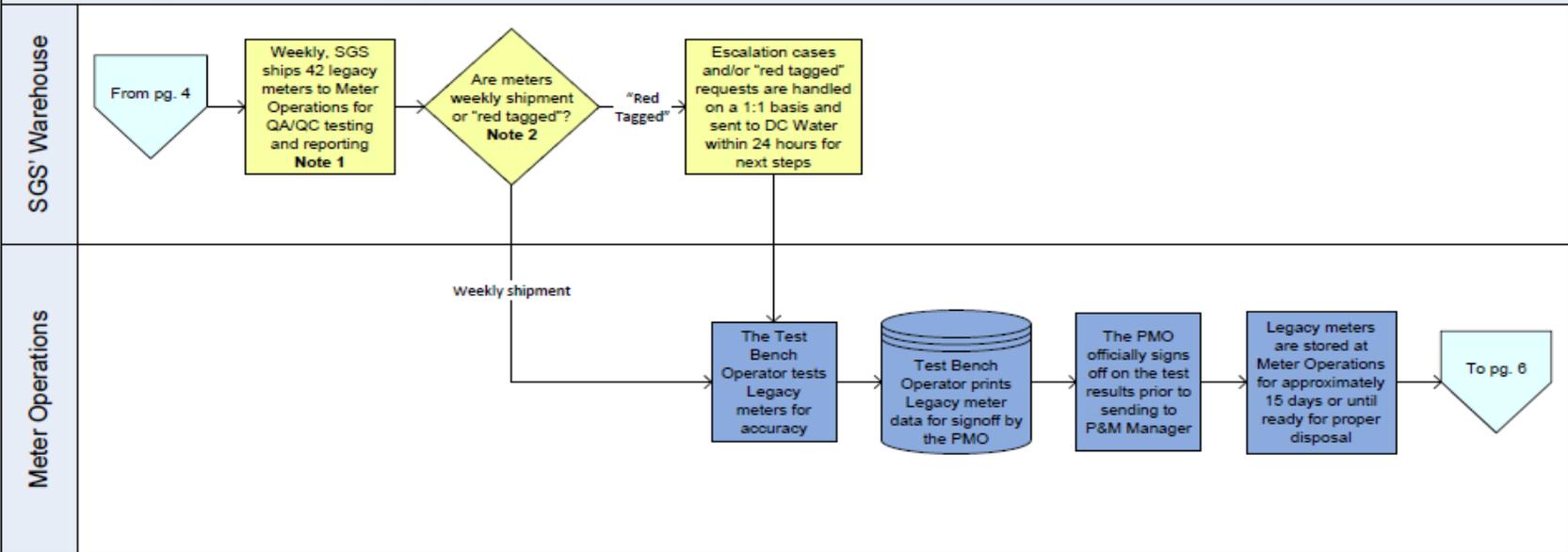


# Appendix D: AMR Flowcharts (continued)

District of Columbia Water and Sewer Authority  
 Automated Meter Reading (AMR) Implementation  
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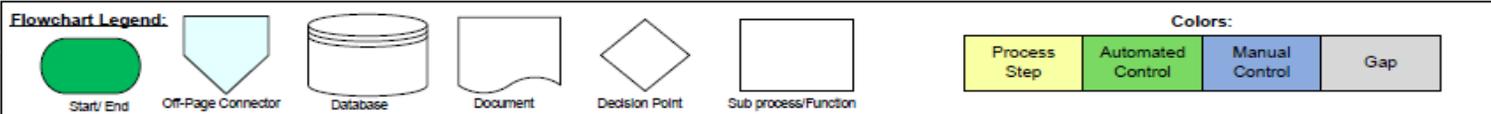


## Testing of Tagged & Sample of Legacy Meters



**Note 1:** Legacy meters represent (12) 5/8 inch; (10) 3/4 inch; (9) 1 inch; (6) 1 1/2 inch; and (5) 2 inch.

**Note 2:** Legacy meters can be "red tagged" by DC Water through their associated WO. This occurs when a customer has complained about a Legacy meter reading/billing error, so the meters are sent to Meter Operations for testing.

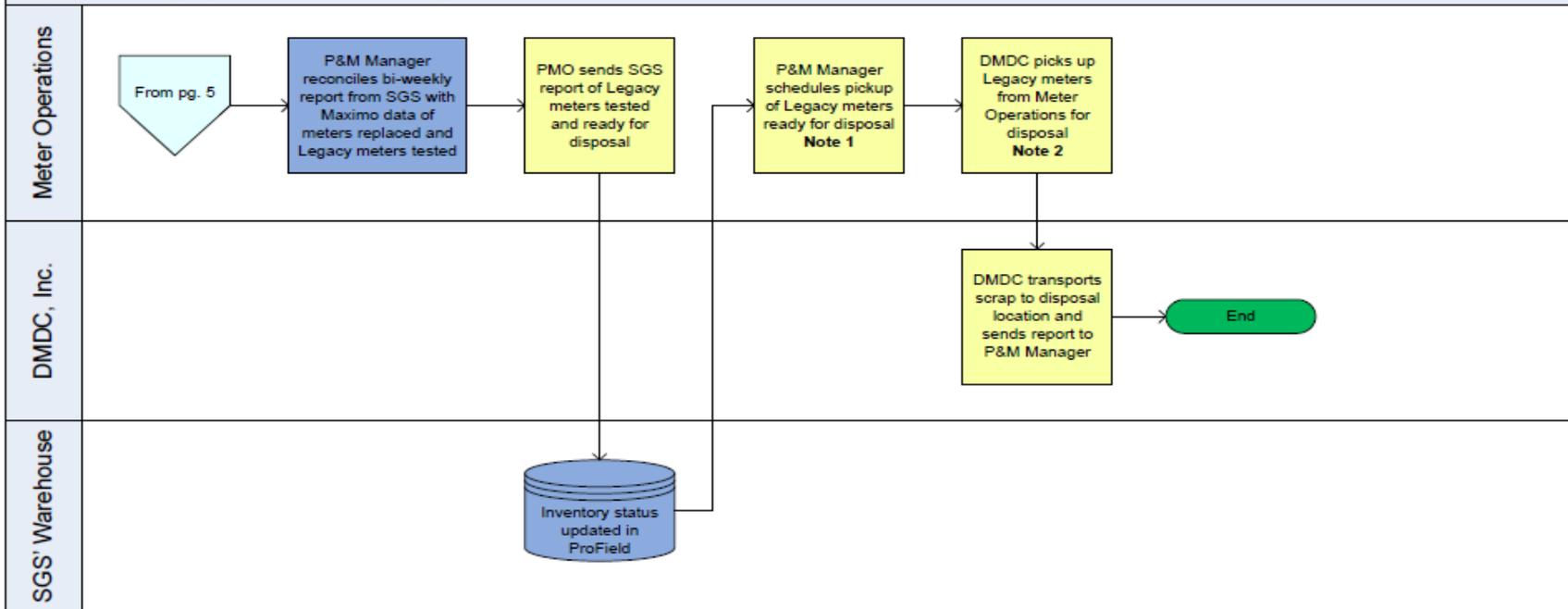


# Appendix D: AMR Flowcharts (continued)

District of Columbia Water and Sewer Authority  
Automated Meter Reading (AMR) Implementation  
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## Disposal of Legacy Meters after Testing



**Note 1:** Legacy meters are stored at Meter Operations for approximately 15 days or until ready for proper disposal.

**Note 2:** DC Water Security is notified by the P&M Manager of the location and time of all scrap pickups and will facilitate the handoff of scrap, during a 2 hour timeframe at a pre-chosen location.

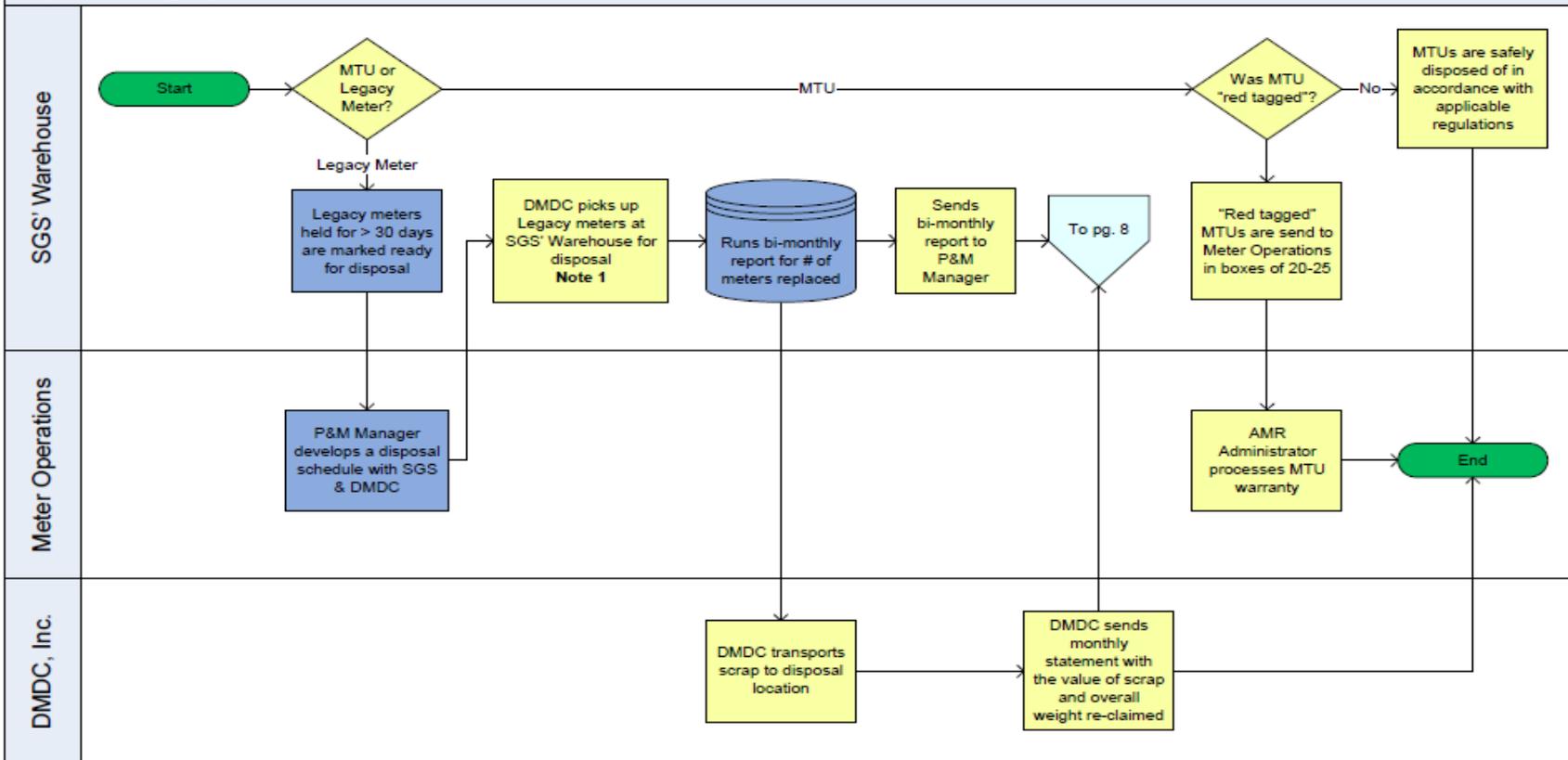


# Appendix D: AMR Flowcharts (continued)

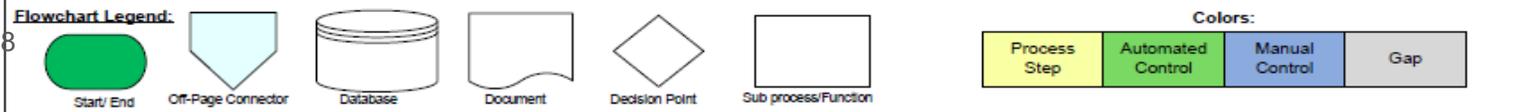
District of Columbia Water and Sewer Authority  
Automated Meter Reading (AMR) Implementation  
Page 7 of 8



## Disposal of Legacy Meters & MTUs



**Note 1:** DC Water Security is notified by the P&M Manager of the location and time of all scrap pickups and will facilitate the handoff of scrap, during a 2 hour timeframe at a pre-chosen location.



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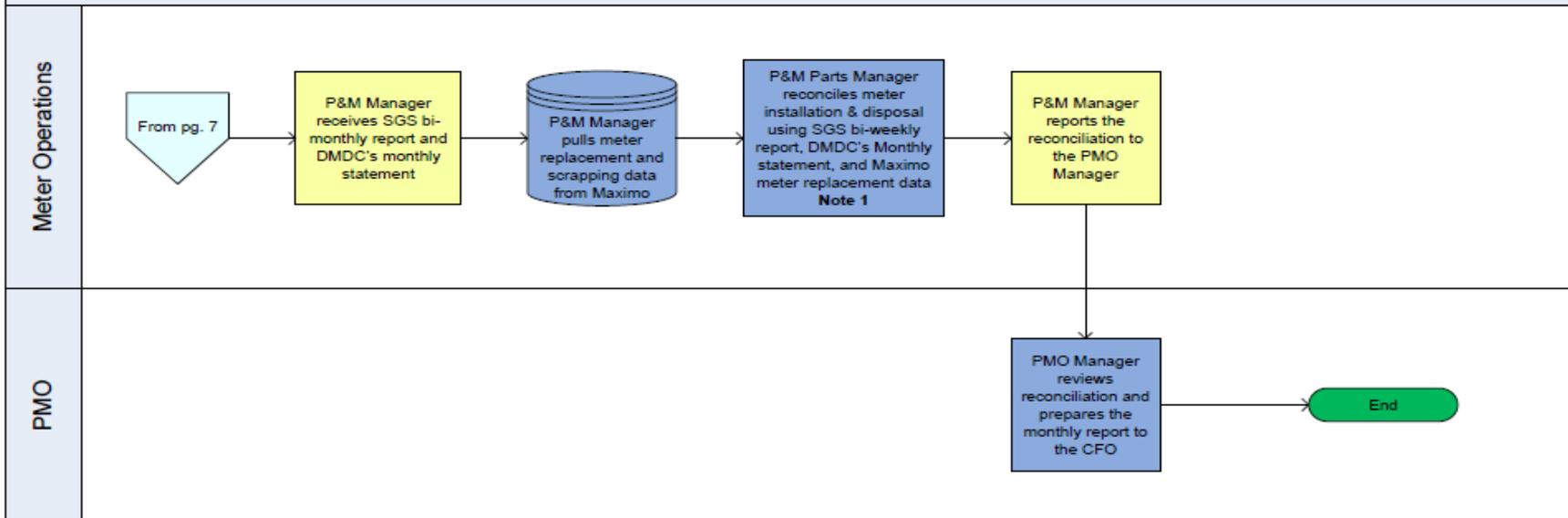


# Appendix D: AMR Flowcharts (continued)

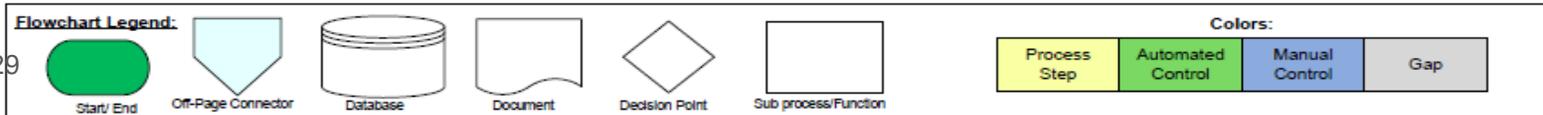
District of Columbia Water and Sewer Authority  
 Automated Meter Reading (AMR) Implementation  
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## Reconciliation



**Note 1:** To perform the reconciliation the P&M Manager will calculate the weight reported from the monthly scrapping report back to approximate weight of replaced meters, which is pulled from ProField and checked against the meter replacement data in Maximo.



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# **AMR Replacement Program**

**Internal Audit Meeting**

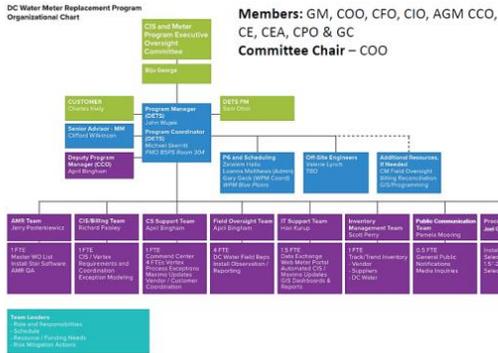
**July 27, 2017**



- 1. Reporting Framework**
- 2. Key Workflow & QA Items**
- 3. Questions & Answers**



# AMR Replacement Program Internal Audit Meeting 07/27/2017 Reporting Framework



**PMO (John Wujek)**

**Roles & Responsibilities**

- Report to Management
- Coordinate Core Team
- Installation Contractor Oversight & Management
- Program Budget
- Project Controls
- Safety & Security Coordination

**Schedule**

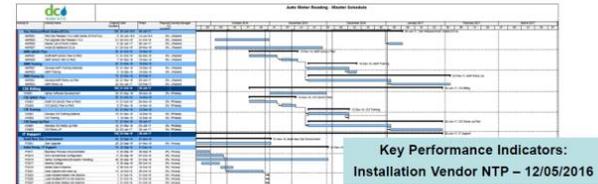
- Staffing Plan: Oct 2016
- QA/QC Plan: Nov 2016
- Training: Dec 2016
- Ramp-Up Period: Jan 2017
- Refined Process: Feb 2017+

**Resource / Funding Needs**

- Sept 2016-March 2017
  - 3 FTEs \$550k
- April 2017-Sept 2018
  - 2 FTEs \$900K

**Risk Mitigation Actions**

- Defined Processes and Monitor Regularly
- Maintain and Monitor CPM, Cost & Resource Loaded P6 Schedule
- Coordination with DC Water Safety and Security
- Dedicated Resources



## Water Program Team Charter

# Team Charter 10/25/2016

The replacement of over 85,000 meters & MTUs is an extremely critical DC Water project from both a financial viability and customer confidence perspective. Any slight error resulting from this could result in significant reputational risks for the agency. The overall charge, purpose, and focus of this team is to successfully execute the meter replacement project while managing reputational risks.



**Monthly Review by Executive Oversight Committee**

11/02/2016 Draft Attached

Probability	Impact	Overall effect	Significant effect	Minor effect	Minimal effect
Very High	Very High	OC	OC	COO	PM
High	High	OC	COO	COO	PM
Medium	Medium	COO	COO	PM	PM
Low	Low	PM	PM	PM	PM
Very Low	Very Low	PM	PM	PM	PM

**DC Water Meter Replacement Program RACI Chart**  
October 25, 2016

**Principles:**

- Open and honest communication / collaboration
- Respectful & positive attitude
- Productive and efficient decision making

**Goal:** Successful ramp-up into full production in February 2017 and up to project completion

**Commitment:** We commit to delivering the items herein and strive towards successful delivery of the project

Task	Responsible	Accountable	Consulted	Informed
Project Management	John Wujek	John Wujek	John Wujek	John Wujek
Program Management	John Wujek	John Wujek	John Wujek	John Wujek
Installation Contractor Oversight	John Wujek	John Wujek	John Wujek	John Wujek
Program Budget	John Wujek	John Wujek	John Wujek	John Wujek
Project Controls	John Wujek	John Wujek	John Wujek	John Wujek
Safety & Security Coordination	John Wujek	John Wujek	John Wujek	John Wujek

**Principles:**

- Open and honest communication / collaboration
- Respectful & positive attitude
- Productive and efficient decision making

**Goal:** Successful ramp-up into full production in February 2017 and up to project completion

**Commitment:** We commit to delivering the items herein and strive towards successful delivery of the project

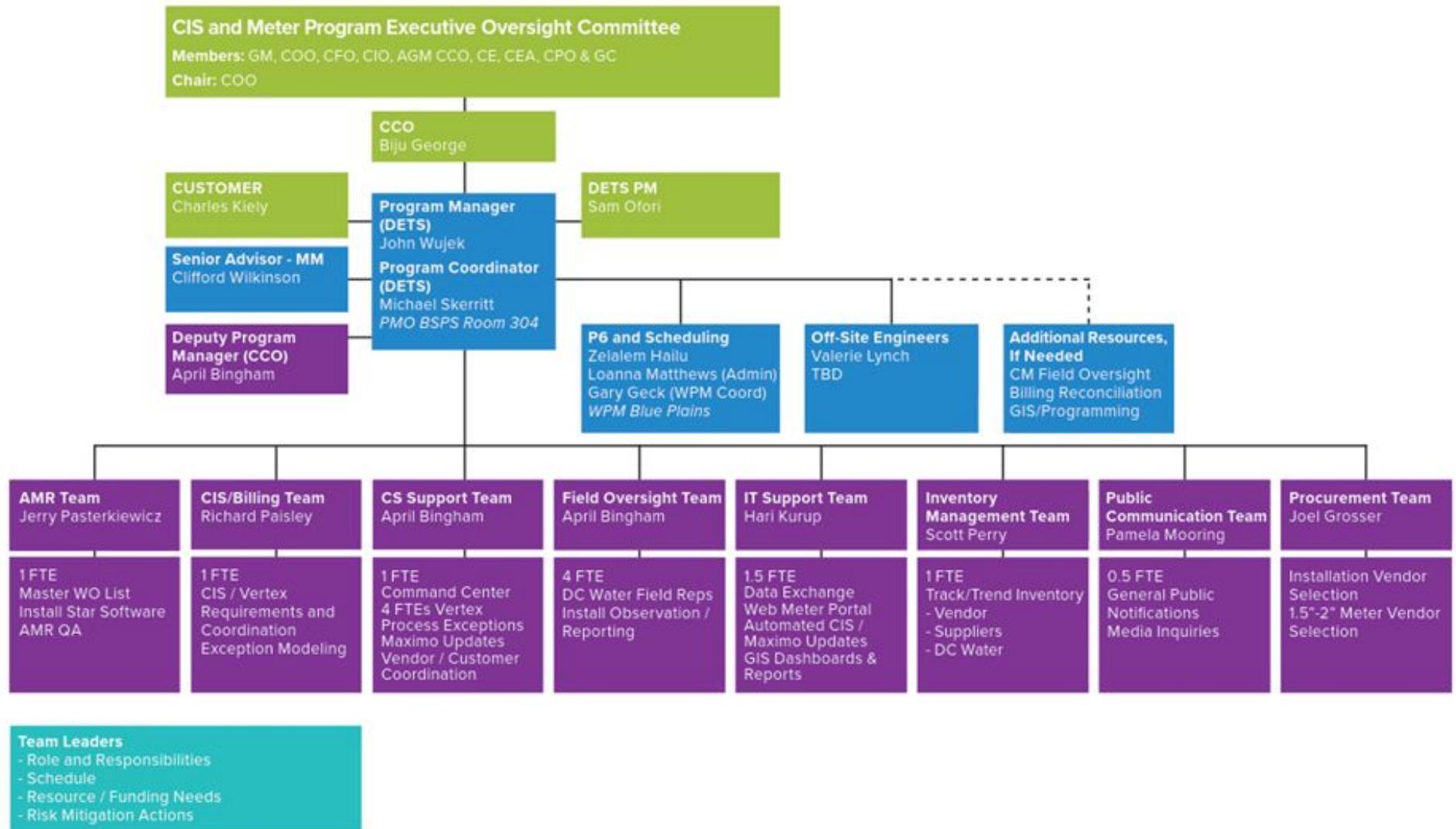
April Bingham  
 Louis Desjardins  
 Joel Grosser  
 Tanya Hedgepeth  
 Hari Kurup  
 William Lake  
 Charlene Minatee  
 Pamela Mooring

Sohail Moinuddin  
 Sam Ofori  
 Richard Paisley  
 Jerry Pasterkiewicz  
 Scott Perry  
 Francis Peters  
 Michael Skerritt  
 John Wujek



# AMR Replacement Program Internal Audit Meeting 07/27/2017

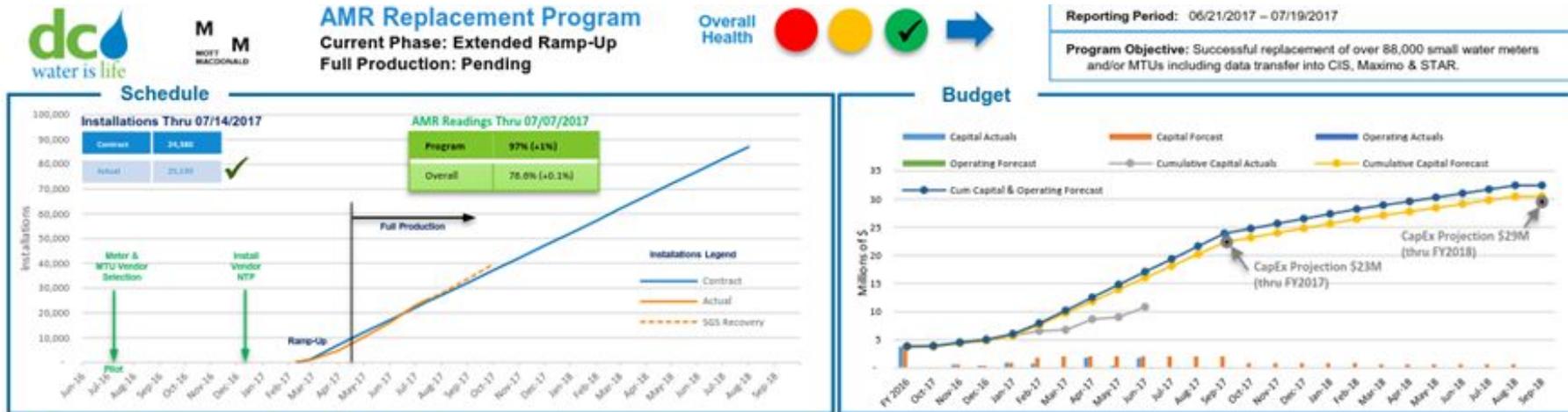
## Reporting Framework





# AMR Replacement Program Internal Audit Meeting 07/27/2017

## Reporting Framework

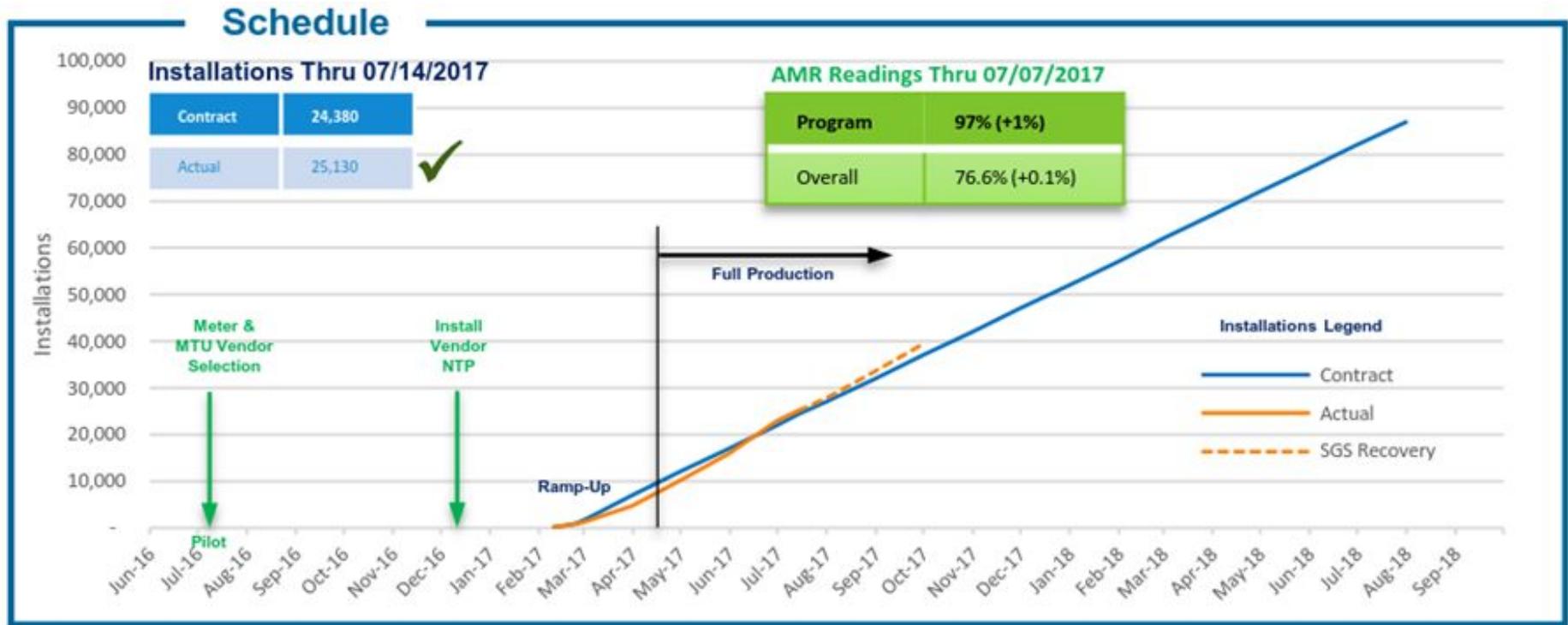


Area	Status	Key Status Items
Schedule	Green	• Last week, 24 crews and 1,203 completed • SGS to maintain increased number of crews • Plan to exceed FY 2017 contract production
Budget	Green	• Costs within Approved Budget • Projections - Spending to Increase • Monthly CFO Report 07/10/2017 • Coordinating Purchases / Invoicing in FY2017
PMO	Green	• Weekly SGS progress meetings • Coordination with A2H PRV On-Going • LSR Notice Letter for Field Observed LSL Finalized • Contract Revisions (Operations & Data) Finalized (\$500k) • 9 Potential Risk Management Claims (0.036%) • Coordination with Project Triton On-Going – Add 5 Temporary Meter Readers (Actual Reads within 90 days of go live) • Over 16k Installations provided to CS for consumption review
AMR Team	Green	• Data Validation (STAR / Maximo) and trending on-going - SGS Mitigating Issues (Reprogramming, Log Files Missing, Backwards Meters, etc.) • Master File Updated • MTUs Not Transmitting ~2% Missing Log Files or Reprogramming ~0.3% Stopped ~0.5% Never
Billing/CIS Team	Green	• Weekly Reporting of Exceptions • On-Going coordination with Vertex
CS Support Team	Green	• 07/10/2017 SGS Call Center Visit & Follow-up On-Going • Coordination with DC Water & SGS Call Centers On-Going • Coordinating and tracking Customer Concerns / Inquiries (95) • Assisting SGS with Appointments – FO Door Hangers for Customers with No Phone / Email Data
Field Oversight Team	Green	• Field & Photo QA on-going • Backlog Photos to be Uploaded to Maximo • Bi-Weekly tailboard meetings On-Going • Workshops with FO staff On-Going • FO Guidelines Published • New & Legacy Meter Testing On-Going (2%) • Utilizing ProField for PERs and Data • UAT for Inside Install Completed • 6 FO (4 CCO + 2 DETS) • Analysis of Inoperable Valves On-Going
Inventory Management Team	Green	• Forecasts and Supplier Coordination On-Going – Accelerating Purchases in FY 2017 • Disposing Legacy Meters / MTUs On-going
IT Support Team	Amber	• Interactive Webpage Refined • Waiting on SGS to finalize remaining XEQP data exchange file/testing
Public Communications Team	Green	• Next Round of ANC Meetings Being On-going (Wards 2, 3, 7 & 8) • Webpage Updates On-Going • Meter Access - What's On Tap Article Published • Outreach for Inside Installs / Appointments
Procurement Team	Green	• Support of Contracts On-Going • MTU Disposal Agreement being finalized • SGS PCRs 2-6 Being Finalized / Executed
Tripping Hazards	Red	• 5,375 Identified through June 2017 • >2' Below Grade Created Prior to May 24 <sup>th</sup> Backfilled • Starting May 24 <sup>th</sup> SGS Immediately Backfilling >2' Below Grade • OGC coordinating with DC ORM & DDOT - 05/22/2017 Letter to DC ORM with List - Meeting to be scheduled to plan long term mitigation



# AMR Replacement Program Internal Audit Meeting 07/27/2017

## Reporting Framework





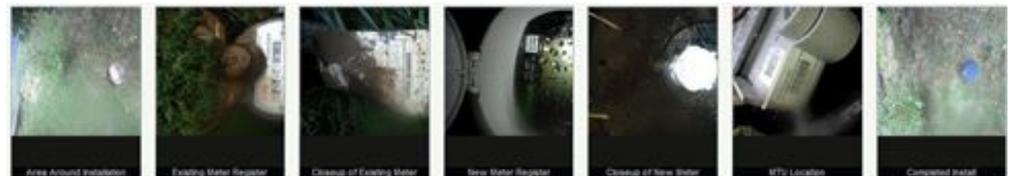
## AMR Replacement Program Internal Audit Meeting 07/27/2017

# Key Workflow & QA Items

### Multi-tier Quality Assurance Program

- 1) “Forced march” workflow requires the installer to follow a strict sequence of steps.
- 2) Installers use a handheld tablet (not a laptop) for easy access
  - GPS
  - App with forced march
  - Camera (Photos Time Stamped)
  - Scanning bar codes for inventory
  - MTU programming
  - Wireless connection to immediately upload data - Real time system of work
- 3) Real time system of work in ProField. Varying levels of access. Interconnectivity for inventory, WO management, QA, safety, mobile access, CS Support, training, reporting

#### 4) Pre and Post Installation Photos



## Multi-tier Quality Assurance Program (continued)

5) Training and certification process.  
Every installer receives classroom and field training.

6) Unique sampling of data

- Daily review
- Larger samples are taken of quality-vulnerable people or processes, such as new employees or complex tasks among others
- Sample size is reduced once the acceptable level of quality is proven over a certain period of time

7) Mobile app used by supervisors and senior installers to perform in-progress field audits.

8) Installers are production based and Supervisors are quality based.





## AMR Replacement Program Internal Audit Meeting 07/27/2017

# Key Workflow & QA Items

### Inventory - QA Items

- New Assets Assigned to Installer - Pickup Daily & Cannot Be Transferred
  - Installer stations with a bar code scanned by each installer prior to picking up assigned meters and MTUs
  - Installer scans pallet code and managers badge to accept/return inventory.
- Legacy Equipment
  - Each day, the installers return all legacy MTUs and Meters
    - Boxes labeled and organized.
  - Meters retained for one week until QA process is completed
  - Weekly scrap removal



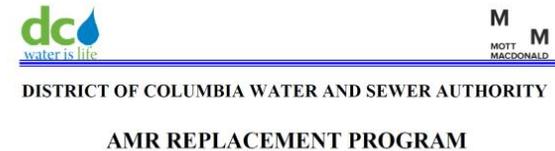


# AMR Replacement Program Internal Audit Meeting 07/27/2017

## Key Workflow & QA Items

### Integrated DC Water Field Oversight of Contractor

- Field Oversight Guidelines – Standardized QA
- Regular Communications & Coordination
  - Six (6) DC water personnel in the field
  - Daily Communications
  - Weekly Progress Meetings
  - DC Water tailboard meeting with SGS supervisors



JULY, 2017



## AMR Replacement Program Internal Audit Meeting 07/27/2017 Key Workflow & QA Items

### Integrated DC Water Field Oversight of Contractor (cont.)

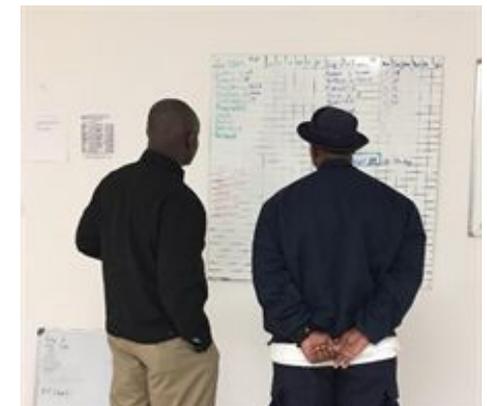
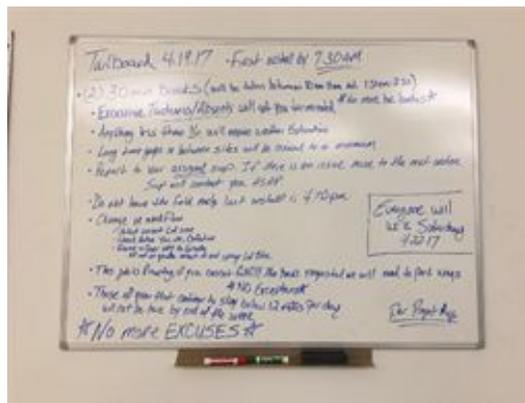
- Daily tailboard meetings for installers (6 am) prior to mobilization to the field.

- Work assignments
- New directives from DC Water
- Installer production rates
- Customer interaction issues
- DC Water attends monthly  
*(Various DC Water Depts May Attend)*



- White board at the Warehouse

- Installers / assigned supervisors and daily stats for each installer
- Reminder notices





# Internal Audit Report Intermunicipal Agreement

July 2017



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Intermunicipal Agreement  
 Internal Audit Report  
 Issued: July 2017



## TRANSMITTAL LETTER

July 2017

The Audit Committee of DC Water  
 5000 Overlook Avenue, SW  
 Washington, DC 20032

Pursuant to the approved 2017 internal audit plan for the District of Columbia Water and Sewer Authority (“DC Water” or the “Authority”), we hereby present our assessment of DC Water’s Intermunicipal Agreement (“IMA”), with respect to cost accumulation and related billing practices. We will be presenting this report to the Audit Committee of DC Water at the next scheduled audit committee meeting on July 27, 2017. Our report is organized in the following sections:

<b>Executive Summary</b>	This provides a summary of the observations and opportunities related to our internal audit of Intermunicipal Agreement (“IMA”), with respect to cost accumulation and related billing practices.
<b>Background</b>	This provides an overview of the IMA.
<b>Objectives and Approach</b>	The internal audit objectives and focus are expanded upon in this section, as well as a review of the various phases of our approach.
<b>Detailed Observations</b>	This section gives a description of the observations noted during our work and recommended actions as well as management’s response, responsible party, and estimated completion date.

We would like to thank the staff and all those involved in assisting the Internal Auditors in connection with this review.

Respectfully Submitted,

**Internal Auditors**



## EXECUTIVE SUMMARY

### Background

DC Water operates a regional wastewater treatment plant (Blue Plains) and provides wastewater conveyance and treatment services to other jurisdictions via two arrangements: the Blue Plains Intermunicipal agreement (“IMA”) and the Potomac Interceptor Group (“PI”). Each year, a share of capital and operating costs incurred by DC Water is allocated to (and subsequently reimbursed by) other jurisdictions under these arrangements.

The Blue Plains Intermunicipal Agreement (IMA) was executed September 1985 among the District of Columbia; Fairfax County, Virginia; and the Washington Suburban Sanitary Commission (WSSC), which includes Montgomery and Prince George’s Counties in Maryland. In November 1998, Loudoun County Sanitation Authority (LCSA) increased its share of treatment capacity at Blue Plains and now pays its share of capital and operating costs on the same basis as the other IMA entities. The IMA agreement was subsequently updated / renegotiated in 2005 and 2012. The total amount of operating and capital expenses allocated to other jurisdictions under the 2012 IMA agreement in FY16 was \$73.8 million and \$133.3 million, respectively.

Although the PI Group’s share of capital and operating expenses is not governed by the IMA agreement (and thus not in scope for this audit), DC Water’s finance and accounting departments review that billings to other jurisdictions in their totality (under IMA and PI combined) does not exceed the total allowed cost allocations for specific projects.

### Overall Summary / Highlights

The observations identified during our assessment are summarized on the next few pages. We have assigned relative risk or value factors to each observation. Risk ratings are the evaluation of the severity of the concern and the potential impact on the operations of each item. Observations will require management action plans with estimated completion dates that will be included in the routine follow-up of internal audit observations.

### Objective and Scope

The purpose of this review was to obtain an understanding of how the IMA billing process is initiated and completed at DC Water. The audit scope was based on the following objectives:

- Review and assess DC Water’s billing process surrounding the IMA to identify risks, controls, and process improvements.
- Review the accuracy of DC Water’s classification of capital contracts as IMA or non-IMA.
- Assess the adequacy of DC Water’s review of IMA related bills generated for the quarter.
- Evaluate individual jurisdictions’ audit results of DC Water for control gaps and process improvement opportunities.
- Review operating settlement bill adjustments including historical data and trends, and the approval process for adjustments, if applicable.
- Evaluate segregation of duties within the process.
- Determine and evaluate if records and documentation are sufficient to establish an audit trail for all transactions involving receipt of payment.

Fieldwork was performed April 2017 through June 2017

### Summary of Observation Ratings *(See Appendix A for definitions)*

	Number of Observations by Risk Rating		
	High	Moderate	Low
<b>Intermunicipal Agreement</b>	<b>0</b>	<b>0</b>	<b>0</b>

***We thank all DC Water team members who assisted us throughout this review.***



## EXECUTIVE SUMMARY (CONTINUED)

### Ratings and conclusions

Following is a summary of all observations noted in the areas reviewed (see “Detailed Observations” section for additional information, if applicable). Definitions of the rating scales are included in the Appendix.

Summary of Observations	
Observations	Rating
No observations requiring a management response were noted during our review.	N/A

Process Improvement Opportunities have been provided to Management for consideration.



## BACKGROUND, OBJECTIVES AND APPROACH

### Background

#### **Overview**

DC Water operates a regional wastewater treatment plant (Blue Plains) and provides wastewater conveyance and treatment services to other jurisdictions via two arrangements: the Blue Plains Intermunicipal agreement ("IMA") and the Potomac Interceptor Group ("PI"). Each year, a share of capital and operating costs incurred by DC Water is allocated to (and subsequently reimbursed by) other jurisdictions under these arrangements.

The Blue Plains Intermunicipal Agreement (IMA) was executed September 1985 among the District of Columbia; Fairfax County, Virginia; and the Washington Suburban Sanitary Commission (WSSC), which includes Montgomery and Prince George's Counties in Maryland. In November 1998, Loudoun County Sanitation Authority (LCSA) increased its share of treatment capacity at Blue Plains and now pays its share of capital and operating costs on the same basis as the other IMA entities. Since the IMA's signing in 1985, several significant changes have occurred in the region that the signatories could not foresee at the time, including the creation of DC Water as a quasi-independent instrumentality of the District Government, changes in federal requirements and technological advances that have changed the treatment process and reduced the amount of nutrients DC Water can discharge into the Potomac River and Chesapeake Bay. The IMA agreement was subsequently updated and/or renegotiated in 2005 and 2012. The total amount of operating and capital expenses allocated to other jurisdictions under the 2012 IMA agreement in FY16 was \$73.8 million and \$133.3 million, respectively.

Although the PI Group's share of capital and operating expenses is not governed by the IMA agreement (and thus not in scope for this audit), DC Water's finance and accounting departments review that billings to other jurisdictions in their totality (under IMA and PI combined) does not exceed the total allowed cost allocations for specific projects.

#### **Capital Improvement Program**

DC Water is reimbursed for certain capital costs associated with capital projects related to Blue Plains as defined in the IMA agreement. The IMA outlines terms relating to facility location, sizing, capacity allocations and funding, and long-term management of the wastewater treatment and disposal process. The IMA also establishes a uniform payment basis for facilities and future improvements.

DC Water's Capital Improvement Program (CIP) supports the continuation of major capital asset investment in programs and projects that will upgrade the District's water distribution system, improve the condition of local waterways and create clean energy. The CIP includes all mandated projects as well as rehabilitation of assets required to meet permit and other regulatory requirements and also all immediate needs necessary to maintain existing service levels.

DC Water's capital budget review process begins each year in the spring. This process includes a review of major accomplishments, priorities, status of major projects, and emerging regulatory and related issues impacting the capital program by the Department of Engineering & Technical Services. Projections of changes in project lifetime budgets are also included. The review process involves the DC Water departments with responsibility for managing the operations of DC Water services and capital projects as well as staff from Finance, Accounting and Budget and Executive Management. The CIP is integrated into DC Water's 10-year financial plan; because of its size, it is the primary driver of DC Water's projected rate increases over the current 10-year planning period.



## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Background (continued)

Whether various project costs can be allocated to other jurisdictions under inter-jurisdictional agreements such as the Intermunicipal Agreement (IMA), is not a factor in considering whether to undertake a project.

This Capital Improvement Program (CIP) review process spans over several months and culminates with the presentation of the updated CIP to DC Water's Board of Directors' Environmental Quality and Sewerage Services, Water Quality and Water Services, Finance and Budget and DC Retail Water and Sewer Rates Committees during the first quarter of the fiscal year. The operating budgets, capital improvement program, and ten-year financial plan are forwarded to the full Board for consideration and action also in the first quarter of the fiscal year. The budget for the period in scope (FY16) was allocated towards the following programs:

- \$223.1 million – Combined sewer overflow
- \$168.6 million – Wastewater Treatment
- \$ 61.9 million – Water
- \$ 34.8 million – Sanitary sewer
- \$ 9.3 million – Non process facilities
- \$ 1.2 million – Stormwater

Additional projected capital expenses for FY16 included \$39.2 million in capital equipment and \$10.8 million for the Washington Aqueduct.\*

After adoption by the Board of Directors, DC Water is required to submit its annual operating and capital budget to the Mayor and the District of Columbia Council for review and comment. However, neither has the power to change DC Water's annual budgets. The District of Columbia includes DC Water's budgets in their submission to Congress.

\* Source: DC Water and Sewer Authority Operating Budget Book

### **IMA Billing – Capital allocation**

The billing process begins with the completion of the annual capital budget. Each participant's share of eligible capital costs is based on the IMA, historical data, and current expectations. The Department of Engineering and Technical Services ("DETS") prepares the capital budget based on the estimated capital requirements for the year.

Participants subject to the IMA receive quarterly billings based on their pro-rata share of capital costs. The initial quarter's billing is based on the projected capital costs. Billings for subsequent quarters are based on the estimate for that quarter net of any adjustments required as a result of the difference between the projected costs and actual costs for the previous quarter. Actual costs associated with capital projects are accumulated in Lawson through the grants module. The allocation of capital costs is determined by the assigned accounting categories also known as ARC (accounting requirements code) codes.



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## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Background (continued)

The financial reporting and billing staff prepares the manual billing. Copies of capital related invoices are sent to WSSC with the capital billings, so WSSC auditors can review and approve capital expenditures quarterly.

Reimbursements for capital related costs are recorded by the Authority as deferred revenue and amortized into charges for wholesale wastewater treatment revenue over the estimated useful lives of the related assets.

IMA participants normally wire payments to DC Water's Concentration Bank account. Treasury is notified of the payments when they pull the daily bank statement. Treasury emails its Daily Cash Report to accounting to advise them of the receipt of payment.

While the actual costs are accumulated in Lawson during the year, the quarterly billings are generated manually since they are based on a combination of estimated and actual expenditures. Quarterly manual journal entries are prepared to record the accounts receivable and deferred revenue in Lawson.

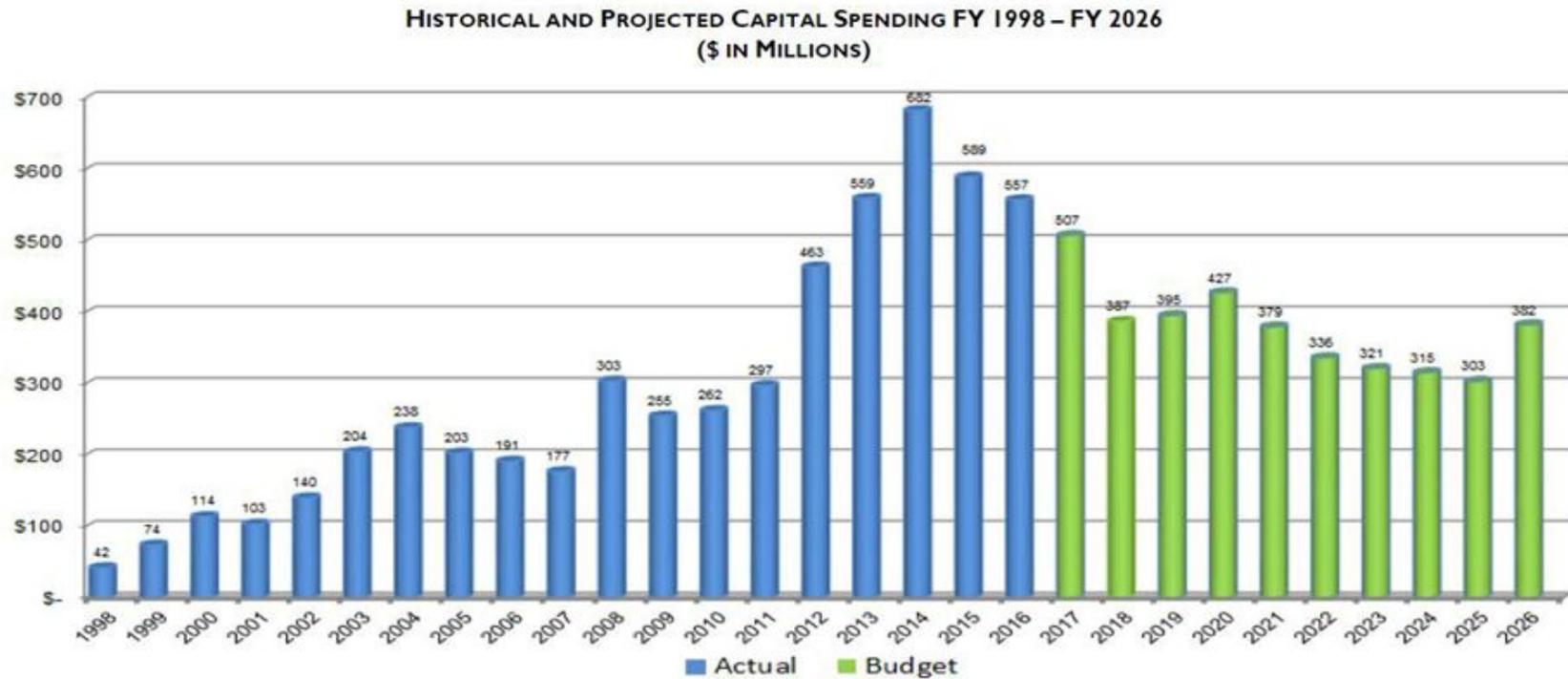
### **Capital Spending**

Capital assets, net of depreciation and amortization, increased to \$6.0 billion in FY16 as a result of capital additions. Capital additions incurred in 2016 were in line with the Authority's approved 10-year capital improvement program. Per the approved FY2016 operating budget, \$549 million in capital spend was budgeted for the year. Actual capital spend during FY16 totaled \$557 million. Of the \$557 million spent in FY16, \$104.6 million was allocated to the Washington Suburban Sanitary Commission (WSSC), \$20 million to Fairfax county and \$8.7 million Loudoun county, for a total of \$133.3 million (23.3%) in capital allocation under the IMA. The graph below illustrates the historical (including FY16) and projected capital-related spend for upcoming years:



## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Background (continued)



Source: DC Water and Sewer Authority FY18 Operating Budget Book



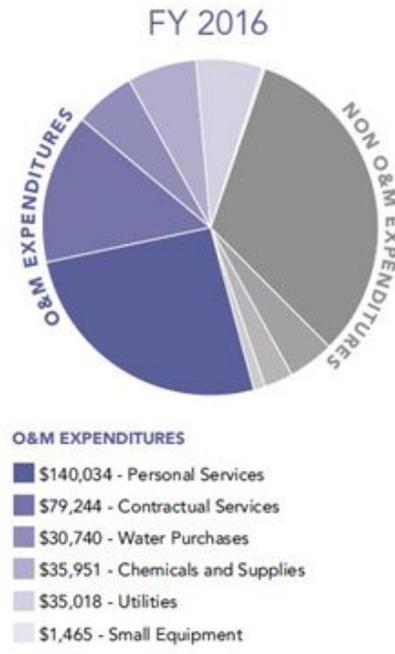
## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Background (continued)

#### IMA Operating Costs Estimates

In addition to capital allocation, DC Water is also responsible for preparing the estimated asset / infrastructure operating and maintenance (“O&M”) costs eligible under the IMA on an annual basis. The estimates are based on the Board of Directors approved budget, known factors and historical data by department and significant financial statement line items. The operating costs incurred are referred to as Direct Costs. The FY16 projected operating expenditures totaled \$322.4 million; the graph below illustrates the operating and maintenance expense categories:

### Operating Expenditures (\$ Thousands)



Source: DC Water and Sewer Authority Operating Budget Book



## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Background (continued)

#### Quarterly Payments - Operating

Upon adoption of the operating budget, financial reporting and billing staff initiate the manual billing for the O&M under the IMA agreement. IMA-eligible costs are based on the upcoming fiscal year's projections for the Wastewater Treatment (WWT), Maintenance Services (DMS), and Distribution and Conveyance Systems (DDCS) departments, and the three year historical averages for Sewer Services (DSS).

The table below shows the percentages DC Water utilized to generate the FY 2016 estimates for each department.

Department	IMA Billable Percentage
Wastewater Treatment	95.0% of approved budget
Maintenance Services	94.0% of approved budget
Sewer Services	4% of approved budget
Distribution and Conveyance Systems	12.5% of approved budget

Source: Department of Finance: FY16 Projected O&M Costs and O&M Operating Bill SOP – Write up for COG\_ Revised 05182016

Once the estimated annual operating costs are determined, DC Water divides each jurisdiction's total estimated operating costs by four to determine the quarterly estimate to be billed to each jurisdiction. The estimated operating costs is submitted to the jurisdiction by October 1<sup>st</sup> of each year in a letter stating the quarterly amount due. Fairfax County receives quarterly billings based on their pro-rata share of the operating budget. Other participants subject to the IMA use the initial quarterly billing as the basis for all quarterly payments.

#### Annual Billing Settlement - Operating

Operating bills (both quarterly bills based on estimates and the annual operating settlement bill) are prepared separately from the capital expense allocation bills. Although IMA participants make payments quarterly based on the annual operating projections, a year-end settlement occurs adjusting the total annual billings to reflect the actual cost of operating and maintaining Blue Plains and related collection facilities applicable to non-District users based upon their share of flows into Blue Plains. Costs associated with operating and maintaining Blue Plains are contained in the Lawson activity module. Costs are captured upon the creation of the purchase order, which is coded to an activity. These accumulated costs are the basis of determining the amounts DC Water should be reimbursed by the participants. If a participant has overpaid during the year, the Senior Financial Analyst prepares the refund documents, communicates overpayment information to the jurisdictions via written letter, and forwards the refund information either to Accounts Payable (if a check is to be cut) or Treasury (if a wire payment is to be made), for processing. If it is determined a participant owes DC Water, a settlement bill is prepared and sent. In addition to the costs for each department noted above, there are three significant line items showing on the annual IMA Settlement Bill: User fees, WSSC Biosolids Costs and Indirect Costs. A description of the various types of costs are shown below:

- User Fees represent fees the jurisdictions pay to DC Water for the use of Authority-owned facilities on behalf of the District. Per the IMA agreement, the initial user fee was effective as of July 1, 1986 and set at \$1.5 million per annum, with subsequent payments compounded annually by 1.5%.



## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Background (continued)

- Biosolids Costs represent the costs WSSC charges DC Water for removing the biosolids waste from the Blue Plains facility. The WSSC biosolids costs estimate is derived from the Board of Directors' approved budget. DC Water utilizes 100 percent of approved budget for the estimate. DC Water multiplies the estimated biosolids costs by each jurisdiction flow percentage to determine each jurisdiction's share of the biosolids costs. Jurisdiction flow percentages are calculated by the Department of Engineering and Technical Services ("DETS") who monitor flow based on meter readings.
- Indirect Costs: Indirect costs are expressed as a percentage of direct services department costs and calculated within the annual operating settlement bill. Historically, the indirect cost has been approximately 20 percent of the direct costs. Additionally, DC Water multiplies the total indirect cost by each jurisdiction flow percentage to determine the estimated indirect costs for each jurisdiction.

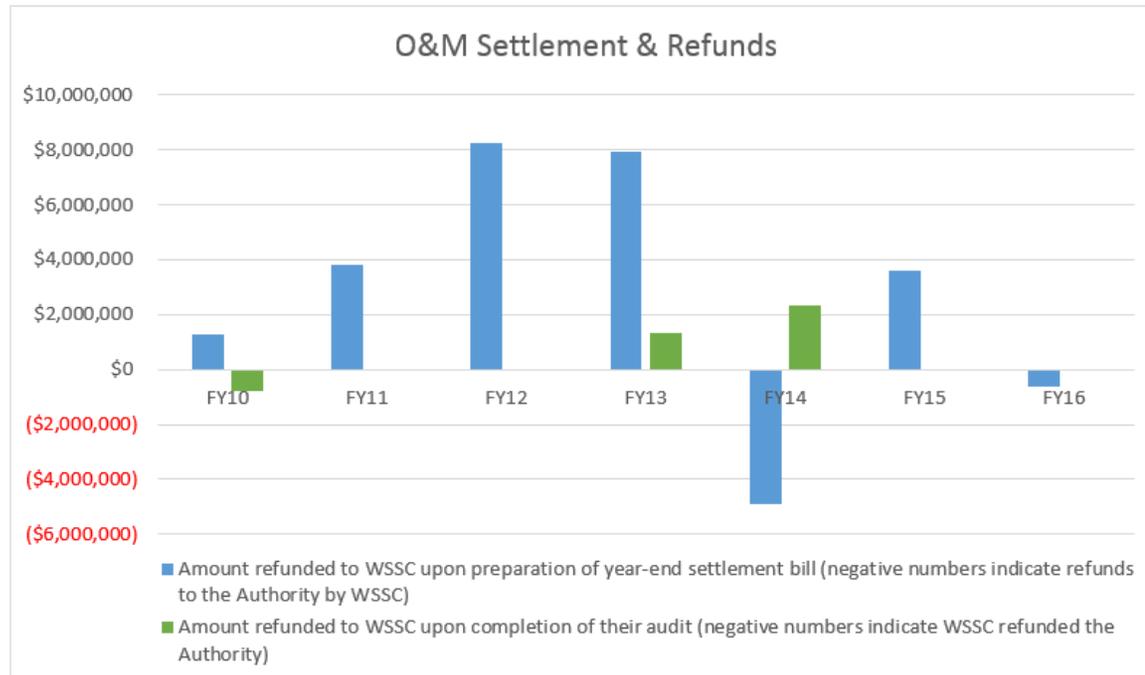
### Audit

At the end of each year, Washington Suburban Sanitary Commission (WSSC) auditors review all the items included in the costs of operating and maintaining Blue Plains and related collection facilities. All line items in the operating settlement bill including user fees, biosolids costs and indirect costs are subject to review. Although WSSC performs the audit for their own pro-rata share, DC Water prepares annual bills for the purpose of reconciling payments made during the year by WSSC, Fairfax and Loudoun. The bill is based on actual costs incurred by each participant (i.e., true-up). The bill is due to the jurisdiction 90 days after the completion of the annual independent audit or March 31<sup>st</sup>. The following graph illustrates the trend in reimbursements to WSSC (the largest of all jurisdictions) upon results of the annual operating settlement bill calculation by DC Water, and upon results of WSSC's audit of the operating settlement bill:



## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Background (continued)



Source(s): DC Water and Sewer Authority, Department of Finance. Washington Suburban Sanitary Commission, Blue Plains Internal Audit Report

The most recent audit conducted by WSSC was of FY14 operating and maintenance charges. The audit conducted by WSSC in FY13 included an audit of FY13, FY12, and FY11 operating and maintenance charges. WSSC is currently in the planning phase of auditing FY15 and FY16 operating and maintenance charges.



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## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Objectives and Approach

#### **Objectives**

The purpose of this review was to gain a better understanding of how the IMA eligible costs are identified, accumulated and billed at DC Water and to identify any additional risks not appropriately covered by controls in the process. Additionally, we sought to gain an understanding and assess unique areas of the business that follow procedures which deviate from the DC Water standard for billing and collections. The audit scope was based on the following objectives:

- Assess and document the cost accumulation and related billing processes surrounding the IMA to identify risks, controls, and process improvements.
- Review capital contracts approved during the test period on a sample basis to ensure whether they are properly classified as applicable or not to the IMA.
- Review capital bills generated quarterly for the period in scope.
- Obtain WSSC audit results for operating allocation and evaluate observations for control gaps and process improvement opportunities.
- Review operating bill adjustments including historical data and trends, and the approval process for adjustments if applicable.
- Evaluate segregation of duties within the process.
- Determine and evaluate if records and documentation are sufficient to establish an audit trail for all transactions involving receipt of payment.

The PI Group's share of capital and operating expenses is not governed by the IMA agreement and thus, are not included in the scope of this audit. Further, because the WSSC performs an audit of the operating and maintenance costs charged to the participants, the majority of RSM's testing focused on the capital expenditure allocation.

#### **Approach**

Our audit approach consisted of the following phases:

##### Understanding of the Process

The purpose of this phase was to gain a better understanding of the Intermunicipal agreement governing DC Water's relationship with surrounding jurisdictions, as it relates to the undertaking and improvement of capital projects that may benefit these other jurisdictions. Additionally, we sought to gain an understanding of the project approval, inter-jurisdictional billing and audit practices as expected to occur under the IMA agreement. Specific procedures performed included:

- Reviewed existing documentation on the process for preparing and recording IMA related bills and refunds;
- Inquired of DETS as to their process for designating a project as IMA billable;
- Inquired of finance, accounting and budget department personnel as to their process for identifying, processing and recording IMA related expenses; and
- Prepared process flows to document our understanding of the processes, which have been confirmed with management and included in the Appendix.



---

## BACKGROUND, OBJECTIVES AND APPROACH (CONTINUED)

### Objectives and Approach

Approach (cont'd)

#### Detailed Testing

The purpose of this phase was to test documentation on a sample basis, and verify compliance with the IMA and DC Water's billing practices towards other participants of the IMA were complete and accurate, as well as identify any process improvements that could improve the efficiency and effectiveness of the billing processes. Specific procedures performed included validating whether:

- Projects and related contracts were properly identified as cost-split eligible under the IMA agreement;
- Supporting documentation for capital and operating cost estimates is properly reviewed;
- Quarterly capital cost charges billed to jurisdictions and reconciled to estimates are properly supported; and
- Reserves for potential refunds due to jurisdictions upon their audit of the annual operating settlement bill are reasonable.

#### Reporting

At the conclusion of this audit, we summarized our observations related to Intermunicipal Agreement billing practices. We have reviewed the results of our testing with management, and their responses (if applicable) are included herein.



## PROCESS IMPROVEMENT OPPORTUNITIES

### Intermunicipal Agreement Internal Audit – Process Improvement Opportunity

#### **Contracts Database**

We reviewed a sample of contracts to test whether they were properly designated as IMA or not. While no exceptions were noted, a significant amount of time was spent gathering relevant documentation for the samples selected. DETS uses “brown folders” to collect and store contract-related data. There is a contract checklist in each file to facilitate gathering all of the required documents; however, we noted incomplete and draft (not final) versions of documents that required additional research on the part of staff. All of the documents requested were subsequently located; Management should consider an electronic database to house contract-related documents, and paper files for the currently ongoing projects should be housed in a central location, even if they were executed in prior years.

#### **Manual Accumulation of O&M Costs**

During our review, we observed the manual spreadsheet used by the Senior Financial Analyst to determine the operating settlement bill charges at year-end is significantly large and complex, containing over 100 individual Microsoft Excel workbook tabs. Upon downloading various reports from the Lawson system, the data is manually transferred to a spreadsheet for analysis. In order to minimize human error and gain better accuracy as to what operating and maintenance costs are billable to IMA jurisdictions, management should consider automating the operating bill settlement calculations under their new ERP system that is currently in the design and selection phase.

#### **System Access**

As part of our review, we examined user access rights to the Grants module of Lawson. While access is restricted to members of the Finance and Accounting departments, there is no mechanism in place to prevent them from altering IMA cost allocations once they are in the system, increasing the risk of erroneous billing to jurisdictions. Management should consider greater access control in the design of profiles and roles under their new ERP system, potentially using restricted table configuration and management for the allocation percentages.

#### **System Interface with Primavera**

The IMA billing process for capital expenses begins with DETS, who is responsible for determining whether project costs (and thus its subsequent contracts) can be allocated to jurisdictions based on project location and use. DETS uses the Primavera system for project management purposes and tracks project data such as start date, projected finish date, cost percent completed, and actual vs. budgeted costs. The Primavera system does not currently interface with the Authority’s financial system, Lawson. Management should consider including system interface with Primavera in their new ERP system requirements, to reduce the risk of errors of manual data transfers.

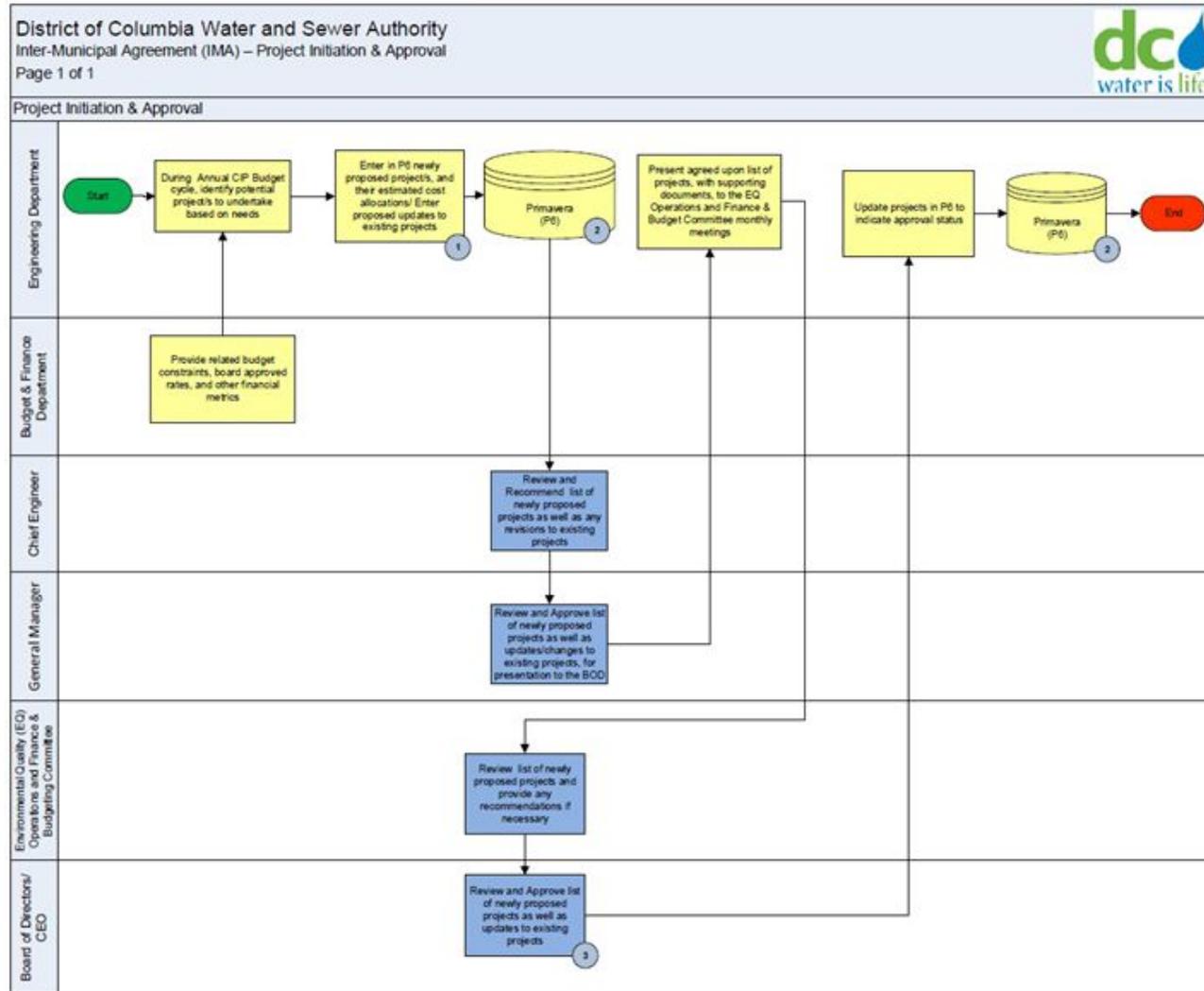


## APPENDIX A – RATING DEFINITIONS

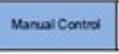
Observation Risk Rating Definitions	
Rating	Definition
Low	Observation presents a low risk (i.e., impact on financial statements, internal control environment or business operations) to the organization for the topic reviewed and/or is of low importance to business success/achievement of goals. Action should be taken within 12 months (if related to external financial reporting, must mitigate financial risk within two months unless otherwise agreed upon).
Moderate	Observation presents a moderate risk (i.e., impact on financial statements, internal control environment or business operations) to the organization for the topic reviewed and/or is of moderate importance to business success/achievement of goals. Action should be taken within nine months (if related to external financial reporting, must mitigate financial risk within two months).
High	Observation presents a high risk (i.e., impact on financial statements, internal control environment or business operations) to the organization for the topic reviewed and/or is of high importance to business success/achievement of goals. Action should be taken immediately, but in no case should implementation exceed six months (if related to external financial reporting, must mitigate financial risk within two months).



## APPENDIX B – FLOW CHARTS



## APPENDIX B – FLOW CHARTS

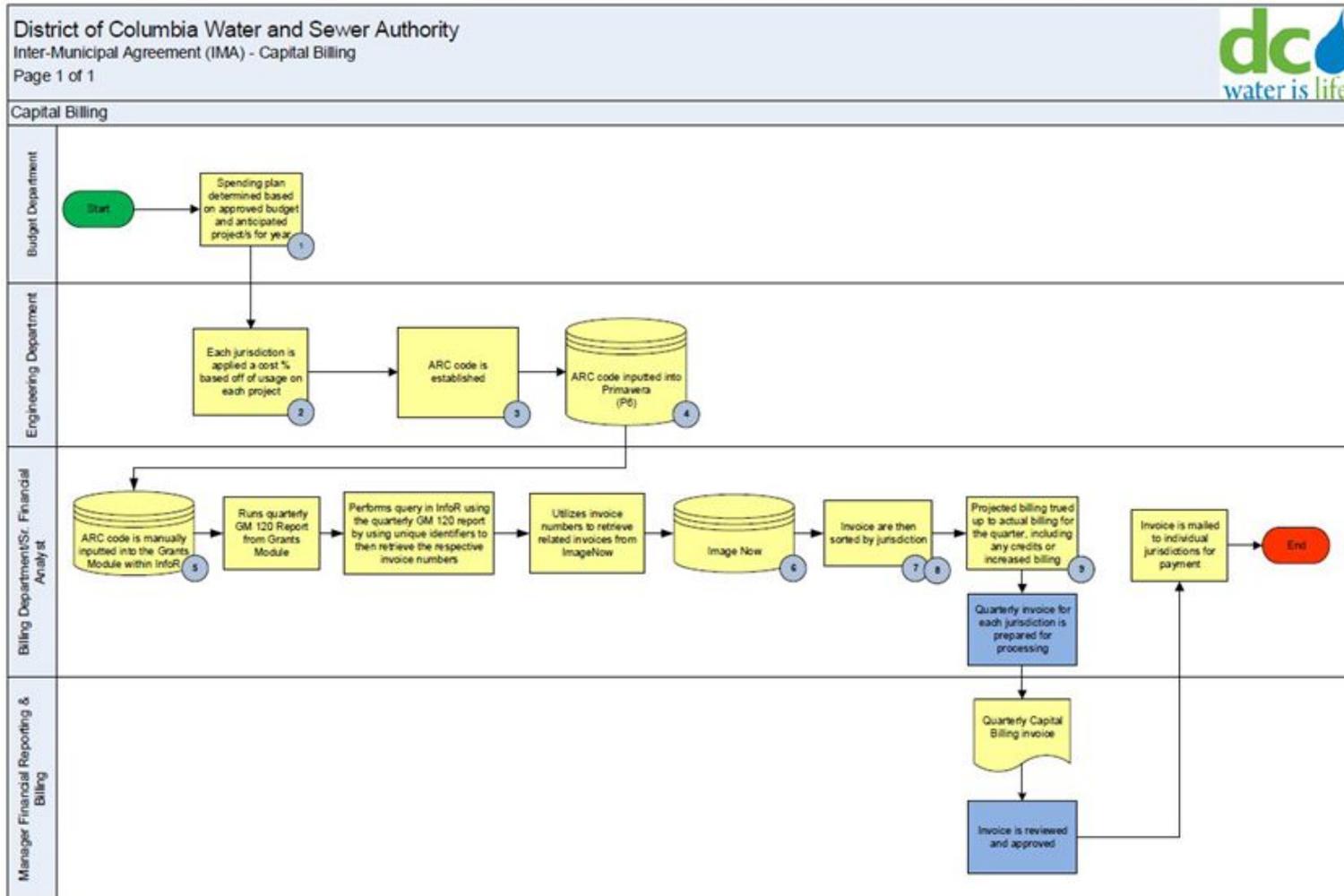
Flowchart Legend:						Colors:			
									
Start line	Off-Page Connector	Database	Document	Decision Point	Sub process/Function	Process Step	Automated Control	Manual Control	Gap

**Notes:**

- There are four types of MJUIFs
  - Existing MJUIF- These do not require Regional Committee approval. The cost splits are based off of the 2012 Blue Plains IMA Agreement
  - New MJUIF with Existing Splits-
  - New MJUIFs without existing splits-
  - Grandfathered MJUIFs- These are projects/contracts were executed prior to the 2012 IMA Agreement. Cost split calculations are sent to the Regional Committee for approval. Do note that once a joint use project nears the beginning of its start date, cost splits and other calculations are generated for the project by the Engineering department, these are then presented to the Regional Committee for their review and approval during their quarterly meeting.
- Primavera (P6)- an Enterprise Project Portfolio Management Software used to track projects and contracts.
- DC Water's capital budget review process begins each year in the spring, as part of both their capital and operating budget review process. The budgets are historically finalized and adopted in either December of the same year or January of the following year.



## APPENDIX B – FLOW CHARTS





## APPENDIX B – FLOW CHARTS

Flowchart Legend:						Colors:			
						Process Step	Automated Control	Manual Control	Gap
Start/End	Off-page Connector	Database	Document	Decision Point	Sub process/Function				

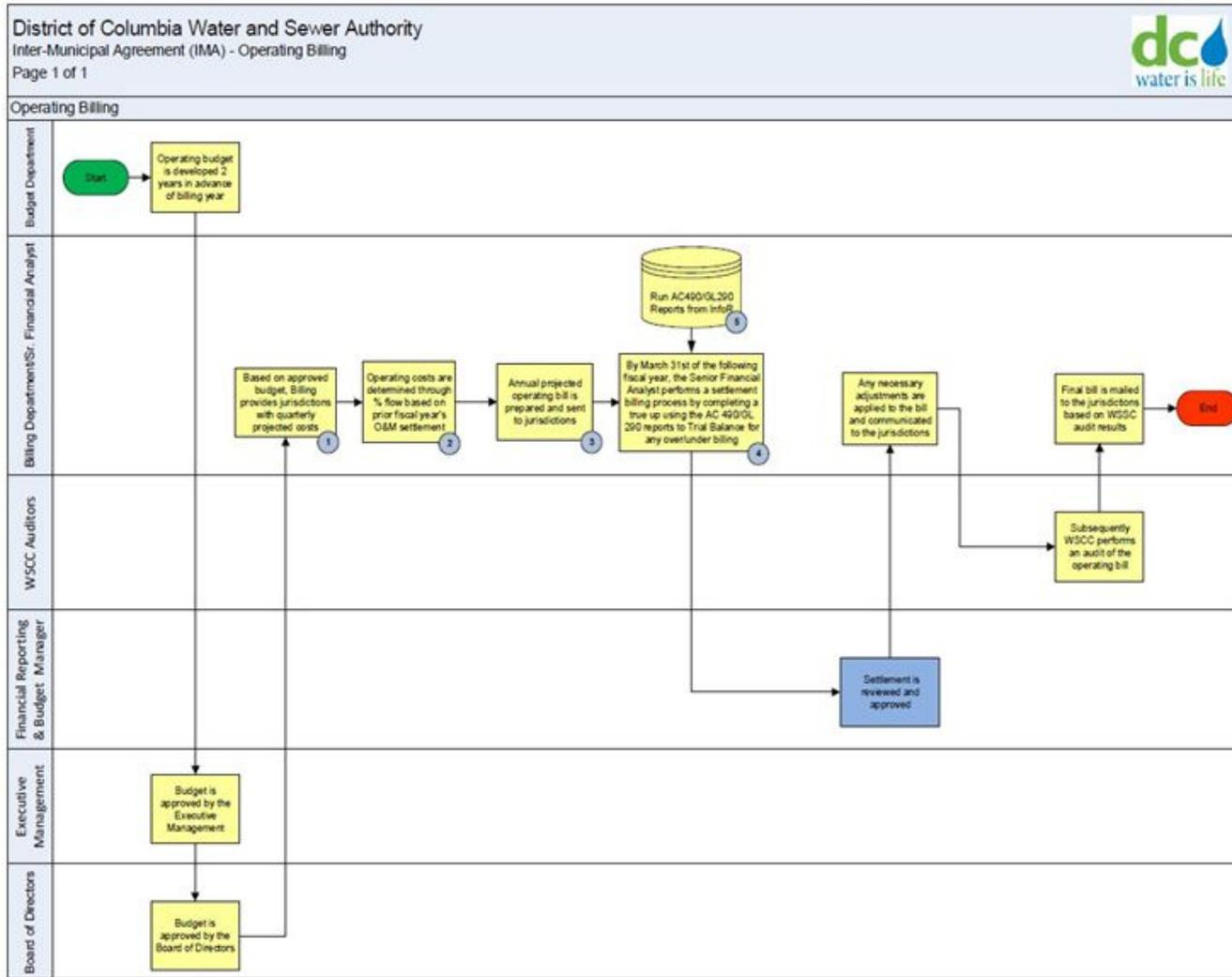
  

**Notes**

1. Inter-Municipal Agreement of 2012- This agreement outlines the operating and financial responsibilities for wholesale wastewater. Signatories to the IMA include the District of Columbia, Montgomery, and Prince George's County, Fairfax County, Virginia, and the Washington Suburban Sanitary Commission.
2. The Program Service Manager from the Department of Engineering and Technology Services (DETS), sends a letter to each jurisdiction to notify them of their allocations for each project. Once approved by the respective jurisdictions, the allocations are then implemented.
3. Agency Reporting Code (ARC)- code assigned by The Engineering Department to each project, determined by the particular project and category.
4. Primavera (P6)- an Enterprise Project Portfolio Management Software used to track projects and contracts.
5. The Grants Module, is a software module used for capital billing within InfoR Financial System, an Enterprise Resource Planning (ERP) software that is industry specific.
6. ImageNow is an Enterprise content management (ECM) software used to organize and store DC Waters invoices related to various activities and departments
7. The DC Water and Sewer Authority bills its IMA (Inter-municipal Agreement) partners for their portion of the capital Equipment on an annual basis.
8. Maintenance and Wastewater costs are direct costs and are 100% billable to the IMAs. Customer Service, Water Services, and Water/Sewer Pump Maintenance are not billable to the IMAs. Water Services costs are DC only costs. The indirect costs are not 100% billable to the IMAs. The Analyst should use the 'Operating, IMA Settlement' bill corresponding to the Capital indirect cost for the fiscal year to determine the percentage of the capital indirect costs billable to the IMAs.
9. Actual costs are pulled from the grants module in InfoR. On an ongoing basis it captures all paid invoices and expense generated in the GL coded as a capital activity.



**APPENDIX B – FLOW CHARTS (CONTINUED)**





## APPENDIX B – FLOW CHARTS (CONTINUED)

Flowchart Legend:						Colors:			
						Process Step	Automated Control	Manual Control	Gap
Start/End	Off-Page Connector	Database	Document	Decision Point	Sub process/function				

**Notes**

- DC Water is responsible for preparing the estimated IMA operating costs on an annual basis. The Estimates are based on the Board of Directors approved budget, known factors and historical data by department and significant line items. The estimated operating costs for each department is multiplied by each jurisdiction flow to determine the jurisdictions' share of the estimated costs.
- O&M (Operating and Maintenance) settlement bill is audited each year by Washington Suburban Sanitary Commission (WSSC). They audit to verify the accuracy and completeness of all activities billed, in accordance with that settlement, for fiscal the year.
- The estimated operating costs for each department is multiplied by each jurisdiction flow to determine the jurisdictions' share of the estimated costs. Once the estimated annual operating costs are determined, DC Water divides each jurisdiction's total estimated operating costs by four to determine the quarterly estimate to be billed to each jurisdiction. The estimated operating costs is submitted to the jurisdiction by October 1<sup>st</sup> of each year in a letter stating the quarterly amount due.
- DC Water prepares annual bills for the purpose of reconciling payments made during the year by WSSC, Fairfax, and Loudoun. The bill is based on actual costs incurred by each Party. The bill is due to the jurisdiction 90 days after the completion of the annual independent audit or at the latest, March 31<sup>st</sup>.
- InfoR Financial System, an Enterprise Resource Planning (ERP) software utilized for DC Water's operating and capital billing purposes.



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# Internal Audit Report Contract Monitoring & Compliance Audit Part I

July 2017



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**Contract Monitoring & Compliance Audit**  
 Internal Audit Report  
 Issued: July 2017



**TRANSMITTAL LETTER**

July 2017

The Audit Committee of DC Water  
 5000 Overlook Avenue, SW  
 Washington, DC 20032

Pursuant to the approved 2017 internal audit plan for the District of Columbia Water and Sewer Authority (“DC Water” or the “Authority”), we hereby present our assessment of Contract Monitoring & Compliance Part I. We will be presenting this report to the Audit Committee of DC Water at the next scheduled meeting on July 27, 2017. Our report is organized in the following sections:

<b>Executive Summary</b>	This provides a summary of the observations and opportunities related to our internal audit of the contract monitoring and compliance process.
<b>Background</b>	This provides an overview of the Contract Monitoring & Compliance process.
<b>Objectives and Approach</b>	The internal audit objectives and focus are expanded upon in this section, as well as a review of the various phases of our approach.
<b>Contract Background and Detailed Observations</b>	For each contract selected, we have provided an overview of the contract, including general statistics and financial information, as well as the observations noted during our work. Recommended actions and managements actions plans are also included.

We would like to thank the staff and all those involved in assisting us in connection with this review.

Respectfully Submitted,

*DC Water Internal Audit*



## EXECUTIVE SUMMARY

### Background

Internal Audit selected a sample of three contracts or service agreements from various departments of operations to test for compliance with applicable terms and conditions.

This report is Part I of the Contract Monitoring & Compliance Audit, and contains two of the three contracts selected by Internal Audit. Part II of this audit contains the remaining contract and will be issued at a later date.

#### **Contract # 15-PR-DWT-02: Department of Wastewater Treatment, Industrial Cleaning Services**

Charmay, Inc. dba ServiceMaster of Alexandria (ServiceMaster) provides industrial cleaning services, such as power washing; cleaning of doors, windows, and piping; removing debris, dirt, scum, grease, solids, trash, and other cleaning services at the DC Water's Blue Plains Advanced Wastewater Treatment Plant. Under the industrial cleaning services contract, there are 54 locations at the Blue Plains that ServiceMaster is required to clean.

#### **Contract # 14-PR-OGC-01-AA: Office of the General Counsel, Environmental Law**

Beveridge & Diamond, P.C. (B&D) is a law firm that provides environmental legal services to DC Water. This includes representing and defending DC Water in claims and negotiations involving environmental matters, defending and representing DC Water during both informal and formal alternative dispute resolution proceedings and other hearings, and provide informal opinions and discuss issues with DC Water personnel and provide recommendations regarding investigation, liability exposure, and overall case administration or matters, as needed.

### Objective and Scope

Our procedures were performed in accordance with the internal audit scope and approach set forth in our audit notification letter, dated April 12, 2017, and were limited to those procedures described therein.

Our scope included the following:

- Determine contractor compliance with specific contract terms and provisions, as applicable;
- Identify the monitoring controls and evaluation process in place for these contracts, including follow-up of remediation of underperformance;
- Review invoice and change order approval processes, and
- Identify process improvement opportunities and recommend internal control enhancements to improve the contractor management process.

Fieldwork was performed April 2017 through June 2017.

### Overall Summary

The observations identified during our assessment are summarized on the next page. We have assigned relative risk or value factors to each observation. Ratings are not assigned to opportunities as these items represent best practices and/or recommended initiatives. Risk ratings are the evaluation of the severity of the concern and the potential impact on the operations of each item. Only observations will require management action plans with estimated completion dates that will be included in the routine follow up of internal audit observations.

#### Overall Rating (See Appendix A for definitions)

	Number of Observations by Risk Rating		
	High	Moderate	Low
Total Observations	1	2	2

*We would like to thank all DC Water team members who assisted us throughout this review.*



## EXECUTIVE SUMMARY (CONTINUED)

### Ratings and Conclusions

The following is a summary of all observations noted in the areas reviewed. Definitions of the rating scales are included in the Appendices.

Observations and Improvement Opportunities	
<b>Charmay Inc. dba ServiceMaster of Alexandria – Department of Wastewater Treatment</b>	
Observation	Rating
<b>1. INVOICE REVIEW PROCESS</b> Per inspection of the invoice review process, it was identified that not all invoices were approved without proper review. Not all invoices sent by ServiceMaster included breakdowns of materials, equipment, and supplies being charged to DC Water. By not properly reviewing the costs related to the invoice, DC Water runs the risk of overpaying for contracted services and materials.	Moderate
<b>2. CONTRACT REQUIREMENTS</b> The executed contract between DC Water and ServiceMaster reference the Request for Proposal (RFP) for contractual requirements. It was identified that processes currently being utilized between DC Water and ServiceMaster do not specifically follow the language specified in the RFP. While current processes have been deemed sufficient, DC Water runs the risk of being unable to enforce the current contract requirements.	Low
<b>3. WEEKLY INSPECTIONS</b> Currently, the COTR and on-site Supervisor for ServiceMaster perform weekly inspections of locations cleaned by ServiceMaster as required by the RFP. However, the COTR only documents one inspection per month. Due to a lack of consistent documentation surrounding inspections, DC Water runs the risk of inadequately capturing contractor performance.	Low



## EXECUTIVE SUMMARY (CONTINUED)

### Ratings and Conclusions (continued)

<b>Beveridge &amp; Diamond – Office of the General Counsel</b>	
<b>Observations</b>	<b>Rating</b>
<p><b>1. ACCESS TO INFORMATION REGARDING ONGOING CASES</b></p> <p>Detailed Beveridge and Diamond invoices and support are posted to ImageNow, a document repository, by DC Water's Accounts Payable Department. These invoices may include confidential and legally privileged information regarding on-going cases. When full invoice support is posted to DC Water's system, many personnel outside of the OGC may access the files, which include strategy regarding ongoing legal cases.</p>	<b>High</b>
<p><b>2. INVOICING AND PAYMENT</b></p> <p>Per our testing of invoice approval, the Office of the General Counsel (OGC) did not remit payment of the Contractor's invoices within 30 days of receiving the invoice in accordance with the Service Agreement. For 4 of the 15 invoices selected for testing, the OGC did not maintain record of when the invoice was received.</p>	<b>Moderate</b>

DRAFT



## BACKGROUND, OBJECTIVES, AND APPROACH

### Background

#### Overview

Internal Audit selected a sample of three contracts or service agreements from various departments of operations to test for contract monitoring and compliance with applicable terms and conditions. A contract with the Department of Wastewater Treatment and a service level agreement with the Office of the General Counsel will be issued during Part I of the internal audit. The internal audit of the third contract will be issued as Part II during the October Audit Committee meeting.

The designated Contracting Officer Representative (COR) and/or Contracting Officer's Technical Representative (COTR) are responsible for ensuring goods and services contract compliance at DC Water and Sewer Authority ("DC Water" or the "Authority"). The COR shall be responsible for all administration of the contract. The COTR is the technical expert for the contract and acts as a liaison between the Contractor and the Contracting Officer. The Authority enters into many contracts each year, as illustrated by the contractual services operating expenditures and budgets in the following table:

Contractual Services Operating Expenditures <sup>1</sup>	
FY 2014 Actual	\$68,172,000
FY 2015 Actual	\$66,241,000
FY 2016 Actual	\$74,086,000
FY 2017 Approved	\$82,760,000
FY 2018 Approved	\$79,354,000

<sup>1</sup>Source: DC Water Approved FY 2018 Operating Budget;  
 FY 2016 Consolidated Annual Financial Report

#### Objectives

The objective of the Contract Monitoring & Compliance Audit was to obtain an understanding of how contracts are managed and assess whether the system of internal controls are adequate and appropriate, at the department level and authority-wide, for promoting and encouraging the achievement of management's objectives in the categories of compliance. The audit scope was based on the following objectives:

- Determine Contractor compliance with specific contract terms and provisions, as applicable;
- Identify the monitoring controls and evaluation process in place for these contracts, including follow-up of remediation of underperformance;
- Review invoice and change order approval process; and
- Identify process improvement opportunities and recommend internal control enhancements to improve the overall Contractor management process.

Contracts managed by the Department of Engineering and Technical Services (DETS) are outside the scope of this audit, as those are being included in the Engineering – Contractor Management internal audits.

## OVERVIEW, OBJECTIVES, AND APPROACH (CONTINUED)

### **Approach**

Our audit approach consisted of the following phases:

#### Understanding of the Process

The purpose of this phase was to gain an understanding of DC Water's contract monitoring and compliance process for goods and services contracts. We submitted requests to the CORs and/or COTRs to gain a better understanding of the contract terms and determine how the contract is monitored. Internal Audit conducted walkthroughs with the CORs and COTRs of the contracts selected, the Contractor's Project Manager, and other employees within the Department, as needed.

#### Detailed Testing

The purpose of this phase was to test compliance and internal controls based on our understanding of the contract terms and conditions. This phase included the execution of applicable tests of compliance with DC Water contracts. The time period covered by testing was October 1, 2015 through March 31, 2017.

For all contracts selected, we conducted the following testing:

- Performed a review of the invoice submission, approval and payment process to verify:
  - Invoices are submitted on a monthly basis and reflect the Contract # and PO #.
  - Invoices define the period of service provided and describe the services provided.
  - Invoices were paid by DC Water within 30 days.
- Reviewed the Contractor's Safety Plan, if applicable, to ensure it met all contractual requirements and was properly approved.
- Verified that DC Water maintained a current Certificate of Insurance for the Contractor, if applicable.

We also conducted testing of the following contracts to verify that the Contractor was meeting specific contractual requirements:

#### **Contract # 15-PR-DWT-02 (Charmay Inc. dba ServiceMaster of Alexandria): Department of Wastewater Treatment, Industrial Cleaning Services**

- Performed a review of the weekly inspection process to gain an understanding of what the COTR is inspecting and how inspections are being documented. Reviewed the scheduling process between DC Water and ServiceMaster to gain an understanding of how cleaning assignments are established, the difference between Schedule A, B, and C cleanings, and the timeliness for establishing cleaning assignments for each level of cleaning.
- Reviewed the reporting process to validate whether ServiceMaster is submitting required documentation timely.

#### **Contract # 14-PR-OGC-01-AA (Beveridge & Diamond): Office of the General Counsel, Environmental Law**

- Compared Service Agreement terms to current contract monitoring process.
- Reviewed purchase order and contract modifications executed throughout the testing period.

#### Reporting

At the conclusion of this audit, we summarized our observations related to contract compliance at DC Water. We have reviewed the results of our testing with management.



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## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

**Charmay, Inc. dba ServiceMaster of Alexandria**  
**Department of Wastewater Treatment, Industrial Cleaning Services**

DRAFT



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Contract Background

**Contract # 15-PR-DWT-02**

Charmay, Inc. dba ServiceMaster of Alexandria (ServiceMaster) was awarded the contract to perform industrial cleaning services for DC Water. The industrial cleaning services include power washing; cleaning of doors, windows, and piping; removing debris, dirt, scum, grease, solids, trash, and other cleaning services at the DC Water’s Blue Plains Advanced Wastewater Treatment Plant.

Contract Overview	
<b>Contractor</b>	Charmay, Inc. dba ServiceMaster of Alexandria
<b>Award Date</b>	October 19, 2015
<b>Original Contract Period</b>	October 19, 2015 – October 18, 2016
<b>Contract Award</b>	\$595,039.38
<b>Type of Contract</b>	Firm fixed price, four (4) one (1) year option periods
<b>COR/COTR</b>	Specialist, Wastewater Treatment OS

During the base year, DC Water had a contract modification that added the Primary Screening and Grit Conveyance Building No.1 (West) and Primary Screening and Grit Conveyance Building No.2 (East) to the scope of the contract. There are currently 54 locations covered in the scope of the contract, for which ServiceMaster are required to clean.

Statistics and Financial Information

DC Water is currently exercising its option to extend the contract in Option Year No. 1. The ServiceMaster contract makes up approximately 6.37% of the Department of Wastewater Treatment’s total contractual services operating expenditures budget for FY 2017, as illustrated below.

Approved FY 2016 Department of Wastewater Treatment Operating Expenditures Budget	
ServiceMaster budget for Option Year 1 <sup>2</sup>	\$612,915
Total operating expenditures budget - Department of Wastewater Treatment <sup>3</sup>	\$80,466,000
ServiceMaster budget % of total Department operating expenditures budget	0.76%
Total contractual services budget – Department of Wastewater Treatment <sup>3</sup>	\$9,619,000
ServiceMaster budget % of total Department contractual services budget	6.37%

<sup>2</sup> Source: ServiceMaster Option Year 1 Price Schedule

<sup>3</sup> Source: DC Water Approved FY 2017 Operating Budgets



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Detailed Observations

ServiceMaster – Department of Wastewater Treatment – Industrial Cleaning Services			
1.	<u>Invoice Review Process</u>	<u>Recommendation</u>	<u>Management’s Action Plan</u>
	<b>Observation Rating: Moderate</b>		
	<p>For two of the four invoices selected for testing, the invoice did not include a breakdown of materials, equipment, and supplies that were purchased by ServiceMaster and then billed to DC Water. The two invoices only included breakdowns of daily labor. Without breakdowns of each category that is billed, the Department of Wastewater Treatment cannot adequately review the completeness and accuracy of the invoice, which can lead to overpayment to the contractor. The invoices missing the breakdowns of materials, equipment, and supplies were approved and paid.</p> <p>Upon Internal Audit’s discovery of the missing schedules, the Department of Wastewater Treatment requested the documentation retroactively from ServiceMaster. ServiceMaster was able to provide the breakdown of material, equipment, and supplies, and the breakdowns agreed to the two previously paid invoices. Upon further investigation, it was noted that ServiceMaster made a change to their financial system, which, in turn, was not providing full breakdowns. Since discovery of this issue, ServiceMaster has made corrections.</p>	<p>If the COTR receives an invoice that does not include full breakdowns of all costs related to the invoice, they should suspend approval and communicate with ServiceMaster in order to receive full details to what costs have been incurred during the period.</p> <p>In order to document compliance with the 30 day payment requirements, any suspension of payment due to lack of support should be documented.</p>	<p><b>Response:</b></p> <p>The COTR will not approve invoices that do not contain full support for the total amount billed. If insufficient support is received, the COTR will reach out to ServiceMaster in order to obtain full details. If this causes payment to be made after the 30 day requirement, the issue will be documented by the COTR.</p> <p><b>Responsible Party:</b></p> <p>Department of Wastewater Treatment</p> <p><b>Target Date:</b></p> <p>July 31, 2017 (effective immediately)</p>



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Detailed Observations (Continued)

ServiceMaster – Department of Wastewater Treatment – Industrial Cleaning Services			
2.	<u>Contract Requirements</u>	<u>Recommendation</u>	<u>Management's Action Plan</u>
	<b>Observation Rating: Low</b>		
	<p>It was noted that multiple requirements are not reflective of the current processes followed by the Department of Wastewater Treatment. Specifically, DC Water is not in compliance with the following sections of the ServiceMaster Request for Proposal (RFP):</p> <p>1. The RFP states "Within two weeks, before quarterly scheduled cleanings are performed, the offeror shall prepare and submit a work plan to the COTR for approval."</p> <p>Currently, formal work plans are not created for Schedule A cleanings. Instead, the COTR and on-site Supervisor for ServiceMaster create a cleaning schedule each month. The schedule will include which areas are to be cleaned and the level effort for each location. Throughout the month, the COTR and on-site Supervisor for ServiceMaster are in constant communication about the status of cleanings. Sometimes, new areas are added to the schedule during the month if a specific area needs unanticipated attention. Schedule B and C cleanings are more intensive and work plans are created 2-3 weeks out from when the task is to be performed. Since Schedule A cleanings are scheduled based on the current state of locations assessed each month, creating a formal work plan for the quarter is unnecessary.</p> <p>Cleaning tasks are subject to change each week, and as such, the RFP language does not fully reflect how cleaning tasks are determined.</p>	<p>1. The executed contract refers to the RFP for scope of work. Because the actual current process differs from the RFP language, contract language should be added to better reflect the process of cleaning schedule determination. The updated language should explicitly state that Schedule B and C cleanings require a work plan, and should include the area, materials, expected cost of the task, personnel included in the cleaning, etc. Currently, the COTR and on-site Supervisor for ServiceMaster determine the schedule on a monthly basis for Schedule A cleanings. Any updates and changes made during the month for Schedule A cleanings should be documented on the schedule that is maintained by the COTR.</p>	<p><b>Response:</b>                      The Department of Wastewater Treatment, along with Procurement, will write a revision to the contract to explicitly state that only Schedule B and C cleanings require a work plan. The revised contract language will include what is required to be documented in the work plan, such as the area to be cleaned, materials to be used, expected cost of the task, personnel working on the task, etc.</p> <p><b>Responsible Party:</b>                      Department of Wastewater Treatment and Procurement</p> <p><b>Target Date:</b>                      August 31, 2017</p>



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Detailed Observations (Continued)

ServiceMaster – Department of Wastewater Treatment – Industrial Cleaning Services			
2.	<u>Contract Requirements</u>	<u>Recommendation</u>	<u>Management’s Action Plan</u>
	<b>Observation Rating: Low</b>		
	<p>2. The RFP states, "Reports on all cleaning assignments shall be submitted to the COTR within 2 days after completion of the cleaning tasks. The COTR will use these reports for inspection purposes."</p> <p>Currently, no reports are submitted to DC Water after cleaning occurs. The COTR and on-site Supervisor for ServiceMaster are in constant communication about what areas are to be cleaned and how long each cleaning should take. Because of this, the COTR knows which areas have been cleaned each day, and will visit work sites at least once a week. Since Schedule A cleanings are occurring daily, it is excessive for ServiceMaster to submit a report for each cleaning assignment.</p> <p>These two requirements are not necessary to adequately perform the scope of work under the executed contract. However, DC Water runs the risk of being unable to enforce the current contract monitoring and compliance processes because they are not fully documented in the executed contract or RFP.</p>	<p>2. Since the COTR and on-site Supervisor are in constant communication, and Schedule A cleanings occur on a daily basis, reports should not have to be submitted after each cleaning assignment. While actual reports are not currently submitted after each cleaning task, the COTR is aware of which areas have been cleaned. Since Schedule B and C cleanings are more intensive and require a higher level of detail and planning, reports should be sent to the COTR following those tasks.</p>	<p><b>Response:</b>                      The Department of Wastewater Treatment, along with Procurement will write a revision to the contract to better reflect the reporting process between ServiceMaster and DC Water. The language will state that reports are only required for Schedule B and C cleaning tasks.</p> <p><b>Responsible Party:</b>                      Department of Wastewater Treatment</p> <p><b>Target Date:</b>                      August 31, 2017</p>



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Detailed Observations (Continued)

ServiceMaster – Department of Wastewater Treatment – Industrial Cleaning Services			
3.	<u>Weekly Inspections</u>	<u>Recommendation</u>	<u>Management’s Action Plan</u>
	<b>Observation Rating: Low</b>		
	<p>The RFP states that the COTR or his/her designee shall conduct weekly inspections of work areas, and ServiceMaster's on-site Supervisor is required to attend.</p> <p>Weekly inspections are occurring, but only one area is documented in an inspection checklist each month, and the on-site Supervisor has not been required to attend all inspections, although he does attend the majority. These monthly documented inspections serve to represent all other areas as a whole. Any issues identified during the weekly inspections are asked to be corrected immediately. Since an inspection checklist is not used for all weekly inspections, an issue or concern may go undocumented.</p> <p>Without documentation of all issues or concerns, DC Water risks an inability to track inadequate contractor performance if multiple similar offenses are occurring.</p>	<p>The COTR should document all weekly inspections, rather than only one per month. By documenting all weekly inspections, the COTR can more easily identify issues, verify that all personnel that are required to be on site are there, and better capture the contractor's performance as a whole. For the formal, weekly inspections, the on-site Supervisor should be required to attend, as the contract states. Issues and feedback can be discussed real time, which can be relayed to the on-site Supervisor's team immediately.</p>	<p><b>Response:</b></p> <p>Formal inspections by the COTR will continue to occur on a weekly basis. The on-site Supervisor at ServiceMaster will be required to attend. ServiceMaster will designate a replacement for circumstances in which the on-site Supervisor is unavailable to attend. All weekly inspections will be documented and retained by the Department of Wastewater Treatment.</p> <p><b>Responsible Party:</b></p> <p>Department of Wastewater Treatment</p> <p><b>Target Date:</b></p> <p>August 31, 2017</p>



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## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

**DRAFT**

**Beveridge & Diamond, P.C.**

**Office of the General Counsel, Environmental Law**



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Contract Background (Continued)

Beveridge & Diamond, P.C. provides outside counsel for environmental legal services upon request to DC Water. McGuireWoods LLP was also awarded a contract (Contract #14-PR-OGC-01-AF) through the same RFP for environmental legal services, and the contract award amount illustrated below represents the total combined contract value for the two firms for the contract base period. However, only the Beveridge & Diamond contract is in scope for this contract compliance audit.

Contract Overview	
<b>Contractor</b>	Beveridge & Diamond, P.C.
<b>Award Date</b>	July 1, 2015
<b>Original Contract Period</b>	July 1, 2015 – June 30, 2018
<b>Contract Award</b>	\$4,500,000 (\$1,500,000 per year per Contractor)
<b>Type of Contract</b>	Legal Services Agreement – fee for service
<b>COR/COTR</b>	Deputy General Counsel

There have been two contract modifications during the life of this contract. The first occurred on April 7, 2016 for additional funding of \$1,544,000. The second modification occurred July 1, 2016 for additional funding of \$1,000,000. Both contract modifications were approved by DC Water’s Board of Directors.

#### Statistics and Financial Information

DC Water is currently in the base year of this contract. This environmental legal services contract makes up approximately 39.7% of the Office of the General Counsel (OGC)’s total contractual services operating expenditures budget for FY 2017, as illustrated below.

Approved FY 2017 Office of the General Counsel Budget <sup>1</sup>	
Environmental Legal Services budget (Contract #14-PR-OGC-01-AA / 14-PR-OGC-01-AF)	\$1,500,000
Total contractual services budget – OGC	\$3,779,000
Environmental Legal Services budget % of total OGC contractual services budget	39.7%

<sup>1</sup>Source: DC Water Approved FY 2017 Operating Budget and BoD Modification  
 2 Contractor Fact Sheet



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Contract Background (Continued)

During FY 2015 and FY 2016, actual OGC contractual services expenditures exceeded the approved OGC contractual services budget by 34% and 89% respectively. See table below for OGC contractual services budget and expenditures over five fiscal years.

Office of the General Counsel Budget Requests <sup>1</sup>		
Fiscal Year	Approved Contractual Services Budget	Actual Contractual Services Expenditure
FY 2014	\$5,477,000	\$3,566,000
FY 2015	\$4,078,000	\$5,456,000
FY 2016	\$3,776,000	\$7,123,000
FY 2017	\$3,779,000	N/A – fiscal year ongoing
FY 2018	\$5,236,000	N/A – fiscal year not started

<sup>1</sup>Source: DC Water Approved Operating Budgets

Two PO modifications were necessary in FY 2016 and one PO modification has occurred in FY 2017 as of June 1, 2017. PO modifications are necessary when the OGC runs out of funding on a PO to adequately cover an invoice. See the table below for a breakdown of FY 2016 and FY 2017 PO modifications.

Beveridge & Diamond PO Modifications		
Fiscal Year	PO#	PO amount
FY 2016	160500	\$500,000
	160500 Mod 1	\$1,000,000
	160500 Mod 2	\$600,000
<b>FY 2016 total PO value</b>		<b>\$2,100,000</b>
FY 2017	170617	\$200,000
	170617 Mod 1	\$300,000
<b>FY 2017 total PO value (as of 6/1/17)</b>		<b>\$500,000</b>



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Detailed Observations

Beveridge & Diamond P.C. – Office of the General Counsel – Environmental Law			
1.	<u>Access to Information Regarding Ongoing Cases</u>	<u>Recommendation</u>	<u>Management's Action Plan</u>
	<b>Observation Rating: High</b>		
	<p>Detailed Beveridge and Diamond invoices and support are posted to ImageNow by DC Water's Accounts Payable Department. These invoices may include confidential and legally privileged information regarding on-going cases.</p> <p>When full invoice support is posted to DC Water's system, many personnel outside of the OGC may access the files, which may include strategy regarding ongoing legal cases. This presents a risk of confidential cases being accessed by inappropriate employees and / or contractors.</p>	<p>The OGC should maintain full invoices and supporting documentation within their office, and Beveridge &amp; Diamond should only share redacted invoice information with Accounts Payable as necessary for payment processing.</p>	<p><b>Response:</b>                      OGC will direct legal service providers to send a statement of the charges to Accounts Payable (AP) and to send the actual invoice to the managing attorney. One of the firms that represents DC Water in employment matters has already been following this process. OGC anticipates all firms will comply with this direction.</p> <p>OGC will maintain the invoices for at least a three year period after the matter has been closed. Management will coordinate with AP to restrict access to prior invoices.</p> <p><b>Responsible Party:</b>                      Office of the General Counsel</p> <p><b>Target Date:</b>                      July 31, 2017</p>



## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Detailed Observations (Continued)

Beveridge & Diamond P.C. – Office of the General Counsel – Environmental Law			
2.	<u>Invoicing and Payment</u>	<u>Recommendation</u>	<u>Management’s Action Plan</u>
	<b>Observation Rating: Moderate</b>		
	<p>Per our testing of invoice approval, the Office of the General Counsel (OGC) did not remit payment of the Contractor's invoices within 30 days of receiving the invoice in accordance with the Service Agreement. For 4 of the 15 invoices selected for testing, the OGC did not maintain record of when the invoice was received. For these instances we used the invoice date to calculate days to payment. It is possible that invoices paid timely may appear late in our testing, as we have no way to evidence the mailing delay that may have existed between invoice date and the date the OGC received an invoice, as invoices are not submitted electronically. Of the invoices tested, 9 of 15 did not meet the 30 day requirement.</p> <p>The Service Agreement states that DC Water will be invoiced once a month for Beveridge &amp; Diamonds services. However, invoices are submitted monthly for each open case, which has led to up to eight invoices submitted by Beveridge &amp; Diamond per month. When each invoice is received, the attorney assigned to the case performs a detailed review of all hours charged during the billing period to confirm that the time, rates, and work performed were appropriate. Any invoices over \$5,000 are also reviewed by the Deputy General Counsel. The volume of invoices received and detailed review necessary are time consuming tasks that contribute to payment delays.</p>	<p>The OGC should begin time stamping each invoice that is received. If the received date is maintained, the exact number of days between receipt and payment can be appropriately calculated. For timelier turnaround, the OGC should consider utilizing DC Water's e-invoicing portal for Beveridge &amp; Diamond to submit invoices.</p> <p>Additionally, the OGC should prioritize review of Beveridge &amp; Diamond invoices such that the turnaround time of approval is less than 30 days and Accounts Payable can remit payment within the 30 days required by the Service Agreement.</p> <p>Further, as part of the annual budgeting process, the Authority should evaluate the contractual</p>	<p><b>Response:</b></p> <p>OGC currently date stamps all correspondence received from outside of the office. There should be no discrepancies regarding the date any correspondence is received going forward. OGC will also explore the possibilities of using an e- invoicing portal.</p> <p>Generally, 30 days are sufficient to approve and remit payment. However, if there is a change in the invoice due to incorrect billing, the understanding of all parties is that the 30 day period does not start until a corrected invoice is received.</p>



		services budget for the OGC, including evaluating past trends, pending litigation and anticipated needs to ensure adequate funds exist for external legal support.
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## CONTRACT BACKGROUND AND DETAILED OBSERVATIONS (CONTINUED)

### Detailed Observations (Continued)

Beveridge & Diamond P.C. – Office of the General Counsel – Environmental Law			
2.	<u>Invoicing and Payment - continued</u>	<u>Recommendation</u>	<u>Management’s Action Plan</u>
	<p>Additionally, two PO modifications were necessary in FY 2016 and one PO modification has occurred in FY 2017 as of June 1, 2017. PO modifications are necessary when the OGC’s required service needs exceed the funding on a PO to adequately cover an invoice. In such instances, invoice payment must be held until a PO modification is created. Three of the nine invoices that exceeded the 30 day payment threshold were late due to pending PO modifications. Typically, POs require modification each year because the OGC is not granted enough budget to cover the cost of external legal services, requiring additional mid-year funding requests. During FY 2015 and FY 2016, actual OGC contractual services expenditures exceeded the approved OGC contractual services budget by 34% and 89%, respectively.</p>	<p>Reference the Annual Budget and Planning Internal Audit report issued on April 27, 2017 for additional process improvement recommendations.</p>	<p><b>Response (continued):</b>                      OGC will work with the Budget team to formulate a budget forecasting process that takes into account the unpredictable nature of outside counsel expenses and evaluate progress in implementing liability prevention practices to reduce litigation costs. In situations where litigation is not avoidable, OGC will implement practices to reduce defense costs, such as having third party providers participate in the discovery phase of the litigation.</p> <p><b>Responsible Party:</b>                      Office of the General Counsel</p> <p><b>Target Date:</b>                      July 31, 2017</p>



## APPENDIX A – RATING DEFINITIONS

Observation Risk Rating Definitions	
Rating	Definition
Low	Observation presents a low risk (i.e., impact on financial statements, internal control environment, brand, or business operations) to the organization for the topic reviewed and/or is of low importance to business success/achievement of goals.
Moderate	Observation presents a moderate risk (i.e., impact on financial statements, internal control environment, brand, or business operations) to the organization for the topic reviewed and/or is of moderate importance to business success/achievement of goals. Action should be in the near term.
High	Observation presents a high risk (i.e., impact on financial statements, internal control environment, brand, or business operations) to the organization for the topic reviewed and/or is of high importance to business success/achievement of goals. Action should be taken immediately.



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