



**DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY**

Board of Directors

Audit and Risk Committee

July 27, 2023

9:30 a.m.

Microsoft Teams Meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Meeting ID: 262 519 636 363

Passcode: W2GN6a

Or call in (audio only)

[+1 202-753-6714,,905804059#](#)

Phone Conference ID: 905 804 059#

- 1. **Call to Order**..... Floyd Holt, Chairperson
- 2. **Roll Call**..... Michelle Rhodd, Board Secretary
- 3. **Enterprise Risk Management and Policy Management Briefing**..... Deloitte
- 4. **Internal Audit Update**..... RSM Internal Audit
 - A. FY 2023 Internal Audit Plan Status Update
 - B. Status Update on Prior Audit Findings
 - C. Payroll & Timekeeping Audit
 - D. Work Order Management Audit – Department of Water Operations
 - E. Hotline Update
- 5. **Executive Session*** Floyd Holt, Chairperson
 - **To discuss facility security matter under D.C. Official Code § 2-575(b)(8).**
- 6. **Adjournment**..... Floyd Holt, Chairperson

This meeting is governed by the Open Meetings Act. Please address any questions or complaints arising under this meeting to the Office of Open Government at opengovoffice@dc.gov.

1The 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 certain matters, including but not limited to: matters prohibited from public disclosure pursuant to a court order or law under D.C. Official Code § 2-575(b)(1); terms for negotiating a contract, including an employment contract, under D.C. Official Code § 2-575(b)(2); obtain legal advice and preserve attorney-client privilege or settlement terms under D.C. Official Code § 2-575(b)(4)(A); collective bargaining negotiations under D.C. Official Code § 2-575(b)(5); facility security matters 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); third-party proprietary matters under D.C. Official Code § 2-575(b)(11); train and develop Board members and staff under D.C. Official Codes § 2-575(b)(12); adjudication action under D.C. Official Code § 2-575(b)(13); civil or criminal matters or violations of laws or regulations where disclosure to the public may harm the investigation under D.C. Official Code § 2-575(b)(14); and other matters provided under the Act.

DC Water ERM and Policy Management

Audit & Risk Committee Briefing

July 27, 2023

- 1 | Value of ERM and policy management
- 2 | Recap of accomplishments from Phase 1
- 3 | Activities included in Phase 2
- 4 | A look into what's ahead

Today's Objectives

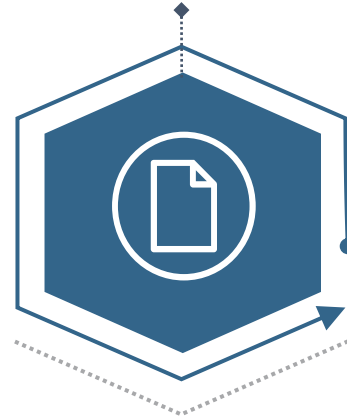
- ✓ *Provide recap and background from Phase 1*
- ✓ *Discuss scope of work included in Phase 2 and where we are today*
- ✓ *Highlight what is next in Phase 2 and required support from you in the upcoming months*

The Value in Advancing ERM and Policy Management

Operationalization of the foundational risk and policy management processes at DC Water has helped the Authority promote a consistent approach to managing both risks and policies.

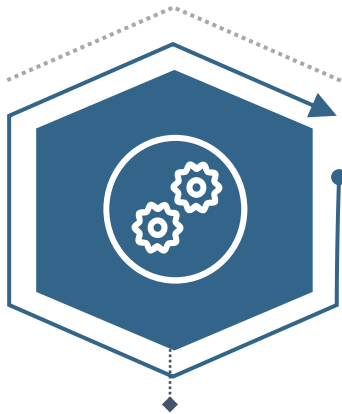
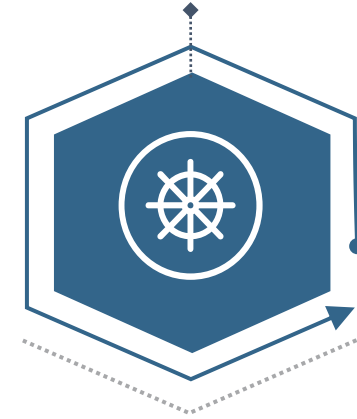
Uniformity

Standardizing overall risk and policy management processes will enable enterprise-wide consistency, ease of understanding, and a consistent approach to proactively identify and evaluate uncertainties.



Creativity

Exploring risk trends and uncertainties will foster curiosity in **uncovering the unknown** and support a risk-aware culture across the Authority.



Efficiency

Streamlining processes with designated timelines, and **governance** will drive tasks forward and mitigate bottlenecks. It will promote stronger **risk-informed decisions** and minimize risk of duplicative policies.



Accountability

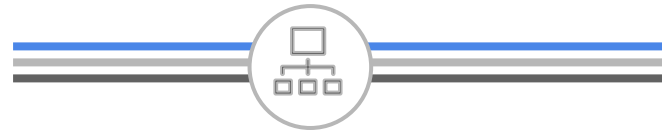
Guidelines for governance, roles, and responsibilities will establish **expectations for stakeholders** and **assign risk ownership**. This enables greater **transparency** and successful **collaboration** across clusters.

Recap of Phase 1 Accomplishments

During Phase 1 that was completed in April 2022, DC Water focused on building the foundational elements of Enterprise Risk and Policy Management programs.

Phase 1: Nov. through Apr. 2022

ERM and Policy Management Program



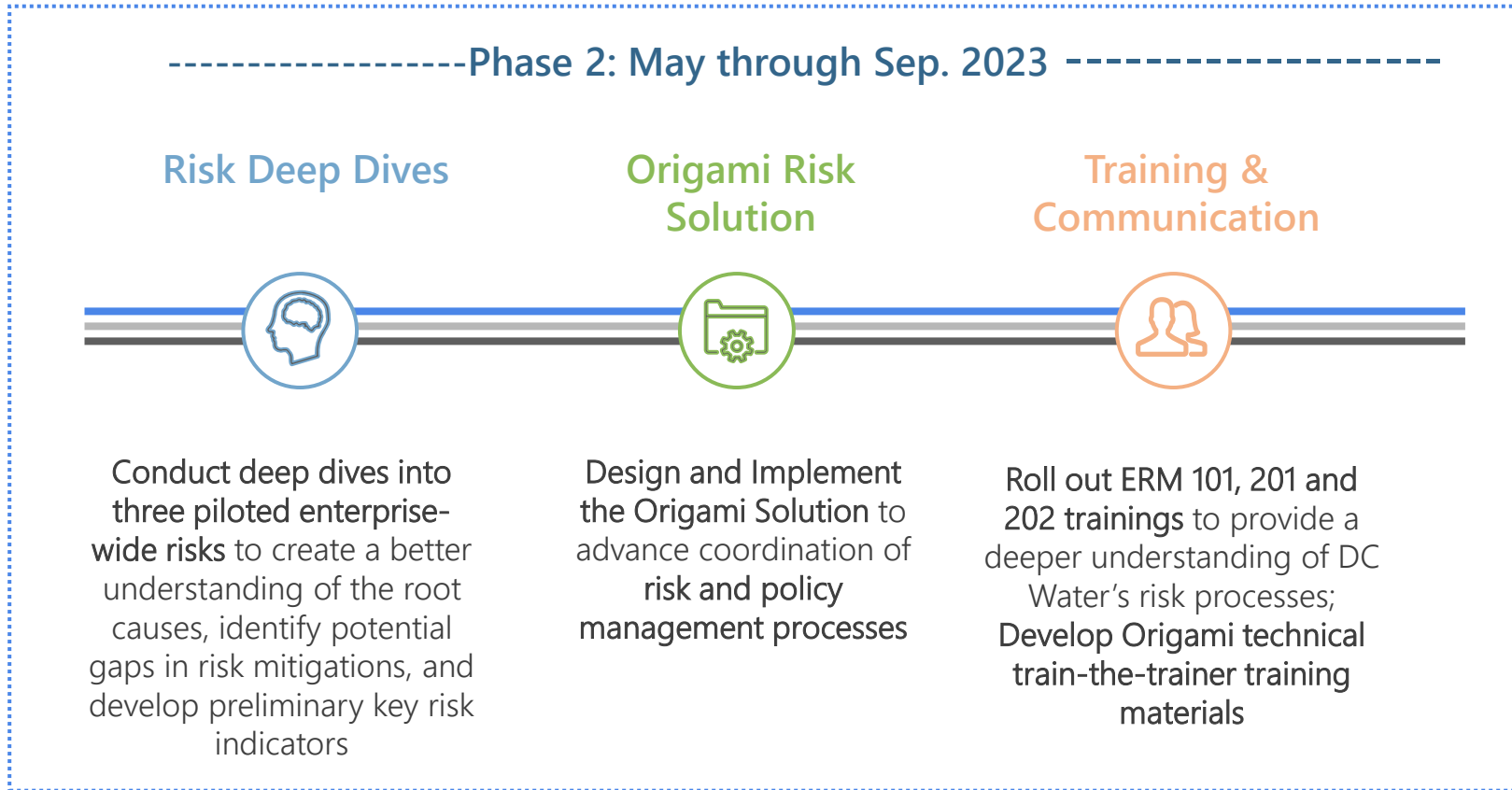
Developed the foundation for the Authority's ERM and Policy Management Programs including framework, governance structure, and processes

Outcomes of Phase 1

- ✓ **List of top enterprise-wide risks**
Conducted an Enterprise Risk Assessment process, including leadership interviews
- ✓ **ERM trainings**
Developed ERM 101, 201, 202, and Board training materials
- ✓ **Communications strategy for ERM and Policy Management**
Created strategy for communicating and guiding the organization through changes
- ✓ **ERM and Policy Management playbooks**
Established framework, governance structure, and processes for the Authority's ERM and Policy Management programs
- ✓ **ERM and Policy Management roadmaps**
Provided recommendations for future state enhancements

Activities included in Phase 2

Phase 2 will continue to operationalize the framework developed through risk deep dive pilots, process automation, and trainings.



Value of Phase 2

- ❑ Deeper understanding of **top enterprise risks** and potential **gaps in mitigation** plans
- ❑ More effective **risk-informed** decisions
- ❑ Enhanced consistent and **tech-enabled** processes
- ❑ Continued efforts to drive a **risk-aware** culture

Risk Deep Dives Overview

Risk deep dives included in Phase 2 and currently underway include Revenue Erosion & Expenditure Growth, Talent Management, and Changing Regulations.

1 Key Causes, Drivers, and Consequences for the Risk

Potential Drivers

- Increased storage driver for parking car
- Car in the garage
- Limited parking facilities
- Expensive parking
- High demand for parking
- Popular car in the region
- Car is high demand for "Club Shop" and "Street Parking"

Potential Causes

- Subsidized - cost related to city, long operation, maintenance, and safety
- Increased - cost related to construction and increased internal parking
- Capitalized - cost related to organization's strategy and potential change related to general urban city, new market entry, new products

Risk

Car being stolen

Potential Consequences

- Financial
- Operational
- Reputational
- Legal/Regulatory

2 Controls / Mitigations

Prioritized Drivers

Existing Mitigations

3 Risk Response Plans

Additional Response Strategies

Next Steps

- Responsible:
- Timeline:

4 Key Risk Indicators (KRIs)

Template for Risk Mitigation Plans and Potential KRIs

Key Driver	Risk	Potential Consequences	Existing Mitigations	Additional Response Strategies	Next Steps

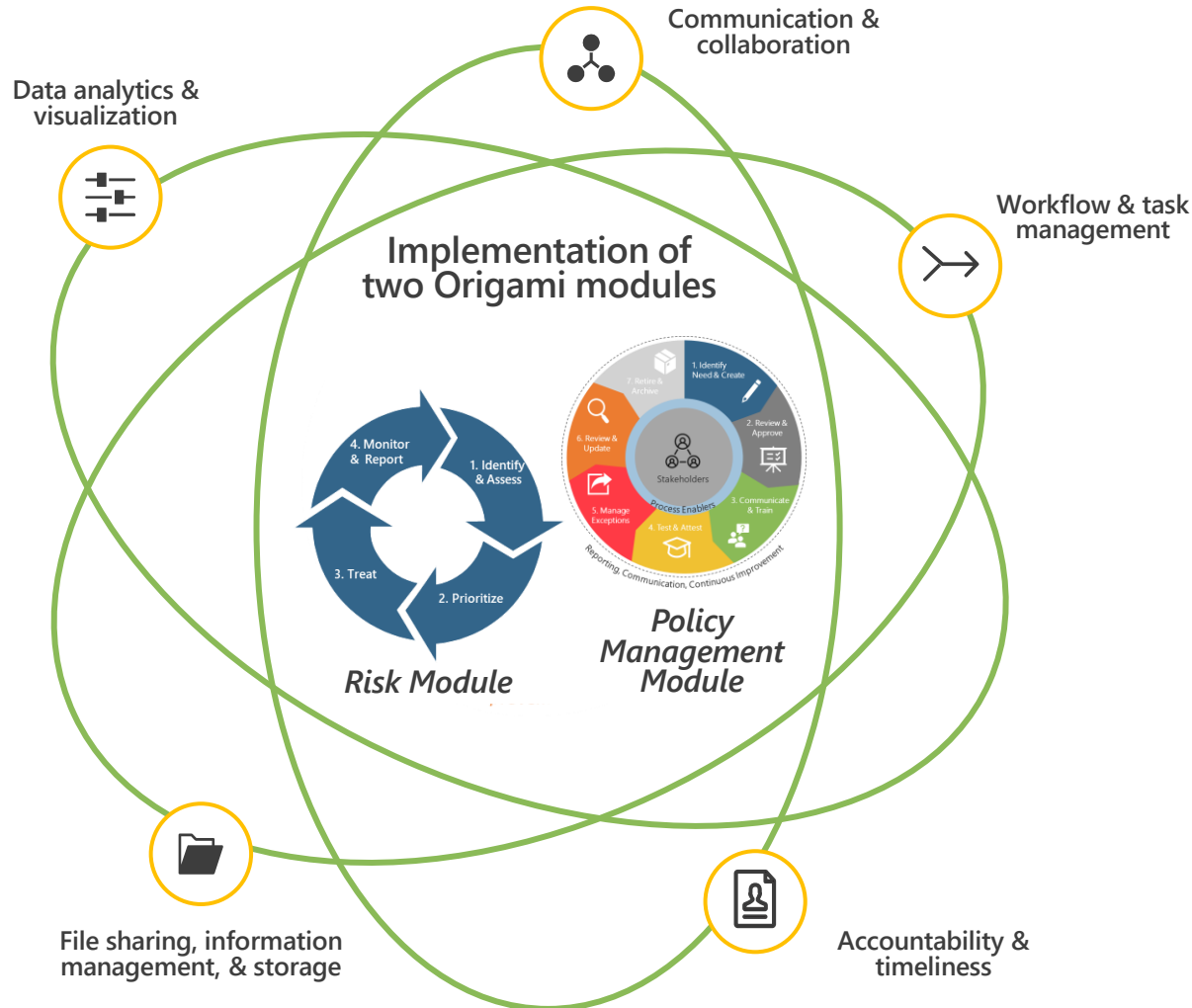
- Responsible:
- Timeline:

The deep dive process can provide value in:

- ✓ Provoking and facilitating conversation among management to allow for **better awareness and communication** around the topic
- ✓ Creating a better understanding of **key drivers, root causes, and consequences** for the risk
- ✓ Assisting in identifying **potential gaps in existing controls and risk response plans**
- ✓ Improving **reporting capabilities** to proactively identify signals and brainstorming **potential KRIS** to track trending of the risk
- ✓ Drive better **accountability around key controls and risk response plans** to mitigate the risk

Origami Risk Solution Overview

The Origami solution can help move risk and policy management from manual sequential activities to a dynamic tech-enabled process.



The Origami Solution can bring value to the Authority through:

- Cross-functional collaboration
- Timely and efficient risk identification
- Increased **visibility** into risks and risk mitigations
- Enhanced **accountability** and the effective identification, modification, and review of **policies** and **Board resolutions**
- Facilitating meaningful **analysis** and visualization via **customized dashboards**

Training & Communication Overview

This effort includes (i) trainings on the foundational elements of ERM, (ii) overview of DC Water’s ERM process, and (iii) Origami train-the-trainer materials for policy and risk management.



ERM 101

July

Virtual, Self-led

- 30 min. – Part of mandatory compliance suite
- Audience: All DC Water employees
- Outcomes: Understand foundational elements and definitions of ERM



ERM 201

Mid-August

Facilitated

- 90 min.
- Audience: Senior leaders (Grade 17 & above)
- Outcomes: Understand role in first two steps of ERM process (Identify & Assess, Prioritize)



ERM 202

Early September

Facilitated

- 90 min.
- Audience: Senior leaders (Grade 17 & above)
- Outcomes: Understand role in last two steps of ERM process (Treat, Monitor & Report)



Origami

Mid-September

Training Guide

- Train-the-trainer guide
- Audience: The ERM & Policy Management Teams and other key Origami users
- Outcomes: Understand use of the Origami functionality

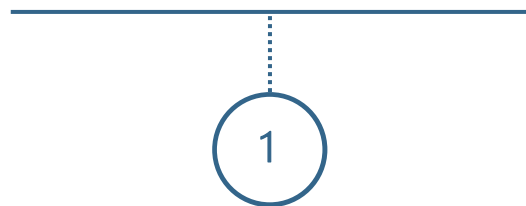
A Look Ahead | Upcoming Activities



As we continue to advance DC Water’s ERM and policy management processes, the **Audit & Risk Committee’s support is critical** as we roll out specific changes throughout the organization. Below are upcoming activities throughout our Phase 2 journey.

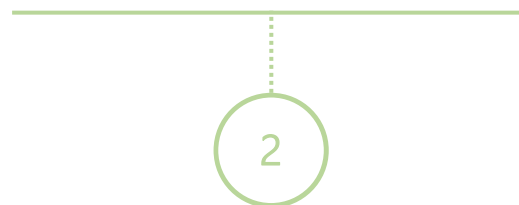
Risk Deep Dives

Facilitate **individual and group stakeholder sessions** to further understand the risk, establish response plans, and determine key risk metrics for monitoring the risk.



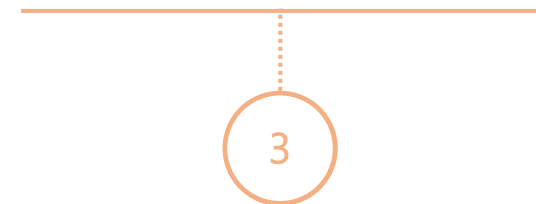
Origami Risk Solution

Continue to **document requirements, test, and provide training** for the ERM and Policy modules as we prepare to implement the Origami Solution.



Training & Communication

Facilitate **ERM 201 and ERM 202 trainings** for 250 senior leaders across the Authority and assist in change management efforts.



Appendix

DC Water Risk Governance Structure



DC Water Enterprise Risk Register



Blueprint 2.0 Strategic Imperatives

Healthy, Safe and Well

Reliable

Resilient

Sustainable

Equitable

Financial	Operational	Reputational	Regulatory	External Ecosystem	Strategic	Technological	Talent
★ Revenue Erosion & Expenditure Growth	★ Reliability (e.g., single source of water, asset failure, aging infrastructure)	★ Stakeholder Management (e.g., agencies, customers, unions)	★ Changing Regulations (e.g., federal, state, local)	★ Washington Aqueduct Contract	★ External Oversight of DC Water	★ Cybersecurity	★ Talent Management (e.g., development, succession planning, skills)
Budgeting & Forecasting	★ Decision Making (e.g., major project execution)	Customer Expectations (e.g., customer affordability)	Legal	★ Catastrophic Events	Success of New Products / Services	System Failures	★ Attract Top Talent
Collections & Payments	★ Health & Safety	Public Trust	Compliance	★ Third-Party Management	Strategic Plan Execution	IT Systems Strategy (e.g., ERP implementation)	Culture
	Resiliency & Continuity		Fraud	Climate Change (e.g., heavy precipitation)	Customer Behavior (e.g., social norms)	Data Governance / Privacy	Talent Operating Model / Posture
	Processes & Controls		Policy Management	Counterparty Risk (e.g., quality, performance)	Environmental, Social, & Governance		Diversity, Equity and Inclusion
	Water Quality (Contaminants)						Union Relations
	Physical Security						

★ Tier 1 Enterprise Risk
 ★ Tier 2 Enterprise Risk

DC Water Top Enterprise Risks & Risk Statements



Risk	Risk Statement
★ Changing Regulations (e.g., federal, state, local)	Inability to anticipate and adequately respond to the adoption of statutes, regulations, or standards (federal, state, local) may impact the Authority's ability to achieve its strategic imperatives.
Decision Making (e.g., major project execution)	Inability to streamline decision making and culture to prioritize or execute on its major projects may lead to operational inefficiencies and increased cost.
Reliability (e.g., single source of water, asset failure, aging infrastructure)	Inability to provide reliable service due to water supply shortages, asset failure or aging infrastructure, may lead to unsatisfied customers and regulatory scrutiny.
★ Revenue Erosion & Expenditure Growth	Inability to maintain sufficient revenue to operate the business due to inefficiencies, improper prioritization and increase in costs, may lead to inadequate funding to provide safe/reliable services and keep rates affordable.
Stakeholder Management (e.g., agencies, customers, unions)	Failure to manage its stakeholders, including local and federal agencies, customers, and unions, may lead to reputational harm, project delays, and budgetary issues for the Authority.
★ Talent Management (e.g., development, succession planning, skills)	The risk that DC Water is not able to retain a skilled, diverse and inclusive workforce that meets the current and future human capital needs of world-class water utility.
Attract Top Talent	Inability to attract top talent may result in insufficient resourcing or misalignment with roles, significantly impacting the Authority's ability to maintain reliability, affordability, and achieve its overall corporate objectives.
Catastrophic Events	Inability to respond quickly and effectively to catastrophic events, e.g., pandemics, extreme weather events, etc., may negatively impact annual budgets, disrupt operations, and erode public trust.
Cybersecurity	Failure to support and protect technology, systems, and critical data assets from a cyber attack could lead to significant disruptions to our business operations and potential loss of stakeholder trust and confidence.
External Oversight of DC Water	Inability of DC Water to maintain its independence from the Washington, DC government or increased oversight efforts around rate approvals and key operational decisions may impact available resources or ability to borrow money at lower rates.
Health & Safety	Failure to ensure the safety of the workforce or the broader community may result in serious injury / illness, financial losses, and/or reputational damage.
Third-Party Management	Risk that third parties' (e.g., partners, vendors, suppliers, and contractors) poor performance, the Authority's ineffective management, or excessive reliance may have negative impacts to the Authority's reputation and/or operations.
Washington Aqueduct Contract	Inability to negotiate favorable terms in the contract negotiation for purchasing water from the Washington Aqueduct may result in unfavorable financial and reliability performance.

★ Risks selected for Deep Dive

DC WATER

Audit & Risk Committee Meeting



July 27, 2023

Agenda

- FY 2023 Internal Audit Plan Status Update
- Status Update on Prior Audit Findings
- Report on Completed Audits
 - Payroll & Timekeeping Audit
 - Work Order Management Audit – Department of Water Operations
- Hotline Update
- Executive Session
 - Oracle IT General Controls Assessment
 - Oracle Identity & Access Management Assessment

AUDIT PLAN STATUS UPDATE

Internal Audit Plan Status Update

Audit	Status
FY 2023	
Procurement Audit	Report Complete
Contract Compliance Audit	Report Complete
Payroll & Timekeeping Audit	Report Complete
Metering, Billing and Collections Audit	Report Complete
Penetration Testing Audit – External Network	Report Complete
Oracle IT General Controls Assessment	Report Complete
Oracle Identity & Access Assessment	Report Complete
Work Order Management Audit – DWO	Report Complete
Business Continuity Assessment	Fieldwork in Progress
Fleet Management Audit	Fieldwork in Progress
FY2024 Risk Assessment	Planning in Progress
Remediation & Follow Up	On-going
Hotline Management	On-going

Internal Audit Plan FY 2023 Timeline

	Oct – 22	Nov – 22	Dec – 22	Jan – 23	Feb – 23	Mar – 23	Apr – 23	May – 23	Jun – 23	Jul – 23	Aug – 23	Sep – 23	Oct – 23
▶ Procurement Audit*		▶											
▶ Contract Compliance Audit*	▶												
▶ Payroll & Timekeeping Audit*				▶									
▶ Metering, Billing and Collections Audit*				▶									
▶ Penetration Testing Audit – External Network*				▶									
▶ Oracle IT General Controls Assessment							▶						
▶ Oracle Identity & Access Assessment							▶						
▶ Work Order Management Audit – DWO*							▶						
▶ Business Continuity Assessment								▶					
▶ Fleet Management Audit										▶			
▶ FY 2024 Risk Assessment											▶		
▶ Ongoing Follow-up Procedures	▶												
▶ Ongoing Hotline Monitoring	▶												

* indicates cycle audit

PRIOR AUDIT FINDINGS – FOLLOW UP STATUS

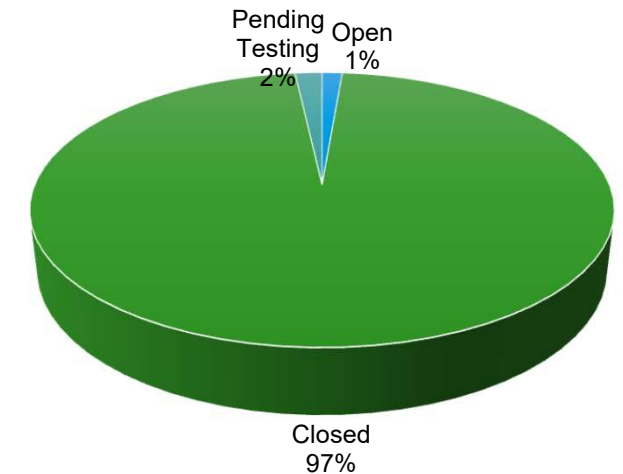
Open High Risk Prior Audit Findings

No open high risk findings to report. All high risk prior audit findings are in pending testing or closed status as of July 2023.

Status Update on Prior Audit Findings

Audit Report/Subject	Report Issue Date	Corrective Actions			
		Total	Open	Closed	Pending Testing ¹
Prior to FY22 Audit Findings					
Training, Licensing & Certification	7/28/2016	7	0	6	1
Entity Level Review	10/26/2017	7	0	7	0
Integrated Work Order Management Audit	1/24/2019	10	0	9	1
Fleet Management Review	1/24/2019	3	1	2	0
Occupational Safety and Health	4/25/2019	4	1	2	1
Customer Billing and Collections Audit	10/22/2020	3	0	2	1
Contract Compliance Audit	7/22/2021	3	1	2	0
	Total	37	3	30	4

FY16 – FY21 Prior Audit Findings Status



¹“Pending Testing” indicates that Management represents that the Action Plan is Completed, but Internal Audit has not yet performed testing to validate the status.

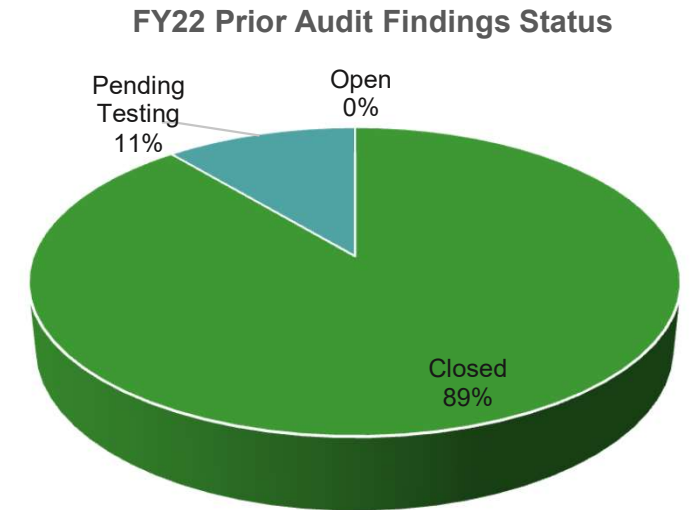
Note that the audit findings reported above only represent findings prior to FY22 with the status of “Pending Testing” or “Open”. Audits conducted prior to FY22 for which all findings have been closed are not represented in this table. However, the pie chart to the right includes status of all audit findings FY16 – FY21.

Color Key

At least 1 original remediation target date has been extended

Status Update on Prior Audit Findings

Audit Report/Subject	Report Issue Date	Corrective Actions			
		Total	Open	Closed	Pending Testing ¹
FY22 Audit Findings					
Contract Monitoring & Compliance Audit	1/27/2022	3	0	3	0
Accounts Payable Audit	4/28/2022	3	0	3	0
Incident Response Tabletop Exercise	4/28/2022	3	0	3	0
Strategic Plan Monitoring Audit	7/28/2022	2	0	0	2
Physical Security Audit – HQO & Ft. Reno	7/28/2022	4	0	4	0
Work Order Management Audit – DSO	10/27/2022	3	0	3	0
	Total	18	0	16	2



Color Key

At least 1 original remediation target date has been extended

¹“Pending Testing” indicates that Management represents that the Action Plan is Completed, but Internal Audit has not yet performed testing to validate the status.

In total, 96% of all prior audit findings from FY16 – FY22 are closed. Management’s target closure rate is 90%.

PAYROLL & TIMEKEEPING AUDIT

Payroll & Timekeeping Audit

Purpose

The purpose of this review was to obtain an understanding of the various procedures and controls that occur throughout the payroll and timekeeping processes, and the applicable governing policies. The audit period was 3/15/2022 through 2/1/2023.

Scope

The audit scope was based upon the following objectives:

- Validate that controls over timekeeping include procedures and documents that indicate the data used to generate payroll disbursements are complete and accurate. This include controls over pre- or post- time authorization, exception reporting, use of special time codes, and other items, where applicable;
- Determine whether the records and documentation for timekeeping and overtime related items are sufficient to establish an audit trail for all transactions involving employee time;
- Determine whether access to timekeeping data is properly restricted to maintain integrity and confidentiality of data, where applicable;
- Evaluate segregation of duties both within the timekeeping system and over manual procedures to confirm that conflicting tasks are appropriately segregated;
- Evaluate controls to validate whether pay is accurately calculated, overpayment occurrences are identified, and payroll data is accurately and completely presented in the general ledger;
- Evaluate compliance with DC Water policies and procedures over timekeeping and payroll processing; and
- Evaluate the usage and trends of non-regular pay codes, such as overtime pay, annual leave, jury duty, etc., as well as review the frequency and trends in timekeeping exceptions (unapproved report statistics).

Payroll & Timekeeping Audit (continued)

Oracle Implementation

In March 2022, DC Water switched from the Ceridian Dayforce system to the Oracle Time and Attendance module for purposes of payroll and timekeeping. Internal Audit reviewed post-Oracle go live internal controls during the in-scope period of 3/15/22 through 2/1/23. This system change has resulted in process and internal control changes while also resulting in efficiencies for the Authority.

Statistics and Financial Information

Personnel services expenditures are budgeted annually by each Department and take into consideration vacancy rates, budgeted positions, Departmental reorganizations, salary adjustments, and overtime costs to support ongoing operational and capital projects.

The fiscal year 2023 and 2024 budgeted and fiscal year 2020 – 2022 actual personnel services expenditures are as follows:

Fiscal Year	Personnel Services Operating Expenditure	% Change
2024 (Budgeted)**	\$201,581,000	8.25%
2023 (Budgeted)*	\$186,223,000	3.25%
2022*	\$180,353,000	9.28%
2021*	\$165,032,000	3.63%
2020*	\$159,244,000	0.80%

*Source: DC Water Approved FY 2023 Budget

**Source: DC Water Approved FY 2024 Budget

Payroll & Timekeeping Audit (continued)

Observations	Risk Rating
1. Retroactive Timecard Adjustment Application Control	High
<p>Management Action Plan:</p> <ul style="list-style-type: none"> <u>Payroll team:</u> Management concurs with the observation and recommendation. Until there is an enhancement to the current configuration, the team will continue to use a mitigating control where the Time Audit report is reviewed to identify any timecard edits made to previously processed timecards. This review is performed by the Payroll Manager, and the Time Audit report is run and reviewed on a bi-weekly basis. <u>ERP system and controls team:</u> DC Water has an open ticket with Oracle to allow reopening of single timecards from a prior period. <p>Responsible Party: Tina Byrd, Payroll Manager</p> <p>Target Date: 6/1/2023 <i>(implemented after in-scope period concluded but prior to audit report issuance)</i></p>	
2. Lack of Segregation of Duties	High
<p>Management Action Plan:</p> <ul style="list-style-type: none"> Management concurs with the observation and recommendation. However, management has already taken steps to segregate duties by assigning locations to the Payroll Specialists. Each Specialist validates the numerous payroll reports for accuracy and the Payroll Manager also reviews and approves. <p>Responsible Party: Tina Byrd, Payroll Manager</p> <p>Target Date: 3/1/2023 <i>(implemented after in-scope period concluded but prior to audit report issuance)</i></p>	

WORK ORDER MANAGEMENT AUDIT

Department of Water Operations (DWO)

DWO Work Order Management Audit

Purpose

The purpose of this audit was to obtain an understanding of how the Department of Water Operations (“DWO”) work order management process is managed and to ensure effective operations in accordance with DC Water policy. The testing period was 9/15/2022 through 3/15/2023.

Scope

The audit scope was based on the following objectives:

- Conduct interviews with key personnel and perform analytics over work order data to obtain a detailed understanding of DWO’s policies and procedures, operating functions, and key performance indicators for the following areas:
 - Work order initiation and screening
 - Work execution and data entry
 - Work order closeout
 - Reporting and monitoring
- Assess the design and operating effectiveness of key controls. Internal Audit reviewed work orders closed by the Department of Water Operations during the period 9/15/2022 –3/15/2023. Key areas of focus included, but were not limited to:
 - Required workflow steps by work order type
 - Required data fields captured
- Identify strong practices and areas of excellence, as well as potential opportunities for process improvement or control gaps and underlying root causes
- Work with management to develop action plans to remediate identified control gaps

DWO Work Order Management Audit (continued)

The purpose of the Department of Water Operations (DWO) is to operate and maintain the water distribution system and deliver potable water to the citizens and visitors to the District of Columbia. DWO ensures compliance with the applicable regulations promulgated by the Safe Drinking Water Act. The DWO involves five main branches. Responsibilities include, but are not limited to:

1. Distribution Control

- Performs preventative maintenance on 43,000 system valves
- Inspects, maintains and replaces 9,500 fire hydrants
- First responders to investigate water system leak emergencies

2. Distribution Maintenance

- Repairs and replaces water mains, service lines, valves, hydrants, and other linear assets
- Coordinates emergency response for distribution system repairs
- Performs all water services taps and abandonments for 2" and smaller
- Plans and executes small capital improvement projects using in-house resources

3. Construction Contract Management

- Manages ongoing multifaceted contracts to support water and sewer infrastructure and rehabilitation and replacement programs
- Administers Public Space Restoration Program
- Manages the acquisition of DDOT permits to facilitate emergency repairs and scheduled projects

4. Linear Asset Management

- Manages ongoing multifaceted contracts to support water and sewer infrastructure and rehabilitation and replacement programs
- Optimizes and prioritizes capital program projects using condition assessment and analysis of CMMS
- Supports Voluntary Lead Service Program

5. Water Quality & Technology

- Environmental Protection Agency (EPA) drinking water compliance, monitoring, and reporting
- Ensures water quality within the distribution system
- Collaborates with District agencies to mitigate adverse health effects from drinking water contaminant fees
- Assesses online water quality data and models and enforces fire hydrant usage policies and regulations

DWO Work Order Management Audit (continued)

Observations	Risk Rating
1. Failure to Capture Work Order Labor and Materials	High
<p>Management Action Plan:</p> <ul style="list-style-type: none">DWO to update business processes and leverage technology for mandatory labor and material data capturing. The data will be queryable through Maximo. DWO will also evaluate all work activities for labor hours and material data capturing requirements and implement accordingly. DWO to check data capture as part of routine QA/QC program and rectify any inconsistencies. <p>Responsible Party: Tamrat Bedane, Supervisor, Asset Management</p> <p>Target Date: 8/31/2024</p>	

HOTLINE UPDATE

Hotline Update

One call has been received since the last Audit & Risk Committee meeting. Below are calls received in FY23 to date as of 7/20/2023:

FY 23 Hotline Call Summary	
FY 23 Calls Received	15
FY 23 Cases Closed	14
FY 23 Calls Open	1
FY 23 Open Call Breakdown	
Open Fraud Claims:	
<i>Policy Issues</i>	1

Total calls by Fiscal Year:

Year	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY19	FY20	FY21	FY22	FY23
# of calls	10	20	16	36	31	21	28	10	7	18	15
Action Taken	0	2	7	7	2	0	1	0	0	2	1



QUESTIONS AND ANSWERS

RSM US LLP

1250 H St NW
Washington, DC 20005

+1 800 274 3978
www.rsmus.com

This document contains general information, may be based on authorities that are subject to change, and is not a substitute for professional advice or services. This document does not constitute audit, tax, consulting, business, financial, investment, legal or other professional advice, and you should consult a qualified professional advisor before taking any action based on the information herein. RSM US LLP, its affiliates and related entities are not responsible for any loss resulting from or relating to reliance on this document by any person. Internal Revenue Service rules require us to inform you that this communication may be deemed a solicitation to provide tax services. This communication is being sent to individuals who have subscribed to receive it or who we believe would have an interest in the topics discussed.

RSM US LLP is a limited liability partnership and the U.S. member firm of RSM International, a global network of independent audit, tax and consulting firms. The member firms of RSM International collaborate to provide services to global clients, but are separate and distinct legal entities that cannot obligate each other. Each member firm is responsible only for its own acts and omissions, and not those of any other party. Visit rsmus.com/aboutus for more information regarding RSM US LLP and RSM International.

RSM, the RSM logo and *the power of being understood* are registered trademarks of RSM International Association.

© 2023 RSM US LLP. All Rights Reserved.



DC WATER

Payroll and Timekeeping Internal Audit

July 2023

Table of Contents

Executive Summary and Objectives

Background

Approach

Observations and Recommended Action

Appendix

A Rating Definitions

EXECUTIVE SUMMARY, BACKGROUND AND APPROACH

Executive Summary and Objectives

Objective and Scope

The purpose of this review was to obtain an understanding of the various procedures and controls that occur throughout the payroll and timekeeping processes, and the applicable governing policies. The audit period was 3/15/2022 through 2/1/2023. The audit scope included the following procedures:

- Validating that controls over timekeeping include procedures and documents that indicate the data used to generate payroll disbursements are complete and accurate. This include controls over pre- or post- time authorization, exception reporting, use of special time codes, and other items, where applicable.
- Determining whether the records and documentation for timekeeping and overtime related items are sufficient to establish an audit trail for all transactions involving employee time.
- Determining whether access to timekeeping data is properly restricted to maintain integrity and confidentiality of data, where applicable.
- Evaluating segregation of duties both within the timekeeping system and over manual procedures to confirm that conflicting tasks are appropriately segregated.
- Evaluating controls to validate whether pay is accurately calculated, overpayment occurrences are identified, and payroll data is accurately and completely presented in the general ledger.
- Evaluating compliance with DC Water policies and procedures over timekeeping and payroll processing.
- Evaluating the usage and trends of non-regular pay codes, such as overtime pay, annual leave, jury duty, etc.; as well as reviewed the frequency and trends in timekeeping exceptions (unapproved report statistics).

Field work was preformed from February 2023 – June 2023

Executive Summary and Objectives

Overall Summary and Highlights

There were two high, two moderate, and three low risk observations identified during our assessment. **The root cause for three of our seven observations relate to the lack of current bandwidth on the payroll team.**

Observation	Responsible Party	Remediation Status
1. Retroactive Timecard Adjustment Application Control	Payroll & ERP Systems teams	Closed – Pending Testing as of 7/7/2023
2. Lack of Segregation of Duties*	Payroll team	Closed – Pending Testing as of 7/7/2023
3. Untimely Payout to Terminated Employees	Payroll & Department Supervisors	Open
4. Lack of Current Payroll Policy*	Payroll team	Open
5. Inconsistent Review of General Ledger*	Payroll team & ERP Systems team	Open
6. Lack of Timely Approval of Leave	Department Supervisors	Open
7. Completeness of User Access Review	ERP Systems team	Closed – Pending Testing as of 7/15/2023

* Indicates an observation with the root cause of bandwidth issues on the payroll team

These observations are described in the detailed observations section of the report (pages 10 – 23). We assigned relative risk or value factors to each observation. Risk ratings are the evaluation of the projected severity of the concern and the potential impact on the operations of each item. Observations will require management action plans with estimated completion dates that will be included in the routine follow-up of internal audit observations.

Summary of Observation Ratings (See Appendix for risk rating definitions)		
Number of Observations by Risk Rating		
High	Moderate	Low
2	2	3

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

Background

Overview

DC Water has over 1,000 employees, including exempt (salaried), non-exempt (hourly), full and part-time employees, as well as Union and non-Union classifications. Employees are located at five main facilities throughout the District of Columbia; however, a large percentage of employees are mobile and service the 1,300 miles of water pipes and 1,900 miles of sanitary and combined sewers. Approximately 60% of DC Water's workforce is governed by one of five Union agreements. The Federal government and the District of Columbia have many laws and statutes that the Authority must comply with regarding payroll, timekeeping, overtime and labor related issues. They include, but are not limited to, the Fair Labor Standards Act (FLSA), the Federal and Medical Leave Act of 1993, Final Rule, 29 CFR Part 825 and applicable provisions of the District of Columbia Family and Medical Leave Act of 1990. In addition to these, the Authority has adopted policies regarding leave, scheduled during hours and compensation time. The policies and procedures include, but are not limited to:

- Hours of Work
- Annual Leave
- Attendance and Punctuality
- Unpaid Leave
- Compensation and Job Evaluation
- Compensation Incentive Pay
- Compensatory Time for Exempt Employees
- Employee Separation Procedures

In addition to the above, the Authority is currently involved with five (5) collective bargaining agreements for Union employees. They are as follows:

- American Federation of Government Employees, Local 2553
- American Federation of Government Employees, Local 631
- American Federation of Government Employees, Local 872
- American Federation of State, County, and Municipal Employees Local 2091
- National Association of Government Employees, R3-06

The working condition agreements address working hours, shift pay policies and overtime distribution. DC Water also has a Master Agreement on Compensation between all five (5) Unions. This agreement encompasses annual wage adjustments, performance bonuses, incentive pay, healthcare plans, and various other compensation related matters. The latest agreement is effective from October 1, 2019 through September 30, 2023.

Background (continued)

Statistics and Financial Information

Personnel services expenditures are budgeted annually by each Department and take into consideration vacancy rates, budgeted positions, Departmental reorganizations, salary adjustments, and overtime costs to support ongoing operational and capital projects. Personnel services expenditures have increased year-over-year primarily due to an increase in wages and benefits. Part of this increase is due to the Board-ratified union labor contract, which requires a 3% increase in base salary each year through 2023.

The fiscal year 2023 and 2024 budgeted and fiscal year 2020 – 2022 actual personnel services expenditures are as follows:

Fiscal Year	Personnel Services Operating Expenditure	% Change
2024 (Budgeted)**	\$201,581,000	8.25%
2023 (Budgeted)*	\$186,223,000	3.25%
2022*	\$180,353,000	9.28%
2021*	\$165,032,000	3.63%
2020*	\$159,244,000	0.80%

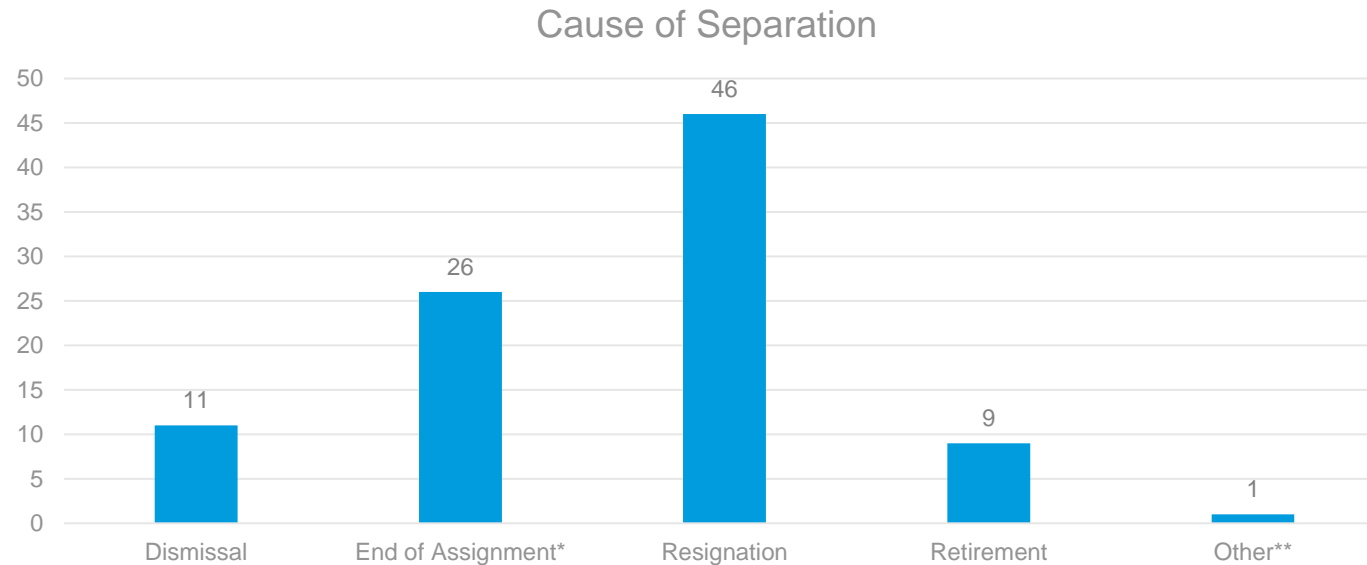
*Source: DC Water Approved FY 2023 Budget

**Source: DC Water Approved FY 2024 Budget

Background (continued)

Statistics and Financial Information (continued)

In addition to reviewing the payroll and timekeeping processes, our scope included a review of how personnel related changes, including terminations or separations, are identified and approved by Human Capital Management and communicated to Payroll for final payout. Between March 1, 2022 and February 1, 2023, there were 93 separations from the Authority. The table below classifies the type of separation during this time:



* The “End of Assignment” cause of separation is the classification used for interns upon completion of their internship. All 26 End of Assignment separations reflect summer internships coming to an end.

** The “Other” cause of separation represents an employee that withdrew from their position after one day of employment.

Approach

PAYROLL AND TIMEKEEPING TESTING

- Reviewed DC Water’s policies and procedures to verify timekeeping, overtime, and payroll are complete and reflect current practice;
- Reviewed employee time tracking methods, practices, documents and procedures to verify controls over recording, authorization, processing and reporting of time and related payroll expenditures are designed and operating effectively;
- Verified timesheets were properly approved, including special and overtime pay approval;
- Verified payroll pre- and post-reconciliation and monitoring is accurate and performed by the appropriate individuals and evidence of completion was maintained via the payroll runbook;
- Verified Separation Personnel Action Request (SPAR) forms were properly submitted to Payroll; final payment was performed timely; and documentation was maintained in the employee file;
- Reviewed system access and duty assignments to verify they are appropriate and there are consistent duties around the following functions: time entry, time approval, manual change entry and approval.

Reporting: At the conclusion of this audit, we summarized our observations related to the payroll and timekeeping functions. We have reviewed the results of our testing with management.



OBSERVATIONS AND RECOMMENDED ACTION

Observation 1: Retroactive Timecard Adjustment Application Control

Risk Rating: High

Observation: In order to make a one-off change in the Oracle system when a retroactive change is needed to closed timecards, the payroll team has to re-open all timecards which gives all employees access to make edits to any timecard within the re-opened period. Upon making the necessary update, the payroll team may not re-close the timecards or re-close it timely.

Root Cause Analysis: The design of the Oracle Time and Attendance module has caused this finding. There are numerous reasons that may cause the payroll team to re-open and modify a previously closed timecard. The system's current setup allows unauthorized access to the re-opened timecard causing all employees to access previously closed timecards.

Impact Analysis: If an employee were to make a change to their previously submitted and closed timecard while the payroll team has the prior period re-opened, payroll would not be notified, and the change could go undetected and impact future payments to the individual.

Recommendation: Internal Audit recommends that the ERP team collaborate with the payroll department to determine new and more suitable controls around the opening of prior timecards/pay periods. If a configuration change is not able to be made, we recommend the payroll team perform a detective control to review all retroactive timecard adjustments for periods that were reopened in order to detect any inappropriate changes.

Observation 1: Retroactive Timecard Adjustment Application Control (continued)

Management Action Plan:

Response:

Payroll team: Management concurs with the observation and recommendation. Until there is an enhancement to the current configuration, the team will continue to use a mitigating control where the Time Audit report is reviewed to identify any timecard edits made to previously processed timecards. This review is performed by the Payroll Manager, and the Time Audit report is run and reviewed on a bi-weekly basis.

ERP system and controls team: DC Water has an open ticket with Oracle to allow reopening of single timecards from a prior period.

Responsible Party: Tina Byrd, Payroll Manager

Target Date: 6/1/2023 (*implemented after in-scope period concluded but prior to audit report issuance*)

Observation 2: Lack of Segregation of Duties

Risk Rating: High

Observation: Throughout our review process, Internal Audit determined that the payroll manager is both preparing and reviewing the Payroll Runbook. Due to the number of reports within the Runbook and the importance of utilizing complete and accurate reports when running the payroll, Internal Audit would expect to see a segregation of duties between the preparer and reviewer of the Runbook.

Root Cause Analysis: Bandwidth issues in the payroll department during the Oracle implementation resulted in a majority of payroll reports being prepared and reviewed by one individual. There was not enough headcount in the department to ensure adequate segregation of duties between the preparer and reviewer for all processes within the payroll run cycle.

Impact Analysis: A lack of segregation of duties in the payroll process opens the Authority to fraud risk. An independent review of reporting can mitigate any opportunity for the preparer to intentionally or unintentionally manipulate payroll data. Ensuring that a separate individual reviews the report provides an additional layer of assurance around the accuracy of payroll reporting and paycheck issuance.

Recommendation: We recommend that the Authority evaluates staffing needs of the payroll department to address disparities in resource availability. Meanwhile, the payroll team should implement a delegation of authority matrix for the preparation and review of the Payroll Runbook. This will authorize separate individuals prepare and conduct reviews, thus providing increased comfort around the accuracy of each piece of the Payroll Runbook.

Observation 2: Lack of Segregation of Duties (continued)

Management Action Plan:

Response: Management concurs with the observation and recommendation. However, management has already taken steps to segregate duties by assigning locations to the Payroll Specialists. Each Specialist validates the numerous payroll reports for accuracy and the Payroll Manager also reviews and approves.

Responsible Party: Tina Byrd, Payroll Manager

Target Date: 3/1/2023 (*implemented after in-scope period concluded but prior to audit report issuance*)

Observation 3: Untimely Payout to Terminated Employees

Risk Rating: Moderate

Observation: Per Authority policy, the payroll department is expected to adhere to the following guidelines when issuing an employee's final pay following a termination:

- For all terminations except dismissals: final payout should be made upon the next regular payday or within seven (7) days of resigning, whichever is earlier for DC residents or on the next regular payday for VA or MD residents
- For all dismissals: final payout should be made one business day after termination for DC residents or on the next regular payday for VA or MD residents

Of the 15 termination samples that Internal Audit tested, the average time from employee termination to issuance of the final payout was 10.5 days. A breakdown of the common themes identified is provided below.

- In two (2) of the 15 samples, the delayed payout was due to a bottleneck in the Department Supervisor's approval and submission to People & Talent. People & Talent is unable to issue a Separation Personnel Action Report (SPAR) until notification of termination is provided by the employee's supervisor. Likewise, Payroll is unable to issue a final payout until a SPAR has been received from People & Talent. In the two samples, payroll issued the final payout timely based on the date of SPAR receipt; however, when reviewing the date of termination as per the Authority policy, the final payout was not issued timely.
- In two (2) of the 15 samples, the delayed payout was due to a delay in payroll's process. Both samples were final payout for summer interns.
- In eleven (11) of the 15 samples, payment was processed timely.

Root Cause Analysis: For the two (2) payouts that were made within seven business days of SPAR receipt but more than seven business days after termination, the delay in payment was due to a delay in obtaining a timely termination notification from Department Supervisors and the People & Talent department. The two (2) payouts that were delinquent due to delays by the payroll team occurred specifically because of the employees' roles as summer interns.

Observation 3: Untimely Payout to Terminated Employees (continued)

Impact Analysis: Delinquent final payments to terminated employees violates DC labor and employment laws. Under D.C. Code 32-1303, an employer must issue a final paycheck to a terminated employee no later than the next business day, or on the next regular payday for Maryland or Virginia residents. Employees who quit their job are entitled to a final paycheck at the next regularly scheduled pay date or within seven days of termination, whichever is earlier. If a terminated employee does not receive their wages within this timeframe, they are able to submit a claim against the Authority to the DC Office of Wage-Hour which would expose the Authority to potential investigation. Additionally, if an employer fails to pay an employee's final paycheck as required by the code, the employer must pay or be additionally liable to the employee, as liquidated damages, 10% of the unpaid wages for each business day during which such failure continues after the day upon which payment is hereunder required, or an amount equal to triple the unpaid wages, whichever is smaller.

Recommendation: We recommend that People & Talent provide additional training to Department Supervisors around the expectations for termination notifications and the importance of timely communication. Additionally, we recommend that Department Supervisors, as well as members of the Payroll and People & Talent teams are reminded that the final payout timelines are an Authority expectation as well as a legal requirement.

Observation 3: Untimely Payout to Terminated Employees (continued)

Management Action Plan:

Response: There are efforts underway to roll out a time entry/approval training to all new hires to educate employees on the expectations around time entry and approval and HR documentation submission. Additionally, HRBPs and the Learning and Development team are creating Job Aids to disseminate on a regular cadence to all employees to provide follow-up/refresher trainings around these time entry and approval expectations.

Responsible Party:

Job Aid Training deployment in Oracle: Nicole Spriggs, Manager, Talent Management

Job Aid creation and dissemination: John Driver, Manager, HR Business Partners

Target Date: 8/31/2023

Observation 4: Lack of Current Payroll Policy

Risk Rating: Moderate

Observation: The payroll department has outdated policies and procedures. While the requirements in the outdated payroll policies and procedures are still applicable, the current policies do not include information related to the recent Oracle system implementation. New DC Water employees may not be provided with adequate and reliable resources to ensure a seamless onboarding process.

Root Cause Analysis: The transition from Ceridian Dayforce to Oracle in March 2022 was a massive endeavor that required significant payroll time and effort. The payroll team has not had the bandwidth to update and formalize its departmental policy. The payroll team is aware that a formalized policy is necessary, but due to resource constraints, the team has not been able to prioritize this task.

Impact Analysis: Every employee at the Authority interacts with the payroll department on a bi-weekly basis, whether directly or indirectly. Given the department's wide reach among Authority employees, a formalized policy that outlines expectations and guidelines is necessary. The lack of a formalized policy creates the possibility for confusion, particularly regarding onboarding and terminations processes, as well as general payroll payments.

Recommendation: We recommend that DC Water formalize and implement a standardized process for updating and reviewing the operating policy and procedure for payroll to ensure documented processes are current. The policy should include recent changes to people, process and technology including guidelines and activities within the Oracle operating system.

Observation 4: Lack of Current Payroll Policy (continued)

Management Action Plan:

Response: Management concurs with the observation and recommendation. Management is in the process of updating the Standard Operating Procedures to include any changes to the previous processes; completion is expected just after the calendar year.

Responsible Party: Tina Byrd, Payroll Manager

Target Date: 1/31/2024

Observation 5: Inconsistent Review of General Ledger

Risk Rating: Low

Observation: Beginning in June 2022, the payroll accountant reviews the general ledger upload file to validate that the GL mapping information is in the correct format and that the coding is accurate bi-weekly. The payroll accountant makes changes, if necessary. Internal Audit identified one of six samples tested did not have evidence that a review was performed by the payroll accountant.

Root Cause Analysis: There are specific payroll scenarios which trigger GL coding errors in the Oracle system that the DC Water systems team is working with Oracle support to remediate. Prior to becoming aware of this issue, the billing and grants team would manually fix the coding errors within the GL file after receiving the file from the payroll accountant. Upon discovering the coding issue in June 2022, the payroll accountant instituted a review process to manually correct GL coding errors. In the pay period without evidenced review by payroll, the payroll accountant stated that it is possible that due to time constraints, payroll requested that the billing and grants team perform the review on its behalf.

Impact Analysis: Inaccurate GL coding of transactions increases the likelihood of inaccurate financial reporting by the Authority. The Oracle system is currently generating errors in GL coding, making the level of manual review performed of utmost importance. If the Authority cannot evidence that a manual review of the GL is consistently occurring in a thorough manner, increased scrutiny will be needed regarding financial statement accuracy.

Recommendation: We recommend that DC Water continue working with Oracle support to remediate GL coding errors to increase reliability and trustworthiness of GL data. Additionally, we recommend that the payroll team continue to conduct bi-weekly reviews of GL coding, and document evidence of review.

Observation 5: Inconsistent Review of General Ledger (continued)

Management Action Plan:

Response:

Payroll team: Management concurs with the observation and recommendation. Management is actively conducting a search for a payroll team member to work closely with Oracle support to remediate GL coding errors to increase reliability and trustworthiness of GL data.

ERP system and controls team: DC Water has an open ticket with Oracle to resolve GL coding errors.

Responsible Party: Tina Byrd, Payroll Manager

Target Date: 9/1/2023

Observation 6: Lack of Timely Approval of Leave

Risk Rating: Low

Observation: As needed, employees request leave in the Oracle Time & Attendance module and it is the responsibility of their supervisor to either approve or deny the request. During Internal Audit's review of employee leave, four (4) of the 25 samples tested did not receive supervisory approval prior to taking the leave. In all four of these instances, the absence type noted is reflective of leave that was planned/scheduled (i.e., Annual Leave Scheduled, Annual Leave, Sick Leave Scheduled).

Root Cause Analysis: Per the payroll manager, in instances when supervisors do not reject or approve a leave request prior to the employee taking the planned/scheduled leave, the supervisor provides a late approval (i.e., once the employee has taken the planned/scheduled leave). If the supervisor's approval is not obtained prior to processing payroll for the time period during which the leave takes place, the leave hours are retroactively included in the subsequent payroll run.

Impact Analysis: The ability for an employee to take leave without receiving prior approval presents a risk to the Authority that unauthorized absences could occur undetected. For certain leave types, such as unscheduled sick leave, it is appropriate for a supervisor's approval to take place after the leave has occurred; however, for planned absences, the ability for an employee to take unapproved leave could result in employees taking leave that they are not authorized to take (i.e., going over their paid time-off or sick leave balances).

Recommendation: We recommend that the payroll team reiterate the importance of providing timely approval for leave requests to all supervisors and timekeepers. We recommend that delinquent approvals are escalated to the designated approver's direct supervisor. If it is not already included in the payroll policy, Internal Audit recommends that a section be added regarding providing appropriate approval for planned leave prior to an employee taking the leave of absence.

Observation 6: Lack of Timely Approval of Leave (continued)

Management Action Plan:

Response: Management concurs with the observation and recommendation. Management will continue with the effort of notifying Timekeepers, Supervisors and Managers of any unapproved leave requests and/or timecards. These email reminders will be distributed at the beginning of the payroll processing process on a bi-weekly basis. Additionally, the payroll team will issue a reminder email to all Timekeepers, Supervisors, and Managers detailing the requirements surrounding leave approval.

Responsible Party: Tina Byrd, Payroll Manager

Target Date: 8/1/2023

Observation 7: Completeness of User Access Review

Risk Rating: Low

Observation: Quarterly, the ERP System and Controls team conducts a user access review of each Oracle module. Of the two quarters that Internal Audit tested, the payroll manager was only asked to perform a user access review in a timely manner for one quarter. After Internal Audit sent our request for evidence of the user access review, the ERP team retroactively requested the payroll manager's review and approval for Q2 2023.

Root Cause Analysis: Historically, the user access review of the payroll system was handled separately from the financial system. Upon Oracle implementation, the payroll module's review was combined with the overarching financial system access review in Q3 of fiscal year 2022. As such, the payroll manager's inclusion on the quarterly user access review email is a new process step that was accidentally omitted. Additionally, the payroll department employees also fall under the Controller's responsibility for review. All other necessary managers, including the Controller, were included on the April 2023 user access review email. Further, the payroll manager has been included in previous communication.

Impact Analysis: The payroll manager's review of user access is a crucial facet of the quarterly review. Given the highly sensitive nature of payroll data, it is imperative to the Authority that only authorized users have access to employee records. Note that no unauthorized access was noted during the retroactive access review for Q2 2023.

Recommendation: Internal Audit recommends that the ERP team create a formal list of individuals that need to be involved in the quarterly access reviews for their respective departments and reference this list prior to the distribution of user access review emails.

Observation 7: Completeness of User Access Review (continued)

Management Action Plan:

Response: We fully understand the importance of the quarterly review process and we accepted your recommendation and created a formal list of individuals that need to be involved in the reviews. The list has been approved by the Controller.

Responsible Party: Val Blinkoff, Manager, ERP System and Controls

Target Date: 7/15/2023

APPENDIX

Appendix A – Rating Definitions

RSM defined observations based on the following risk rating definitions:

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

RSM US LLP

1250 H St NW
Washington, DC 20005

+1 800 274 3978
www.rsmus.com

This document contains general information, may be based on authorities that are subject to change, and is not a substitute for professional advice or services. This document does not constitute audit, tax, consulting, business, financial, investment, legal or other professional advice, and you should consult a qualified professional advisor before taking any action based on the information herein. RSM US LLP, its affiliates and related entities are not responsible for any loss resulting from or relating to reliance on this document by any person. Internal Revenue Service rules require us to inform you that this communication may be deemed a solicitation to provide tax services. This communication is being sent to individuals who have subscribed to receive it or who we believe would have an interest in the topics discussed.

RSM US LLP is a limited liability partnership and the U.S. member firm of RSM International, a global network of independent audit, tax and consulting firms. The member firms of RSM International collaborate to provide services to global clients, but are separate and distinct legal entities that cannot obligate each other. Each member firm is responsible only for its own acts and omissions, and not those of any other party. Visit rsmus.com/aboutus for more information regarding RSM US LLP and RSM International.

RSM® and the RSM logo are registered trademarks of RSM International Association. *The power of being understood®* is a registered trademark of RSM US LLP.

© 2023 RSM US LLP. All Rights Reserved.



DC WATER

DWO Work Order Management Internal Audit

July 2023

Table of Contents

Executive Summary and Objectives

4

Background

5

Approach

7

Observations and Recommended Action

8

Process Improvement Opportunities

15

Appendix

A

Rating Definitions

18



EXECUTIVE SUMMARY, BACKGROUND AND APPROACH

Executive Summary and Objectives

Objective and Scope

The purpose of this audit was to obtain an understanding of how the Department of Water Operations (“DWO”) work order management process is managed and to ensure effective operations in accordance with DC Water policy. Our procedures were performed in accordance with the internal audit scope and approach set forth in our audit notification letter and were limited to those procedures described therein. The testing period was 9/15/2022 through 3/15/2023. The audit scope included the following objectives:

- Conducting interviews with key personnel and performed analytics over work order data to obtain a detailed understanding of DWO’s policies and procedures, operating functions, and key performance indicators for the following areas:
 - Work order initiation and screening
 - Work execution and data entry
 - Work order closeout
 - Reporting and monitoring
- Assessing the design and operating effectiveness of key controls. Internal Audit reviewed work orders closed by the Department of Water Operations during the period 9/15/2022 –3/15/2023. Key areas of focus included, but were not limited to:
 - Required workflow steps by work order type
 - Required data fields captured
- Identifying strong practices and areas of excellence, as well as potential opportunities for process improvement or control gaps and underlying root causes
- Working with management to develop action plans to remediate identified control gaps

Fieldwork was performed March 2023 through June 2023.

Overall Summary and Highlights

There were one high and two low risk observations identified during our audit, which are summarized below:

1. Failure to Capture Work Order Labor and Materials
2. Incorrect Personnel Performing WO Reviews
3. Hydrant Flow Testing Six Year Requirement

These observations are described in the detail observations section on pages 9 through 14 of the report. We assigned relative risk or value factors to each observation. Risk ratings are the evaluation of the perceived likelihood of an adverse event occurring and the potential impact an occurrence could have on the operations of each item. All observations require management action plans with estimated completion dates that will be included in the routine follow-up procedures for internal audit observations.

Summary of Observation Ratings (See Appendix for risk rating definitions)

Number of Observations by Risk Rating

High	Moderate	Low
1	0	2

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

Background

The purpose of the Department of Water Operations (DWO) is to operate and maintain the water distribution system and deliver potable water to the citizens and visitors to the District of Columbia. DWO ensures compliance with the applicable regulations promulgated by the Safe Drinking Water Act.

Per the FY23 Approved Budget Departmental Summary, DWO involves five main branches:

1. Distribution Control

- Performs preventative maintenance on 43,000 system valves
- Inspects, maintains and replaces 9,500 fire hydrants
- First responders to investigate water system leak emergencies

2. Distribution Maintenance

- Repairs and replaces water mains, service lines, valves, hydrants, and other linear assets
- Coordinates emergency response for distribution system repairs
- Performs all water services taps and abandonments for 2" and smaller
- Plans and executes small capital improvement projects using in-house resources

3. Construction Contract Management

- Manages ongoing multifaceted contracts to support water and sewer infrastructure and rehabilitation and replacement programs
- Administers Public Space Restoration Program
- Manages the acquisition of DDOT permits to facilitate emergency repairs and scheduled projects

4. Linear Asset Management

- Manages ongoing multifaceted contracts to support water and sewer infrastructure and rehabilitation and replacement programs
- Optimizes and prioritizes capital program projects using condition assessment and analysis of CMMS
- Supports Voluntary Lead Service Program

5. Water Quality & Technology

- Environmental Protection Agency (EPA) drinking water compliance, monitoring, and reporting
- Ensures water quality within the distribution system
- Collaborates with District agencies to mitigate adverse health effects from drinking water contaminant fees
- Assesses online water quality data and models and enforces fire hydrant usage policies and regulations

Background (continued)

The following table is derived directly from Maximo data provided by management for work orders completed between September 15, 2022 and March 15, 2023.

Work Order Type	Function	# of Work Orders	% of Population	Avg. Duration to Completion
Inspection (INSP)	Customer Compliance	4,783	28.98%	27 hours 8 minutes
Flow Test (FLTST)	Distribution Control	2,941	17.82%	7 months 4 days
Non-Emergency Investigation (INV)	Distribution Control	1,719	10.42%	3 months 20 days
Planned Spot Flushing (FLSH9)	Distribution Control	1,207	7.31%	8 days 8 hours
Corrective Maintenance (CM)		868	5.26%	-
	Customer Compliance	620	3.75%	8 months 18 days
	Distribution Control	236	1.43%	2 years 4 months
	Distribution Maintenance	12	0.07%	4 years 23 days
Emergency Maintenance (EM)		637	3.87%	-
	Customer Compliance	281	1.70%	2 months 27 days
	Distribution Control	57	0.35%	7 years 3 months
	Distribution Maintenance	299	1.81%	11 months 28 days

Approach

Our audit approach consisted of the following phases:

Understanding of the Process

The first phase of our review consisted primarily of inquiry with management to obtain an understanding of the Authority's structure and key processes within our scope. The following procedures were conducted as part of the first phase of our review:

- Conducted interviews with key personnel to obtain a detailed understanding of DWO's policies and procedures, operating functions, and key performance indicators for the following areas:
 - Work order initiation and screening
 - Work execution and data entry
 - Work order closeout
 - Reporting and monitoring
- Based on our interviews, we identified key risks and controls and developed a detailed control testing script

Detailed Testing

The second phase of our review consisted of an assessment of the design of key controls and testing of the operating effectiveness of those controls. This process was facilitated using process mining software and supplemented with manual testing of a sample of work orders. Our procedures during this phase included, but were not limited to:

- Performing detailed analytics over work order data to derive insights over the Distribution Control, Distribution Maintenance, and Customer Compliance functions
- Testing 25 samples of work orders from the Distribution Maintenance function to assess the design and operating effectiveness of related controls
- Testing 2 quarters of QA/QC reviews on Distribution Maintenance work orders to assess the design and operating effectiveness of related controls
- Reviewing the source data and compilation process for key performance indicators (KPIs) reported in the CEO monthly report

Reporting

At the conclusion of the internal audit, we summarized our observations related to the Department of Water Operations Work Order Management function and reviewed the results of our testing with management. Additionally, internal audit conducted a process mining analysis of DWO work orders and has compiled the results of this analysis, along with identified process improvement opportunities, in a management supplemental report.



OBSERVATIONS AND RECOMMENDED ACTION

Observation 1: Failure to capture work order labor and materials on a consistent basis

Risk Rating: High

Observation: Based on our review of the full population of work orders completed during the testing period, Internal Audit noted that the Department of Water Operations (DWO) is not capturing labor hours and material costs within Maximo on a consistent basis when required. If a work order is associated with repair work, we would expect materials used and labor hours incurred to be necessary to complete the work, whereas other work types such as inspections would not require the usage of materials to complete. We identified the following inconsistencies in data entry for the testing period:

- 9,864 work orders completed in the testing period should have captured labor hours based on their work type. However, only 125 (1.27%) of these work orders captured labor hour details in Maximo.

Total work orders	# work orders expected to capture labor hours	% work orders expected to capture labor hours	# work orders with labor hours captured	% work orders with labor hours captured as expected
16,502	9,864	59.77%	125	1.27%

- 1,774 work orders completed in the testing period should have captured material costs based on their work type. However, only 406 (22.89%) of these work orders included material cost details in Maximo.

Total work orders	# work orders expected to capture material costs	% work orders expected to capture material costs	# work orders with material costs captured	% work orders with material costs captured as expected
16,502	1,774	10.75%	406	22.89%

Root Cause Analysis: There is insufficient training provided to crews regarding required data fields when performing work order data entry. Additionally, there is inadequate enforcement of data capture procedures and inadequate review processes to validate that work orders have all required data fields populated prior to work order closure.

Impact Analysis: If labor and material costs associated with work orders are not captured on a consistent basis, DWO is unable to quantify the true total cost of performing the tasks associated with work orders and is therefore unable to accurately capture the true costs of maintaining each asset. This limits Management's ability to monitor trends, assess performance, complete budgeting and forecasting activities, identify areas of concern for further investigation, identify opportunities for efficiencies, and inform priority focus areas for the Authority's asset management program.

Observation 1: Failure to capture work order labor and materials on a consistent basis (continued)

Recommendation: Internal Audit recommends:

- Management provide adequate training over all work order data requirements to personnel involved in data entry and enforce compliance with work order completion requirements
- DWO revisit Maximo configuration to determine feasibility of requiring labor hours and material cost fields by work order type within the system
- DWO implement a detective control for a periodic review of Maximo data capture so management can identify trends in missing information and escalate to crews and foremen as necessary

Management Action Plan:

Response: DWO to update business processes and leverage technology for mandatory labor and material data capturing. The data will be queryable through Maximo. DWO will also evaluate all work activities for labor hours and material data capturing requirements and implement accordingly. DWO to check data capture as part of routine QA/QC program and rectify any inconsistencies.

Responsible Party: Tamrat Bedane, Supervisor, Asset Management

Target Date: 8/31/2024

Observation 2: Incorrect Personnel Performing WO Reviews

Risk Rating: Low

Observation: Based on our review of the full population of work orders for the period, we noted that appropriate personnel are not always performing the WO reviews and the WO reviews are not always thorough enough to catch errors

- For all work order types that require review and approval per Department of Water Operations procedures, a review is expected to be performed by an individual in a managerial position (qualified positions include managers, foremen, and field supervisors). Our analysis indicated that 6.36% of work orders requiring review and approval were not approved by the appropriate reviewer as defined by Department of Water Operations procedures.
- For one out of 25 Distribution Maintenance Branch work orders reviewed, the work order had the incorrect Daily Field Report attached. This error was not caught during managerial review and was not corrected until Internal Audit noted and communicated the error.

Root Cause Analysis: There is insufficient training provided to crews, managers, foremen, field supervisors, and operations and inadequate enforcement of required review procedures.

Impact Analysis: Whether due to a lack of knowledge regarding the delegation of authority for reviewers or due to time constraints, individuals without authority to review and approve work orders are providing their signoff. If work orders are not reviewed by the appropriate personnel, there is an increased risk of missing, incorrect, or incomplete work order data.

Recommendation: Internal Audit recommends:

- Management provide adequate training over who should perform work order reviews and how to perform work order reviews
- The Maximo approval workflow should be updated to restrict workflow functionality to only assigned reviewers, if configurable within the system.
- Management scrutinize the positions authorized to perform approvals and modify DWO procedures to reflect all appropriate positions.

Observation 2: Incorrect Personnel Performing WO Reviews (continued)

Management Action Plan:

Response: DWO will evaluate roles of personnel performing work order review. DWO to update business process to include personnel who has authority to perform work order review.

Responsible Party: Tamrat Bedane, Supervisor, Asset Management

Target Date: 3/31/2024

Observation 3: Hydrant Flow Testing Six Year Requirement

Risk Rating: Low

Observation: DC Water has an active Memorandum of Understanding (MOU) with DC Fire and EMS Department (FEMS). The MOU states that each hydrant should have a flow test performed at least once every six years. The Authority has invested time to determine the most time- and cost-effective method of performing cyclical flow tests but given the sheer number of hydrants located in the District of Columbia, the target has not been able to be met.

Root Cause Analysis: Despite the Authority being aware of the importance of meeting this requirement and its efforts to do so, the Authority has not met this requirement historically due to resource challenges. In 2019, the Authority evaluated the gaps they had in meeting the goal and decided to focus on flow testing the hydrants with unknown data or that had white bands. After weeks of testing, the team discovered that driving around the city took longer than performing the work because these hydrant types were all over the city and not concentrated in one area.

After this discovery, the Authority changed the approach to "geographical flow testing", which does not prioritize white band hydrants or hydrants without data. Instead, this approach ensures that the Authority flow-tests all hydrants in a cluster simultaneously. With this approach and the right resources, the Authority will flow test each hydrant in the next 4 to 5 years. At the end of this first attempt to meet the six years goal cycle, the Authority will have reliable and accurate data to plan future six-year cycles.

Impact Analysis: Although the Authority is making efforts to meet the required flow testing expectations for each hydrant in the District of Columbia, the Authority is currently not in compliance with the terms agreed to in the MOU with DC FEMS and will not be in compliance for at least four more years.

Recommendation: Internal Audit agrees with the approach of focusing on geographical flow testing that is currently underway at the Authority. After testing all hydrants in the next 4 to 5 years, Internal Audit recommends developing a plan to ensure that all hydrants will be flow tested in the following six-year cycle.

Observation 3: Hydrant Flow Testing Six Year Requirement (continued)

Management Action Plan:

Response: DWO to develop hydrant flow test implementation plan. Implementation plan to include evaluation of resource needs, standardize flow test, identify technology and development of standard procedure to ensure that the 6-year fire hydrant flow test cycle is met.

Responsible Party: Tamrat Bedane, Supervisor, Asset Management

Target Date: FY 2028



PROCESS IMPROVEMENT OPPORTUNITIES

Process Improvement Opportunities

During our review, we noted the following process improvement opportunities. These did not rise to reportable risk-rated observations. However, DC Water should consider addressing these findings to provide further clarity to public reporting.

- **Process Improvement Opportunity #1: CEO Monthly Report KPI (Fire Hydrant Operational Rate)** — For the Fire Hydrant Operational Rate KPI in the CEO monthly report, Internal Audit recommends saving the fire hydrant out-of-service report or a screenshot of the report each month to ensure there is a copy of the point-in-time data to reference. This report cannot be retroactively pulled for a prior period, so there is no way to retroactively validate that previously reported data was accurate.
- **Process Improvement Opportunity #2: CEO Monthly Report KPI (Water Quality Complaint Resolution)** — For the Water Quality Complaint Resolution KPI in the CEO monthly report, Internal Audit recommends rewording the KPI to state "Water Quality Complaint Full Resolution" and removing the reference to 48 hours. The data that is presented is the number of water quality complaints that have been fully resolved within the specified month. All water quality complaints are initially responded to within 48 hours of notification, however, some complaints require additional re-testing or flushing, so they are not fully resolved for a longer period.

APPENDIX

Appendix A – Rating Definitions

RSM defined observations based on the following risk rating definitions:

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

RSM US LLP

1250 H St NW
Washington, DC 20005

+1 800 274 3978
www.rsmus.com

This document contains general information, may be based on authorities that are subject to change, and is not a substitute for professional advice or services. This document does not constitute audit, tax, consulting, business, financial, investment, legal or other professional advice, and you should consult a qualified professional advisor before taking any action based on the information herein. RSM US LLP, its affiliates and related entities are not responsible for any loss resulting from or relating to reliance on this document by any person. Internal Revenue Service rules require us to inform you that this communication may be deemed a solicitation to provide tax services. This communication is being sent to individuals who have subscribed to receive it or who we believe would have an interest in the topics discussed.

RSM US LLP is a limited liability partnership and the U.S. member firm of RSM International, a global network of independent audit, tax and consulting firms. The member firms of RSM International collaborate to provide services to global clients, but are separate and distinct legal entities that cannot obligate each other. Each member firm is responsible only for its own acts and omissions, and not those of any other party. Visit rsmus.com/aboutus for more information regarding RSM US LLP and RSM International.

RSM® and the RSM logo are registered trademarks of RSM International Association. *The power of being understood®* is a registered trademark of RSM US LLP.

© 2022 RSM US LLP. All Rights Reserved.

