



The Eastern Bridge in the National Capital Region

Regional Transportation Context

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Introduction

In 2024, the Government of Canada reiterated its commitment to building an additional multimodal bridge in the eastern part of the National Capital Region. This initiated the next phase of planning, design and studies on the Montée Paiement-Aviation Parkway corridor. As the project moves forward, its design must take the future regional transportation network into consideration. This document provides an overview of how the Eastern Bridge project will support the vision outlined in the National Capital Commission's (NCC) Long-Term Integrated Interprovincial Crossings Plan (LTIICP). The detailed studies referenced in this report can be found online or requested from Public Services and Procurement Canada (PSPC) or the NCC, which are part of the project team.

This summary report includes an overview of select elements from the NCC's LTIICP [1] as well as updated regional travel demand data, where available and relevant to the Eastern Bridge project. Additionally, this report highlights opportunities for the Eastern Bridge project to align with LTIICP guidance, which will be further established through development of the planning and design principles study taking place in 2025.

Context

The National Capital Region covers an area of 4,715 km² straddling the Ottawa River and includes the cities of Ottawa (Ontario) and Gatineau (Quebec), as well as surrounding rural municipalities. The interprovincial crossing system in the National Capital Region includes five federally owned bridges and one owned by the City of Ottawa; the latter currently serves active mobility and is open only during the summer and shoulder seasons.

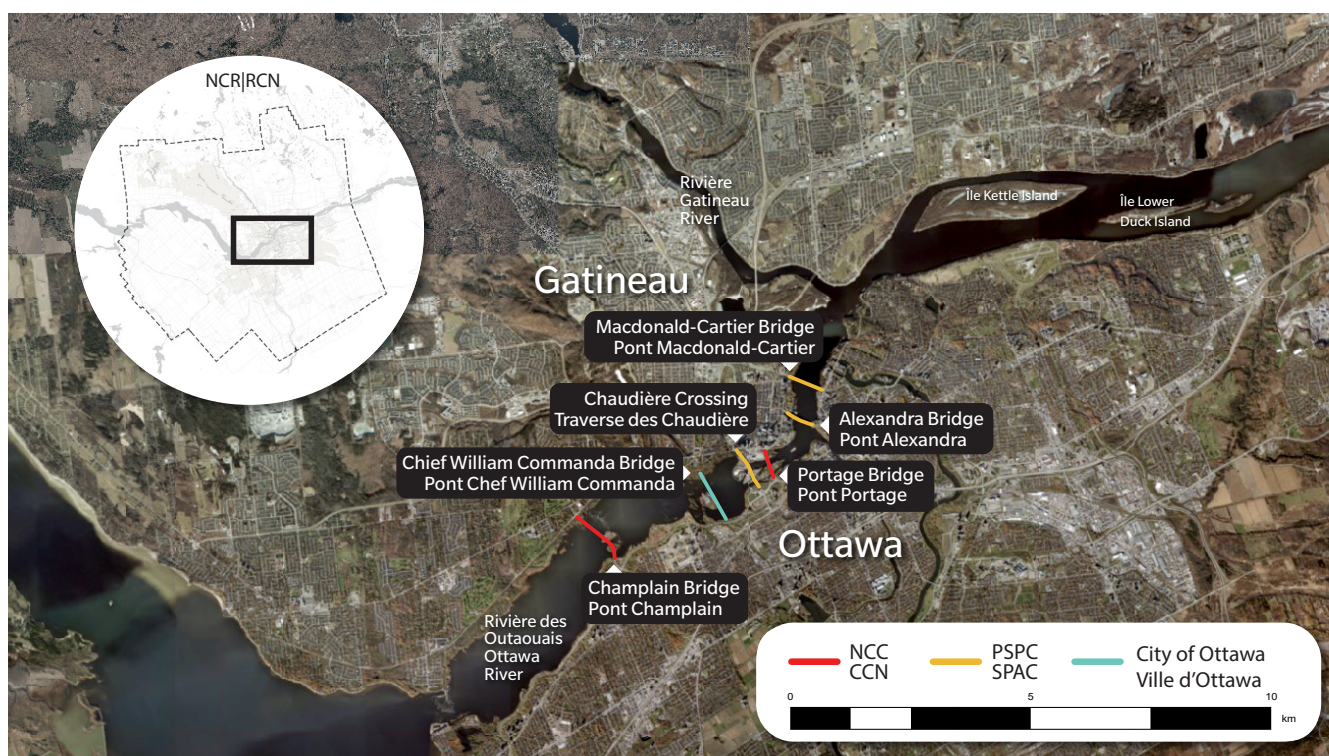


Figure 1 – Existing interprovincial bridges in the National Capital Region

Long-Term Integrated Interprovincial Crossings Plan


In 2022, the NCC's board of directors approved the LTIICP, [1] which outlines a long-term vision, and supporting strategies, for the interprovincial movement of people and goods by 2050. Developed in collaboration with stakeholders, the public and the region's municipal, provincial and federal departments and agencies, the LTIICP considered existing infrastructure and potential new projects to support anticipated regional growth.

The LTIICP states that by 2050, the transportation network to cross the Ottawa River will provide well-connected and sustainable travel options that contribute to a high quality of life and economic prosperity in the National Capital Region. The system of crossings will support equitable mobility and the safe and efficient movement of people and goods, while respecting the

region's natural environment and cultural heritage. The LTIICP sets a path for achieving common goals and objectives that fall under five strategic pillars:

- One Region (transportation integration)
- Sustainable Use of Crossing Infrastructure
- Environment and Climate Change
- Economy
- Quality of Life

To determine long-term transportation policy and infrastructure requirements to achieve the LTIICP's vision, multiple transportation-demand scenarios were considered. These forecasts were based on anticipated growth in a combination of sociodemographic categories, such as population, employment and changes in travel trends and land use. As population and employment forecasts in the National Capital Region are routinely updated in the context of ongoing planning processes, the LTIICP will be updated in collaboration with regional partners. The first technical update is underway and is expected to be completed in 2025. The following sections focus on the key transportation challenges that were identified in the 2022 LTIICP and outline early draft projections that are being developed



as part of the ongoing technical update. As the technical data and projections continue to be refined and adjusted, the LTIICP's strategic directions continue to set a sustainable path to achieve common goals and objectives.

Commuter trips

Based on anticipated conditions in 2050, the LTIICP identified a range of transportation initiatives required to achieve its vision. Interprovincial commuter trips were one of the most important interprovincial travel concerns highlighted in the LTIICP. The following section provides an overview of this challenge and outlines new relevant data from the ongoing technical update.

Population and employment forecasts

It is crucial to acknowledge the inherent uncertainty in terms of forecasting long-term population, employment, and travel trends and their impact on interprovincial travel patterns in the National Capital Region. Travel patterns are heavily shaped by demographic factors, employment levels and the geographic distribution of these. In the National Capital Region, the balance of these factors on the two sides of the Ottawa River plays a significant role in determining interprovincial travel. A shift in population or employment growth on one side of the river could potentially alter travel patterns across the region.

In the context of interprovincial travel planning, addressing uncertainty means identifying the demographic and employment scenarios that most influence interprovincial travel. The goal is to optimize transportation infrastructure to accommodate the range of potential outcomes, and ensure the infrastructure remains adaptable to future changes in population and employment dynamics.

In 2021, there were approximately 1,408,000 residents in the National Capital Region and 755,000 jobs. The TRANS committee, a partnership between employees of the NCC, the cities of Ottawa and Gatineau, and the two provincial governments, updated regional population and employment projections to reflect a growth of approximately 37% and 26%, respectively, by 2050. However, while there are precise growth projections for planning purposes, it is appropriate to consider a potential variation of approximately $\pm 15\%$ in the 2050 population projections due to factors such as birth rates, mortality and migration patterns. Sensitivity assessments will be undertaken as part of the NCC's LTIICP technical update to consider the potential for variability.

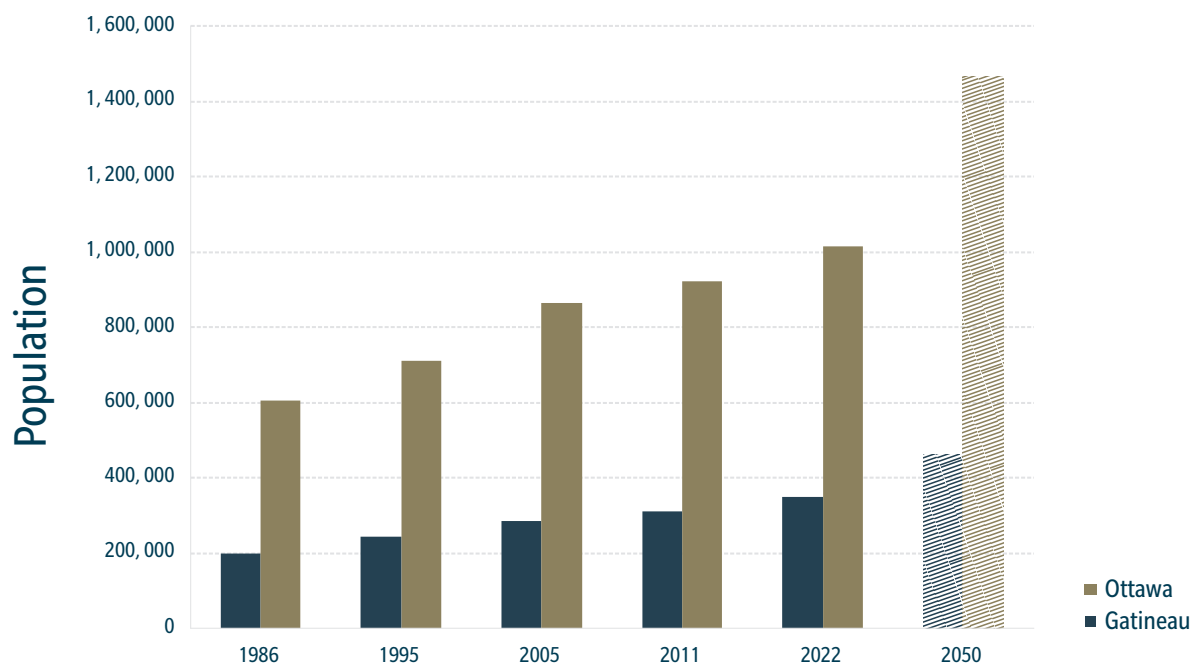


Figure 2 – Population Growth in the National Capital Region

The National Capital Region operates as a single metropolitan area where residents often work and live in different provinces. In 2021, about 25% of National Capital Region resident workers lived in Quebec, and 85% of National Capital Region employment positions were located in Ottawa. Because resident workers exceeded the number of employment positions in Gatineau, more workers were travelling across the river from Gatineau and the Outaouais region into Ottawa. Forecasts indicate that by 2050, employment positions in Ottawa will continue to exceed the number of resident workers, maintaining the relatively larger need to travel from Gatineau into Ottawa for work.

Travel patterns and trends

As a result of regional employment distribution, weekday interprovincial travel patterns in the National Capital Region typically show more trips from Gatineau into Ottawa in the morning and from Ottawa into Gatineau in the afternoon. The peak direction traffic volume has historically been two to three times higher than the off-peak direction with capacity constraints most pronounced in the peak direction.

The Origin Destination Survey (OD Survey), conducted every 5 to 10 years, queries residents on the purpose for their daily trips. The 2022 OD Survey, [2] conducted as more workers were beginning to return to the office

following the COVID-19 pandemic, identified a regional decrease in work and school trips and an increase in discretionary trips. Accordingly, interprovincial travel decreased by approximately 25% from the previous survey, conducted in 2011. Since the latest survey, the TRANS committee has continued to monitor the evolution of people returning to the office and the increase in interprovincial travel so it can develop projections to 2050. Although the LTIICP update remains ongoing, current estimates suggest interprovincial travel could be expected to increase by 70% to 85% by 2050 relative to 2022 levels. However, like population growth, growth in travel is influenced by many factors, including the scale of population and employment growth, development patterns and in-office work arrangements. These factors will continue to be periodically reviewed and updated through the LTIICP planning process.

In recent years, there has been a consistent shift in the National Capital Region toward a greater use of transit, cycling and walking during the peak periods. This trend can also be seen in interprovincial crossings; the proportion of trips made by sustainable modes of transportation has been steadily increasing. The results of the 2022 OD Survey show an exception to this trend; the pandemic had a positive effect on reducing peak commuter demand overall, but there has been a significant decline in transit use [2].



Key findings

As indicated by the sociodemographic trends shown in Figure 2, the existing crossings are expected to face greater demand in the future, necessitating an evaluation of how growth could be accommodated. To maximize crossing capacity in constrained environments, the LTIICP looked at sustainable, higher-capacity solutions, such as the construction of the West Gatineau Tramway. Other projects, such as the still-under-construction Stage 2 of Ottawa's LRT, were also identified as playing a major role in accommodating the increase in travel by transit across the entire region.

Heavy truck movement

The LTIICP identified heavy truck traffic as negatively impacting health, safety and quality of life, as a high volume of trucks must travel through downtown neighbourhoods to reach interprovincial crossings. The LTIICP highlighted heavy truck movement as one of the biggest challenges to interprovincial travel and explored various alternatives to reducing its impact. The following section highlights some of the new truck data that was collected in 2023 and summarizes the challenges facing the current interprovincial truck routes.

Volumes and forecasts

Approximately 3,500 trucks per weekday were observed in 2023, which accounted for 2% of the daily interprovincial vehicle traffic [3]. Thirty percent of these trucks were estimated to be larger (articulated) trucks [3]. When estimating future truck activity, a wide range of factors will be considered. The movement of commercial goods is influenced by both local factors, such as truck route accessibility, the overall infrastructure and the locations of distribution and retail centres, and by external factors related to the broader supply chain. While uncertainty related to local factors can be estimated using population and employment forecasts in conjunction with municipal zoning regulations, external factors remain more challenging to predict. As trucks represent a small proportion of the vehicles crossing the interprovincial bridges (2%), planning for uncertainty in interprovincial truck movement is primarily focused on assessing routes to ensure efficient truck movement between potential destinations, while reducing interactions between trucks and pedestrians or cyclists.

Interprovincial truck routing

Freight transportation between the provinces is currently only permitted on the Macdonald-Cartier bridge and the Chaudière crossing. While the Macdonald-Cartier bridge

leads directly to Autoroute 5 in Gatineau, neither bridge connects directly to Ontario's highway system, thereby requiring trucks to travel through neighbourhoods and the downtown areas of Ottawa. While commuter transportation characteristics and trips have changed significantly since the COVID-19 pandemic, the trucking volumes observed in 2023 [3] were relatively consistent with the findings from 2007.

Daily vehicle counts performed monthly on each interprovincial bridge indicate that most truck trips (72%) are over the Macdonald-Cartier Bridge, 19% are over the Chaudière Crossing and the remaining trips (9%) are over the three other bridges that are not part of the designated truck route network. Reliance on the Macdonald-Cartier Bridge to connect Autoroute 5 in Gatineau to Highway 417 in Ottawa via the King-Edward-Rideau-Waller-Nicholas (KERWN) corridor results in the corridor accommodating two to four times more trucks than other major arterial truck routes in the region [3].

The volume of trucks on Autoroute 5 is not generally considered a problem, as the infrastructure is designed to accommodate high vehicular volumes and is separated from adjacent communities. However, a similar, higher-order roadway was never constructed in Ottawa, so high volumes of truck traffic travel along King Edward Avenue and through the Ottawa core, resulting in concerns related to safety, noise, vibration and increased congestion.

Despite a high volume of interprovincial truck trips that cross the Macdonald-Cartier Bridge and head to or from the KERWN corridor, in 2023, only 33% of those trucks trips were estimated to have origins or destinations in the immediate vicinity [3]. Furthermore, approximately 75% of interprovincial trucks started or ended their trips east of the Gatineau and Rideau rivers [3].

Key findings

The LTIICP indicates that a new interprovincial crossing in the east, combined with municipal measures to limit heavy trucks from certain corridors, would be the most effective means of diverting heavy trucks from the core area. Improving logistics for the movement of goods and shifting deliveries to smaller trucks and different times of day were also highlighted as a means of reducing impacts.

The Eastern Bridge project

In 2024, the Government of Canada reiterated its commitment to building a multimodal bridge in the National Capital Region along the Montée Paiement-Aviation Parkway corridor. This project is consistent with several infrastructure scenarios included in the LTIICP, and can be developed to support the plan's vision, through its five pillars, for the future transportation network. Early considerations on how the Eastern Bridge project may be tailored to align with the LTIICP's strategic pillars and guide the design as the project progresses are summarized below. These concepts will be further explored as part of the project's planning and design principles being developed by the project team in 2025.

Sustainable Use of Crossing Infrastructure

This new corridor will be designed to provide safe and separated facilities for pedestrians and cyclists, while also providing lanes for public transit, personal vehicles and trucks. Providing a denser transportation network for all modes allows shorter trips to be made, an important factor when encouraging travel by active transportation and local transit.

Additionally, this corridor will contribute to sustainable use of all the interprovincial crossings in the region. By attracting some vehicles and trucks outside the core on more efficient routes, the lanes on the existing crossings in the core will provide opportunities to enhance sustainable and higher-capacity travel where the demand is greatest.

One Region

Connecting eastern communities will reinforce regional integration and provide opportunities for shorter trips in the east as the municipalities continue to grow. Transportation integration is an area that requires particular care in the National Capital Region, with three levels of government and multiple transit agencies all playing important roles. A new crossing will provide more opportunities to integrate transit services between lines 1 and 3 of Ottawa's O-Train and Gatineau's Rapibus.

Environment and Climate Change

The new crossing and corridor design will use sustainable materials, be climate resilient and have an extended service life. Street trees may be introduced to reduce the urban heat island effect and ensure the corridor and bridge can withstand extreme flooding events. The crossing will improve the transportation network's resiliency and create additional opportunities for emergency services during climate- and/or security-related crises in the National Capital Region.

The LTIICP's strategic environmental and economic assessment, which is being developed in parallel with the LTIICP's technical update in 2025, will summarize the potential environmental, social and economic benefits and impacts of the overall plan, including consideration of the Eastern Bridge within the regional context. The impacts identified in this assessment are expected to include environmental impacts on the Ottawa River and the surrounding areas associated with the new infrastructure. These impacts will be further reviewed and mitigated, where feasible, as part of the impact assessment process for the Eastern Bridge project.

Economy

The delivery of commercial goods is essential to the region's economy and the new crossing will be designed to accommodate trucks. A new interprovincial crossing will attract truck trips between freight hubs outside the core and provide alternative routes for trips that do not need to go through the core area. Changes to regional truck routes will be identified in partnership with regional partners and stakeholders and will be considered within the regional context as the project design progresses.

Construction activities related to this new corridor could temporarily enhance economic vitality through job creation, including for Indigenous communities, supporting the local and regional economies.

Quality of Life

Some loss of green space and recreational land is anticipated. Nonetheless, access to existing green space from opposite sides of the Ottawa River will be improved and new views over the river will be created. Pedestrian and cyclist safety will be enhanced through the separation of facilities, and additional intersection

and roadway optimizations targeted at safer vehicle operations. Many of the east-end truck and vehicle trips that currently go through the core area will be able to use a more direct route, which will improve the downtown public realm and unlock opportunities for significant mixed-use development (including housing) along King Edward Avenue.



Conclusion

In 2024, the Government of Canada authorized further studies for a new interprovincial bridge on the Montée Païement-Aviation Parkway corridor. The Eastern Bridge project will be designed to support the NCC's vision for interprovincial transportation, as outlined in the LTIICP, and to carefully mitigate impacts and maximize benefits to the communities it will serve. The corridor's planning direction will be established through the following two ongoing planning studies:

1. The LTIICP technical update: The LTIICP considered a range of scenarios for 2050 to support regional growth, and the technical update that is currently underway will further refine these scenarios with updated data. The number of lanes desired for a new interprovincial bridge and their designations (vehicles, freight, transit, etc.) will be confirmed as part of the LTIICP technical update. A new bridge in the east is expected to accommodate all modes of transportation, including walking, cycling, transit, freight and personal vehicles.

2. The planning and design principles: Building on the direction of the LTIICP, the project's planning and design principles will subdivide the corridor into major segments in order to integrate the new interprovincial transportation link with the existing transportation networks and surrounding communities. The lane requirements and lane reservations may vary by segment to respond to the varying demand and range of impacts and opportunities identified.

New major transportation infrastructure has the potential for environmental, social and economic benefits and impacts. The Eastern Bridge project will be assessed through the impact assessment process, and opportunities will be identified to avoid, mitigate and offset the project's impacts. Additionally, as part of the federal land use, design and transaction approval process, NCC staff will review the project from a land use and design perspective to ensure conformity with relevant legislation, federal plans, policies and guidelines.

The next steps in the project's development will include keeping partners, the public and stakeholders informed on project updates and opportunities for engagement, via regular communications, and the NCC's and PSPC's respective project websites.



References

- [1] National Capital Commission, "Long Term Integrated Interprovincial Crossings Plan," 2022.
- [2] R.A. Malatest & Associates Ltd. & David Kriger Consultants Inc., "2022 Household Travel Survey – Regional Travel Trends Preview Report," 2024.
- [3] National Capital Commission, "Interprovincial Truck Mobility Data Collection," 2024.





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