

# **RMCO ANNUAL COMPLIANCE REPORT FOR 2025**

## **REGULATORY MONITOR AND COMPLIANCE OFFICER**

**Transit Committee Meeting**

**April 9<sup>th</sup>, 2026**

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Regulatory Monitor and Compliance Officer**

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# RMCO Background

- RMCO for City of Ottawa since March 2018:
  - Started regulatory compliance monitoring in September 2019 (after revenue service)
- Experience:
  - More than 40 years in the railway sector
  - Including passenger and commuter service
  - Worked in several positions in operations and corporate departments
  - Worked at CN Rail for 35 years - retired as Vice President of Safety and Sustainability
- Education:
  - Bachelors and Masters in Engineering, and MBA from McGill university
- Expertise:
  - Safety, Operations, Regulations, Auditing / Monitoring, Safety Management Systems, Safety Culture
- Member of IIA (Institute of Internal Auditors)

# RMCO Scope / Mandate

- Regulatory Monitor and Compliance Officer (i.e. “RMCO”) position created as part of Delegation Agreement
- RMCO Mandate / Scope:
  - Monitoring of regulatory compliance for safety and security;
  - Confederation line only (i.e. excludes lines 2/4);
  - Encompassing OC Transpo, IWSD and Contractors;
  - Monitoring started **after** revenue service;
  - RMCO does **not** perform audits and does **not**:
    - Investigate incidents or safety issues;
    - Assess safety or risks;
    - Assess the adequacy of Regulations, equipment or technology;
    - Assess contractor competence.
- RMCO monitoring represents one of several layers of oversight in the City’s Regulatory Regime

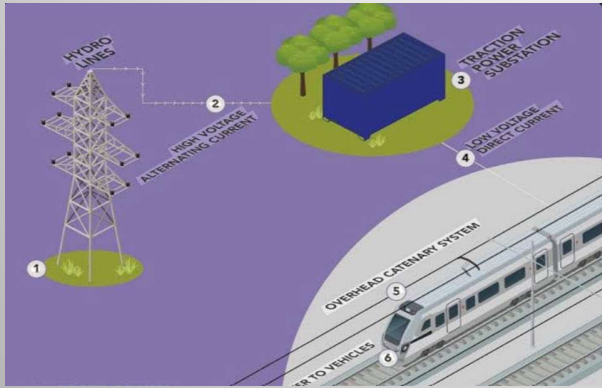
# Regulatory Monitoring Approach

- RMCO monitors compliance relative to Confederation Line Designated Regulations (i.e. “CLR”):
  - OC Transpo has specific regulatory responsibilities (refer to Figure below)
  - Contractors have contractual responsibilities with respect to Project Agreement (i.e. “P.A.”)
- Monitoring is structured and transparent:
  - Risk-based selection of areas and programs to monitor
  - Monitoring procedures
  - Fact and evidence-based assessment of compliance
  - Engagement of stakeholders



# Areas Monitored in 2025

- Risk-based analysis identified 2 areas to monitor in 2025:



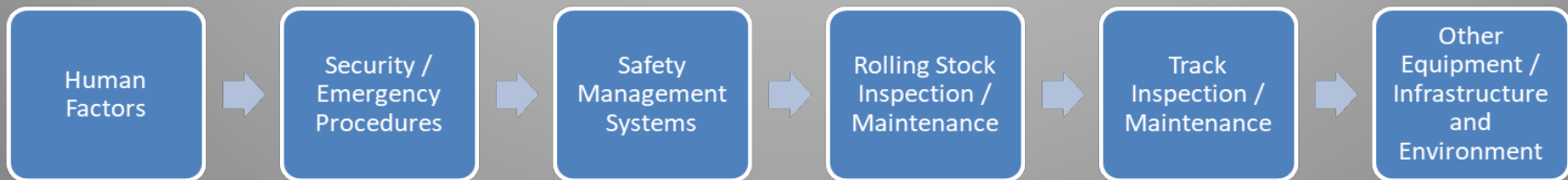
**Traction Power Supply System:**  
Monitored June - September



**Communications Systems:**  
Monitored September - December

- All 6 key risk areas\* monitored since revenue service:

Monitoring Breadth



\* Typical risk areas in commuter lines

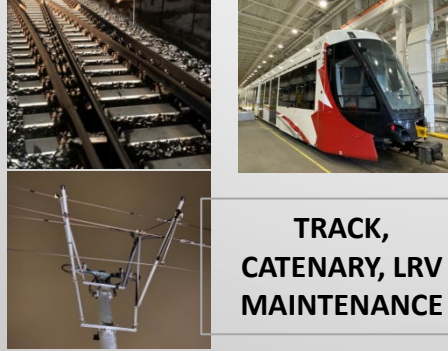
# RMCO Monitoring Since RSA - Overview

2019



TRAINING - ELROR

2020



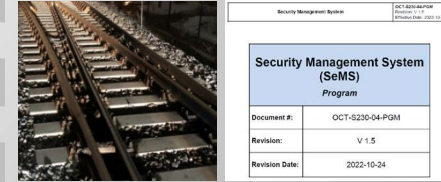
TRACK,  
CATENARY, LRV  
MAINTENANCE

2021



SMS,  
EMERGENCY  
MGMT

2022



TRACK, CATENARY,  
LRV REVISIT &  
SECURITY MGMT  
SYSTEM

2023



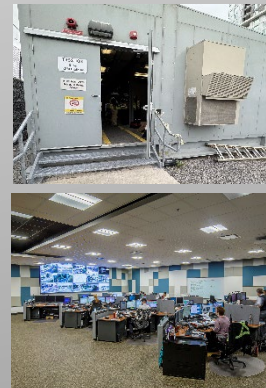
TUNNELS, CBTC  
INSPECTIONS

2024



STRUCTURES / BRIDGES,  
HOURS OF SERVICE

2025



TRACTION POWER S.S.,  
COMMUNICATION SYSTEMS

2026

TBD\*

\* To be determined on the basis of risk-based analysis

# RMCO Activities - 2025

## RMCO Activities - 2025

### Regulatory Monitoring:

- 1) Monitored OC Transpo and RTG / RTM:
  - a) Traction Power Supply System
  - b) Communications Systems
- 2) Risk-based analysis
- 3) Developed specific monitoring procedures
- 4) Review / analysis of documents and records, interviews and field observations

### Remedial Actions:

- Analysis, engagements with OCT and RTG / RTM
- Focus on resolution of Findings

### Reporting:

- 1) Quarterly City Manager meetings / updates
- 2) Annual Compliance Report

# Monitoring of Traction Power Supply System (TPSS)

## What is the Traction Power Supply System?

- Electrical infrastructure which converts utility power into usable DC traction power;
- Delivers power to trains through the overhead catenary system\*;
- Transformers step down the voltage, while rectifiers convert the AC power to DC power (1500 VDC) suitable for light rail vehicles (i.e. LRV's);
- 10 traction power stations in the Confederation Line (excluding East Extension)

### Traction Power Stations – Confederation Line



\* The Catenary system was monitored by the RMCO in 2020 and 2022 – as such it was not re-monitored in 2025

# Monitoring of Traction Power Supply System (TPSS)

## Why monitor traction power supply system?

- Risk-based analysis identified TPSS as a key area to monitor in 2025:
  - ✓ Critical for operating the Confederation Line;
  - ✓ Potentially high impact on safety, security and service;
  - ✓ Not monitored by RMCO since RSA

## What are TPSS inspection / maintenance requirements?

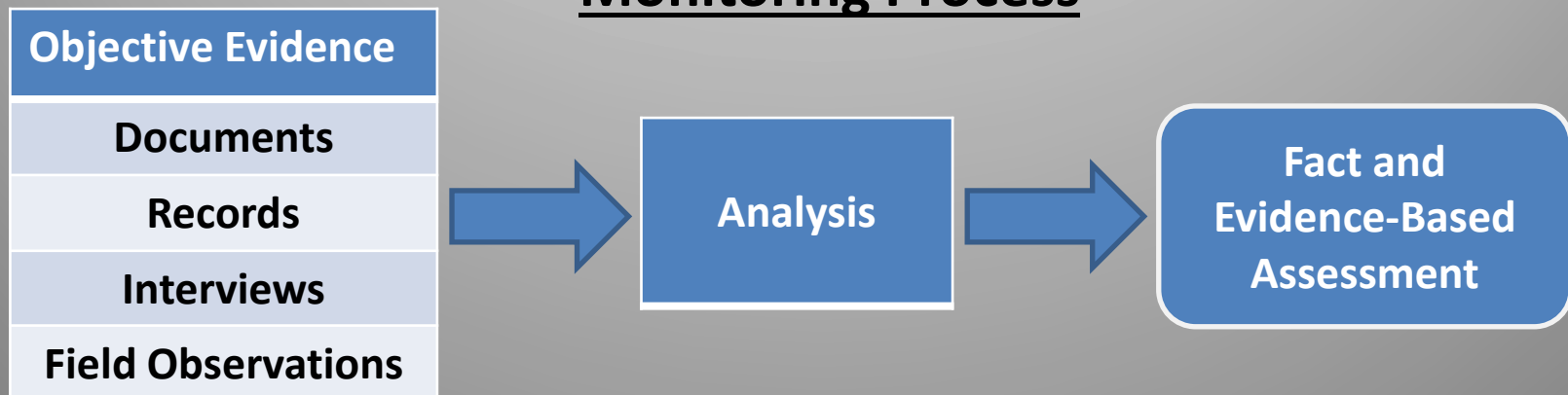
- The Project Agreement and associated program documents identify specific inspection and maintenance requirements for the TPSS;
- Most of the work is performed by Alstom Power Technicians

<b>B-5. Maintenance for TPSS (Traction Power Sub Station)</b>			
<b>Frequency</b>	<b>Asset</b>	<b>Maintenance Activity</b>	<b>Reference Code</b>
Monthly	Building assembly	TPSS Visual Inspection	OTT-TPS10-MTN10-WMS-001
	HVAC ( <i>Visual inspection</i> )		
	Fire detection system		
Bi-Annual	Building	TPSS Cleaning	OTT-TPS10-MTN10-WMS-003
	Eye wash Station	Eye wash station refilling	OTT-TPS-MTN10-WMS-007
Seasonal	HVAC Inspection	HVAC Seasonal Inspection	OTT-TPS-MTN10-WMS-006
Annual	DC ( <i>Direct Current</i> ) Breaker	TPSS Annual inspection	OTT-TPS10-MTN10-WMS-002
	AC ( <i>Alternating Current</i> ) Breaker		
	Rectifier Transformer		
	Battery Charger + Battery bank		
	Disconnect Switch		
	Auxiliary Transformer		
	Fire detection system		
	Distribution panels		
Cable inspection			

# Monitoring of TPSS (cont'd)

- Monitoring uses a fact and evidenced based approach
- Specific procedures developed for TPSS
- Monitoring initiated with OC Transpo and RTG / RTM June 2, 2025 (procedures P4008 and P4009)
- Monitoring period Jan. 1, 2024 – March 31, 2025 (i.e. review of records)
- Over 300 documents and records received / reviewed
- Interviews and field observations performed in August
- Meetings held with OCT and RTG / RTM to finalize findings in September
- Excellent collaboration by all stakeholders

## Monitoring Process



# Monitoring of TPSS (cont'd)

## ➤ Monitoring focused on the following elements:

- 1) OC Transpo's Regulatory responsibilities identified in the Confederation Line Designated Regulations:

Regulatory Responsibility*	Monitoring Process
Adoption	Monitor whether TPSS Programs have been Adopted
Direction	Is Direction being provided internally and to Contractors?
Oversight	Is Oversight being performed on TPSS?
Records	Are TPSS Records being maintained / available?

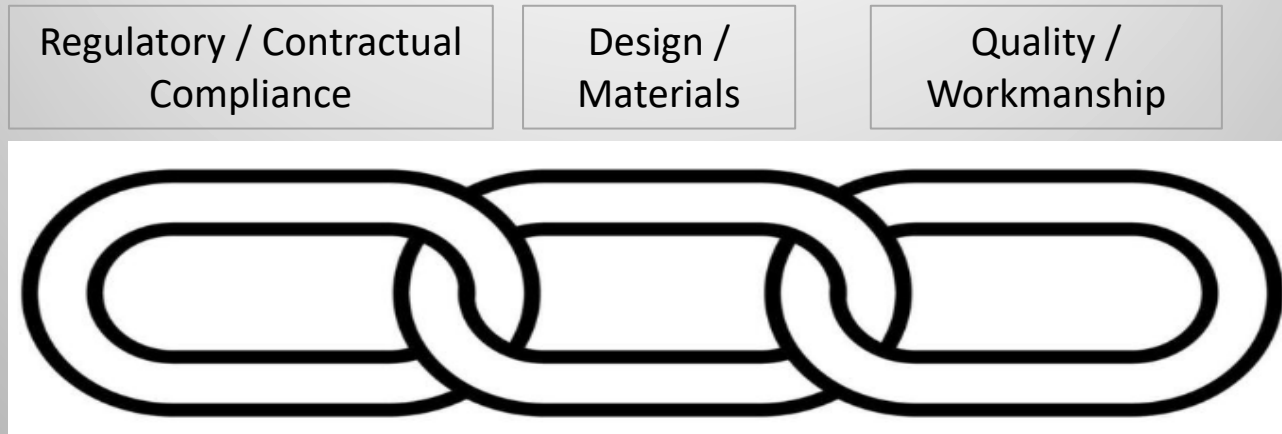
\*Implementation (i.e. inspections/ maintenance monitored through Contractors)

- 2) RTG / RTM contractual responsibilities (i.e. P.A.) relative to TPSS:

Contractual Responsibility	Monitoring Process
Documents	Monitor whether Program documents have been implemented
Inspections / Maintenance	Inspections / maintenance being performed in accordance with Program requirements?
Repairs	Inspection findings being addressed with repairs / remediation?
Oversight	Oversight performed on TPSS inspections / maintenance?
Training	Power Technicians trained with all mandatory courses?

# Regulatory compliance - Role in Safety

- A Safe operation requires several elements to function effectively:



- Each link is important for safety:
  - 1) Regulatory / Contractual compliance (e.g. regime of inspections)
    - ✓ Identifies / addresses defects or conditions which can represent hazards
  - 2) Design / Materials:
    - ✓ Ensures that components can withstand operating requirements
  - 3) Quality / Workmanship:
    - ✓ Key requirements for effective inspections, maintenance and repairs

# TPSS Monitoring Findings – OC Transpo

**OC Transpo Findings:** All 5 elements monitored are compliant

5 Elements Monitored			
Adoption	Direction	Oversight	Records
Compliant	Compliant	Oversight Plan – Compliant	Compliant
		Oversight Activities - Compliant	

## OC Transpo Compliance Findings – Summary:

- Adoption – compliant:
  - ✓ OCT provided programs and documents adopted for TPSS
- Direction – compliant:
  - ✓ Direction provided through the Project Agreement (Schedule 15-3: Appendix A – Attach. 3 “Traction Power System”; and P.A. Sched. 15-2: “2.4 Traction Power Substations”, “2.5 Traction Power”), as well as Program documents and associated procedures;
  - ✓ Specific TPSS inspection / maintenance requirements identified in Program Documents (e.g. Maintenance and Rehabilitation Plan, Asset Management Plan, WMS procedures etc.)

# TPSS Monitoring Findings – OC Transpo (cont'd)

- Oversight (plan) - compliant:
  - ✓ Substantive Oversight Plan (i.e. OCT “Line 1 Oversight Plan”) – updated annually
  - ✓ Annual schedules of monitoring activities include TPSS
- Oversight (activities) - compliant:
  - ✓ Dedicated oversight resources performing oversight
  - ✓ Records confirm OCT oversight resources are monitoring TPSS
- Records - compliant:
  - ✓ Records maintained and provided for oversight and contractual correspondence

## Opportunity identified:

- Opportunity identified for OC Transpo to strengthen record keeping of Oversight Activities - some of OC Transpo’s oversight Records for the TPSS were provided in excel format, although the 'Rail Systems Oversight Schedule' specifies that such Oversight activities are to be recorded in CleverCAD (information system). This is being addressed by OC Transpo.

# TPSS Monitoring Findings – RTG / RTM

**RTG / RTM Findings:** 4 elements conformant and 2 mostly conformant

6 Elements Monitored			
Adoption / Direction	Implementation	Oversight	Records
Conformant*	Inspections – Conformant	Conformant	Conformant
	Repairs - Mostly Conformant		
	Training - Mostly Conformant		

## RTG / RTM Compliance Findings – Summary:

- Adoption / Direction – conformant:
  - ✓ RTG / RTM provided Programs and documents (e.g. RTM Maintenance and Rehab. Plan, Asset Management Plan, WMS procedures etc.) which outline requirements for inspections / repairs
- Implementation (inspections) – conformant:
  - ✓ RTM provided about 300 inspection / maintenance records and documents
  - ✓ The review / analysis of inspection / maintenance records shows a level of execution which is conformant.

\* The term “conformant” is used for Contractors because of their Contractual obligations (i.e. vs “compliant”)

# TPSS Monitoring Findings – RTG / RTM (cont'd)


- Implementation (repairs) – mostly conformant\*:
  - ✓ The RMCO identified a sample of inspection records which contained conditions requiring repairs / remediation
  - ✓ RTM provided the corresponding Alstom work orders for the conditions identified
  - ✓ A review of these work orders shows that the repair duration and severity vary significantly. 3 of the 11 items were not closed at the time of the monitoring
- Implementation (training) – mostly conformant\*:
  - ✓ The training matrices for Alstom employees (power technicians) involved in TPSS inspections / maintenance appear to be mostly conformant
- Oversight - conformant :
  - ✓ RTM provided an Oversight Plan (RTM-OP-PLN-739), an “Oversight Tracker” which shows specific monitoring activities performed for TPSS, and records which confirm that oversight / audit activities were performed on TPSS
- Records - conformant :
  - ✓ RTM has an information system which shows inspection / maintenance activities for TPSS and is used for monitoring purposes.
  - ✓ RTM provided inspection / maintenance records and oversight records.

\*Note: Findings are being addressed through remedial actions process – refer to next slides




# Monitoring of Communications Systems

## ➤ What are Communications Systems?

- ‘Communications Systems’ are components defined in the Project Agreement and Program documents which include the following:
  - a) Camera System (CCTV)
  - b) Public Address System (PA)
  - c) Passenger Information System (PIS)
  - d) Telephony System (TS)
  - e) Guideway Intrusion Detection System (GIDS)
  - f) Communication Transmission System (CTS)
  - g) High Speed Data Receivers (HSDR)
  - h) Intrusion Access Control (IAC)
  - i) Supervisory Control and Data Acquisition (SCADA)

CCTV	PA	PIS
		
<p>Camera System in stations and across the transit system</p>	<p>Public Address system for passengers</p>	<p>Passenger Information System – screens which display information at stations</p>

# Monitoring of Communications Systems (cont'd)

TS	GIDS	CTS
		
<p>Telephone System for emergency, operational, and information calls across the transit system (excludes LRV emergency intercoms )</p>	<p>Guideway Intrusion Detection System: detects intrusion to guideway at stations and tunnel portals</p>	<p>Communication Transmission System - includes fiber optics, firewalls, network management system and network switches</p>

HSDR	IAC	SCADA
		
<p>High Speed Data Receivers: wayside devices which receive and transmit LRV video recordings / data</p>	<p>Intrusion Access Control System: controls access to key assets (e.g. TPSS stations)</p>	<p>Monitoring and control of the operations system interfacing to CCTV, IAC, and remote devices</p>

# Monitoring of Communications Systems (cont'd)

## Why monitor Communications Systems?

- Risk-based analysis identified Communications Systems as a key area for 2025:
  - ✓ Important role in the operation of the Confederation Line;
  - ✓ Potentially high impact on safety, security and service;
  - ✓ Not monitored by RMCO since RSA

## What are inspection / maintenance requirements?

- The Project Agreement and associated program documents identify specific inspection and maintenance requirements for Communications Systems;
- Most of the work is performed by Alstom Signals & Communications Technicians

B-3. Maintenance for Communications System			
Frequency	Asset	Maintenance Activity	Reference Codes
Daily	Communication Systems	Inspection via SCADA	OTT-COM-MTN10-WMS-020
Monthly	SCADA	Inspection - SCADA	OTT-COM-MTN10-WMS-021
Quarterly	PIDS	Inspection – Stations/BCC/YCC/TOCC	OTT-COM-MTN10-WMS-003
	PA		OTT-COM-MTN10-WMS-006
	IAC		OTT-COM-MTN10-WMS-014
	CTS		OTT-COM-MTN10-WMS-018
	CCTV		OTT-COM-MTN10-WMS-029
	HSDR		OTT-COM-MTN10-WMS-024
	Telephony		OTT-COM-MTN10-WMS-026
	SCADA		OTT-COM-MTN10-WMS-022
	IAC		OTT-COM-MTN10-WMS-014
	CCTV		Inspection - TPSS
Telephony	OTT-COM-MTN10-WMS-026		
Bi -Annual	GIDS	Inspection - GIDS	OTT-COM-MTN10-WMS-012
	Workstations	Workstation Cleaning	OTT-COM-MTN10-WMS-005

# Communications Systems Monitoring Findings – OC Transpo

**OC Transpo Findings:** All 5 elements monitored are compliant

5 Elements Monitored*			
Adoption	Direction	Oversight	Records
Compliant	Compliant	Oversight Plan – Compliant	Compliant
		Oversight Activities - Compliant	

## OC Transpo Compliance Findings – Summary:

- Adoption – compliant:
  - ✓ OCT provided programs and documents adopted for Communications Systems
- Direction – compliant:
  - ✓ Direction provided through the Project Agreement (Schedule 15-3: Appendix A – Attachment 3 “Systems Maintenance Service” which contains Section 2(d) titled “Communications Systems); as well as program documents;
  - ✓ Specific inspection / maintenance requirements identified in Program Documents (e.g. Maintenance and Rehabilitation Plan, Asset Management Plan, WMS procedures etc.)

\* Note: Implementation (i.e. inspection / maintenance) monitored with contractors

- Oversight (plan) - compliant:
  - ✓ Substantive Oversight Plan (i.e. OCT “Line 1 Oversight Plan”) – updated annually
  - ✓ Annual schedules of monitoring activities include Communications Systems
- Oversight (activities) – compliant:
  - ✓ Dedicated oversight resources performing oversight
  - ✓ Records confirm OCT oversight resources are monitoring Communications Systems
- Records - compliant:
  - ✓ Records maintained and provided for oversight and contractual correspondence

## Opportunities identified:

- a) Some oversight Records were created in CleverCAD several months after the activities were performed. OCT is considering the implementation of a guideline requiring staff to enter oversight activities in CleverCAD within 30 days.
- b) Following a contract variation in Dec. 2023, RTM has been responsible to inspect / maintain GIDS devices outside of the downtown tunnel. However, the objective evidence provided by RTM indicates that GIDS inspections were performed using an inconsistent frequency and procedure. OC Transpo is reviewing internal processes relative to oversight following contract variations to ensure conformance.

# Communications Systems Monitoring Findings – RTG / RTM

**RTG / RTM Findings:** 3 elements conformant and 3 mostly conformant

6 Elements Monitored			
Adoption / Direction	Implementation	Oversight	Records
Conformant	Inspections – Mostly Conformant	Mostly Conformant	Conformant
	Repairs – Conformant		
	Training - Mostly Conformant		

## RTG / RTM Compliance Findings – Summary:

### ➤ Adoption / Direction – conformant:

- ✓ RTG / RTM provided Programs and documents (e.g. RTM Maintenance and Rehab. Plan, Asset Management Plan, WMS procedures ) which outline requirements for inspections / repairs of Communications Systems

### ➤ Implementation (inspections) – mostly conformant:

- ✓ RTM provided 800 inspection / maintenance records corresponding to Program requirements
- ✓ The level of execution is conformant with the exception of GIDS inspections which were initiated in Jan. 2024 following a Contract variation.

# Comm. Systems Monitoring Findings – RTG / RTM (cont'd)

- Implementation (repairs) - conformant:
  - ✓ The RMCO identified a sample of inspection records which contained conditions requiring repairs / remediation, and requested objective evidence to assess completion
  - ✓ RTM provided work orders for all the conditions identified which confirm resolution / closure. A review of these work orders shows a strong level of follow-up from identification to resolution
- Implementation (training) - mostly conformant\*:
  - ✓ The training matrices for Alstom employees (i.e. S. & C. technicians) involved in the inspection / maintenance of Communications Systems appear to be mostly conformant
- Oversight - mostly conformant\* :
  - ✓ RTM has an Oversight Plan and performed specific audits on Communications Systems. However, the RTM Oversight Plan requires ongoing Oversight activities which do not appear to have been performed
- Records - conformant :
  - ✓ RTM has an information system which shows inspection / maintenance activities for communications systems and is used for monitoring purposes.
  - ✓ RTM provided inspection / maintenance records and oversight records.

\*Note: Findings are being addressed through remedial actions process – refer to next slides

# Remedial Actions – RTG / RTM

- OC Transpo requests remedial actions from RTG / RTM for all RMCO Findings:
  - Expectations / timelines for submission and implementation of remedial actions specified in OC Transpo process map
- Resolution of Remedial Actions actively pursued:
  - OC Transpo engaging RTG / RTM and using contractual means for resolution
  - OC Transpo / RMCO meet RTG / RTM quarterly to review status of remedial actions and expedite resolution
- Progress being made (refer to next slide for summary table):
  - Since RSA, RMCO identified 59 Findings, of which 51 have been addressed and closed
  - 10 findings closed since last Transit Committee update
  - Of the 8 remaining (open) Findings:
    - ✓ 5 relate to monitoring performed in 2025 (i.e. 2 TPSS and 3 Communications Systems)
    - ✓ 1 relates to “Hours of Service Regulations” monitored in 2024
    - ✓ 1 relates to track inspections
    - ✓ 1 relates to Security Management Plan (i.e. Fence Intrusion Detection System)
- Good collaboration by RTG / RTM, but resolution of some Findings requires time to achieve consistent conformance:
  - Inspections (i.e. track) requires consistently high level of execution which meet the City’s requirements – this is monitored through oversight and in monthly activity reports
  - Findings remain open until objective evidence demonstrates conclusive resolution over time.

# Remedial Actions Summary - RTG / RTM

REGULATORY AREA / PROGRAM	PERIOD MONITORED	NUMBER OF FINDINGS	NUMBER OF FINDINGS CLOSED	NUMBER OF FINDINGS OPEN
RULES TRAINING - OPERATING EMPLOYEES	Q4 - 2019	1	1	0
TRACK INSPECTIONS	Q1 / Q2 - 2020	8	8	0
LRV INSPECTIONS	Q3 / Q4 - 2020	5	5	0
CATENARY INSPECTIONS	Q3 / Q4 - 2020	5	5	0
SMS	Q2 / Q3 - 2021	6	6	0
ERP	Q4 - 2021	6	6	0
INSPECTIONS LRV, TRACK*, CATENARY	Q2 / Q3 - 2022	4	3	1
SECURITY MANAGEMENT SYSTEM	Q4 - 2022	6	5	1
TUNNEL INSPECTIONS	Q2 / Q3 - 2023	5	5	0
CBTC INSPECTIONS	Q3 / Q4 - 2023	2	2	0
BRIDGE INSPECTIONS / REPAIRS	Q2 / Q3 - 2024	2	2	0
HOS REGULATIONS	Q4 - 2024	4	3	1
TPSS	Q2 / Q3 - 2025	2	0	2
COMMUNICATIONS SYSTEMS	Q4 - 2025	3	0	3
	<b>TOTAL</b>	<b>59</b>	<b>51</b>	<b>8</b>

\* Note: Open finding for 2022 relates to track inspections; the LRV and Catenary inspections have been closed.

# Summary and Upcoming Activities

- RMCO activities completed in 2025:
  - Monitored inspections / maintenance of TPSS and Communications Systems
  - Strong compliance / conformance results
  - Findings being addressed through remedial actions process
  
- RMCO upcoming activities:
  - City Council meeting April 22
  - Risk-based analysis to be updated in early May to finalize next areas to monitor
  - Two risk areas to be monitored in 2026:
    - ✓ Segment 1: June to August
    - ✓ Segment 2: September to December
  - Ongoing focus on remedial actions