DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

Board of Directors

Audit and Risk Committee

October 26, 2023

9:30 a.m.

Microsoft Teams Meeting

Join on your computer or mobile app
[Click here to join the meeting](#)
Meeting ID: 284 940 261 491
Passcode: 2Me2r6
Or call in (audio only)
+1 202-753-6714,,235667966#
Phone Conference ID: 235 667 966#

1. **Call to Order**……………………………………………. ....Floyd Holt, Chairperson

2. **Roll Call**………………………………………… .... Michelle Rhodd, Board Secretary

3. **Enterprise Risk Management Briefing**............................ .. Francis Cooper, Director EPMO

4. **Internal Audit Update**………..…………………. .... RSM Internal Audit
   A. FY 2023 Internal Audit Plan Status Update
   B. Status Update on Prior Audit Findings
   C. Business Continuity Assessment
   D. Fleet Management Audit
   E. Hotline Update
   F. Risk Assessment Results & Proposed FY24 Audit Plan

5. **Executive Session*** …………………………………........................Floyd Holt, Chairperson

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.

DC Water Enterprise Risk Management Briefing

Audit & Risk Committee Meeting

October 26, 2023

Today's Objectives

1 | Review **the value** in advancing risk and policy management

2 | Highlight **outcomes and accomplishments** from this effort

3 | Discuss **what is ahead** for the ERM program

2

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.

dc water is life®

Standardization & Collaboration

- **Standardized** risk and policy management processes to enable consistency and an enterprise view
- Integrated view for greater transparency and successful **collaboration** across clusters

Accountability

- Established **governance, roles, and responsibilities** across forums
- Assigned **ownership** and clear expectations across stakeholders
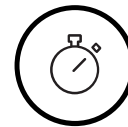
Efficiency

- Streamlined **processes with designated timelines** and governance to drive tasks forward
- Proactive **risk-informed decisions** and minimized risk of **duplicative policies**

Visibility & Alignment

- **Visibility and alignment** on the organization's top risks and risk trending
- Easier **navigation of existing policies** and better understanding of potential gaps

3

Outcomes and Phase 2 Focus

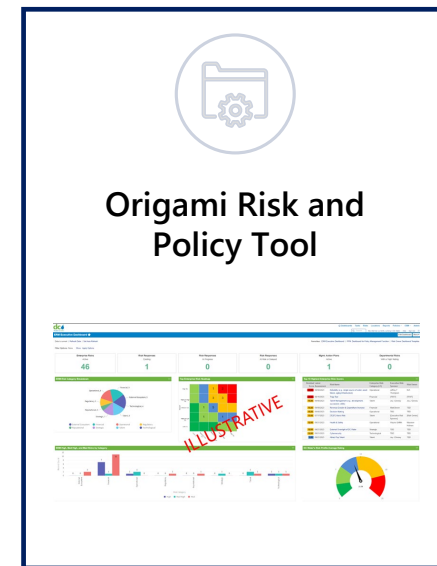During Phase 1 that was completed in April 2022, DC Water focused on building the foundational elements of Enterprise Risk and Policy Management programs. In Phase 2, DC Water built upon these frameworks through facilitating trainings, conducting risk deep dives, and implementing the Origami tool.

Training

Risk Deep Dive Pilots

Origami Risk and Policy Tool
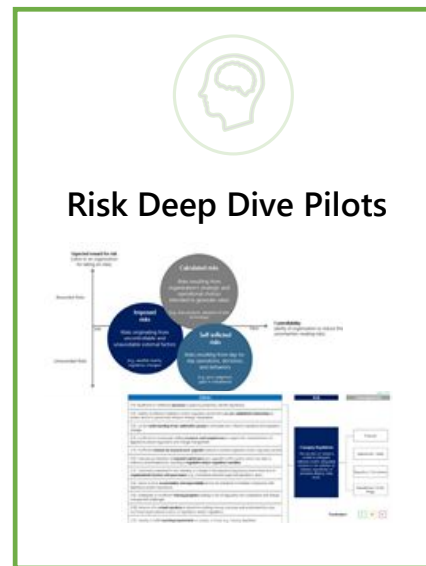
Outcomes:

- *Self-led, intro training for employees*
- *Two trainings for Senior Leaders*
- *Board ERM training session*

- *For the pilot deep dives (Revenue Erosion & Expenditure Increase; New & Changing Regulations):*
  - *Prioritized list of risk drivers*
  - *Potential gaps in risk responses*
  - *Key risk indicators (KRIs) to consider*

- *Documented requirements*
- *Configured and implemented risk and policy modules*
- *User training guides*

4

Training | Outcomes

ERM 101

July 2023

Virtual, Self-led

Included in mandatory compliance suite

ERM 201

August 16, 2023

Facilitated

140 attendees

ERM 202

September 22, 2023

Facilitated

126 attendees

Board

October 5, 2023

Facilitated

Full Board of Directors

Outcomes and Accomplishments

Provided an **introductory risk understanding** for employees across the Authority

Fostered a **risk-aware culture** across Senior Leaders (Grade 17 and above) through facilitation of ERM 201 to introduce the ERM process

Built upon foundational understanding of ERM through facilitation of ERM 202 training across Senior Leaders

Highlighted DC Water's current ERM processes with the **Board** and discussed **their role** in risk management

Next Steps

Engage stakeholders to advance ERM maturity and overall risk awareness

Business to engage with ERM team to proactively identify and escalate risks

Embed a risk perspective into daily operations and ongoing decision-making

5

Risk Deep Dive Pilots | Outcomes

Risk deep dives were conducted for two enterprise risks: 1. Revenue Erosion & Expenditure Increase and 2. Changing Regulations. The deep dive process provokes and facilitates conversations among management to allow for better understanding, awareness, and communication around the risk topic and supports development of risk responses.

Revenue Erosion & Expenditure Increase

New and Changing Regulations

Bow-tie analysis framework

*Reference illustrative risk dashboard in appendix

Risk Drivers to Address

The below risk drivers were identified as the **highest priority** when considering which we are controlling the least and where are we the most vulnerable.

1. Non-revenue water loss
2. Asset prioritization
3. O&M spending and capital costs
4. Resources and competencies
5. Third party management
6. Stakeholder relationships
7. Imposed regulations (e.g., PFAs)

Drivers with current focus for additional risk response

Next Steps

Update risk deep dive process and ERM playbook based on lessons learned from pilots

Initiate and facilitate additional deep dives for remaining top enterprise risks

Analyze deep dive outputs to identify enterprise risk and risk driver correlations

6

Origami Risk and Policy Tool | Outcomes

Risk Module

Policy Management Module
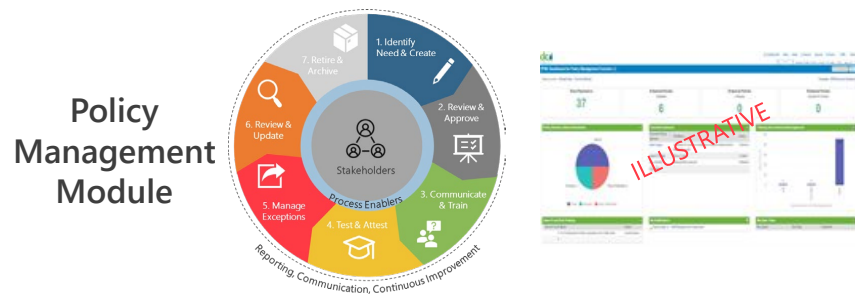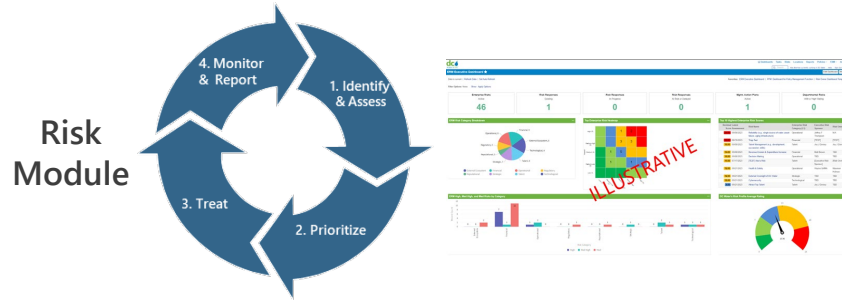
Outcomes and Accomplishments

Aligned risk and policy modules with current **processes** and frameworks

Customized **Executive and Risk Owner dashboards** to allow for meaningful analysis and visualization

Risk module to provide **timely identification** of risks and **visibility into risk response** activities and management action plans

Policy module to manage **policy revisions and reviews** and serve as a **repository for Board resolutions**

Next Steps

Promote tool adoption through active communication and training

Gather and input risk and policy data; Explore additional automation opportunities (e.g., KRIs)

Develop a broader strategy to integrate existing risk management practices across the Authority

7

What's ahead for the ERM program

Building A Risk-Aware Culture

- Engage stakeholders across the organization to advance **ERM maturity** and overall **risk awareness.**
- Initiate **change management** efforts and support the business in making **risk-informed** decisions.

Risk Response & Monitoring

- Assign **ownership for the piloted deep dive risks** to drive accountability.
- Initiate implementation of **risk responses** to reduce risk exposure.
- Establish **thresholds** and **gather data** to monitor KRIs and report on the trending of the risks.

Align Existing Risk Processes to Prepare for Bottom-Up Risk Assessment

- Coordinate with existing risk processes throughout the Authority to **align with enterprise risk framework.**
- Refine risk processes (e.g., risk assessment criteria) to prepare for a bottom-up risk assessment.
- Revise **Origami functionality** as necessary to align with other functions' existing risk processes.

Integration with Strategic Planning

- Integrate risk discussions within **existing strategic planning and budgeting activities** through scenario planning and/or table-top exercises.
- Develop a watchlist of potential and emerging **risks and opportunities** related to the Strategic Plan.

8

Appendix

Your Role in Enterprise Risk Management

Based on feedback received during the October 5th Board training, ERM is prioritized and viewed as a critical component in DC Water's successful ability to achieve its strategic imperatives. As a member of the SET, you play a key role in this effort.

Audit & Risk Committee of the Board

Senior Executive Team

What are SET responsibilities regarding ERM?

Enterprise Risk Management Committee (PLT)

Enterprise Risk Management

Key

Collaborates

Risk updates & feedback
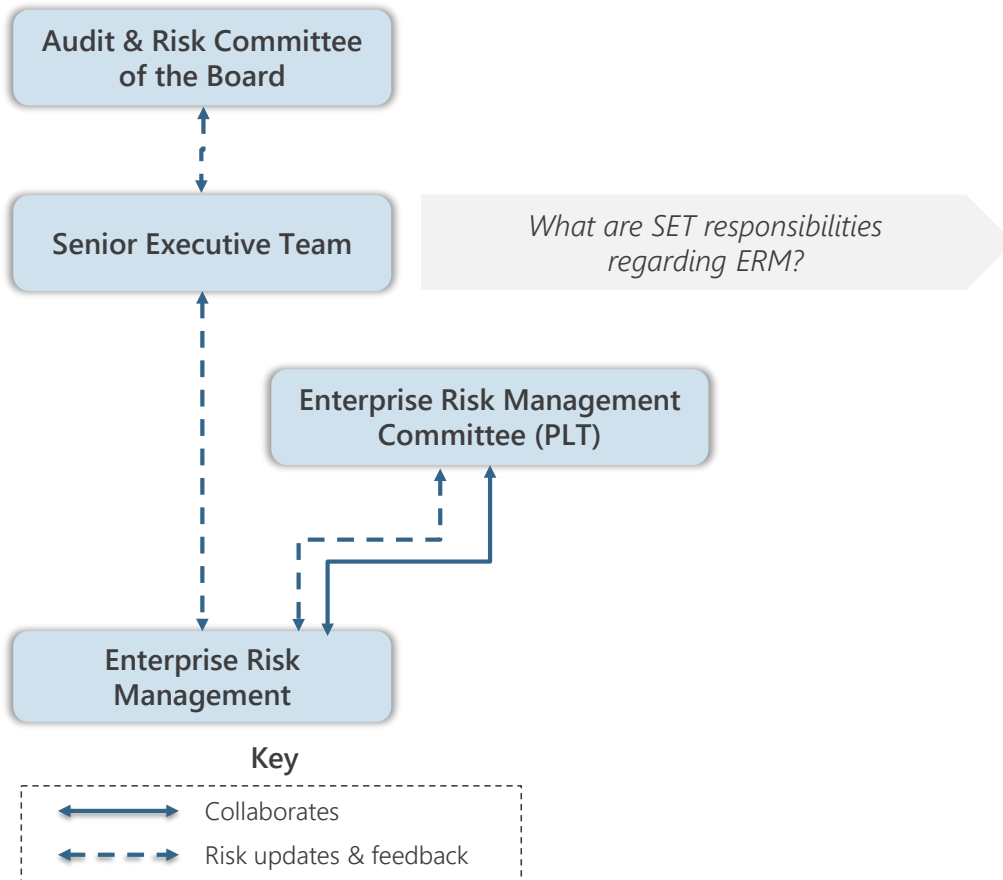
General SET Responsibilities

- Maintain risk management **accountability and oversight** of ERM Program activities
- Enable **linkage of risk management with strategic initiatives** and business decisions
- Ensure management **ownership and prioritization of resources** to address enterprise risks
- Provide input on **Origami risk reports** and feedback on risk information received

Role of an Executive Risk Sponsor

- Members of the SET will be an **Executive Risk Sponsor** for top identified enterprise risks to ensure **accountability**
- Serve as **Point of Contact for facilitated deep dives**
- Appoint **Risk Owners** (at the ERMC/PLT level) to manage day-to-day activities and own the enterprise risk

10

2022 Enterprise Risk Assessment Results

DC Water Top Enterprise Risks & Risk Statements

Risk	Risk Statement
★ 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.
★ New and Changing Regulations	The risk that DC Water is unable to anticipate, influence and/or adequately respond to legislations and/or regulations (federal, state, local).
★ 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 Increase	The risk of potential inefficiencies in internal processes and resource prioritization and/or unfavorable external factors (e.g., increasing costs, continued water loss) may lead to revenue erosion.
★ 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	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.

★ Tier 1 Enterprise Risk   ★ Tier 2 Enterprise Risk

This document is intended solely for the information and internal use of DC Water and should not be used or relied upon by any other person or entity.

12

Summary of Top Enterprise Risks – Tier 1

Scale to rate Impact and Vulnerability:

| Low | Med.-Low | Medium | Med.-High | High |

dc water is life®

Risk Statement	Risk Drivers and Considerations	What We Heard	Rating
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.*	• **Reliance on single water source**, which DC Water does not own • High cost to **replace aging infrastructure** • Potential for **asset failure**	*"We only have a 24–36-hour water supply if something happens on the Potomac."* *"I worry about asset failure."*	High — Impact Med.-High — Vulnerability
Revenue Erosion & Expenditure Increase *The risk of potential inefficiencies in internal processes and resource prioritization and/or unfavorable external factors (e.g., increasing costs, continued water loss) may lead to revenue erosion.*	• **~1% annual decrease in water consumption**, likely due to conservation efforts • **Mandated** capital improvement projects • **Late fees paused** due to COVID-19 • Global **supply chain and inflation** effects on costs	*"With the rise in cost of materials and supplies, either we ask more from rate payers, or have to do fewer capital projects."*	Med.-High — Impact Med.-High — Vulnerability
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.*	• Impact of contractors on ability to **develop in-house skills** • Institutional knowledge **not shared consistently** • **Key person risk** / single point of failure • **Scarcity of niche talent** needs • **Lack of performance plans** for unionized workforce	*"We have an aging skills profile based on what the organization needed 25 years ago, but as we build new capabilities, we need people with new sets of skills."*	Med.-High — Impact Med.-High — Vulnerability

13

Summary of Top Enterprise Risks – Tier 1 (cont.)

Scale to rate Impact and Vulnerability:

| Low | Med.-Low | Medium | Med.-High | High |

Risk Statement	Risk Drivers and Considerations	What We Heard	Rating
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.*	• DC Water historically had a **siloed culture** • Focus on meeting regulatory requirements may **delay funding** for other **infrastructure projects**	*"Without all the necessary information, we manage risk by being overly conservative, which is expensive."*	Med.-High **Impact** Med.-High **Vulnerability**
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.*	• Coordination with other **utilities and agencies** • **Managing customers' expectations** as a non-profit • 70% of DC Water workforce is **unionized** • **Operational incident**, caused by DC Water or not • **Public perception management** of projects and products	*"We need to collaborate with other utilities and agencies to fix issues, but if they don't want to play ball, then we are stuck."*	Med. **Impact** Med. **Vulnerability**
New and Changing Regulations *The risk that DC Water is unable to anticipate, influence and/or adequately respond to legislations and/or regulations (federal, state, local).*	• Potential federal or local **regulatory changes'** affect on water standards could have a financial impact • Relative **ease to pass local legislation** in DC • **Federal mandates** for programs (e.g., Clean Rivers)	*"We don't think enough about how we will work to meet future regulatory requirements."*	Med. **Impact** Med. **Vulnerability**

14

Summary of Top Enterprise Risks – Tier 2

Scale to rate Impact and Vulnerability:

Low | Med.-Low | Medium | Med.-High | High

dc water is life®

Risk Statement	Risk Drivers and Considerations	What We Heard	Rating
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.*	• Status as **critical infrastructure provider** for U.S. capital • Evolving and increasingly **complex nature of cyber threats**	*"Cyber is always going to be a risk, especially as threats become more complex and prevalent."*	Med.-High **Impact** Med. **Vulnerability**
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.*	• Increased DC **government scrutiny** of DC Water and its rates (e.g., Office of People's Counsel) • **Reallocation of resources** to meet demand of DC governmental requests for meetings & inquiries • Potential **impacts to credit and bond ratings** due to increased oversight / scrutiny from regulators	*"Increased government oversight and interaction has forced us to dedicate resources to appease meetings and inquiries"*	Med.-High **Impact** Med. **Vulnerability**
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.*	• Lack of comprehensive **safety assessment** • **Lack of accountability** at frontline level • No systematic process to **measure changes in safety culture**	*"We don't have a great safety culture or tools to measure it. We've come a long way in the past three years, but we have a long way to go."*	Med.-High **Impact** Med. **Vulnerability**
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.*	• Water purchase contract with Washington Aqueduct **expires in 2023** and has been in place since the 1990s • DC Water is the Aqueduct's **primary customer** but **relies solely** on it for its water supply	*"Even though we don't operate the Washington Aqueduct, the public would probably blame us if something failed."*	Med. **Impact** Med. **Vulnerability**

15

Summary of Top Enterprise Risks – Tier 2 (cont.)

Scale to rate Impact and Vulnerability:

Low | Med.-Low | Medium | Med.-High | High

dc water is life®

Risk Statement	Risk Drivers and Considerations	What We Heard	Rating
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.*	• **Climate change** and weather-related events (e.g., floods) • **Infrastructure failure** (e.g., Blue Plains) • Multiple risks **materializing concurrently**	*"We should be planning for two or more unknowns at the same time, like Japan when it had a tsunami and nuclear reactor go down in the same event."*	Med. **Impact** Med. **Vulnerability**
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.*	• **Competition for talent**, especially in evolving, post-COVID labor market • Requirements to **source talent from DC area** • Difficulty bringing **institutional knowledge in-house**	*"One of the biggest risks we have is that we are too lean. We can't hire enough people."* *"The availability of qualified people is not there."*	Med. **Impact** Med. **Vulnerability**
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.*	• Balance of what is developed **in-house vs. outsourced** • **Reliance on third parties** for critical parts of business • Third parties may be **unable to meet obligations**	*"We don't have a dashboard to monitor vendor performance."*	Med. **Impact** Med.-Low **Vulnerability**

16

Risk Deep Dive Output

Revenue Erosion & Expenditure Increase Deep Dive | High Priority Risk Drivers

High Priority Drivers

[1.1]. Difficulties detecting issues in **customer billing** due to internal capacity limitations and/or insufficient systems/technology (e.g., illegal meter connections, new meter installations, large meter accessibility)

[1.4]. **Utilization of third parties** and opportunity to re-evaluate the existing operating model to assess potential duplication of efforts and current uses for external parties

[1.2]. Opportunity to **minimize water loss** by addressing leakages in infrastructure and implementing water shut-offs as necessary

[2.1]. Impact of federally/EPA **mandated capital improvement plan (CIP) programs** on debt service from capital costs without proper federal funding to align with mandated needs

[1.3]. Management and prioritization of unplanned **O&M spending** (i.e., increasing asset maintenance expenses) and **rising capital costs** (i.e., Clean Rivers)

[2.2]. **Supply chain disruptions** and use of **single sourced** materials leading to raw material shortages and increasing the cost of chemicals required to treat wastewater

Note: The numbering of risk drivers signifies the root cause of the driver.

1 – Self-Inflicted
2 – Imposed
3 – Calculated

Ex: Driver [1.2] was the second driver discussed under self-inflicted category.

Note: Drivers were prioritized through 1:1 sessions and a group workshop

18

New and Changing Regulations Deep Dive | High Priority Risk Drivers

High Priority Drivers	
[1.2]. Inability to influence legislative and/or regulatory actions through **pre-established relationships**	[2.1]. Increasing legislations and/or regulations, both **federal, state, and local** (e.g., Environmental Protection Agency (EPA), Department of Energy & Environment (DOEE))
[1.4]. Limited staffing **resources and competencies** to support the implementation of legislations and/or regulations and change management	[2.2]. **PFAS regulations** limiting the ability to sell Bloom and potential public scrutiny, regulatory violations, and tort claims resulting from biosolid product recycling
[1.6]. **Prioritization of required maintenance and upgrades** to the system, which may lead to extensive asset breakdowns, resulting in legislative and/or regulatory mandates	

Note: The numbering of risk drivers signifies the root cause of the driver.
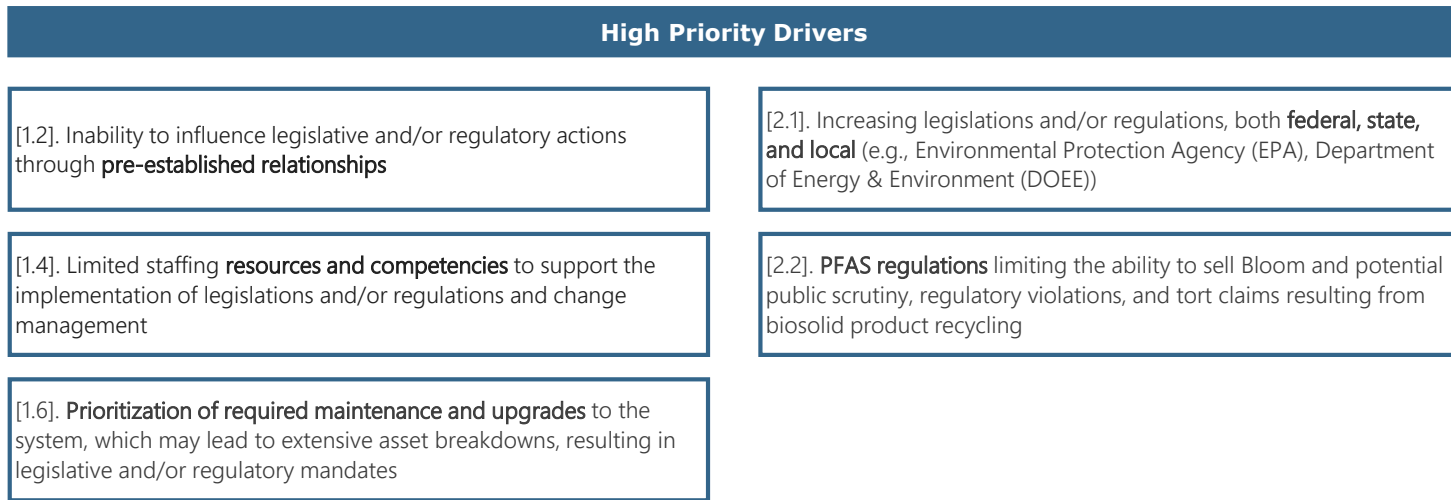
1 – Self-Inflicted
2 – Imposed
3 – Calculated

Ex: Driver [1.2] was the second driver discussed under self-inflicted category.

Note: Drivers were prioritized through 1:1 sessions and a group workshop

19

Illustrative Risk Summary Dashboard

ILLUSTRATIVE

RISK: NEW AND CHANGING REGULATIONS		RISK DRIVERS	SELECT KEY RISK METRICS	ACTUAL	TARGET	TREND
IMPACT	Med./High	[2.3] **PFAS regulations** limiting the ability to sell Bloom and potential public scrutiny, regulatory violations, and tort claims resulting from biosolid product recycling	A. Number of **enacted regulations** with medium/high effect on DC Water [2.1] [2.3] B. Number of **proposed legislations** with medium/high effect on DC Water [2.1] [2.3]		TBD	
VULNERABILITY	Med./High					
TREND	TBD	[2.1] Increasing legislations and/or regulations, both **federal, state, and local** (e.g., Environmental Protection Agency, Department of Energy & Environment)	C. Number of regulatory **violation notices received** (at local, regional, and/or federal level) [2.1] [2.3] D. Number of regulatory violation notices **settled or enforced with/without monetary penalties or other adverse actions** annually [1.2] [2.1] [2.3] E. Number of **outstanding noncompliance matters**/violations that are behind on resolution and/or expected to be behind on resolution [1.6] [2.1] [2.3]		TBD	
RISK OWNER						
TBD						
EXECUTIVE RISK SPONSOR		[1.6] **Prioritization of required maintenance and upgrades** to the system, which may lead to extensive asset breakdowns, resulting in legislative and/or regulatory mandates	F. Number of assets (and or %) of **assets that are overdue** (x days) for maintenance or replacement [1.6]*		TBD	
Jeffrey Thompson						
RISK MANAGEMENT STATUS		[1.4] Limited staffing **resources and competencies** to support the implementation of legislations and/or regulations and change management	G. Number of **compliance reporting obligations and percentage of delays in reporting** [1.4] [1.6] [2.1]		TBD	
TBD						
A&RC PRESENTATION DATE		[1.2] Inability to influence legislative and/or regulatory actions through **pre-established relationships**	H. Year over year change in **regulatory/legislative stakeholder relationship** health map [1.2] [1.4]		TBD	
TBD						

RISK DESCRIPTION	SELECT RISK RESPONSE ACTIVITIES*	OWNER	DUE	STATUS	RECENT PROGRESS	ADDITIONAL CHALLENGES
The risk that DC Water is unable to anticipate, influence and/or adequately respond to legislations and/or regulations (federal, state, local).	• Public outreach regarding alternative to recycling biosolids [2.3]					
	• OLA tracks District Reg development and sends email updates [2.1]					
	• Robust asset maintenance in place at Blue Plains Treatment Plant [1.6]					
	• Processes in place to address staffing needs [1.4]					
	• FTEs within Government & Legal Affairs team focusing on DC reg development and interacting with some EPA departments [1.2]					

Trend Options:
Change in risk exposure since last report (Increased, Decreased, Unchanged): ⬆ ⬇ ⬌

Status Options   🟢 On Track   🟡 At Risk   🔴 Delayed   *Information gathered through review of DC Water documentation and stakeholder interviews*

This document is intended solely for the information and internal use of DC Water and should not be used or relied upon by any other person or entity.

20

DC WATER

Audit & Risk Committee Meeting

October 2023

RSM

Agenda

- FY 2023 Internal Audit Plan Status Update

- Status Update on Prior Audit Findings

- Report on Completed Audits
  - Business Continuity Assessment
  - Fleet Management Audit

- Hotline Update

- Risk Assessment Results & Proposed FY24 Audit Plan

2

RSM

AUDIT PLAN STATUS UPDATE

RSM

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	**Report Complete**
Fleet Management Audit	**Report Complete**
FY2024 Risk Assessment	**Report Complete**
Remediation & Follow Up	On-going
Hotline Management	On-going

RSM

4

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 Wifi***													
▶ **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

5

RSM

PRIOR AUDIT FINDINGS – FOLLOW UP STATUS

RSM

Open High Risk Prior Audit Findings

	Audit FY	Issue Date	Audit Report	High Risk Open Finding	Original Target Date	New Target Date	# Extensions
1	2023	7/27/2023	**DWO Work Order Management Audit**	**Failure to capture work order labor and materials data**	8/31/24	N/A	0
				In Q4 FY23 DWO is evaluating work activities that require material data capturing, developing business processes for labor hour data capture, and developing business processes for material data capture. After establishing the business processes, DWO will begin monitoring data integrity biweekly to monitor effectiveness of new process adoption. Specific milestone dates have been provided to Internal Audit.			

Legend	
	Past due
	Original target date has not yet come due

7

RSM

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	7	0
Entity Level Review	10/26/2017	7	0	6	1
Integrated Work Order Management Audit	1/24/2019	10	0	10	0
Fleet Management Review	1/24/2019	3	0	3	0
Occupational Safety and Health	4/25/2019	4	0	3	1
Customer Billing and Collections Audit	10/22/2020	3	0	3	0
Contract Compliance Audit	7/22/2021	3	1	2	0
Total		**37**	**1**	**33**	**2**

FY16 – FY21 Prior Audit Findings Status
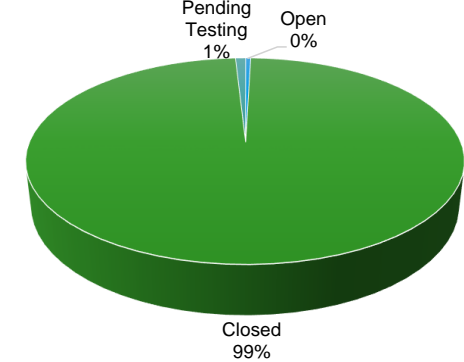
Pending Testing 1%
Open 0%
Closed 99%

[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.

8

Color Key	
	At least 1 original remediation target date has been extended

RSM

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**
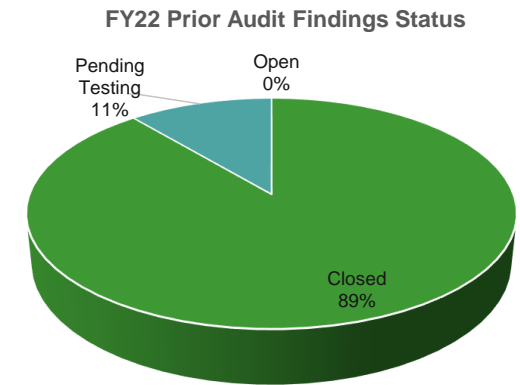
FY22 Prior Audit Findings Status

Pending Testing 11%

Open 0%

Closed 89%

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, 98% of all prior audit findings from FY16 – FY22 are closed. Management's target closure rate is 95%.

Internal Audit will begin reporting out on the status of FY23 prior audit findings next quarter.

9

RSM

Follow-up Summary

- For FY16 – FY22 prior audit findings:
  - At the start of FY23 (October 2022), there were:
    - 22 open audit items
    - 219 closed audit items
    - 4 pending testing
  - As of October 2023, there are:
    - 1 open audit item
    - 235 closed audit items
    - 4 pending testing
- In total, 98% of all prior audit findings from FY16 – FY21 are closed
  - 16 audit items were closed in FY23

FY16 - FY22 Follow-Up Progress

Legend: Open — Closed — Pending Testing

10

RSM
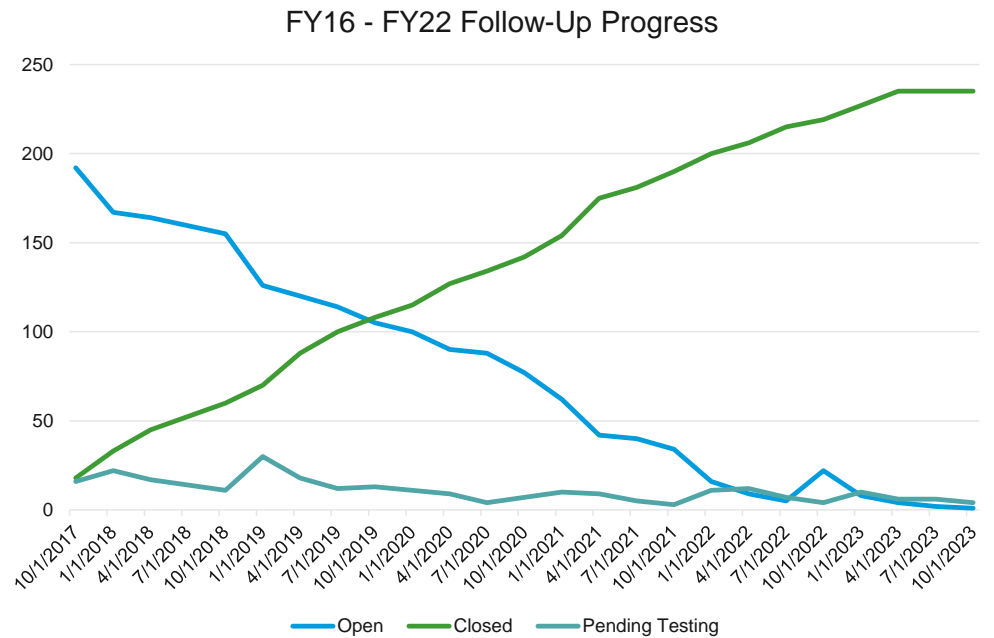
Time to closure by fiscal year

The below graphs illustrate the average number of quarters from audit finding issuance to audit finding closure year-over-year as of October 2023. Management has made significant improvements to achieve timelier audit finding closure as illustrated by the continued decline in time to close since FY19.

Internal Audit follow up remediation
FY18 – FY22
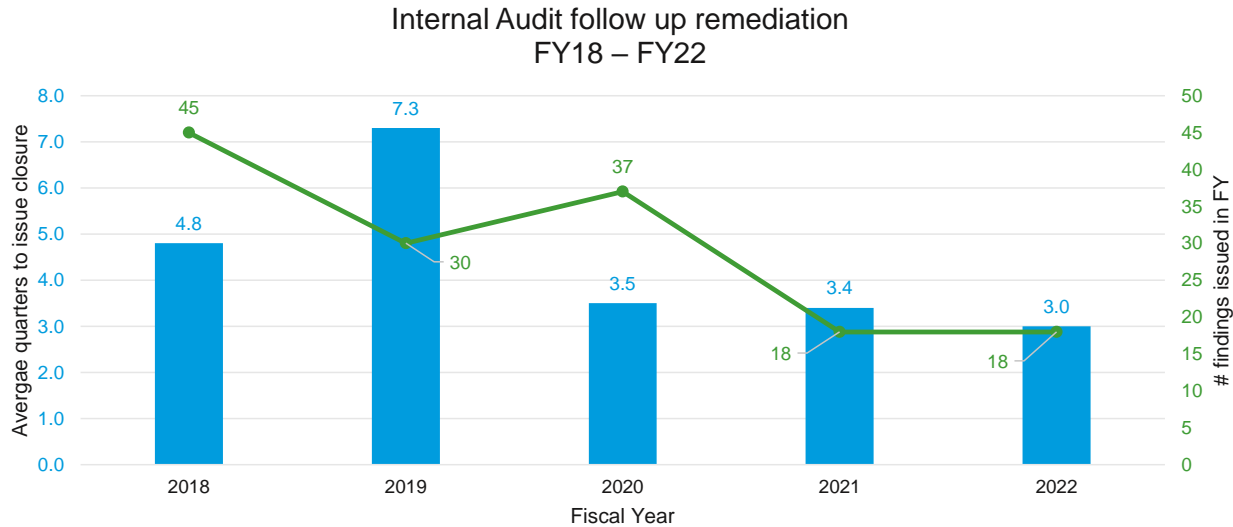
Note: The reports driving the higher FY19 finding closure rate are related to the Purchase card policy and the Safety policies. The Purchase Card policy update was put on hold during Covid due to the decline in PCard/TCard spending and competing Procurement priorities. Safety findings were issued in 2019 with an original target date of March 2020 which was delayed due to other Safety Covid priorities. Safety policy issue closure is dependent upon Union review.

11

RSM

BUSINESS CONTINUITY ASSESSMENT

RSM

Business Continuity Assessment

Purpose

The purpose of this assessment was to analyze the telework procedures for the Customer Care team, identify effective telework best practices, areas of improvement and impacts to existing Continuity of Operations (COOP) planning.

Scope

Specific objectives of the assessment included:
- Provide recommendations on existing telework policies, procedures, and related planning documentation.
- Provide the framework for additional telework policies and/or procedures as needed.
- Provide content recommendations for management training on telework practices.

Internal Audit provided management with recommendations prioritized across involved stakeholder departments (Emergency Management, Information Technology, and Customer Care).

13

RSM

Business Continuity Assessment

Background

DC Water has a formal COOP plan that supports the DCW Emergency Operations Plan and is in alignment with the guidelines outlined in multiple Homeland Security Presidential Directives (HSPD-5, HSPD-7, HSPD-9) pertaining to the National Incident Management System (NIMS) and Incident Command Structure (ICS). Additionally, the DCW Emergency Management Department adheres to the mitigation, planning, response, recovery, and restoration protocols and procedures by DC Homeland Security and Emergency Management Agency (DC HSEMA).

Approach

Assessment activities included:

• Review the existing telework policies, procedures, and related planning documentation (e.g., COOP plan).

• Meet with key stakeholders as needed to clarify current telework activities and discuss considerations of the following:

   o Telework successes during and following COVID-19

   o Existing and new Memoranda of Understanding (MOUs)

   o "What if" scenarios that may impact staff (locally, regionally) capability and ability to continue working.

14

RSM

FLEET MANAGEMENT AUDIT

RSM

Fleet Management Audit

Purpose

The purpose of this review was to assess fleet management processes to determine whether the system of internal controls is adequate and appropriate for promoting and encouraging the achievement of management's objectives. The audit period was 7/1/2022 through 6/30/2023.

Scope

The audit scope was based upon the following objectives:

- Conducting interviews with key personnel
- Reviewing relevant contracting documents and draft policy documentation to gain an understanding of the current process
- Assessing the design and operating effectiveness of key internal controls:
  - Vehicle acquisition and disposal
  - Permitting and insurance documentation for fleet vehicles
  - Training and licensing of personnel utilizing fleet vehicles
- Reviewing contract oversight processes related to the newly executed First Vehicle Services, Inc. Contract
- Performing analysis over KPI reporting, vehicle utilization and repair/maintenance costs

16

RSM

Fleet Management Audit (continued)

Background

Fleet Management is responsible for the supply of vehicle parts and materials, fleet management, maintenance, repair and operational services for DC Water. In FY23, the Fleet department outsourced its responsibility for maintenance and repair of Authority fleet and equipment to First Vehicle Services, Inc. The Fleet Headquarters for maintenance activities was relocated to Capitol Heights, Maryland during FY23. This transition was a result of extensive planning and provides the department with expanded facilities and capabilities for maintaining the Authority's fleet.

The Authority's fleet is comprised of over 560 vehicles and 800 pieces of utility equipment. The graph below shows the average age of active units versus the average age of disposed units for a Fleet type. The average disposal age of a unit type represents the timeframe in which the Authority can reasonably assume a unit will become obsolete and require disposal/replacement.

Average Age of Unit Types (Active and Disposed) as of 9/27/2023
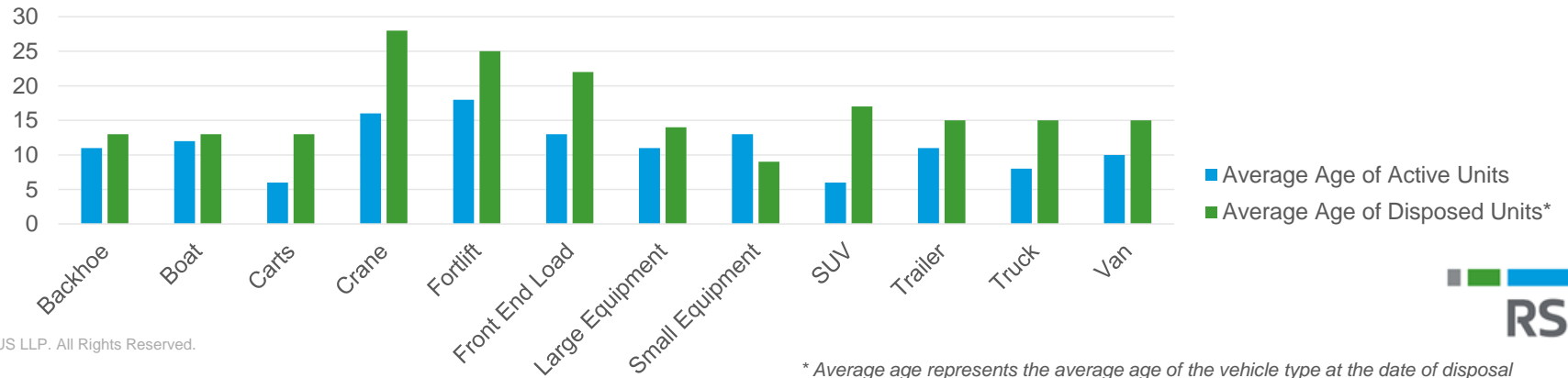
Average age represents the average age of the vehicle type at the date of disposal

17

Fleet Management Audit (continued)

Observations	Risk Rating
1. Lack of current policies and procedures	High

Management Action Plan:

DCW Fleet Management has existing, outdated policies and procedures that need review for relevance and application. The repository for policies and procedures are not publicly shared and will need to be uploaded to Share Point once revised and vetted. This task has not been previously assigned to any staff member and Fleet may leverage outside consultant support for the documentation, to vet newer practices and incorporate utility industry standards.

Fleet is engaged in a Maturity Model exercise which is designed to identify key business processes and sub processes. This exercise will generate defined roles, persons responsible, intended outcomes, operating procedures, and for some company policies. The work has been assigned to each DCW Fleet employee who is responsible for documenting the tasks in a consistent and coherent format to include a RACI analysis, risk factors and any company wide policies that are necessary to implement specific to that operation. It is important to note that the policies and procedures will be aligned to the Blueprint 2.0 imperatives and the goals of the Fleet department.

Considering that DCW Fleet is in a new relationship with a repair and maintenance contractor, several tasks and responsibilities have been shifted that will need documenting. For example, compliance documentation, inventory and parts are now being managed in a different way that will require newly documented procedures.

Responsible Party: Fleet Director, Fleet Data Management Analyst, and Executive Assistant

Target Date: 9/1/2024

18

One additional moderate risk and four low risk findings are included in the full report.

RSM

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 10/18/2023:

FY 23 Hotline Call Summary	
FY 23 Calls Received	16
FY 23 Cases Closed	15
FY 23 Calls Open	1
FY 23 Open Call Breakdown	
Open Fraud Claims:	
Time Theft	*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	16
Action Taken	0	2	7	7	2	0	1	0	0	2	2

20

RSM

RISK ASSESSMENT & AUDIT PLAN

21

RSM

Risk Assessment approach

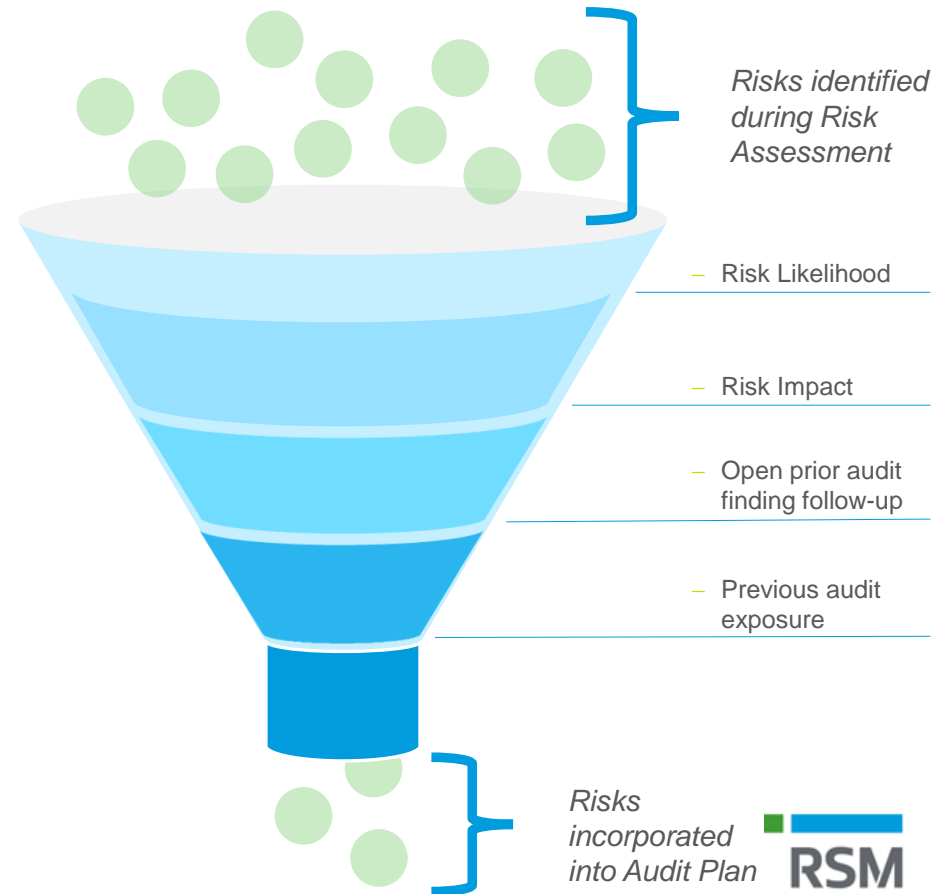**Internal Audit conducted a Risk Assessment, considering the following:**

- Interviewed various members of management and the Audit Committee
- Distributed a survey to 36 members of management
- Distributed an anonymous survey to all Board members
- Revisited risks identified in prior year audits
- Considered current DC Water environment, strategic initiatives and industry trends

Based on the results of the Risk Assessment, Internal Audit performed the following:

- Compiled a risk register of risks identified, rated by impact and likelihood
- Reconciled Internal Audit risk register to management's identified ERM risks
- Considered open prior audit finding follow-up that management is in the process of remediating
- Considered each process' previous audit exposure
- Prioritized risks where internal audit can provide value
- Created an audit plan based on top priority risks for the year
- *Note: Internal Audit is a finite resource – Internal Audit cannot incorporate all risks discussed during Risk Assessment interviews into the Audit Plan. Risks are prioritized based on the factors listed above.*
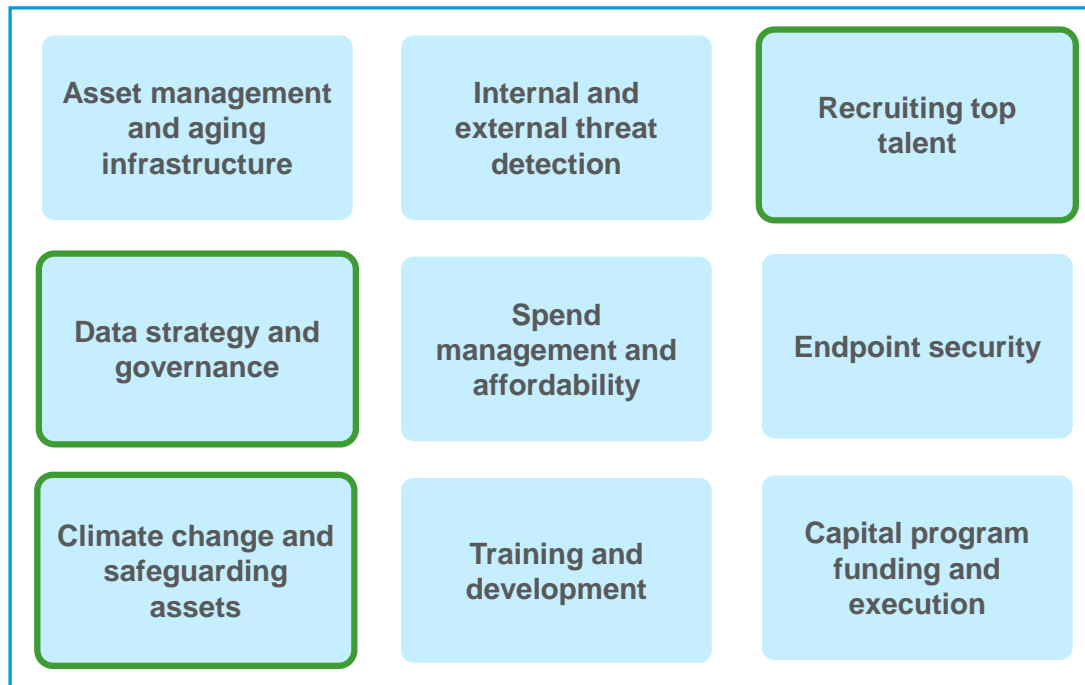
22

Risks identified during Risk Assessment

- Risk Likelihood

- Risk Impact

- Open prior audit finding follow-up

- Previous audit exposure

Risks incorporated into Audit Plan

RSM

43

Risk themes

Below are the top risk themes that emerged during the risk assessment. Risks highlighted in green are new to the top nine this year*.

Asset management and aging infrastructure	Internal and external threat detection	Recruiting top talent
Data strategy and governance	Spend management and affordability	Endpoint security
Climate change and safeguarding assets	Training and development	Capital program funding and execution

*The three risks that dropped out of the top nine from prior year (but are still considered high risks for DC Water) are compliance governance, emergency preparedness and business continuity, and policies and procedures management and governance.

RSM

Survey results

Internal Audit distributed a risk assessment survey to all **Board members**, of which we received 10 responses. The top five **Blueprint 2.0 strategic plan themes** that Board members identified as a priority to DC Water's success in FY24 were the following:

1. Sustainable: Identifying innovative funding and financing
2. Equitable: Providing affordable and equitable rates
3. Healthy, Safe and Well: Delivering world-class, healthy water services
4. Resilience: Securing resilience of water supply
5. Resilience: Securing assets through value-driven asset management and proactive maintenance

Internal Audit distributed a risk assessment survey to 36 members of **DC Water leadership**, of which we received 26 responses. The top four **Blueprint 2.0 strategic plan themes** that leadership identified as a priority to DC Water's success in FY24 were the following:

1. Healthy, Safe and Well: Delivering world-class, healthy water services
2. Equitable: A totally engaged and aligned DC Water
3. Healthy, Safe and Well: A safe DC Water for all, above all else
4. Reliable: Safeguarding a high-performing network of systems and assets

24

RSM

Survey results (continued)

This chart represents where Board members (blue) and Management members (green) identified the highest degree of exposure to the Authority (i.e., could potentially pose a threat or disruption to productivity, effectiveness or achievement of strategic imperatives).
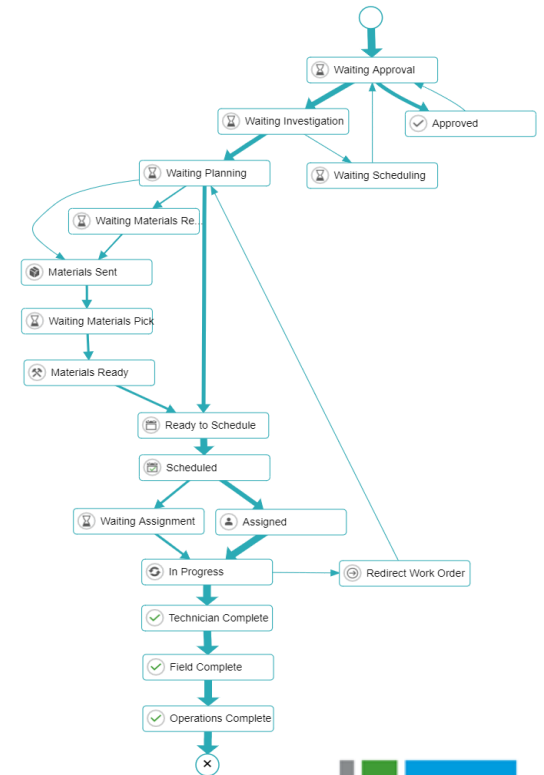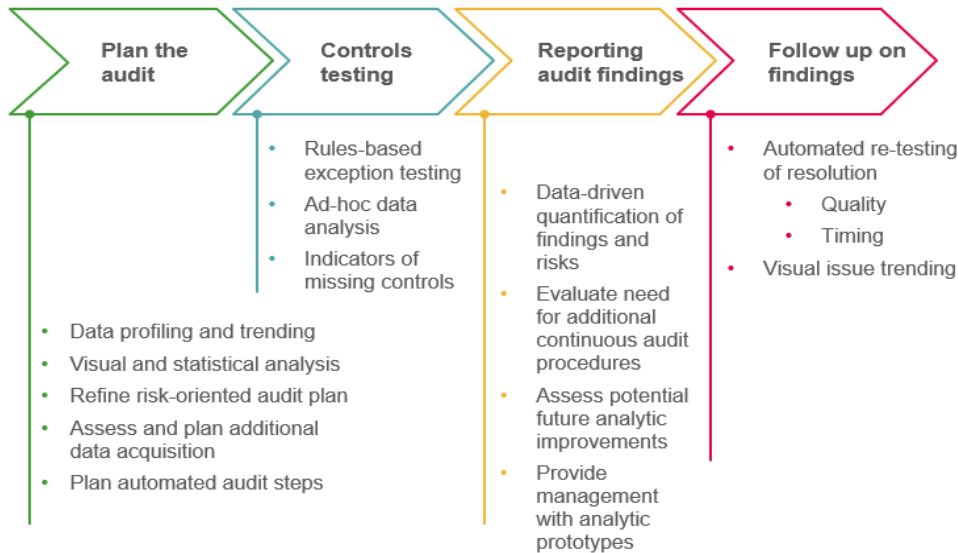
25
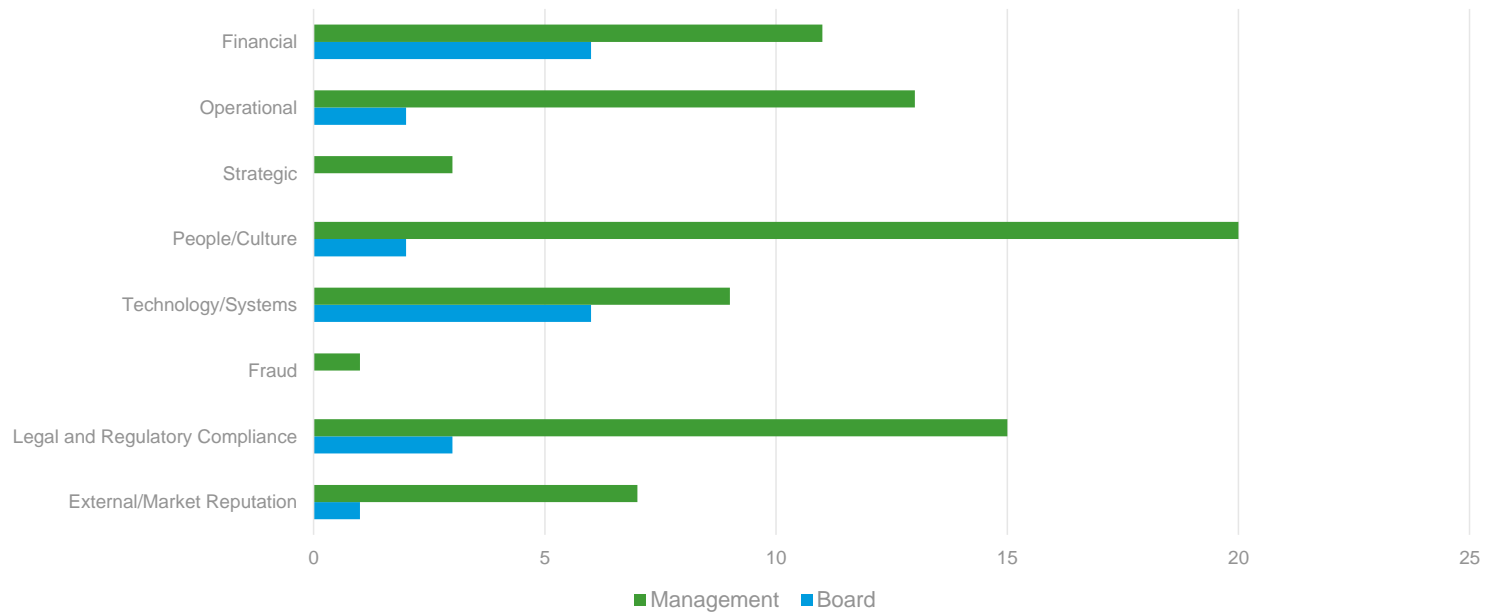
Internal Audit approach

- Project types:
    - **Cycle audits** - Conduct formal reviews of management's controls at a specified frequency based on highly transactional processes that have elevated risk exposure across the industry
    - **Ad hoc audits** - Perform formal reviews of management's control environment over a specific area/process with elevated risk or limited audit exposure
    - **Management assessments** - Leverage Internal Audit's expertise and institutional knowledge to assist in identifying process improvements, best practices, automation opportunities, benchmarking, etc. Assessment results will be delivered to management to help inform future strategic decision-making.

- Approach:
    - For each audit conducted, Internal Audit evaluates the design and operating effectiveness of the internal control environment (draft process flowcharts, establish risk and control matrix, conduct sample-based transactional testing, issue audit report)
    - For management assessments conducted, Internal Audit will review and analyze existing processes and data to identify strategic improvement opportunities for management.

26

RSM
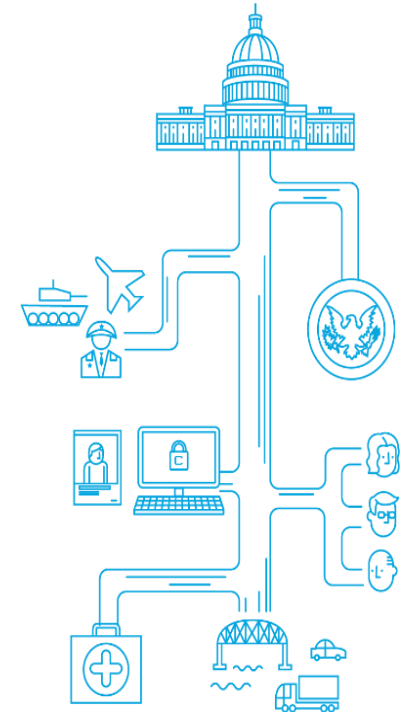
Internal Audit approach (continued)

Internal Audit is committed to developing and deploying innovative solutions to inform scoping and sample selections, facilitate audit fieldwork, highlight business process trends and/or inefficiencies, and identify outliers. Opportunities for incorporation of data analytics into the audit process are below.

Internal Audit has started leveraging process intelligence for select projects. Process intelligence allows Internal Audit to visualize workflow permutations, analyze time and cost to complete, identify time consuming process steps, and determine correlation between transaction variables. The chart on the right illustrates an example macro-level visual of a most common path transaction derived from a large dataset.

Plan the audit

- Data profiling and trending
- Visual and statistical analysis
- Refine risk-oriented audit plan
- Assess and plan additional data acquisition
- Plan automated audit steps

Controls testing

- Rules-based exception testing
- Ad-hoc data analysis
- Indicators of missing controls

Reporting audit findings

- Data-driven quantification of findings and risks
- Evaluate need for additional continuous audit procedures
- Assess potential future analytic improvements
- Provide management with analytic prototypes

Follow up on findings

- Automated re-testing of resolution
  - Quality
  - Timing
- Visual issue trending

27

© 2023 RSM

48

Proposed FY24 Internal Audit Plan

Proposed Project	Cycle Audit	Ad Hoc Audit	Management Assessment
Finance & Procurement			
1. Purchasing Card Audit	X		
2. Contract Compliance Audit	X		
Shared Services			
3. Physical Security Penetration Testing – Fleet Facility	X		
4. Physical Security Penetration Testing – HQO Facility	X		
Ops & Engineering			
5. Work Order Management Audit – Pumping Ops	X		
6. Permit Operations Assessment			X
People & Talent			
7. Training and Recruiting Audit	X		

Proposed Project	Cycle Audit	Ad Hoc Audit	Management Assessment
Information Technology			
8. Mobile Application Penetration Testing	X		
9. Genesys Information Technology General Controls (ITGC) Review		X	
10. Internal and External Network Penetration Testing		X	
Ongoing Activities			
11. Hotline Case Management			
12. Open Action Items - Remediation & Follow Up			
Authority-Wide			
13. FY25 Risk Assessment			

RSM

Proposed FY23 Internal Audit Plan – project justification

Auditable entity	Project justification
Purchasing Card	*Purchasing cards are DC Water's preferred method for micro-purchases that do not have an existing purchase order. The purchasing card program is intended to simplify the buying process and improve cycle time from ordering to receipt, however, if program administration is not properly executed, the program introduces risk of circumventing DC Water's required procurement policies, inappropriately purchasing unapproved goods and services, and exposing the Authority to fraud, waste and abuse.*
Contract Compliance	*To evaluate individual contracts from departments throughout the Authority. Internal Audit will evaluate for compliance with contract terms and conditions, contract monitoring best practices, and invoice payment controls. Internal Audit will look for Authority-wide themes regarding reliance on and engagement with contractors that may emerge consistently in year-over-year reviews.*
Physical Security Penetration Testing – Fleet and HQO	*DC Water maintains a robust physical security program to secure its various offices and water operations, physical intrusion threats remain to be a high risk and area of focus from advisories in WaterISAC and cybersecurity trends. Internal Audit will conduct a physical security penetration and social engineering exercise to determine vulnerabilities at DC Water locations where a threat actor may have the ability to breach the premise. Adequate security controls are important to data security and employee safety.*
Work Order Management – Department of Pumping Operations	*Maximo work orders facilitate maintenance of DC Water assets. The controls surrounding appropriate workflow, data capture, and overall utilization of the system are critical to the Authority's ability to quantify the effectiveness of asset management and execute on data-driven strategic decisions.*

Proposed FY23 Internal Audit Plan – project justification

Auditable entity	Project justification
Permit Operations	*To evaluate the control environment surrounding the public-facing permit processes. All residents, private companies and government agencies must obtain approval from DC Water prior to performing any work that directly or indirectly affects the public water and/or sewer systems. The Permit Operations Department is the starting point for all of DC Water's permit services.*
Training and Recruiting	*Proper training for employees across the Authority allows for everyone to execute their job safely, efficiently, in compliance with regulations and policies, cost-effectively, and plays a role in employee job satisfaction. Internal Audit will review the Authority's training program to confirm that controls are appropriately in place to monitor and enforce training assignment and completion. Additional procedures will be performed to review recruiting processes and controls to determine the effectiveness of identifying and securing talent to fill critical vacancies.*
Mobile Application Penetration Testing	*DC Water recently implemented a custom mobile platform developed by third party contractors for field employees to make updates and retrieve information in real-time from Maximo. Internal Audit will perform a mobile applications penetration testing to simulate an attacker targeting these mobile applications to ensure no security-facing application weaknesses or vulnerabilities are present.*
Genesys Information Technology General Controls (ITGC) Review	*DC Water's call center utilizes the Genesys application which is a cloud-based platform housed within the AWS environment to support call center capabilities. DC Water deployed in September 2023. Internal audit will use this assessment to evaluate the design and effectiveness of the IT General Controls (ITGCs) over the application.*

30

RSM

Proposed FY23 Internal Audit Plan – project justification

Auditable entity

Project justification

Internal and External Network Penetration Testing	*To assess technical vulnerabilities on external and internal assets. External penetration testing mimics an external threat actor trying to gain access to the Authority's network by exploiting externally-facing vulnerabilities (e.g., website, Cloud, etc.), while the internal penetration testing mimics and internal threat actor who already has access to the Authority's network (e.g., disgruntled employee, authenticated vendor, etc.).*

31

RSM

APPENDIX

32

Illustrative 5 Year Audit Plan

Legend:
- Business Process Cycle Audit
- IT Cycle Audit
- Business Process Ad Hoc Audit
- IT Ad Hoc Audit
- Ongoing IA Activity

Year 1	Year 2	Year 3	Year 4	Year 5	Frequency
Shared Services					
Physical Security - Fleet Facility		Physical Security - Blue Plains		Physical Security - Location TBD	every 2 years (rotating locations)
Physical Security - HQO		Physical Security - Bryant Street		Physical Security - Location TBD	every 2 years (rotating locations)
	WOM Facilities				every 1 year (rotating depts - other depts in Engineering & Ops)
	Safety				Ad hoc
Finance & Procurement					
		Payroll & Timekeeping			every 3 years
	Accounts Payable			Accounts Payable	every 3 years
Purchasing Card			Purchasing Card		every 3 years
Contract Compliance	Contract Compliance	Contract Compliance	Contract Compliance	Contract Compliance	every 1 year
	Procurement		Procurement		every 2 years
		Materials Management		Budgeting & Planning	Ad hoc
					Ad hoc
People & Talent					
Training			Training		every 3 years
	Recruiting Alignment Assessment				Ad hoc
		Billing and Collections			every 3 years
Genesys ITGC Review	Data Governance and Reporting Assessment	Cloud Security Scan and Architecture Security Review	Applications Inventory and Mapping Assessment	Records Managmenet Audit	Ad hoc
	API Governance and Security Review		IT Contract Management & Service Provider Assessment		Ad hoc
					Ad hoc
Internal and External Network Pen Testing					
Mobile Application Penetration Testing	SCADA Review	PCS Review	External Wi-Fi Pen Testing	Internal and External Network Pen Testing	every 1 year (rotating systems)
Strategy & Performance					
	Strategic Plan Monitoring				every 3 years
				ESG Management Assessment	Ad hoc
Ops & Engineering					
WOM DPO		WOM DMS	WOM DSO	WOM DWO	every 1 year (rotating departments)
Permit Operations			Construction Design and Asset Management	Business Development Plan Subcontractor A	Ad hoc
Legal Affairs					
		Compliance Monitoring Assessment	Legal Operations Case Management Audit		Ad hoc
Ongoing Internal Audit Activity					
Remediation of Open Findings	Remediation of Open Findings	Remediation of Open Findings	Remediation of Open Findings	Remediation of Open Findings	Ongoing
Hotline Monitoring	Hotline Monitoring	Hotline Monitoring	Hotline Monitoring	Hotline Monitoring	Ongoing
Risk Assessment	Risk Assessment	Risk Assessment	Risk Assessment	Risk Assessment	every 1 year

Prior audits performed

FY 2015

Intellectual Property

SCADA/PCS Review

Procurement Pre-Award Selection Process

Retail Rates Pre-Implementation Monitoring

Engineering - Vendor / Contractor Monitoring & Project Administration - Phase I

Timekeeping

IT Vendor Risk Management / Compliance and Monitoring

Information Security Policy Review

Network Penetration Testing (Corp/SCADA/Wifi)

FY 2016

Blue Horizons - Strategic Monitoring

Contract Monitoring & Compliance Review

Business Development Plan

Customer Billing & Collections

Retail Rates Post-Implementation Monitoring

Training, Certification and Licensing

Engineering - Construction Management Phase 2

Overtime

Annual Budgeting & Planning

Rolling Owner Controlled Insurance Program (ROCIP)

IT Incident Management & Response Review

Enterprise Project Governance Maturity Assessment

FY 2017

Contract Monitoring & Compliance Review

Entity-Level Assessment

Work Order Management (Maintenance Services)

Materials Management - Operations and Inventory

Purchasing Cards (PCard Program)

Automated Meter Reading (AMR) Implementation

MTU Implementation Review

Fleet - Accident and Incident Reporting

Engineering - Construction Management Phase 3

Intermunicipal Agreement

IT Human Resource/Employee Data Privacy Review

Vulnerability Management Review and Platform Technical Audit (Windows/UNIX)

FY 2018

Recruiting, Selection, and On-Boarding

Automated Meter Replacement (AMR) Implementation Progress Update

Office of Emergency Management Review

DB/OS Privileged User

Network Penetration Testing

Affordability Programs

Contract Monitoring & Compliance Review

Crisis Management/Business Continuity

Integrated Work Order Management (DWS, DSS, DDCS)

CIS Post-Implementation Review

Payroll & Timekeeping

Accounts Payable

FY 2019

Permit Operations - Reimbursable Projects

Mail Room Procedures

Fleet Management

Legal Operations

Occupational Safety and Health

Automated Meter Reading Implementation Progress Update

Cloud Security Rapid Assessment

Active Directory Cloud Migration Security Review

Purchasing Card Internal Audit

Severance Assessment

Wifi Security Testing

CIS Application Security Segregation of Duties (SOD) Review

Contractual Services

Asset Management Assessment

Physical Security and Social Engineering

FY 2020

Work Order Planning Assessment

Phase 2: Physical Security Penetration Testing

Facilities Management Audit

Benefits and Compensation Audit

Engineering Change Order Assessment

Industrial Control System (ICS) Review

Customer Billing and Collections Audit

Oracle Embedded Risk Assurance Phase 1

34

RSM

Prior audits performed (continued)

FY 2021
Department of Maintenance Services (DMS) Work Order Management
Remote Workforce Assessment
Succession Planning
Procurement PreAward Selection
Contract Compliance
Materials Management
PCS Review

FY 2022
Contract Compliance
Accounts Payable
Expenditure Analytics Assessment
Work Order Management - DSO
Supply Chain Assessment
Employee Retention Assessment
Strategic Plan Monitoring
Physical Security Audits
Incident Response Tabletop
CTI Program Development

FY 2023
Fleet Management
Business Continuity Assessment (OEM)
Payroll & Timekeeping
Work Order Management - DWO
Contract Compliance – CIP scope
Procurement – CIP scope
Metering, Billing, and Collections
Oracle ITGC Assessment (CM & CO)
Oracle Identity & Access Management Review
Penetration Testing – Wifi

35

Internal Audit project survey results

DC Water's Strategy & Performance team sends out satisfaction surveys following each Internal Audit business process project conducted. Summary results of four of the surveys from FY2023 are below:

- Payroll & Timekeeping:
    - 100% response rate (2 out of 2)
    - All respondents felt that the audit added value and provided meaningful results

- Procurement:
    - 75% response rate (3 out of 4)
    - All respondents felt that the audit added value
    - All respondents stated that the recommendations put forth were relevant and constructive

- Metering, Billing, and Collections:
    - 60% response rate (3 out of 5)
    - 1 respondent felt that the audit added value; 1 respondent was neutral; 1 respondent disagreed
    - 2 respondents stated that the recommendations put forth were relevant and constructive; 1 respondent disagreed

- Work Order Management – DWO:
    - 67% response rate (2 out of 3)
    - Both respondents felt that the audit added value
    - Both respondents felt that the recommendations put forth were relevant and constructive

36

RSM

QUESTIONS
AND ANSWERS

37

RSM US LLP

1250 H St NW
Washington, DC 20005

+1 800 274 3978
www.rsmus.com

DC WATER

Fleet Management Internal Audit

October 2023

Table of Contents

RSM

EXECUTIVE SUMMARY, BACKGROUND AND APPROACH

3

RSM

Executive Summary and Objectives

Objective and Background

The purpose of this review is to assess fleet management processes to determine whether the system of internal controls is adequate and appropriate for promoting and encouraging the achievement of management's objectives. 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 7/1/22 – 6/30/23. The audit scope included the following objectives:

- Conducting interviews with key personnel
- Reviewing relevant contracting documents and draft policy documentation to gain an understanding of the current process
- Assessing the design and operating effectiveness of key internal controls:
  - Vehicle acquisition and disposal
  - Permitting and insurance documentation for fleet vehicles
  - Training and licensing of personnel utilizing fleet vehicles
- Reviewing contract oversight processes related to the newly executed First Vehicle Services, Inc. Contract
- Performing analysis over KPI reporting, vehicle utilization and repair/maintenance costs

  Fieldwork was performed August 2023 through October 2023.

Overall Summary and Highlights

There were six risk-rated observations identified during our audit, which are summarized below:

1. Lack of current policies and procedures
2. Failure to retain DC inspection documentation
3. Inconsistent document retention for vehicle disposals
4. Failure to perform accurate cycle counts
5. Insufficient reporting over Fleet KPIs
6. Manual tracking of employee certifications

These observations are described in the detail observations section on pages 10 through 23 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	1	4

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

4

RSM

Background

Fleet Management ensures DC Water's fleet and equipment are safe and functioning to meet the operational needs of the Authority. Fleet Management is responsible for the supply of vehicle parts and materials, fleet management, maintenance, repair and operational services for DC Water. In FY23, the Fleet department outsourced its responsibility for maintenance and repair of Authority fleet and equipment to First Vehicle Services, Inc.

The Authority's fleet is comprised of over 560 vehicles and 800 pieces of utility equipment. The chart to the right shows a breakdown of unit types within these two categories. To assist in the maintenance and monitoring required of the fleet management process, the Authority uses Fleetwave, a real-time SQL-based fleet management system, and Geotab, a GPS tracking system installed in all vehicles.

The Fleet Headquarters for maintenance activities was relocated to Capitol Heights, Maryland during FY23. This transition was a result of extensive planning and provides the department with expanded facilities and capabilities for maintaining the Authority's fleet.

Fleet Unit Types		Number of Units
Vehicles	Bus	1
	Car	32
	Van	71
	SUV	92
	Truck	423
Utility Equipment	Front End Loader	2
	Mounted Equipment	2
	Crane	3
	Boat	8
	Stationary Equipment	8
	Backhoe	27
	Forklift	29
	Large Equipment	33
	Trailer	54
	Carts	81
	Small Equipment	571

5

RSM

Analysis of Fleet Vehicles

The graph below shows the average age of active units versus the average age of disposed units for a Fleet type. The average disposal age of a unit type represents the timeframe in which the Authority can reasonably assume a unit will become obsolete and require disposal/replacement. Several of the Authority's active units are approaching their average age of disposal (i.e. backhoe, boat, large equipment), with one category already exceeding the average age of disposal (small equipment). Referencing an analysis of this type can assist with planning for the future needs of the Fleet and provide a quick litmus check of unit types that will likely require replacement in the coming years.

Average Age of Unit Types (Active and Disposed) as of 9/27/2023
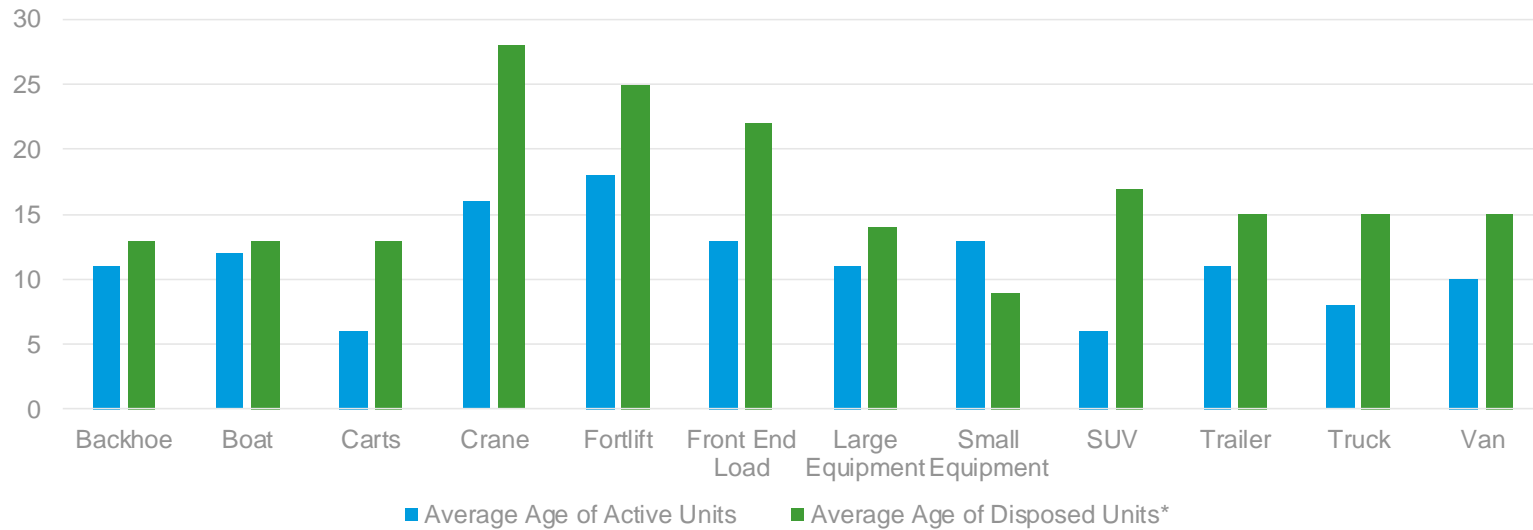
■ Average Age of Active Units   ■ Average Age of Disposed Units*

* Average age represents the average age of the vehicle type at the date of disposal

6

Analysis of Fleet Vehicles (cont'd)

The graph below shows the average spend over a unit's lifetime versus the average target spend per unit within each unit type. The Authority has determined the target spend for a unit to be equal to its value at time of purchase. Reviewing unit types for the variance between actual spend and target spend provides valuable insight into the average cost of maintaining various fleet types and the amount of spend that the Authority can reasonably estimate moving forward for each unit type.

Service, Maintenance, and Repair Costs by Unit Type as of 9/27/2023

7
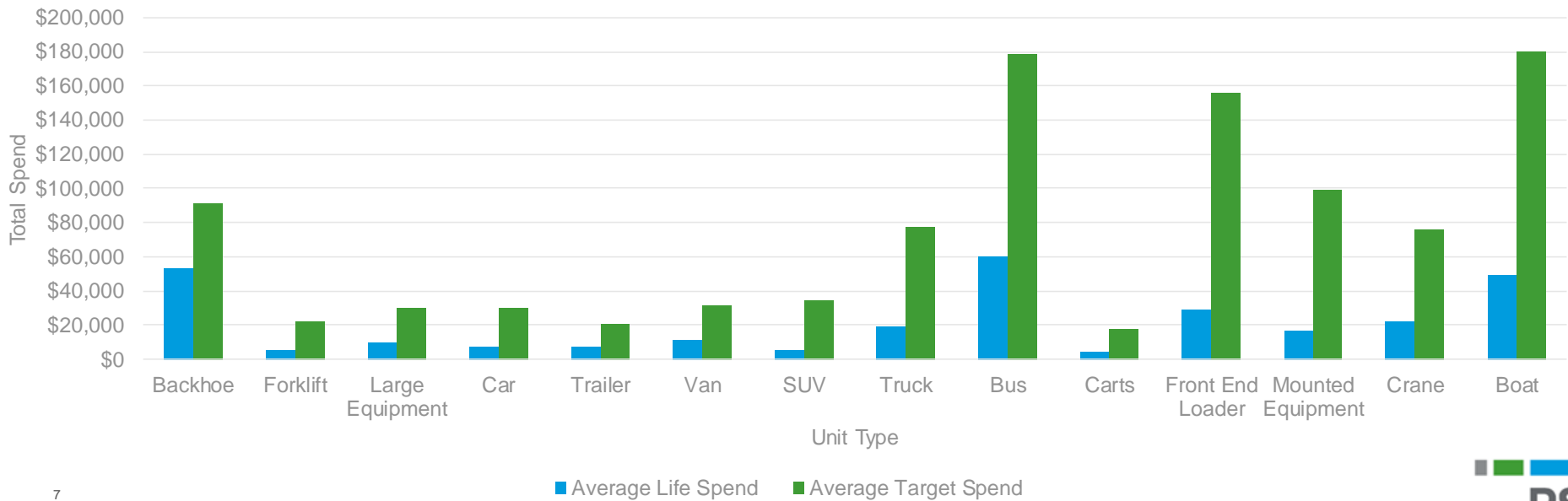
Analysis of Fleet Vehicles (cont'd)

The graph on the left represents the amount of vehicles/unit by department, with the graph on the right showing the total number of service and repair hours incurred for fleet upkeep for each department. When comparing the total number of vehicles by department to the total number of hours used, there do not appear to be any outliers of departments with lower vehicle counts but higher needs in terms of service/repair hours.

Number of Vehicles/Units by Department
as of 9/27/2023
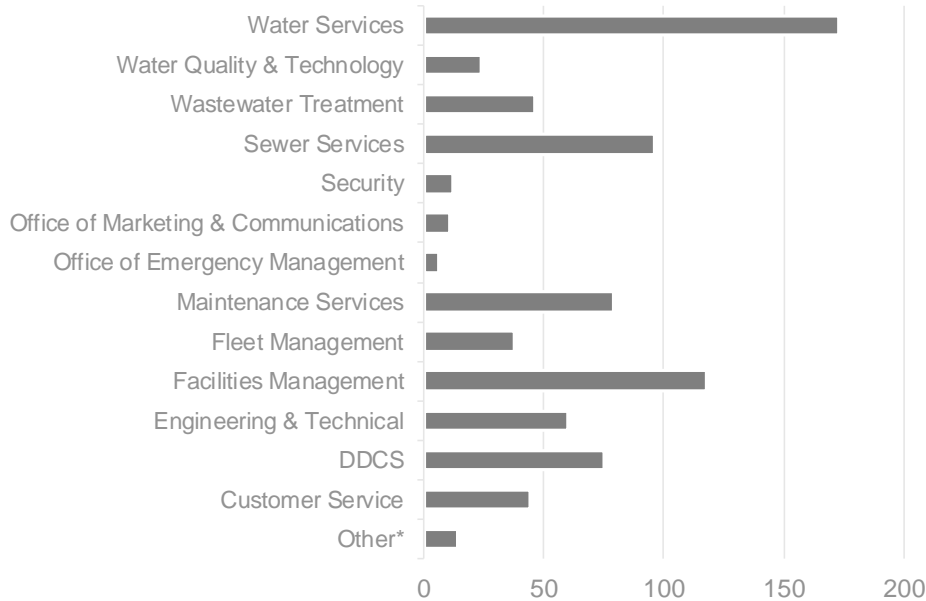
Service and Repair Hours by Department
as of 9/27/2023
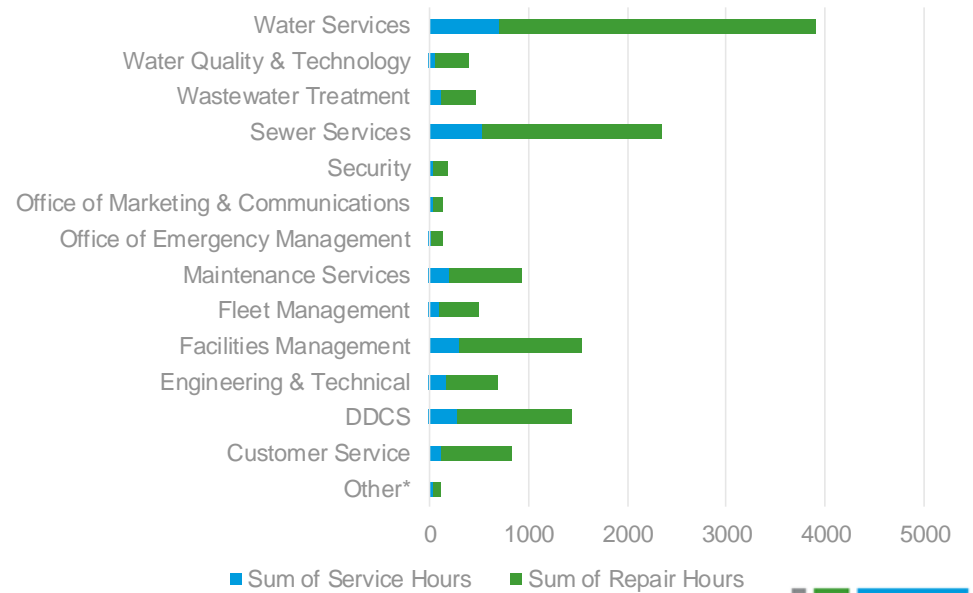
8

*Other represents the four departments that have the fewest number of units / incurred the lowest number of service and repair hours

Approach

Fleet Management Testing

- Assessed the design and operating effectiveness of key internal controls owned by management related to the following sub-processes for the testing period:
  - Vehicle acquisition and disposal
  - Permitting and insurance documentation for fleet vehicles
  - Training and licensing of personnel utilizing fleet vehicles

- Reviewed the following elements of contract oversight related to the newly executed First Vehicle Services, Inc. contract:
  - Performance monitoring
  - Inventory management
- Verified completeness and accuracy of Monthly CEO Report KPI reporting
- Performed analysis over vehicle utilization and report / maintenance costs to identify trends and potential risk areas

Reporting: At the conclusion of this audit, we summarized our observations related to the Fleet management function. We have reviewed the results of our testing with management.

9

RSM

OBSERVATIONS AND RECOMMENDED ACTION

RSM

Observation 1: Lack of current policies and procedures

Risk Rating: High

Observation: The current formalized policies and procedures for the Fleet department were approved in 2005 and as such do not reflect current Fleet management processes. Internal Audit issued an audit finding regarding the lack of updated policies and procedures during the last review of Fleet management during fiscal year 2019. With the continued lack of formalized documentation, the department has been operating without approved guidelines for over four years.

Root Cause Analysis: Due to competing priorities and changes in leadership, there has been a lack of ownership in the effort to formalize policies and procedures for the Fleet department. Additionally, there was a desire to wait until the relocation of Fleet headquarters was complete prior to memorializing department guidelines to avoid the need for substantial modifications after the relocation was completed.

Impact Analysis: Policies and procedures are critical to setting employee expectations and responsibilities, consistency in handling equipment and stakeholders, execution alignment to best practices, transparency amongst stakeholder departments, the ability to measure the effectiveness of the function, memorializing record retention expectations, and establishing accountability for Fleet management functions. When there are not clearly defined policies and procedures for a department, there is an opportunity for misalignment of actions and improper execution of processes. The remaining observations in this report all tie back to a lack of clearly defined requirements and accountability.

Recommendation: There are current efforts across the Authority to update and formalize policies and procedures, and Internal Audit recommends that the Fleet department policies be prioritized in these efforts. Given elements of fleet management that are outsourced, Internal Audit recommends that the policies and procedures should include how DC Water is interacting with and monitoring contractor performance. Additionally, Internal Audit recommends that a consistent review cadence be established to provide assurance that any future modifications to the processes within the department are documented in a timely manner.

11

Observation 1: Lack of current policies and procedures (cont'd)

Management Action Plan:

Response: DCW Fleet Management has existing, outdated policies and procedures that need review for relevance and application. The repository for policies and procedures are not publicly shared and will need to be uploaded to Share Point once revised and vetted. This task has not been previously assigned to any staff member and Fleet may leverage outside consultant support for the documentation, to vet newer practices and incorporate utility industry standards.

Fleet is engaged in a Maturity Model exercise which is designed to identify key business processes and sub processes. This exercise will generate defined roles, persons responsible, intended outcomes, operating procedures, and for some company policies. The work has been assigned to each DCW Fleet employee who is responsible for documenting the tasks in a consistent and coherent format to include a RACI analysis, risk factors and any company wide policies that are necessary to implement specific to that operation. It is important to note that the policies and procedures will be aligned to the Blueprint 2.0 imperatives and the goals of the Fleet department.

Considering that DCW Fleet is in a new relationship with a repair and maintenance contractor, several tasks and responsibilities have been shifted that will need documenting. For example, compliance documentation, inventory and parts are now being managed in a different way that will require newly documented procedures.

Responsible Party: Fleet Director, Fleet Data Management Analyst, and Executive Assistant

Target Date: 9/1/2024

Observation 2: Failure to retain DC inspection documentation

Risk Rating: Moderate

Observation: Based on our review of DC inspections for Fleet vehicles in-use, Internal Audit noted that the Authority did not upload the DC inspection documentation to Fleetwave for all 25 samples reviewed. Internal Audit did identify that 13 of the 25 samples had their records in Fleetwave updated to show the date of the most recent DC inspection, however the supporting inspection documentation was not uploaded accordingly. The remaining 12 samples' Fleetwave profiles did not reflect their most recent DC inspection date, nor was there evidence of completion of the inspection.

Root Cause Analysis: DC inspection documentation is not properly maintained in Fleetwave due to two main causes: (1) there are not currently up-to-date policies and procedures within the Fleet department that include the requirement to upload all DC inspection documents to Fleetwave and (2) there is a lack of reinforcement or training around key administrative tasks that Fleet team members are expected to complete. Upon inquiry, the individuals responsible for uploading the DC inspection documentation to the associated work order in Fleetwave were instead maintaining the documentation locally.

Impact Analysis: DC inspection documentation is required when renewing Fleet vehicle registrations. As a result of DC Inspections not being retained in a centralized location, the level of effort for the administrative team to submit registration renewal forms increases and subsequently increases the risk of registration expiration prior to renewal. Additionally, Fleet vehicles that are not operating at required emission standards can result in fines due to noncompliance with District regulations.

13

RSM

Observation 2: Failure to retain DC inspection documentation (cont'd)

Recommendation: Internal Audit recommends that the Fleet department reeducate employees about the significance of proper document management and other behind the scenes activities that keep the Fleet department operating efficiently and effectively. Internal Audit recommends that these document retention requirements are reiterated to responsible personnel via email. These responsibilities should also be incorporated into the Fleet policy and a monitoring process established. An escalation protocol should be established for employees that are delinquent in uploading inspection documentation.

Management Action Plan:

Response: As a result of a contract change and forced exiting of personnel, this documentation has not been maintained. DCW Fleet Management has since charged Transdev (Repair & Maintenance contractor) to submit a documented procedure and timeline for how this DCI documentation is gathered and uploaded to Fleetwave. Given the frequency of DCIs, Fleet Management will embark on a new process of capturing this information upon entry to the shop including leveraging the Fleetwave mobile app and the newly received GETAC tablets. Fleet Management has communicated this deficiency to Transdev who is currently working to upload and update the system with missing data and institute an escalation protocol.

Responsible Party: Program Manager Maintenance, Fleet Data Management Analyst, and Executive Assistant

Target Date: 12/31/2023

14

RSM

Observation 3: Inconsistent document retention for vehicle disposals

Risk Rating: Low

Observation: Internal Audit selected and reviewed a sample of 15 vehicle disposals performed during the audit period. For 2 out of 15 samples, the vehicle had not been marked as disposed in Fleetwave, even though the item had already been sold at Auction. For 1 out of 15 samples, Fleet was unable to locate the title transfer paperwork.

Root Cause Analysis: The absence of clear policies and procedures related to document management and record-keeping in the Fleet department has led to this lack of proper document retention. There is limited oversight in the documentation retention process, so omissions of data are not caught and resolved in a timely manner.

Impact Analysis: If a fleet vehicle is not properly tracked through its lifecycle, including through its disposal, the Authority's data fleet usage and costs cannot be considered accurate or reliable. Disposal data informs a wide array of Authority decision making – particularly budgetary and procurement decisions. An inability to rely on data due to an increased risk of missing, incorrect, or incomplete fleet disposal data can have negative impacts on various planning and execution functions throughout the Authority.

Recommendation: Internal Audit recommends that an annual training is held for Fleet employees pertaining to the significance of proper document management and the expectations of involvement in the process for each employee. Additionally, the department's expectations around document retention should be explicitly outlined in the Fleet policies and procedures.

15

Observation 3: Inconsistent document retention for vehicle disposals (cont'd)

Management Action Plan:

Response: Prior Fleet personnel were not able to accurately capture or maintain adequate documentation for this function, as there was not a clear line of roles and responsibilities among staff thus leading to the mismanagement of information. The role is currently vacant, and we are in the process of redefining the requirements to meet current business needs. The Maturity Model exercise will define this process more thoroughly, create a documented approach with roles and responsibilities and establish any associated policies.

Responsible Party: Fleet Director, Program Manager Maintenance, and Program Manager A&D (vacant)

Target Date: 3/31/2024

16

RSM

Observation 4: Failure to perform accurate cycle counts

Risk Rating: Low

Observation: Per inquiry with First Vehicle Services, Inc., the contractor completes a full inventory count quarterly, with a full count for fluids, tires, batteries, and 20-30% cycle count of all bin locations during the months where a full count is not completed. This cadence results in four full inventory counts and eight cycle counts per year.

Per review of the July 2023 cycle count, Internal Audit found that the First Vehicle team did not conduct a count for all fluids and batteries in their inventory. Additionally, the contractor did not conduct a comprehensive count for the selected bin locations (representative of 20-30% of all bin locations). The contractor's cycle count was evidenced by a cycle count workbook, and Internal Audit determined that the count was not conducted thoroughly by identifying several inventory line items that did not have an associated inventory count documented.

Root Cause Analysis: First Vehicle Services, Inc. began their contract with DC Water in April 2023. As a result, the July 2023 cycle count was one of the first cycle counts completed. After following up with the contractor, Internal Audit confirmed that a lack of inventory count for an item indicated that the item was either not counted or not found during the cycle count. There is currently no documented policy or procedure requiring DC Water personnel to monitor adequacy of First Vehicle Services, Inc.'s inventory procedures.

Impact Analysis: If inventory and cycle counts are not completely and accurately performed, there is an increased risk of inventory being lost, stolen, or otherwise unaccounted for. This can lead to financial loss and increased fleet downtime. Additionally, due to First Vehicle Services, Inc.'s position as a contractor for the Authority, inventory/cycle counts are a mandatory component of the service agreement between the two companies. If First Vehicle is unable to reliably track inventory on hand, this may impact ability to perform repairs timely if items expected to be in inventory are unable to be located.

17

Observation 4: Failure to perform accurate cycle counts (cont'd)

Recommendation: Internal Audit recommends that DC Water review documentation to confirm that First Vehicle is adequately conducting their review of inventory and cycle counts. This review will provide an opportunity to monitor that First Vehicle is appropriately performing their own controls over inventory.

Management Action Plan:

Response: DC Water has mitigated this risk by outsourcing the parts room and parts contained therein. DCW pays for parts issued from the room to the technician indicated on a specific work order for a specific unit or equipment. As part of DCW's contract oversight, Fleet Management will monitor inventory counts and charges. It is important to note that any failure or loss based on cycle counts does not have a financial implication for DCW.

Responsible Party: Program Manager, Maintenance

Target Date: 4/30/2024

18

Observation 5: Insufficient reporting over Fleet KPIs

Risk Rating: Low

Observation: Internal Audit reviewed two months of KPI metrics and reporting within the CEO monthly report. During both months reviewed, April and May of 2023, the Fleet department did not meet their monthly KPI monitoring targets. Additionally, Internal Audit noted that despite not achieving the predetermined targets, no explanation was provided detailing the reasoning for being below the goal operational level in the CEO monthly report. It is expected for all departments that any missed KPIs are accompanied by an explanation when reported within the CEO monthly report.

Root Cause Analysis: The requirement to provide explanations with any missed targets was not communicated to the Fleet department's new leadership. Additionally, the Fleet team feels that not all department KPIs currently tracked are directly correlated to performance of the Fleet team, thus, tracking of these metrics does not accurately reflect Fleet's progress and accomplishments. The Fleet director provided alternate metric options to consider moving forward that are more aligned to Fleet performance.

Impact Analysis: CEO monthly reports are published on the DC Water website and are public record. If departments do not report out on relevant KPIs that reflect departmental performance or do not provide explanations for missed KPI targets, it diminishes the value in tracking such targets and minimizes accountability for improvement.

Recommendation: Internal Audit recommends that Fleet reevaluate which KPIs should be monitored and reported in the CEO monthly report to best demonstrate department performance month-over-month. Additionally, Internal Audit recommends that any missed KPI targets are accompanied with an explanation within the CEO monthly report moving forward.

19

RSM

Observation 5: Insufficient reporting over Fleet KPIs (cont'd)

Management Action Plan:

Response: Fleet will consistently fail to meet one of the monthly KPI targets set forth by the Board since they are in contradiction to each other. A measurement based on a departments ability to bring a unit in during set time falls to the responsibility of said department and not Fleet. Consequently, if units are in shop being serviced, then the availability of that unit will be down. I would like to propose revising the KPI targets for the Board's consideration to determine how Fleet satisfaction is measured. Fleet has outsourced repair, maintenance, and parts, therefore a closer look at performance indicators that measure specific Fleet outcomes should be considered. For example, the preventative maintenance (PM) metric should be replaced with a new metric that measures specifically the time allotted to perform a PM. If the goal is to perform a PM using 100% of the time allotted, we will better understand how we manage productivity of servicing once the unit is received.

Responsible Party: Fleet Director and Program Manager, Maintenance

Target Date: 4/30/2024

20

Observation 6: Manual tracking of employee credentials

Risk Rating: Low

Observation: Internal Audit selected and reviewed the credentials of 25 employees who drive Fleet vehicles. Of the selected samples, all 25 had credential details in Fleetwave. However, 23 of the samples had inactive/expired credential information saved in the system. The other 2 employees had active certifications loaded into Fleetwave that were not expired. Additionally, Internal Audit selected and reviewed 8 new hires whose job descriptions require operation of Fleet vehicles. Of the selected new hires, 0 out of 8 had certifications loaded into Fleetwave.

Upon inquiry, the HCM Systems team informed Internal Audit that although Fleetwave is expected to be the system of record, due to bandwidth issues all employee credentials are currently maintained in a local Shared drive. The HCM Systems team was able to provide the active certifications for all 8 of the selected new hires samples after this inquiry. Of the 23 employees with inactive certifications in the system, the HCM Systems team was able to provide the active certifications for 20 of the selected individuals. Three certifications were determined to be expired however all of the individuals were already removed from driving privileges prior to the audit due to expired licenses and inability to provide renewals.

While Fleetwave was not being effectively utilized the last 2 years as a repository for employee credentials, the Program Manager of Compliance Programs is performing manual reviews of employee credential expiration dates informed by Fleetwave dashboards on a near daily basis. When an employee is shown on the dashboard as having delinquent credentials, the Program Manager contacts the manager directly for evidence of their active credential and the manager contacts the employee. If the employee is able to furnish evidence of an active credential, the Program Manager updates their expiration date noted in Fleetwave accordingly. In the event that the credential is expired, the employee is informed of the revocation of their driving privileges until evidence of renewal is provided.

RSM

Observation 6: Manual tracking of employee certifications (cont'd)

Root Cause Analysis: The Fleetwave system has the functionality to track CDL, license, and certification expiration dates and notify employees 90, 60, and 30 days prior to license expiration. Currently, this functionality is not being utilized as certifications are not up to date in the system. The last 2 years, the entry and tracking functionality was not being utilized as certifications are not up to date in the system due to resource constraints. Instead, CDL, license, and certification expiration is being tracked manually. The HCM Systems team is aware of the requirement to upload certifications to Fleetwave, but due to vacancies on the team and resulting bandwidth issues, the team has maintained the certification documentation locally for the past 2 years. The Employee Notifications at 90, 60, 30 days prior to expiration were awaiting language approval by Legal & Labor and to finalize the change management process.

Impact Analysis: Without accurate credential information in Fleetwave, it is difficult to track if and when employees become non-compliant. Currently, the Program Manager of Compliance Programs maintains a manual spreadsheet with employee credential information to track credential expiration and note any employees who are either on a leave of absence or currently suspended from operating Fleet vehicles. However, the manual nature of this tracking could cause an expired certification to go unnoticed, opening the Authority up to liability if there are drivers and machine operators who have not kept their licenses active.

Recommendation: Internal Audit recommends that the HCM Systems team continue the efforts to upload the backlog of all employee credentials into Fleetwave. Moving forward, Internal Audit recommends the current process that specific employees, including a back up, are assigned the responsibility of uploading and tracking credentials in Fleetwave. Implementing an internal KPI around upload time could be beneficial and improve the timeliness of efforts, i.e. all credentials should be uploaded to Fleetwave within 3 business days of receipt.

After uploading all employee credentials, the HCM Systems team should continue as planned to implement usage of the notification functionality. If needed, training should be conducted with the HCM Systems, Fleet and Compliance teams to educate them on how notifications are sent and the escalation protocol if an employee does not renew their certification, license, or CDL prior to expiration.

22

Observation 6: Manual tracking of employee certifications (cont'd)

Recommendation (continued): Internal Audit recommends that standard operating procedures (SOP) are formalized for the disciplinary process required for employees with expired credentials. The SOP should include all required disciplinary actions and timeframes. This will increase transparency across the Authority and promote continuity throughout the disciplinary process.

Management Action Plan:

Response: The HCM Systems team began working on uploading employee credentials from a local shared drive to Fleetwave in August 2023. The HCM Systems team is also in the process of enabling the Fleetwave 90/60/30/expiration notifications. The final step prior to turning these notifications on is informing managers/employees of what to expect moving forward. All credential information that is received at this point and moving forward will be automatically uploaded to Fleetwave. The goal for completion of uploading backlogged credential information to Fleetwave is November 30, 2023.

Once the interface between Oracle and Fleetwave is implemented and active, the HCM Systems team will upload credential information into Oracle which will automatically interface into Fleetwave for document retention and notification triggering. The timeline for this effort is to be determined at this point in time.

A formalized SOP will be created detailing the discipline process for expired credentials by November 30, 2023.

Responsible Party: Manager, HCM Systems

Target Date: 11/30/2023

23

RSM

APPENDIX

RSM

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).

25

RSM

RSM US LLP

1250 H St NW
Washington, DC 20005

+1 800 274 3978
www.rsmus.com