Ottawa Light Rail Transit – Stage 2
Trillium Line Extension
Infrastructure Investment, Funding & Regulatory Hurdles

November 15, 2018
Chartered Institute of Logistics and Transport North America (CILTNA)
Ottawa’s Transit Challenge
Stage 2 Light Rail Transit (LRT)

44km
KM of new rail

24
New Stations

70%
Ottawa residents within 5km of new rail

Transit Nodes
- Post-Secondary Institution
- Retail Destination
- Major Employment Hub

O-Train System
- Confederation Line (2018)
- Trillium Line (current)
- Trillium Line Extension (2021)
- Confederation Line Extension East (2022)
- Confederation Line Extension West (2023)
- Bus Rapid Transit

2023
2021
2022
Confederation Line East

New LRT stations

KM of new rail

95% of area residents within 5 km of rail
Confederation Line West

New LRT stations

15 km

KM of new rail

Transit Nodes
- Post-Secondary Institution
- Retail Destination
- Major Employment Hub

O-Train System
- Confederation Line (2018)
- Trillium Line (current)
- Trillium Line Extension (2021)
- Confederation Line Extension East (2022)
- Confederation Line Extension West (2023)
- Bus Rapid Transit
Trillium Line South Extension

- Extension of an existing operating diesel system.

New LRT stations

16 km

KM of new rail
Key Challenges

• Affordability.
• Ensure procurement for Confederation Line expansion drove strong competition and was supported by federal and provincial funding partners.
• Ensure procurement to expand Trillium Line would function and integrate seamlessly between existing and expanded line and the overall O-Train system.
• Ensuring risk and financial profiles balance desired City outcomes.
• Getting community buy-in.
• Future-proofing the system.
Guiding Principles

• Meet the City’s affordability criteria for capital, maintenance and operations of the Stage 2 project;

• Ensure Stage 2 can be competitively tendered and will attract private sector interest

• Maximize system ridership;

• Optimize risk transfer between City and Stage 2 Project Co;

• Minimize mobility, environmental and quality of life impacts of Stage 2 construction & operation;
Guiding Principles (cont’d)

• Ensure customer familiarity throughout the entire O-Train system;
• Ensure station investment returns maximum benefit to riders and adjacent community;
• Maximize alternative revenue streams to the City;
• Maximize local economic benefit of Stage 2 construction; and
• Maximize resiliency and environmental sustainability.
**Procurement Challenges and Objectives**

The project’s procurement faced unique challenges in order to maximize value to the City and limit the City’s risk exposure. Addressing these challenges help shape the procurement objectives.

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incumbent Advantage</strong></td>
<td><strong>Optimal Service</strong></td>
</tr>
<tr>
<td>Mobilized, familiarity with systems, Maintenance and Storage Facility (MSF)</td>
<td>Maximize systems function and operability</td>
</tr>
<tr>
<td><strong>System Integration</strong></td>
<td><strong>Accountability</strong></td>
</tr>
<tr>
<td>Ensuring integration of systems and control centre</td>
<td>Single point of accountability for service availability</td>
</tr>
<tr>
<td><strong>Value for Money</strong></td>
<td><strong>Meet Budget Targets</strong></td>
</tr>
<tr>
<td>Achieving value for money and competitive pricing in a $6B concession (~$3B Capital, ~$3B Maintenance Period)</td>
<td>Meet capital budget and minimize maintenance and operating cost of the Stage 2 Project</td>
</tr>
<tr>
<td><strong>Risk Transfer</strong></td>
<td><strong>Optimal Risk Transfer</strong></td>
</tr>
<tr>
<td>Maintaining the value of original Stage 1’s DBFM risk transfer and quality regime</td>
<td>Set conditions for optimal risk transfer</td>
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</tbody>
</table>
Stage 2 Procurement Approach

- Two separate projects (with two separate bids), including an MOU with Rideau Transit Group (RTG) to maintain an expanded Confederation Line:

  - MOU with RTG
    - Limited extension to Confederation Line Scope (in areas contemplated by existing contract)

  - Confederation Line East and West Extensions
    - Design Build Short-term Finance (DBF) competitive tender;
    - RTG, via MOU, to provide maintenance services; and
    - RTG will not compete

  - Trillium Line Extension
    - Design Build Finance Maintain (DBFM) competitive tender; and
    - RTG is permitted to compete.
## Procurement Key Elements

The table below summarizes the key elements negotiated with RTG through MOU process:

<table>
<thead>
<tr>
<th>RTG MOU Scope</th>
<th>Negotiated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 Stage 2 LRT Vehicles</td>
<td>Approx. $500M</td>
</tr>
<tr>
<td>Belfast Yard MSF Expansion</td>
<td></td>
</tr>
<tr>
<td>Communications Equipment</td>
<td></td>
</tr>
<tr>
<td>Construction Oversight</td>
<td></td>
</tr>
<tr>
<td>Procurement Support Services</td>
<td></td>
</tr>
<tr>
<td>Maintenance, mobilization and latent defect risk</td>
<td></td>
</tr>
<tr>
<td><strong>Remaining Works</strong></td>
<td></td>
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<tr>
<td>Confederation Line East and West Extensions (including Trim, Moodie MSF and Hwy Widening)</td>
<td>Approx. $2,500M</td>
</tr>
<tr>
<td>Trillium Line Extension</td>
<td>Approx. $600M</td>
</tr>
</tbody>
</table>
Procurement Solution

The solution, which focused on extracting efficiencies from RTG, achieved real savings for the City:

<table>
<thead>
<tr>
<th>RTG MOU Scope</th>
<th>Savings from the Bid Price to the final Negotiated Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Vehicle</td>
<td>$1M reduction</td>
</tr>
<tr>
<td>Per km Vehicle Maintenance</td>
<td>7% reduction</td>
</tr>
<tr>
<td>Per km Infrastructure Maintenance</td>
<td>27% reduction</td>
</tr>
</tbody>
</table>

**Vehicles:**

- The City purchased 32 Alstom Citadis vehicles through the Stage 1/Confederation Line project. Was necessary to purchase an additional 38 vehicles for Stage 2.
- To extract maximum efficiency on existing maintenance facility, pricing and infrastructure, negotiating an increase to the vehicle order was preferred approach.
- Because City could demonstrate pricing was below what had been established in a previous competitive environment, funding partners were satisfied with direct procurement approach, as negotiated.
Trillium Line Extension Procurement Approach

Trillium Line Extensions
Design-Build-Finance-Maintain (DBFM)

Trillium Line Extension Scope

- Existing 8 km and 5 station upgrades
- Construction of additional 16 km track and 8 new stations
- City bundled projects
- City led procurement of additional diesel vehicles
- Contingency, property, cost of short-term financing and equity placement

Approx. $600M Capital
Challenge:
• Maintain the same P3 risk transfer as on the Confederation Line, and procure the extension as a DBFM

Solution:
• Transfer the maintenance responsibilities for existing assets to the private sector for 27 years
  – This resulted in an outsized maintenance payment *vis a vis* the capital build that the City dealt with by implementing a “wide equity” solution – requiring no long term lender and any associated lenders agreement.
• Proponents were provided with the following to price the risk of maintaining this system:
  – Exhaustive knowledge transfer of brownfield assets
  – Repeated site visits
Challenge:
• Assign responsibility of existing Alstom LINT fleet to Project Co and expand the fleet to accommodate the expanded service.

Solution:
• City released an expression of interest procurement to determine sufficient market capacity and interest to include the acquisition of the additional fleet into the DBFM procurement:
  • City undertook a separate procurement based on expressed interest from two vehicle manufactures;
  • Stadler won the contract for the additional fleet.
• To maintain the City’s total risk transfer, the Stadler contract needed to be married to the DBFM Project Co.
• City negotiated terms with Stadler that mirrored drop down terms that a typical Project Co would have with a vehicle manufacturer.
  • This approach was complicated and unprecedented.
• The Trillium Line, operated by Capital Railway on behalf of the City of Ottawa, falls within the regulatory framework of Transport Canada and the Canadian Transportation Authority (CTA).

• The City acquired the corridor from CP in 2005, subject to certain licenses, agreements and other encumbrances benefitting third parties
  • Such as Board Orders and agreements with utility and telecommunications providers.
Transport Canada requires verifiable documentation that all equipment meets all applicable legislation, regulation, rules and standards under the Railway Safety Act, including the following submittals:

- Notice of Railway Works
- DMU Inspection Rules
- Safety Management System (update)
- Security Management System (update)
- Notice of Change in Operations
- Capital Railway Operating Rules and Timetable
- Railway Operating Certificate
The CTA provides regulatory approval, determinations and issues authorities, licenses and permits to transportation carriers under federal jurisdiction.

The City is required to provide the following submittals to the CTA:

- Application for Approval to Construct a Railway Line
- Updated Certificate of Fitness
Canadian Transportation Agency (CTA)

- Board Orders act to establish rights and responsibilities as they relate to the operation and maintenance of a federally regulated railway.
- The CTA approves Board Orders for all items under federal jurisdiction as they relate to:
  - The operation of federally regulated railways
  - The construction of new or the rehabilitation of structure to support the federally regulated railway line and in the vicinity, or directly on or adjacent to, federally regulated railway lines.
- The Project Team identified a total of 296 Board Orders related to the Trillium Line, with 183 identified as being no longer relevant to current operations.
Rideau Canal swing bridge (1871).
Regulatory Challenges

Challenges:

- Legacy information from the 2005 Purchase and Sale Agreement, Board Orders and Retained agreements were:
  - Often incomplete
  - Difficult to find in government archives
  - Difficult to translate into encumbrances and/or contractual requirements.

Solution:

- City has maintained the risk on regulatory obligations and was only able to pass obligations onto Trillium Line proponents that were explicitly outlined in the Output Specifications.
- City provided as much of the regulatory background information as possible during procurement to ensure bidders were aware of the regulatory environment within which they would be operating.
Budget, Funding and Next Steps

- Projected cost of Stage 2 project is approximately $3.6B (including bundled projects) with each level of government contributing to the total funding package.

<table>
<thead>
<tr>
<th>Upcoming Milestones</th>
<th>Target</th>
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<tbody>
<tr>
<td>Contract Award</td>
<td>Jan/Feb 2019</td>
</tr>
<tr>
<td>Financial Close</td>
<td>March 2019</td>
</tr>
<tr>
<td>Construction</td>
<td>2019</td>
</tr>
</tbody>
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Questions?

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