



LRT disruption: wheel bearing issue update

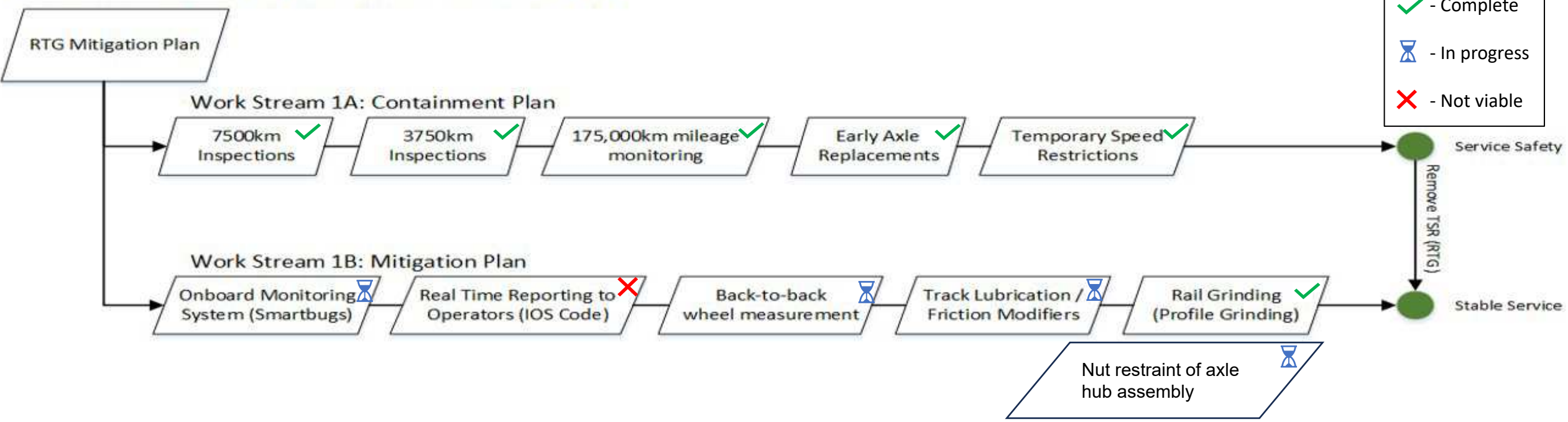
Transit Commission
October 12, 2023



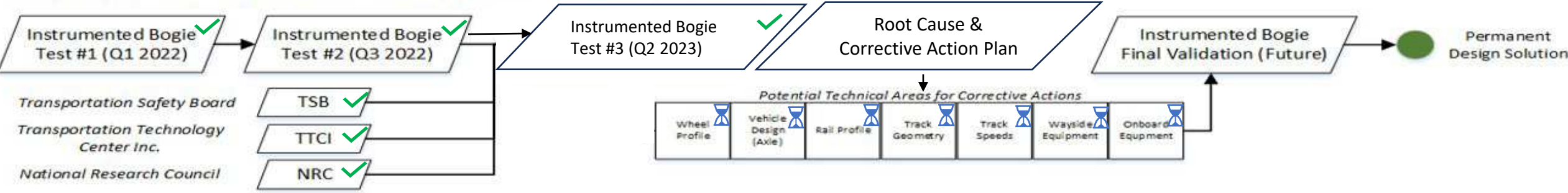
Introduction

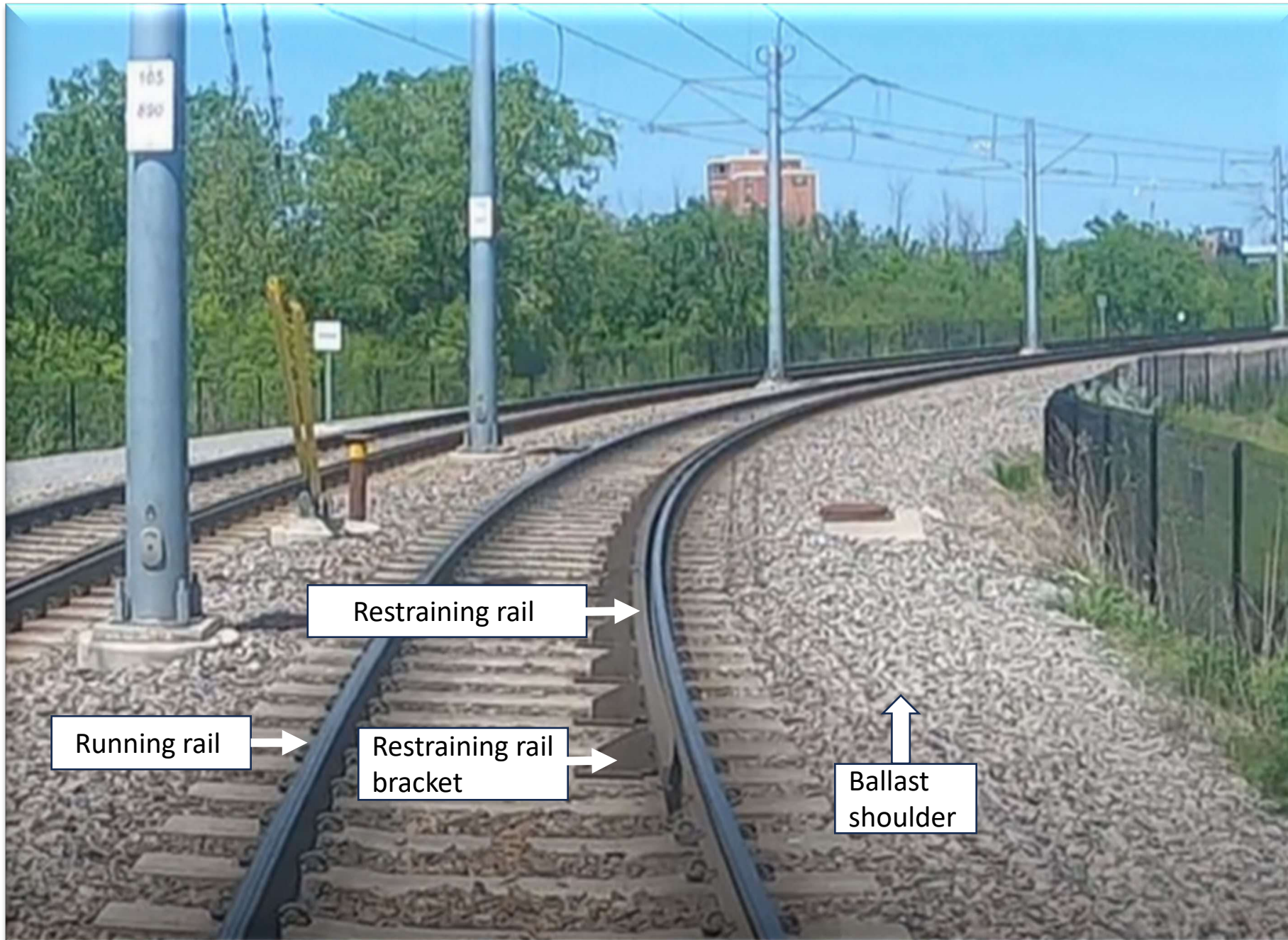
- Three major incidents from 2021-23 related to wheel and axle bearing issues
- Regular updates to Council and the public on these issues
- This presentation includes an overview of work completed, work underway, and planned work for the future
- Also in attendance and presenting to Transit Commission today: spokespeople from RTG's team

Work Stream 1: Axle Failure Mitigation & Containment Plan



Work Stream 2: Axle Failure Root Cause Analysis & Corrective Action Plan





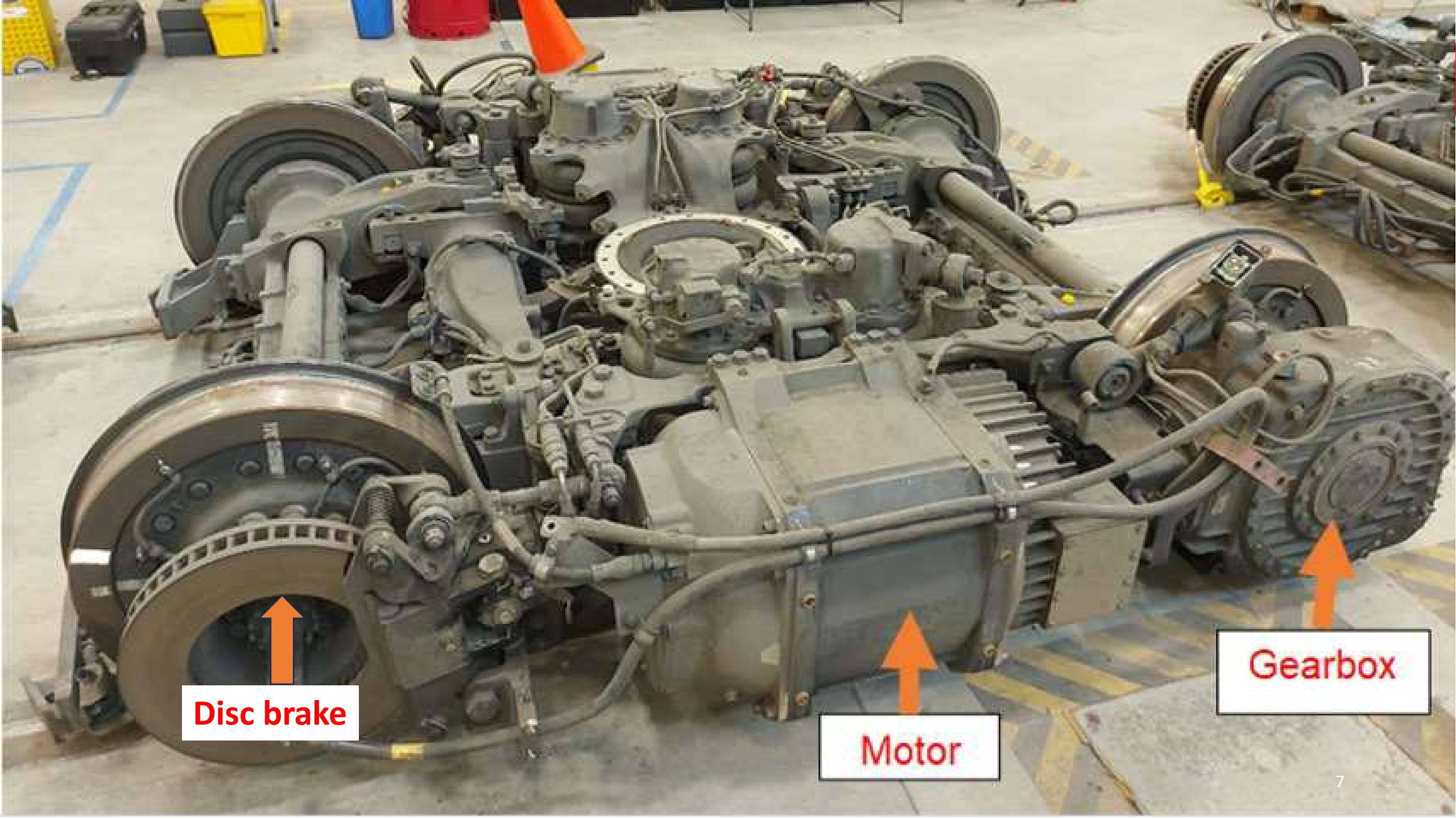


Example – top of rail friction modifier
(credit: LBFoster.eu)



Example – accelerometer

Credit: transmissiondynamics.com



Disc brake

Motor

Gearbox



Axle hub assembly

Containment plan – maintaining service

Speed
Restrictions

Temporary 20% speed reduction in curves

Axle
Replacements

Leading and trailing axles replaced at 60,000 KMs

Prybar
Test

- "Failure" at 0.005 inches measured every 3,750 KMs
- "Grease check" introduced

Alstom Safety
Note
Revision

Currently re-assessed every 30 days

Return to
Service Plan

Oversight by Transportation Research Associates (TRA)

Mitigation plan – providing stable service

Smartbugs

- Four LRVs fitted with accelerometers – no signature identified
- Bench test with NRC in progress – results expected by end of 2023

IOS Code

Slip/slide not a reliable indicator of bearing degradation

Wheel
Measurement

Equipment to remotely detect anomalies under review by Alstom

Top of Rail

Implementation underway – in operation January 2024

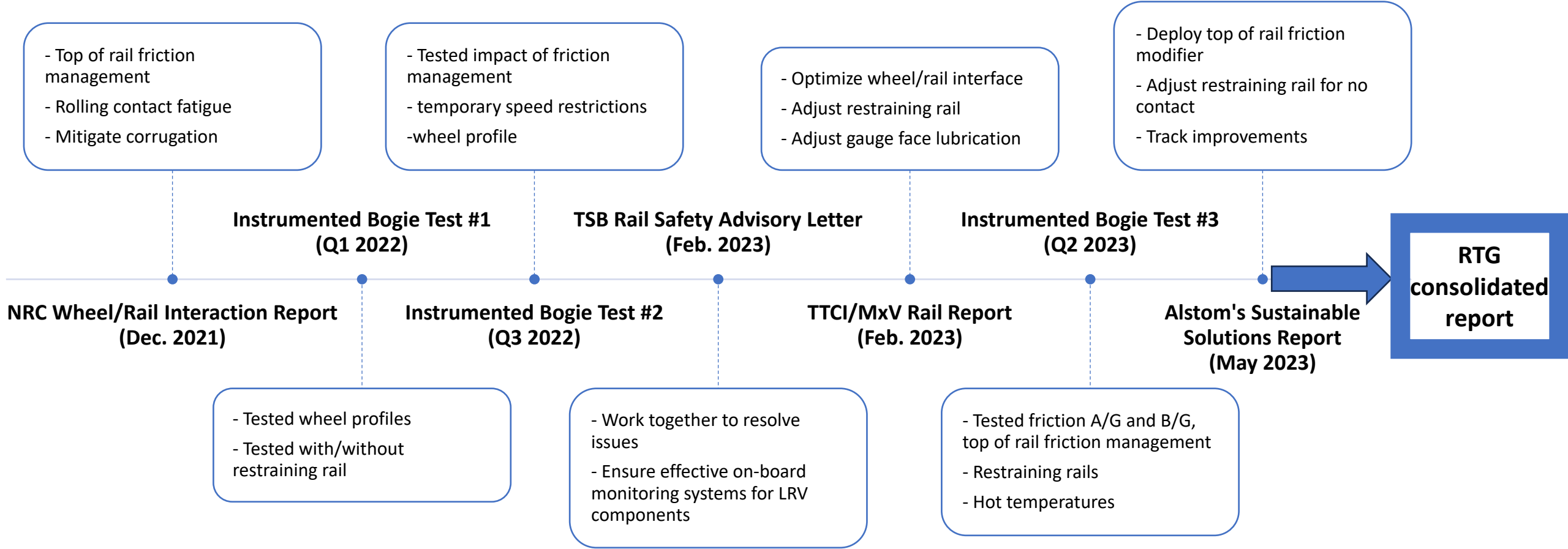
Rail Grinding

Summer grinding program completed, monitoring and re-grinding will be continual

Nut
Restraint

Recent proposal to improve reliability of mitigation plan

Axle failure root cause analysis



Stage 2 implications

- Any changes and improvements will be applied to Stage 2
- Criteria for restraining rails is being adopted
- Top of rail friction modifier equipment will be installed on Stage 2 rail, as part of construction
- Further changes will be communicated to Council



RTG Presentation

Corrective actions

