



**DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY**

Board of Directors

Audit Committee

Thursday, March 26, 2015

9:00 a.m.

1. **Call to Order**.....Nicholas A. Majett, Chairperson
2. **FY 2014 Financial Statements**.....Mark Kim, CFO
3. **External Auditor’s Report**.....KPMG
4. **Review of Internal Audit Status**..... Dan Whelan, Auditor General
 - A. **Procurement Memo and Updated Proposed Audit Plan**
 - B. **Internal Auditor Follow-Up Report on Prior Audit Findings**
 - C. **Intellectual Property Program Assessment Report**
 - D. **External Communication Plan**
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.



PRESENTATION TO AUDIT COMMITTEE FY2014 FINANCIAL STATEMENTS

February 26, 2015





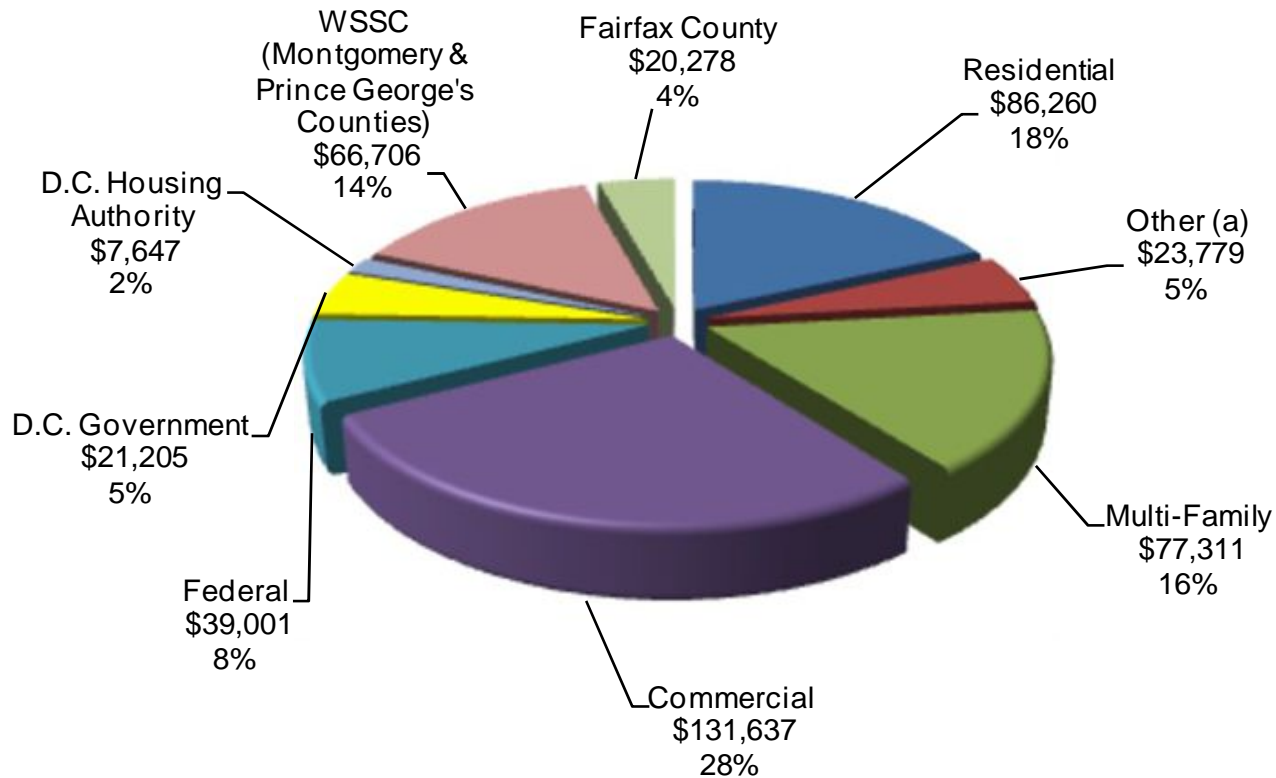
FY2014 Financial Overview

- The Authority's balance sheet remains strong and is growing
 - Total net position of \$1.4 billion (increase of \$144.2 million or 11.9%)
- The Authority posted financial results from operations generally in line with expectations and consistent with historical performance
 - Operating revenues increased by \$34.7 million (7.9%) to \$473.8 million
 - Operating expenses increased by \$2.1 million (0.6%) to \$356.0 million
 - Total unrestricted cash & investment of \$239.9 million (vs. \$204.0 million in FY13)
 - Total restricted cash & investment of \$211.8 (vs. 220.0 million in FY13)
 - Total long-term debt increased to \$2.5 billion (19.8% increase)
- The Authority maintained its credit ratings of Aa2/AA+/AA with a stable outlook from all three major rating agencies
 - Issued \$350 million of green century senior lien bonds and \$100 million in tax-exempt variable rate bonds to finance the Authority's \$3.8 billion capital improvement program



FY2014 Operating Revenues

- The Authority's operating revenues remain well diversified and stable





FY2014 Operating Revenues

- The Authority’s operating revenues increased by \$34.7 million (or 7.9%) to \$473.8 million

	<u>FY 2014</u>	<u>FY 2013</u>
Residential, commercial and multi-family customers	\$ 295,209	\$ 275,337
Federal government	39,001	45,187
District government and D.C. Housing Authority	28,852	21,677
Charges for wholesale wastewater treatment	96,845	87,178
Other	<u>13,917</u>	<u>9,700</u>
Total operating revenues	<u>\$ 473,824</u>	<u>\$ 439,079</u>



FY2014 Operating Expenses

- The Authority’s operating expenses increased by 0.6% (or \$2.1 million) to \$356.0 million

	FY 2014	FY 2013
Personnel services	\$ 108,467	\$ 103,908
Contractual services	68,172	68,417
Chemicals, supplies and small equipment	31,748	28,987
Utilities and rent	29,939	26,098
Depreciation and amortization	77,833	77,330
Water purchases	28,407	27,223
Payment in lieu of taxes and right of way fee	11,458	21,982
Total Operating Expenses	\$ 356,024	\$ 353,945

- Personnel and chemicals were the primary drivers offset by PILOT settlement.



Net Capital Assets

- The Authority’s net capital assets, including construction in progress and less depreciation, increased by \$641.3 million (or 14.9%) to \$4.9 billion

	As of September 30,		
	2014	2013	2012
Wastewater treatment plant	\$ 2,057,116	\$ 1,945,920	\$ 1,924,985
Wastewater collection facilities	758,603	730,622	716,651
Water distribution system	981,047	920,150	897,077
Purchased capacity	334,174	326,290	319,840
Capital equipment	191,409	178,620	167,641
Construction in progress	1,879,678	1,381,652	807,430
Less accumulated depreciation	(1,268,009)	(1,190,489)	(1,115,381)
Net capital assets	<u>\$ 4,934,018</u>	<u>\$ 4,292,765</u>	<u>\$ 3,718,243</u>



Change in Net Position

- The Authority's net position increased by \$144.2 million (or 11.9%) to \$1.4 billion

	Fiscal Year		
	2014	2013	2012
Operating revenues	\$ 473,824	\$ 439,079	\$ 440,566
Operating expenses	356,024	353,945	343,037
Net non-operating revenues (expenses)	(68,311)	(62,761)	(73,252)
Change in net position before capital contributions	49,489	22,373	24,277
Capital contributions	94,690	58,310	58,957
Change in net position	144,179	80,683	83,234
Net position - beginning of year, as restated	1,206,636	1,125,953	1,042,719
Net position - end of year	\$1,350,815	\$1,206,636	\$1,125,953



PRESENTATION TO AUDIT COMMITTEE FY2014 FINANCIAL STATEMENTS

February 26, 2015





DC Water FY 2014 Financial Statement Audit

Exit Conference
February 26, 2015



Agenda

- Introductions
- Financial Statement Audit Results
 - Opinion on the Basic Financial Statements
 - Report on Internal Control over Financial Reporting (ICOFR) and on Compliance
- Auditors' Required Communications
- Significant Deficiencies in ICOFR
- Single Audit Results
- Open Discussions/Questions

This is intended solely for the information and use of the Board of Directors and Management of the District of Columbia Water and Sewer Authority, and is not intended to be and should not be used by anyone other than these specified parties.

Financial Statement Audit Results

- Opinion on the Basic Financial Statements
 - Unmodified or “clean” opinion

- Report on Internal Control over Financial Reporting
 - No Material Weaknesses Identified
 - Significant Deficiencies Identified

- Report on Compliance with Laws, Regulations, Contracts and Grants
 - No instances of non-compliance noted

- Management Letter
 - Control deficiencies noted

Auditors' Required Communications

Responsibilities Under Auditing Standards Generally Accepted in the United States of America

- Conduct our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* which provide reasonable – not absolute – assurance about whether the basic financial statements are free of material misstatement, whether caused by error or fraud.

Scope of Independent Audit

- No significant changes to planned audit scope

Other Information in Documents Containing Audited Financial Statements

-Management's Discussion and Analysis (RSI)

-Introductory and Statistical Sections (CAFR Only)

- No matters came to our attention that cause us to believe such information is materially inconsistent with the basic financial statements
- Our responsibility relating to other information in documents containing the basic financial statements upon which we report:
 - Applied limited procedures, which consisted principally of inquiries of management
 - We did not audit this information and, accordingly, we express no opinion on it.

Auditors' Required Communications (continued)

Significant Accounting Policies

- Described in Note 2 of the basic financial statements
- Implemented several new accounting standards in FY 2014. GASB 65 had the most significant impact on DC Water's financial statements in FY 2014.

Significant Audit Differences and Adjustments

- **Corrected** audit adjustments/reclassifications to the basic financial statements and related notes for FY 2014:
 - Components of Net Position
- **Uncorrected** audit differences noted for FY 2014:
 - IMA Operating Revenues Accrual
 - Costs Transferred from CIP to Fixed Assets Prior to Completion

Auditors' Required Communications (continued)

Quality of Accounting Principles

- We discussed quality of accounting principles as well as acceptability with management
 - Purchased Capacity (Washington Aqueduct)
 - IMA Wholesale Agreement Capital Contributions
 - Component unit status with District
 - Useful lives of capital assets
- Accounting principles have been consistently applied
- Corrected basic financial statements and footnotes demonstrate clarity and completeness

Management Judgments and Accounting Estimates

- Allowance for Doubtful Accounts
- IMA Operating Cost Accruals

- We evaluated the key factors and assumptions used to develop these estimates and determined that the estimates are reasonable in relation to the DC Water basic financial statements taken as a whole

Significant and Unusual Transactions

- As discussed in note 12c, in September 2014, the District and DC Water entered into a MOU whereby the District agreed to fund up to \$58,579 of costs incurred by the Authority on the Northeast Boundary Neighborhood Protection Project. A receivable of \$38,782 was recorded for reimbursable costs incurred on the project to date.

Auditors' Required Communications, continued

Major Issues Discussed with Management Prior to Retention

■ None

Disagreements with Management on Financial Accounting and Reporting Matters

■ None

Difficulties Encountered with Management in Performing the Audit

■ None

Consultation with Other Accountants

■ None that we are aware of relating to audit matters

Independence

■ We are independent with respect to the Authority

Significant Deficiencies in Internal Control Over Financial Reporting

Significant Deficiencies in Internal Control Over Financial Reporting

2014-01

Improve Time and Attendance Process

- Ensure that hours recorded are approved by the appropriate personnel before the pay period is closed.
- If all hours are not able to be approved prior to payroll being processed, implement additional controls that require Department Heads to approve the hours after the fact .

2014-02

Strengthen Entity Level Controls

- Require the Board of Directors and executive management to sign an annual COI statement; and
- Implement the ethics policy developed in 2009.

2014-03

Improve General Information Technology Controls

- Access to programs and data
- Program changes
- Computer operations

Single Audit Results

- Major programs tested:
 - CFDA# 66.468, Safe Drinking Water Act Program

- Opinion on Compliance For Major Programs
 - Unmodified or “Clean” Opinion
 - No Questioned Costs Identified

- Internal Control over Major Programs
 - No Material Weaknesses Identified
 - No Significant Deficiencies Identified

Open Discussion/ Questions

Appendix

Categories for Reporting Control Findings

- **Material Weakness** is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis.
- **Significant Deficiency** is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.
- **Control Deficiency** exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis.

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

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)
 - Website: www.kpmginstitutes.com/government-institute/



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Audit Committee - 4. Review of Internal Audit Status - Dan Whelan, Auditor General

 		DC Water & Sewer Authority Audit Plan October 2009 through September 2014 Proposed 2015, 2016 and 2017							
Key -		2010	2011	2012	2013	2014	Proposed 2015	Preliminary 2016	Preliminary 2017
X	Proposed Audit Plan						X		
X	Audit In Process						X	X	X
#	Audit complete, Open Management Action Plans						X	X	X
X	Audit Issued						X	X	X
X	Action Deferred						X	X	X
X	Audit Closed, No Follow-up Items								
Overall Audit Functions									
Risk Assessment							X		
Update Risk Assessment and Audit Plan Development							X	X	X
Follow-up Processes							X	X	X
Quality Control - Board meetings, Status Reporting							X	X	X
Fraud, Waste & Abuse Hotline Management							X	X	X
Entity - Wide									
Office of the General Manager							X		
Intellectual Property									
Organization Governance									
Organization Policies & Procedures		X							
Succession Planning		X							X
External Affairs									
Community Outreach & Education									
Government Relationships									
Finance									
Financial Accounting and Reporting									
Accounts Payable									
Fixed Assets & Equipment								X	
Financial Statement Consolidation & Reporting									
General Ledger									
Grant Operations			X						
Payroll				X					
Payroll - Timekeeping & Overtime							X		
Financial Planning and Analysis									
Annual Budgeting & Planning									
Treasury, Debt and Risk									
Cash Receipts		X			X				X
Debt Management									
Insurance Program Procurement & Insurance Claims Management				X					
Investments and Cash Management					X				X
Rates and Revenue Calculation							X		
General Counsel									
Legal Operations						1			
Regulatory Compliance Monitoring		X			X				
Information Technology									
GIS System						3			
Access Provisioning and DeProvisioning		X			X	9			
Asset Management									
Business & Operating Applications				X					
Customer Data Collection and CIS								X	
Disaster Recovery & Business Continuity Plans			X			2			X
Financial Applications								X	
Governance & Strategy Review				X				X	
Help Desk & Computer Operations				1					
Human Resource/Employee Privacy									X
Information Security Policy							X		
Internal & External Network Intrusion/Penetration Testing		X			X		X		
Internal Network & Telecommunications					X				
Incident Response								X	
Physical Security									X
SCADA							X		
SDLC and Change Management		X			X				X
Vendor Management			X				X		
Labor Relations									
Labor Relations - Contract Management & Compliance								X	
Workers Compensation								X	
Support Services									
Facilities Management									
Facility Operations, Maintenance & Costs									X
Fleet									
Fleet Management			X		2				X
Human Capital Management									
Employee Benefit Plans						1			
Employee New Hire and on-boarding Processing								X	
Recruitment & Training System									X
Human Capital Management			X						
Occupational Safety and Health									
OSHA						1			
Safety Programs, Training & Compliance		X							
Procurement									
Disposal of Assets						5			
Outside Contractor Management - Part 1						X		X	X
Outside Contractor Management - Part 2						2			
Procurement Operations		X					X		
Purchasing Cards (P-Card Program)			X		X				X
Warehousing & Inventory				X		6			
Security									
Facility Security & Contingency Planning			X						
Individual Function Audits									
Blue Plains									
Maintenance Services									
Maintenance Services Operations				2				X	
Plant Operations									
Biosolids Management				X					
Chemical Purchasing					X				
Process Control System (PCS)						7			
Water and Sewer Pumping									
Pumping & Storage Water Leakage Review			X						
Customer Care & Operations									
Customer Service									
Automated Meter Reading (AMR) & Customer Billing			X					X	
Customer Service Operations				X					
Emergency Management									
Emergency Management - Mitigation & Response						1			
Emergency Management - Recovery						2			
Sewer Services									
Sewer Services - Construction & Repair						7			
Sewer Services - Distribution									
Sewer Services - Emergency Maintenance					2				
Utility Services - Water									
Aqueduct Contract		X					X		
Fire Hydrant Maintenance			X						
Utility Services - Water Distribution					X				
Utility Services - Water Maintenance					4				
Department of Engineering & Technical Services									
Clean Rivers									
Clean Rivers Project Management						X			
Engineering and Technical Services									
Engineering - Budget Management							X	X	X
Engineering - Contractor Management									
Engineering - Project Planning & Design; Procurement		X			X				
Capital Projects				X					
Permit Operations									
Permit Operations			X	X					
Contingency and Requested Audits and Projects							TBD	TBD	TBD
Total by Year		0	0	3	15	40			
Total open items		58		Total proposed audits		10	12	13	



McGladrey LLP

1501 M St NW
 Washington, DC 20005
 O 202.370.8200
 www.mcgladrey.com

Memorandum

Date: January 22, 2015
 To: DC Water Audit Committee
 From: Internal Audit, DC Water
 CC: George Hawkins, GM; Mark Kim, CFO; John Madrid, Controller; Rosalind Inge, AGM Support Services; Leonard Benson, Chief Engineer
 Subject: Analysis of Procurement Audits and Reports

Background

McGladrey reviewed the procurement-related internal audit reports, consulting reports and memos that have been issued to DC Water during the last five years. These reports include:

- Memo investigating a procurement error issued by SC&H (2014)
- Outsider Contractor Management – Part 1 and 2 internal audit reports issued by SC&H (2014)
- Governance Assessment of DC Water’s Procurement issued by Veolia (2014)
- Disposal of Assets internal audit report issued by SC&H (2014)
- Evaluation Report of DC Water and Sewer Authority’s Procurement Department issued by Hill-Christian Consulting Group (“HCCG”) (2012)
- Capital Projects internal audit report issued by SC&H (2012)
- Procurement internal audit report issued by SC&H (2010)

A matrix to review the scope, objectives, methodology and timeframe of each report was developed and provided to Management. We analyzed the results for deficiencies in audit scope as well as identified on-going remediation efforts as a part of our follow up process. As shown in the matrix, DC Water has spent more than \$215,000 on these deliverables.

Analysis

The internal audit reports referenced above that were performed by SC&H resulted in 16 recommendations for process, documentation, organizational structure, and performance measurement improvements. Through their regular follow-up process, SC&H closed 13 of those items, and 3 remain open, which are included in the follow-up report that we are presenting to the Audit Committee today.

In addition, the HCCG and Veolia reports included another 33 recommended actions. These were not included in the routine follow up performed by SC&H. As a part of our analysis, we interviewed various DC Water personnel and management regarding the status of the items and noted the following:

Report	Not Started	Closed	In-Progress	No Planned Action
HCCG	1	0	8	1
Veolia	0	0	13	10

We did not verify management's representations above, but noted that none of the items have been fully addressed, partly as result of several ongoing initiatives and concerns, including the following:

- Lawson integration with Maximo
- Materials Management updates
- Asset Management updates
- Organizational changes in the Goods & Services Procurement department ("G&S")
- Staffing vacancies (currently 13) in G&S

Further, a comprehensive review of the G&S pre-award and award phases of the procurement process have not occurred since FY2010 and for DETS since FY2012. The pre-award and selection / award phases of the process are a growing concern based on the following risk indicators:

1. Recent error resulting in an over-award and over-payment to a vendor;
2. Significant amount of turnover and ongoing vacancies in G&S;
3. Multiple recommendations based on independent assessments are not being addressed;
4. Significance of the capital budget; and
5. The enabling legislation for DC Water does not require adherence with procurement related codes and statutes, and the policies and procedures for procurement varies between G&S and DETS.

The items above are indicators of higher risk and could result in potential control design gaps and/or operating deficiencies in procurement compliance, process inefficiencies or irregularities.

Recommendations

Based on the review of the reports referenced above and the analysis noted, we recommend that a procurement audit be added to the FY2015 Audit Plan (and reschedule the Worker's Compensation audit to FY2016). The scope of the procurement audit would include:

1. Review of the pre-award and selection / award phases of the procurement process for G&S and DETS;
2. Compliance with the Procurement Regulations and Procurement Manual (or other existing policies and procedures); and
3. Follow-up testing on status of existing recommendations and improvement opportunities from the more recent reports identified above.

As part of the scope of the procurement audit, since the recommendations by the outside consultants had not been formally tracked, we will determine management's agreement with the proposed recommendations, the associated action plan and due dates and the current status of the recommendations. Based on our initial audit planning, we may incorporate the DETS portion of this audit scope in the Engineering Contractor Management internal audit or perform these steps concurrently with G&S. We will have a better understanding of the timing and extent of testing after initial interviews have been completed.

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

DC WATER INTERNAL AUDIT

February 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	February 2015	February 2015	02/23/2010	OGM	1	0	0	0	1
Safety Program Training & Compliance	February 2015	February 2015	10/07/2010	OGM	1	0	0	0	1
Pumping & Storage - Water Leakage	February 2015	February 2015	03/01/2011	Customer Care & Operations	1	0	0	0	1
Grant Operations	February 2015	February 2015	10/20/2011	Finance	1	0	1	0	0
Human Capital Management	February 2015	February 2015	11/29/2011	OGM	1	0	0	0	1
Maintenance Services	February 2015	February 2015	04/18/2012	Blue Plains	2	2	0	0	0
Warehouse Operations	February 2015	February 2015	06/12/2012	Support Services	2	0	2	0	0
IT Helpdesk & Computer Operations	February 2015	February 2015	10/05/2012	IT	1	1	0	0	0
Purchase Cards	February 2015	February 2015	04/16/2013	Support Services	1	0	1	0	0
Fleet Management	February 2015	February 2015	04/17/2013	Support Services	3	1	1	1	0
Process Control System (PCS)	February 2015	February 2015	09/04/2013	Blue Plains	7	7	0	0	0
Sewer - Emergency Maintenance	February 2015	February 2015	06/18/2013	Customer Care & Operations	2	1	0	1	0
Water Services - Distribution Maintenance Branch	February 2015	February 2015	10/28/2013	Customer Care & Operations	6	3	2	1	0
Water Services - Distribution Control Branch	February 2015	February 2015	11/08/2013	Customer Care & Operations	1	0	1	0	0
Legal Operations	February 2015	February 2015	02/11/2014	OGC	2	1	1	0	0
Clean Rivers Project Management	February 2015	February 2015	02/11/2014	DETS	1	0	1	0	0
OSHA	February 2015	February 2015	02/18/2014	Support Services	1	1	0	0	0
Disposal of Assets	February 2015	February 2015	02/18/2014	Support Services	5	5	0	0	0
Employee Benefit Plans	February 2015	February 2015	03/31/2014	Support Services	1	1	0	0	0
Emergency Management - Recovery	February 2015	February 2015	05/12/2014	Customer Care & Operations	5	2	3	0	0
DSS - Construction & Repair	February 2015	February 2015	05/12/2014	Customer Care & Operations	7	7	0	0	0
Emergency Management - Mitigation	February 2015	February 2015	06/27/2014	Customer Care & Operations	3	1	2	0	0
Outsider Contractor Management - Part 2	February 2015	February 2015	07/22/2014	IT	3	2	1	0	0
Disaster Recovery	February 2015	February 2015	07/31/2014	IT	3	2	1	0	0
IT Asset Management	February 2015	February 2015	09/10/2014	IT	9	1	0	8	0
Warehouse Operations	February 2015	February 2015	09/15/2014	Support Services	7	3	0	3	1
GIS Mapping	February 2015	February 2015	06/23/2014	DETS	5	3	2	0	0
Total					82	44	19	14	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.

Corrective Actions by Due Date

	Pending Testing	FY2015 Q2	FY2015 Q3	FY2015 Q4	FY2016 Q2	FY2016 Q3	FY2017 Q3
# of corrective actions	14	23	10	8	1	1	1

Summary of Audit Corrective Actions

DC WATER INTERNAL AUDIT

February 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	3	0	8	1	2	4	1	0
Open Management Action Plans	3	9	14	1	6	11	0	0
Pending Testing	0	0	2	0	8	4	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, 224, 230, 232, 233, 238, 244, 259, 260, 265, 270, 279, 280	25
Employee Development / Training	173, 187, 213, 237, 243, 251, 273	7
Asset Management	111, 113, 240, 262, 263, 264, 265, 266, 270, 271, 272, 274, 279, 280	14
Catch Basin Pilot Program	208, 210, 240	3
Vacant Position Dependency	168, 219	2
Contractor / Vendor Dependency	167-B, 178, 179, 225, 231	5

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

- There are 25 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 12 (with 3 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), and we will update the status of these items during the April meeting, as applicable.
- There are 2 open items (with one duplicate) that require a position to be filled in order to be closed.
- There are 5 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.



District of Columbia Sewer and Water Authority

Intellectual Property Program Assessment

Prepared By:
Internal Auditors
January 8, 2015



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McGladrey LLP

1501 M St NW
Washington, DC 20005
O 202.370.8200
www.mcgladrey.com

January 8, 2015

The Audit Committee of
District of Columbia Water and Sewer Authority
5000 Overlook Avenue, SW
Washington, DC 20032

Pursuant to the approved internal audit plan for fiscal year 2015 for the District of Columbia Water and Sewer Authority ("DC Water" or "Authority"), we hereby present our assessment of the Intellectual Property program. We will be presenting this report to the Audit Committee of DC Water at the next scheduled meeting on January 22, 2015. Our report is organized in the following sections:

Executive Summary	This provides a summary of the observations and opportunities related to our Intellectual Property Program Assessment.
Background	This provides an overview of the Intellectual Property program.
Objectives, Scope and Approach	The objectives and focus are expanded upon in this section as well as a review of the various phases of our approach.
Observations Matrix	<p>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.</p> <p>Items identified as improvement opportunities noted during our work will also be included, with recommended actions. These items should be considered and implemented at management's discretion and will not be included in our routine follow-up process.</p>

We would like to thank the staff and all those involved in assisting the Internal Auditors in connection with the Intellectual Property Program Assessment.

Respectfully Submitted,

INTERNAL AUDITORS

Executive Summary

Executive Summary

DC Water has a long history of being recognized globally as an innovation leader in their sector and is a key partner to universities, research institutions, and the industry. Their commitment to serve in the best interest of the public is what motivates the Authority to achieve status as a best in class innovator and advisor. To further enhance the Authority's position as industry Leader, they are implementing a broad based open innovation program aimed at leveraging the ideas and creativity of every employee. The premise of open innovation is to promote collaboration and share technologies rather than hoard Intellectual Property ("IP") as a defense mechanism. Through the pursuit of an open innovation approach that includes organizing licensing activities and selecting strategic partnerships to pro-actively manage intellectual property strategy, the Authority will be uniquely positioned to supplement revenues, share success with employees and further elevate their status as a research partner of choice.

DC Water is unique in the water sector in its scientific approach to integrating technology into planning and operations. The science and technology research arm of the Blue Plains Advanced Wastewater Treatment Plant is where personnel identify emerging technologies and keep an eye to upcoming regulatory changes. They investigate concepts, then plan and undertake scientific research, the most promising of which leads to recommendations for the Authority. From concept to recommendation typically takes up to five years and it may be another five years to implementation.

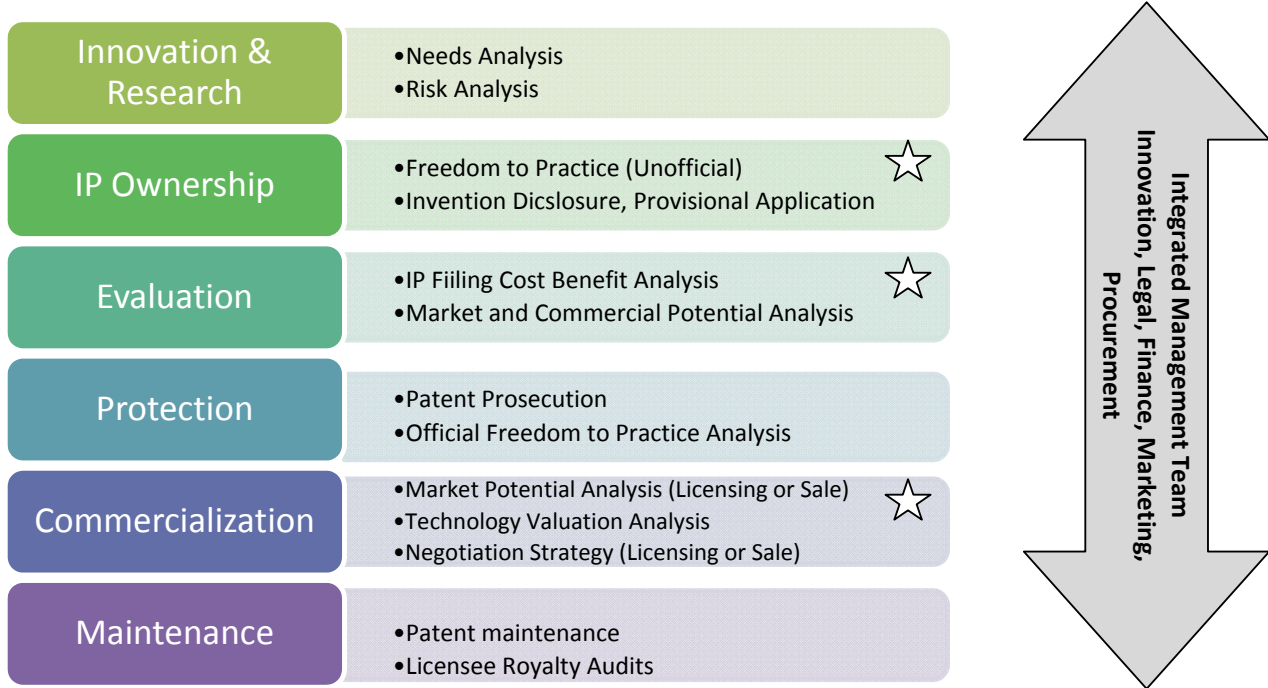
In early 2014, a formal Innovations program was established. The Innovations Chief was hand-selected by the General Manager from the Authority's Blue Plains engineering team for Clean Water Quality and Technology. As noted above, the department's primary initiative is to implement a broad-based employee-driven 'innovation program' to enable every employee to participate in the innovation process. Involving more individuals in the process accelerates the development of methods and technologies to address safety risks, permit risks, and process improvements and will result in increased generation of intellectual property patents. Some patents will have tangible commercial value through licensing to third parties; therefore, the Innovations team is working on a technology transfer process to facilitate commercialization. The program holds the additional benefits of improving employee morale, increasing partnerships with universities, and attracting and retaining talent that would otherwise choose to work in the private sector. The Innovations Chief and program manager have performed extensive research and progressed toward formalizing the program's structure, objectives, communication and related policies and procedures.

DC Water is among the first in the sector to actively pursue commercialization to offset R&D costs and increase funding available for additional research. To date the Innovations team has made great progress towards implementing policies and procedures for the program despite significant challenges locating comparable business models for managing the Intellectual Property lifecycle. The closest models are those for universities or non-profit research institutions. Unlike universities and research labs that are measured on their ability to generate and commercialize IP and publish, DC Water's goal is to accelerate research activity and when practical leverage the commercialization of resulting IP. For this reason the Innovations team has elected to implement an IP management approach similar to the university model yet tailored to the Authority's operating strategy and risk profile.

Innovation, the Intellectual Property Program, and the IP lifecycle management processes at DC Water are still in their infancy. The Authority holds two patents, has filed nine patent applications, and is in the process of licensing one patent to a third party. The Innovations team anticipates eventually generating 3-5 patents annually with commercial potential. Performing an independent program assessment during the infancy stage allows DC Water to be proactive in ensuring significant, relevant risks and opportunities are identified during the development stage as potential gaps are much more costly and time consuming to remediate in a mature process.

Executive Summary - continued

An overview of the IP lifecycle is shown below. Each phase represents different risks and challenges based on the Authority's business model. The stars indicate lifecycle areas of focus to mitigate the risks associated with the observations noted within our report and ensure success as the program matures.



The following section provides a summary of the risks for each phase of the IP Lifecycle, as well as management's representation of the Authority's Current State response to those risks. We have also noted hurdles to moving into a desired Future State that expands innovations and the Intellectual Property Program while efficiently and effectively minimizing the risks.

Innovation & Research	
Risk	<ul style="list-style-type: none"> • Research and development resources are wasted on non-value added activities and projects.
Current State	<ul style="list-style-type: none"> • Based on interviews, DC Water appears to have a good process and approvals in place to identify worthwhile projects to pursue for patented technologies and potential commercialization. A capital and R&D investment analysis would be required to validate.
Hurdles to Future State	<ul style="list-style-type: none"> • Funding for R&D is limited; employee engagement and Return on Investment are difficult to measure. Personnel and financial resources to efficiently and effectively conduct R&D in a timely manner may not be available.

Executive Summary - continued

IP Ownership	
<i>Risk</i>	<ul style="list-style-type: none"> Loss of patent rights and inability to defend patent rights; increased litigation expenses; loss of research partners.
<i>Current State</i>	<ul style="list-style-type: none"> The Authority does not have strong procedures in place to ensure ownership rights are safeguarded.
<i>Hurdles to Future State</i>	<ul style="list-style-type: none"> Contracts with joint venture partners, university partners are not yet well-defined. Employee policies for disclosure, ownership and potential remuneration are in process but not yet in place. Partnering with universities in particular may lead to early disclosure of technologies prior to issuance of provisional patents due to pressure to publish. Personnel and financial resources to efficiently and effectively ensure ownership rights are safeguarded in a timely manner may not be available.
Evaluation	
<i>Risk</i>	<ul style="list-style-type: none"> Authority resources are erroneously used pursuing technologies already in existence or with no market potential.
<i>Current State</i>	<ul style="list-style-type: none"> Solid processes and procedures are not yet in place to manage the evaluation process.
<i>Hurdles to Future State</i>	<ul style="list-style-type: none"> Personnel and financial resources to efficiently and effectively evaluate commercial potential in a timely manner may not be available.
Protection	
<i>Risk</i>	<ul style="list-style-type: none"> Errors with patent application and prosecution invalidate patentability.
<i>Current State</i>	<ul style="list-style-type: none"> Much of the patent prosecution is outsourced to external law firms but managed by internal counsel consisting of more than one patent attorney. While we did not validate external counsels competencies the risk of filing errors appears minimal based on internal counsels experience and professional requirements.
<i>Hurdles to Future State</i>	<ul style="list-style-type: none"> Personnel and financial resources to manage increased patent activity may not be available. Contracts with joint venture partners, university partners are not yet well-defined.
Commercialization	
<i>Risk</i>	<ul style="list-style-type: none"> Patents would not be licensed at the most beneficial terms or according to any applicable regulations such as Bayh-Dole.
<i>Current State</i>	<ul style="list-style-type: none"> There is currently not a process in place to proactively perform market analysis, market valuation, or licensing negotiation.
<i>Hurdles to Future State</i>	<ul style="list-style-type: none"> Personnel and financial resources to manage increased commercialization activity may not be available. Contracts with joint venture partners, university partners are not yet well-defined.

Executive Summary - continued

Maintenance	
Risk	<ul style="list-style-type: none"> Loss of patents due to failure to pay maintenance fees or address Patent Office actions; under reporting and payment of royalty fees.
Current State	<ul style="list-style-type: none"> Monitoring process is adequate for the size of the portfolio. Both internal counsel and external counsel are monitoring deadlines for Patent Office Action requests and renewal fee due dates. There are currently no license agreements in place therefore royalty audits are not yet necessary.
Hurdles to Future State	<ul style="list-style-type: none"> Personnel and financial resources to manage increased activity related to licensing and auditing performance may not be available.

The observations and opportunities identified during our assessment are summarized below. 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.

Factor for evaluating relative risk consider include financial, operational, and/or compliance as well as public perception or 'brand' risk when determining the risk rating. Items are rated as High, Moderate, or Low.

- High Risk Items* are considered to be of immediate concern and could cause significant operational issues or deteriorating public perception if not addressed in a timely manner.
- Moderate Risk Items* may also cause operational issues or poor public perception and do not require immediate attention, but should be addressed as soon as possible.
- Low Risk Items* could escalate into operational issues, but can be addressed through the normal course of conducting business.

The details of the observations and opportunities shown below are included within the Observations Matrix of this report.

Observations	Risk Rating
1. Policies & Procedures – IP Management	High
<p>The Innovations team has been proactive in recognizing the need for more robust policies and procedures related to IP management. Management is currently in the process of developing a personnel IP policy related to ownership rights and remuneration. We noted key subject areas, such as the invention disclosure process, compliance with the Bayh-Dole Act and a methodology for assessing commercialization, are not yet addressed but should be considered for inclusion.</p>	
2. Licensing and Royalty Contract Language	High
<p>The Innovations team and Office of General Counsel have been proactive in recognizing the need for more robust policies and procedures related to Licensing and Royalty Contract Language. Management is currently in the process of evaluating minimum standards related to contract language to ensure the best interest of the Authority are met; however, a policy is not yet in place. While the licensing agreement currently in negotiation appears to include appropriate language, minimum standards for future agreements is necessary to prevent erroneous exclusions in the event licensing activity increases and resources are stressed.</p>	

Executive Summary - continued

3. Policies & Procedures – IP Financial Accounting	Moderate
<p>We noted Finance has not yet developed a whitepaper for the Authority’s accounting policy and treatment of intellectual property assets. Based on the minimal size of the portfolio and lack of maturity in the process, the risk associated with not yet having this policy developed is moderate. As the innovation program grows and partnerships expand, the risk increases.</p>	
4. IP Commercial Valuation and Licensee Selection	Moderate
<p>Methodologies and processes for evaluating the commercial value of patents do not exist. Further, a process for soliciting potential licensees of patented technologies is not defined. Based on the minimal size of the portfolio and lack of maturity in the process, the risk associated with not yet having these methodologies developed is moderate. As the innovation program grows and partnerships expand, the risk increases.</p>	
5. IP Protection & Security	Low
<p>Entity-wide confidentiality and/or non-disclosure agreement standards are not in place beyond standard procurement related transactions which could result in premature disclosure. Such premature disclosure may disqualify an invention for patentability in most countries outside of the United States. Based on the minimal size of the portfolio and lack of maturity in the process, the current risk associated with not yet having these methodologies developed is low; however, as the innovation program grows and partnerships expand, the risk increases.</p>	
<p>Opportunities</p>	
<p>6. Improvement Opportunity: IP Lifecycle Management Tracking Software</p>	
<p>The Innovation Team is currently in the process of evaluating software to manage the innovation process. The systems under review are primarily meant for managing the innovation cycle versus the entire IP lifecycle which includes capability to manage legal, commercialization and contract process management.</p>	

Background

Background

Intellectual Property Overview

As previously noted in the Executive Summary, DC Water has a long been recognized globally as an innovation leader in their sector and is a key partner to universities, research institutions, and industry. The Innovations Chief and program manager have done extensive research to progress the program, working towards formalizing the program structure, objectives, communication and related policies and procedures.

Policy

The first policy addressing IP ownership and inventor remuneration was drafted in October 2014 and is currently pending final approval by management and the unions. This is a critical milestone to achieving employee engagement, which is a cornerstone of success for the program. The initial draft policy includes the following:

- Assigns ownership of the IP to DC Water. Currently, if someone were to develop something, they could patent it on their own, potentially leading to litigation because the inventor used DC Water resources; or the technology would not be used, thereby creating no benefit to DC Water.
- DC Water takes responsibility for owning, licensing, commercializing and then giving the researcher/inventor a portion of the ownership/revenue.
- Addresses third-party arrangements. Due to the unique nature of the arrangements, separate written agreements for relationships with external parties such as research partners, university partners, and contractors may exist that address non-disclosure, confidentiality resource commitments, ownership and revenue sharing. In such cases, the DC Water IP policy would still apply, provided it does not conflict with the written agreement.

Prioritization

Projects fall into one of three categories: Safety, Permitting, or Process Improvement. They are prioritized (and funded) in that order of importance. Most R&D projects relate to permit requirements and changes and historically there has been little to no funding for process improvement initiatives. As a public agency with revenue generated by user charges for service, DC Water must balance their innovation goals with their fiduciary responsibility for the delivery of services at a reasonable cost to the consumer. The intent of commercialization of the Authority's viable IP is to allow DC Water to innovate using a dedicated revenue stream that is not directly tied to user fees and consumption, and which supplements (if not fully sustains) the costs of R&D.

Selection and Approval

DC Water utilizes a two-step approach when selecting which R&D projects to pursue. The Innovations team selects 2 or 3 technologies and conducts a preliminary cost benefit and viability analysis for each. When the team arrives at a recommendation, the initiative is proposed to the Technology Advisory Committee. The committee is comprised of a diverse group of internal individuals including engineers, management, and finance personnel. With varying viewpoints, the committee works in helping to arrive at the right decision. Once approved, by the committee they submit the proposal for budget approval.

Background - continued

Intellectual Property Overview - continued

Development

The Authority uses two platforms to enable the development of new technologies and processes: traditional R&D and Open Innovation. Open Innovation is a concept that moves from in-house traditional R&D (“closed innovation”) to the combination of internal and external ideas through knowledge exchange and partnerships to innovation. The goal is to combine the programs in the near future to optimize effectiveness. The Innovations team currently consists of approximately 20 volunteer members from various disciplines. The R&D Team consists of 2 full-time professionals and approximately 20 university graduate students at any given time.

A significant concern for the Innovations team, aside from funding, is development lead-time. Effective R&D requires a long lead-time; if the time horizon is too short, the Authority may have to implement an “off the shelf” technology even if their idea would be more effective. This challenge is another reason for encouraging Open Innovation. The expectation is that by soliciting ideas from a larger group, lead time can be improved. In cases where there has not been enough time to evaluate options, DC Water would be at risk of moving forward with a wrong decision.

Notification from regulatory bodies regarding changes impacting permitting are generally provided enough in advance to ensure adequate time to proactively assess options. However, potential changes are harder to proactively assess due to the uncertainty of whether or the change will be codified. The Authority monitors regulators for potential changes but generally does not act until the likelihood of approval is generally known so as not to incur expenses developing technology that may never be required.

Comparability

DC Water is the first in the sector to actively pursue commercialization to offset R&D costs and increase funding available for additional research. As such, there are no true comparable entities against which the Authority can benchmark, in order to easily implement standard IP lifecycle management policies and procedures.

DC Water’s model and proposed methodologies are similar in nature to those of a university from a procedural standpoint, with the primary exception being that university performance is mostly based on the number of patents acquired and the number of patents commercialized, while DC Water’s motivation is to provide a funding source that facilitates and offsets the costs of research. Because of the varying intentions of the programs, certain policies and procedures in place in a university setting would not apply to DC Water, and conversely, there are risks and needs at DC Water that a university’s model does not address.

Objectives and Approach

Objectives and Approach

Objectives

There are various types of Intellectual Property (“IP”) audits. Because DC Water’s Intellectual Property Program is in its infancy, our work focused primarily on program development, policies, and the process for managing and accounting for the existing IP. We did not evaluate the legal validity of or the proper identification of potential IP.

The objective of the Intellectual Property Program Assessment was to perform a systematic review of the processes related to intellectual properties owned, used or acquired to ensure that IP rights are captured, preserved, safeguarded, and properly valued. The resulting identification of any financial and operational risk, process deficiencies and best practices in IP investment and asset management will enable DC Water to ensure alignment with regulatory requirements and strategic and financial goals while also ensuring that public interest objectives are met.

The assessment focused on the following areas with respect to intellectual property, primarily patents:

- Intellectual Property Lifecycle Maturity Assessment – Identification, Management, and Commercialization
- Intellectual Property protection practices
- Intellectual Property Licensing & Royalty management
- Inventor compensation practices
- Intellectual Property and Research & Development accounting treatment

Approach

Our audit approach consisted of the following phases:

Understanding of the Process

During the first phase of our approach, we met with those involved with the innovations process, including the General Manager, Innovations Chief, program manager, legal counsel and finance personnel to discuss the scope and objectives of the work and obtain preliminary data. In order to obtain an understanding of the process and identify related controls, we conducted interviews and obtained documentation. We reviewed existing policies and procedures related to intellectual property and accounting for intangibles, as well as draft contracts in progress.

Detailed Testing

Performing an independent program assessment during the infancy stage allows DC Water to be proactive in ensuring significant, relevant risks and opportunities are identified during the development stage as potential gaps are much more costly and time consuming to remediate in a mature process. Based on the minimal size of the portfolio and lack of maturity in the process detailed substantive testing was not warranted. Instead, we conducted research and reviewed examples of intellectual property policies and procedures from other agencies in the public and private sectors.

We will continue to monitor the expansion of the program and evaluate the need for a follow-up assessment as part of the proposed internal audit plan during each annual risk assessment update.

Reporting

At the conclusion of this audit, we summarized observations and process improvement opportunities related to the Innovation and Intellectual Property Program. We have reviewed the results of our testing with the Innovations Chief, Chief Financial Officer and Controller.

Observations Matrix

Observations Matrix

Rating	Observation
High	<p>1. Policies & Procedures – IP Management</p>
	<p>The Innovations team has been proactive in recognizing the need for more robust policies and procedures related to IP management. Management is currently in the process of developing a personnel IP policy with respect to ownership rights and remuneration. We noted key subject areas, such as the invention disclosure process, compliance with the Bayh-Dole Act and a methodology for assessing commercialization, are not yet addressed in the draft policy, but which should be considered for inclusion.</p> <p style="text-align: center;">Recommendation</p> <p>We recommend that in addition to the current policy, the following be included or addressed in separate policies:</p> <ol style="list-style-type: none"> 1. Amending a portion of the first paragraph in section (2) of the draft policy which states "...to encourage the development of revenue generating intellectual property". This infers the Authority is engaging in research for the sole purpose of generating revenue which impacts the required accounting treatment. Paragraph 3a of Governmental Accounting Standards Board ("GASB") Statement No. 51 (Intangible Capital Assets) requires that assets acquired or created to directly obtain income or profit be classified as investment, and not as intangible assets. We do not believe it is the Authority's sole intention to generate revenue, therefore this section should be reworded to represent the actual intent. 2. Invention Disclosure Process – Similar to most universities and research institutions, official policies and procedures related to disclosure should be implemented that require disclosure to DC Water prior to publication. This protects both the inventor and DC Water. Premature disclosure may disqualify an invention for international patentability. Most countries bar the right to a patent if there is any publication before the filing date. 3. Bayh-Dole Act Compliance – While DC Water does not typically use Federal funding for research, the possibility exists and should be addressed in policy. In order to retain ownership of any inventions created as a result of Federal Funding, must be reported to the government within 2 months of disclosure. Additionally, the following actions are required: <ul style="list-style-type: none"> - Provide the government with a non-transferable, paid-up, nonexclusive license - Give priority to small businesses and ensure use would be substantially in the U.S. when seeking to grant licenses to 3rd parties - Ensure excess revenues support research - Ensure royalties are shared with inventor(s) 4. Methodology for assessing patentability and commercialization – There should be a clear methodology for determining whether to move forward with patenting or commercialization to ensure the most efficient use of Authority Funds. <p>Sample policies have been provided to management for reference.</p>

Observations Matrix

Rating	Observation
High	1. Policies & Procedures – IP Management - continued
	<p data-bbox="743 344 1040 375" style="text-align: center;">Management's Response</p> <p data-bbox="402 390 529 422">Response:</p> <ol data-bbox="444 436 1393 1003" style="list-style-type: none"> 1. Agree 2. There is concern over reactive nature of disclosure requirements and potential to inhibit research process, especially with outside collaborators who are fundamental to DC Water's research effort. Our current proactive approach is to engage investigators to discuss potentially patentable intellectual property throughout the process of discovery, with the Innovations Chief ultimately informed of any inventions. The Innovations Chief or other DC Water researchers are engaged in the publication process as co-authors of any papers. The Innovations Chief and the team are thus constantly aware of the potential for patenting throughout, and have the ability to determine if publication should be delayed or withheld to prevent an adverse impact on patent filing. Furthermore, the disclosure process can be subverted by merely asserting that there is no patentable invention, a concern which is present in University TTOs. We are confident that the integrated approach of engagement is more effective at finding patentable IP and preventing premature publication than a punitive (policing) disclosure system. 3. To date, Bayh-Dole provisions have not been a requirement of any funding used by the research team regardless of source. In the future, policy will be in place to deal with any Bayh-Dole compliance requirements. 4. Our goal is to develop proactive rather than reactive models <p data-bbox="402 1031 834 1062">Responsible Party: Dr. Sudhir Murthy</p> <p data-bbox="402 1083 699 1115">ECD: September 30, 2015</p>

Observations Matrix - continued

Rating	Observation
High	<p>2. Licensing and Royalty Contract Language</p>
	<p>The Innovations team and Office of General Counsel have been proactive in recognizing the need for more robust policies and procedures related to Licensing and Royalty Contract Language. Management is currently in the process of evaluating minimum standards related to contract language to ensure the best interests of the Authority are met however a policy is not yet in place. While the licensing agreement currently in negotiation appears to include appropriate language, minimum standards for future agreements is necessary to prevent erroneous exclusions in the event licensing activity increases and resources are stressed.</p>
	<p style="text-align: center;">Recommendation</p>
	<p>We recommend that the Authority consult with internal and external counsel as well as business process experts to define minimum licensing contract requirements. We acknowledge that each agreement will have some uniqueness; however, consulting with both legal and business experts will enable the development of balanced minimum requirements aimed at ensuring that legal, business, employee, and research partner requirements are balanced.</p> <p>Areas of consideration that may be “sticking points” in Royalty Licensing Audits include the following:</p> <ol style="list-style-type: none"> 1. Definition of Affiliate 2. Definition of Net Sales, which specifically denotes what is included as well as what is excluded from the calculation, such as freight, taxes, cost of insurance, etc. 3. Right to Audit clause, including period of record retention 4. Treatment for methodology errors and late or unpaid royalties 5. Reporting 6. Foreign currency translation <p>Sample contract language has been provided to management for reference, and is not intended to be precise legal language. DC Water should consult with its attorneys before adopting any contract language.</p>
	<p style="text-align: center;">Management’s Response</p>
	<p>Response:</p> <p>We agree with the excellent suggestion that there is a need for minimum standards for IP licensing contracts and are currently preparing them in cooperation with the Chief Procurement Officer.</p> <p>Responsible Party: Dr. Sudhir Murthy</p> <p>ECD: September 30, 2015</p>

Observations Matrix - continued

Rating	Observation
Moderate	<p>3. Policies & Procedures – IP Financial Accounting</p>
	<p>We noted Finance has not yet developed a whitepaper for the Authority’s accounting policy and treatment of intellectual property assets. Based on the minimal size of the portfolio and lack of maturity in the process, the risk associated with not yet having this policy developed is moderate. As the innovation program grows and partnerships expand, the risk increases.</p>
	<p style="text-align: center;">Recommendation</p>
	<p>Historically, all costs related to the creation of intellectual property have been expensed. In light of the new initiatives to pursue the specific creation and commercialization of intellectual property, we recommend that policies and procedures or a statement of position to address the accounting treatment of intellectual property be drafted. Depending on the circumstances, accounting treatment of intangible assets is governed by either Governmental Accounting Standards Board (“GASB”) Statement No. 51 (Intangible Capital Assets), Statement No. 31 (Investment) or if neither applies Statement of Financial Standard (FAS) No. 2 (Accounting for R&D Costs).</p> <p>Finance developed a whitepaper in FY2013 on the accounting policy and treatment of intangible assets related to certain easements acquired as part of the Clean Rivers Project. The whitepaper includes the applicable GASB pronouncements and related management discussion on how DC Water intends to recognize and account for those easements. This whitepaper was provided to the Authority’s external auditors as part of financial statement audit evidence, and can be used as a basis for developing a policy for all intangibles, including Intellectual Property. The whitepaper would need to be expanded to include valuation methodologies as well as discussion on the tax treatment on unrelated business income (including an analysis of applicability) from commercialization of patented technologies. See also Observation #4 related to commercialization and valuation policies.</p> <p>Sample policies have been provided to management for reference.</p>
	<p style="text-align: center;">Management’s Response</p>
	<p>Response:</p> <p>Management will conduct research of relevant Generally Accepted Accounting Principles and Governmental Accounting Standards Board pronouncements and draft a white paper specifically addressing accounting policy and procedures for accounting for intellectual property. The white paper will be vetted with our internal and external auditors.</p> <p>Responsible Party: John Madrid</p> <p>ECD: September 30, 2015</p> <p>We will carefully track all costs associated with the next IP commercialization initiated to inform the construction of a template for cost accounting. Management will research financial system changes/modifications in budget reporting, revenue reporting, payroll reporting, and purchase order processing necessary to track revenues and expenses attributable to the endeavors identified by the Intellectual Property Group. Associated operational policies and procedures and system change/modification implementation plan.</p> <p>Responsible Party: Dr. Sudhir Murthy and John Madrid</p> <p>ECD: September 30, 2016</p>

Observations Matrix - continued

Rating	Observation
Moderate	4. IP Commercial Valuation and Licensee Selection
	<p>Methodologies and processes for evaluating the commercial value of patents do not exist. Further, a process for soliciting potential licensees of patented technologies is not defined. Based on the minimal size of the portfolio and lack of maturity in the process, the risk associated with not yet having these methodologies developed is moderate. As the innovation program grows and partnerships expand, the risk increases.</p>
	Recommendation
	<p>We recommend that management develop and implement a policy and methodology for commercial valuation analysis prior to soliciting potential licensees or as part of the licensee proposal review process. Without an official methodology, the Authority is unable to quantify whether the economics of the deal are maximized.</p> <p>Additionally, a formal process for identifying potential licensees should be implemented. At present the Authority is leveraging procurement policies and soliciting licensees in a similar manner to soliciting vendors. Due to the complexities and uniqueness of intellectual property sales and licensing, a separate policy related for soliciting licensees, negotiating agreements, and auditing royalties be implemented. See also Observation #2 related to licensing and royalty contracts.</p> <p>Sample methodologies have been provided to management for reference.</p>
	Management's Response
	<p>Response:</p> <p>We appreciate the keenness and insight of the recommendation and agree that an evaluation process is needed. We are currently evaluating approaches used by other licensors to determine the commercial value of patents for their applicability to DC Water. We have received the sample methodologies referenced in the recommendation and will use them to build the valuation component of the set of strategic guidelines for the entire commercialization process.</p> <p>Responsible Party: Dr. Sudhir Murthy</p> <p>ECD: September 30, 2015</p>

Observations Matrix - continued

Rating	Observation
Low	5. IP Protection & Security
	<p>Entity-wide confidentiality and/or non-disclosure agreement standards are not in place beyond standard procurement related transactions which could result in premature disclosure. Such premature disclosure may disqualify an invention for patentability in most countries outside of the United States. Based on the minimal size of the portfolio and lack of maturity in the process, the current risk associated with not yet having these methodologies developed is low; however, as the innovation program grows and partnerships expand, the risk increases.</p>
	<p style="text-align: center;">Recommendation</p> <p>We recommend that a standard that specifically defines when confidentiality and/or non-disclosure agreements are required be implemented. Consideration should be given, for example, to require such disclosures for research agreements, innovation team participants, technology review participants, and disclosure review participants. Further, all agreements should be retained in a central location in accordance with records retention guidelines.</p> <p>Failure to maintain confidentiality and non-disclosure agreements could result in the loss of rights to internally developed, valuable technology. Consequently, DC Water could potentially have to license technology that they created but for which rights were not preserved. While we recognize the risk for DC Water is less than that of industry, university, or research institutions, incurring additional costs to license lost rights is not in the best interest of the public or the Authority.</p> <p>These protocols will also protect the Authority's rights to confidential information upon separation of graduate students and or employees.</p> <p>Sample agreements have been provided to management for reference.</p>
	<p style="text-align: center;">Management's Response</p> <p>Response:</p> <p>We agree on the growing need for IP protection and the use of non-disclosure agreements. However, current approval policies are an impediment to efficient implementation of such agreements. Standardizing and simplifying language to remove, where possible, the need for legal review or delegating signatory authority is important to enable greater use and earlier implementation of NDAs. IP protection methods that account for DC Water priorities for both research and new revenue will be developed as part of the strategic guidelines for the commercialization process.</p> <p>Responsible Party: Dr. Sudhir Murthy</p> <p>ECD: September 30, 2015</p>

Observations Matrix - continued

Rating	Observation
Not rated	6. Improvement Opportunity: IP Lifecycle Management Tracking Software
No Follow Up Required	The Innovation Team is currently in the process of evaluating software to manage the innovation process. The systems under review are primarily meant for managing the innovation cycle versus the entire IP lifecycle which includes capability to manage legal, commercialization and contract process management
	<p data-bbox="786 491 992 522" style="text-align: center;">Recommendation</p> <p data-bbox="391 529 1395 743">We recommend that the Authority also consider software with more holistic IP lifecycle management capability versus just the idea generation and development process. There are companies that offer cloud-based software capable of managing the from idea generation and innovation collaboration through portfolio management, and reporting. Selecting a system with lifecycle management capability brings efficiency to the process and integrates key stakeholders across functional areas. (i.e., Innovators, Legal, Finance, Marketing, Procurement).</p>

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DC WATER

INTERNAL AUDIT - COMMUNICATIONS PLAN

FISCAL YEAR 2015



ENGAGEMENT TEAM & STAKEHOLDER DIRECTORY

The following table presents contact information for all persons identified in this communications management plan. The email addresses and phone numbers in this table will be used to communicate with these people.

Role	Name	Title	Email	Phone
Executive Management	George Hawkins	General Manager / CEO	george.hawkins@dcwater.com	(202)-787-2609
Audit Committee	Nicholas Majett	Audit Committee Chair	Contact through the Board Secretary	
Client Sponsor	Mark Kim	CFO	mark.kim@dcwater.com	(202)-787-2714
Client Sponsor	Mustaafa Dozier	Acting Chief of Staff	mustaafa.dozier@dcwater.com	(202)-787-2232
Client Sponsor	John Madrid	Controller	john.madrid@dcwater.com	(202)-278-2194
McGladrey Partner	Dan Whelan	Auditor General	dan.whelan@mcgladrey.com	(410)-246-9124
McGladrey Partner	Pat Hagan	Deputy Auditor General	patrick.hagan@mcgladrey.com	(312)-634-3981
McGladrey Director	Jennifer Murtha	IA Director	jennifer.murtha@mcgaldrey.com	(321)-751-6217
McGladrey IT Director	Charles Barley Jr.	IA IT Director	charles.barleyjr@mcgladrey.com	(703)-336-6440
McGladrey Manager	Jill Reyes	IA Manager	jill.reyes@mcgladrey.com	(555) 555-0192
McGladrey Senior Associate	Kelly Johnson	IA Senior	kelly.johnson@mcgladrey.com	(410)-570-6219

COMMUNICATIONS MATRIX

The following table identifies the communications requirements for this engagement.

Communication Type	Objective of Communication	Medium	Frequency / Timing	Audience	Deliverable
Fiscal year kick-off	Present the audit plan, based on results from the annual risk assessment, for review and approval.	<ul style="list-style-type: none"> • Face to Face 	Annually	<ul style="list-style-type: none"> • Audit Committee • DC Water Executive Management 	<ul style="list-style-type: none"> • Agenda • Audit Plan • Meeting Minutes
Audit Committee Agenda Preparation and Distribution	Finalize reporting, agenda items and other documents as needed; distribute to Audit Committee	<ul style="list-style-type: none"> • E-mail 	One week prior to Audit Committee meeting; distributed electronically	<ul style="list-style-type: none"> • Audit Committee, Board Secretary, CFO 	<ul style="list-style-type: none"> • Agenda • Audit Reports • Other as needed
Audit Committee Meetings	Present the status of the audit plan, report on follow-up and discuss audit committee concerns.	<ul style="list-style-type: none"> • Face to Face 	Quarterly	<ul style="list-style-type: none"> • Audit Committee • DC Water Executive Management • Note: The public and/or employees of DC Water may be excused if an executive session is held. 	<ul style="list-style-type: none"> • Agenda • Audit Plan • Audit Reports*
Audit Committee Meeting Minutes	Summarize the audit committee meeting and identify action items	<ul style="list-style-type: none"> • Paper 	Quarterly, Due the Monday following the AC Meeting	<ul style="list-style-type: none"> • General Public 	<ul style="list-style-type: none"> • Meeting Minutes

COMMUNICATIONS MATRIX - CONTINUED

Communication Type	Objective of Communication	Medium	Frequency / Timing	Audience	Deliverable
Internal Audit Status Meetings	Report on the status of the audit plan and fraud hotline.	<ul style="list-style-type: none"> • Conference Call or Face to Face 	Monthly, Following the Board meeting	<ul style="list-style-type: none"> • Mark Kim, CFO • Katrina Wiggins, Chief of Staff • John Madrid, Controller 	<ul style="list-style-type: none"> • Slide updates • Audit plan timeline
Audit exit meeting - CFO	Review the results of the audit, including findings and proposed recommendations.	<ul style="list-style-type: none"> • Face to Face 	Quarterly, Two weeks prior to AC Meeting	<ul style="list-style-type: none"> • Mark Kim, CFO • John Madrid, Controller 	<ul style="list-style-type: none"> • Audit report
Audit kick-off meetings	Identify the scope of the audit with the key process owners and develop a project timeline.	<ul style="list-style-type: none"> • Face to Face 	Project Specific	<ul style="list-style-type: none"> • Key Process Owners 	<ul style="list-style-type: none"> • Engagement timeline • Scope
Audit exit meetings	Review the results of the audit, including findings and proposed recommendations.	<ul style="list-style-type: none"> • Face to Face 	Project Specific	<ul style="list-style-type: none"> • Key Process Owners 	<ul style="list-style-type: none"> • Audit report
Fraud hotline follow-up	Investigate an open fraud hotline cases for resolution.	<ul style="list-style-type: none"> • E-mail, Face to Face 	As needed	<ul style="list-style-type: none"> • As determined necessary, case by case 	<ul style="list-style-type: none"> • N/A

- On a monthly basis, any finalized audit report will be submitted to members of the audit committee (prior to the audit committee meeting after review from the CFO, Controller and any applicable process owner).