

# Audit of the Enterprise Work Management Solution (EWMS): Lessons Learned for Future Large Information Technology Projects

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# Agenda

## **1. EWMS Background**

Objectives of program, status, key statistics

## **2. Key Audit Findings and Recommendations**

A. Project Planning

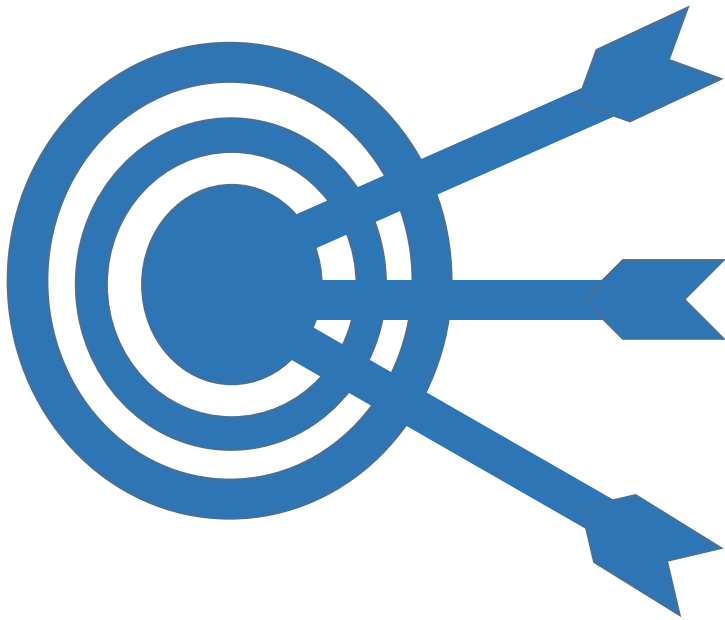
B. Project Governance

C. Project Execution

D. Project Risk Management

## **3. Moving Forward and Applying Lessons Learned**

# 1. EWMS Background



EWMS Program initiated in 2013 to:

1. Improve work management processes across divisions
2. Integrate divisional processes and shared services like 311 and SAP
3. Replace legacy systems

# Audit Objectives

The objectives of the EWMS audit were to assess:

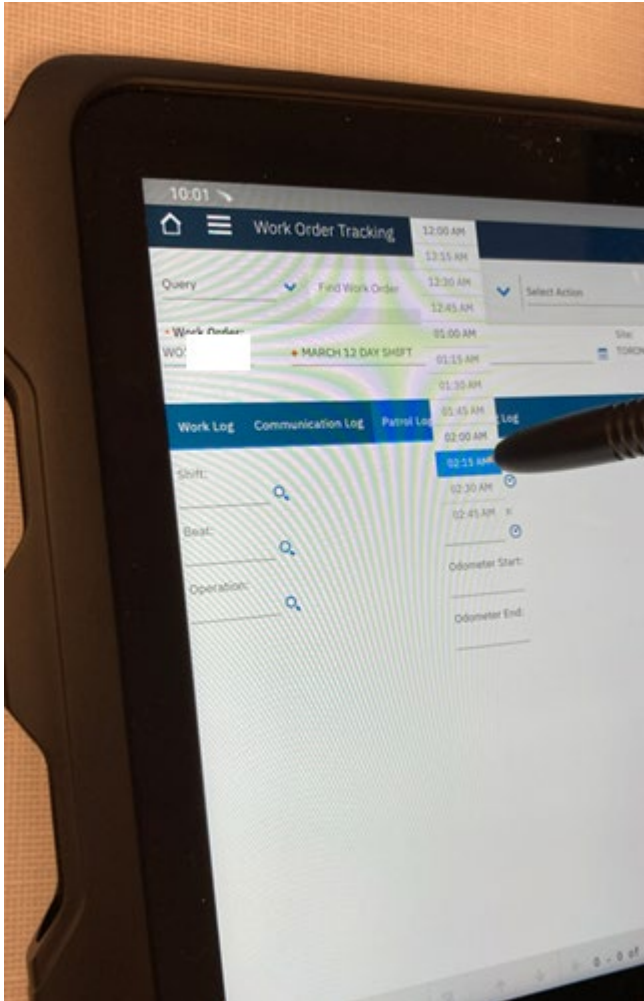
1. How the EWMS program was **planned** and **governed**, including whether the program met its **budget** and **timelines**
2. Whether the program met the **divisions'** **operational needs** and the **overall program objectives**

# EWMS Implementation Status

A large & complex IT project involving at least 20 business units in 4 divisions:

Divisions	Phase 1 Status	Phase 2 & 3 Scope
Solid Waste Management Services	1 business unit implemented	At least 1 business unit to implement
Transportation Services	1 business unit implemented	7 business units to implement
Parks, Forestry and Recreation	Implementation for 1 business unit rescheduled to December 2023	2 business units to implement
Toronto Water	Implementation deferred to phases 2 & 3	7 business units to implement

# Key EWMS Statistics



<b>10 Years</b>	Since start in 2013; phase 1 still in progress
<b>\$52.3 M</b>	Budget reported to Executive Steering Committee
<b>\$59.3 M</b>	Expected cost to complete original phase 1 scope
<b>\$33.1 M</b>	Estimated costs by management for phases 2 & 3
<b>\$92.4 M</b>	Estimated minimum cost for entire EWMS program
<b>\$14.1 M</b>	Combined cost of operating legacy systems alongside EWMS 2021 - 2027
<b>\$1 M +</b>	Cost of unused EWMS licenses in the past 2 years

## 2. Key Audit Findings and Recommendations

A. Project Planning

B. Project Governance

C. Project Execution

D. Project Risk Management

# A. Project Planning

- Incomplete program charter
- Program goals not measured
- Lack of stakeholders' communication and involvement





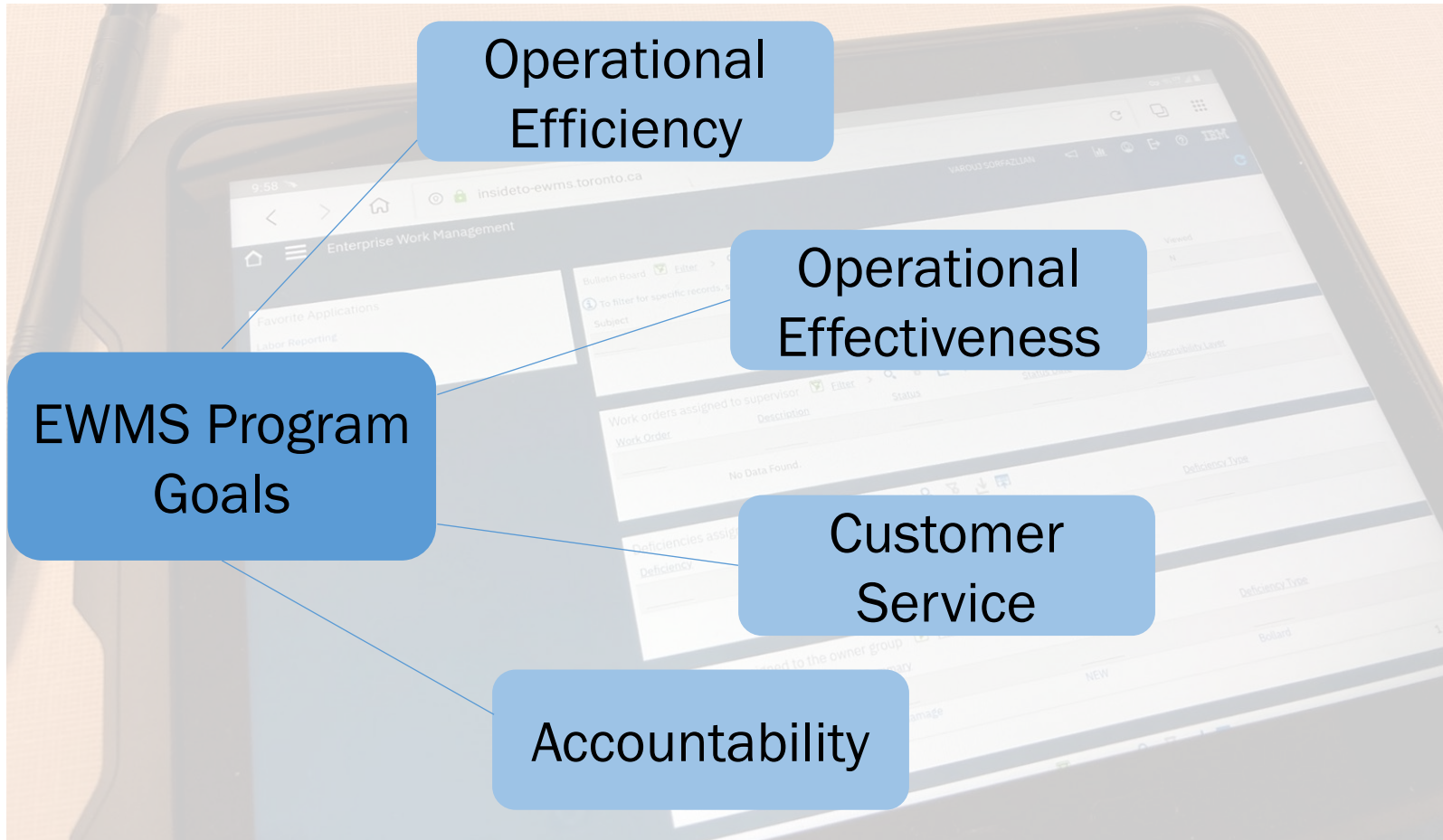


# Incomplete Program Charter

- Initial charter did not include a clear project timeline and budget
- This charter document did not clearly indicate whether the budget was for phase one alone, or the entire EWMS program's three phases
- Five out of eight project charters were not signed off by all stakeholders



# Goals Not Measured Regularly



Achievement of goals was not measured regularly as metrics are being developed to assess the goals



# Lack of Stakeholder Communication and Involvement

- EWMS integration proceeded without PPEB's senior management approval and later stopped
- EWMS integrated with a 311 legacy system that was due to be replaced by a new system. This integration with the legacy system was later stopped

# Recommendations

## A. Project Planning

1. Need an overall program-level charter:

- Implementation budget
- Clear timeline
- Performance measurement

2. Regularly measure achievement of goals; take corrective action as required

3. TSD Stakeholder Management Plan to facilitate:

- Enhanced stakeholder engagement
- Improved coordination and communication for the remaining implementation phases

## B. Project Governance

- Dashboard criteria need re-design
- Report program status accurately, consistently, and on a timely basis
- Auditor General's prior audits identified similar issues



# Re-design Dashboard Criteria

The dashboard has 5 performance metrics

Overall Status	Scope/ Quality	Schedule	Budget	Benefits
Good	Good	Good	Good	Good

But there are only 3 criteria

	Program Health	Scope and Schedule	Budget
	Program Health to be at green, if <b>any 2 or more</b> other indicators are green (scope, schedule and budget)	Project is on track with manageable issues that will not impact the project scope or schedule	More than 80% and less than 100% of Forecasted Budget spent (>80% and <100%)
	Program Health to be at yellow, if <b>any 2 or more</b> other indicators are yellow	Project is showing signs of trouble that could impact the scope and/or schedule. However, if timely action is undertaken, the project will be back on track with no impact to scope or schedule	65% - 80% of Forecasted Budget spent
	Program Health to be at red, if <b>1 or more</b> indicators are red	Project is experiencing serious problems that will impact scope and/or schedule. The sponsor/steering committee will need to approve a Change Request to re-baseline and bring this project back on track	Less than 65% or more than 100% of Forecasted Budget spent (100%)

# Report Program Status Accurately, Consistently, and on a Timely Basis

## November 2022 Program Status Dashboard

Overall Status	Scope/Quality	Schedule	Budget	Benefits
Good	Good	Good	Good	Good

## May 2023 Program Status Dashboard

Total Amount (\$ million)			Progress
Actual Spend	Budget	Forecast	% Progress (As % of Total Forecast)
49.3	52.3	52.8	93

# Apply Auditor General's Prior Recommendations

Findings provided in this report are not new

AG's prior audit recommendations need to be incorporated into TSD's project governance framework





# Recommendations

## B. Project Governance

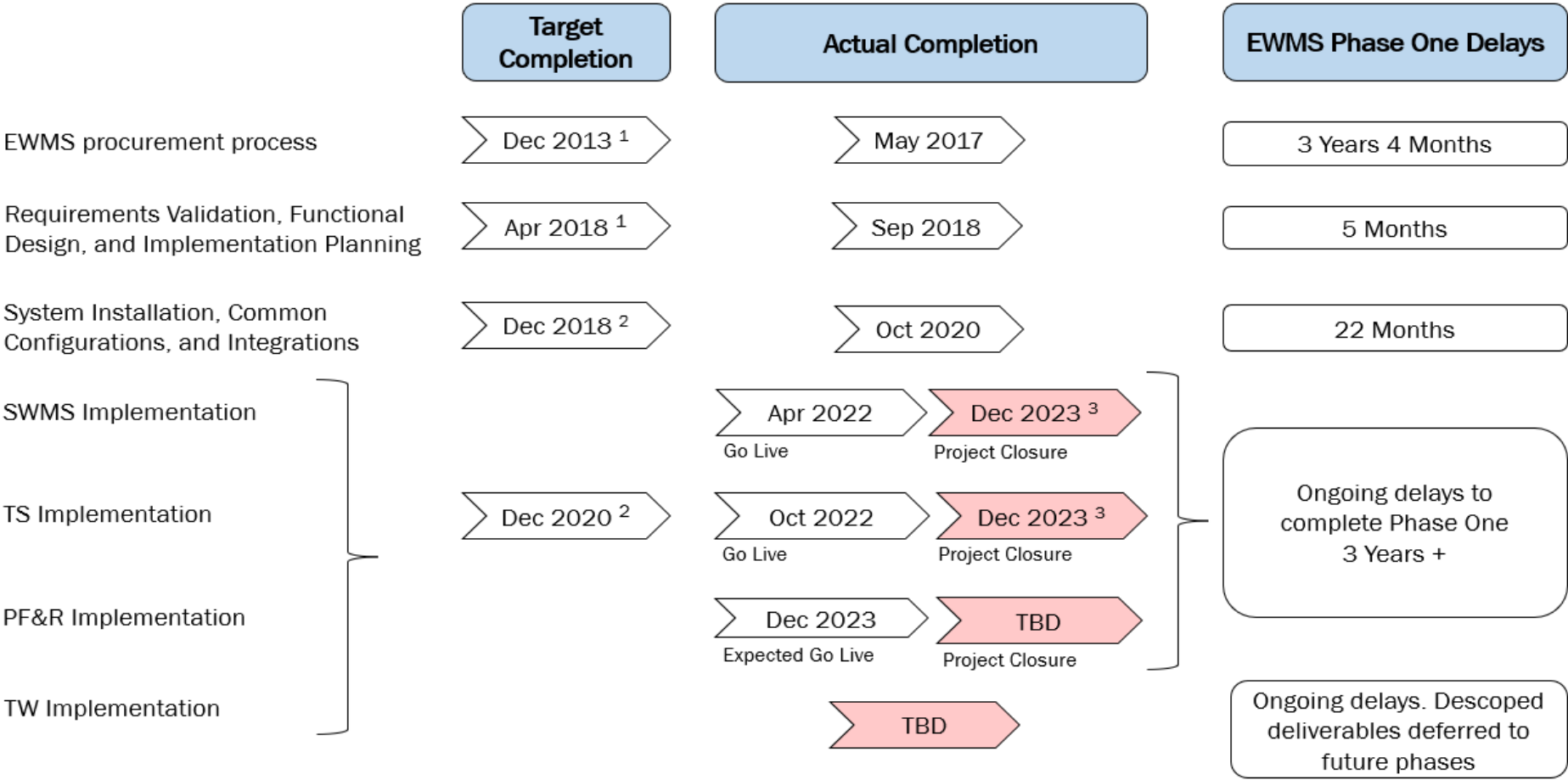
1. Establish a methodology to measure implementation progress (deliverables) against budget and timeline
2. Reassess benefits realization and potential losses that could be incurred due to project delays - new cost benefits assessment needed with an update to City Council on total program budget and costs
3. Timely report risks impacting budget, timelines, and realizing intended benefits
4. Incorporate AG's prior recommendations into the City's project management framework

## C. Project Execution

- EWMS phase one delay
- Budget and costs underreported; phase one budget overrun of \$7M
- Over \$1M spent on underutilized licenses
- EWMS functionality not operationalized fully for one division (2022/23)
- Legacy system risks and related costs



# EWMS Phase One Delay Overview



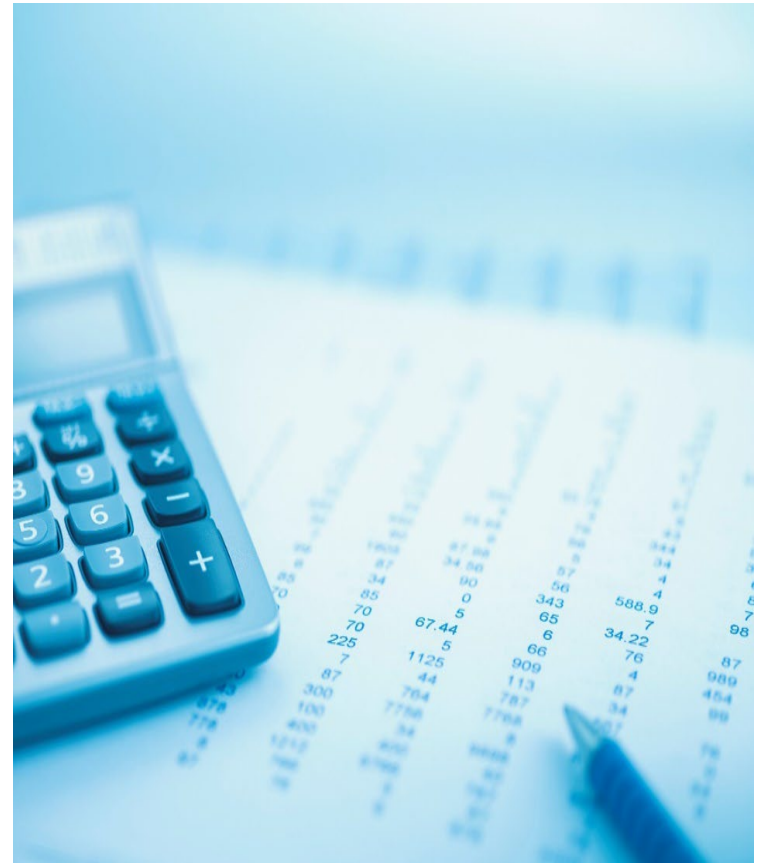
<sup>1</sup> As per signed Program / Project Charter

<sup>2</sup> As per 2017 Cost Benefit Assessment

<sup>3</sup> EWMS Program Status Report, Executive Steering Committee, September 26, 2023

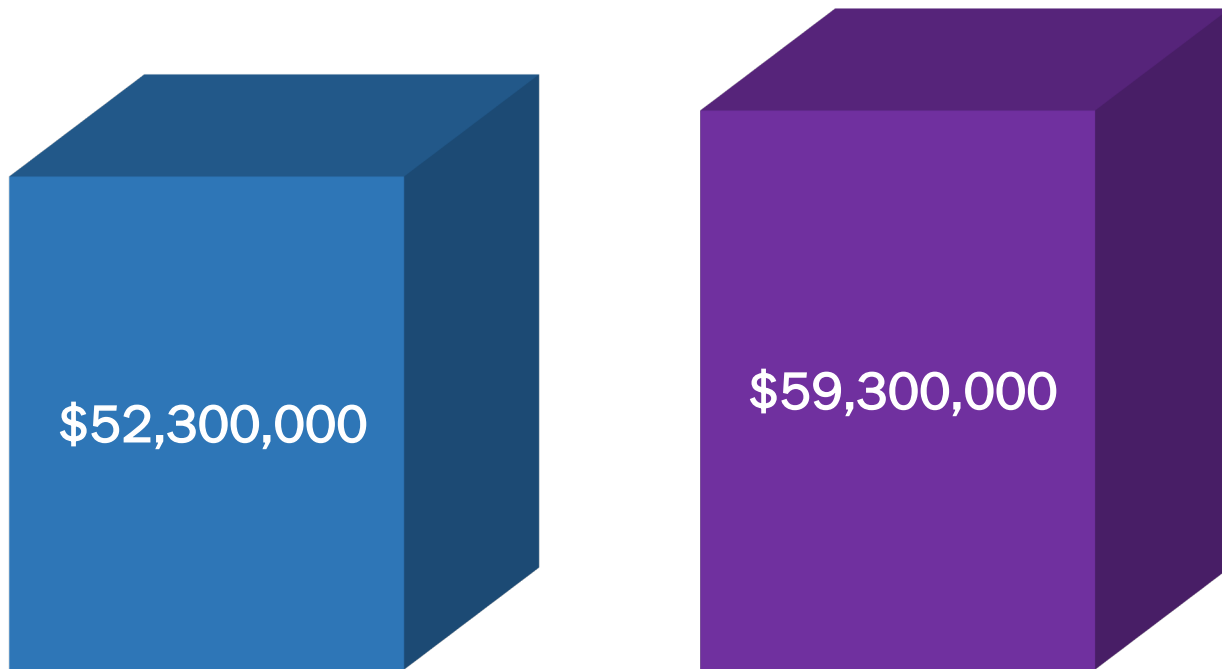
# Underreported EWMS Budget and Costs

- Council 2023 budget report did not include historical TSD costs of \$6.8 million
- There are variances between Council reports and Executive Steering Committee reporting
- A consolidated reporting of the total budget and costs is needed



# Phase One – Costs Will Exceed Budget

## EWMS PROGRAM: ESTIMATED COMPLETION COSTS



■ EWMS Phase 1 Budget

■ Estimated Cost to Complete Phase 1 Scope

# Funds Spent on Unused Licenses

- Additional licenses purchased in anticipation of earlier go-live dates
- Some licenses not of the correct access level and were “retired”
- Initial purchase cost of retired licenses is a one-time loss
- Our analysis identified \$1.1 million in licenses fees not put to productive use

License Description	Unused Licenses	Cost (000's)
Cancelled Licenses	240	\$116
Unassigned Licenses	1,581	\$520
Unused Licenses	294	\$448
<b>Total:</b>		<b>\$1,084</b>

# EWMS Functionality Not Operationalized

- Implementation for Transportation Services was at a time of significant change for the division (2022/23 winter season)
- Role-based training not completed prior to implementation
- Paper and Excel-based forms were used in lieu of full EWMS functionality

**Toronto**  
TRANSPORTATION SERVICES

District: Scarborough  
WINTER MAINTENANCE INSPECTION LOG

Name: [Redacted]  
Signature: [Redacted]

Date: April 3, 2021  
Observer Start: 10:05 AM  
Observer Finish: 11:05 AM  
Run Mileage: 6.07

WMS: Checked  Yes  No

Physical Condition and Temperature: [Handwritten notes]

TYPE	LOCATION & DETAILS	TEMPERATURE		WINDSPEED	WIND DIRECTION	WIND VELOCITY
		DB	WB			
Clear	[Redacted]	11	12	21	SW	12
Clear	[Redacted]	11	12	21	SW	12
Light Rain	[Redacted]	17	16	14	SW	12
Clear	[Redacted]	21	19	14	SW	12
Light Rain	[Redacted]	17	16	14	SW	12
Light Rain	[Redacted]	17	16	14	SW	12
Light Rain	[Redacted]	17	16	14	SW	12
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Light Rain	[Redacted]	17	16	14	SW	12
Light Rain	[Redacted]	17	16	14	SW	12
Light Rain	[Redacted]	17	16	14	SW	12

17:00 End of shift

# Legacy System Risks and Related Costs

- Difficult to upgrade legacy systems - vendors may stop supporting the system and this presents operational risks
- The City continues to pay licensing and support costs for legacy systems in addition to EWMS costs

Support and License Costs (millions)		Cost of operating two sets of systems in parallel (millions)
Legacy Systems	EWMS Licenses	
<b>\$9.75</b>	<b>\$4.37</b>	<b>\$14.1</b>

This calculation is cumulative for the period 2021 - 2027



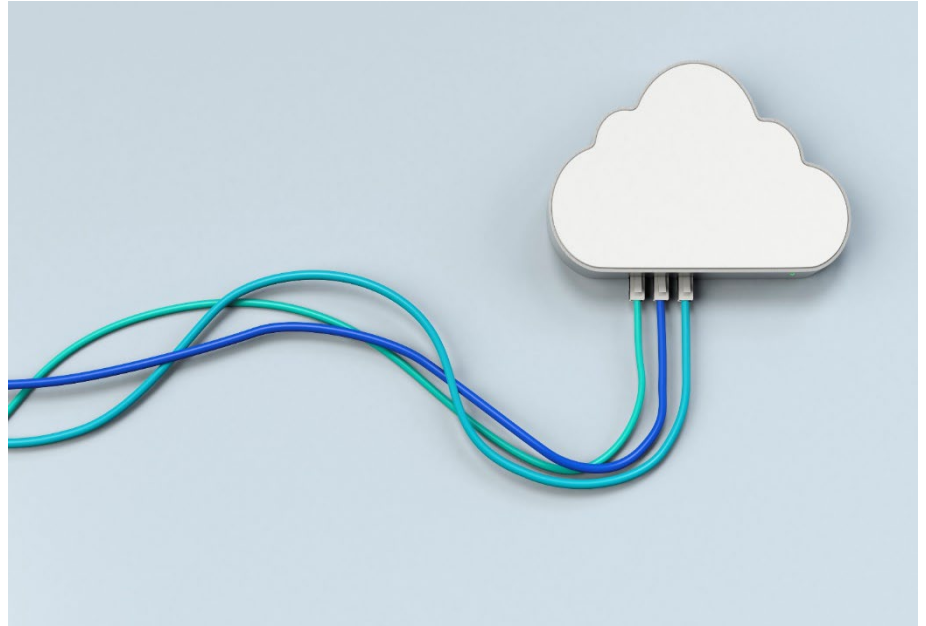
# Recommendations

## C. Project Execution

1. Promptly escalate project delays, and ensure business processes and training are ready prior to implementation
2. Align and consolidate reporting of cumulative budget and actual spending between Council reports and Steering Committee dashboards
3. Efficiently plan license acquisition to ensure license utilization is maximized
4. Plan for prompt retirement of unsupported legacy systems

## D. Project Risk Management

- Migration to Cloud and software version upgrade



# Migration to Cloud and Software Version Upgrade

## Two anticipated IT changes

1. Migrating EWMS from being hosted “On Premises” to the Cloud
2. Upgrading to the EWMS new software version

A software version upgrade and the Cloud transition together will add complexity and risk to the ongoing implementation.

# Recommendations

## D. Project Risk Management

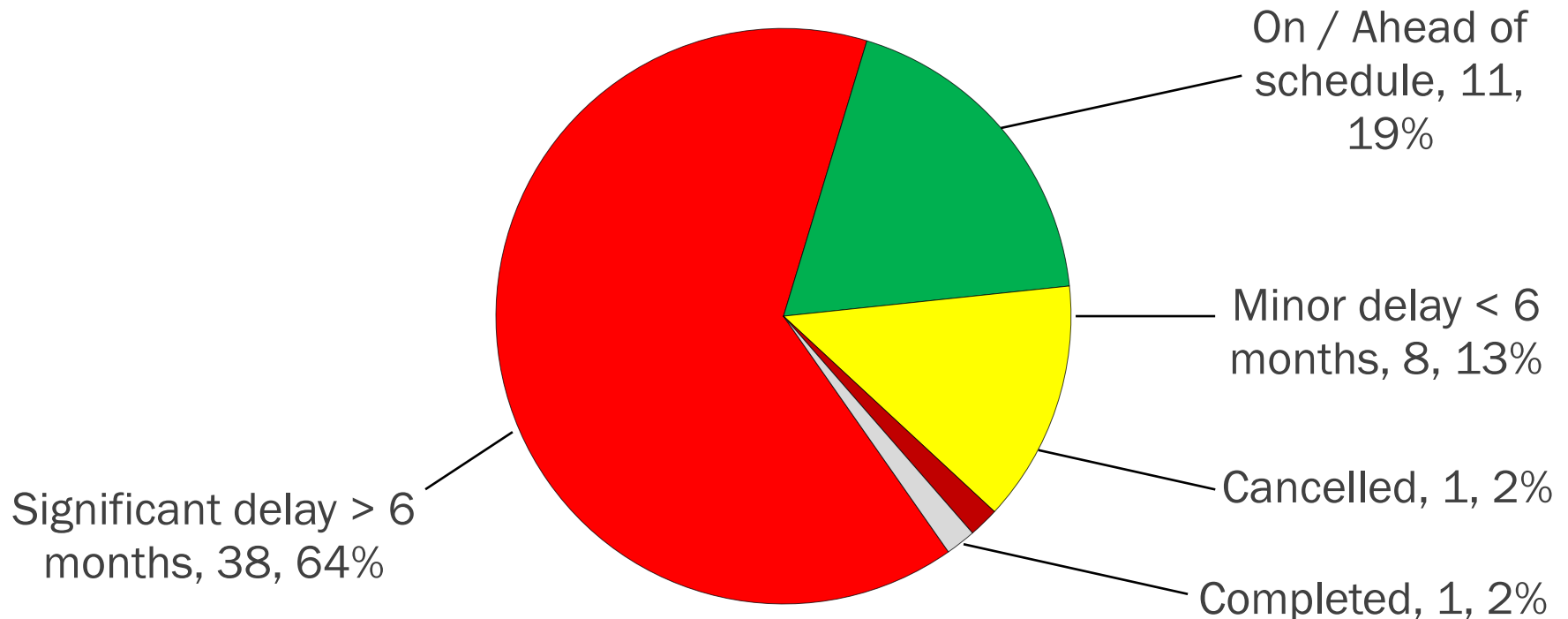
1. Prepare a detailed risk assessment for the EWMS system upgrade and cloud transition
2. Prepare an action plan to mitigate risks, approved by all stakeholders.

# 3. Moving Forward and Applying Lessons Learned

- There are many benefits of implementing the EWMS program – with an **integrated solution** across divisions and using shared services
- **However, project delays add risks to the project:**
  - Legacy systems not yet replaced
  - Increased costs as delays continue
  - Intended benefits not yet being achieved
  - Technology changes rapidly and may have a limited life span

# TSD Timing Status of All IT Projects

- June 30, 2023 Capital Variance Dashboard for TSD shows 38 out of 59 projects (**64%**) are **delayed by 6 months or more**
- Total value of all 59 projects is \$325M



# Moving Forward and Applying Lessons Learned

- A. Project Planning
- B. Project Governance
- C. Project Execution
- D. Project Risk Management

➤ **14 Recommendations** to improve controls and expedite implementation

**Lessons learned for not only Phases 2 and 3 of EWMS Program – also for all large IT projects of the City and its agencies and corporations**

# Key Take-Aways in Moving Forward

1. Regularly engage and communicate with all stakeholders involved and impacted
2. Measure implementation of the project's progress against clearly defined budgets and timelines - including consolidated reporting of budgets and costs
3. Keeping the project on time will not only help minimize potential cost overruns, but addresses the important risk of replacing unsupported legacy systems and helps to realize the intended benefits of the project



# Thank You



**AUDITOR  
GENERAL**  

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**TORONTO**