

# **City of Ottawa Stage 2 LRT Procurement**

**- City of Ottawa's Unique Challenges and Solutions -**

# Stage 1 Confederation Line

## Subtitle 2018

### Purpose

Provide an overview of the exciting expansion and extension Ottawa's LRT system and highlight key planning and procurement challenges

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1. Stage-1 LRT Project Overview
2. Stage-2 LRT Project Overview
3. Stage-2 Procurement Options
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# Stage 1 LRT Project

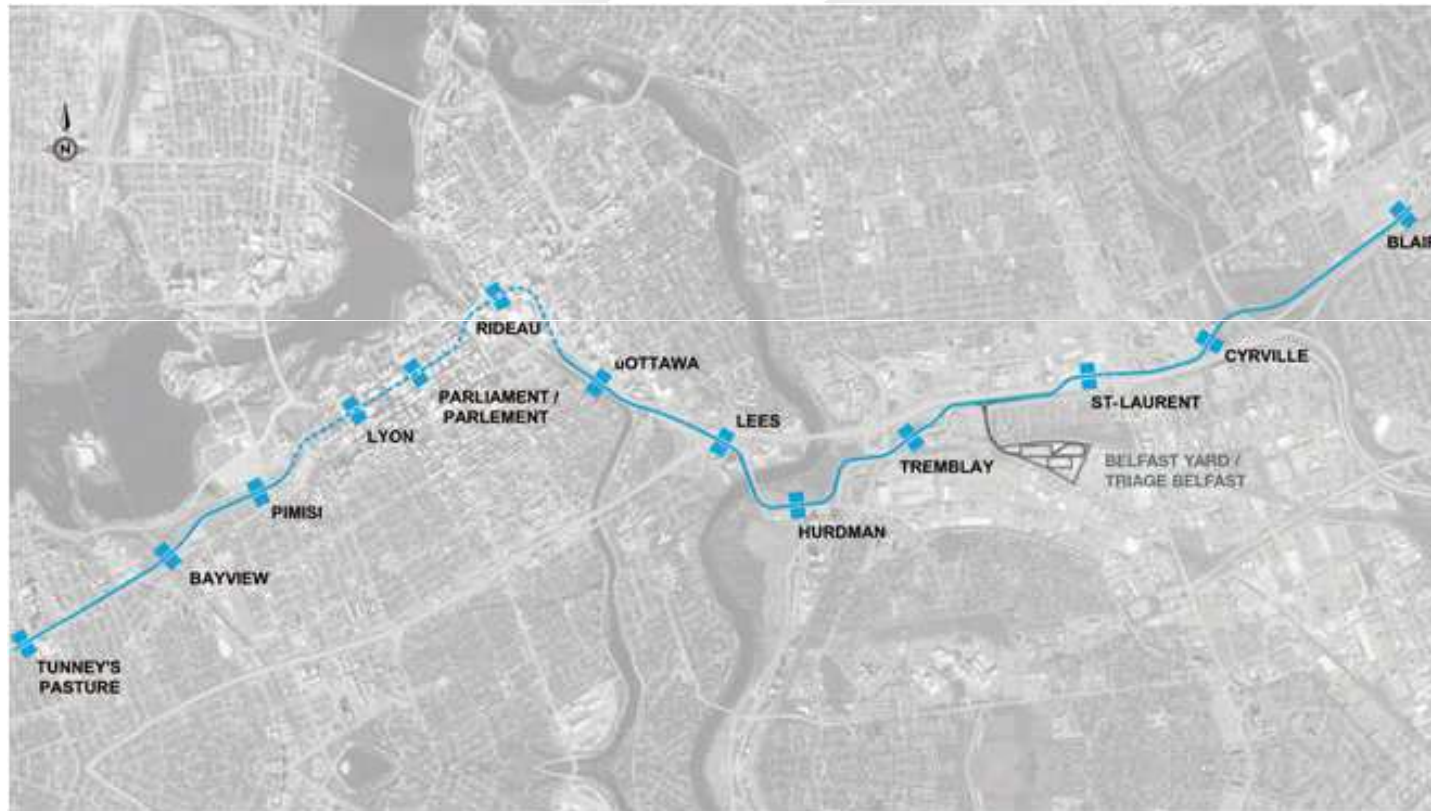
# Stage 1 Confederation Line

## Project Overview

- The City of Ottawa is building the Confederation Line through a \$2.1B Design Build Finance Maintain AFP/P3
- Rideau Transit Group ("**RTG**") made up of ACS, SNC, and Ellis Don is designing and building the Confederation Line and maintaining the line until 2048
- Stage 1 Confederation Line consists of 12.5 km of new track, a 2.5 km tunnel, 13 stations and significant Highway 417 bundling work
- The line is expected to open in November 2018

# Stage 1 Confederation Line Project Overview

Stations for the Stage 1 Project:



# Stage 1 Confederation Line Project Overview

Project renderings and ongoing construction work:



# Stage 2 LRT Project

# Stage 2 Project

## Project Overview



The Stage 2 LRT Project will build on the existing **Trillium Line** and will extend the Stage 1 **Confederation Line** further east and west.

**Trillium Line (south):** 12+ kilometres of new rail and 7 new stations, as well as a link to the Ottawa International Airport

**Confederation Line East:** 12 kilometres of new rail and 5 new stations including expanding park and ride capacity

**Confederation Line West:** 15 kilometres of new rail and 11 new stations

By 2023, Ottawa's O-Train network will have 41 stations and more than 60 kilometres.





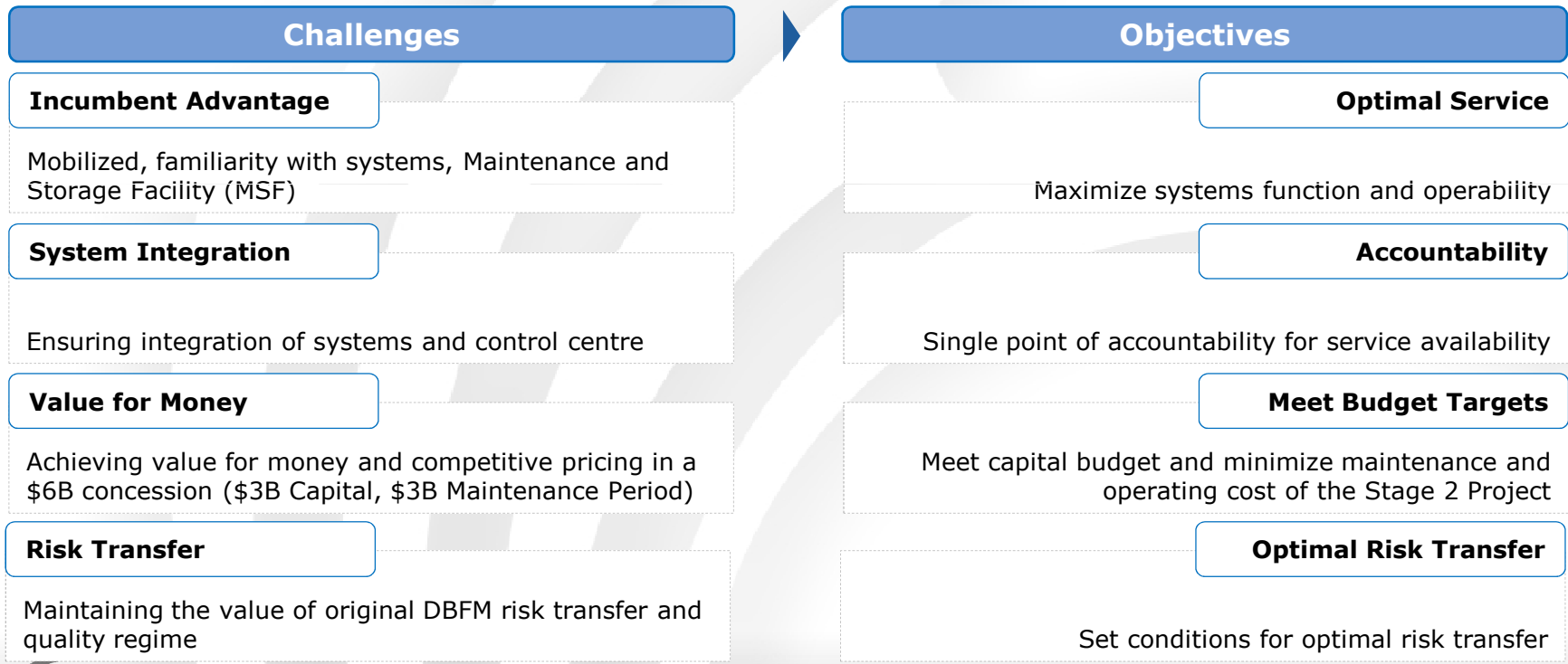
# Procuring the Stage 2 LRT Project

## Procurement Options

# Stage 2 LRT Project

## Procurement's Uniqueness 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.



# Stage 2 LRT Project

## Procurement Options – Confederation Line Extensions

The City identified the following list of options to consider for the Stage 2 Project for the eastern and western extension of the Confederation Line:

<b>Procurement Option</b>	<b>Description</b>
<b>A. Direct Procurement</b>	Use Schedule 38 to negotiate the full Stage 2 project scope to RTG.
<b>B. RTG Buy-out</b>	The City terminates RTG’s contract and undertakes a procurement for Stage 2 Project DBFM and Confederation Line maintenance/lifecycle.
<b>C. DBf + separate maintenance procurement</b>	Undertake all civil works through a Design-Build-Finance (DBF) procurement and procure maintenance provider separately.
<b>D. DBf + RTG vehicle provision and maintenance</b>	Undertake all civil works through a DBFM procurement and existing DBFM provides incremental vehicles and maintenance of vehicles and additional elements where efficient.
<b>E. DBFM</b>	Stage 2 is procured through a Design-Build-Finance-Maintain (“DBFM”) transaction.

# Procurement Options

## [A] Direct Procurement

- Schedule 38 [Network Extension Provisions that could be offered to RTG to implement through a variation] was not designed for extensions of this magnitude.
- Reputational risk (limited appetite to sole source a project of this magnitude)
- No competitive tension that results in cost-compression.
- Federal and Provincial funding partners will not fund a direct procurement.
- No independent outcome specification.
- No ability to leverage risk transfer on additional scope.
- Subject to challenge under international trade agreements.

**For the reasons outlined above, this option was not explored further.**

# Procurement Options

## [B] RTG Buy-out (ending maintenance term)

- In this option, the City would either negotiate to purchase the controlling interest in RTG through purchase of equity or terminate maintenance term using termination for convenience.
- In both cases, the City would tender the entire Stage 2 civil & rolling stock, as well as maintenance for Stage 1 and 2 (new Project Co would own RTG).
- Ultimately, was not the solution as RTG would not agree to conditions necessary for voluntary sale (mandatory disclosure), or valuation (no maintenance profit over the concession).
- While termination was explored, it was not preferred (though presented a necessary negotiation leverage) as it carried legal and reputational risks and RTG is a good partner by all accounts at this stage of the process.

**For the reasons outlined above, this option was not explored further.**

# Procurement Options

## [C] DBf with separate maintenance procurement

- Long-term quality and full integration undisciplined by need to maintain.
- Design interface with RTG existing system complex without risk transfer.
- Unclear what value would come from a separate maintenance procurement as RTG would have such strong advantages meaningful competition would be difficult to achieve.
- No longer one single point of accountability for service availability.

**For the reasons outlined above, this option was not explored further.**

# Procurement Options Screening Analysis

Through preliminary screening, the Stage 2 LRT procurement team was able to eliminate options that were impractical, as shown below:

Procurement Option	Description
A. Direct Procurement	Use Schedule 38 to negotiate the full Stage 2 project scope to RTG.
B. RTG Buy-out	The City terminates RTG’s contract and undertakes a procurement for Stage 2 Project DBFM and Confederation Line maintenance/lifecycle.
C. DBf + separate maintenance procurement	Undertake all civil works through a Design-Build-Finance (DBF) procurement and procure maintenance provider separately.
<b>D. DBf + RTG vehicle provision and maintenance</b>	Undertake all civil works through a DBFM procurement and existing DBFM provides incremental vehicles and maintenance of vehicles and additional elements where efficient.
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# Procurement Options

## [D] DBf with RTG vehicle provisions and maintenance

- Minimizes the City's exposure to interface risk between Confederation Line and the Stage 2 Project.
- Leverages full value from existing MSF (assuming successful negotiation for pricing pinned to original procurement).
- Limits value of direct procurement and likely acceptable to senior orders of government.
- Limits additional risk transfer and competition for certain elements.
- Dependent on reasonable approach to negotiation by RTG.



# Procurement Options

## [E] Full DBFM

- Confederation Line procurement shows ability to drive strong competition = significant cost compression, fixed schedule and budget, as well as good risk transfer resulting in quality build, innovation and maintenance.
- A second DBFM will be challenging to procure given RTG's incumbent advantage.
- Results in over-build of MSF facilities without fully utilizing MSF first.
- Fails to fully utilize equipment-like high-rail vehicles and tampers.
- Significant complexity in ensuring back-to-back performance of both RTG and Project Co 2.
- Interface issues that presented significant market concerns on fairness.

# Procurement Options

## Ratings Against Objectives

- Subsequent to the preliminary screening process, the short-listed options were weighted against each of the four (4) objectives and considered holistically to determine a proposed procurement solution:

Options	Minimize Capital and O&M Costs	Set conditions for optimal for risk transfer	Maximize system function and operability	Single point of accountability on service availability	Total Score
[D] DBf + RTG Vehicle Provider and Maintainer					
[E] DBFM					

Strong Weak

# Procurement Options

## Proposed Procurement Solution

The following procurement solutions for the various elements of Stage 2 were proposed after having weighted the various options and objectives:

### 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.

# Procuring the Stage 2 LRT Project

## Procurement Key Elements

# Procurement Key Elements

## Fixed-Price MOU with RTG

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

<b>RTG MOU Scope</b>	<b>Negotiated Cost</b>
38 Stage 2 LRT Vehicles	<b>Approx. \$500M</b>
Belfast Yard MSF Expansion	
Communications Equipment	
Construction Oversight	
Procurement Support Services	
Maintenance, mobilization and latent defect risk	

<b>Remaining Works</b>	
Confederation Line East and West Extensions (including Trim, Moodie MSF and Hwy Widening)	<b>Approx. \$2,500M</b>
Trillium Line Extension	<b>Approx. \$550M</b>

# Procurement Key Elements

## Key MOU Terms

- RTG is being paid to **support the City during the PSOS and procurement** documentation development, and construction oversight, to confirm maintainability of the asset and to underpin their pricing.
- RTG is bound to the terms of the MOU through a **LOC**, as well as the implications of not being able to participate in the competitive procurement.
- The **negotiated price for the items is a fixed price number**. Any adjustments to (capital or services) numbers dictated by Schedule 22.
- **RTG takes all risk for the assets** once substantial completion payment has been given to DB Co
- **RTG and DB Co will have an interface agreement** for assets under warranty. Once the warranty expires all risk will sit with RTG
- **Formal dispute process** available as part of the existing PA.

### Critical Issues:

a) Lender Consent, b) CBTC Implementation/Integration and c) Warranty/Interface Resolution

# Procurement Key Elements

## Lender Consent

- Throughout the negotiations with RTG a critical issue was: which party would be responsible for the risk of lender consent?
- RTG's proposal to achieve lender consent included the requirement of a significant equity injection to preserve the resiliency of the Stage 1 model.
- It became clear that the long-term lender would require the additional equity plus a requirement to be ring-fenced from Stage 2 risk.
- It was determined that the additional equity would not provide good value for money in terms of additional risk transfer and would significantly challenging the City's affordability model.
- To facilitate obtaining legally required approvals from the long-term lenders, in connection with the expansion of the existing Confederation Line LRT, the City entered into assignment and assumption agreements with the original long-term lenders and assumed the role under the Credit Agreement.

**Status:** the City has established a Steering Committee to administer the Credit Agreement in their new role as the Project's Long Term Lender

# Procurement Key Elements

## CBTC, Train Control

- RTG selected a Thales CBTC system on the Stage 1 Confederation Line System.
- Integrating this system across both systems is a critical project success factor.
- After significant analysis and engagement with proponents and RTG it was determined to leave the scope of the implementation and integration of CBTC with the Stage 2 DB Co.
- This is being accomplished through a tri-partite negotiated drop down agreement.
- The costs will be paid by the City as a flow through amount (not a bid item).



# Procurement Key Elements

## Interface/ Warranty Protocol

- While this solution significantly reduces the interfaces between the DB Co and RTG there is still the requirement for an ongoing relationship during the warranty and latent defect warranty period.
- This is managed through an Interface Agreement that outlines a warranty protocol between the two parties similar to what would have existed between a maintainer and a DBJV in a traditional structure.
- This Schedule to the project agreement also outlines a fast track dispute procedure and an LD regime for the DB Co to incent rapid warranty claim response during system operation.

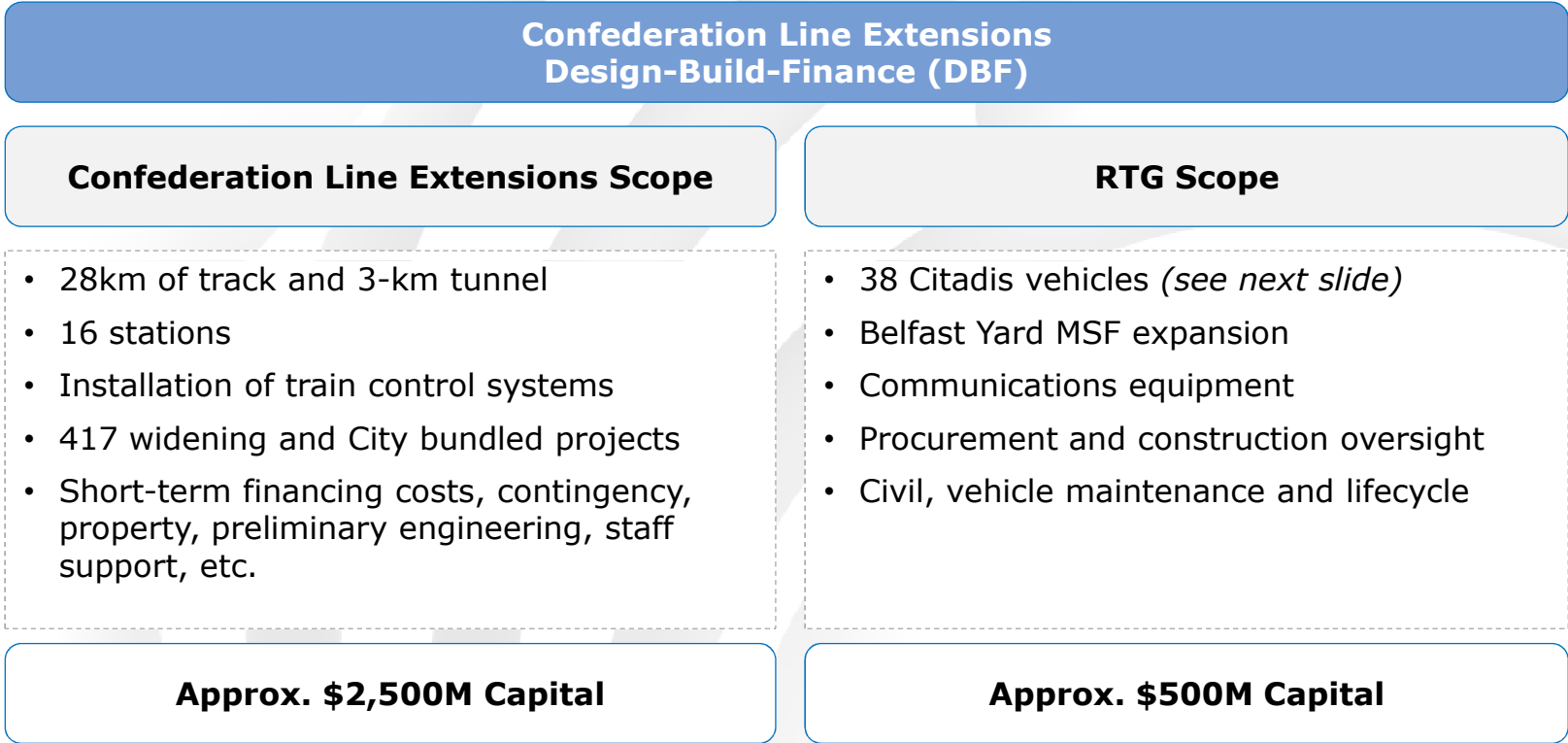
# Procuring the Stage 2 LRT Project

## Procurement Solution

# Procurement Solution

## Confederation Line Extensions

### Procurement approach for the Confederation Line Extensions:



# Procurement Solution

## Confederation Line Extensions

### Procurement Approach:

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

RTG MOU Scope	Savings from the Bid Price to the final Negotiated price
Per vehicle	\$1M reduction
Per km vehicle maintenance	7% reduction (\$2.45 to \$2.27)
Per km infrastructure maintenance	27% reduction (\$1.40M to \$1.02M)

### Vehicles:

- The City purchased 32 Alstom Citadis vehicles through the Stage 2 Confederation Line / Confederation Line project.
- Was necessary to purchase an additional 38 vehicles for Stage 2.
- In order to extract maximum efficiency on the existing maintenance facility, pricing and infrastructure, it was determined that negotiating an increase to the vehicle order was the preferred approach.

# Procurement Solution

## Trillium Line Extensions

### Procurement approach for the Trillium Line Extensions:

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

#### Trillium Line Extension Scope

- Existing 8 km and 5 station upgrades
- Construction of additional 12 km track and 7 new stations
- City bundled projects
- City led procurement of additional vehicles
- Contingency, property, cost of short-term financing and equity placement

**Approx. \$5500M Capital**

**QUESTIONS?**