



**DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY**

Board of Directors

Audit Committee

Thursday, October 22, 2015

9:30 a.m.

1. **Call to Order**.....Nicholas A. Majett, Chairperson

2. **KMPG Audit Status Update**.....KPMG

3. **Review of Internal Audit Status**..... Dan Whelan, Auditor General
 - A. **Internal Auditor Follow-Up Report on Prior Audit Findings**
 - B. **Retail Rates Pre-Implementation Progress Report**
 - C. **Hotline Update**
 - D. **Risk Assessment and Proposed Internal Audit Plan FY2016**

4. **Blue Horizon 2020 Progress**.....Sarah Neiderer, Strategic Planning Officer

5. **Executive Session*** Nicholas A. Majett, Chairperson

6. **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 Audit Committee Meeting

October 22, 2015



Assurance ■ Tax ■ Consulting

Agenda

- KPMG Financial Audit Status Update
- Internal Audit Status Update
- Follow-up Report on Prior Audit Findings
- Retail Rates Pre-Implementation Progress Report
- Hotline Update
- FY 2015 Internal Audit Accomplishments
- Internal Audit Methodology and Risk Assessment Process
- FY 2016 Proposed Internal Audit Plan FY

KPMG Financial Audit Status Update

- Completed walkthroughs over the following process areas: Procurement, Debt, Human Resources, Grants Management, Property Plant & Equipment (PP&E), Treasury, Financial Reporting / Journal Entries
- Performed planning and risk assessment procedures, including audit scoping
- Performed control test work over Debt, Revenue, Treasury, PP&E, and Wire Transfers
- Performed planning analytical procedures
- Began management review of audit documentation
- Began testing of general IT controls and application controls in Lawson and Vertex systems
- No significant findings or issues noted to date

Internal Audit Status Update

Audit	Status
FY2015	
Intellectual Property	Report Complete
Timekeeping	Report Complete
Procurement – Pre Award Selection Process	Report Complete
Engineering – Vendor / Contractor Monitoring	Report Complete
Retail Rates Pre-Implementation Progress Report	Report Complete
IT Security Policy Review *	Report Complete
ITGC - SCADA and Processing Control System (PCS) *	Report Complete
IT Network Penetration Testing (Corp/SCADA/Wifi) *	Report Complete
IT Vendor Risk Management *	Fieldwork Complete, Reporting In-Progress
FY2016	
Retail Rates Post-Implementation Progress Report	Fieldwork In-Progress
Overtime	Fieldwork In-Progress
Remediation Follow Up Procedures	On-going
Hotline Management	On-going

* Report issued during Executive Session.

Follow-up on Prior Audit Findings

Audit Report/Subject	Report Issue Date	Corrective Actions				
		Total	Open	Closed	Pending Testing	Action Deferred*
Organizational Policies & Procedures	02/23/2010	1	0	0	0	1
Safety Program Training & Compliance	10/07/2010	1	0	0	0	1
Pumping & Storage - Water Leakage	03/01/2011	1	0	0	0	1
Human Capital Management	11/29/2011	1	0	0	0	1
Maintenance Services	04/18/2012	2	2	0	0	0
IT Helpdesk & Computer Operations	10/05/2012	1	1	0	0	0
Fleet Management	04/17/2013	2	2	0	0	0
Process Control System (PCS)	09/04/2013	7	7	0	0	0
Sewer - Emergency Maintenance	06/18/2013	2	1	0	1	0
Water Services - Distribution Maintenance Branch	10/28/2013	4	3	0	1	0
Legal Operations	02/11/2014	1	0	0	1	0
OSHA	02/18/2014	1	0	0	1	0
Disposal of Assets	02/18/2014	2	2	0	0	0
Emergency Management - Recovery	05/12/2014	2	1	0	1	0
DSS - Construction & Repair	05/12/2014	7	3	1	3	0
Emergency Management - Mitigation	06/27/2014	1	1	0	0	0
Outsider Contractor Management - Part 2	07/22/2014	2	0	2	0	0
IT Asset Management	09/10/2014	3	2	1	0	0
Warehouse Operations	09/15/2014	4	1	0	2	1
GIS Mapping	06/23/2014	3	3	0	0	0
	Total	48	29	4	10	5

*Of the 5 action deferred items, 3 items are policy and procedure related and 2 are business process improvements.

On October 1, 2014, there was a total of 82 open prior audit findings.



Follow-up on Prior Audit Findings

Status by Business Area

	DETS	Blue Plains	Customer Care & Operations	Office of the General Counsel	IT	Support Services	Finance	Office of the General Manager
Closed Since Last AC Meeting	0	0	1	0	3	0	0	0
Open Management Action Plans	3	9	9	0	3	5	0	0
Pending Testing	0	0	6	1	0	3	0	0
Action Deferred	0	0	1	0	0	1	0	3
48 Total	3	9	17	1	6	9	0	3

Corrective Action Themes

Category	Number of corrective actions
Policy and Procedure Update / Approval	19
Employee Development / Training	7
Asset Management	10
Catch Basin Pilot Program	3
Vacant Position Dependency	3
Contractor / Vendor Dependency	4

Corrective Action by Due Date

Due Date	Number of corrective actions
Action Deferred	5
Past Due or Pending Testing	27
FY 2015 Quarter 1	3
FY 2015 Quarter 2	5
FY 2015 Quarter 3	2
FY 2015 Quarter 4	1
FY 2016 Quarter 3	1

Retail Rates Implementation Pre-Implementation Progress Update

The purpose of this review was to obtain an understanding of the proposed FY16 retail rates and related proposed rate structure changes and assist management with facilitation of the rates implementation plan execution for completeness and accuracy. The project scope was based on the following objectives:

- To obtain and review the Rate Design Implementation Plan, including monitoring and reporting on the status of the plan.
- To assess the data clean-up process, including:
 - Proper classification of property type (identification of premise changes)
 - Validating meter size accuracy
- To review existing business rules (not system requirements) established for the rates implementation and make recommendations, as applicable.
- Identify any additional requirements for the rate design implementation.
- To evaluate the design, completeness and effectiveness of the Retail Rates Implementation (RRI) User Acceptance Testing (UAT) approach.

We performed detailed testing and validation of data clean-up efforts, including premise and meter size validation and changes; as well as performed customer site visits and independent premise validation on a sample basis, and traced changes to eCIS.

We also re-performed and observed user acceptance testing procedures, as well as monitored that any testing exceptions noted were researched, analyzed and corrected, where applicable.

No material exceptions were noted in data clean-up validation or UAT validation. We provided management with recommendations for post-implementation activities, including additional data clean-up documentation requirements and updating Standard Operating Procedures.

Retail Rates Implementation Pre-Implementation Progress Update, cont.

Implementation Go Live of the new rates occurred October 1, 2015, and the retail rates implementation team will continue to ensure that system updates are operating effectively and the customer data is accurate. Specific tasks will include:

- Suspended invoice mailing to recalculate and verify that bills sent to customers are accurate;
- Formalize monitoring process for meter downsizing
- Revenue impact assessment related to the data clean-up efforts and potential impact of meter downsizing; and
- Analysis of Account Receivable collection and aging as a results of the rate changes.

Internal audit will be conducting a phase II review of the retail rates implementation plan, which will include the following:

- Independent billing testing from October – December 2015;
- Additional validation of data clean-up activity; and
- Analysis of billing adjustments made during October – December 2015.

A Post-Implementation progress report will be issued at the January Audit Committee. A customer billing and collections internal audit is proposed for Spring – Summer 2016.

Hotline Update

Last audit committee meeting we reported that 5 cases were open. Since the last audit committee meeting:

Hotline Calls	
Calls Received	2
Fraud Claims	0
Other	2
Cases Closed	4
Cases Currently Open	3

Conducted joint quarterly meeting with Legal Counsel, Labor Relations, Security and Internal Audit.

The following table reflects the cumulative number of cases that were opened and closed during FY 2015:

Hotline Calls	
Calls Received	16
Fraud Claims	7
Other	9
Cases Closed	13*
Cases Currently Open	3

*One open case from FY 14 was subsequently closed in FY 15

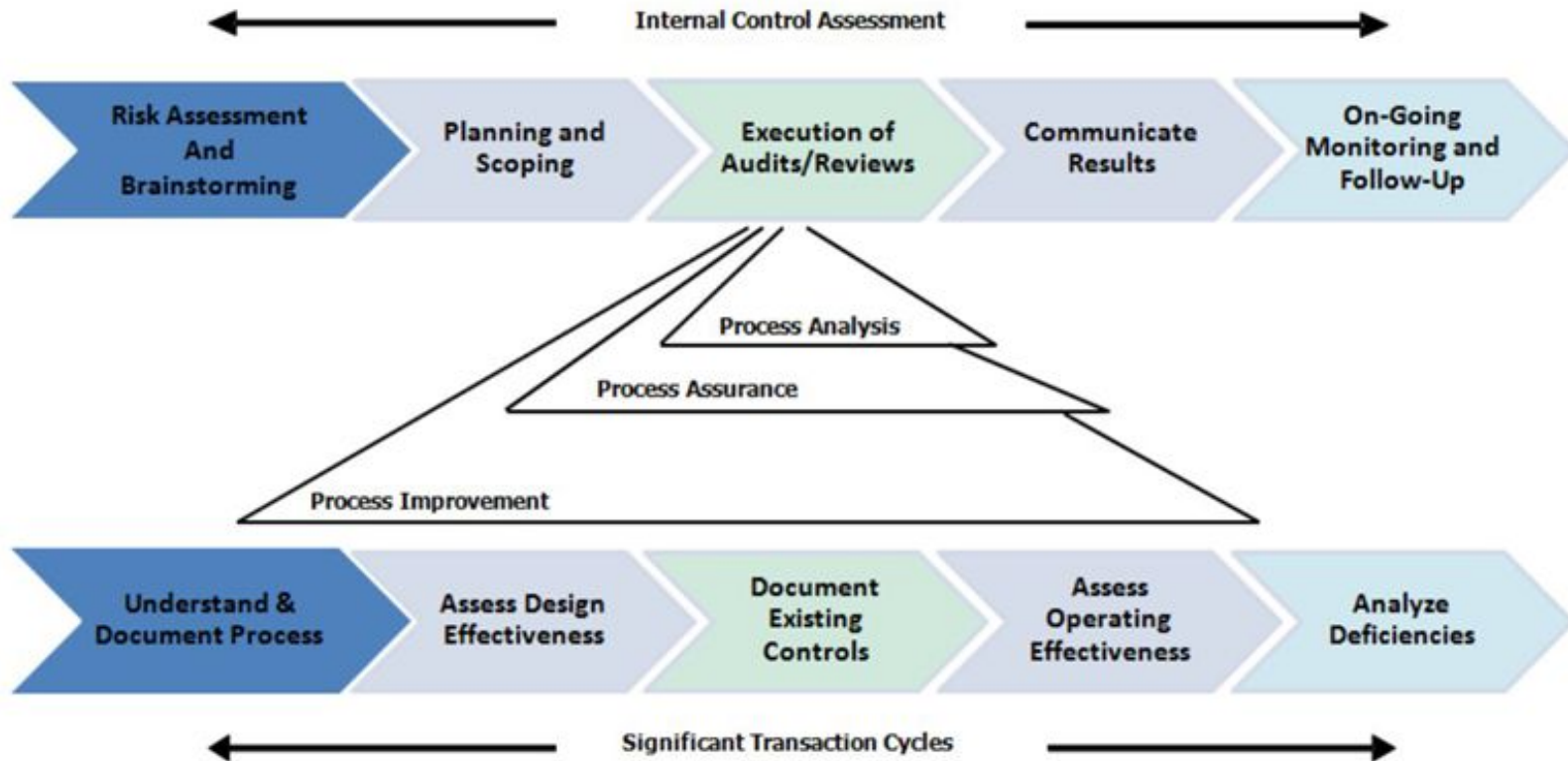
The following number of calls were received during the last three fiscal years:

FY 13	FY 14	FY 15
10	20	16

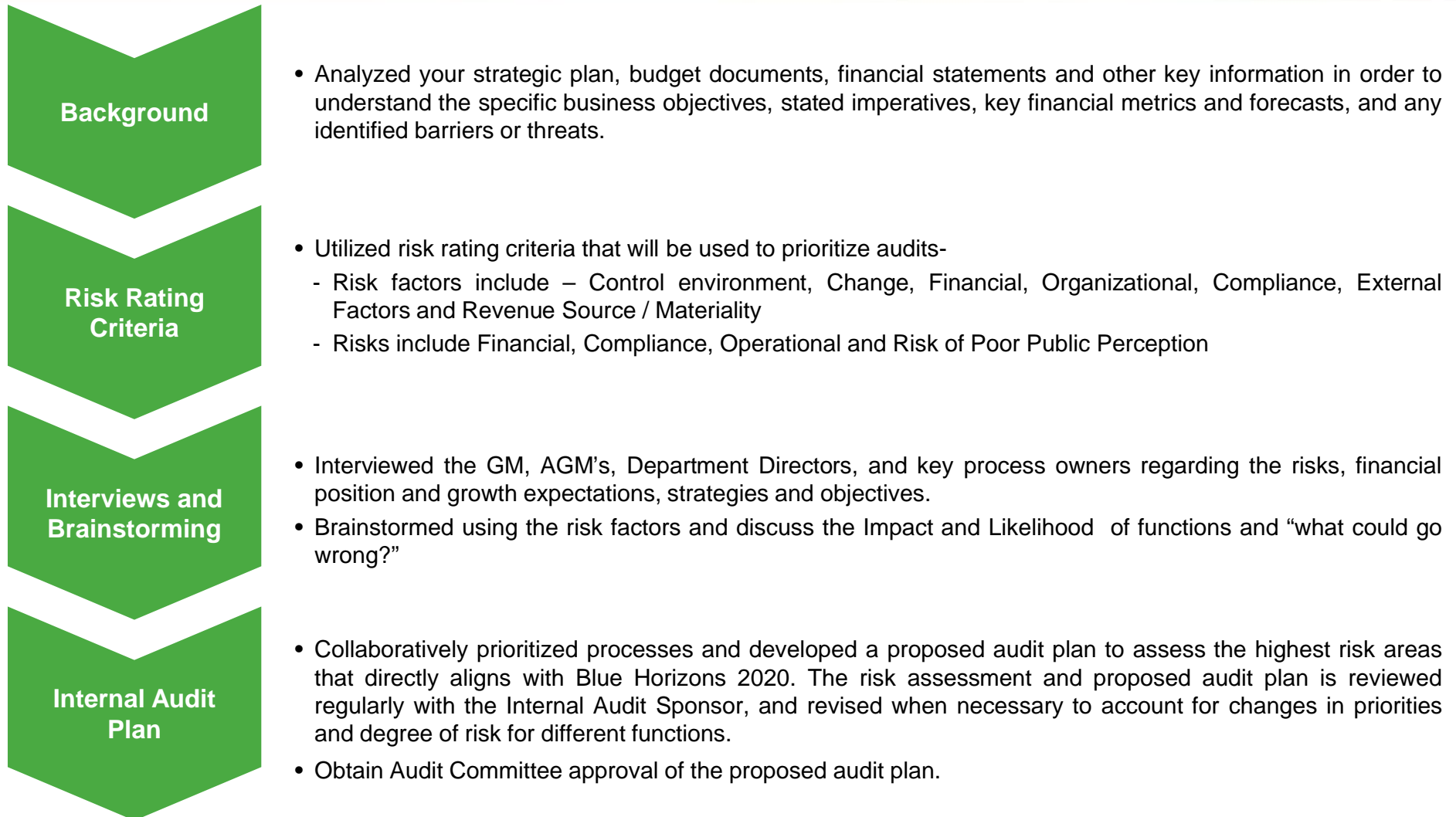
FY 2015 Internal Audit Accomplishments

- Performed a Comprehensive Risk Assessment and developed audit plan based on the results of the risk assessment.
- Developed and implemented an External Communication Plan between Internal Audit, Management and the Audit Committee.
- Assumed responsibility for and conducted a comprehensive review of the prior internal audit findings, reducing the number of open items from 82 to 39 (including 10 that management represents are closed and testing is pending) - 48% closure rate, through inquiry, testing and categorization of the issues noted.
- Implemented an automated, web-based remediation Issue Tracker for the follow-up action items, including alerting process owners for items that are coming due.
- Managed 16 hotline calls.
- Drafted and began implementation of an Authority-wide hotline protocol to improve the management of the hotline investigation process.
- Organized a quarterly update meeting between Legal Counsel, Labor Relations, Security and Internal Audit.
- Recommended the expansion of the hotline to include updated marketing and coverage, as well as a web-reporting tool at minimal cost to the Authority.
- Issued 10 Internal Audit or specific project-based reports.
- Utilized our contracted, approved local small business for 10% of our contract hours (as we committed to do in our proposal).

Internal Audit Methodology



Risk Assessment Process

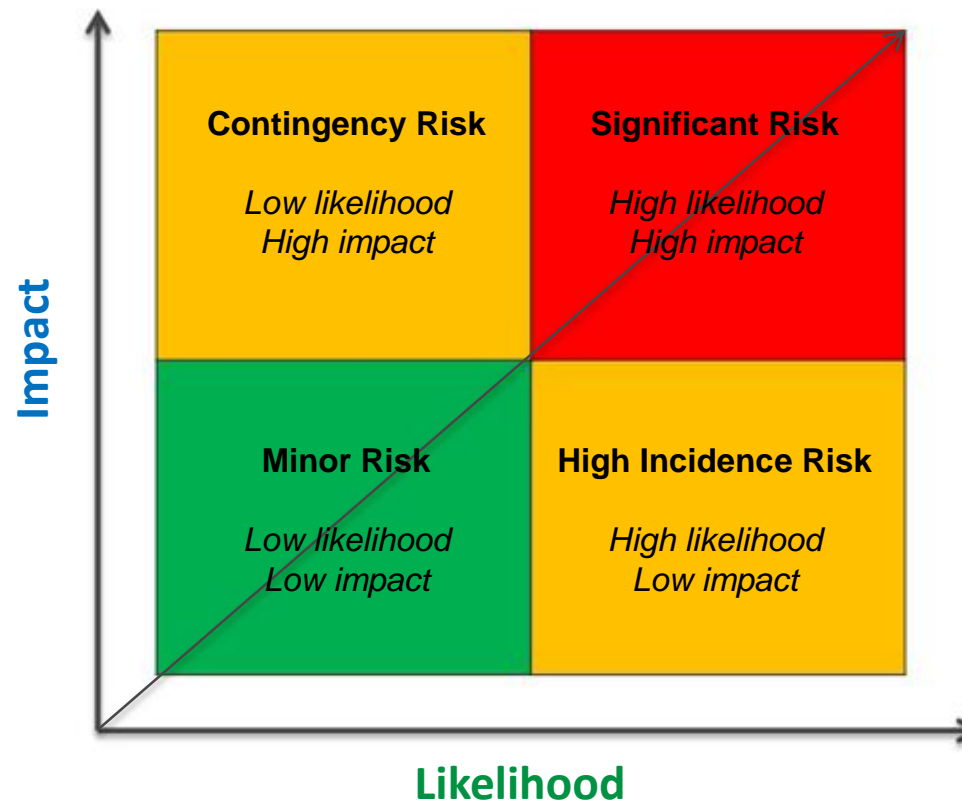


Risk Assessment Process

- Risks identified are assessed from two primary perspectives: *likelihood* and *impact*.

Likelihood - the probability that something will occur.

Impact - the effect that an event will have on the organization.



FY 2016 Proposed Internal Audit Plan

Follow-up and Cycle Audits	Procurement
Hotline Management (ongoing)	Local / Small Business Utilization – Rapid Assessment
Open Action Items – Remediation & Follow Up	Department of Engineering & Technical Services
Blue Horizons – Strategic Plan Monitoring	Engineering – Construction Management
Contract Monitoring & Compliance Reviews	Finance
Blue Plains	Overtime
Maintenance Services – Work Order Management	Annual Budgeting & Planning
Customer Service	Rolling Owner Controlled Insurance Program (ROCIP)
Customer Billing & Collections	Information Technology
Retail Rates Post-Implementation Monitoring	IT Governance Review
Human Capital Management	Customer Data Collection and CIS (Integrated)
Training, Certification and Licensing	

Contingency and Requested Audits and Projects
TBD



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Internal Auditor Follow-Up Report on Prior Audit Findings
Summary of Audit Corrective Actions

DC WATER INTERNAL AUDIT

October 2015

Audit Report/Subject	Management Comments	Auditor Status Up-Date	Report Issue Date	Business Area	Corrective Actions				
					Total	Open	Closed	Pending Testing	Action Deferred
Organizational Policies & Procedures	October 2015	October 2015	02/23/2010	OGM	1	0	0	0	1
Safety Program Training & Compliance	October 2015	October 2015	10/07/2010	OGM	1	0	0	0	1
Pumping & Storage - Water Leakage	October 2015	October 2015	03/01/2011	Customer Care & Operations	1	0	0	0	1
Human Capital Management	October 2015	October 2015	11/29/2011	OGM	1	0	0	0	1
Maintenance Services	October 2015	October 2015	04/18/2012	Blue Plains	2	2	0	0	0
IT Helpdesk & Computer Operations	October 2015	October 2015	10/05/2012	IT	1	1	0	0	0
Fleet Management	October 2015	October 2015	04/17/2013	Support Services	2	2	0	0	0
Process Control System (PCS)	October 2015	October 2015	09/04/2013	Blue Plains	7	7	0	0	0
Sewer - Emergency Maintenance	October 2015	October 2015	06/18/2013	Customer Care & Operations	2	1	0	1	0
Water Services - Distribution Maintenance Branch	October 2015	October 2015	10/28/2013	Customer Care & Operations	4	3	0	1	0
Legal Operations	October 2015	October 2015	02/11/2014	OGC	1	0	0	1	0
OSHA	October 2015	October 2015	02/18/2014	Support Services	1	0	0	1	0
Disposal of Assets	October 2015	October 2015	02/18/2014	Support Services	2	2	0	0	0
Emergency Management - Recovery	October 2015	October 2015	05/12/2014	Customer Care & Operations	2	1	0	1	0
DSS - Construction & Repair	October 2015	October 2015	05/12/2014	Customer Care & Operations	7	3	1	3	0
Emergency Management - Mitigation	October 2015	October 2015	06/27/2014	Customer Care & Operations	1	1	0	0	0
Outsider Contractor Management - Part 2	October 2015	October 2015	07/22/2014	IT	2	0	2	0	0
IT Asset Management	October 2015	October 2015	09/10/2014	IT	3	2	1	0	0
Warehouse Operations	October 2015	October 2015	09/15/2014	Support Services	4	1	0	2	1
GIS Mapping	October 2015	October 2015	06/23/2014	DETS	3	3	0	0	0
Total					48	29	4	10	5

LEGEND:

Remaining items from the audit report are Action Deferred.

DEFINITIONS:

Action Deferred - This corrective action items is still intended to be completed by management. However, completion is dependent on budgetary or resource constraints, pilot programs, or other efforts.
Pending Testing - Management has indicated that this item is closed. Closure is pending additional information from management and testing from internal audit.

**Internal Auditor Follow-Up Report on Prior Audit Findings
Summary of Audit Corrective Actions**

DC WATER INTERNAL AUDIT

October 2015

Audit Status by Department

	DETS	Blue Plains	Customer Care & Operations	Office of the General Counsel	IT	Support Services	Finance	Office of the General Manager
Closed Since Last AC Meeting	0	0	1	0	3	0	0	0
Open Management Action Plans	3	9	9	0	3	5	0	0
Pending Testing	0	0	6	1	0	3	0	0
Action Deferred	0	0	1	0	0	1	0	3

Corrective Action Themes

Category	Related Observations (#)	Total
Policy and Procedure Update / Approval	38, 74, 97, 168, 174, 175, 178, 179, 180, 190, 214, 219, 223, 232, 238, 244, 259, 279, 280	19
Employee Development / Training	173, 187, 213, 237, 243, 251, 273	7
Asset Management	111, 113, 240, 264, 266, 271, 272, 274, 279, 280	10
Catch Basin Pilot Program	208, 210, 240	3
Vacant Position Dependency	139, 168, 219	3
Contractor / Vendor Dependency	167-B, 178, 179, 225	4

The summary of Corrective Action Themes shown above illustrates the following:

- There are 19 open items are related to the formalization and approval of policies and procedures that are already in place. There is an Authority-wide initiative in process to have all policies and procedures documented / updated and approved by management and the Unions as soon as possible, during the current labor negotiations.
- There are 7 open items that relate to the identification/ documentation/tracking of employee training. These tie into the Authority-wide initiative to implement Cornerstone training program (among other things) that is being administered by HCM. Once complete, we will re-evaluate whether there are outlier training needs that are not inclusive of that process.
- There are 10 (with 2 already included in other areas above) open items that relate specifically to property control and asset management. The hope is that the Authority-wide initiative to integrate Maximo and Lawson, as well as shift several responsibilities to the Warehouse / Materials Management team will address and close these issues. The integration projects are ongoing, but expected to be substantially complete by the beginning of the third fiscal quarter of 2017.
- There are 3 items (with one duplicate) that are dependent on the currently in progress Catch Basin Pilot program. This program is anticipated to be completed by the end of the second fiscal quarter of 2015 (March 31).
- There are 3 open items (with 2 already included in the areas above) that require a position to be filled in order to be closed.
- There are 4 open items (with 2 already included in the areas above) that are dependent on the hiring of a contractor or vendor to conduct services for DC Water.

Corrective Action by Due Date

Due Date or Category	Action Deferred	Past Due or Pending Testing	FY15 Q1	FY15 Q2	FY15 Q3	FY15 Q4	FY16 Q3
Number of Open Action Items	5	27	3	5	2	1	1

DC Water Internal Audit

Retail Rates Pre-Implementation – Progress Report

October 8, 2015



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Transmittal Letter

October 8, 2015

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

Pursuant to the approved 2015 internal audit plan, we hereby submit the following progress report related to the retail rates implementation plan, including review of the data clean-up efforts and user acceptance testing. Our report is organized in the following sections:

Objectives and Approach	The objectives of our procedures and our approach to the execution of those procedures are expanded upon in this section.
Project Snapshot	This section provides an overview of the current status of each area subjected to our procedures.
Process Maps	This section provides a visual depiction of the workflow of all key processes included within our scope.

Our work has and continues to assist management with facilitation of this project. We did not, nor does DC Water desire us to, perform and 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



Objectives

Objectives

The purpose of this review is to obtain an understanding of the proposed FY16 retail rates and related proposed rate structure changes and assist management with the facilitation of the Retail Rates Implementation (“RRI”) plan execution for completeness and accuracy. The audit scope is based on the following objectives:

- To obtain and review the Rate Design Implementation Plan, including monitoring and reporting on the status of the plan.
- To assess the data clean-up process, including:
 - Proper classification of property type (identification of premise changes)
 - Validating meter size accuracy
- To review existing business rules (not system requirements) established for the rates implementation and make recommendations, as applicable.
- Identify any additional requirements for the rate design implementation.
- To evaluate the design, completeness and effectiveness of the RRI User Acceptance Testing (UAT) approach.

Approach

Approach

Our approach consisted of the two phases described below:

Obtaining an Understanding

In order to establish a foundational understanding of the new rate structure, the implementation plan and the related-business processes and to better assist the DC Water, McGladrey met with the key members of Finance, Customer Service, and Information Technology, including personnel on the rates steering committee. Major work steps as a part of this phase were as follows:

- Key process owner interviews to understand meter operations and billing processes
- New rates structure and Rate Design Implementation Plan review
- Business rules review
- Identification of data clean-up efforts
- Review of the UAT

Detailed Testing and Walkthroughs

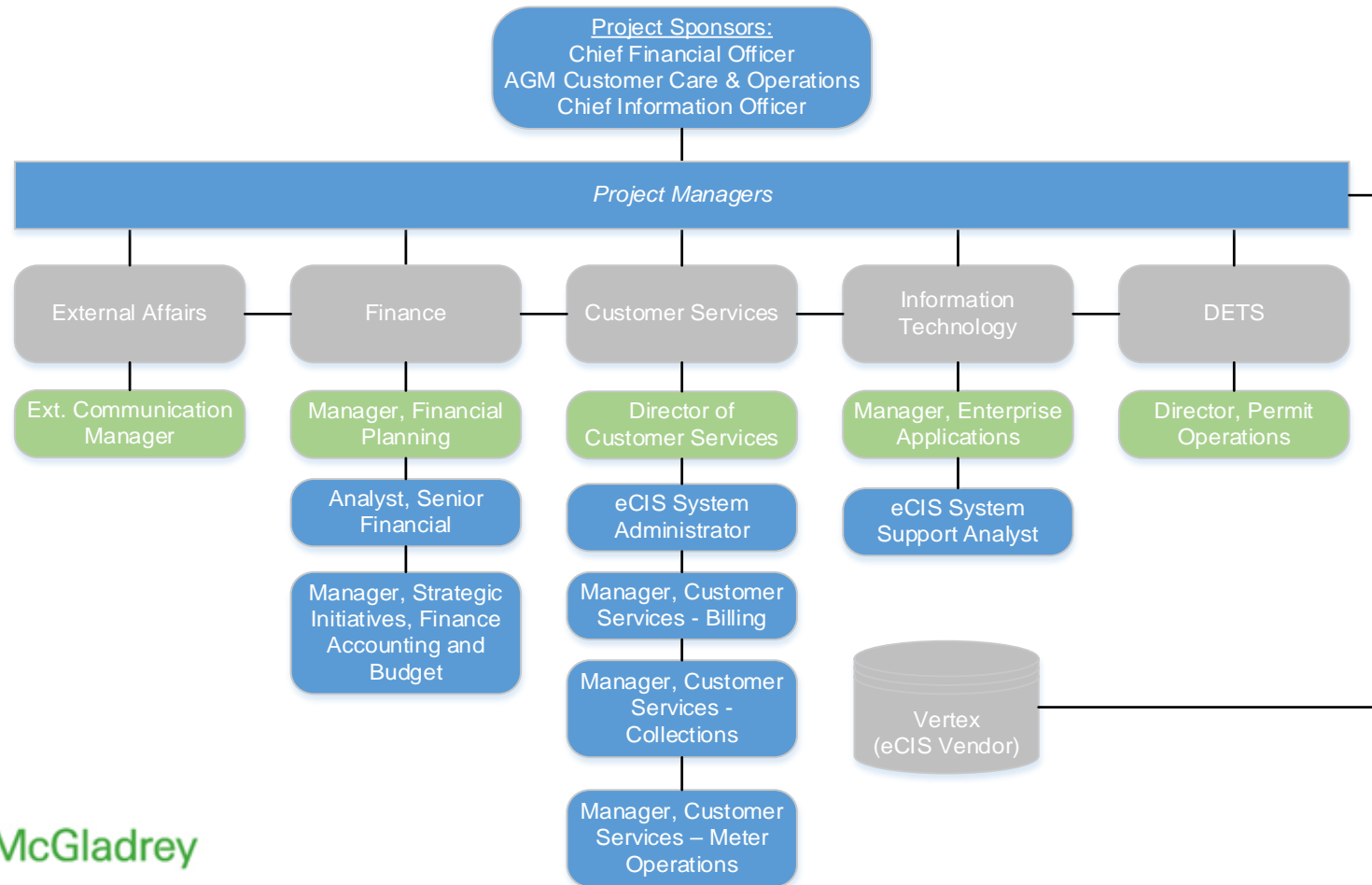
The purpose of this phase was to validate that the data clean-up efforts were properly documented, executed, and, as needed, changes were appropriately made in the customer information systems (“CIS”). Our testing procedures included:

- Walkthroughs of the data clean-up efforts, including premise validation and meter size validation;
- Re-performance of the premise validation process, on a sample basis;
- Physical verification of premise classification through site-visits, on a sample basis;
- Review of audit trail to ensure system changes were appropriately documented in eCIS for data clean-up activities;
- Validation of populations selected for data clean-up process; and
- UAT Assessment, including re-performance, observation and inquiry of implementation testing procedures.

Background

Retail Rates Implementation Steering Committee

To ensure that the new retail rates were applied to customer accounts appropriately and accurate billing operations continue, a steering committee was established to facilitate the implementation process. The steering committee consists of managers from each of the departments impacted by the rates change. The departments include, Customer Service, Finance, External Affairs, Information Technology, and Permits. The project sponsors are the Chief Financial Officer, AGM Customer Care and Operations, and the Chief Information Officer. The project sponsors provide direction, approve funding, approve scope, and act as the project champions.



Data Clean-up Premise Validation Summary

Data Clean-up: Premise Validation

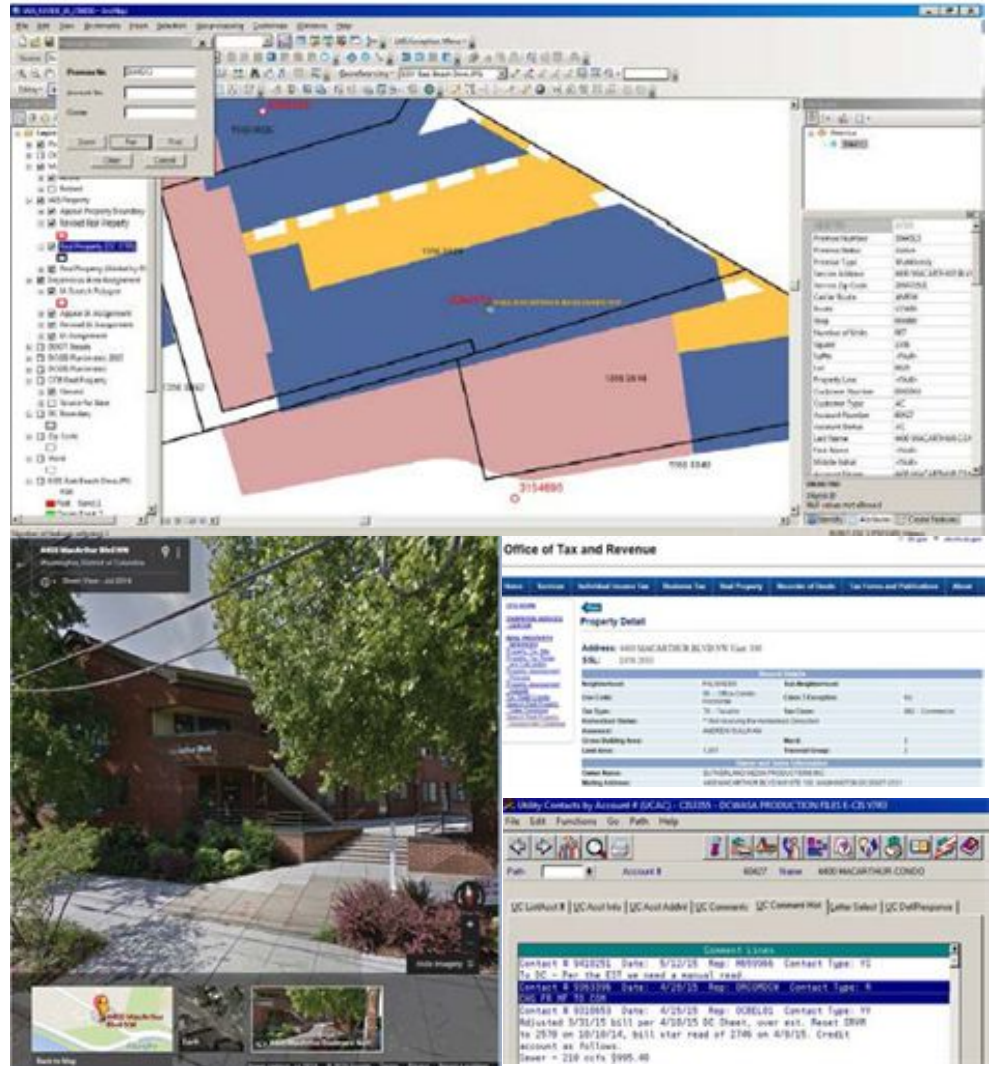
The new rate structure is contingent on each customer's property-type or premise classification, thus reliance on DC Water customer records became increasingly significant. In order to validate the accuracy of the records, the steering committee established a data clean-up team.

One of the largest class of properties that were at risk for inaccuracies were the multi-family, condominium and cooperate property-types, which could be classified as either non-residential (if there is a business in the building) or Multi-Family or Residential based on the number of units in the property. DC Water identified 9,080 accounts that needed to be validated for proper classification.

To validate the premise type, each account was assessed for number of dwelling units in eCIS, the property use code was cross-checked the against the Office of Tax & Revenue (OTR) online tool, and viewed using Google maps street view. If the premise type still could not validated, the account was sent to Permit Operations, to conduct a field visit. The field visit team took notes on the property type and provided pictures.

The accounts that were recommended for premise type change, were sent to the Impervious Area Billing (IAB) for final premise type validation. IAB utilized GIS and made updates, as needed, in the impervious area database.

Internal Audit validated the population of accounts and re-performed the validation steps above for 65 accounts. Additionally, we conducted site visits of the accounts to further validate that DC Water had properly classified the accounts. No exceptions were noted.



Data Clean-up Premise Validation Metrics

Premise Validation	# of Accounts (approx.)
Total accounts reviewed	9,080
Accounts requiring field visit to determine premise type	119
Accounts sent to Impervious Area Billing for final review and validation	1,457
Accounts Purged	5
No Change	129
Accounts Changed	1,323

Data Clean-up Meter Size Validation Summary

Large Meter Validation

The Water System Replacement Fee (WSRF), was established in order to recover the 1% renewal and replacement of water service lines. As the fees were based on meter size, customers with larger meters would be significantly impacted.

The data clean-up team worked with meter operations to determine large non-federal meters to review for meter size accuracy. The initiative focused on validating 8, 10, 12, 16 inch meters, as these meters have the highest monthly fee. Large Meter Technicians conducted physical inspections to document if the meter size was correct.

Internal Audit conducted a walkthrough with the Meter Operations team to determine how the population was identified and obtained evidence of completion of the validation process.

Fire Suppression System – 2 Inch Meter Validation*

Special Provision 112.11 of DCMR Chapter 21 states " Residential customer, whose premises is served by a meter that is larger than one inch (1"), shall be charged a monthly Water System Replacement fee set forth in Subsection 112.10(a) for a one inch (1") meter."

In order to identify existing residential accounts (not new construction), that may qualify for the provision, the Rates Implementation Steering Committee obtained a listing from eCIS of residential accounts that have a 2" meter. The list of 661 accounts were provided to Permit Operations to determine if the 2" meter was needed due to a fire suppression system. Permit Operations utilized permit plans and direct contact with customers in order to validate the purpose of the meter size and ensure that they were classified appropriately, in order to received the lower WSRF.

Internal Audit conducted a walkthrough with the Permit Operations team to determine how the population was identified and obtained evidence of completion of the validation process.



Data Clean-up

Meter Size Validation Metrics

Large Meter Validation

Meter Size	# of Meters Identified (eCIS)	# of Meters Inspected	Final # of Meters*	Est. Annual WSRF Validated
8" Meters	142	113	112	\$3,185,124
10" Meters	56	50	44	\$3,526,855
12" Meters	2	2	5	\$400,799
16" Meters	6	6	6	\$480,935
Total Meters	206	171	167	\$7,593,693

*As needed, updates were made in eCIS to adjust the meter size. This total does not include the meters that were not able to be inspected.

Meter Services were able to inspect 83% of the 206 meters identified

Fire Suppression System

Meter Size Validation	# of Accounts
Residential Accounts with 2" meter (existing construction)	661
Accounts validated through permit plan	432
Accounts validated through contact with customer	53
Residential accounts with fire suppression system	485

90% of the accounts were validated through permit plans or customer contact

80% of accounts reviewed had a fire suppression system

Data Clean-up Other Activities

Other Data Clean-up Efforts:

In addition to the premise validation process of the 9,080 accounts, large meter validation and fire suppression data analysis, the Data Clean-up team identified other sets of data to review and update in eCIS, as needed. Management has advised the tasks are now complete and we will validate a sample of these accounts during the next progress reporting period. Below is a list of the data clean-up efforts and the purpose of the reviews:

Data Clean-up Activity	Purpose
Premise type validation of 10,605 non-residential accounts with meter sizes 1" inch or less	Verify if the property should be classified as residential
Premise type validation of 2,287 residential accounts with meter sizes greater than 1" inch	Validate that the property is a residential property and is not being utilized as a business or mix-use property
Zero usage residential and commercial accounts and zero billed (approximately 1,400 residential accounts and 400 commercial accounts)*	Determine if these accounts have zero usage due to seasonality (municipalities, such as school) or are non-active accounts
Meter size validation of over 5,000 accounts that had different meter size in two separate systems of record	Ensure meter size information in eCIS matches that of STAR (AMR)
Premise type validation of DC Housing properties	Review and reclassify each DC Housing property type to ensure each property is billed at the correct rate

*This clean-up activity was still in process during our test period. Management has advised that DC Public Schools and Federal Municipal accounts have been reviewed and validated.

Rate Redesign Implementation User Acceptance Testing Assessment

User Acceptance Testing Review Approach

- Inspect and evaluate the User Acceptance Testing (UAT) test plan to determine whether the plan covers all the Rate Redesign Implementation billing requirements.
- Interview management team leads assigned the responsibility to complete the UAT and obtain an understanding of their testing methodology, documentation requirements and process to remediate identified issues.
- Evaluate the UAT project management governance, monitoring and issue reporting/resolution controls.
- For a selection of completed UAT from each key DC Water test team (Customer Service, Information Technology, Finance and Accounting) re-perform the selected UAT to determine whether the tester conclusions are in agreement with the McGladrey independent reviewer conclusions.

User Acceptance Testing Review Results

- The Rate Redesign Implementation UAT Test Plan covered the billing calculation requirements. The original 40 test plan cases was reduced to 36 due to redundancy and the removal of the 4 test cases was deemed to be reasonable.
- Management UAT team leads followed an effective testing methodology that required testing documentation requirements and included a process to remediate identified issues.
- Project governance included timely status meetings and a process to resolve issues.
- Selected Customer Service, Finance, IT and Accounting testing team UAT evidence was supported and conclusions were in agreement with the independent McGladrey reviewer.
- No material exceptions were noted.



Rates Implementation – Next Steps

Retail Rates Implementation Plan

As a part of the pre-implementation efforts, we provided management with recommendations for post-implementation activities, including additional data clean-up documentation requirements and updating Standard Operating Procedures (SOPs).

The implementation Go Live of the new rates occurred on October 1, 2015, and the retail rates implementation team will continue to ensure that system updates are operating effectively and the customer data is accurate. Specific tasks will include:

- Suspended invoice to recalculate and verify that bills sent to customers are accurate;
- Formalize monitoring process for meter downsizing;
- Revenue impact assessment related to the data clean-up efforts and potential impact of meter downsizing;
- . Analysis of Account Receivable collection and aging as a results of the rate changes; and
- Updating of SOPs, as needed.

Internal audit will be conducting a phase II review of the retail rates implementation plan, which will include the following:

- Independent billing testing from October – December 2015;
- Additional validation of data clean-up activity; and
- Analysis of billing adjustments made during October – December 2015.

A final progress report will be issued at the January Audit Committee. A customer billing and collections internal audit is proposed for Spring – Summer 2016.

Informational Resources

[Comprehensive Annual Financial Statements – Fiscal Year 2014, Statistical Section](#)

[2015 Cost of Service Study](#)

Current Rate Specifications (located on 2016 Rate Change Project SharePoint)

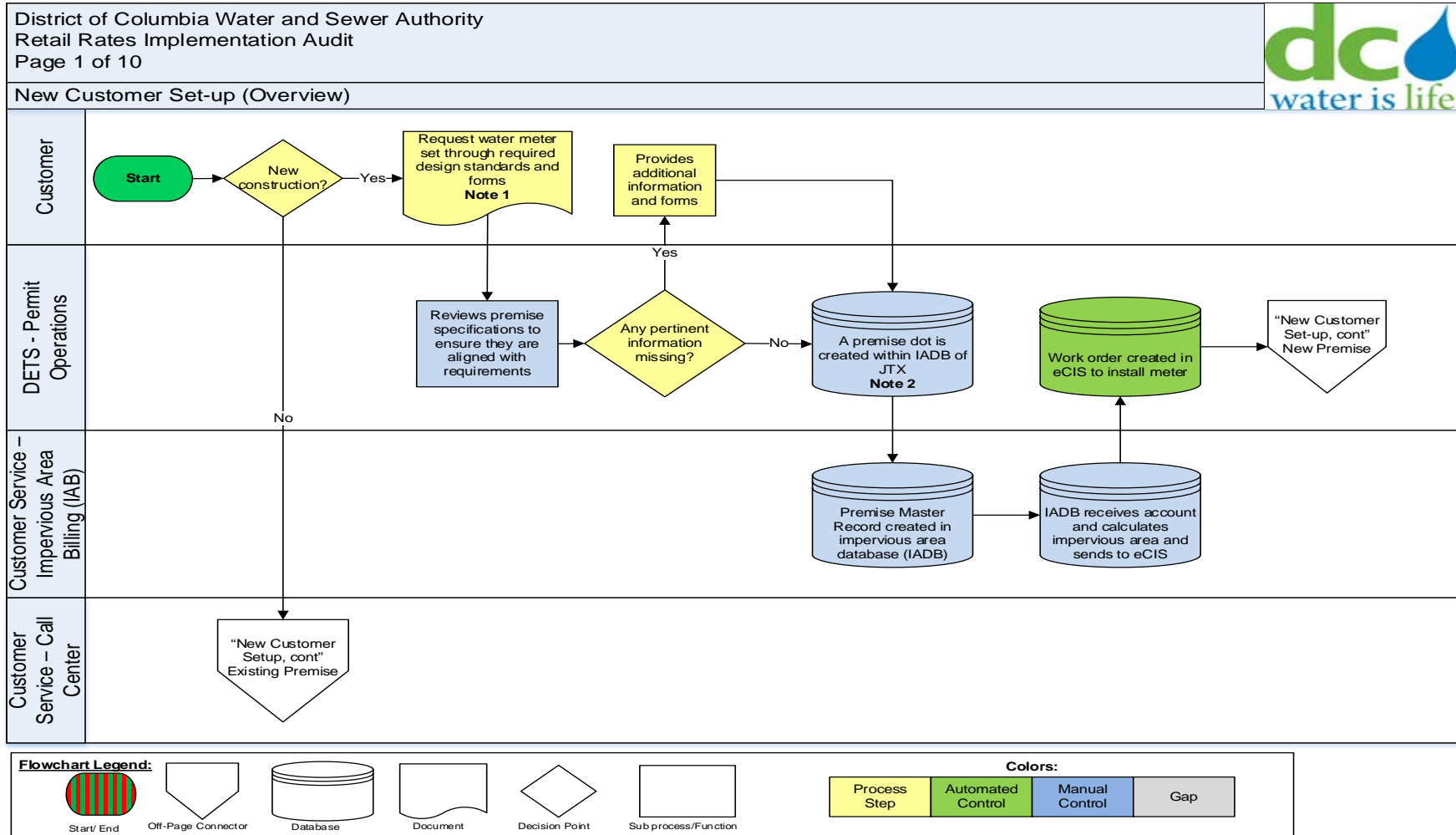
[DC Water Retail Water and Sewer Rates Committee Meeting – June 23, 2015](#)

[Fiscal Year 2016 Approved Rates](#)

Rate Change Project Charter (located on 2016 Rate Change Project SharePoint)

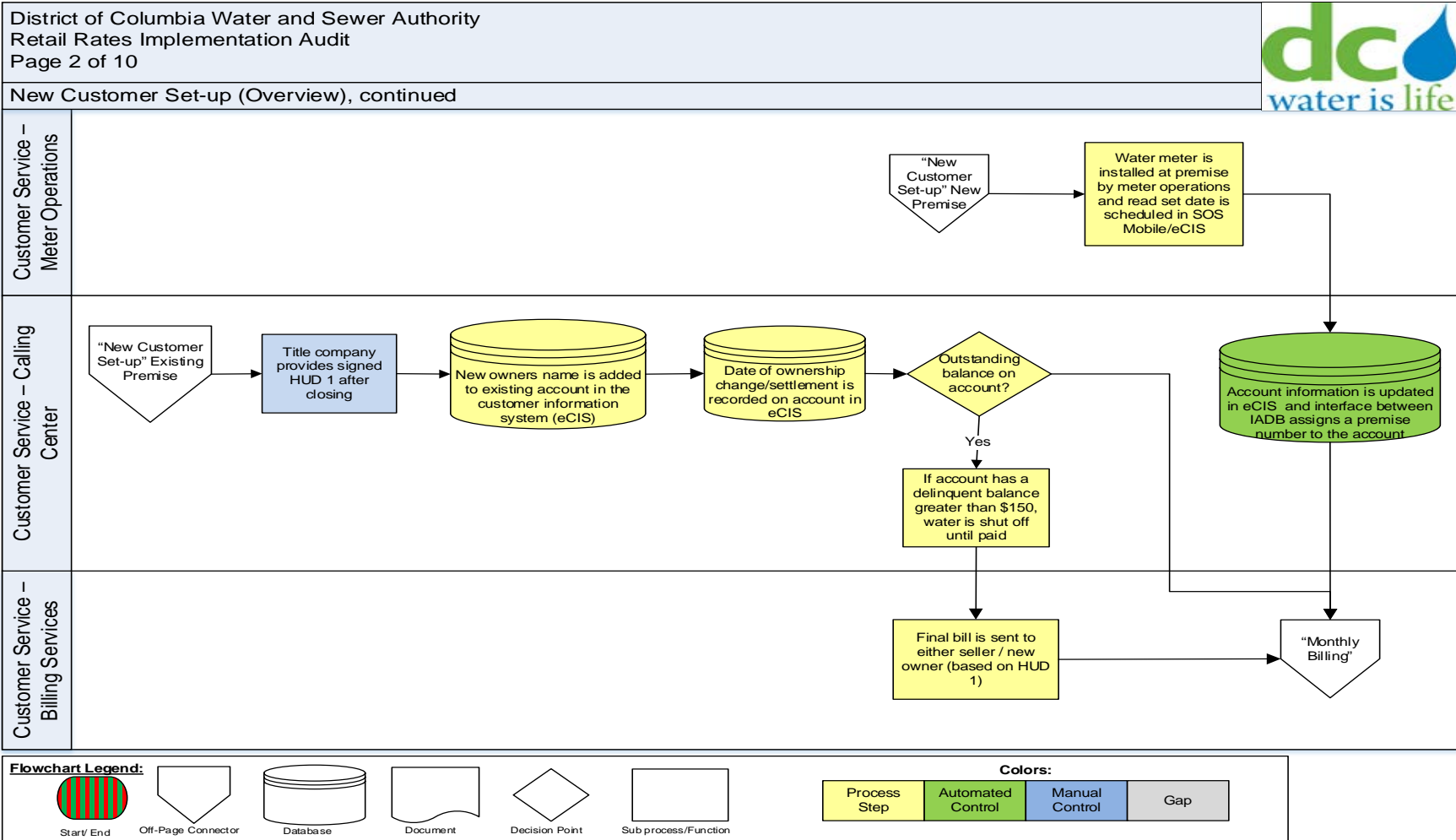
Rate Redesign Project Analysis (located on 2016 Rate Change Project SharePoint)

Process Maps



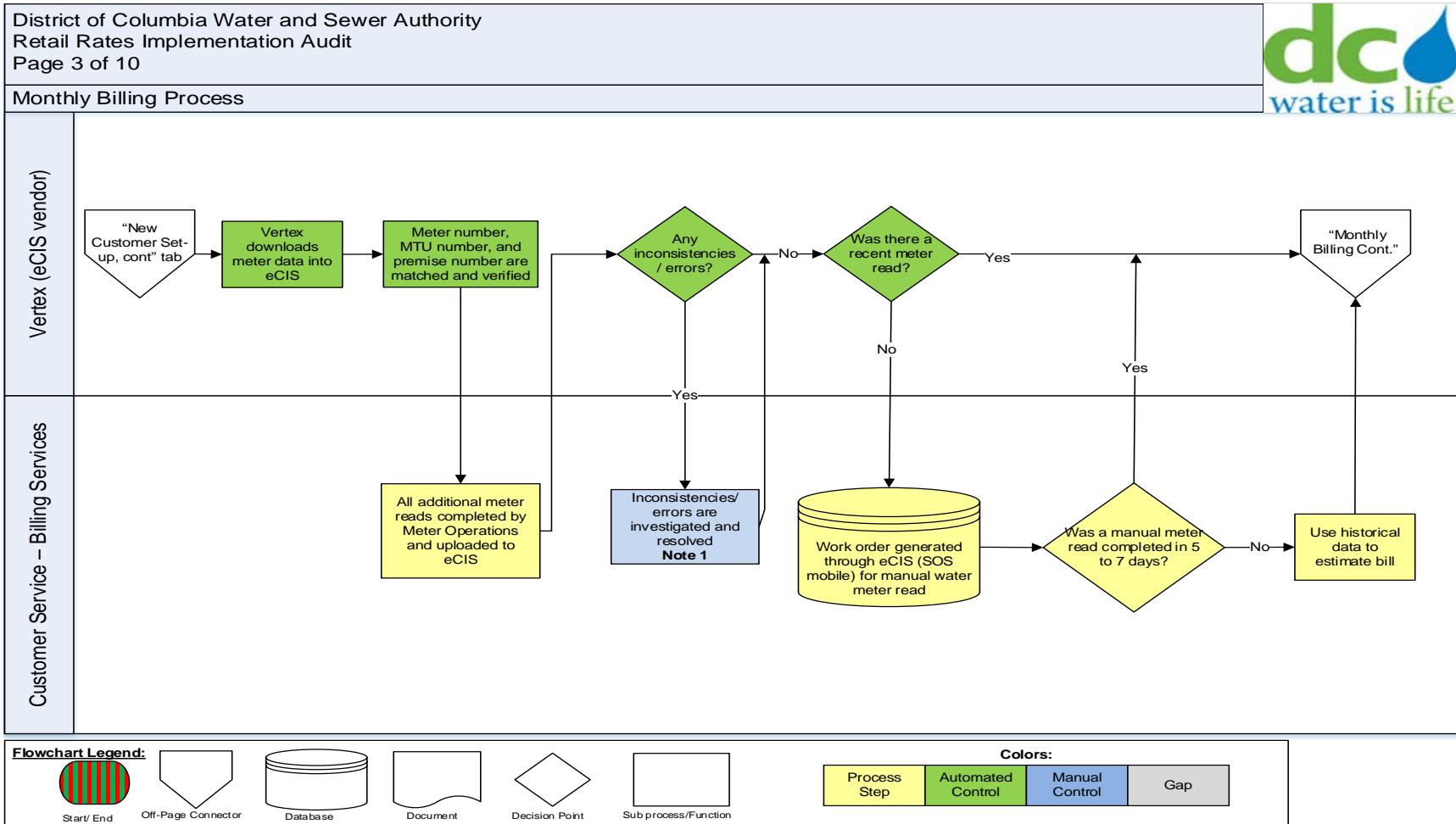
Note 1: Design standards and forms are located on DC Water's website: <https://www.dwater.com/business/permits/criteria.cfm>
 Note 2: JTX is the job tracking for ArcGIS, which DC Water updates when water meters are installed.

Process Maps



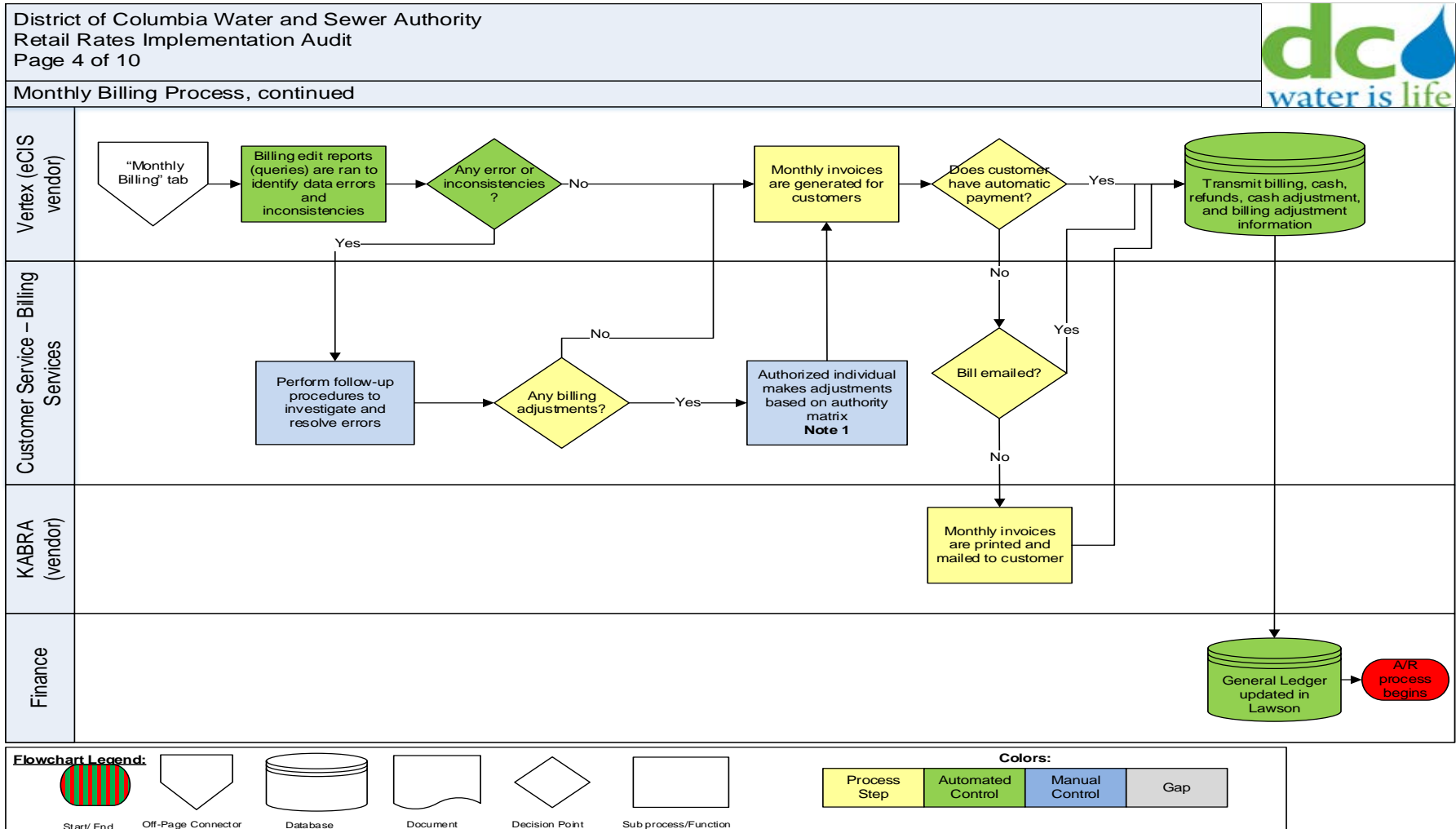
Note 1: Design standards and forms are located on DC Water's website: <https://www.dewater.com/business/permits/criteria.cfm>
 Note 2: JTX is the job tracking for ArcGIS, which DC Water updates when water meters are installed.

Process Maps



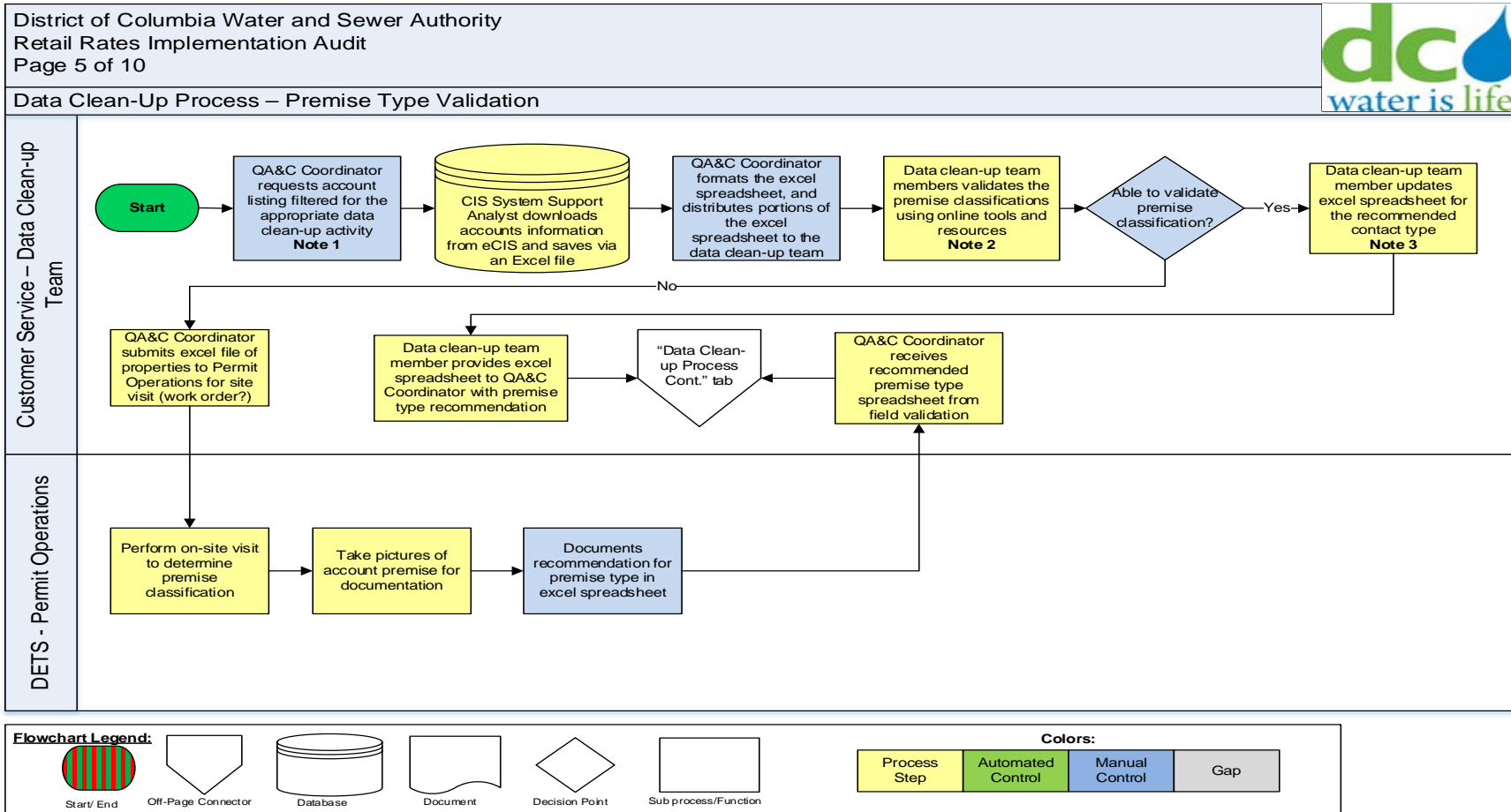
Note 1: As part of the ongoing service order processing related to meter change-outs, the analysts performing the service order close, perform additional QA activities to ensure that the Premise Number, Meter Number, and MTU match between the service order, CIS, and Star application, as well as check to ensure the meter is transmitting. Anomalies are reported to Meter Operations for research and resolution.

Process Maps



Note 1: The authority matrix includes the adjustment limits (\$) that are allowed by each customer service member. The matrix is reviewed on a monthly basis and updated as necessary.

Process Maps

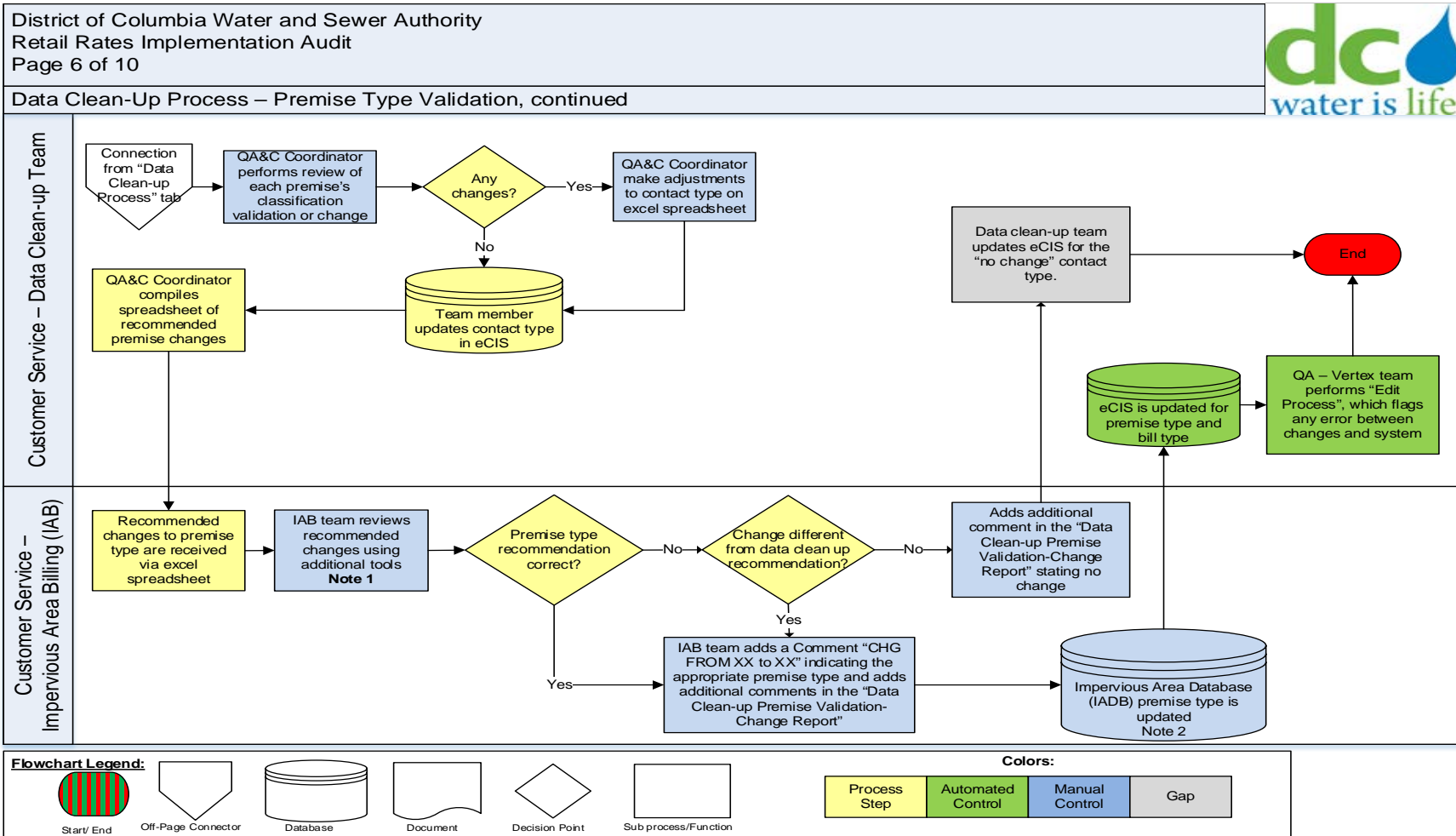


Note 1: Data clean-up effort 1: Query from eCIS was run for all active and inactive accounts with a premise type of Multi-Family and a premise type of Commercial with a "Condo (C)" or "Co-op(O)" dwelling code. An additional review was done to include premises with "condo", "apartment", "co-op", and abbreviations of such in the account name to identify any additional condominiums or apartments to include.

Note 2: In order to validate the property type, the data clean-up team utilized the use code in DC's Office of Tax and Revenue records and through searches on Google Maps.

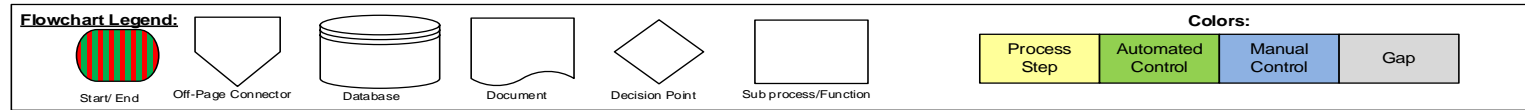
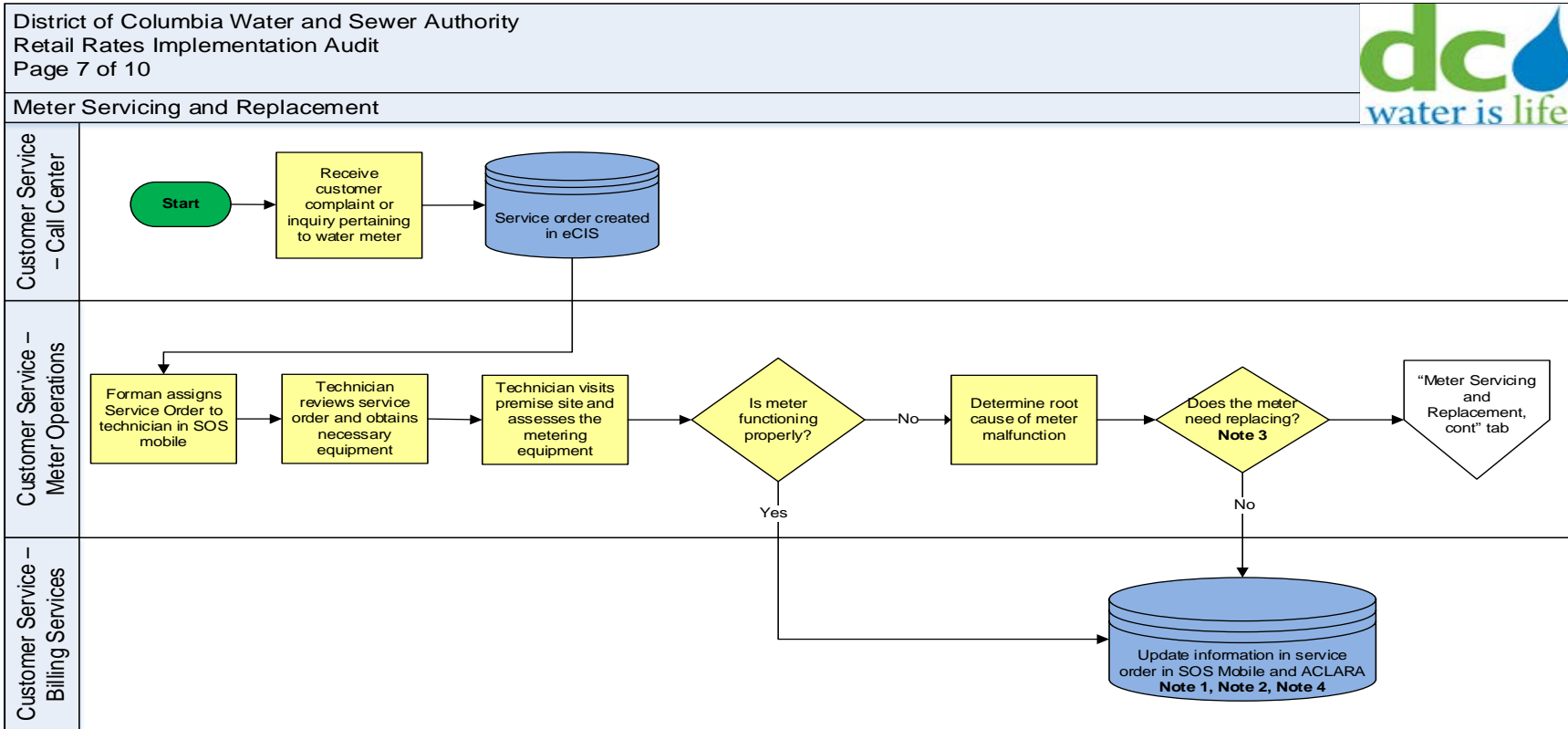
Note 3: The contact types are used to track which accounts have been identified for review (RRDCA), have been reviewed and confirmed no change (RRDCB), have been reviewed and needs a change (RRDCC) and which account need a field visit (RRDCD).

Process Maps



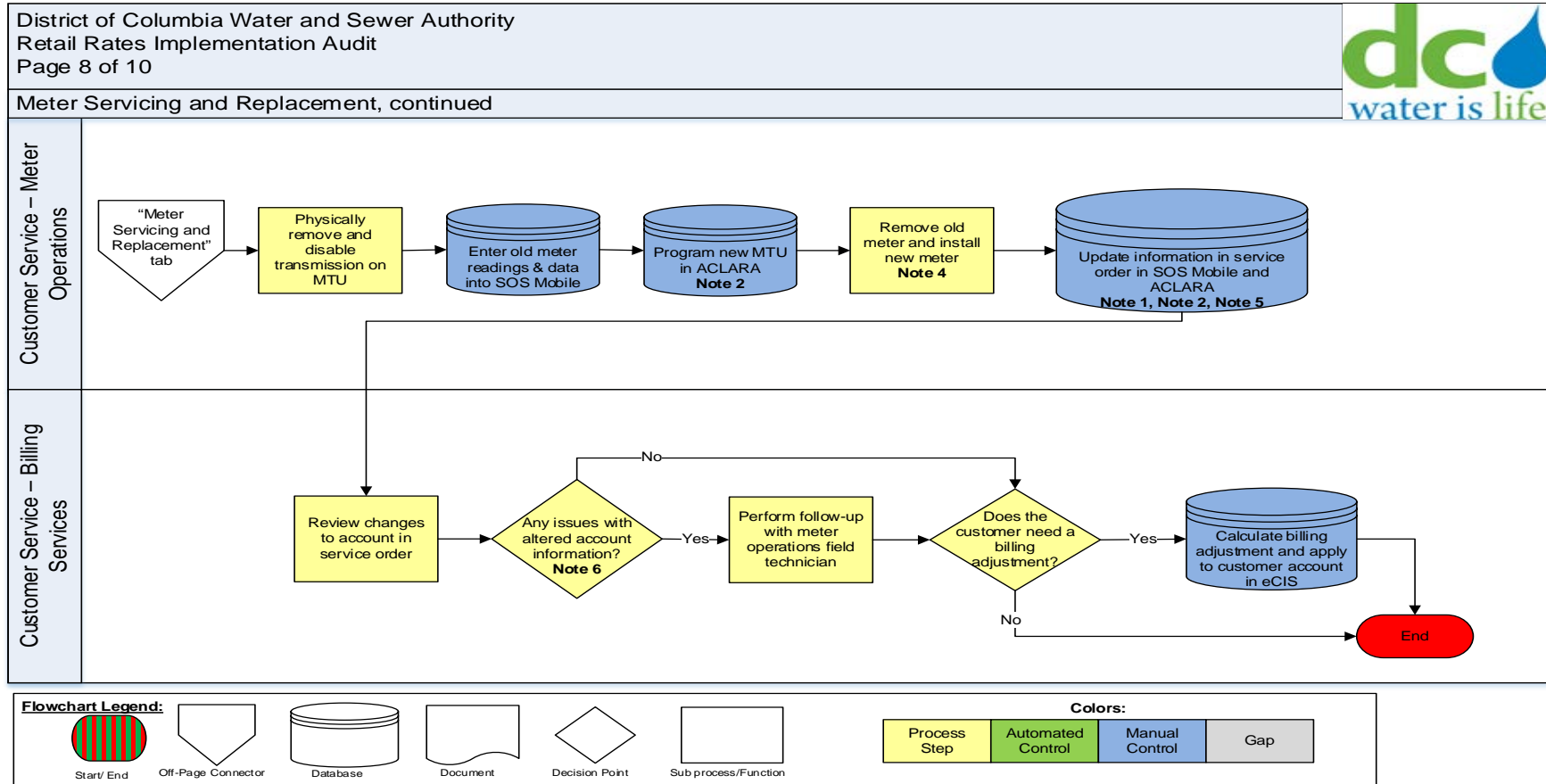
Note 1: The impervious area team utilizes GIS, JTX, and the Impervious Area database (IADB) to validate the premise type.
Note 2: If the premise type is reclassified to residential, the IAB determines the appropriate usage tier for the account and rate schedules are altered.

Process Maps



Notes
 Note 1: Meter information inputted into SOS mobile includes MTU #, Meter #, Meter Reading, and Meter Type. This information is recorded from the old meters and the subsequent new meter (if necessary).
 Note 2: ACLARA programing entries require Meter #, Meter Type, MTU #, Meter Size (dropdown), Meter manufacturer (dropdown), and Premise #.
 Note 3: Per the American National Science Federation (ANSF), water meters must be comprised of no more than 0.25% lead (NSF 61, appendix F and G). As part of a meter assessment, DC Water technicians will replace a meter if it is a model that does not comply with ANSF's regulation.
 Note 4: SOS Mobile and ACLARA are programs that run on the field technician's GETAC laptop computer. These laptops are kept in each technicians truck and brought to sites.

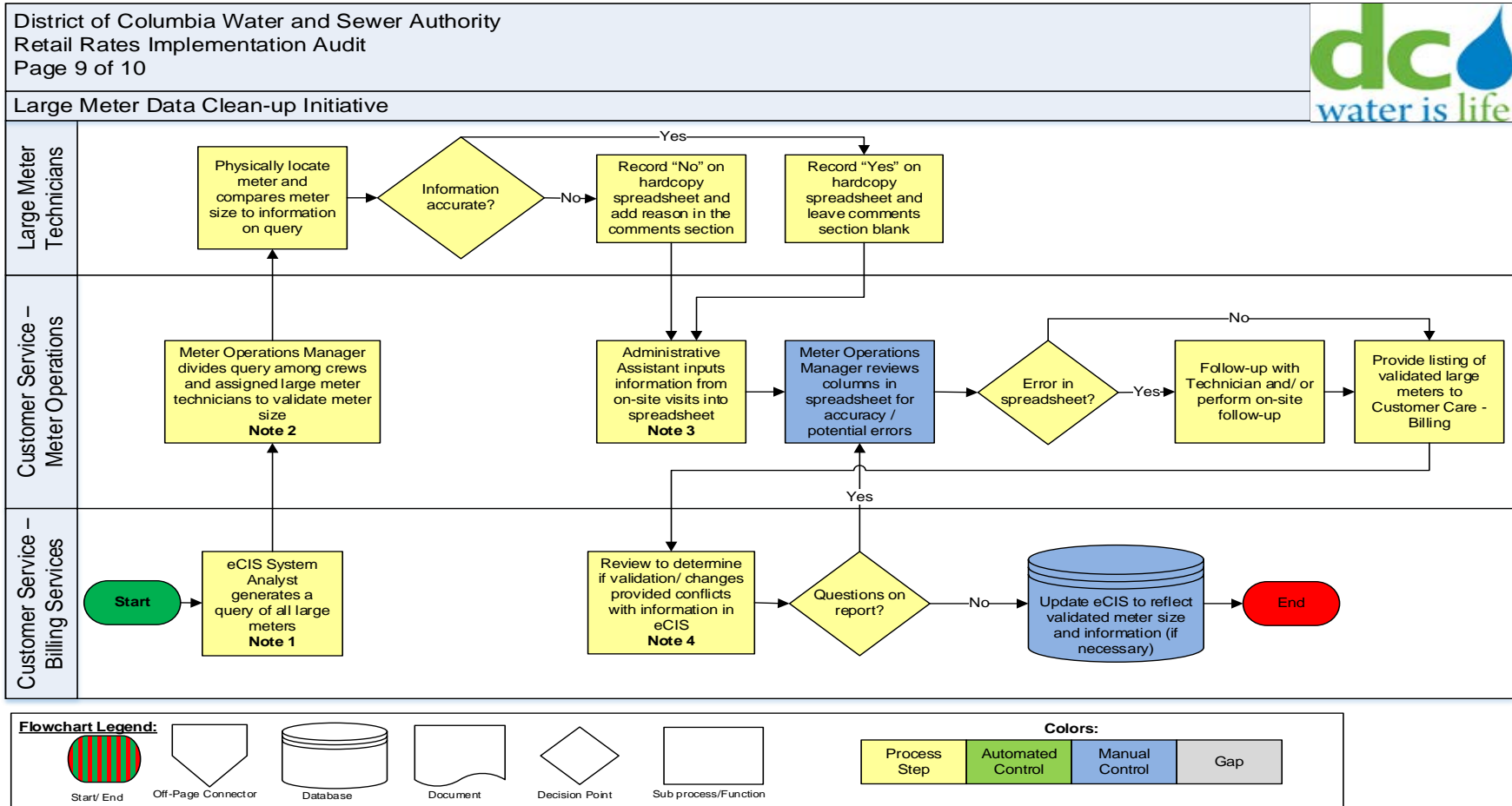
Process Maps



Notes

- N1: Meter information inputted into SOS mobile includes MTU #, Meter #, Meter Reading, and Meter Type. This information is recorded from the old meters and the subsequent new meter (if necessary).
- N2: ACLARA programming entries require Meter #, Meter Type, MTU #, Meter Size (dropdown), Meter manufacturer (dropdown), and Premise #.
- N3: Per the American National Science Federation (ANSF), water meters must be comprised of no more than 0.25% lead (NSF 61, appendix F and G). As part of a meter assessment, DC Water technicians will replace a meter if it is a model that does not comply with ANSF's regulation.
- N4: New Meters: Come with tags on from the factory, with Meter #, and Low, Med, High flow test ratings. The meters also have pertinent information branded on them.
- N5: SOS Mobile and ACLARA are programs that run on the field technician's GETAC laptop computer. These laptops are kept in each technicians truck and brought to sites.
- N6: The most common example of this is 'duplicate meter serial numbers in use'. This can occur when a technician enters a serial number into SOS mobile/ACLARA and the meter associated with that serial number is already in use. This occurs commonly because meters are assigned serial numbers in sequence.

Process Maps



Notes

Note 1: There were approximately 142 8" meters, 64 10" meters, and 10 12" and 16" inch meters.

Note 2: Crew was provided a spreadsheet of all meters they were assigned to validate. The spreadsheets included premise number, service address, account number, acct name, acct status, acct type, meter number, meter size, utility code, meter type, service code, schedule code.

Note 3: Technicians hand wrote information from on-site visits, so an admin was assigned to input the information manually into a organized spreadsheet.

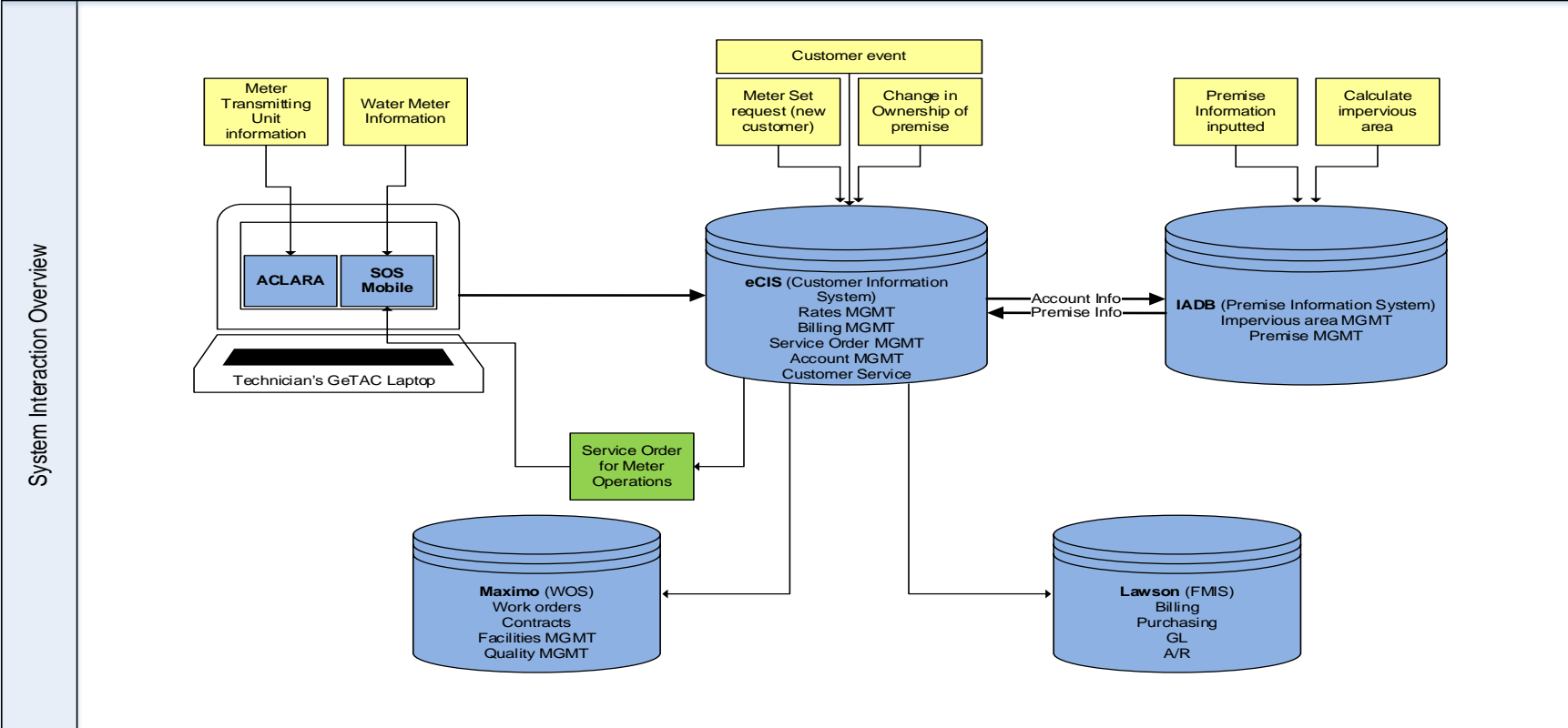
Note 4: Changes to the meter information in eCIS was expected, but the data clean-up team may have recent information in Service Orders that conflicts with what technicians found.

Process Maps

District of Columbia Water and Sewer Authority
Retail Rates Implementation Audit
Page 10 of 10



System Interaction Map





Flowchart Legend:

- Start/End: Red and green vertical stripes in a circle
- Off-Page Connector: Inverted triangle
- Database: Cylinder
- Document: Rectangle with wavy bottom
- Decision Point: Diamond
- Sub process/Function: Rectangle

Colors:

- Information Input: Yellow
- System Request: Green
- System: Blue
- Gap: Grey

Audit Committee - 3.Review of Internal Audit Status - Dan Whelan, Auditor General

 		DC Water & Sewer Authority Proposed Internal Audit Plan WORKING DRAFT - as of October 22, 2015					
Legend							
X	Required Internal Audit Activity						
X	Proposed Future Audit						
X	Audit In Progress						
X	Audit Issued						
X	Follow Up In Progress						
X	Audit Closed						
Audit Universe	Last Audit	2013	2014	2015	Proposed 2016	Preliminary 2017	
Overall Internal Audit Management							
Risk Assessment for Audit Plan Development				X			
Update Risk Assessment and Audit Plan Development					X	X	
Quality Control - Board Meetings, Status Reporting				X	X	X	
Hotline Management				X	X	X	
Follow-up and Cycle Audits							
Open Action Items - Remediation and Follow-up Procedures				X	X	X	
Blue Horizons - Strategic Plan Monitoring					X	X	
Contract Monitoring & Compliance Reviews	2014		X		X		
Audits by Department and/or Division							
Office of the General Manager							
Intellectual Property	2015			X			
Organization Policies & Procedures	2010						
Blue Plains (Wastewater Treatment)							
Maintenance Services							
Maintenance Services - Operations	2012						
Maintenance Services - Work Order Management					X		
Plant Operations							
Chemical Purchasing	2013	X					
Process Control System (PCS)	2013	X		X			
Wastewater Treatment							
Pumping & Storage Water Leakage Review	2011						
Customer Services							
Customer Services							
Customer Billing & Collections	2011				X		
Retail Rates Pre- and Post-Implementation Monitoring	2015			X	X		
Emergency Management							
Emergency Management - Mitigation & Response	2014		X				
Emergency Management - Recovery	2014		X				
Sewer Services							
Sewer Services - Construction & Repair	2014		X				
Sewer Services - Emergency Maintenance	2013	X					
Utility Services - Drinking Water							
Utility Services - Water Distribution	2013	X					
Utility Services - Water Maintenance	2013	X					
Support Services							
Facilities							
Facilities - Work Order Management							X
Fleet							
Fleet - Operations	2013	X					
Fleet - Intergovernmental Support (Ambulance Services)							X
Human Capital Management							
Employee Benefit Plans	2014		X				
Employee Recruitment and On-Boarding							X
Human Capital Management - Operations	2011						
Training, Certification and Licensing					X		
Occupational Safety and Health							
OSHA	2014		X				
Safety Programs, Training & Compliance	2010						
Procurement							
Materials Management - Disposal of Assets	2014		X				
Materials Management - Operations and Inventory	2014		X				X
Procurement Operations	2010						
Local / Small Business Utilization - Rapid Assessment					X		
Procurement Pre-Award Selection Process	2015			X			
Purchasing Cards (P-Card Program)	2013	X					X
Department of Engineering & Technical Services							
Long-Term Control Plan							
Clean Rivers Project Management	2014		X				
Clean Rivers - Vendor / Contractor Monitoring & Project Administration				X			
Engineering and Technical Services							
Engineering - Vendor / Contractor Monitoring & Project Administration	2015			X			
Engineering - Construction Management					X		
Engineering - Design and Program Management & Permitting	2013	X					X
Finance							
Financial Accounting and Reporting							
Payroll - General Operations	2012						
Timekeeping	2015			X			
Overtime					X		
Budget, Planning and Analysis							
Annual Budgeting & Planning					X		
Treasury, Debt and Risk Management							
Cash Receipts	2013	X					
Investments and Cash Management	2013	X					
Rolling Owner Controlled Insurance Program (ROICP)					X		
Information Technology							
Governance: Planning and Organization:							
Information Technology - Remediation and Follow-Up				X	X	X	
Vendor Risk Management / Compliance and Monitoring (Shadow IT)	2015			X			
Information Security Policy Review	2015			X			
Incident Management & Response Review						X	
Human Resource/Employee Privacy Review						X	
Enterprise SDLC Review	2013	X				X	
IT Governance Review	2012				X	X	
Crisis Management / Business Continuity Program	2014		X			X	
Technical & Operations: Information Security and Application Support:							
Operational Applications ITGC - SCADA	2015			X			
Network Penetration Testing (Corp/SCADA/Wifi)	2015	X		X			
Customer Data Collection and CIS (Integrated)					X		
DB/OS Privileged User	2010					X	
Software and Asset Management	2014	X	X				
Help Desk Operations	2012						
GIS System	2014		X				
Internal Network & Telecommunications	2013	X					
General Counsel							
Legal Operations - Case Management	2014		X				
Regulatory Compliance Monitoring	2013	X					
Contingency and Requested Audits and Projects							

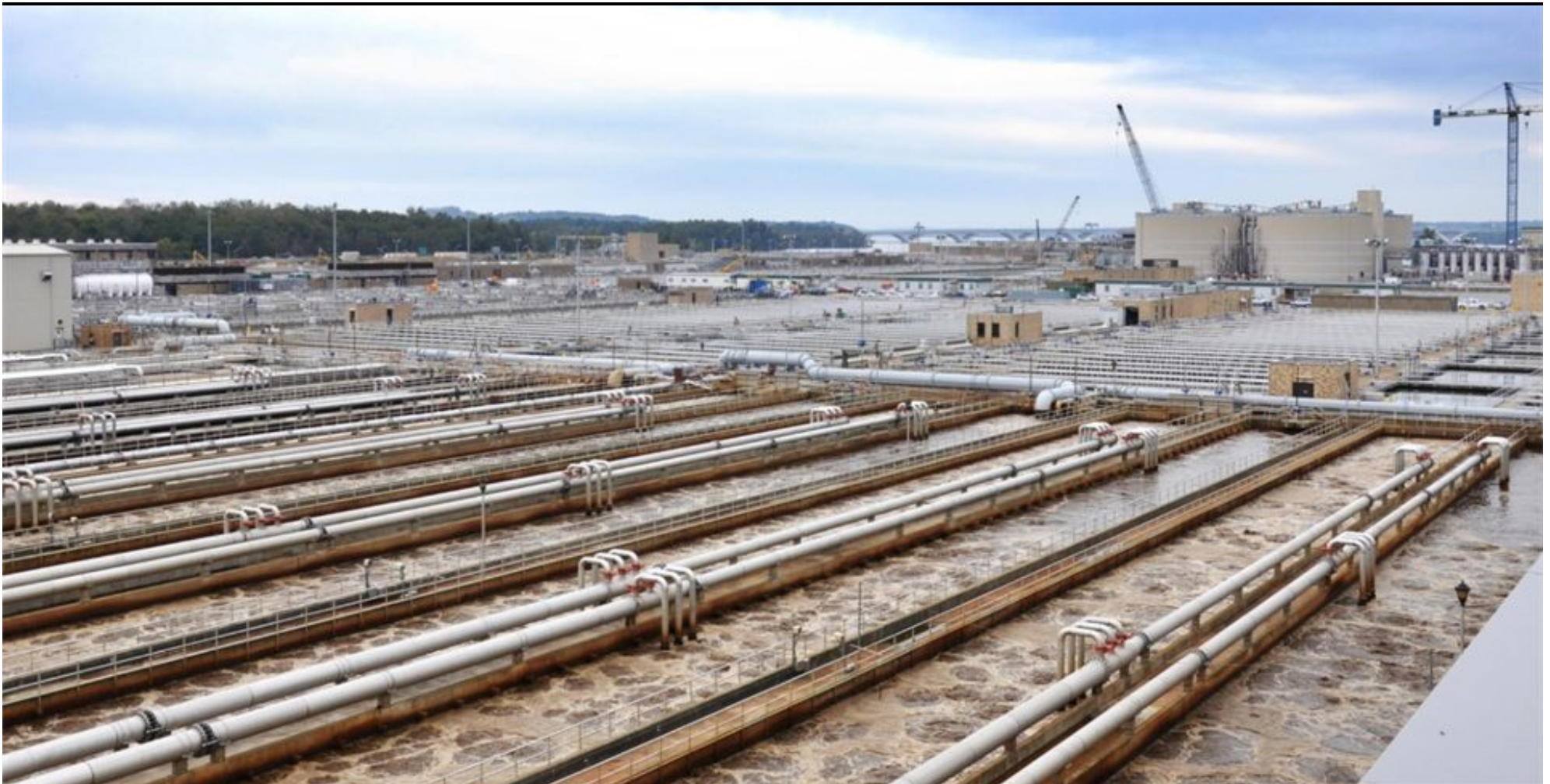


BLUE HORIZON 2020 STRATEGIC PLAN

Implementation Progress Report and Proposed Revisions

Presentation to the DC Water Audit Committee

October 22, 2015





Agenda

- Blue Horizon 2020 Overview
- Goal 9: Implementation Progress
- Goal 9: Proposed Revisions



DC Water's Strategic Direction

Vision

To be a world-class utility

Values

Respect, Ethics, Vigilance and Accountability

Mission

Exceed expectations by providing high quality water services in a safe, environmentally friendly, and efficient manner



LEADERSHIP



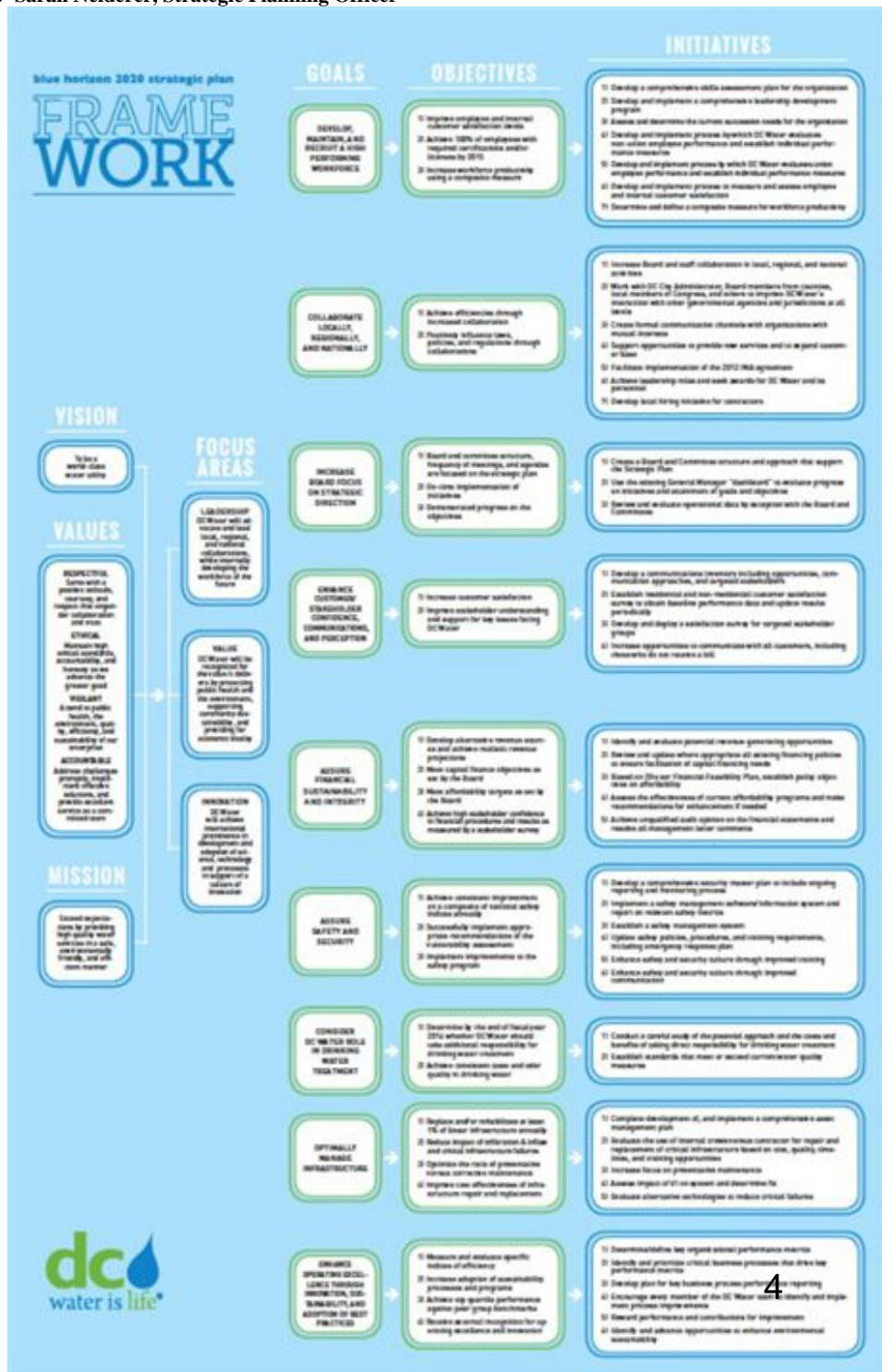
VALUE



INNOVATION



- 9 Goals
- 27 Objectives
- 44 Initiatives
- 146 Milestones





Blue Horizon 2020 Goals

GOAL		COMMITTEE	GOAL CHAMPION
1	Develop, Maintain and Recruit a High Performing Workforce	Human Resources/Labor Relations	Rosalind Inge
2	Collaborate Locally, Regionally, and Nationally	Governance	John Lisle
3	Increase Board Focus on Strategic Direction	Strategic Planning	Randy Hayman
4	Enhance Customer/Stakeholder Confidence, Communications, and Perception	Water Quality and Water Services	Charlie Kiely
5	Assure Financial Sustainability and Integrity	Finance and Budget/DC Retail Water and Sewer Rates	Mark Kim
6	Assure Safety and Security	Human Resources/Labor Relations	Aklile Tesfaye
7	Consider DC Water Role in Drinking Water Treatment	Water Quality and Water Services	Charlie Kiely
8	Optimally Manage Infrastructure	Environmental Quality and Sewerage Services	Len Benson
9	Enhance Operating Excellence Through Innovation, Sustainability, and Adoption of Best Practices	Audit	Biju George



Implementation Progress

Goal 9

*Enhance Operating Excellence Through Innovation,
Sustainability and Adoption of Best Practices*

9	Enhance Operating Excellence Through Innovation, Sustainability, and Adoption of Best Practices	% COMPLETE
9.1	Measure and evaluate specific indices of efficiency	
9.1.1	Determine/define key organizational performance metrics	60
9.1.2	Identify and prioritize critical business processes that drive key performance metrics	100
9.2	Increase adoption of sustainability processes and programs	
9.2.1	Identify and advance opportunities to enhance environmental sustainability	80
9.3	Achieve top quartile performance against peer group benchmarks	
9.3.1	Develop plan for key business process performance reporting	15
9.3.2	Encourage every member of the DC Water team to identify and implement process improvements	100
9.4	Receive external recognition for operating excellence and innovation	
9.4.1	Reward performance and contributions for improvement	70



Proposed Revisions

Goal 9

*Enhance Operating Excellence Through Innovation,
Sustainability and Adoption of Best Practices*



Goal 9

Adopted in 2013

- **Goal**
 - Enhance Operating Excellence Through Innovation, Sustainability, and Adoption of Best Practices
- **Objectives**
 - Measure and evaluate specific indices of efficiency
 - Increase adoption of sustainability processes and programs
 - Achieve top quartile performance against peer group benchmarks
 - Receive external recognition for operating excellence and innovation

Proposed Revisions

- **Goal**
 - Enhance Operating Excellence Through Innovation, Sustainability, and Adoption of Best Practices
- **Objectives**
 - **Develop**, Measure and evaluate specific indices of efficiency
 - **Achieve top quartile asset management performance against benchmarks**
 - Increase adoption of sustainability processes and programs
 - **Increase adoption of innovative processes and programs**
 - **Leverage innovation to develop alternative revenue sources**



Goal 9 Initiatives

9.1 Develop, Measure and evaluate specific indices of efficiency

- Develop strategy map, outcome measurements in alignment with strategic plan. Effective process measurement and benchmarking framework
- Identify and prioritize critical business processes that deliver strategic outcomes
- Determine/define key organizational performance metrics
- Implement performance management system

9.2 Achieve top quartile asset management performance against benchmarks

- Develop and implement asset management performance benchmarking framework for all classes of assets
- Research and adopt industry benchmarking frameworks for DC Water

9.3 Increase adoption of sustainability processes and programs

- Research and develop sustainability framework for DC Water
- Identify and advance opportunities to enhance environmental sustainability

9.4 Increase adoption of innovative processes and programs

- Develop innovation process and facilitation structure for DC Water

9.5 Leverage innovation to develop alternative revenue sources

- Pursue policies and procedures for enabling alternative revenue generation
- Identify and evaluate potential revenue-generating opportunities



Questions?
