

# **Wellington Street Transportation Study**

**(from Bank Street to Elgin Street)**

## **Executive Summary**

**FINAL**

**November 14<sup>th</sup>, 2023**

## ACRONYMS

AODA	Accessibility for Ontarians with Disabilities Act
BLOS	Bike Level of Service
BRT	Bus Rapid Transit
EA	Environmental Assessment
EB	Eastbound
IPTL	Inter Provincial Transit Loop
IPS	Intersection Pedestrian Signals
LoS	Level of Service
LBI	Leading Bike Interval
LPI	Leading Pedestrian Interval
LRT	Light Rail Transit
LTIICP	Long Term Integrated Interprovincial Crossings Plan
MTO	Ministry of Transportation Ontario
NCC	National Capital Commission
NB	Northbound
OP	Official Plan
PLOS	Pedestrian Level of Service
PSPC	Public Services and Procurement Canada
PROC	House of Commons Standing Committee on Procedure and House Affairs
ROW	Right-of-way
RTC	Rapid Transit Corridor
RTTP	Rapid Transit and Transit Priority
SB	Southbound
STO	Société de Transport de l'Outaouais
TLoS	Transit Level of Service
TDM	Transportation Demand Management
TMP	Transportation Master Plan
TOD	Transit Oriented Development
TSP	Transit Signal Priority
TkLoS	Truck Level of Service
veh/h	vehicles-per-hour
WB	Westbound

## INTERSECTION TURNING MOVEMENT ACRONYMS

NBR	Northbound Right
NBT/R	Northbound Through/Right
NBT	Northbound Through
NBL	Northbound Left
EBR	Eastbound Right
EBT/R	Eastbound Through/Right
EBT	Eastbound Through
EBL	Eastbound Left
SBR	Southbound Right
SBT/R	Southbound Through/Right
SBT	Southbound Through
SBL	Southbound Left
WBR	Westbound Right
WBT/R	Westbound Through/Right
WBT	Westbound Through
WBL	Westbound Left

## EXECUTIVE SUMMARY

### BACKGROUND

Wellington Street, located in Ottawa, Ontario, is one of Canada's most iconic streets. It serves multiple roles that add to its interest and complexity. The main street of the Parliamentary Precinct of the Parliament of Canada, it is home to a number of federal institutions, including Parliament Hill and Centre Block, the Office of the Prime Minister and Privy Council, and the Indigenous Peoples Space at 100 Wellington Street. Furthermore, within the next decade approximately 50% of parliamentarians will be permanently accommodated in the three city blocks south of Wellington Street, a transition that will reinforce Wellington Street between Bank Street and Elgin Street as the heart of the Parliamentary Precinct. The current physical components of the street include vehicle travel lanes, temporary on-road bicycle lanes, transit stops, distinctive street lighting, wide sidewalks, and customized streetscape finishes. Wellington Street is an arterial roadway within the City of Ottawa's Transportation Network and also forms part of the National Capital Commission's (NCC) Confederation Boulevard, the Capital's symbolic ceremonial and discovery route. It connects numerous sites of national significance, celebration, remembrance, and commemoration.

The role of Wellington Street shifted in the winter of 2022, away from a transportation corridor, to become the backdrop of protracted demonstrations over COVID-19 mandates that captured international attention. The protests in Ottawa highlighted longstanding issues for Wellington Street related to ownership, security, and governance, and impacted the operations of Canada's democratic institutions and the well-being of nearby residential communities. Wellington Street remained closed to general purpose vehicle traffic until its reopening in April 2023.

### WELLINGTON STREET TEMPORARY CLOSURE – JANUARY 2022 TO APRIL 2023

On January 28, 2022, Wellington Street was closed as a result of the occupation by demonstrators. The street remained closed for the duration of the demonstrations. On February 23, 2022, days after the demonstration ended, City of Ottawa Council approved a motion to maintain the road closure of Wellington Street between Bank Street and Elgin Street. On this basis, the City erected physical barriers and signage on the east leg of the Bank Street /Wellington Street intersection and on the west leg of the Elgin Street Southbound /Wellington Street intersection to permit authorized vehicles, only in the eastbound direction. Wellington Street remained open to pedestrians, cyclists, and vehicles related to area businesses and institutions, such as federal public servants/parliamentarians, tour buses, shuttles, taxis, delivery vehicles, service vehicles, waste vehicles, emergency services, etc. OC Transpo and STO Transit services had been rerouted from the closed segment of Wellington Street in the years prior.

A January 17, 2023 memo to the City of Ottawa Transportation Committee from Traffic Services noted that traffic volumes for most of 2022 were below pre-pandemic volumes. During this period of reduced traffic demand, City staff were able to manage traffic impacts to the surrounding network, including Queen Street, Albert Street and Slater Street through traffic signal timing adjustments and other minor mitigation measures.

At the meeting of February 8, 2023, City of Ottawa Council approved several recommendations related to the Wellington Street closure, including:

- in consultation with Ottawa Police Services, Ottawa Fire Services and Ottawa Paramedic Services, Wellington Street be re-opened to all traffic as soon as it is operationally feasible; and
- that staff continue working with Public Service and Procurement Canada (PSPC) on finalizing a traffic study and report back to Transportation Committee and Council in the first quarter of 2024.

On April 28, 2023, the physical barriers were removed, and the closed section of Wellington Street was re-opened with temporary cycling facilities featuring a single vehicle travel lane in each direction plus on-road bicycle lanes.

### INTER AGENCY COLLABORATION

The federal government and the City of Ottawa have been working collaboratively to respond to the challenges posed by the 2022 demonstrations, since their conclusion in February 2022. By July 2022, formal governance was launched with parliamentary and other government stakeholders, which was followed by an agreement between City of Ottawa and PSPC officials to explore the potential transfer of Wellington Street into federal jurisdiction, and to undertake a transportation study as a key input into the decision-making on this subject.

The coordination between agencies is a key commitment made in response to the Procedure and House Affairs study (Dec. 2022), in that the federal government stated: *"That the government and its partners continue their current consultations and discussions with relevant stakeholders regarding the potential expansion of Parliament Hill onto Wellington and Sparks streets, along with the potential redevelopment of these streets;"* and *"That Wellington Street...be closed off to vehicular traffic..."* (Recommendation 1).

Since April 2023, discussions between PSPC and the City of Ottawa have been ongoing with the intent of formally integrating Wellington Street into the plans for the Parliamentary Precinct. Parliamentary, federal and municipal stakeholders have set up committees to explore the best way of keeping the area safe and secure for those who work and live there. They also want to ensure the precinct remains open and accessible for residents and visitors while contributing to building a capital city.

A Transportation Working Group was established to direct and oversee this transportation study, and to inform the discussions on the future of Wellington Street. Membership of the group was comprised of representatives from PSPC, NCC, and the City of Ottawa. The group's role was to monitor progress of work, confirm assumptions, provide direction to the consultant preparing the transportation study, and review the consultant's work in a collaborative manner.

### TRANSPORTATION STUDY PURPOSE

The study purpose was to evaluate the transportation implications of the proposed permanent closure of Wellington Street from just east of Bank Street to just west of Elgin Street. The study focused on identifying the network traffic impacts and associated mitigation. Whereas the transportation study addressed the general implications of the proposed closure on pedestrians, cyclists, transit, goods movement, emergency services, on-street parking, loading zones and maintenance in a general manner, the focus of this analysis was on vehicular traffic.

The scope of work included an assessment of how forecasted vehicle traffic (auto mode) would be expected to divert following the proposed closure of Wellington Street while remaining open to active modes. This involved assessing a range of potential implications of the traffic diversion on streets and intersections within the study area. Where the diverted traffic was determined as having operational impacts, mitigation measures were to be identified at the conceptual level and indicative cost estimates prepared. Given this specific scope, it is important to note that the following matters were not addressed by the study:

- The ultimate use and design of the closed portion of Wellington Street;
- The temporary bike lane project implemented in April 2023 on the closed portion of Wellington Street;
- The design and operations of a potential future STO tramway system on the surface of Wellington Street;
- The transportation implications of a sixth interprovincial bridge crossing of the Ottawa River; and
- A detailed assessment of the transportation implications (positive and negative) on pedestrians, cyclists, and transit.

The ensuing document represents a traffic operations and multi-modal assessment of the implications of the proposed Wellington Street closure for the segment just east of Bank Street to just west of Elgin Street. This study can be used by decision makers to understand future road modifications needed to mitigate impacts to the downtown street network, should vehicular restrictions on Wellington Street be permanently implemented in the future.

### STUDY APPROACH

The study area reflects much of the Downtown Core of Ottawa. It is bound by the Ottawa River to the north, Sussex Drive and Colonel By Drive to the east, Laurier Avenue to the south and Booth Street to the west.

The study reviewed pre-pandemic and transportation conditions throughout the pandemic to establish a baseline condition. Future downtown infrastructure projects were identified and incorporated into the analysis. Future traffic volumes were projected considering the directions from the City of Ottawa Official Plan, a review of historical transportation trends, and ongoing changes in work-from-home and transit trends which occurred during the pandemic. In carrying out the analysis, three future traffic volume scenarios were identified. The scenarios included low, medium, and high traffic volume forecasts for the 2046 planning horizon, representing the weekday peak hours of travel demand. This scenario-based approach was taken to reflect the challenges of establishing a single traffic volume forecast in the absence of definitive data on the stabilization of post-pandemic place-of-work trends and transit ridership. It is also important to note that the study does not identify a preferred or "most likely" traffic volume forecast scenario.

The evaluation applied industry standard tools for the analysis of vehicle intersection performance, as well as City of Ottawa Multi-Modal Level of Service (MMLoS) Guidelines to assess other modes of travel. The evaluation identified potential intersection mitigation measures to meet the City of Ottawa’s Vehicle Level of Service Targets for downtown intersections for each forecasted scenario, and provided indicative cost estimates for each mitigation measure.

### SUMMARY OF TRAFFIC ANALYSIS FINDINGS

The traffic analysis evaluated the following three long-term forecast traffic scenarios:

- **Low Vehicle Traffic Scenario:** Represents a 25% reduction in traffic volumes when compared to 2019 observed traffic, similar to conditions experienced in late 2022 and early 2023 in downtown Ottawa.
- **Medium Vehicle Traffic Scenario:** Represents no change in traffic volumes when compared to 2019 observed traffic volumes, representing a scenario where auto demand growth has returned to pre-COVID levels and any additional growth has been negated.
- **High Vehicle Traffic Scenario:** Represents a 10% increase relative to 2019 observed traffic volumes, to represent a scenario where auto demand within the downtown core has returned to pre-COVID levels and incurred additional auto growth.

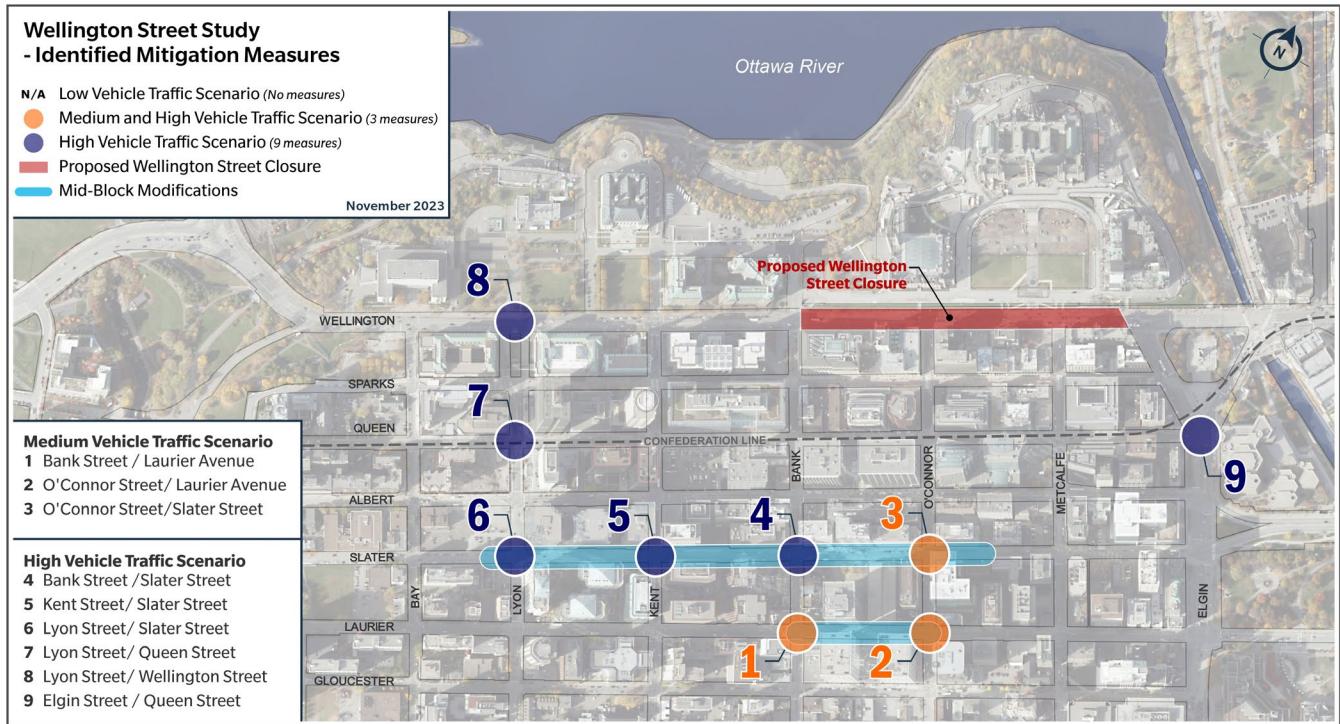
Overall, the traffic analysis demonstrated the following:

- For vehicles diverting from the proposed Wellington Street closure, Albert Street and Slater Street would serve as the primary east-west detour routes, while Queen Street and Laurier Avenue would function as secondary detour routes. An increase in traffic is forecasted on these routes, and on important north-south roadways such as Bay Street, Lyon Street and Kent Street. The analysis did not consider potential traffic impacts outside the Downtown Core area of Ottawa.
- Should traffic volumes remain low or decrease over time (Low Vehicle Traffic Scenario), fewer operational or safety implications would be experienced. No notable mitigation measures would be required for this scenario.
- In the case where traffic volumes return to pre-pandemic values (Medium Vehicle Traffic Scenario) or increase beyond historically observed traffic (High Vehicle Traffic Scenario), the vehicle traffic diverted from the proposed Wellington Street closure would have notable impacts on vehicle traffic flows, surface transit operations, and emergency service response on surrounding downtown streets and intersections.
- Three (3) intersection modifications were identified for the Medium Vehicle Traffic Scenario, while an additional six (6), for a total of nine (9), modifications were identified for the High Vehicle Traffic Scenario. These modifications are intended to mitigate impacts of traffic diverted from the proposed closure of Wellington Street and improve intersection level of service in the downtown area in alignment with City of Ottawa Multi-Modal Level of Service Guidelines.
- Should traffic volumes increase and the identified mitigation measures implemented, the majority of the downtown vehicle network would meet the City’s minimum Vehicle Level of Service Target. The traffic impact of the proposed closure of Wellington Street was found to be manageable with the targeted intersection modifications.
- With respect to the City of Ottawa’s MMLoS Guidelines, the identified mitigation measures result in negligible changes in Pedestrian LOS, Bicycle LOS, Transit LOS and Truck LOS relative to existing. Some of the identified mitigation measures do have adverse safety implications for pedestrians and cyclists that are not captured by the MMLoS analysis.
- Notable impacts to street parking supply and loading zones along Queen Street (nearest Elgin Street), Slater Street (from west of Lyon Street to east of O’Connor Street) and Laurier Avenue (from east of Bank Street to O’Connor Street).

**Figure E-1** depicts the location of the identified mitigation measures to address the range of potential future traffic scenarios. More comprehensive study will be required to advance the design of each identified intersection modification, confirm feasibility, and develop refined cost estimates.



Figure E-1: Identified Mitigation Measures



### SUMMARY OF MULTI-MODAL ANALYSIS FINDINGS

The implications of the proposed Wellington Street closure, and its diversion effects, were evaluated initially without the identified mitigation measures in place to consider the consequences to non-auto modes, activities and services in the context of the aforementioned three 2046 traffic scenarios. A multi-modal assessment was completed using the City of Ottawa's MMLOS Guidelines as the basis. The current MMLOS Guidelines provide an objective measure of the quality of the active transportation facilities, but do not incorporate vehicle turning movements at intersections. Therefore, additional qualitative analysis was undertaken to identify underlying safety and other operational challenges related to exposure to additional/diverted vehicle traffic.

A general assessment of the transportation implications on pedestrians, cyclists, and transit was completed. The assessment considered the effects of the diverted vehicle traffic which is expected to be most prominent during weekday peak hours. The Low Vehicle Traffic Scenario is anticipated to have negligible impacts to these modes, whereas the impacts would increase through the Medium and High Vehicle Traffic Scenarios.

- **Pedestrians:** The proposed closure of Wellington Street would offer an exceptional environment to those walking within the closed segment. For the streets which are anticipated to accommodate higher traffic volumes associated with the diversion, the overall intersection pedestrian LOS will remain largely unchanged under all traffic scenarios. However, a detailed assessment of the transportation implications on pedestrians would consider the higher potential for vehicle-pedestrian conflicts and associated safety considerations at the intersections, and this assessment would also identify potential mitigation measures.
- **Bicycles:** A bi-directional cycling facility is currently being planned for the north side of Wellington Street, linking Mackenzie Avenue to the Parliamentary Precinct and beyond towards the Portage Bridge. The proposed closure of Wellington Street is anticipated to provide a minimal additional benefit to cyclists on Wellington Street relative to the planned bi-directional cycling facility. For the streets which are anticipated to accommodate higher traffic volumes associated with the diversion, the overall intersection bicycle LOS will remain largely unchanged under all Traffic Scenarios. However, a detailed assessment of the transportation implications on cyclists would consider the higher potential for vehicle-cyclist conflicts and associated safety considerations at the intersections, and this assessment would also identify potential mitigation measures.
- **Bus Transit:** The proposed closure of Wellington Street is anticipated to result in a decrease in bus transit performance for those routes which are expected to accommodate higher traffic volumes associated with the

diversion due to additional delays. While mitigation measures are identified, and many transit trips to/from downtown are accommodated by LRT (Line 1), Queen Street is considered particularly vulnerable to any additional traffic volumes diverted from Wellington Street, and there are few options to increase surface transit capacity within this corridor. However, a detailed operational assessment of the transportation implications on transit would quantify the higher potential for transit delay considerations at the intersections, and this assessment would also identify potential transit priority measures.

A general assessment of the impacts to the following activities was considered. The identified impacts are largely unaffected by peak hour traffic volumes and the analyzed traffic scenarios.

- **Street Parking and Loading:** There is no designated on-street parking or loading zones on the subject segment of Wellington Street. The proposed closure of Wellington Street would result in a decrease in the number of dedicated street parking stalls and loading stalls on Metcalfe Street and O'Connor Street (north of Queen Street). Loading vehicles destined to Sparks Street may have wayfinding challenges and be required to circulate around their destination and through the proposed closure area.
- **Tour Buses and Taxis:** The proposed closure of Wellington Street would result in an overall increase in navigation and circulation challenges resulting in longer trips for pick-ups and drop-offs. There is an opportunity to leverage Wellington Street right-of-way to offer dedicated spaces to improve operations.
- **Municipal Emergency Services:** It is acknowledged that municipal emergency vehicles would be able to access restricted areas of Wellington Street. However, the proposed closure of Wellington Street would result in an overall increase in traffic delays and reduction in network resiliency that can result in increased response times during emergencies.
- **Road Maintenance:** The proposed closure of Wellington Street would result in an overall minor impact to road maintenance. Future agreements would need to be established for the proposed Wellington Street closure.
- **Goods Movement:** The proposed closure of Wellington Street would result in additional challenges to navigate the downtown network, access the Urban Truck Network, and increase in interactions with vulnerable road users.
- **Downtown Traffic Circulation:** The proposed closure of Wellington Street would result in an overall increase in circulation requirements including challenges for vehicles when navigating the one-way street system within the Downtown Core, and a decrease in overall network resiliency.

#### FINANCIAL IMPLICATIONS OF THE IDENTIFIED MITIGATION MEASURES

The identified mitigation measures to accommodate diverted vehicular traffic were developed to a conceptual level. A high-level or indicative Class 'D' cost estimate was prepared for each mitigation measure according to City of Ottawa cost estimating guidelines to understand potential financial implications. The estimates provided as part of this study were based on unit rates for construction items experienced during 2023, and also include other "soft costs" related to engineering, utilities, etc., as well as an appropriate overall contingency value of 50 percent. The cost estimates considered a variety of risks to represent a range of potential implementation costs, from "best case" to "worst case" scenarios.

The cost estimates are summarized for each of the forecast traffic scenarios below.

- **Low Vehicle Traffic Scenario:** No intersection mitigation measures have been identified to improve vehicle level of service within the study area to accommodate the proposed closure of Wellington Street. The costs associated with this demand scenario would be driven largely by the costs to implement the closure of Wellington Street, and its reprogramming, which is considered beyond the scope of this study.
- **Medium Vehicle Traffic Scenario:** The analysis identified three intersections which would warrant intersection modifications to mitigate traffic operation deficiencies. The total estimated cost of these intersection modifications amounted to approximately \$4.6M-to-\$10.6M (including soft costs and contingencies).
- **High Vehicle Traffic Scenario:** The analysis identified six additional intersections which would warrant intersection modifications to mitigate traffic operation deficiencies. The total estimated cost of the nine identified intersection modifications amounted to approximately \$10.1M-to-\$26.0M (including soft costs and contingencies).

## CONCLUDING REMARKS

The Wellington Street Transportation Study focused on identifying the network traffic impacts and potential mitigations associated with the proposed Wellington Street closure from just east of Bank Street to just west of Elgin Street. The implications of the closure on pedestrians, cyclists, transit, goods movement, emergency services, on-street parking, loading zones and maintenance were addressed in a general manner. The study evaluated a range of future traffic scenarios in the downtown core in order to reflect uncertainty in traffic growth at the 2046 planning horizon. The impact of the proposed closure and associated mitigation measures was found to be dependent on the level of traffic.

The study demonstrates that traffic impacts through all three scenarios can be mitigated through targeted intersection modifications. The range of potential costs to implement the identified conceptual mitigation measures is from no cost associated with the Low Vehicle Traffic Scenario, to \$26 million associated with the High Vehicle Traffic Scenario.

There remains the need for additional detailed assessment related to the transportation implications on pedestrians, cyclists and transit at those locations/routes which are anticipated to accommodate higher traffic volumes associated with the diversion. The detailed assessment would also identify potential mitigation measures for these modes.

Given the uncertainty in transportation patterns, and to inform decision making, it would be prudent to monitor travel to and from the downtown core, including post-pandemic place of work trends, transit ridership, and vehicle/person activity on downtown streets and intersections. The identified mitigation measures should only be considered for implementation when warranted by travel trends and traffic volumes experienced at the time, as well as when consistent with approved policy direction.

Any decision regarding the future of Wellington Street will be an integral part of a larger policy context targeting place-making and design, encompassing layers of interests beyond the efficient movement of vehicles. The decision will thus have to consider a breadth of factors also include security, engagement, and planning for the adjacent judicial precinct.