Asset Management & Maintenance Operations: A Process Based Approach

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Key Presentation Take-Aways

- The Canada Line’s journey toward Asset Management excellence
- First steps for ISO 55001 conformance
- Maintenance operations core processes
- Key learnings and a new way of thinking
Canada Line
Vancouver, Canada

- $1.9 billion P3 Project
- O&M contract through 2040
- 18.5 km of Guideway
- 3 Water Crossings
- 16 Stations
- 148,000 Average weekday ridership
- 99.89% Availability
Asset Management on the Canada Line

2005: Initial Development
2009: Trial by Fire
2011: Making it Our Own
2015: "Major Maintenance"
2018: AM Review
2019: ISO 55000 Conformance
       Pursuit of Excellence
Gap Analysis

- Innocent
- Aware
- Developing
- Competent
- Optimizing
- Excellent

ISO Benchmark
Now What?

Customers
Legislation
Investors
Commercial Environment

Organisational Strategic Plan

Strategy & Planning
Asset Management Decision-Making
Asset Information

Lifecycle Delivery
Acquire
Operate
Dispose
Maintain

Risk & Review

Organisation & People

Scope of Asset Management

ISO 55001
Asset Information
Asset Management
Decision-Making

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### Asking the Basic Questions

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<th>Question</th>
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<tr>
<td>What are we maintaining?</td>
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<td>What is our basis for decision making?</td>
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<td>What work will be done?</td>
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<td>What do we know about?</td>
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<td>How do we manage the unknown?</td>
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<td>How do we manage projects/change?</td>
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<td>Who do we need to do our work?</td>
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<td>What else will we need?</td>
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<td>How do we track our work?</td>
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Responsive Work
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• Driven by condition assessment, failure, or risk
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- Requires investigation, evaluation of impact, development of solutions, and decision to proceed
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• Driven by condition assessment, failure, or risk
• Requires investigation, evaluation of impact, development of solutions, and decision to proceed
• What is our basis for decision making?
Value Based Risk Assessment

• Impact/Risk evaluation indexed to value drivers
• Value drivers can be weighted for criticality
• Active risks ➔ AM Risk Register
Moving Forward

- Ongoing journey toward ISO 550001 conformance
Moving Forward

• Ongoing journey toward ISO 550001 conformance

• Implementation of new process improvement tools & programs
Moving Forward

- Ongoing journey toward ISO 550001 conformance
- Implementation of new process improvement tools & programs
- Leveraging lessons learned for new projects
Values that guide us

Our values are the essence of our company’s identity. They represent how we act, speak and behave together, and how we engage with our clients and stakeholders.

**Safety**
We put safety at the heart of everything we do, to safeguard people, assets and the environment.

**Integrity**
We do the right thing, no matter what, and are accountable for our actions.

**Collaboration**
We work together and embrace each other’s unique contribution to deliver amazing results for all.

**Innovation**
We redefine engineering by thinking boldly, proudly and differently.