

Enterprise Work Management Solution (EWMS) Program Status

Date: June 21, 2024

To: Audit Committee

From: Chief Technology Officer, General Manager - Transportation Services Division, General Manager - Solid Waste Management Services, General Manager - Parks, Forestry & Recreation General Manager - Toronto Water, and Executive Director - Customer Experience

Wards: All

SUMMARY

This report updates the Audit Committee on the City's Enterprise Work Management Solution (EWMS) Program, fulfilling recommendation 4 from 2023.AU3.4 - Audit of the Enterprise Work Management Solution (EWMS): Lessons Learned for Future Large Information Technology Projects. This status update covers the implementation cost, benefits realized as of Q1 2024 and outlines the City's continued implementation and monitoring plan.

RECOMMENDATIONS

The Chief Technology Officer, the General Manager, Transportation Services, the General Manager Solid Waste Management Services, the General Manager, Parks, Forestry & Recreation, the General Manager, Toronto Water, and Executive Director, Customer Experience Division recommends that:

1. Audit Committee receive this report for information.

FINANCIAL IMPACT

There is no financial impact as a result of this report. Funding for the EWMS Program in 2024 is available within the Approved 2024 Capital and Operating Budgets of participating Divisions. 2025 funding will be included in the 2025 Capital Budget submissions.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the information as presented in the Financial Impact Section.

DECISION HISTORY

On December 13, 2023, City Council requested the Chief Technology Officer to report to City Council on the status of the Enterprise Work Management Solution (EWMS) Program by June 30, 2024, including the total expected cost of implementation, the status of benefits realized for divisions that have completed the implementation, and the planned benefit realization for the entire Enterprise Work Management Solution Program.

[Agenda Item History 2023.AU3.4](#)

COMMENTS

The City of Toronto's Transportation Services, Parks, Forestry, and Recreation, Solid Waste Management Services and Toronto Water divisions currently use various outdated work management systems to identify, plan, schedule, perform, and record work activities. These systems are now more than two decades old and have become costly to maintain, difficult to upgrade/patch, and operate separately from each other with limited integration to other City systems.

The Enterprise Work Management Solution (EWMS) Program is a series of projects managed by the Technology Services Division aimed at transforming and modernizing how the City of Toronto manages its work, by replacing the aging, legacy work management systems being used by the four divisions. The new single enterprise-level system will provide a unified technology platform with tools, processes, workflows, and best practices for managing work activities, city assets, and service delivery to:

- Improve information shared with residents related to service requests initiated by residents through the City's 311 call centre.
- Modernize asset maintenance and management with accessible technology to increase maintenance productivity and hasten achievement of service plan objectives.
- Enable mobile computing and paperless work orders.
- Standardize processes and improve work activity documentation and tracking.
- Enhance data sharing between divisions and track work order status and costs.
- Implement integrated procedures, job plans, and workflows for common functions.
- Provide accurate, timely information to frontline and senior management.

The new system, at full implementation, will be used by approximately 4000 City staff and contractors to support the maintenance of approximately \$118 billion worth of the City's assets including public roads, bridges, urban forestry and parks, water and

wastewater treatment utility plants, water distribution and wastewater collection, and waste management infrastructure and bins.

The rollout of the new system is underway and includes three phases:

- Phase 1 includes the establishment of the new core system and the initial rollout to a minimum one section within each of the four divisions. This phase also includes the initial integrations to other City systems (i.e., SAP and the 311 Call Centre's Customer Relation Management (CRM) system). The phase 1 rollout has been completed for Solid Waste Management Services' Facilities and Equipment Maintenance section (2022), Transportation Services' Road Operations and Maintenance section (2022) and Parks, Forestry & Recreation's Urban Forestry section (2024). System design is underway for the relevant Toronto Water sections.
- Phases 2 and 3 will include the expansion and rollout of the system to the remaining sections and areas within the four divisions. Once complete, each division's legacy work management system will be retired and decommissioned.

The Auditor General's audit of the EWMS Program included 14 recommendations to improve project planning, governance, and execution of the EWMS Program and other large information technology projects within the City. Four of the recommendations have been self-assessed by the Division as complete, subject to verification by the Auditor General, and the remaining 10 are in progress at various stages of implementation and are expected to be complete by Q4 2024. All recommendations are on track to be implemented by end of 2024, consistent with the Management Response to the audit report. A detailed update on the status of the recommendations is included in Attachment 1 - 2023 Audit Recommendation - Status Update.

Program Benefits

Currently, the legacy work management systems present an unacceptable risk to the City and its divisions related to technical obsolescence and challenges with making changes and enhancements. The legacy work management systems manage and control approximately \$118 billion worth of system assets for critical City services and satisfy legislative requirements (i.e. water quality, road transportation, etc.). The rollout of the new system will address this risk by reducing the reliance on aging technology while providing an opportunity to modernize current work management practices.

The EWMS Program was established, in part, based on an AG audit recommendation to rationalize work management systems across the City. Subsequent AG audit recommendations have also identified the need to replace existing legacy and manual work managements due to the risk to city assets and service delivery. The full implementation of the EWMS Program scope will address several AG audit recommendations including 5 in Transportation Services, 13 in Parks, Forestry & Recreation, and about 10 program-specific recommendations from the EWMS audit report in the Technology Services Division.

In addition, the City has realized other benefits from the initial implementation of the EWMS Program in Transportation Services and Solid Waste Management Services. These benefits in financial and operation efficiency, improving asset maintenance and maintenance data quality, service value through improved user and customer service in providing information to residents, are further outlined below.

Transportation Services Division

Since the implementation of EWMS for the Operations and Maintenance section in Transportation Services, notable improvements have been made to winter operations including:

Improved Transparency and Collaboration between City Staff and Contractors

- Winter service activations can now be added as work orders and assigned to City contractors for improved tracking and reporting, supporting delivery within contractual timeframes.
- City and contractors can include notes and responses within each work order, leading to improved communication between both parties and reducing disputes.

Improved Data Integrity

- Winter service activations and service request responses are now recorded in a single, centralized database.
- Data and records are consistent and complete as City contractors can now enter records against their own winter equipment within their contract.
- Further address audit recommendations related to capturing and storing records in a centralized electronic system to measure and monitor contractor compliance and performance.

Improved Contractor Accountability

- City staff can now flag and assign deficient work orders to City contractors for action, with attached photos and documentation, which has improved communication and contractor response to address deficiencies in a faster response time.
- Improved tracking due to the availability of work order information and faster response times for 311 status inquiries through 311's system integration.

Solid Waste Management Services Division

The benefits realized by the Facilities & Equipment Maintenance Unit of Solid Waste Management Services throughout Phase 1 are:

- Immediate access to work order information in a central location, facilitating better reporting, data retrieval and ability to respond/provide information to internal customers.
- Mobile capability, including voice-to-text for quick information capture in the field, the ability to attach photos and videos to work orders, and real-time access to asset

information, work order history and safe working procedures, resulting in reduced administrative carry-over to the next day.

- Reduction in reactive work orders (break-fix) relative to proactive work orders (planned maintenance), due to the automation of planned maintenance for all assets, ensuring no regular service or maintenance is missed, and potential issues are identified early.
- Automation of compliance-related activities within the work order completion process, enabling quick and efficient compliance reporting.

Further benefits will be defined at the conclusion of Phase 2.

Customer Experience Division

The Customer Experience Division (311) uses Salesforce's Customer Relationship Management (CRM) system integrated with multiple divisions' work management systems. As divisions switch from their old systems to EWMS, improved two-way communication between Salesforce CRM and EWMS is expected to support accessible and up-to-date customer information and tickets across divisions.

Transportation Services Division's Road Operations and Maintenance section and Parks, Forestry & Recreation Division's Urban Forestry section have implemented EWMS and are integrated with Customer Experience Division's CRM system. 311 currently tracks customer satisfaction levels on service request creation and fulfilment and, as remaining integrated divisions and sections are onboarded, greater transparency and real-time updates is expected for available to customers, resulting in increased customer satisfaction. This will be further enhanced by the work currently underway relating to "Closing the Loop". In addition, with the completion of remaining phases, there will be improvements to internal work processes, such as automated re-assignment of service requests between divisions and improved work notes available for 311 agents to view in Salesforce, leading to more efficient handling of re-assignments and status calls.

Future Benefit Realization

Several additional benefits are under review, consistent with the development and finalization of the scope and delivery plans for the remaining EWMS Program scope. These additional benefits in operational efficiency by streamlining and centralizing processes, in service value by enhancing the quality and reliability of City services, and improving the information provided to customers, will be realized at program completion.

Implementation Costs

The budget and actual expenditures for the EWMS Program are included in the annual capital budget submission approved by City Council and the Quarterly Capital Variance Report provided by the Chief Financial Officer.

EWMS Program costs are divided into four cost elements:

- City Staff - This includes technical, project management and business/operational staff;
- Vendor - external third-party professional services to configure the system, plan the implementation and technical support system rollout;
- Technical Resources - external consultants that are Maximo Subject Matter Experts (SMEs) to assist with developing system requirements and system implementation;
- Software & Hardware - system infrastructure and computing environments, Maximo software, and Maximo user licences

The current approved budget for the EWMS Program is \$80 million with a total life-to-date (April 2024) expenditures of \$52.5M. The professional services provided by external vendors are required to develop Maximo configurations to address the City's requirements as new business areas are onboarded. The new vendor contracts are expected to be awarded in mid 2024. The costs to deliver the remaining scope and associated schedule are being refined and will be updated once the new vendor contracts are awarded. The preliminary and high-level estimate for the additional budget requirements is \$50M. The additional budget requirements, once confirmed, will be included in the annual capital budget submission.

Division Rollout	Approved Budget	Life-To-Date (April 2024)	Scope of Work
Phase 1 Rollout			
Solid Waste Management Services	\$10,949,465	\$10,949,465	Facilities and Equipment Maintenance
Transportation Services	\$14,068,893	\$14,039,598	Road Operations
Parks, Forestry & Recreation	\$12,941,270	\$13,224,756	Urban Forestry
Toronto Water	\$12,920,905	\$9,953,617	Distribution & Collection, Customer & Technical Support, Water Infrastructure Management
Customer Experience (311)	\$442,000	\$307,784	
Total Phase 1	\$51,322,533	\$48,475,220	Includes rollout planning, development and implementation of foundational system and system environments, divisional business readiness and system rollout

Phase 2/3 Rollout			
Solid Waste Management Services	\$4,422,763	\$1,123,335	Collections and Litter Operations
Transportation Services	\$5,999,412	\$856,030	Operations Maintenance; Traffic Management; Construction Coordinator; Permits & Enforcements; Planning & Capital Programs
Parks, Forestry & Recreation	\$13,501,534	\$1,439,613	Parks Operations; Parks Development; Capital Projects; Community Recreation
Toronto Water	\$4,776,945	\$586,405	Operations and maintenance of distribution and collection systems, and treatment facilities
Total Phase 2/3	\$28,700,654	\$4,005,383	Includes rollout planning, system software upgrade, cloud adoption, divisional business readiness and system rollout
EWMS Program Total	\$80,023,187	\$52,480,603	

**Current cost estimates are high level and will be updated once new vendor contracts are in place.

Digital Infrastructure Impact Statement

The Digital Infrastructure Strategic Framework (DISF) is a corporate-wide principles-based strategy, adopted by Toronto City Council, that provides overall guidance for all Digital Infrastructure Initiatives at the City. The EWMS Program aligns with the DISF by contributing to the following Strategic Priorities:

- **Digital Transformation:** The objective of this Strategic Priority is that City services, programs, and processes use Digital Infrastructure, when appropriate, to evolve and transform by understanding and anticipating public or program needs and expectations. The EWMS Program aligns with this priority by consolidating multiple legacy systems and by enabling paperless and mobile computing.
- **Data Governance:** The objective of this Strategic Priority is to develop clear data management standards to ensure that data is protected, accessible, and useable, and facilitates evidence-based decision-making, organizational efficiency, and improved service delivery. The EWMS Program aligns with this priority by enhancing data sharing between divisions; and by enabling accurate, timely information to frontline and senior management.

- Toronto Public Service Digital Literacy and Adoption: The objective of this Strategic Priority is that the Toronto Public Service has the knowledge, skills, and ability to understand, use, and govern Digital Infrastructure effectively. The EWMS Program aligns with this priority by integrating staff training and communications into the change management strategy.

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ATTACHMENTS

Attachment 1 - 2023 Audit Recommendations - Status Update