

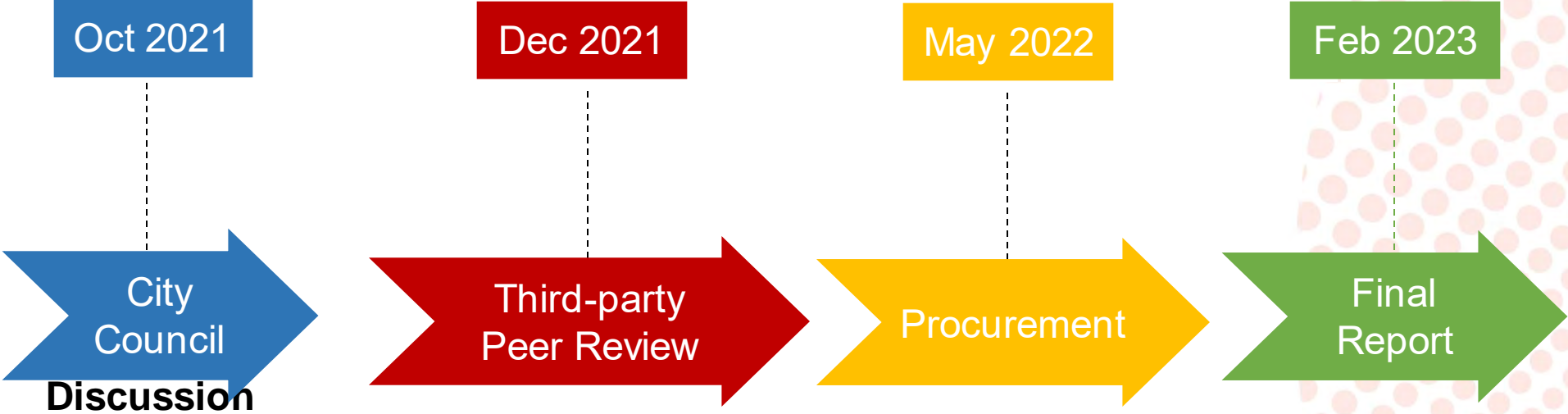


# Stage 2 Trillium Line Independent Peer Review

Light Rail Sub-Committee  
May 26, 2023



# Background



Quality of railway design, construction, and installation on the TLE

### Objectives

- Analyze & validate TNEXT's strategies & methodologies
- Identify any potential issues

SYSTRA Canada Inc. and RATP Dev. Canada



# Company profile

## History

Over 60 years of experience  
7,500 employees worldwide

## Services

Transportation Solutions  
*Advise, Design and Build New  
Mobility Systems*

## SYSTRA Canada

*Certified ISO  
9001:2015*

## Relevant Projects

- ARTM Blue Line Extension Peer Review  
*Montreal, Canada*
- Lusail Light Rail Transit  
*Doha, Qatar*
- Al Sufouh Tramway System Project  
*Dubai, United Arab Emirates*

## History

Over 120 years of experience  
3rd largest public transport entity  
worldwide

## Services

Operations & Maintenance Services  
*Design, Build, Operate, Maintain,  
and Modernize Urban Rail Systems*

## RATP Group



# Process

## Review

Extensive Review of various documentation from project management, design, construction, testing, operation and Maintenance.

## Interviews

Series of interviews and workshops with the TransitNEXT team.

## Site Visit

A site visit to various project locations, including the Main Server Room, the Test Lab, the Main Control Centre, the MSF, and the Walkley Station.

## Discussion

Several rounds of constructive discussions with TransitNEXT and the City to arrive at a shared understanding of the strategies employed based on the work completed to date.

## Final Review

Final report identifies project risks and offers recommendations, based on final review of document updates and feedback from City/TransitNEXT.

## Action Plan

City has taken active steps to address any identified shortfalls by implementing an action plan throughout the ongoing project development

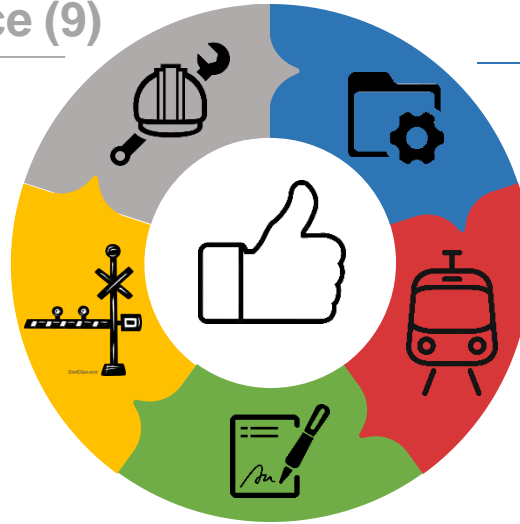


# 47 action Items

## Operations & Maintenance (9)

### Rail Systems (20)

- Trains and Systems
- Rail Communication Systems
- Testing & Commissioning
- System Engineering Management

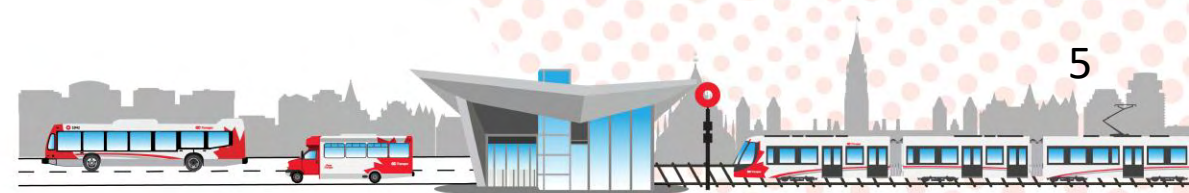


## Project Management (3)

### Rail Infrastructure (5)

- Trackwork
- Tunnel Ventilation System
- Construction Control

## Safety Processes (10)



# Status of action Items

## ✓ Fully Addressed (23)

- *Revisions to various documents*
- *Issuance of Documents Following Peer Review*
- *Completed Testing*

## ✓ Addressed in an Alternative Format (13)

- *Post Concrete Placement Verification*
- *On-site Systems Integration*

## ➤➤ In Progress (7)

- *Ongoing Report Updates*
- *Recurring Meetings*
- *Future Testing*

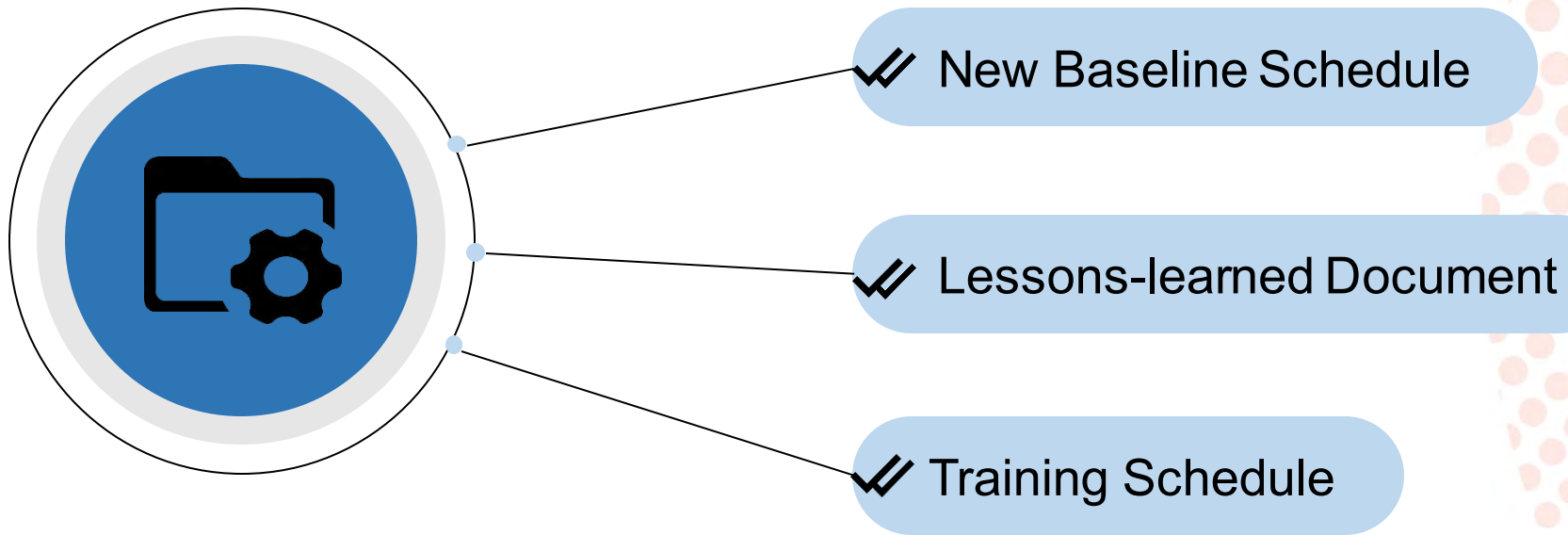


## Future Consideration (4)

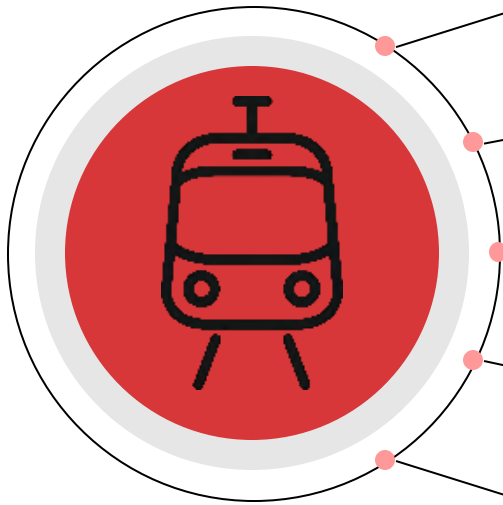
To be explored further based on System Performance



# Project management



# Rail infrastructure



✓ Direct Fixation Track - Methodology & Tests

✓ Limebank Crossover Rail (Structure Interaction Analysis)

» Tunnel Ventilation documentation

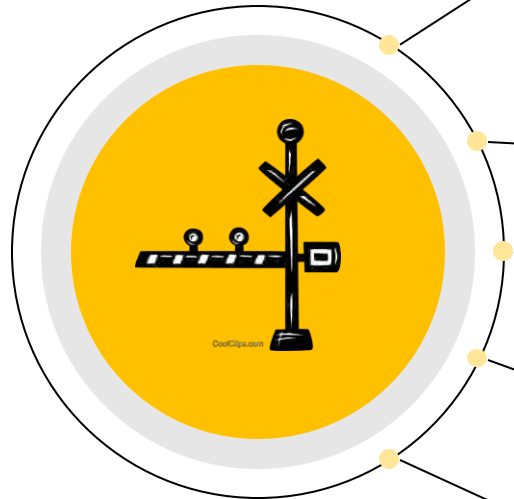
» Tunnel Temperature & Trains HVAC

✓ Post Concrete Placement Verification





# Rail systems (1 of 2)



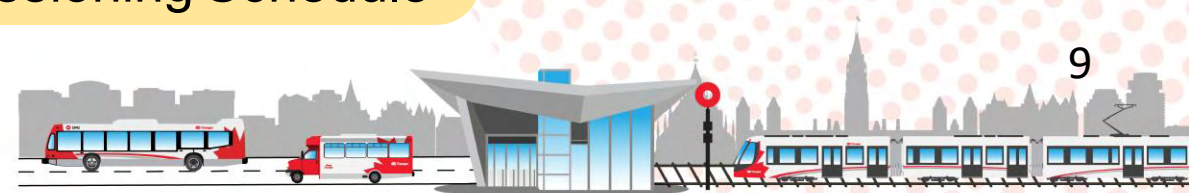
- ✓ Cold Weather Test (Door Operator)
- ✓ Cold Weather Test (Engine Startup)
- » Interior & Exterior Noise Tests
- ✓ Bogie Rotational Resistive Test
- ✓ Vehicle Vertical Gaps at the Platform

» Train Control System Test (GEBR Test)

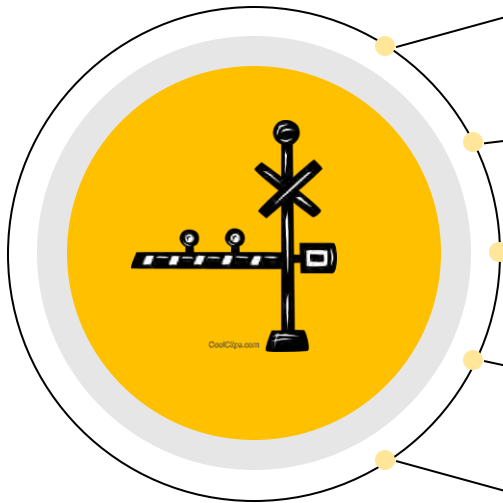
✓ Systems Testing & Documentation

✓ Testing & Commissioning Test Plan

✓ Testing & Commissioning Schedule



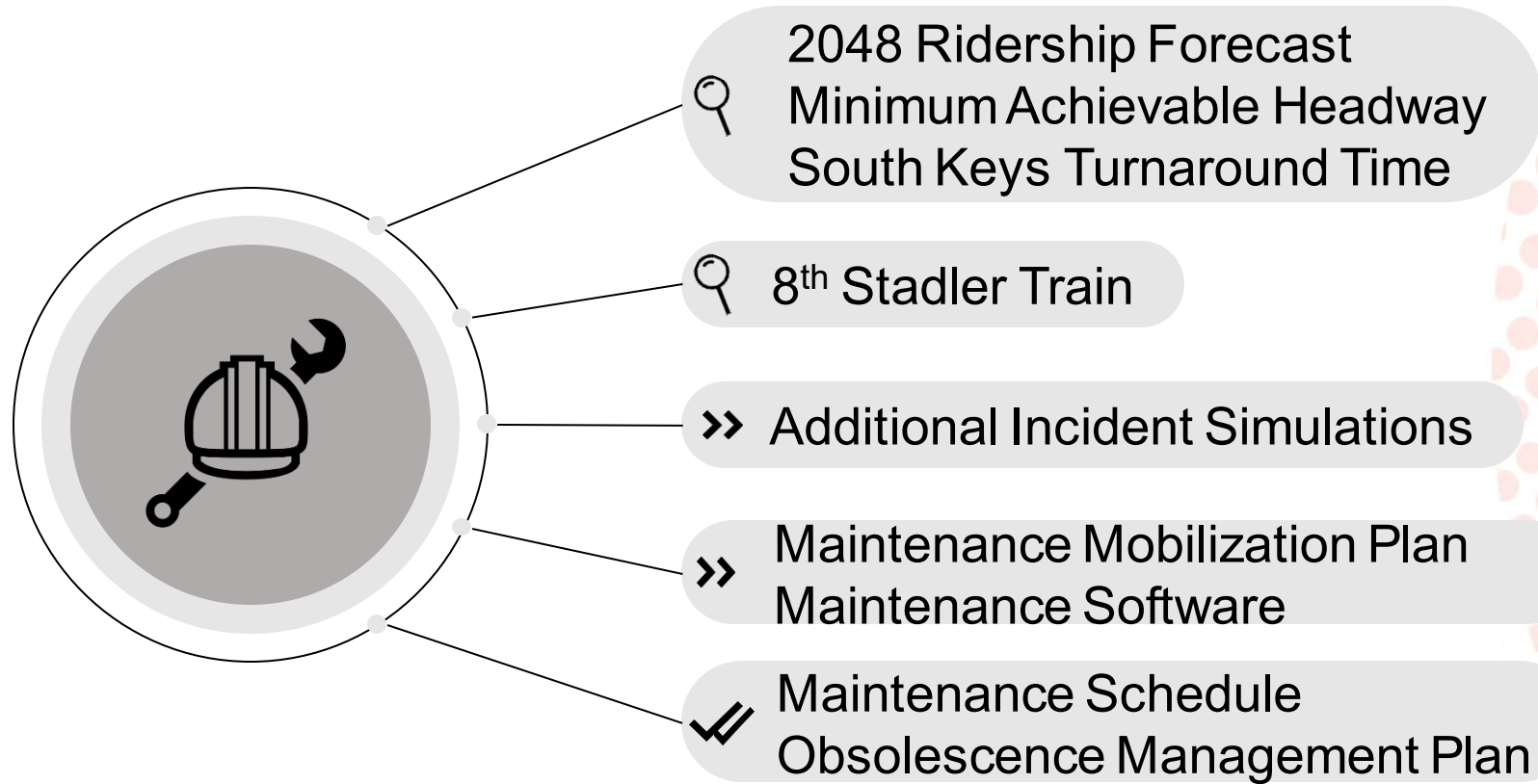
# Rail systems (2 of 2)



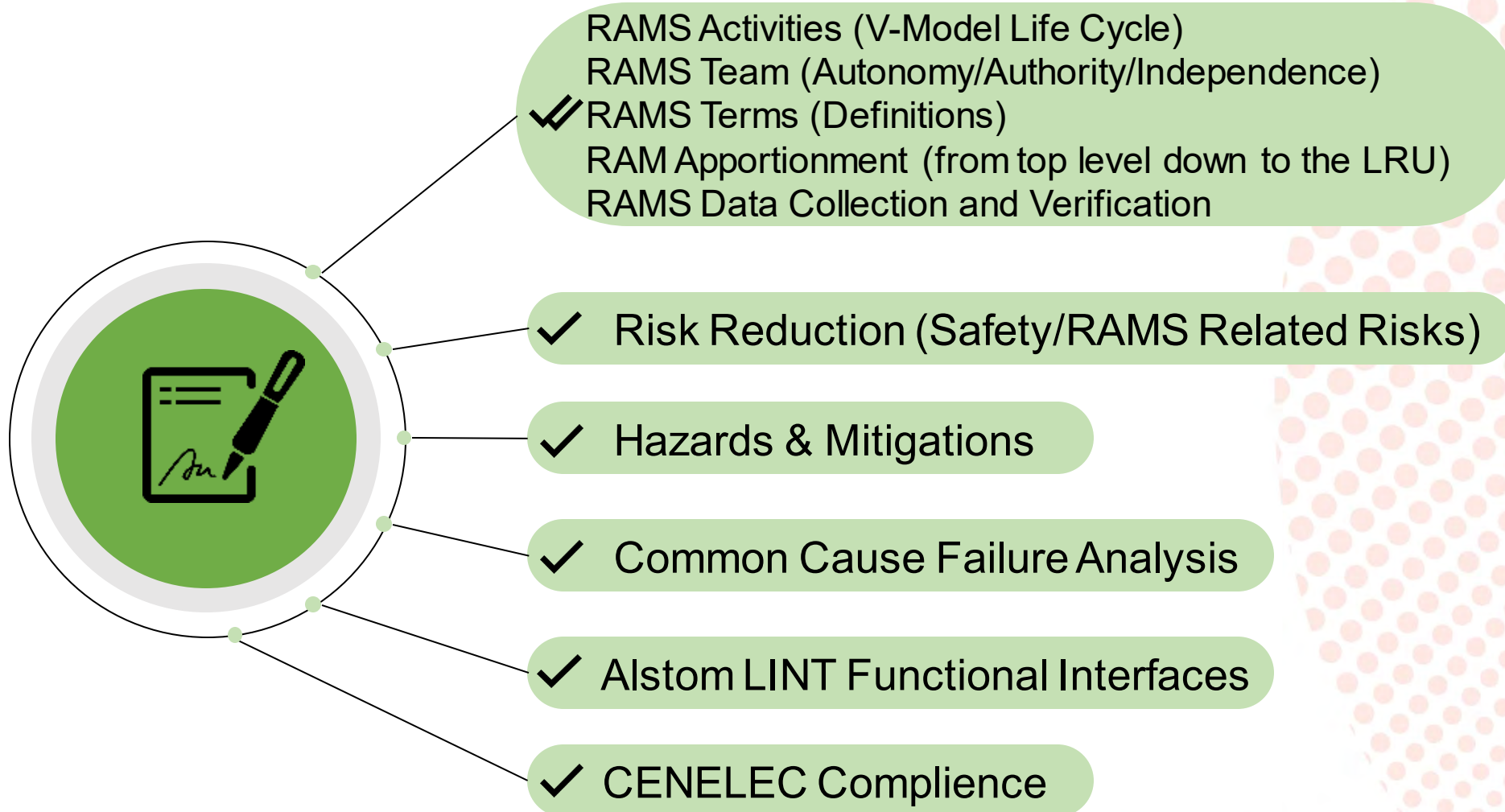
- ✓ Considerations for the Future Electrification
- ✓✓ Accountability for Systems Configuration Management
- ✓✓ EMC Control Plan update
- ✓✓ System Breakdown Structure & Functional Breakdown Structure
- ✓✓ Operating Requirements for 98.5% Service Delivery



# Operations & maintenance



# Safety processes



**Questions?**