Confederation Line
Ottawa’s Light Rail Transit System

2015 Real Property National Workshop
Real Property Institute of Canada
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Rail Implementation Office
City of Ottawa
Agenda

- Project Overview
- Property Acquisition and Business Development Strategy
- Procurement Model
- Project Management Plan
- Stage 2
- Questions
Project Overview
Ottawa’s Transit Challenge

Without the LRT tunnel we would need to send an articulated bus down through the downtown at the impossible rate of 1 every 18 seconds in order to meet the demand expected by 2031.
The Confederation Line

- 12.5 km alignment, 2.5 km tunnel
- 13 stations, 3 underground
- 34 new Light Rail Vehicles (LRVs)
- New Maintenance and Storage Facility
Project Scope

- Maintenance and Storage Facility
- Vehicles
- Stations and Guideway
- Testing and Commissioning
- Highway 417 Expansion
- Associated cash allowance projects
Maintenance and Storage Facility
Light Rail Vehicle (LRV)
Light Rail Stations
Highway 417 Expansion Project
**System Capacity**

- **Initial ridership capacity of ~11 000 pphpd**
  - Future expansion can accommodate an ultimate ridership of 24,000 pphpd

- **Initial frequency of 3:15 min (peak hours)**
  - Future expansion can increase frequency to under 2 min

- **Travel time from Tunney’s to Blair totalling under 24 min, including stops**
Local Investment

- $240 million invested in over 20 local companies in 2013
- Approx. $360 million invested in 2014

Local companies include:

- **Hwy 417:**
  - Black and MacDonald
  - Dessau
  - Greenbelt Construction
  - High Road Maintenance
  - Marathon Drilling
  - Priestly Demolition
  - Tomlinson

- **Design:**
  - bbb architects;
  - MMM Group
  - Paterson Group
  - Stantec
  - Thurber Engineering

- **Tunnel construction:**
  - Dilfo Mechanical
  - DST
  - Dufresne Piling
  - Eastway
  - Explotech
  - Lafarge
  - Taggart
  - Cavanagh
  - Toban Electric
CONSTRUCTION SCHEDULE

- **Stations & Guideway**: SUMMER 2015 - FALL 2017
- **Tunnel**: SUMMER 2013 - FALL 2017
- **MSF**: SPRING 2013 - SUMMER 2015
- **Vehicle**: SPRING 2013 - WINTER 2018
- **417 Widening**: SPRING 2013 - SUMMER 2015
- **Testing/Commissioning**: WINTER 2015 - MAY 2018
- **Full Project**: SPRING 2013 - MAY 2018

Ottawa
Construction Update - Tunnel
Construction Update – Belfast Yard (MSF)
Construction Update – Stations and Guideway
Property Acquisition & Business Development Strategy
Property Acquisition

➢ To date, 100% of the required lands for the project are under City Control

➢ Total of 123 acres required:
  ➢ 95 acres for Confederation Line
  ➢ 26 acres for Maintenance and Storage Facility
  ➢ 2 acres for Hydro easements

➢ Acquisitions were advanced through 5 distinct phases

➢ Each expropriation included an individual by-law

➢ A total of 5 Memorandums of Understandings were completed and executed
Property Acquisition

Property Rights includes:

- Land assembly for MSF
- Combination of fee simple, permanent and temporary easements for Confederation Line
- Subsurface rights
- Integrated stations rights acquired inside existing buildings and within future development sites
Memorandums of Understanding

Memorandums of Understanding and Agreements were finalized and are being executed with the following stakeholders:

- MOU
  - National Capital Commission
  - University of Ottawa
  - Via Rail

- MOA
  - Parks Canada
  - Public Works and Government Services Canada
Business Development Strategy

➢ Council directed staff to release a Request for Information (RFI) to property owners to solicit ideas on station access, development and design

➢ As a result of this engagement, all 3 underground stations are integrated with a total of 6 entrances
Integrated Stations

- A costly expropriation/condemnation process was avoided for all 6 underground station integrated entrances
- Integration initiatives allow for more space for the tunnel station entrance, in addition to other benefits:
  - Inviting and safe public spaces
  - Intuitive passenger flows
  - Way-finding opportunities
  - Room for public art showcases
PROJECT SCOPE CONTEXT – THE BIG PICTURE

Transit Oriented Development
- Urban Intensification
- Mixed-Use development
- Downtown Ottawa Urban Development Strategies

Improved Transit Quality & Efficiency

Supportive Designs for Alternative Transportation

Transportation Demand Management
- Communication and promotion of sustainable transportation
- Route planning for all major modal types
- Detour and mobility planning

Convenient Mass Transit

OLRT Program
- Preliminary Engineering
- Vehicle Procurement
- Property Procurement
- Construction
- Project Management Support Services
Procurement Challenges

- “On time, on budget, fixed price” – Mayor of Ottawa
- Council Directive to advance procurement process by 1 year
- Schedule to accommodate Canada’s 150th in 2017
- Minimize transit and transportation impacts during construction (Mobility Matters)
- Ensure a “service proven” vehicle capable of operating in Ottawa’s climate
Procurement Overview

- Procurement Partner – Infrastructure Ontario
- Value for money evaluation
- Design-Build-Finance-Maintain (DBFM)
  - Lower risk to the City:
    - RTG owns the design-construction risk
    - RTG owns the systems integration and commissioning risk
Procurement Model – P3

- 5 years of construction with financial incentives tied to on-time completion
- 30 year maintenance contract ties to strong motivation for quality maintenance of the system over the long term
Procurement solutions

- Affordability Cap
- Develop a preliminary (30%) design
- 2017 Project Readiness Date
- Bundling Highway 417 widening and cash allowance projects
- Defined Service Proven Vehicle and System
- Communications and Stakeholder Outreach
- RFP Innovations:
  - Geotechnical Risk
  - Flexibility in tunnel methodology
Performance Incentives

- RFP included financial incentives and disincentives to achieve desired outcomes:
  - **Operations matters** – examined the number of drivers needed to operate the system and the impact on the City’s operating costs
  - **Mobility matters** – encouraged an approach to construction that minimized the number of lane closures on the Transitway as well as on roads
  - **Energy matters** – developed a long-term affordability and efficiency plan for the system as the City pays these energy costs
Private Partner – Rideau Transit Group
Project Management Plan
## Project Management Plan Overview

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Governance</td>
<td>Process and escalation protocols established</td>
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<tr>
<td>Scope Management</td>
<td>Schedules 10 and 22</td>
</tr>
<tr>
<td>Quality Management</td>
<td>QMP – Schedule 11</td>
</tr>
<tr>
<td>Risk Management</td>
<td>Processes well-established</td>
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<tr>
<td>Procurement Management</td>
<td>Governed by existing City policies</td>
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<tr>
<td></td>
<td>Processes well-established</td>
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<tr>
<td>Stakeholder Engagement and Communication Management</td>
<td>Schedule 18</td>
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<td>Annual Update Required</td>
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<tr>
<td>Time/Schedule Management</td>
<td>Schedule 33-Works Report</td>
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<tr>
<td></td>
<td>Process well-established</td>
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<tr>
<td>Cost Management</td>
<td>Schedule 19-Milestone Payments</td>
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<td></td>
<td>Process well-established and supported by FSU</td>
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<tr>
<td>HR Management</td>
<td>Governed by City policies &amp; procedures</td>
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<tr>
<td>Office Administration</td>
<td>Processes well-established</td>
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<td>Continuous improvement of documentation</td>
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</tbody>
</table>
Monthly Works Committee
Bi-Weekly Variations Committee

RTG, OLRTC, RTM

- Engineering
  - Control systems
  - Tunnels
  - Stations
  - Vehicles
- Project Controls
  - Contracts
  - Schedule
  - Risk
  - Quality

Consultants

Subject matter Experts
- Capital Transit Partners
- Independent Certifier
- MacIntosh & Perry
- Infrastructure Ontario
- BLG LLP

City Departments
- Transit Services
- Finance
- REPDO
- Corporate Communications
- PGM
- ISD
- ESD
- Public Works
- Parks & Rec
- HR

Funding Partners

Key Stakeholders
- Councillors
- All Residents
- NCC
- VIA
- U of Ottawa
- Hydro Ottawa
- ISE Property Partners
- Sensitive Receivers

RIO
# Governance & Escalation

<table>
<thead>
<tr>
<th>Committee</th>
<th>Responsibilities</th>
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</table>
| **Executive Steering Committee (ESC)** | • Reviews strategic direction for OLRT Project  
• Project Charter, Project Agreement, Council Report (Dec 2012)  
• Bi-Monthly Meetings                |
| **Contingency Management Committee (CMC)** | • Reviews and approve expenditures against $100M Contingency Fund  
• Delegation of Authority, Terms of Reference  
• Bi-Monthly Meetings                  |
| **RIO Departmental Management Team (DMT)** | • Delivers project on time and on budget  
• Project Management Plan, Communications Plan, Stakeholder Plan  
• Weekly Meetings                        |
| **Change Control Board (CCB)**         | • Reviews all proposals for scope change  
• Terms of Reference, Variations Summary Report  
• Weekly Meetings                        |
| **Risk Review Board (RRB)**            | • Approves Risk Assessments, Risk Strategies and Risk Mitigation Plans  
• Terms of Reference, Risk Register  
• Monthly Meetings                      |
| **Project Managers / Project Technical Leads** | • Provide guidance and direction on issues resolutions  
• Process documentation  
• Regular internal and RTG working group meetings |
City of Ottawa – Project Oversight

Executive Steering Committee

• Project sponsor which includes Senior Management and includes Infrastructure Ontario
• Receives project updates and provides Strategic direction on PA challenges/omissions
• Approves all significant design changes

Contingency Management Committee

• Subset of Senior Management - CM, DCM and Treasurer
• Receives project updates and approved any draws from the contingency
• makes recommendations to ESC for any project increases in funding, design changes outside of delegated authority etc
Scope Management & Delegation of Authority

• **Key Consideration in the Scope Change Process**
  
  – A variation to the PA can only be executed once a Variation Confirmation or Variation Directive has been authorized and signed by the delegated authority
  
  – Specific design and construction modifications require the concurrence of the Ward Councillor and the Mayor provided these design modifications remain within the project and contingency budgets
  
  – Use of “Consent Report” to document concurrence
  
  – If concurrence cannot be achieved, then issue is referred to FEDCO
# Project Schedule (Gantt)

## OLRT Project Schedule REV 2

### Level 2 Schedule Summary

<table>
<thead>
<tr>
<th>Activity</th>
<th>Start Date</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Train Project Schedule - Confédération Line Project</td>
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<tr>
<td>1. Overall project management</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>2. START MILESTONES</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>3. PAYMENT MILESTONES</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>4. COMPLETION MILESTONES</td>
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<td>24-March-16</td>
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<tr>
<td>5. DESIGN AND ENGINEERING</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>6. TRACKWAY DESIGN AND INSTALLATION</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>7. SIGN DESIGN</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>8. OLE DESIGN</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>9. TRAFFIC CONTROL &amp; ALIGNMENT</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>10. SOILS &amp; SURVEY DESIGN AND ENGINEERING</td>
<td>5/29/14</td>
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<td>11. STATION DESIGN AND ENGINEERING</td>
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<td>12. STRUCTURE AND BRIDGE DESIGN</td>
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<td>13. MAINTENANCE &amp; STORAGE FACILITY DESIGN (MSTF)</td>
<td>5/29/14</td>
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<tr>
<td>14. LRT SYSTEM DESIGN</td>
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<tr>
<td>15. VEHICLE DESIGN</td>
<td>5/29/14</td>
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<tr>
<td>16. PROPERTY &amp; FIRE PROTECTION</td>
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<td>17. FERIES</td>
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<tr>
<td>18. PROCUREMENT &amp; SUPPLY</td>
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<td>19. CIVIL WORKS PROCUREMENT AND SUPPLY</td>
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<td>24-March-16</td>
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<td>20. SYSTEMS PROCUREMENT AND SUPPLY</td>
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<td>21. CIVIL CONNECTION TRACK PROCUREMENT AND SUPPLY</td>
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<td>22. SHAFE</td>
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<tr>
<td>23. LRT &amp; MPI CONSTRUCTION TRACK CONSTRUCTION</td>
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<td>24. IHWY CONNECTION WORKS</td>
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<td>25. OLE CONNECTION WORKS</td>
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<td>27. SIGN DESIGN</td>
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<tr>
<td>28. URBAN ELEMENTS</td>
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<tr>
<td>29. SYSTEM INSTALLATION &amp; TESTING</td>
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<tr>
<td>30. TRAINS</td>
<td>5/29/14</td>
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<tr>
<td>31. COMMUNICATION &amp; SIGNALS</td>
<td>5/29/14</td>
<td>24-March-16</td>
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<tr>
<td>32. ELECTRICAL &amp; MECHANICAL HANDBACK</td>
<td>5/29/14</td>
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<td>33. MME</td>
<td>5/29/14</td>
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<tr>
<td>34. VEHICLE MANUFACTURE &amp; TESTING</td>
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<tr>
<td>35. MATERIALS</td>
<td>5/29/14</td>
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</tbody>
</table>

### Schedule Rev 2 Official Schedule Submission

*Ottawa*
Project Schedule (Linear)
Quality Management

- RTG certified to ISO 9001:2008 within 90 days after Financial Close
- All audit reports and Inspection & Test reports are submitted to the City
- City may observe all audits, and has the right to conduct audits
- City has live access to RTG’s Non-Conformance Records system
Stakeholder Relations & Communication

- Presentations to affected community and business associations
- Public outreach at City Events
- Monthly meetings with key stakeholders
- Liaising with Councillors and Mayor
- Coordinating with Corporate Communications Team
- Responding to public email inquiries
Project Management Tools

Document Management:
• Third party web based tools

Project Reporting
• Weekly to all Stakeholders
• Quarterly reporting to Council
• Consent Reports as required
• Mandated reporting to Funding Partners, CMC, ESC
Project Reporting - Website
Stage 2
Stage 2 - West

Ottawa’s O-Train System

- --- Bus Rapid Transit (BRT)
- ----- Potential Airport Extension
- ----- Potential Trim Extension

New Stations

13 km Of New Rail
800 Buses Taken Off
Sir John A Parkway Daily
Stage 2 - East

Confederation Line EAST

Ottawa’s O-Train System
- Bus Rapid Transit (BRT)
- Potential Airport Extension
- Potential Trim Extension
Stage 2 - South
Questions?

www.ottawa.ca/confederationline