STO's Complementary Study:
Public Transit System in Gatineau's West End

Technical Briefing to City of Ottawa
May 15, 2020
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Introduction
Need

• Gatineau’s population has grown significantly, particularly in the west end. This growth is expected to continue (+33% towards 2051 for Gatineau’s west end and 26% for Gatineau)

• There are currently more than 200,000 interprovincial crossings daily, including around 25% on public transit.

• The need for public transit services is increasing.

• The road system is operating at capacity.

• Ottawa’s plans and vision aim to reduce the number of buses downtown

• Launch of the Confederation Line of the O-Train in 2019

⇒ The current road system and public transit services will not be sufficient to meet the needs of the growing population by 2051

⇒ A reliable and efficient public transit system is required.
Evolution of the Need

Currently 2300 passengers/hour
27 to 45% increase expected for 2031

Currently 2350 passengers/hour
31 to 38% increase expected for 2031

Currently 1970 passengers/hour
57 to 81% increase expected for 2031

Destination: Downtown Ottawa:
Currently 3500 passengers/hour
100 to 110% increase expected for 2031

Data given in passengers/hour, in morning peak hour for transit users
Objectives of the Study

The transit solution must:

— Meet mobility requirements (current and projected to 2051);

— Support Gatineau’s land use and development plan (SADR); and

— Support the region’s economic and social development from a metropolitan perspective.

The Complementary Study has been made possible through funding from the governments of Canada and Quebec under the Public Transit Infrastructure Fund.
Background

Feasibility study
2010 - 2012

Opportunity study
2013 - 2017

Complementary study
started in 2018
### Complementary Study Stages

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- **Completed**: Needs and Constraints, Evaluation of Options
- **Completed**: Development of Options
- **Underway**: Refinement of Solution
Project Main Phases

Current phase:
Opportunity Study

Next Phases:
The remainder of the Project includes the following:

- Preliminary and Detailed Design
- Environmental Assessment
- Choice of Procurement Approach (traditional, PPP, ...)
- Construction and Testing
- In Service (8 to 10-year horizon)
Interprovincial Link
Analysis of Current Crossings

Legend:
- Rapibus
- O-Train (Confederation Line)
- Underground portion
- O-Train (Trillium Line)

Champlain Bridge
Eliminated
Too far to the west

Prince of Wales Bridge
Eliminated for this study
Too far west of downtowns
Insufficient capacity of the O-Train at Bayview
Potential future link for a west-south route

Chaudières Bridge
Eliminated
Limited space (heritage buildings, Zibi, …)

MacDonald-C Bridge
Eliminated
Too far to the east
Analysis of Current Crossings

Legend:
- Rapibus
- O-Train (Confederation Line)
- Underground portion
- O-Train (Trillium Line)

1. **Portage Bridge**
   - Recommended
   - Valuable service linking both downtowns.
   - Sufficient space on the bridge and approaches.

2. **Alexandra Bridge**
   - Eliminated for this study
   - Too far from Gatineau’s west.
   - Does not bring riders to major downtown employment node.

Potential future interprovincial loop.
Other Options Considered (but not retained)

**NEW BRIDGE AND TUNNEL TO THE DOWNTOWN**
- Impact on protected Ottawa River landscapes
- Ottawa stations would be very deep

**TUNNEL UNDER THE RIVER**
- Deep tunnel beginning in downtown Gatineau
- Ottawa stations would be very deep

**INDEPENDENT TRANSPORTATION BETWEEN THE DOWNTOWNS**
- Little value added
- Would still require an interface between the two systems
- Would require multiple transfers

Complementary Study: Public Transit System in Gatineau’s West End
Assessed Scenarios
2 Transit Modes Studied:

**BRT (bus rapid transit)**

**TRAM**

MAIN CHARACTERISTICS OF TRAMS

- Urban transit
- Generally at-grade crossings at intersections
- Can operate in mixed use or dedicated lanes
5 Scenarios:

1. Reference (Baseline)
5 Scenarios:

2. All Bus

3. All Tram
5 Scenarios:

4. Hybrid: Tram on Allumettières/Plate

5. Hybrid: Tram on Aylmer-Taché
Public Consultations (Gatineau)
Public Consultation at a glance

• Event held in June 2019, in Gatineau
  - 668 completed questionnaires

Highlights: What participants told us...

About the Need:
• A large majority of respondents considered it necessary to introduce rapid transit service to Gatineau’s west end.

About the Transit Mode:
• Close to 2/3 of respondents preferred the tram as the mode of transportation, which they consider the fastest, most reliable and most viable over the long-term, due to its greater capacity.

About the Connection in Ottawa:
• A majority of respondents consider that the system should extend beyond the Lyon Station of LRT.
Rationale for Tram Component
Rationale

Currently, approximately 3,500 public transit riders use the Portage Bridge during the peak hour.

That number is expected to increase to approximately 7,000 – 7,500 riders per peak hour over the next 15 years.

Meeting that future need would require:
• 170 regular buses / hour
  or
• 105 articulated buses / hour,
  or
• 75 bi-articulated buses / hour,
  or
• 25 trams/hour

• Even with bi-articulated buses, the transit lane on the bridge and downtown streets would reach capacity (max. capacity of a dedicated lane = 80 bus / hour)

• As a result, only scenarios with at least one tram component are carried forward for further assessment.
3 Viable Scenarios

1. All Tram
3 Viable Scenarios

2. Hybrid: Tram on Allumettières/Plateau

3. Hybrid: Tram on Aylmer-Taché
Integration into Ottawa
Highlights of Options

**Tram** component from Gatineau, crossing the Portage Bridge

**Buses** crossing via Portage and MacDonald-Cartier, with combined use of three loops (in mixed traffic)
Main Design Considerations

• **System Requirements:**
  - Straightest possible route for a tram
  - Efficient connection with the O-Train stations
  - Attractive system for riders (reliable, stops close to places of interest)
  - Double tracked

• **City of Ottawa’s Plans for Downtown Streets**
  - Queen Street redesigned as a complete street to accommodate more pedestrians
  - Sparks Street revival plans
  - Albert and Slater repurposed to include active transportation
  - Cycling projects on: Bay (Wellington to Laurier West), and Wellington (Portage to Elgin) – a joint NCC-City of Ottawa project (in accordance with the City of Ottawa Cycling Plan)
Main Design Considerations
City of Ottawa’s Plans for Downtown Streets

Queen - A complete street
Albert & Slater - Increased active transportation
Sparks - Revival plans
Options for Tram Component

Two options:

- **Surface** integration on Wellington Street
- **Tunnel** integration under Sparks Street

The Study will assess:

- Feasibility of options
- Alignment
- Station locations
Options: Pros and Cons

SURFACE INTEGRATION ON WELLINGTON

PROS
- Ground level stations make it easier to access
- Easier to construct
- Potential component of an interprovincial loop with the Alexandra Bridge

CONS
- Corridor has several uses competing for space, requiring compromises to be made:
  - north esplanade
  - partial widening of the south sidewalk
  - planned two-way bike facility
  - vehicular traffic lanes
- Security concerns around the parliamentary complex and at stations
- Possible disruptions due to demonstrations and events on Wellington Street (alternative arrangements required to ensure service continuity)
- Disruption to current traffic and transit service during construction (will require detour planning and traffic management)
- Option will lead to a significant increase in the number of pedestrians crossing Wellington to reach the stations

TUNNEL INTEGRATION UNDER SPARKS

PROS
- Light impact on traffic and surface amenities
- Allows for more direct connection with the O-Train
- Weather protected environment for transferring passengers
- Less vulnerable to service interruptions from external events such as demonstrations

CONS
- Higher cost than surface option
- Complex and lengthier construction with higher risks
- Significant underground constraints (utilities and foundations)
- Portal will significantly impact the open space west of Commissioner Street
- Possible security concerns of adjacent federal institutions
Next Steps
Analysis of Options for Integration in Ottawa

• Key issues to be addressed for the 2 options:
  o vehicular traffic impact in the downtown;
  o number of stations required and their locations;
  o boarding and disembarking issues at the platforms;
  o quality of connections with the O-Train;
  o security issues;
  o trade-offs and mitigation plan;
  o order of magnitude costs; and
  o public consultation
Upcoming Events in Ottawa

• On-line public consultation June 2020 for Ottawa and Gatineau
  • present evaluation progress
  • seek public feedback

• Transportation Committee and Council - July 2020
  • present recommended plan for integration in Ottawa

Note: To be confirmed in function of the measures related to COVID-19