METROLINX

MEMORANDUM

To: Metrolinx Board of Directors

From: Fay Pittman
Chief Engineer, Asset Management & Maintenance

Date: June 26, 2025

Re: **Asset Management & Maintenance Quarterly Report**

This report provides an update on activities and key milestones in the Asset Management & Maintenance division over the past quarter.

Fault Control Services Transitions to In-house Delivery

On January 1, 2025, Fault Control Services (FCS) at the Network Operations Centre successfully transitioned to in-house delivery, marking a significant milestone for the organization. The handover from Siemens, the previous contractor responsible for delivering FCS, went smoothly due to careful planning, tailored training programs, and timely access to systems.

Some of the duties of FCS include coordinating responses to faults and incidents across the railway network's signalling and communications systems; offering guidance to field teams to address and resolve technical faults; analyzing office and field logs to identify patterns and optimize response time; and collaborating with teams to ensure safety standards are upheld.

Internalizing FCS has allowed Metrolinx to cultivate a culture of continuous improvement and innovation. The recruitment, onboarding, and extensive training of the Fault Control Signal Specialists were effectively completed to ensure operational readiness around the clock. The dedicated in-house team is now better positioned to adapt swiftly to technological advancements, industry best practices, and evolving safety standards.

This transition has provided Metrolinx with greater control, accountability, oversight of third-part maintenance providers in the field, and a more seamless integration with railway operations, which will result in improved on-time performance and enhanced collaboration across teams. This enables Metrolinx to become a more knowledgeable owner. Additionally, this shift has led to substantial cost savings through optimized resource management and reduced overhead. This achievement reflects the hard work and dedication of the FCS and Signals & Communications leadership teams.

Invision Pilot Update

In early September 2024, we introduced you to Metrolinx's pilot project with Invision AI, under sponsorship from the Government of Canada's Innovation, Science and Economic Development (ISED) Innovation grant. This project was implemented to further improve safety by targeting Level Crossings and Obstacle Detection using AI tools. The tools automate detection and timing parameters for events such as train approach, gate activation, crossing occupation by train, and gate deactivation; encroachment at the crossing by vehicles and pedestrians; statistics of road vehicles and pedestrians (count, timing and crossing area); and vehicle length that could be used for revaluating the design vehicle parameter for that location.

Since then, Invision delivered its Level Crossing pilot dashboard, which successfully demonstrated to Transport Canada and Metrolinx Signals Engineering a credible remote monitoring solution. The system captures live safety events (e.g., vehicles, pedestrians and gate malfunctions) with an overall accuracy of ~90 per cent across safety alerts, traffic statistics, and gate timing parameters. Notably, performance under heavy snow conditions met Transport Canada's pilot objectives, with every activation accurately recorded during snowstorms.

While the pilot clearly established the feasibility of a camera-based monitoring platform, additional refinement is needed to prove the value proposition before a network-wide rollout. In particular, Metrolinx would like to attain greater safety-alert accuracy, improved classification of maintenance vehicles, recognition of various train types, and overall system robustness. Metrolinx is exploring the expansion of this tool across additional locations.

Metrolinx's State of Good Repair Program

Metrolinx manages assets through effective engineering standards, proactive maintenance and targeted capital investment. The capital investment into rehabilitation and replacement of assets is outlined in asset management plans and executed through our State of Good Repair program. Maintaining assets in a state of good repair (SOGR) enables Metrolinx to achieve its strategic objectives of safety, customer satisfaction, and on-time performance. Metrolinx records its asset inventory and annually provides this information to the provincial integrated asset inventory.

Regular data driven condition assessment and performance data are leveraged to forecast long-term rehabilitation and replacement requirements. These inputs along with an asset risk assessment framework are used to prioritize and budget SOGR work. Metrolinx currently sustains SOGR renewal activities for its asset base across its existing GO rail, GO bus, and Bus Rapid Transit systems.

Separately, GO Expansion, in-flight LRT projects, and Ontario Line programs contain lifecycle costs that are part of the awarded contracts. As Metrolinx's asset base continues to grow, so does the need for increased SOGR funding to sustain incremental SOGR renewal activities and needs.

Respectfully submitted,

Fay Pittman
Chief Engineer, Asset Management & Maintenance