


# Langstaff Road

## From Weston Road to Highway 7 Municipal Class Environmental Assessment Study

## Environmental Study Report

January 2022

## THE PUBLIC RECORD

This Environmental Study Report and Appendices are available for a 30 calendar-day public review period from **January 13, 2022 to February 11, 2022** on the York Region website at www.york.ca/langstaffstudy

## GLOSSARY

| | |
|---|---|
| AODA | Accessibility for Ontarians with Disabilities Act, 2005 |
| APEC | Areas of Potential Environmental Concern |
| AT | Active Transportation |
| ATR | Automatic Traffic Record |
| BMPs | Best Management Practices |
| CAC | Clean Air Council |
| CC | Coefficient of Conservatism |
| CFIA | Canadian Food Inspection Agency |
| CN | Canadian National Railway |
| CNWA | Canadian Navigable Waters Act, 1985 |
| CO | carbon monoxide |
| COS | Contamination Overview Study |
| COSEWIC | Committee on the Status of Endangered Wildlife in Canada |
| COSSARO | Committee on the Status of Species at Risk in Ontario |
| CP | Canadian Pacific Railway Company |
| CW | Coefficient of Wetness |
| DFO | Fisheries and Oceans Canada |
| EA | Environmental Assessment |
| EA Act | Environmental Assessment Act, 1990 |
| EAB | Emerald Ash Borer |
| EASR | Environmental Activity and Sector Registry |
| ECCC | Environment and Climate Change Canada |

| | |
|---|---|
| ELC | Ecological Land Classification for Southern Ontario |
| ESA | Endangered Species Act, 2007 |
| ESAs | Environmental Site Assessments |
| ESC | Erosion and Sediment Control |
| ESR | Environmental Study Report |
| FHWA | The United States Department of Transportation Federal Highway Administration |
| FTN | Frequent Transit Network |
| GA | General Arrangement |
| GGH | Greater Golden Horseshoe |
| GTHA | Greater Toronto and Hamilton Area |
| GPL | General Purpose Lane |
| HADD | harmful alteration, disruption and destruction |
| HOV | High Occupancy Vehicle |
| IAA | Impact Assessment Act, 2019 |
| IPZ | intake protection zone |
| kN | kilonewton |
| LOS | Level of Service |
| MBCA | Migratory Birds Convention Act, 1994 |
| MECP | Ministry of the Environment, Conservation and Parks (formerly Ministry of Environment and Climate Change - MOECC) |
| MHSTCI | Ministry of Heritage, Sport, Tourism and Culture Industries (formerly Ministry of Tourism, Culture and Sport - MTCS) |

| | |
|---|---|
| NDMNRF | Ministry of Northern Development, Mines, Natural Resources and Forestry (formerly Ministry of Natural Resources and Forestry - MNRF) |
| MSPP | Municipal Streetscape Partnership Program |
| MTO | Ontario Ministry of Transportation |
| MUP | multi-use path |
| NEP | Niagara Escarpment Plan |
| NHIC | Natural Heritage Information Centre |
| NHS | Natural Heritage System |
| $NO_x$ | nitrogen oxides |
| $NO_2$ | nitrogen dioxide |
| NPP | Navigation Protection Program |
| NSA | Noise Sensitive Area |
| OAO | Open Water |
| OBBA | Ontario Breeding Bird Atlas |
| OH | Open House |
| OH1 | Open House 1 |
| OH2 | Open House 2 |
| OHA | Ontario Heritage Act |
| OP | Official Plan |
| OTA | Ontario Trucking Association |
| ORAA | Ontario Reptile and Amphibian Atlas |
| ORMCP | Oak Ridges Moraine Conservation Plan |
| $PM_{2.5}$ | Fine Particulate Matter |

| | |
|---|---|
| PPS | Provincial Policy Statement |
| PTTW | Permit to Take Water |
| RER | Regional Express Rail |
| RfR | Request for Review |
| RTP | Regional Transportation Plan |
| SAR | Species at Risk |
| SARA | Species at Risk Act, 2002 |
| SARO | Species at Risk in Ontario |
| SCC | Species of Conservation Concern |
| SGMN | Strategic Goods Movement Network |
| $SO_2$ | Sulphur Dioxide |
| SPA | Source Protection Area |
| SWH | Significant Wildlife Habitat |
| SWM | Stormwater Management |
| TDM | Transportation Demand Management |
| TMP | Transportation Master Plan |
| TPZ | Tree Protection Zone |
| TRCA | Toronto and Region Conservation Authority |
| TTC | Toronto Transit Commission |
| UGC | Urban Growth Centres |
| USA | United States of America |
| V/C | Volume Over Capacity Ratio |
| VMC | Vaughan Metropolitan Centre |

| | |
|---|---|
| VNEP | Viva Network Expansion Plan |
| VO5 | Visual OTTHYMO |
| WHPA | Wellhead Protection Areas |
| YRT | York Region Transit |
| YRTDF | York Region Travel Demand Forecasting |
| YRTMP | York Region Transportation Master Plan |

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# EXECUTIVE SUMMARY

## E.1 Introduction

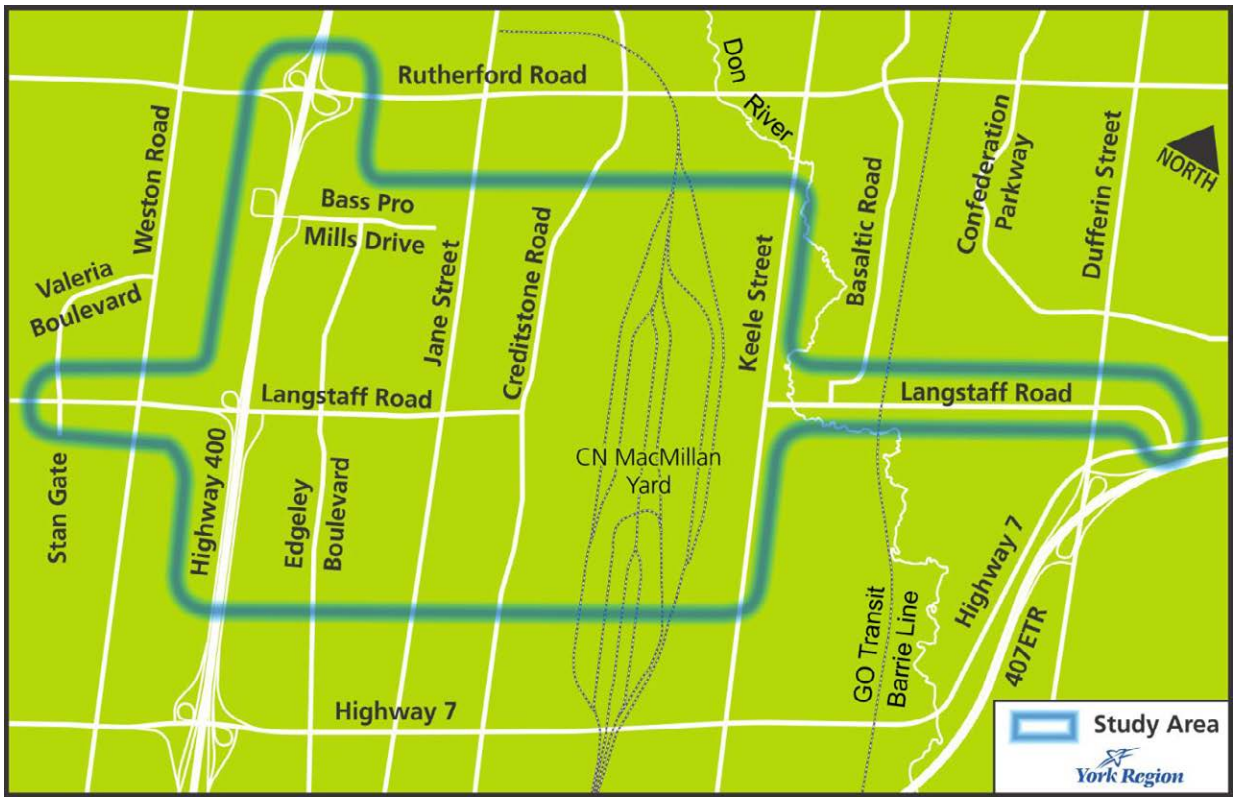
The Regional Municipality of York (York Region) has completed a Municipal Class Environmental Assessment (Class EA) study for improvements to Langstaff Road (Regional Road 72), from Weston Road (Regional Road 56) to Highway 7 (Regional Road 7 within the City of Vaughan.

The Class EA study goal is to identify a transportation solution that addresses existing problems and opportunities in the Langstaff Road corridor including: a new Langstaff Road connection across the Canadian National Railway (CN) MacMillan Rail Yard; a grade separation at the Metrolinx GO Transit Barrie Line; widening in certain sections of Langstaff Road and consideration of Highway 400 interchange improvements. These improvements are being considered in order to: manage existing and future traffic congestion on other east-west arterial roads; support growth of the Vaughan Metropolitan Centre and other primary growth centres nearby; improve access to employment lands; provide infrastructure for all modes of transportation and support an efficient goods movement system.

To assess potential improvements for Langstaff Road from Weston Road to Highway 7, York Region retained WSP Canada Inc. to conduct the EA study. The Langstaff Road Class EA study was carried out in accordance with Schedule ‘C’ of the Municipal Class Environmental Assessment document (Municipal Engineers Association October 2000, as amended in 2007, 2011, and 2015). The Environmental Study Report (ESR) documents the decision-making process carried out during the EA study.

The study area length is approximately 6 km, along the Langstaff Road corridor from Weston Road in the west to Highway 7 in the east. A partial interchange at Highway 400 currently provides access to southbound Highway 400 and from northbound Highway 400 to Langstaff Road. Langstaff Road currently terminates on the east and west side of the CN MacMillan Rail Yard, at Keele Street and Creditstone Road, respectively. **Exhibit ES-1** depicts the Langstaff Road Class EA study area.

## Exhibit ES-1: Study Area




### E.2 Consultation

Consultation is a key component of the Municipal Class EA process and reflects York Region's commitment to engaging potentially affected or interested stakeholders, including but not limited to technical agencies, members of the public, property owners, municipalities and Indigenous Communities.

Modes of outreach and engagement to the stakeholders noted above for this Class EA study included notices, newspaper ads, direct mail, email correspondence, responses to written comments submitted, phone calls, project website updates (york.ca/langstaffstudy), social media (York Region Facebook, York Region Twitter, and digital ad campaigns), public meetings (open houses), online open house material (display material and videos), as well as agency meetings and individual property owner meetings. Each notice was mailed to approximately 12,200 property owners within the study area. Key consultation events are outlined in **Table ES-1** below.

### Table ES-1: Key Consultation Events

| Consultation Event | Date |
|---|---|
| Notice of Study Commencement | December 2016 |
| Notice of Open House #1 | May/June 2017 |
| Open House #1 | June 14, 2017 |
| Notice of Open House #2 | November 2018 |
| Open House #2 | November 28, 2018 |
| Notice of Study Completion | January 13, 2022 |

Property owners and business owners within the study area directly received mailed notices. Following the study commencement, individuals who expressed interest in the project and as requested, were added to the project mailing list to receive updates on the study as it progressed.

Indigenous Communities were engaged at each milestone of the Class EA study, including:

- Aamjiwnaang First Nation
- Alderville First Nation
- Aundeck-Omni-Kaning First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of Nawash First Nation
- Chippewas of Rama First Nation
- Chippewas of the Thames First Nation
- Curve Lake First Nation, Hiawatha First Nation
- M'Chigeeng First Nation
- Mississaugas of Scugog Island First Nation
- Mississaugas of the Credit First Nation
- Mohawks of Akwesasne First Nation
- Mohawks of the Bay of Quinte First Nation
- Métis Nation of Ontario
- Saugeen First Nation
- Sheguiandah First Nation
- Six Nations of the Grand River First Nation
- Six Nations of the Grand River First Nation
- Walpole Island First Nation
- Walpole Island First Nation

- Zhiibaahaasing First Nation

Indigenous Communities on the study contact list did not express any specific concerns regarding this Class EA study.

Technical agencies were consulted with throughout the course of the Class EA study. The list of technical agencies, including utility companies and interested groups, contacted is provided below.

- Canadian National Railway (CN)
- Ontario Ministry of Transportation (MTO)
- Metrolinx
- 407ETR
- MPP, Vaughan-Woodbridge
- City of Vaughan
- Ontario Ministry of the Environment, Conservation and Parks (MECP)
- Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) (formerly Ministry of Natural Resources and Forestry (MNRF))
- Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)
- Ontario Ministry of Municipal Affairs and Housing
- Ontario Ministry of Indigenous Affairs
- Toronto and Region Conservation Authority (TRCA)
- York Region District School Board
- York Catholic District School Board
- Student Transportation Services of York Region
- York Regional Police
- Emergency Medical Services, York Region
- Fire and Rescue Services, City of Vaughan

<u>Utility Companies</u>

- Bell Canada
- Enbridge Gas
- Alectra Utilities
- Rogers
- Telecom
- Zayo

Interested Groups

- National Estates Ratepayers' Association
- Pinewood Estates Ratepayers' Association
- Vellore Woods Ratepayers' Association
- Concord West Ratepayers' Association
- Carrying Place Ratepayers' Association
- West Woodbridge Ratepayers' Association
- Weston Downs' Ratepayers Association
- Preserve Thornhill Woods Association
- Beverley Glen Ratepayers' Association
- York Region Cycling Coalition
- Vaughan Bicycle User Group
- Smart Commute – North Toronto
- Chamber of Commerce, City of Vaughan
- Ontario Trucking Association
- St. Stephen Anglican / Lutheran Cemetery

One-on-one meetings were held with key technical agencies during the Class EA study. These included Canadian National Railway (CN), Ontario Ministry of Transportation (MTO), Metrolinx, City of Vaughan and Toronto and Region Conservation Authority (TRCA) – see **Section 2.3** of the ESR. Seven meetings were held with CN, nine with MTO, three with Metrolinx, three with City of Vaughan, and two with TRCA throughout the study process.

Property owners who are directly impacted by the proposed improvements on Langstaff Road were invited to have one-on-one meetings with the Project Team; specifically, property owners at the east and west approaches of the future CN MacMillan Rail Yard crossing. A number of meetings were held with the individual property owners and the meeting minutes are on file with York Region – see **Section 2.7** of the ESR.

Various information packages were also provided to landowner representatives to address their specific concerns and requests.

## E.3 Study Planning Context

Several objectives, policies and actions are embedded in many of York Region's Council-approved plans that support the undertaking of the Langstaff Road Class EA study and the consideration of improvements to Langstaff Road.

A number of Regional planning documents were reviewed in the context of this Class EA Study including York Region's Vision 2051, York Region Official Plan (2010), the 2019 to 2023 York Region Strategic Plan: From Vision to Results and the York Region Transportation Master Plan (2016). Recommendations in these documents provided the necessary foundation and framework for making decisions about the improvements required on Langstaff Road and took into account economic, environmental and community considerations.

Specifically, the York Region Transportation Master Plan (TMP) identifies Langstaff Road improvements between Weston Road and Highway 7 within three sections: Weston Road to Jane Street; Jane Street to Keele Street; and Keele Street to Dufferin Street. York Region has proposed network improvements in each of these sections with a vision to build and improve transportation network connectivity, provide close live / work opportunities, promote efficient movement of goods and people, and invest in infrastructure to support future growth. These improvements include a new road crossing over the CN MacMillan Rail Yard, widening of Langstaff Road with a provision of Transit/HOV lane in each direction and Highway 400 interchange improvements.

Other planning documents such as the City of Vaughan Official Plan (2020), the City of Vaughan Transportation Master Plan (2012), the Vaughan Metropolitan Centre Secondary Plan and Surrounding Areas Transportation Study (2013) also provide growth and transportation planning and analysis that recommends improvements to Langstaff Road as a vital part of an efficient transportation network. Additionally, the considerations of the on-going Weston Road / Highway 7 Transportation Master Plan (TMP), VMC TMP and Concord GO Centre TMP studies provide general future context of the surrounding nodes of population, employment and multi-modal hubs that are in proximity to Langstaff Road.

The York Region TMP outlines objectives related to active transportation, including developing a road network fit for the future that provides opportunities to support all

modes of travel within the Region's right-of-way; integrating active transportation in urban areas to promote the use of alternative travel modes which will help the Region reach its sustainable transportation objectives to reduce single-occupant vehicle trips; and, making the last mile work, meaning increasing the adoption of transit and active transportation while lowering the amount of single-occupant vehicle use especially during peak periods. The 2020 City of Vaughan Pedestrian and Bicycle Master Plan provides a strategic plan to support the advancement of active transportation across Vaughan to create a more walkable and bikeable city, in particular along Langstaff Road. The Green Directions Vaughan (2019) also outlines objectives and sustainability actions, such as developing and sustaining a network of sidewalks, paths and trails that support all modes of non-vehicular transportation and reducing single occupant vehicle trips by supporting active transportation, car pooling and public transit, for the City of Vaughan to maintain a healthy natural environment, vibrant communities and a strong economy.

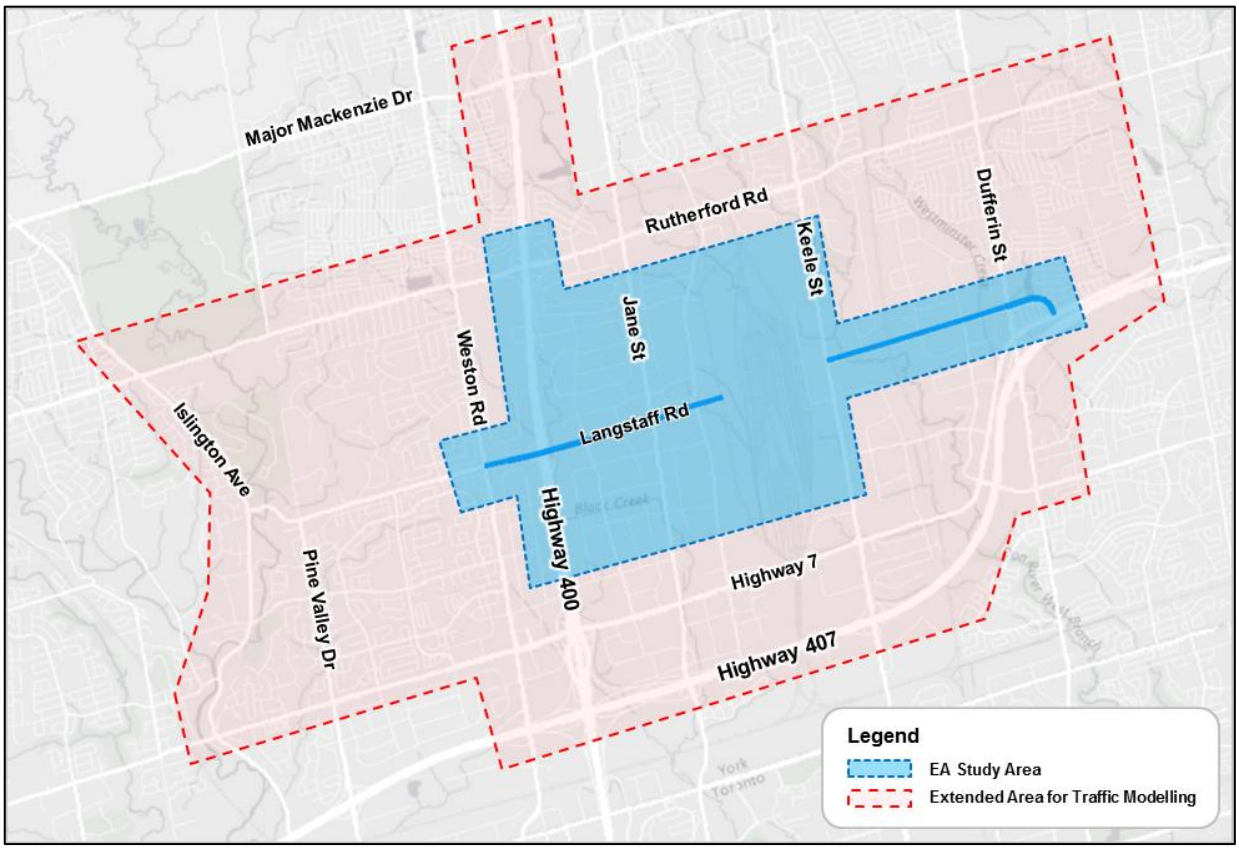
From the design perspective, York Region's Designing Great Streets Guidelines (2019) aids in shifting the focus from planning for vehicle capacity to planning for streets that provide greater mobility for all users and greater integration with the community. The Langstaff Road Class EA study is consistent with the Guidelines vision *to create vibrant streets for York Region to provide a range of safe and reliable transportation options, while being sensitive to adjacent land uses and needs of the community*.

The Langstaff Road Class EA study builds on the above-noted planning history and policy framework with the objectives to: improve mobility for residents and businesses; position the Region to respond to the forecasted population and employment growth; and support the successful implementation of the Vaughan Metropolitan Centre, a Provincial Growth Plan-designated Urban Growth Centre.

### E.4 Transportation Assessment

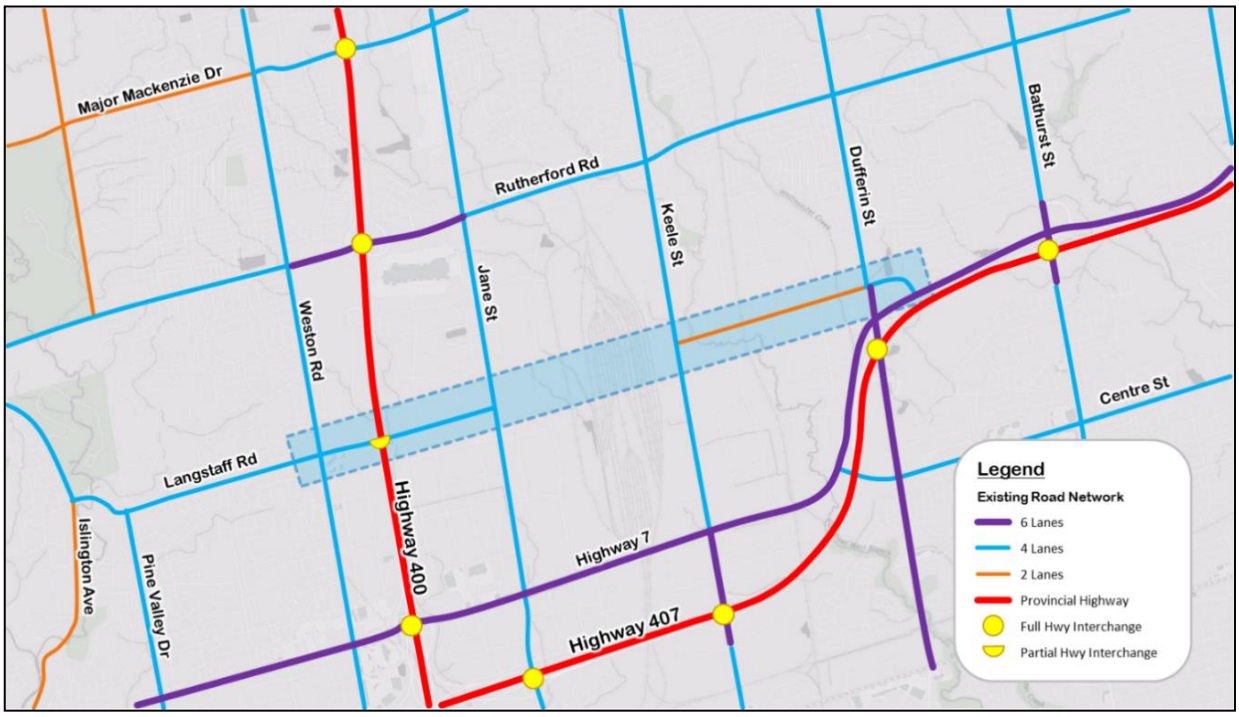
The primary study area for the Langstaff Road Class EA study is between Weston Road and Highway 7. The travel demand analysis considered an extended area beyond the primary study area, bounded by Rutherford Road to the north, Thornhill Woods Drive to the east, Highway 7 to the south and Islington Avenue to the west. This expanded area allowed for a comprehensive travel demand analysis and review of the impacts associated with potential Langstaff Road improvements. The study area is depicted in **Exhibit ES-2**.

## Exhibit ES-2: Langstaff Road Class EA Travel Demand Study Area




Langstaff Road, as it relates to this Class EA study, is a Regional arterial road that runs between Islington Avenue to the west and Highway 7 to the east. The segment of Langstaff Road under consideration in this Class EA study, between Weston Road and Highway 7, is approximately 6 km in length. Due to the location of the CN MacMillan Rail Yard, Langstaff Road is discontinuous between Jane Street and Keele Street; the western segment is currently a four-lane roadway, whereas the eastern segment operates with a two-lane cross-section. A short segment of Langstaff Road west of Jane Street (terminating at the CN MacMillan Rail Yard) is a four-lane collector road under the jurisdiction of the City of Vaughan. **Exhibit ES-3** presents the Langstaff Road study area, including the surrounding Regional road network.

## Exhibit ES-3: Existing Regional Road Network Surrounding the Langstaff Road Class EA Study Area




Langstaff Road is connected to Highway 400 through a partial interchange that provides access to and from the south (excluding Highway 407). Highway 400, a provincial highway, is an important element of the transportation system supporting the function and growth of York Region. While it may impose a physical barrier between communities on either side of the highway, its location in the study area serves major business centres and employment areas in the City of Vaughan.

Travel demand analysis for the existing (2016) and future (2041) transportation conditions for Langstaff Road has been conducted to assess the road network improvement needs and justification (see **Chapter 4** of the ESR). This analysis applied the York Region Travel Demand Forecast model to forecast future travel demands based on regional population and employment growth targets. The key aspects of this analysis are summarized below:

- The existing (2016) travel demand analysis result confirms that east-west traffic volumes are operating at *Very Congested* conditions near the CN MacMillan Rail Yard crossing, and approaching planning level capacity at other screenline locations within the study area.

- A total of five screenline analysis scenarios were carried out under the future conditions (2041):
  - The Base Case (Scenario 1) accounted for all regional TMP recommended improvements excluding Langstaff Road improvements. Findings under Scenario 1 indicate that the east-west corridors (Rutherford Road, Langstaff Road and Highway 7) will be operating with very high delays under Very Congested conditions. This scenario highlights the need for additional transportation capacity within the study area.
  - Scenario 2 includes the widening of Langstaff Road from 2 General Purpose Lanes (GPLs) to 4 GPLs between Keele Street and Dufferin Street only. Findings of this scenario only marginally improves the westbound 2041 AM Peak Hour traffic flow west of Dufferin Street. The analysis results for this scenario show that the operating conditions for all other screenlines are expected to remain similar to Scenario 1.
  - Scenario 3 includes the provision of the new connection of Langstaff Road across the CN MacMillan Rail Yard and widening of Langstaff Road between Weston Road and Dufferin Street with 4 GPL + 2 HOV. The connection across CN MacMillan Rail Yard could provide much needed transportation capacity within the study area by relieving capacity constrained conditions on Rutherford Road and Highway 7. The new connection will also provide opportunity for truck traffic to access area highways directly, thereby reducing truck traffic from other regional arterial roads. Under this scenario, congestion within the study area could be reduced significantly.
  - Scenario 4 improvements (Scenario 3 plus Highway 400 interchange at Langstaff Road) are expected to attract additional traffic volumes to Langstaff Road. At the screenline level, analysis of this scenario shows very marginal improvements compared to Scenario 3; this is expected since no additional arterial roadway capacity was introduced.
  - Scenario 5 includes the widening of Langstaff Road to 6 GPLs which provides additional vehicular capacity (in particular goods movement) compared to Scenario 4, which would reduce congestion within the study area, leading to improved overall traffic operations.

- In summary, from a travel demand analysis standpoint using screenline and link analysis techniques, needs and justification have been identified for the following preliminary Langstaff Road improvements:
  - Widening Langstaff Road to six general-purpose lanes;
  - Provision of a new connection on Langstaff Road across the CN MacMillan Rail Yard; and
  - Consideration for improvements to the existing partial Highway 400 interchange in the future (see **Section 8.5**).

Throughout the course of the Class EA study, the consideration for the Highway 400 / Langstaff Road interchange improvements was reviewed in consultation with MTO and the City of Vaughan. Based on the review of various Highway 400 / Langstaff Road interchange alternatives and associated traffic analysis completed as part of the Class EA study, it was acknowledged that the planning of the Highway 400 / Langstaff Road interchange will be a complex undertaking. The extent of the improvements associated with the Highway 400 / Langstaff Road interchange is expected to span well beyond the immediate area of Highway 400 / Langstaff Road, and have implication to the Highway 400 corridor. High level design concept and analysis completed during the Class EA study are on file with York Region.

Per above, the planning for the Highway 400 / Langstaff Road interchange improvements is to be reviewed as part of a future study of the Highway 400 corridor to ensure a more thorough, comprehensive and holistic approach, and therefore, will not be included as part of the current Langstaff Road Class EA study.

Even without the Highway 400 / Langstaff Road interchange improvement, the implementation of other proposed improvements on Langstaff Road, which include the widening to six general purpose lanes, grade separation with the Metrolinx GO Barrie Line and crossing of the CN MacMillan Rail Yard, will provide the following benefits:

- Congestion reduction in east-west corridors (i.e. Rutherford Road and Highway 7);
- Supports Langstaff Road as a Primary Arterial Goods Movement Corridor;
- Direct access to area highways, which can reduce truck traffic on surrounding arterial roads; and
- General improvement of traffic operations throughout the study corridor.

## E.5 Problem and Opportunity Statement

Langstaff Road is a major Regional east-west arterial road, designated as part of York Region's Strategic Goods Movement Network, strategically located within an intensifying employment area, and in close proximity to the Vaughan Metropolitan Centre and other primary growth areas in the City of Vaughan.

The role and function of Langstaff Road in York Region's future transportation network is severely limited by: 1) the lack of connection across the CN MacMillan Rail Yard; 2) the restricted access to Highway 400 at the partial interchange; 3) the need for additional road capacity to serve employment areas; and 4) the at-grade crossing of the GO Transit Barrie Line.

These limitations will continue to create additional pressure on adjacent east-west arterial routes and interchanges at Rutherford Road and Highway 7.

Improvements to Langstaff Road are necessary to accommodate long term travel demands, support key growth policies, maximize the potential of employment areas and support the goods movement network.

There is an opportunity to significantly improve the overall function of Langstaff Road in the Regional transportation network, facilitate more efficient movement of people, vehicles and goods, improve access to transit and provide sustainable transportation choices by linking the active transportation network.

## E.6 Existing Conditions

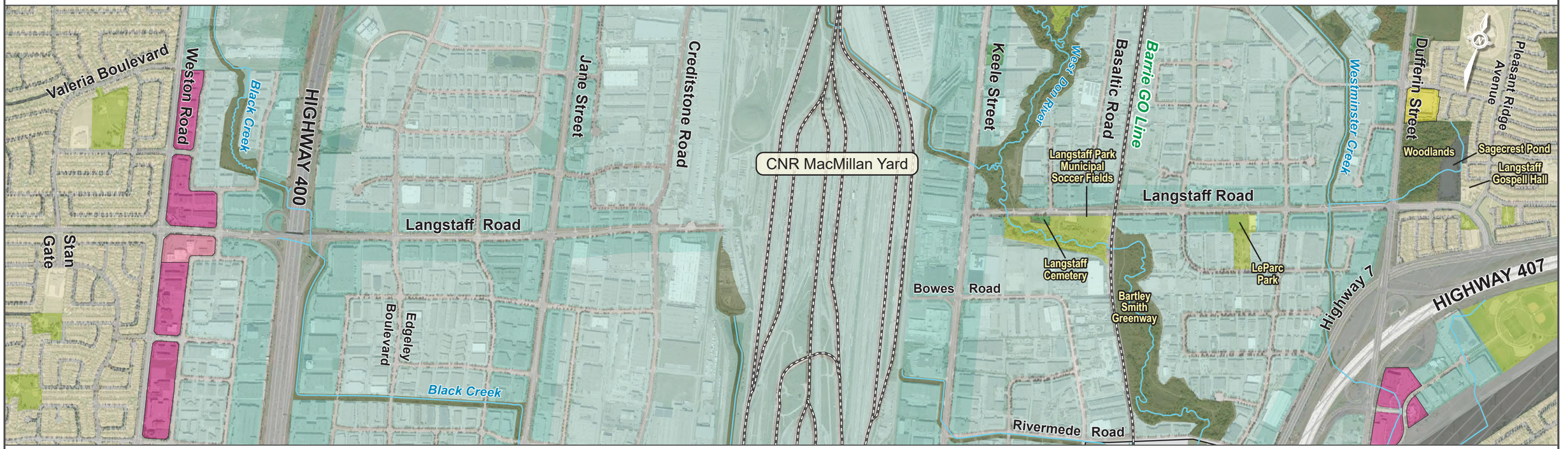
As part of this Class EA Study, the existing conditions of the study area have been reviewed and summarized in **Chapter 6** of the ESR in setting the baseline when identifying potential impacts as a result of the proposed improvements to Langstaff Road. Existing land uses, environmental features and major transportation corridors within the study area include the following and are shown in **Exhibit ES-5**:

- Dense mix of commercial and industrial businesses along Langstaff Road between Weston Road and Dufferin Street;
- East of Dufferin Street and west of Weston Road, land use transitions to residential with some recreational / parkland east of Dufferin Street;
- Core features of the Natural Heritage Network are identified in three locations: within the Highway 400 / Langstaff Road interchange (Black Creek); along the

valley crossing just east of Keele Street (West Don River); and at the woodland located in the northeast quadrant of Langstaff Road and Dufferin Street;

- Community Commercial Mixed-Use area in the northeast corner of Langstaff Road and Weston Road;
- Employment Commercial Mixed-Use area in the southeast corner of Langstaff Road and Weston Road;
- Mainly Prestige Employment area located between Highway 400 and Dufferin Street;
- Langstaff Cemetery, also known as Old St. Stephen's Cemetery (adjacent to Langstaff Park) – south side of Langstaff Road, east of Keele Street;
- Langstaff Gospel Hall – north side of Langstaff Road, east of Dufferin Street;
- West Crossroad Park – south side of Langstaff Road, east of Dufferin Street;
- LeParc Park – south side of Langstaff Road, west of Dufferin Street;
- Langstaff Park – south side of Langstaff Road, west of railway track; and
- The Bartley Smith Greenway and Vaughan Super Trail along the West Don River.

The existing conditions reviewed include features in socio-economic environment (land use, economic activity, planning urban intensification), cultural environment (archaeology and built heritage), natural environment (natural heritage system, fish and fish habitat, vegetation and flora, wildlife, tree inventory), drainage, hydrogeology and contamination overview.




- Natural Areas
- Parks
- Private Open Spaces
- Low-Rise Residential
- Low-Rise Mixed-Use
- Community Commercial Mixed-Use
- Employment Commercial Mixed-Use
- General Employment
- Prestige Employment
- Parkway Belt West Lands
- Infrastructure and Utilities

LANGSTAFF ROAD ENVIRONMENTAL ASSESSMENT

**Existing Land Use along Langstaff Road**

Exhibit

ES-5

## E.7 Alternative Solutions

Alternative solutions provide an opportunity to examine, in a broad and general way, fundamentally different ways of addressing transportation problems (Phase 2 of the Class EA process). The alternative solutions are assessed against their ability to reasonably address the problems and opportunities, and in consideration of the constraints identified in the early stages of the study, to identify a preferred solution(s) for which alternative designs can be developed. For this study, alternative solutions have been identified as:

- Alternative 1: Do Nothing
- Alternative 2: Transportation Demand Management
- Alternative 3: Alternative Modes of Transportation
- Alternative 4: Operational Improvements
- Alternative 5: Upgrade Parallel Roads Beyond Planned Improvements
- Alternative 6: Langstaff Road and Highway 400 Interchange Improvements

Based on the assessment and evaluation of the Alternative Solutions, Alternatives 1, 2, and 5 were not recommended to be carried forward as they did not address the needs, problems and opportunities of Langstaff Road. As such, the preliminary Preferred Planning Solution carried forward for public review at Open House 1 (OH1) includes a combination of Alternatives 3, 4, and 6, as follows:

- **Add New Lanes:** Widen Langstaff Road to provide increased traffic capacity by adding new lanes to optimize traffic flow.
- **Langstaff Road Connection:** Construct Langstaff Road link across the CN MacMillan Rail Yard.
- **Highway 400 Interchange Improvements:** Convert the Highway 400 / Langstaff Road Interchange to a full-move interchange to provide better connection and to optimize traffic flow.
- **Grade Separation with GO Transit Barrie Line:** Construct grade separation at Langstaff Road and GO Transit Barrie Line
- **Intersection Improvements:** Consideration of turning lanes, traffic signal timing optimization, etc.

- **Alternative Modes of Transportation**: Provision of or improvements to pedestrian and cycling facilities (e.g. AODA compliance, reduced curb radii (where technically feasible), pavement markings including cross-rides and signal heads, etc.). Improvements to transit system (e.g. improved transit amenities).

Public and agency feedback received during and following OH1 did not trigger any changes to the alternative solutions being considered or the selection of the preliminary Preferred Design Planning solution for Langstaff Road.

Following OH1, the preliminary Preferred Design Planning solution was confirmed as the Preferred Design Planning Solution to be carried forward into Phase 3 of the Class EA process.

### E.8 Alternative Design Concepts

The alternative design concepts development and evaluation associated with Langstaff Road improvements involved the following activities (see **Chapter 8** of the ESR):

- developing a **cross-section** to establish future right-of-way requirements;
- developing the **road widening alternative design concepts**, based on the cross-section and associated right-of-way requirements;
- developing the Metrolinx GO Transit Barrie Line **grade separation** alternative design concepts;
- developing the **CN MacMillan Rail Yard** crossing alternative design concepts;
- developing the **Preliminary Preferred Design Plan** based on the inputs above;
- inviting participating agencies and the public to attend Open House 2 (OH2) to review and provide comments on the **Preliminary Preferred Design Plan**; and
- refining the Preliminary Preferred Design Plan based on feedback received from agencies and the public and confirming the **Preferred Design Plan**.

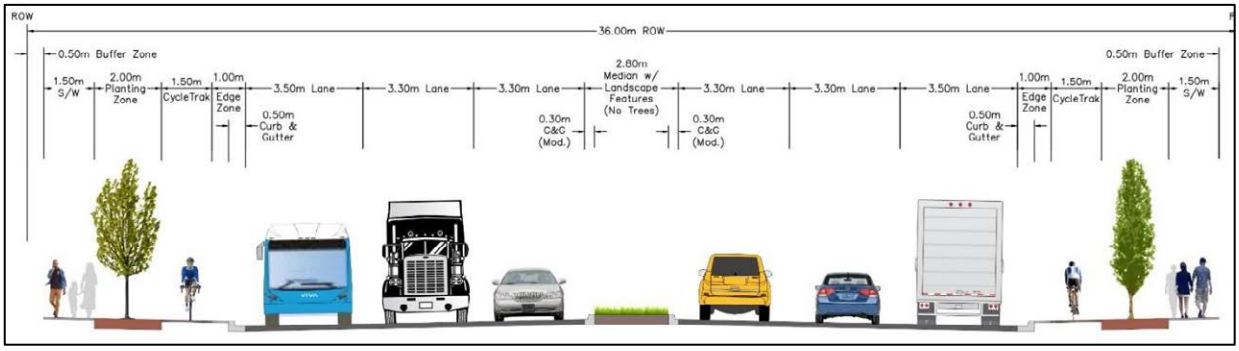
<u>Typical Cross Section</u>

The following key constraints and design elements were considered in developing the cross-section alternatives: compatibility with adjacent land uses within the study area, provision for pedestrian and cyclists and future multi-use path connections, available existing right-of-way and minimizing property impacts, York Region's Official Plan

right-of-way, reduction in lane widths, intersection and turning lane recommendations, geometric design requirements, and Region's Streetscape Program.

The typical roadway cross-section for Langstaff Road was developed collaboratively by staff from York Region's Capital Planning and Delivery, Streetscape, Forestry, Active and Sustainable Transportation and Operations/Maintenance departments through a meeting held on October 4, 2017. The Langstaff Road cross-section is illustrated by **Exhibit ES-6**. The proposed roadway supports the movement of commercial goods, motor vehicles, transit, pedestrians and cyclists, and protects opportunities for streetscape enhancements.

## Exhibit ES-6: Langstaff Road Preliminary Cross-Section from Weston Road to Dufferin Street




Langstaff Road Future Road Widening Alternative Design Concepts & Evaluation:

Three roadway widening alternative design concepts were developed for Langstaff Road: Alternative 1: Widen to the north only, Alternative 2: Widen to the south only and Alternative 3: Widen by the existing centreline.

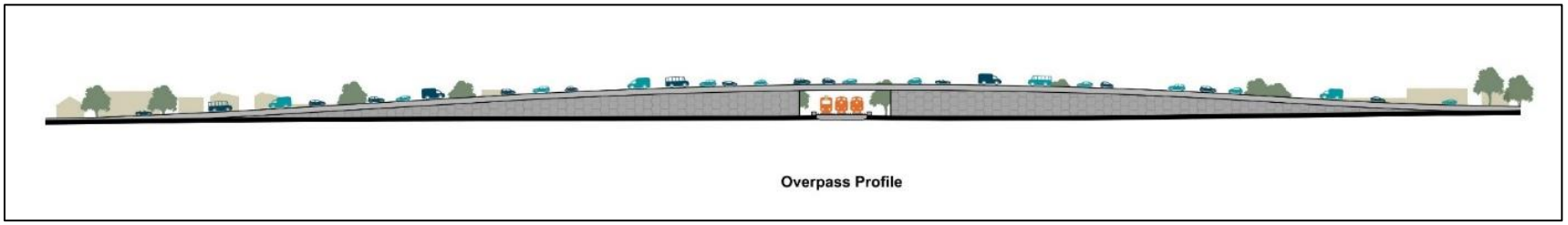
While the above alternative design concepts provided a reasonable range of options, for much of the study area, there are existing constraints located along both sides of Langstaff Road. Based on a qualitative assessment of these alternative design concepts, a "Best Fit" alignment that combines centreline, north and south widening provides the greatest opportunity to minimize property impacts for the proposed widening Langstaff Road between Weston Road and Dufferin Street.

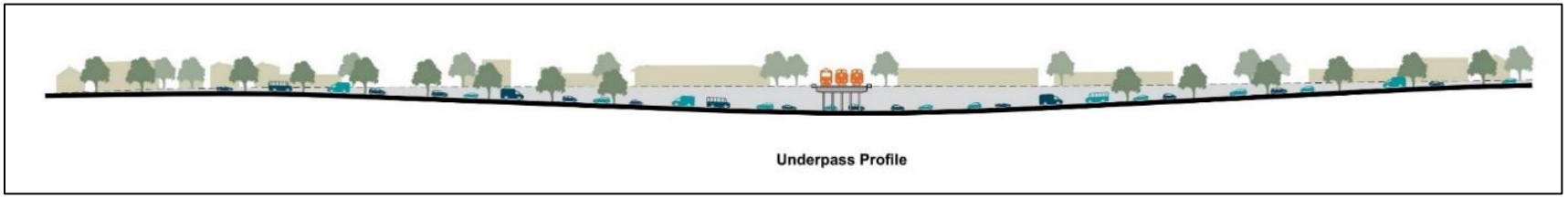
Metrolinx GO Transit Barrie Line Grade Separation Alternative Design Concepts:

Two alternative design concepts were developed for the Langstaff Road grade separation crossing at Metrolinx GO Transit Barrie Line as described below and as illustrated by **Exhibit ES-7**: Overpass Design Concept – road over rail and Underpass Design Concept – rail over road.

An overpass (rail over road) is preferred because, when compared to the underpass, this alternative and it would have minimal impacts to rail line during construction, less complex construction, would not require a pumping station; and substantially lower construction cost.

## Exhibit ES-7: Schematic of Metrolinx GO Transit Barrie Line Grade Separation Alternatives



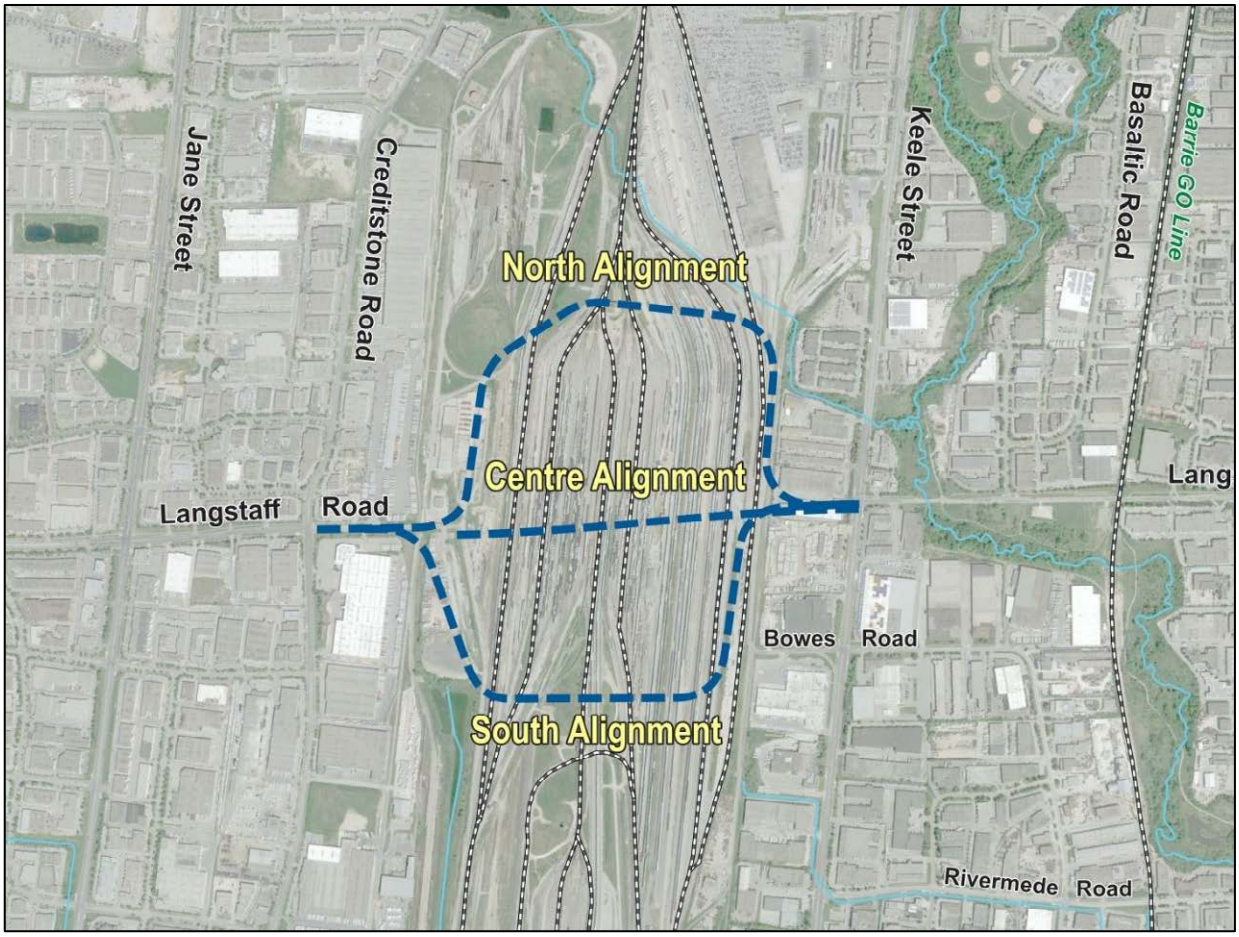



Canadian National Railway (CN) MacMillan Rail Yard Crossing & Evaluation:

Three Langstaff Road extension alignment corridor concepts crossing the CN MacMillan Rail Yard were considered as part of the *Vaughan Metropolitan Centre and Surrounding Area Transportation Study (2012)*. The same three alignment alternatives were carried forward as the initial alignment alternative design concepts of the current Class EA study and were presented to CN at the early stage.

As illustrated in **Exhibit ES-8**, the Langstaff Road extension alignment alternative design concepts across CN MacMillan Rail Yard includes: North Alignment (bridge over rail yard), Centre Alignment (bridge over rail yard or tunnel under the rail yard) and South Alignment (bridge over rail yard).

## Exhibit ES-8: CN MacMillan Rail Yard Crossing Alignment Alternatives



At the January 20, 2017 meeting with CN, CN representatives noted that amongst the three alignment design concepts, the south alignment is the only viable option due to key operational constraints in the areas associated with the centre and north alignments. Four overpass design concepts (i.e. different structural types) were subsequently developed along the south alignment, as well as the tunnel design concept that follows the centre alignment: Alternative 1A – Steel Box Girder Bridge – Long Spans, Alternative 1B – Steel Box Girder Bridge – Short Spans, Alternative 2 – Extradosed Bridge, Alternative 3 – Post-tensioned Segmental Concrete Bridge and Alternative 4 – Tunnel Option.

Based on the analysis and evaluation of the CN MacMillan Rail Yard crossing alternatives, while Alternative 4 (tunnel) has the least impact to CN operation; the cost is not economically feasible compared to the other alternatives (about 5 times more). Moreover, Alternative 1B has the greatest impact to CN operation. Therefore, these alternatives were not considered to be a preferred alternative.

The remaining alternatives (1A, 2 and 3) all have similar socio-economic and transportation impacts and similar impacts to CN operation. Given Alternative 1A has the lowest cost of the remaining three alternatives and is the simplest structure to construct, Alternative 1A is selected as the technically preferred alternative.

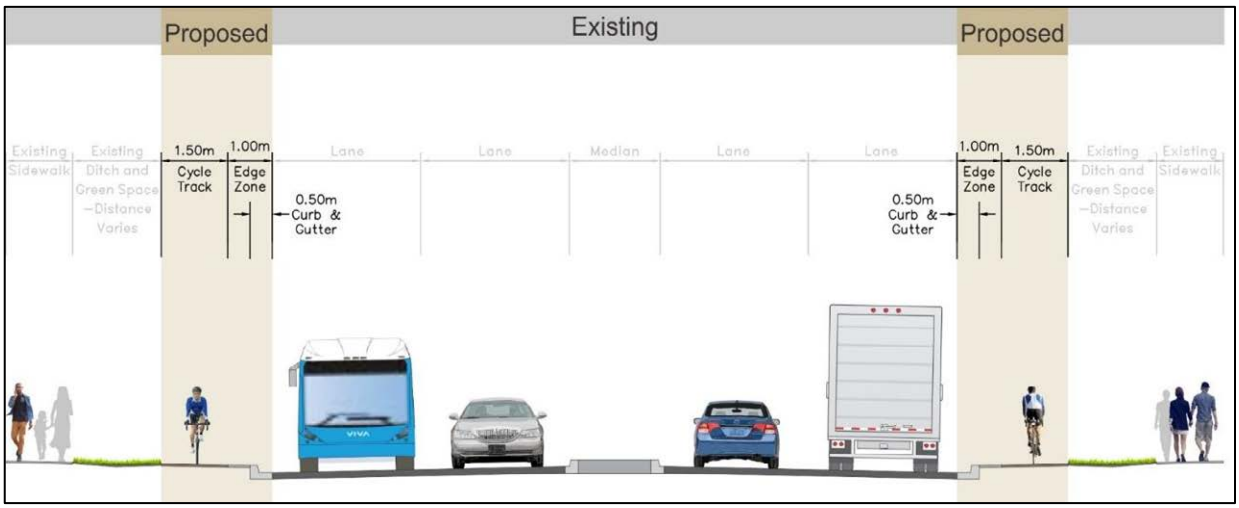
Confirmation of the Preferred Design Plan:

At OH2, one of the comments received inquired about the continuity of the cycling facility on Langstaff Road east of Dufferin Street. Subsequently, a high-level screening analysis of the provision of active transportation facility improvements on Langstaff Road between Dufferin Street and Highway 7 was carried out and the following four alternatives were considered: Option 1: 3.0 m multi-use path (MUP) on both sides; Option 2: Sidewalk and cycle track on the south side, separated by planting zone, and maintaining existing sidewalk on the northside side; Option 3: Sidewalk and on-street bike lane on both sides; and Option 4: Sidewalk and cycle track on both sides, separated by planting zone (i.e. same as Langstaff Road Cross-Section west of Dufferin Street).

Option 4 was selected as the preferred alternative as it provides active transportation facility enhancement and connection between Dufferin Street and Highway 7, while minimizing construction and utility impacts. Option 4 underwent further refinements after being selected. The preferred alternative includes cycle track on both sides, separated by ditch/green space, while maintaining the existing sidewalk on the both

sides, as illustrated by **Exhibit ES-9**. The active transportation facility extension between Dufferin Street and Highway 7 is incorporated in the Preferred Design Plan.

## Exhibit ES-9: Langstaff Road Proposed Cross-Section from Dufferin Street to Highway 7




### E.9 Preferred Design Plan

The Preferred Design Plan for Langstaff Road was identified in consideration of transportation service for all road users, including pedestrians, cyclists, transit riders and motorists, and potential impacts to the natural environment, community, cultural environment, operations, property requirements, and capital construction and maintenance costs. The Preferred Design Plan best meets the goals of the project with regard to transportation service improvements, while considering the overall impact of the project and mitigation measures. The Project Team selected, developed and refined the Preferred Design Plan through extensive consultation and engagement with agencies, stakeholders, Indigenous communities, impacted property owners, and the public.

The Preferred Design Plan for Langstaff Road between Weston Road and Highway 7 includes the following aspects, and the following details will be refined further in detailed design subject to the most current design standards at that time. Plates of the preliminary design may be found in **Appendix A** of the ESR.

- Widen Langstaff Road to six general-purpose lanes from Weston Road to Highway 7;

- Provide sidewalk and cycle track separated by planting zone on both sides of Langstaff Road from Weston Road to Dufferin Street and provide cycle track on both sides from Dufferin Street to Highway 7 separated by ditch/green space while maintaining the existing sidewalk on both sides;
- Construct overpass structure (Steel Box Girder Bridge – Long Spans) across CN MacMillan Rail Yard, along the south alignment;
- Construct overpass structure (Langstaff Road over rail tracks) at Metrolinx GO Transit Barrie Line crossing;
- Replace Bowes Bridge at the West Don River crossing;
- Intersection improvements which include extending turning lane storage, and adding dedicated right-turn lanes at intersections with a bus stop;
- Intersection improvements for pedestrians and cyclists, such as cross-rides, reduced curb radii (where technically feasible), signal heads, etc.;
- Intersection design compliant with *Accessibility for Ontarians with Disabilities Act*;
- Identify general footprint for YRT amenity consideration, subject to future YRT service plan; and
- Streetscape / landscape enhancements, including street trees (with consideration for proper growth medium and soil volumes), mitigation / replacement for street tree removals and other amenities (benches, gathering areas).

## E.10 Environmental Effects, Mitigation Measures and Commitment to Future Work

Anticipated impacts to the natural, socio-economic, and cultural environments as a result of the proposed improvements to Langstaff Road are summarized in **Chapter 10** of the ESR. Anticipated impacts and proposed mitigation measures are provided for the following factors:

- Property Requirements
- Access
- Streetscape and Landscape
- Noise and Vibration
- Air Quality
- Climate Change
- Archaeology
- Built Heritage

- Fisheries and Aquatic Resources
- Vegetation, including Tree Inventory
- Wildlife
- Species of Conservation Concern
- Drainage and Stormwater Management
- Sediment and Erosion Control
- Hydrogeology
- Contamination
- Design and Construction

**Chapter 10** of the ESR identifies specific items to be reviewed and confirmed during detailed design. Some of these commitments will address specific concerns raised by property owners and review agencies during the EA process. Items to be addressed during detailed design, include but are not limited to, resolution of outstanding concerns, any permits and approvals, and monitoring plans. In particular, the following will need to be reviewed further in detailed design:

- York Region is committed to completing further studies, in consultation with CN, to identify potential impacts associated with the proposed CN MacMillan Yard structure, such as safety of the public, safety of rail operations, impacts to CN due to future maintenance (inspections, minor repairs and major rehabs), and identify mitigation measures, particularly on related to addressing surface runoff (including snow removal from draining/falling into the yard, pedestrian accessing, viewing or impacting CN operations, incidents/accidents impacting the CN operation in the yard, maintenance and repair/rehabilitation strategy, and anti-terrorism precautions.
- At the time of the filing of this ESR the future third track alignment was yet to be determined and therefore, not able to be made available to the Project Team. In order to provide maximum flexibility for future design phase, the general arrangement prepared for the grade separation structure accommodates a total of four tracks (i.e., protecting for a third track on either side of the existing tracks). The structure design will be further refined during detailed design, in consultation with Metrolinx, once the location of the third track is confirmed in the future.
- As noted above, the planning for the Highway 400 / Langstaff Road interchange improvements is to be reviewed as part of a future study of the Highway 400 corridor to ensure a more thorough, comprehensive and holistic approach.

## E.11 Timing of Improvements

The design plan, profile, and timing of improvements will be further refined during future detailed design and will adhere to the most current design standards at that time. The implementation of the Preferred Design Plan may be carried out in a phased approach as follows:

- *Interim widening of Langstaff Road from 2 lanes to 4 lanes from Dufferin Street to Highway 7.* This improvement is identified as part of York Regional Council approved Roads Capital Acceleration Reserve Fund (2019). The construction is anticipated to start within the next 10 years, subject to the completion of this Class EA study.
- *Active transportation facility improvements from Dufferin Street to Highway 7.* The improvements will be within the existing right-of-way which is considered a "pre-approved" project and does not require a Class EA study. The construction timing is be subject to Region's funding availability.
- *Other proposed improvements on Langstaff Road.* The remaining improvements identified as part of this Class EA study (listed below) are considered longer-term improvements, as they are not included in York Region's current 10-year capital plan. York Region's 10-year capital plan is reviewed and approved by York Region Council each year.
    - Widen Langstaff Road to six general-purpose lanes from Weston Road to Highway 7;
    - Construct overpass structure (Steel Box Girder Bridge – Long Spans) across CN MacMillan Rail Yard, along the south alignment; and
    - Construct overpass structure (Langstaff Road over rail tracks) at Metrolinx GO Transit Barrie Line crossing.

# 1 INTRODUCTION AND STUDY PROCESS

## 1.1 Introduction

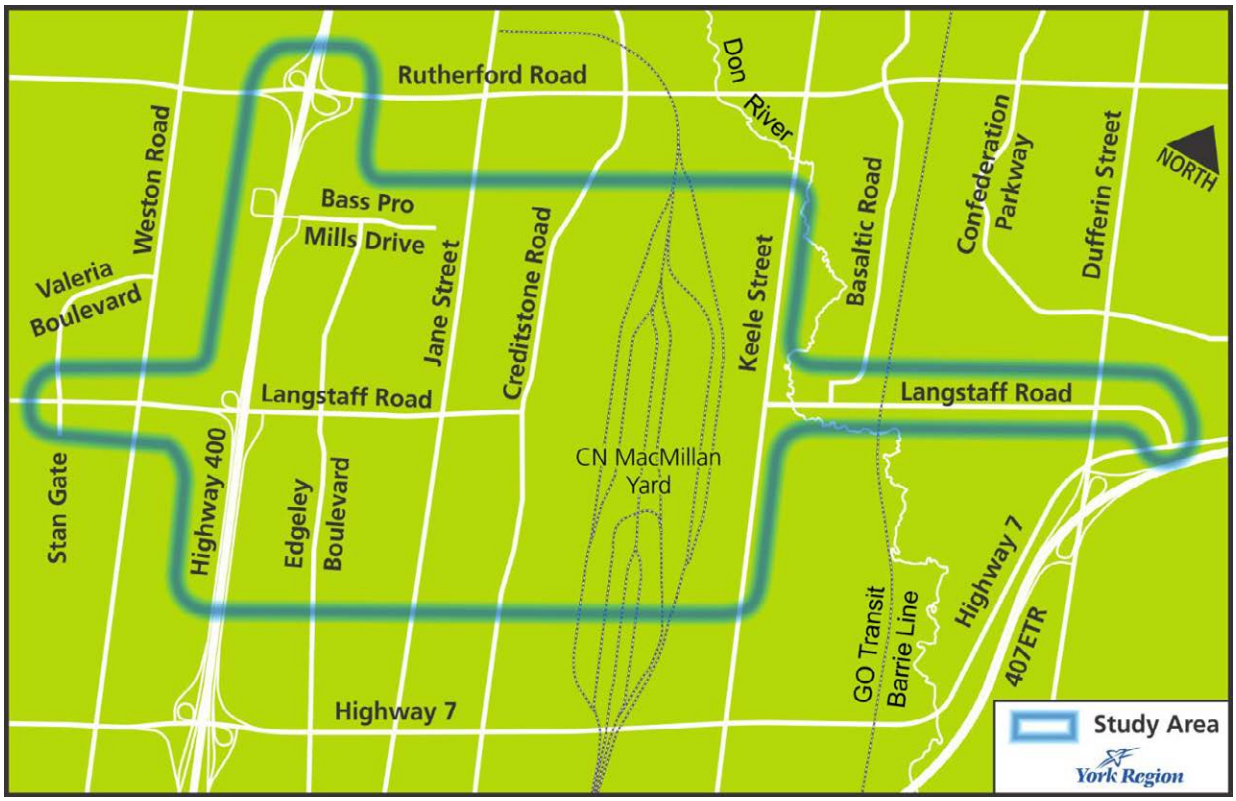
The Regional Municipality of York (York Region) has completed a Municipal Class Environmental Assessment (Class EA) study for improvements to Langstaff Road (Regional Road 72), from Weston Road (Regional Road 56) to Highway 7 (Regional Road 7) within the City of Vaughan.

The Class EA study goal is to identify a transportation solution that addresses existing problems and opportunities in the Langstaff Road corridor including: a new Langstaff Road connection across the Canadian National Railway (CN) MacMillan Rail Yard; a grade separation at the Metrolinx GO Transit Barrie Line; widening in certain sections of Langstaff Road and consideration of Highway 400 interchange improvements. These improvements are being considered in order to: manage existing and future traffic congestion on other east-west arterial roads; support growth of the Vaughan Metropolitan Centre and other primary growth centres nearby; improve access to employment lands; provide infrastructure for all modes of transportation and support an efficient goods movement system.

The Class EA study was carried out in accordance with Schedule 'C' of the Municipal Class Environmental Assessment document (Municipal Engineers Association October 2000, as amended in 2007, 2011 and 2015). The Class EA process is approved under the Ontario *Environmental Assessment Act* and outlines the process whereby municipalities can comply with the requirements of the Ontario *Environmental Assessment Act*. The Environmental Study Report (ESR) documents the decision-making process carried out during the Langstaff Road Class EA study.

The Class EA study area is depicted on **Exhibit 1-1**. The study area length is approximately 6 km, along the Langstaff Road corridor from Weston Road in the west to Highway 7 in the east. A partial interchange at Highway 400 currently provides access to southbound Highway 400 and from northbound Highway 400 to Langstaff Road. Langstaff Road currently terminates on the east and west side of the CN MacMillan Rail Yard, at Keele Street and Creditstone Road, respectively. A broader study area has been customized to include an area in which alternative infrastructure improvements may be considered both as a Langstaff Road connection and as a Highway 400 access improvement.

## Exhibit 1-1: Study Area




The CN MacMillan Rail Yard is one of the most prominent features in the study area. The yard, located at the junction of the CN York Subdivision and CN Halton Subdivision, is the second largest rail classification yard in Canada, measuring approximately 5 km in length and 1.2 km in width with a north-south orientation. The property is bordered by four main roads: Highway 7 to the south, Keele Street to the east, Rutherford Road to the north, and Creditstone Road to the west.

The yard was developed in the late 1950s as part of CN's redesign of its Toronto track network. At the time of construction, Vaughan was a largely rural community; however, subsequent development on adjacent properties has created an industrial area surrounded by a variety of industrial consignors, distributors, and suppliers. Some commercial establishments (e.g., restaurants, retail and wholesale outlets) are located along the perimeter of the yard.

Land use along the Langstaff Road corridor includes:

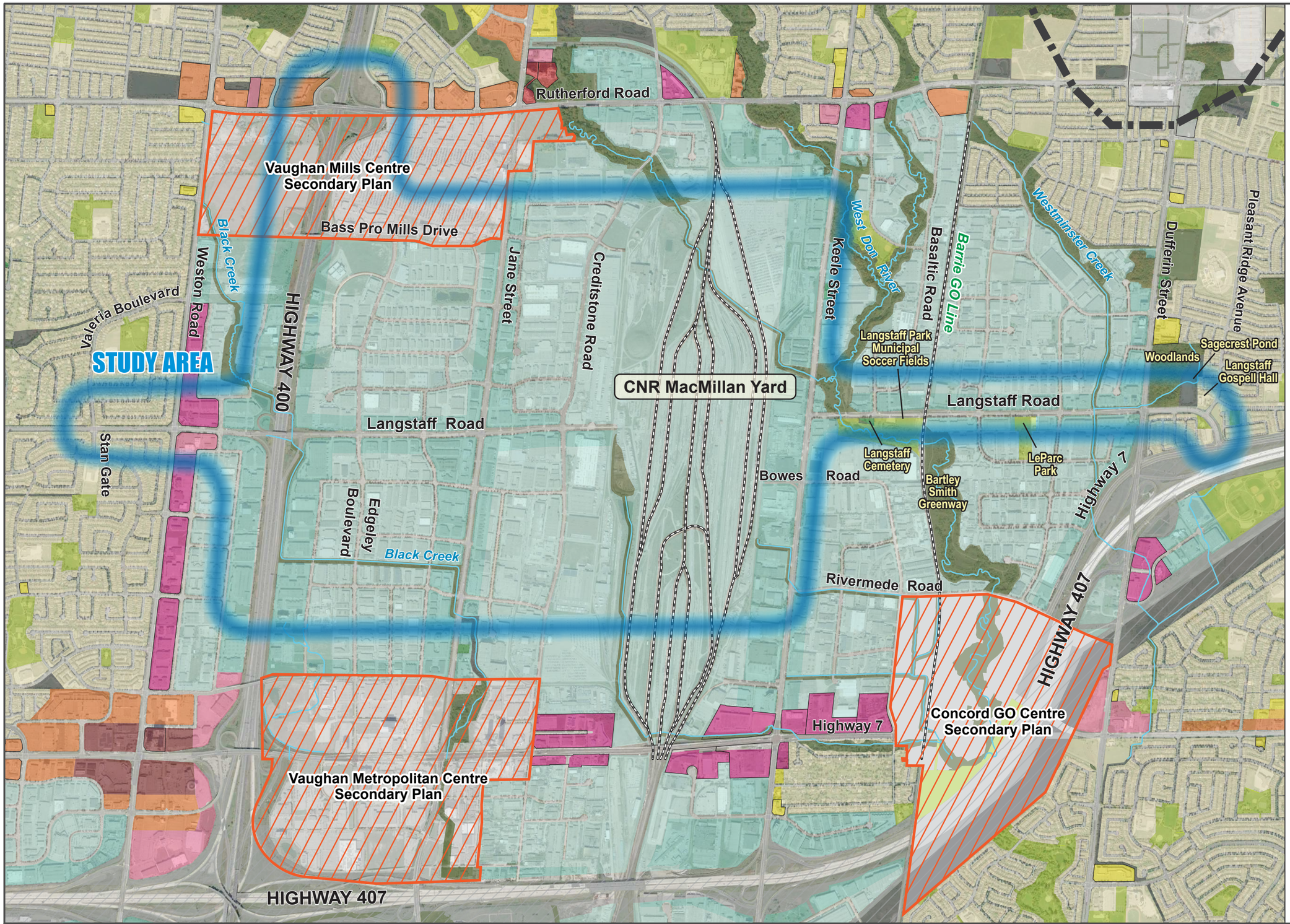
- Community Commercial Mixed-Use area in the northeast corner of Langstaff Road and Weston Road;
- Employment Commercial Mixed-Use area in the southeast corner of Langstaff Road and Weston Road;
- Mainly Prestige Employment area along Langstaff Road both north and south sides between Highway 400 and Dufferin Street;
- Low-Rise Residential area on the south side of Langstaff Road, east of Dufferin Street; and
- Natural Areas on the north side, east of Dufferin Street.

A number of parks are located along Langstaff Road including Langstaff Park, LeParc Park and West Crossroads Park. Langstaff Cemetery (also known as Old St. Stephen's Cemetery) is located on the south side of Langstaff Road, east of Keele Street.

The majority of the land adjacent the Langstaff Road corridor is designated as Employment in the York Region and City of Vaughan Official Plans. The strategic location relative to the CN MacMillan Rail Yard and Highways 400 and 407 make this area an important centre to support economic activities associated with a range of industrial, manufacturing, warehousing uses and goods movement.

Langstaff Road is also situated just to the north / northeast of the Vaughan Metropolitan Centre (VMC), a designated Urban Growth Centre in the Province's Growth Plan (*A Place to Grow, 2020*) and an Anchor Mobility Hub in Metrolinx's Regional Transportation Plan. This area is the focus of significant investment and redevelopment of residential, cultural / entertainment and employment lands. Other growth centres (Primary and Local Centres) in close proximity to the Langstaff Road Class EA study area include Vaughan Mills Centre; Concord GO Centre; Weston Road / Highway 7 commercial area; and Carrville Centre. The existing land use conditions are depicted in **Exhibit 1-2**.

The presence of the rail yard creates a break in Langstaff Road between Keele Street and Creditstone Road. The lack of continuity of Langstaff Road puts pressure on other parts of the regional arterial road network, and specifically on other nearby east-west Regional roads including Rutherford Road and Highway 7.




LANGSTAFF ROAD ENVIRONMENTAL ASSESSMENT

**Study Area and Existing Conditions**

Exhibit

1-2

## 1.2 Environmental Assessment Process

Municipal infrastructure projects are subject to the Ontario *Environmental Assessment Act* (EA Act). The Class Environmental Assessment (Class EA) is an approved self-assessment process under the EA Act for a specific group or "class" of projects. Projects are considered approved, subject to compliance with an approved Class EA process. The Municipal Class EA (Municipal Engineers Association October 2000, as amended in 2007, 2011 and 2015) applies to municipal infrastructure projects including roads, water and wastewater.

### 1.2.1 Municipal Class Environmental Assessment

The Municipal Class EA outlines a comprehensive planning process that provides a rational approach to consider the environmental and technical advantages and disadvantages of alternatives in order to determine a preferred alternative for addressing the problem or opportunity, as well as consultation with agencies, directly impacted stakeholders, Indigenous Communities and the general public throughout the process. The key principles of successful environmental assessment planning include:

- Consultation;
- Consideration of a reasonable range of alternatives;
- Consideration of effects on natural, social, cultural, and economic environments and technical components;
- Systematic evaluation;
- Clear documentation; and
- Traceable decision making.

Provided that the Municipal Class EA planning process is followed, a proponent does not have to apply for formal approval under the Ontario *Environmental Assessment Act*. The Municipal Class EA process is shown on **Exhibit 1-3** and includes:

- Phase 1: identify the problem or opportunity;
- Phase 2: identify alternative solutions;
- Phase 3: examine alternative methods of implementing the preferred solution;

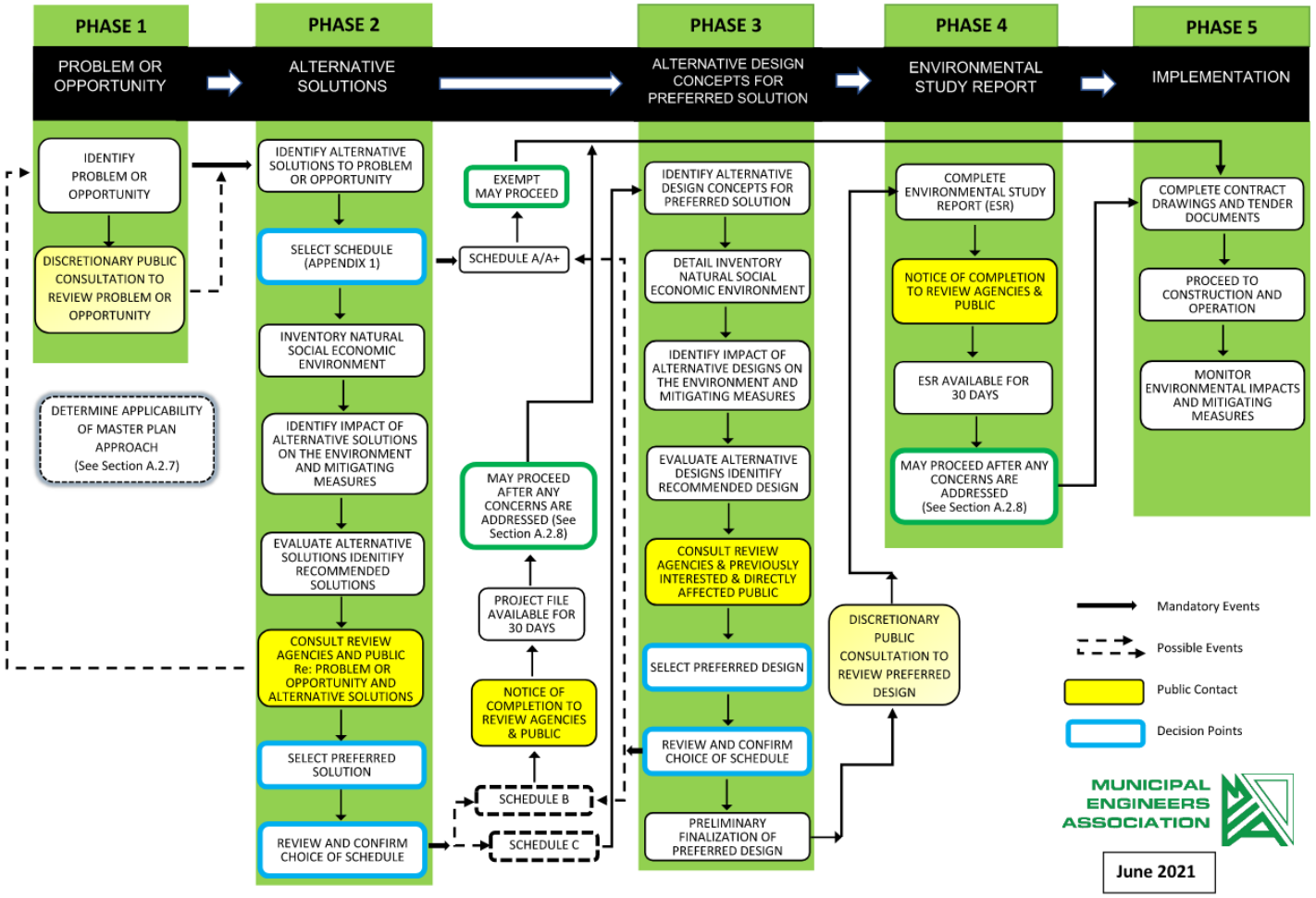
- Phase 4: prepare and file an Environmental Study Report; and
- Phase 5: proceed to detailed design, construction and operation.

The classification of projects and activities under the Municipal Class EA is as follows:

- Schedule A: Includes normal or emergency operational and maintenance activities, which are limited in scale and have minimal adverse environmental effects. These undertakings are pre-approved and the proponent can proceed without further assessment and approval.
- Schedule A+: Introduced in 2007, these projects are also pre-approved. The public is to be advised prior to the implementation of the project.
- Schedule B: Includes projects that have the potential for adverse environmental effects. This includes improvements and minor expansions of existing facilities. These projects are approved subject to a screening process which includes consulting with stakeholders who may be directly affected and relevant review agencies.
- Schedule C: Includes the construction of new facilities and major expansions to existing facilities. These undertakings have the potential for significant environmental effects, and must proceed under the planning and documentation procedures outlined in the Municipal Class EA document.

The Langstaff Road Class EA study has been identified as a Schedule 'C' project under the Municipal Class EA (**Exhibit 1-3**). An Environmental Study Report (i.e., this Report) is required for Schedule 'C' projects to document the decision-making process.

## Exhibit 1-3: Municipal Class Environmental Assessment Process




*Source: Municipal Class Environmental Assessment, Municipal Engineers Association, October 2000, as amended 2007, 2011, and 2015*

#### 1.2.1.1 Environmental Study Report

This Environmental Study Report (ESR) documents the process followed to develop the Preferred Design Plan and the environmentally significant aspects of the planning, design and construction of the proposed works. The ESR describes: the problem being addressed, the existing social, natural, cultural environmental considerations, planning and design alternatives that were considered, a description of the recommended alternative and its environmental effects and proposed mitigation measures, and commitments to further work, consultation, and monitoring associated with the implementation of the project.

As required by the Municipal Class EA, this ESR is being made available to stakeholders, regulatory agencies, Indigenous Communities and the public for a minimum 30-calendar day public review period. A Notice of Completion of Environmental Study Report was placed in local newspapers and on York Region's website, and letters were mailed to notify government agencies, Indigenous Communities, impacted property owners and members of the public on the study mailing list. During the review period, parties with outstanding issues are encouraged to bring their project concerns to the attention of York Region for resolution.

The improvements contemplated by this Class EA study are subject to further review by and negotiation with CN and therefore it is likely that minor modifications to the recommended design may be identified during the future detailed design phase. However, these modifications are not anticipated to change the overall intent of the undertaking.

This Environmental Study Report has been placed on the public record during the COVID-19 pandemic. At this time, exceptional measures are being employed by the various levels of government to curb the pandemic. York Region is making the necessary accommodations, based on the latest guidance from public health agencies, governments and other public bodies, to preserve the health and safety of its employees, residents, business owners and the general public. Due to emergency measures, including restricted access to public institutions to visitors (i.e., York Region Office, City of Vaughan Libraries, etc.), the Environmental Study Report is not being provided in 'hard copy' form for public viewing at centralized locations. Interested members of the public may view the document on York Region's website. Should a member of the public request a hard copy of the Environmental Study Report, York Region will assess how this might be prepared and delivered in a manner that is

consistent with current public health agency and government direction regarding public protection.

#### 1.2.1.2 Section 16 Order

The Municipal Class EA process includes an appeal provision. The Minister of the Environment, Conservation and Parks has the authority and discretion to make an Order under Section 16 of the *Environmental Assessment Act*.

A Section 16 Order may require that the proponent of a project going through a Class Environmental Assessment (Class EA) process:

1. Submit an application for approval of the project before they proceed. This is generally referred to as an Individual Environmental Assessment (individual EA).
2. Meet further conditions in addition to the conditions in the Class EA. This could include conditions for: further study, monitoring and/or consultation

The minister can also refer a matter in relation to a section 16(6) Order request to mediation.

Before making an Order, the minister must consider the factors set out in section 16(5) of the Environmental Assessment Act. If a Section 16 Order request is made, the project proponent cannot proceed with the project until the minister makes a decision on the request. If the minister makes a Section 16 Order, the proponent may only proceed with the project if they follow the conditions in the Order.

Note, Section 16 Order requests were previously known as Part II Order requests.

**Reasons for Requesting an Order**

A concerned party may ask the minister to make a Section 16(6) Order if:

- they have outstanding concerns that a project going through a Class EA process may have a potential adverse impact on constitutionally protected Aboriginal and treaty rights;
- they believe that an Order may prevent, mitigate or remedy this impact.

A Section 16(6) Order request cannot be made to simply delay or stop the planning and implementation of a project that is going through a Class EA process. Prior to making a Section 16(6) Order request, the concerned party should first try to resolve any concerns directly with the project proponent, in this case, York Region.

**Timing for an Order Request**

During the 30-day public comment period, anyone can review the documentation, submit any comments or concerns to the proponent, and request a Section 16(6) Order

To request a Section 16 Order for a project, on the grounds that an Order may prevent, mitigate or remedy potential adverse impacts on constitutionally protected, Aboriginal and treaty rights, a concerned party must make the request before the public comment period is complete.

**How to make a request**

To submit a Section 16(6) Order request, the following information must be provided:

- name, address and email address;
- project name;
- proponent name;
- what kind of Order is being requested i.e., a request for additional conditions or a request for an individual environmental assessment;
- details about the concerns about potential adverse impacts on constitutionally protected Aboriginal or treaty rights and how the proposed Order may prevent, mitigate or remedy the identified adverse impacts;
- whether the concerned party belongs to, represents or has spoken with an Indigenous community whose constitutionally protected Aboriginal or treaty rights may be adversely impacted by the proposed project;
- whether the concerned party has raised their concerns with the proponent, the proponent's response (if any) and why the concerns could not be resolved with the proponent;

- any other information to support the request.

Section 16 Order requests are made to the Minister of Environment, Conservation and Parks and the Director of Environmental Assessment Branch:

Minister

Ministry of the Environment, Conservation and Parks

777 Bay Street, 5th Floor

Toronto ON M7A 2J3

Minister.mecp@ontario.ca

Director

Environmental Assessment Branch

Ministry of the Environment, Conservation and Parks

135 St. Clair Avenue West, 1st Floor

Toronto ON M4V 1P5

enviropermissions@ontario.ca

There is no appeal of the minister's decision with respect to a Section 16 Order. If the request for a Section 16(6) Order is denied by the minister, the proponent can proceed with the project. If the minister makes an Order, the proponent may only proceed with the project if they follow the conditions in the Order.

The above discussion is intended as an overview of the process only. For more information and specific instruction, please visit:

https://www.ontario.ca/page/class-environmental-assessments-section-16-order

### 1.2.2 The Federal Impact Assessment Act

The *Impact Assessment Act,* 2019 (IAA 2019) and associated regulations came into effect on August 28, 2019. Under IAA 2019, a federal environmental assessment is required for "designated projects". A designated project is one that includes one or more physical activities that are set out in the regulations under IAA 2019 or by order of the federal Minister of the Environment and Climate Change.

The scope of the Langstaff Road Class EA study was reviewed by the Project Team against the federal Regulations Designating Physical Activities, and the Project Team determined that the potential range of physical activities contemplated by the study are not "designated" and therefore will not require consideration of a federal environmental assessment. However, given the proposed works across the CN MacMillan Rail Yard to Langstaff Road, York Region will require federal permits / approvals to meet the requirements of other federal legislation (e.g., Transport Canada). The necessary permits associated with the construction of the CN MacMillan Rail Yard crossing structure will be obtained during the subsequent design phases at that time.

More information about the *Impact Assessment Act* (2019) is available at the following link: https://www.canada.ca/en/impact-assessment-agency.html.

## 1.3 Study Approach and Organization

The Langstaff Road Class EA study stages and schedule are depicted in **Exhibit 1-4**.

The study was carried out under the direction of senior staff of York Region and managed by WSP Canada Inc. (WSP), on behalf of the Region. WSP carried out the responsibilities of:

- Project Management
- Class EA Process and Consultation
- Transportation Planning / Traffic Engineering
- Drainage and Stormwater Management
- Hydrogeology
- Ecology
- Structural Design
- Streetscaping

The team of subconsultant specialists and their associated roles / disciplines are:

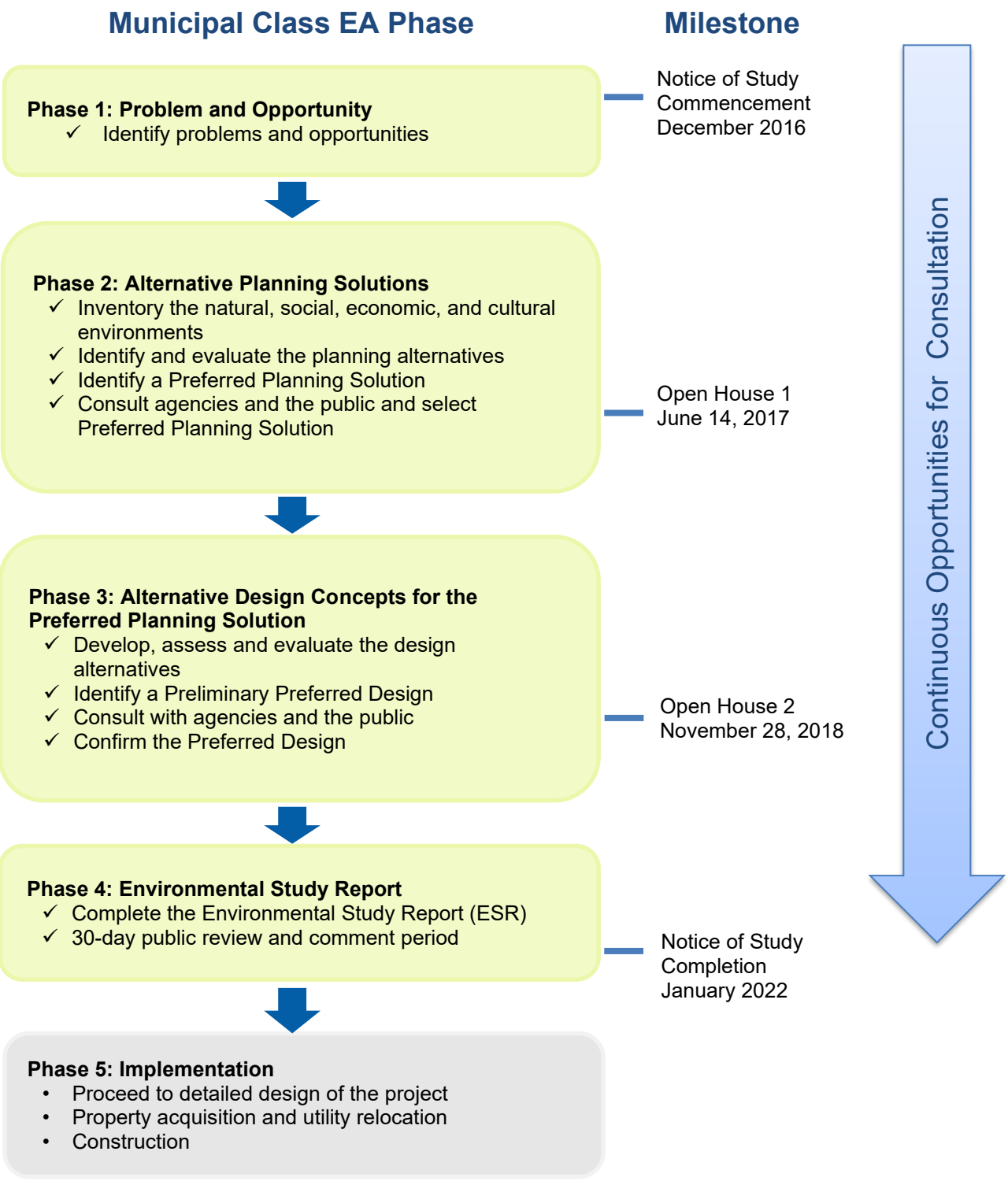
- New Directions Archaeology Ltd. – Stage 1 Archaeological Assessment
- Unterman McPhail Associates – Cultural Heritage Assessment
- Thurber Engineering – Geotechnical Review
- RWDI – Noise Assessment and Air Quality

The Project Team recognized that there are many different interests within the study area. To provide all potentially impacted stakeholders with an opportunity to become involved the in study, the consultation program included outreach to and obtaining feedback from:

- Directly impacted property owners;
- Property owners and business owners within the surrounding community;
- Canadian National Railway (CN);
- Ontario Ministry of Transportation (MTO);
- City of Vaughan;
- Metrolinx;
- Indigenous Communities;
- Utility companies; and,
- General public.

Consultation activities with these groups is documented in **Chapter 2** of this report.

## Exhibit 1-4: Langstaff Road Class EA Study Process



# 2 CONSULTATION

## 2.1 Overview of Consultation

Consultation is a key component of the Municipal Class EA process and reflects York Region's commitment to engaging potentially affected or interested stakeholders, including but not limited to technical agencies, members of the public, property owners, municipalities and Indigenous Communities.

Modes of outreach and engagement for this Class EA study included notices, newspaper ads, direct mail, email correspondence, responses to written comments submitted, phone calls, project website updates (york.ca/langstaffstudy), social media (York Region Facebook, York Region Twitter), public meetings (open houses), online open house material (display material and videos), agency meetings and individual property owner meetings.

This Class EA study was carried out in accordance with Schedule 'C' of the Municipal Class EA. As shown in **Exhibit 1-3**, there are three mandatory points of contact held at key milestones. **Table 2-1** summarizes the milestones, MCEA Phase, outreach tactics and purpose. Consultation undertaken beyond the mandatory requirements are also included and discussed in further sections of this report.

The full consultation record can be found in **Appendix C** of the ESR.

### Table 2-1: Summary of Formal Notification Milestones

| Milestone | Notification Tactics | Purpose |
|---|---|---|
| MCEA Phase 1<br>Notice of Study Commencement<br>December 2016<br>(See Section 2.4) | • Notice mailed to agencies, utilities, Indigenous Communities, Resident Ratepayer Associations bordering the study area, City of Vaughan Local Councillors, interest groups, and property owners – January 16, 2017<br>• *Vaughan Citizen* – December 9 and December 15, 2016<br>• Region website, Region Facebook and Twitter accounts – December 9 | To introduce and invite participation in the study and to request any preliminary comments or pertinent information. |

| Milestone | Notification Tactics | Purpose |
|---|---|---|
| | and December 15, 2016 | |
| MCEA Phase 2<br>Open House 1<br>June 14, 2017<br>(See Section 2.5) | • Notice mailed to agencies, utilities, Indigenous Communities, Resident Ratepayer Associations bordering the study area, City of Vaughan Local Councillors, interest groups, property owners, and members of the public who requested to be on the mailing list – May 30 and 31, 2017<br>• *Vaughan Citizen* – June 1 and June 8, 2017<br>• Region Facebook and Twitter accounts – June 8 and June 14, 2017<br>• Region website – started June 8, 2017<br>• Open House Display materials posted on York Region website following Open House 1 on June 14, 2017 | First mandatory point of contact:<br>Generally, to take place at the end of Phase 2 of the Class EA study.<br>To inform agencies and the public about nature of the problem and opportunity and provide inventories of the existing environmental conditions.<br>To provide an opportunity to discuss potential impacts and local concerns. |
| MCEA Phase 3<br>Open House 2<br>November 28, 2018<br>(See Section 2.6) | • Notice mailed to agencies, utilities, Indigenous Communities, Resident Ratepayer Associations bordering the study area, City of Vaughan Local Councillors, interest groups, property owners, and members of the public who requested to be on the mailing list – November 14, 2018.<br>• *Vaughan Citizen* – November 15 and November 22, 2018<br>• Region Facebook account – November 15 and November 24, 2018<br>• Region Twitter account – November 15 and November 25, 2018<br>• Region website – started November 15, 2018<br>• Open House Display materials and online Open House (video) posted on | Second mandatory point of contact:<br>Generally, to take place during Phase 3 of the Class EA study.<br>To inform agencies and the public about the alternative design, evaluation of the alternative designs, preliminary preferred alternative and potential impacts and mitigation measures.<br>To seek public and agency input regarding evaluation of the alternative designs and |

| Milestone | Notification Tactics | Purpose |
|---|---|---|
| | York Region website on November 28, 2018 | the preliminary recommended design. |
| MCEA Phase 4<br>Notice of Study Completion<br>January 13, 2022 | • Notice mailed to agencies, utilities, Indigenous Communities, Resident Ratepayer Associations bordering the study area, City of Vaughan Local Councillors, interest groups, property owners, and members of the public who requested to be on the mailing list – January 13, 2022.<br>• *Vaughan Citizen* – January 13 and 20, 2022<br>• Region Facebook and Twitter accounts – January 13, 2022<br>• Digital ad campaign – running the duration of the 30-day public review period<br>• Region website – started January 13, 2022 | Third mandatory point of contact:<br>Advise public and agencies regarding the filing of the Environmental Study Report (30-day public review period). |

## 2.2 Indigenous Communities

The list of Indigenous Communities contacted at each milestone of the Class EA study is provided below and can be found in **Appendix C** of the ESR.

- Aamjiwnaang First Nation
- Alderville First Nation
- Aundeck-Omni-Kaning First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of Nawash First Nation
- Chippewas of Rama First Nation
- Chippewas of the Thames First Nation
- Curve Lake First Nation, Hiawatha First Nation
- M'Chigeeng First Nation
- Mississaugas of Scugog Island First Nation
- Mississaugas of the Credit First Nation
- Mohawks of Akwesasne First Nation
- Mohawks of the Bay of Quinte First Nation
- Métis Nation of Ontario
- Saugeen First Nation
- Sheguiandah First Nation
- Six Nations of the Grand River First Nation
- Six Nations of the Grand River First Nation
- Walpole Island First Nation
- Walpole Island First Nation
- Zhiibaahaasing First Nation

**Table 2-2** summarizes the communication with Indigenous Communities during the Class EA study; documentation can be found in **Appendix C** of the ESR. Indigenous Communities on the study contact list did not express any specific concerns regarding this Class EA study.

### Table 2-2: Indigenous Communities Engagement

| Milestone | Date | Purpose |
|---|---|---|
| Notice of Study Commencement | January 16, 2017 | To introduce the study, ascertain whether or not the Indigenous Community has an interest in the study, and request any preliminary comments or pertinent information. |
| | January 25, 2017 | Email received from the Chippewas of Rama First Nation noting that the Notice of Study Commencement letter was under review and a |

| Milestone | Date | Purpose |
|---|---|---|
| | | follow-up response would be provided if required. |
| | February 2, 2017 | Letter received via email from the Chippewas of the Thames First Nation noting that they have identified no concerns with the project or the information presented to them and requested to be removed from the project mailing list. |
| | August 3 to 8, 2017 | Follow up email / phone calls to confirm receipt of the Notice of Study Commencement. |
| Open House 1 Notice<br>(June 14, 2017) | May 31, 2017 | To notify and invite interested parties to attend the first Open House on June 14, 2017 to review information and provide input regarding the problem being addressed and the collection of background information. |
| | June 2 and 6, 2017 | Email received from the Chippewas of Rama First Nation noting that the Notice of Study Commencement letter was under review and a follow-up response would be provided if required. |
| | June 5, 2017 | Email received from the Mohawks of the Bay of Quinte noting their change of address. |
| | June 12, 2017 | Letter received via email from the Chippewas of the Thames First Nation noting that they have identified no concerns with the project. |
| | June 27, 2017 | Letter from the Mississaugas of the Credit First Nation (MCFN, formerly Mississaugas of the New Credit First Nation) noting they do not have a high level of concern regarding the proposed project and would like to be notify of status of the project. MCFN also advised of their Field Liaison Representative (FLR) mandate who are |

| Milestone | Date | Purpose |
|---|---|---|
| | | to be present at archaeological assessment and environmental field work. |
| | July 17, 2017 | York Region response to MCFN acknowledges that MCFN does not have any high-level concern regarding the proposed project and that MCFN will continue to be notified as to the status and/or changes to the project. York Region confirms that copies of the Stage 1 Archaeological and Natural Environment reports will be provided once they are finalized. York Region notes that, based on recent projects, the practice that has been established with all Indigenous communities (including MCFN) is to provide for this type of FLR participation for Stage 2, 3 and 4 Archaeological Assessments. York Region proposes to implement a similar FLR engagement protocol for this EA project. York Region confirms that should archaeological investigations advance to these stages, MCFN will be contacted to discuss the details of the FLR's participation. |
| | July 14, 2017 | Provided displays material from Open House 1 (held June 14, 2017) on a CD via mail. |
| | August 3 to 8, 2017 | Follow up email / phone calls were made in August 2017 to confirm receipt of Open House 1 information. |
| | August 14, 2017 | Letter received via email from the Chippewas of the Thames First Nation noting that they have identified no concerns with the project or the information presented to them and requested to be removed from the project mailing list. |
| Open House 2 Notice | November 14, 2018 | To notify and invite interested parties to attend the second Open House (November 28, 2018) to review information and present initial findings |

| Milestone | Date | Purpose |
|---|---|---|
| (November 28, 2018) | | and planning solutions considered to address the needs of the corridor. |
| | November 19, 2018 | Email received from the Chippewas of Rama First Nation noting a change in contact information. |
| | December 19, 2018 | Provided displays material from Open House 2 (held November 28, 2018) via mail. |
| | December 20, 2018 | Email received from MCFN noting that MCFN has a low level of concern about the project. MCFN also advised of their Field Liaison Representative (FLR) mandate who are to be present at archaeological assessment and environmental field work. |
| | January 9, 2019 | Letter received via email from the Mohawks of the Bay of Quinte noting that they do not have any environmental concerns with the project and requested a copy of Stage 1 Archaeology Report once completed. |
| | January 8 to 22, 2019 | Follow up email / phone calls were made in January 2019 to confirm receipt of Open House 2 information. |
| Notice of Completion | January 13, 2022 | To announce the completion of the Class EA study and notify interested parties of the 30-calendar review period for the Environmental Study Report which is made available on York Region's website. |

## 2.3 Technical Agencies

Technical agencies were notified of the commencement of this Class EA study through the mailing of the Notice of Study Commencement on January 16, 2017. The list of technical

agencies, including utility companies and interested groups, contacted is provided below, and comments received are documented in **Appendix C** of the ESR.

- Canadian National Railway (CN)
- Ontario Ministry of Transportation (MTO)
- Metrolinx
- 407ETR
- MPP, Vaughan-Woodbridge
- City of Vaughan
- Ontario Ministry of the Environment, Conservation and Parks (MECP)
- Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) (*formerly Ministry of Natural Resources and Forestry (MNRF)*)
- Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)
- Ontario Ministry of Municipal Affairs and Housing
- Ontario Ministry of Indigenous Affairs
- Toronto and Region Conservation Authority (TRCA)
- York Region District School Board
- York Catholic District School Board
- Student Transportation Services of York Region
- York Regional Police
- Emergency Medical Services, York Region
- Fire and Rescue Services, City of Vaughan

**Utility Companies**

- Bell Canada
- Enbridge Gas Distribution Inc.
- Ontario One Call, on behalf of Alectra Utilities
- Rogers Cable Communications Inc.
- Telecom
- Zayo

**Interested Groups**

- National Estates Ratepayers' Association
- Pinewood Estates Ratepayers' Association
- Vellore Woods Ratepayers' Association
- Concord West Ratepayers' Association

- Carrying Place Ratepayers' Association
- West Woodbridge Ratepayers' Association
- Weston Downs Ratepayers' Association
- Preserve Thornhill Woods Association
- Beverley Glen Ratepayers' Association
- York Region Cycling Coalition
- Vaughan Bicycle User Group
- Smart Commute – North Toronto
- Chamber of Commerce, City of Vaughan
- Ontario Trucking Association
- St. Stephen Anglican / Lutheran Cemetery

Technical agencies were also invited to attend the Open Houses which were held on June 14, 2017 and November 28, 2018, through the mailing of Notice of Open Houses on May 30/31, 2017 and November 14, 2018, respectively. In addition, technical agencies were encouraged to visit the project website (York.ca/langstaffstudy) for project updates and view the open house display materials.

A summary of key comments from technical agencies and how they were addressed by the Project Team is provided in **Table 2-3**.

One-on-one meetings were held with key technical agencies during the Class EA study. These included Canadian National Railway (CN), Ontario Ministry of Transportation (MTO), Metrolinx, City of Vaughan and Toronto and Region Conservation Authority (TRCA). Summaries of this outreach and their comments/discussion items are presented in **Sections 2.3.1 to 2.3.5**.

## Table 2-3: Summary of Key Comments from Agencies and Project Team Responses

| Agency | Key Comment Received | Project Team Response |
|---|---|---|
| CN | CN provided high level comments on the July 16, 2018 package via letter and memo dated August 27, 2021. CN listed the following concerns:<br>• Future maintenance<br>• Surface runoff (including snow removal) from draining/falling into the CN MacMillan Yard<br>• Pedestrians' access, viewing and impacting CN operations<br>• Incidents / accidents impacting the CN operation in the yard<br>• Maintenance and repair/rehabilitation strategy<br>• Anti-terrorism precautions<br>• Challenges and complexities of construction<br>• Erection or launching of spans would cause complete shutdowns of the yard<br>• Installation of piers would both temporarily and permanently impact the capacity of the yard | Within the context of the Langstaff Road MCEA Study, development of the design alternatives across the CN MacMillan Yard was based on input from CN, best available information at the time of the study in combination with technical expertise from the structural and rail specialists on the Project Team, as well as direction from York Region. The concerns presented by CN have been incorporated and addressed at a level that is suitable in the context of a planning study through the development of the general arrangement of the structure, landscape plan, stormwater management strategy and construction cost estimate. York Region has indicated that the extension of Langstaff Road through the CN MacMillan Yard is a long-term initiative and therefore, many of the details associated with, but not limited to, structural design, drainage and geotechnical consideration, construction methodology, access logistics, CN operation coordination, etc., will have to be addressed during detailed design adhering to the most current design guidelines and regulations at that time. The Region is committed to continued consultation with CN following completion of the |

| Agency | Key Comment Received | Project Team Response |
|---|---|---|
| | | Langstaff Road MCEA Study through future design phases. |
| MTO | MTO provided various comments throughout the study process in regard to the potential improvements to the Highway 400 / Langstaff Road interchange. Due to the complexity and far reaching impacts of implementing a full movement interchange at Highway 400 / Langstaff Road, it was agreed that potential improvements to the Highway 400 / Langstaff Road interchange will be subject to a future study. | In consultation with MTO, it was agreed that potential improvements to the Highway 400 / Langstaff Road interchange will be subject to a future study |
| Metrolinx | Metrolinx is in general agreement with the future proposed grade separation of Langstaff Road (at 6-lane) with the GO Barrie Line<br>Concern regarding the GO Transit Barrie line at-grade crossing associated with the proposed 4-lane interim design. Metrolinx also noted:<br>• OCS attachments at the bridge facia (or throughout) may be required to accommodate the vertical clearance needed to meet the Metrolinx Electric Traction Standards<br>• The proposed bridge span protects Metrolinx's ability to potentially add a third track<br>• York Region is required to enter into a Crossing Agreement with Metrolinx which will stipulate | Metrolinx and York Region agreed with the approach to maintain the interim 4-lane widening as an at-grade crossing while implementing Metrolinx's latest Enhanced Grade Crossing Standards. This will be further reviewed and coordinated with Metrolinx during the detailed design of the 4-lane widening assignment. |

| Agency | Key Comment Received | Project Team Response |
|---|---|---|
| | requirements to construct, operate, and maintain the bridge structure. | |
| City of Vaughan | City of Vaughan provided various comments throughout the study process that shaped the preliminary design and modelling. City of Vaughan noted the following key concerns:<br>• The placement of the cycling facility adjacent to the curb, and suggested to move the cycling facility on the other side of the planting zone or removing/reducing the size of the median and redistributing the space to the boulevard including increasing the buffer adjacent to the curb.<br>• A grade separated trail crossing for the Bartley Smith Greenway above 200 m east of Langstaff and connections to the at-grade Langstaff pedestrian and cycling facilities as identified in the City of Vaughan Pedestrian and Bicycle Master Plan.<br>• Integration of the proposed Langstaff Road improvements west of Weston Road (i.e., transitioning from 6 lanes to 4 lanes and connecting to Active Transportation facilities). | The typical cross section was developed based on York Region internal discussion and agreement from various departments including forestry and operation/maintenance. The placement of cross sectional elements (e.g. active transportation facilities and landscape features) may be modified in detailed design within the proposed ROW subject to the most up-to-date guidelines at that time.<br>The proposed Bowes Bridge (West Don River crossing) replacement does not preclude the planning of a future north-south trail connection by the City of Vaughan. The trail connection downstream is being accommodated at the new Metrolinx GO Transit rail bridge at West Don River crossing.<br>West of Weston Road is beyond the scope of this EA study. |
| Toronto and Region | TRCA provided comments regarding hydrology and hydraulic modelling, erosion control, stormwater | The Project Team incorporated the comments in the Natural Environment Report, Stormwater |

| Agency | Key Comment Received | Project Team Response |
|---|---|---|
| Conservation Authority | management (SWM) controls, TSS removal for OGS, and the natural environment, including the impacts to the Tributary of Westminster Creek, impacts to the watercourse channel under the Bowes Bridge and provided reference guidelines for the natural feature crossings. | Management Report, hydrology and hydraulic modelling, the Preliminary Design Plan, and added commitments to future work in the ESR. |
| NDMNRF | Provided information related to Species at Risk (SAR) within the study area. | The Project Team incorporated the Species at Risk information into the Natural Environment Report and the ESR. |
| MECP | Provided information related to SAR within the study area.<br>MECP provided comments related to SWM controls, impacts of road salts on watercourses within the study area, climate change adaptation considerations, and commitments to future work to be included in the ESR including developing a general monitoring program during detailed design. | Project Team revised the ESR and associated specialist reports as required. |
| **Utilities** | | |
| Enbridge Gas | Noted interest in the project if the project had any potential for utility conflicts. | Noted by the Project Team. |
| Hydro One | Confirmed that Hydro One has high voltage transmission and distribution facilities within the study area, however they did not have enough information | Noted by the Project Team. |

| Agency | Key Comment Received | Project Team Response |
|---|---|---|
| | about the project to provide meaningful input with respect to the impacts that the project may have on Hydro One infrastructure. | |
| **Interested Group** | | |
| Vaughan Bicycle User Group | Concern regarding the disconnect between communities on the west side and east side of Langstaff Road from a cycling perspective.<br>Suggested the following improvements be considered for Langstaff Road:<br>• A complete network of 1.5 m cycling facility on both sides of Langstaff Road for the entire length of the study area.<br>• Signalized intersection similar to that at Dufferin Street and Pleasant Ridge.<br>• An at grade separation crossing at the railway track integrating the entrance to the Bartley Smith Trail and signage will enhance traffic flow both for cyclists and pedestrians. If a grade separated crossing cannot be achieved, a signalized pedestrian cyclist crossing including signage for the trail.<br>• CN MacMillan Yard bike lane width preferred to be 2 m fenced but 1.5 m is feasible if the lanes are located at the centre of the road width. | Project Team considered these comments in the development of the preliminary design. |

| Agency | Key Comment Received | Project Team Response |
|---|---|---|
| | • Concern regarding safety of cyclists at the Langstaff Road and Highway 400 interchange. | |
| York Region Cycling Coalition | Acknowledged that York Region's cycling and pedestrian network is suffering from connectivity issues as a result of industrial and transportation barriers, including the CN MacMillan Yard. Noted that it is critical that any proposed plans to improve Langstaff Road include safe cycling and pedestrian infrastructure over the CN MacMillan Yard. | Noted by the Project Team. |
| Ontario Trucking Association | Support for the overall project. | Noted by the Project Team. |
| Weston Downs Ratepayers' Association | Request to set up a meeting to discuss impacts to their community. | Project Team has reached out to arrange a meeting with Weston Downs Ratepayers' Association but did not receive a response to confirm a meeting date. York Region is committed to ongoing consultation with members of the public and interested stakeholders. |

### 2.3.1 Canadian National Railway (CN)

One of the proposed improvements for Langstaff Road is the extension of the roadway across CN MacMillan Rail Yard. The need for the crossing was identified in the York Region Transportation Master Plan in 2016 and was also confirmed through the traffic analysis completed as part of this Class EA study. A crossing of approximately 850 m is proposed. Considering the technical challenges associated with the proposed CN crossing, and CN has been a key stakeholder throughout the entire study.

CN has noted that their preference is for York Region to focus other east-west road improvements outside of the Langstaff Road corridor. However, CN has continued to work with the Project Team throughout the Class EA study in reviewing the design alternatives, as well as the preferred design alternative for the CN crossing. Seven meetings have been held throughout the study and minutes can be found in **Appendix C**. A summary of each of the meeting is provided in **Table 2-4**.

#### Table 2-4: CN Meetings Summary

| CN Meeting Date | Purpose of Meeting / Summary |
|---|---|
| Meeting 1<br>January 20, 2017 | Provided an introduction of the Langstaff Road Class EA study, review key issues and constraints associated with the potential Langstaff Road extension at the CN MacMillan Rail Yard and to get an understanding of CN's general requirements.<br>CN provided background information on the CN yard layout, train movements, general daily operations, yard access, site constraints and future plans of the yard. |
| Meeting 2<br>May 15, 2017 | Provided an update of the Langstaff Road Class EA study. Recognizing there are many technical challenges associated with the crossing across the CN MacMillan Rail Yard, the Project Team discussed potential consultation strategy with CN. CN noted their concerns about potential impacts to their operation during construction and the future crossing. |
| Meeting 3<br>June 29, 2017 | Presented the need and justification for the proposed extension of Langstaff Road across CN MacMillan Rail Yard to support future infrastructure needs. Presented four conceptual design alternatives (different structural types) for the extension of Langstaff Road via a "straight through" alignment across the CN |

| CN Meeting Date | Purpose of Meeting / Summary |
|---|---|
| | MacMillan Rail Yard. CN advised that the central (core) part of yard are the core classification yards and is a "No Touch" zone. The construction of the crossing through the core classification area and the location of the piers will impact their operation and is a safety concern due to proximity to live tracks that operate 24/7. CN advised the Project Team to explore crossing design alternatives to the south where there are less rail tracks compared to the central area and there are some vacant areas where it is more feasible for pier placement. |
| Meeting 4<br>November 1, 2017 | Reviewed three conceptual CN MacMillan Rail Yard crossing alternatives based on a south alignment. The tunnel option (central alignment) was also discussed at a high level and was agreed to be further explored. |
| Meeting 5<br>May 28, 2018 | Reviewed five CN MacMillan Rail Yard crossing alternatives (different structure types and the tunnel option) and associated evaluation of alternatives. The steel box girder bridge along the south alignment was identified as the preliminary preferred by the Project Team.<br>The five CN MacMillan Rail Yard crossing alternatives and the analysis and evaluation of the alternatives as presented to CN on May 28, 2018 were presented at Open House 2 on November 28, 2018 and were provided to CN for further review and comment. |
| Meeting 6<br>December 21, 2020 | Follow up with CN regarding review of analysis and evaluation of alternatives and next steps associated with the CN crossing. York Region is committed to ongoing consultation with CN during detailed design.<br>CN confirmed that a consultant has been retained to review the technical information for the Langstaff Road Class EA study. |
| Meeting 7<br>October 19, 2021 | CN provided their comments regarding review of analysis and evaluation of alternatives via letter dated August 27, 2021 and York Region subsequently responded via letter dated September 28, 2021. York Region and CN agreed to ongoing consultation during detailed design. York Region and CN both acknowledged that the implementation of the CN MacMillan Yard crossing will be in the longer term horizon. York Region is committed to carrying out the associated technical studies to address design |

| CN Meeting Date | Purpose of Meeting / Summary |
|---|---|
| | and other logistics in regard to coordination with CN during detailed design while adhering to the most current design guidelines and regulations at that time. |

A technical package was provided to CN for review which included the analysis and evaluation of CN crossing design alternatives and a high-level constructability memo of the proposed design. CN provided their comments via letter dated August 27, 2021.

Overall, CN's preference is not to have a road crossing over the MacMillan Yard, noting more specific concerns such as associated impacts on safety to public, rail operations and CN future maintenance including surface runoff, pedestrians accessing/viewing/impact CN operations, incidents/accidents impacting CN operation, maintenance and repair/rehabilitation strategy, anti-terrorism precautions, challenges and complexities of construction, erection or launching of spans would cause complete shutdowns of the yard, as well as installation of piers would both temporarily and permanently impact capacity of the yard.

York Region responded to CN via letter dated September 28, 2021 and committed to address CN's ongoing concerns in future detailed design. York Region has stated that within the context of the Langstaff Road Class EA study, development of the design alternatives across the CN MacMillan Yard was based on input from CN, best available information at the time of the study in combination with technical expertise from the structural and rail specialists on the Project Team, as well as direction from York Region. All concerns raised by CN have been incorporated and addressed at a level that is suitable and feasible in a planning study, through the development of the general arrangement drawing of the structure, landscape plan, stormwater management strategy and construction cost estimate. Since the extension of Langstaff Road through the CN MacMillan Yard is a long-term initiative for York Region, many of the details associated with but not limited to structural design, drainage and geotechnical consideration, construction methodology, access logistics, CN operation coordination, etc., will have to be addressed during detailed design, adhering to the most current design guidelines and regulations at that time.

### 2.3.2 Ontario Ministry of Transportation

The proposed improvements on Langstaff Road considered the potential to modify the existing Highway 400 / Langstaff Road partial interchange into a full move interchange; therefore, the Ontario Ministry of Transportation (MTO) was one of the key stakeholders in the Class EA

study. The proposed interchange improvement was identified in the York Region Transportation Master Plan (2016), which is discussed further in **Section 3.2.4**.

The existing Highway 400 / Langstaff Road interchange is located approximately 2 km and 3 km north of the Highway 400 / Highway 7 and Highway 400 / Highway 407 interchanges, respectively and approximately 1.3 km south of the Highway 400 / Bass Pro Mills Drive interchange. Given the close proximity of adjacent interchanges, including a freeway-to-freeway interchange, there are significant technical challenges in providing the geometric and operational requirements for the implementation of a full interchange.

The Project Team had nine meetings with MTO and a design workshop with MTO / City of Vaughan throughout the Class EA study. Meeting minutes can be found in **Appendix C**. A summary of each of the meeting is provided in **Table 2-5.**

### Table 2-5: MTO Meetings Summary

| MTO Meeting Date | Purpose of Meeting / Summary |
|---|---|
| Meeting 1<br>December 2, 2016 | Provided a brief overview of the study background, project introduction, review of key issues and constraints associated with the Highway 400 corridor and interchange at Langstaff Road, MTO general requirements regarding geometric design and traffic modelling, and MTO concerns with the previously proposed Langstaff Road full interchange concept (separate study by others) that were discussed in letters sent to York Region, dated December 4, 2012 and January 11, 2013, that would be reviewed through this EA study.<br>Some of the challenges discussed were:<br>• The proximity of the proposed interchange to adjacent commercial buildings, Black Creek and the adjacent interchange at Bass Pro Mills Drive.<br>• The termination of the existing core/ collector system.<br>• Impacts to the newly constructed Langstaff Road Underpass structure. |
| Meeting 2<br>May 10, 2017 | Provided a brief study overview and study status, need and justification for improvements on Langstaff Road, and discussed the preliminary Langstaff Road / Highway 400 interchange improvement concepts and traffic assessment approach. |

| MTO Meeting Date | Purpose of Meeting / Summary |
|---|---|
| | MTO noted that the Langstaff Road interchange improvement concepts should not preclude the Highway 400 High Occupancy Vehicle (HOV) Lane plan. MTO provided preliminary comments on the interchange concepts. |
| Meeting 3<br>July 26, 2017 | Provided study status update and reviewed updated Langstaff Road / Highway 400 interchange improvement concepts based on MTO's future HOV Lane plan.<br>MTO provided further comments/concerns on the proposed design options via email dated August 8, 2017 for further design modifications. |
| Meeting 4<br>November 30, 2017 | Presented the updated Langstaff Road / Highway 400 interchange concept per MTO comments from previous meeting and email, as well as associated traffic operational analysis of these concepts.<br>MTO provided further comments via email dated February 1, 2018 regarding micro-simulation results and assumptions, and concerns with the Langstaff Road / Highway 400 interchange concepts including:<br>• Weaving distance<br>• Limitations to Highway 400 expansion<br>• Loading on ramps<br>• Highway signing conflicts<br>MTO noted that any proposed improvements to the Highway<br>400/Langstaff Road interchange should not adversely impact the Highway 400 operations (not making the operations on Highway 400 worse comparing to without the proposed improvements). |
| Meeting 5<br>March 22, 2018 | (York Region and MTO only). Presented additional information regarding traffic operational analysis. |
| Meeting 6<br>August 8, 2018 | Presented additional and updated information regarding traffic operational analysis. The Ministry agreed to participate at the proposed design workshop with York Region and the project team to share ideas and address MTO comments. |

| MTO Meeting Date | Purpose of Meeting / Summary |
|---|---|
| Workshop<br>October 4, 2018 | A workshop was held with MTO, City of Vaughan and the Project Team regarding geometric constraints and design concepts for the Langstaff Road / Highway 400 interchange improvements.<br>In addition to previously developed interchange design options, various collector extension options were discussed.<br>Subsequent to the Design Workshop, an interchange design alternatives screening was carried out and was provided to MTO.<br>An interchange concept was selected by the Project Team to be carried forward for traffic micro-simulation.<br>Additional comments were provided by MTO via email dated March 19, 2019 and on August 6, 2019. |
| Meeting 7<br>August 13, 2019 | Presented the micro-simulation and associated traffic operational analysis findings.<br>Recognizing the extent of the potential Langstaff Road / Highway 400 interchange improvements is beyond the scope the Langstaff Road Class EA study, the Project Team proposed that the interchange improvement be reviewed under a separate corridor study in the future.<br>MTO to review presentation material from the meeting with Senior Management.<br>Additional comments were provided by MTO via email dated August 22, 2019, with key concerns being related to weaving, safety and operations. |
| Meeting 8<br>March 26, 2021 | This was a follow up meeting with MTO regarding the material presented at the August 13, 2019, meeting and how the planning of the Langstaff Road / Highway 400 interchange improvements should proceed within the context of the Langstaff Road Class EA study.<br>Additional comments, along with requirements that need to be met for the ministry to accept the proposed interchange concept, were provided by MTO via email dated June 23, 2021. The Ministry still had potential safety and operational concerns with the interchange concept and a key requirement was the request for a Safety and Human Factor analysis to be submit for review. The Ministry also noted that it cannot commit to completion or cost sharing further Langstaff interchange and related Highway 400 corridor studies. |

| MTO Meeting Date | Purpose of Meeting / Summary |
|---|---|
| Meeting 9<br>July 22, 2021 | With the design and analysis conducted as part of this Class EA study the Ministry has not accepted the proposed interchange concept at this time. Due to the extensive scope associated with the Langstaff Road / Highway 400 interchange based on the high-level assessment work completed to date, it was confirmed that improvements to the interchange would need to be reviewed more cohesively under a future corridor study. |

Through the initial review carried out as part of the Class EA study, an interchange providing for all movements to and from Highway 400 will require extensive studies, analysis and design effort to achieve the geometric requirements, and traffic operation and safety standards, which could potentially require a need for a core/collector system. As a result, the preliminary design of the Highway 400 / Langstaff Road interchange was not included as part of this Class EA study and may be subject to a future study.

### 2.3.3 Metrolinx

There is an existing at-grade crossing of Langstaff Road with the Metrolinx GO Transit Barrie Line (two tracks) east of Keele Street. Based on traffic analysis completed as part of the Class EA study, which accounts for future traffic volumes and anticipated train volumes, it is proposed that a grade separation be provided in the future (see **Chapter 4**). The timing of the grade separation will be subject to railway operations on the GO Transit Barrie Line and future road traffic volume on Langstaff Road, which would be associated with overall improvements of the roadway (e.g., extension of Langstaff Road over CN MacMillan Rail Yard) and Metrolinx's improvements to the GO Transit Barrie Line service.

Through the evaluation of underpass (road under railway) vs. overpass (road over railway) (see **Section 8.4**), an overpass is proposed. Two meetings were held with Metrolinx throughout the Class EA study, and a technical package of the structural general arrangement of the proposed grade separation was provided to Metrolinx for review.

The Project Team had three meetings with Metrolinx throughout the Class EA study. Meeting minutes can be found in **Appendix C**. A summary of each of the meeting is provided in **Table 2-6**.

### Table 2-6: Metrolinx Meeting Summary

| Metrolinx Meeting Date | Purpose of Meeting / Summary |
|---|---|
| Meeting 1<br>January 20, 2017 | Introduce the project, review key issues and constraints associated with the potential Langstaff Road grade separation with GO Transit Barrie Line within the project limits.<br><br>Metrolinx noted that they were carrying out an EA study for the Barrie Rail Corridor Expansion (which was since filed in August 2017). The implementation will be in different phases over the next 10 years, including electrification. Within the Langstaff Road Class EA study area, Metrolinx noted that a passing track that crosses Langstaff Road was constructed as part of the additional passing track from Steeles Avenue to south of Rutherford Road. This track will ultimately become the second track as part of the Barrie Rail Corridor Expansion project. |
| Meeting 2<br>January 19, 2018 | The Project Team provided an update of the Class EA study status, the proposed improvements on Langstaff Road, reviewed the preliminary design alternatives for the GO Transit Barrie Line grade separation, and noted that the overpass alternative is the preferred option. The preliminary plan for the overpass preliminary design was presented at Open House 2 in November 2018.<br><br>Per Metrolinx email dated March 6, 2019, a future third track is to be protected at this location. However, given the early stage in the planning process, the location of the third track is subject to future design. Given that the future third track alignment is yet to be determined at this time and therefore, not able to be made available to the Project Team. In order to provide maximum flexibility for future design phase, the general arrangement prepared for the grade separation structure accommodates a total of four tracks (i.e., protecting for a third track on either side of the existing tracks). The structure design will be further refined during detailed design once the location of the third track is confirmed in the future. |
| Meeting 3<br>November 16, 2021 | Via phone and email correspondence from May to July 2021, the Project Team provided the general arrangement of the grade separation structure to Metrolinx for review. In the August 10, 2021 email from Metrolinx, Metrolinx acknowledges that the proposed grade separation structure protects for the ability of a future third track and that the vertical clearance meets Metrolinx's Electric Traction Standards. |

| Metrolinx Meeting Date | Purpose of Meeting / Summary |
|---|---|
| | The Project Team met with Metrolinx to discuss one of the outcomes of the Steering Committee Meeting, namely the at-grade crossing at Langstaff Road / GO Barrie Line, that took place on November 15, 2021 that included senior staff from Metrolinx and York Region. While the Langstaff Road Class EA Study recommends an ultimate 6-lane cross section with an overpass (i.e. road over railway) at this location, it is proposed that Langstaff Road will be widened to 4-lane in the interim with an at-grade crossing.<br><br>At the Steering Committee Meeting, Metrolinx and York Region agreed with the approach to maintain the interim 4-lane widening as an at-grade crossing while implementing Metrolinx's latest Enhanced Grade Crossing Standards. This will be further reviewed and coordinated with Metrolinx during the detailed design of the 4-lane widening assignment (which is ongoing). |

Overall, Metrolinx is supportive of the proposed overall grade separation on Langstaff Road. Meeting minutes are provided in **Appendix C**.

### 2.3.4 City of Vaughan

Since the study area is within the City of Vaughan, the City was one of the key stakeholders during the Class EA study. Three meetings were held with City of Vaughan over the course of the study. Meeting minutes can be found in **Appendix C**. A summary of each of the meeting is provided in **Table 2-7**.

#### Table 2-7: City of Vaughan Meeting Summary

| City of Vaughan Meeting Date | Purpose of Meeting / Summary |
|---|---|
| Meeting 1<br><br>December 12, 2017 | The Project Team met with the City of Vaughan to provide an update of study status, need and justification, review key issues and challenges, as well as to present the preliminary design alternatives for the proposed improvements on Langstaff Road. City of Vaughan noted the following during the meeting:<br><br>• There is a future plan to connect the trail south of Langstaff Road with the trail on the north side of the road between Keele Street and the Metrolinx GO Transit Barrie Line crossing |

| City of Vaughan Meeting Date | Purpose of Meeting / Summary |
|---|---|
| | • Improvement to the existing culvert located at the park west of the Metrolinx GO Transit Barrie Line crossing is required.<br><br>Subsequent to the first meeting, City of Vaughan staff provided various comments (via email dated February 6, 2018) associated with planning policies, development applications, parks and recreation, typical cross section, operational improvements, as well as Highway 400 / Langstaff Road interchange option in association with the Vaughan Mills Secondary Plan. |
| Meeting 2<br><br>September 18, 2018 | The Project Team met with the City of Vaughan, prior to Open House 2, to provide responses to the above-noted comments and review the proposed improvements on Langstaff Road including a high-level discussion on the Highway 400 / Langstaff Road interchange modification.<br><br>City of Vaughan provided an overview of the infrastructure and development status of the Vaughan Metropolitan Centre and Bass Pro Mills Drive area and noted the following:<br><br>• The extension of Bass Pro Mills Drive to Jane Street is scheduled to be under construction in 2019.<br><br>• An Environmental Assessment (EA) for Bass Pro Mills Drive extension to Weston Road is currently being planned.<br><br>• The EA for near-term improvement (2021) for the Portage Parkway extension to Creditstone Road is completed.<br><br>• The improvements to Creditstone Road are not currently programmed.<br><br>• The Highway 7 to highway 400 ramp improvement will likely start once the rapid transit work is completed on Highway 400.<br><br>• For the Colossus Drive crossing of Highway 400, the areas east of Highway 400 is being policy protected. West of the Highway 400, it is included in the Weston Road and Highway 7 Secondary Plan.<br><br>• The Local Planning Appeal Tribunal (LPAT, formerly known as Ontario Municipal Board) is currently reviewing the potential redesignation of the development land, west of Highway 400 between Rutherford Road and Bass Pro Mills Drive, from employment use to residential use. |

| City of Vaughan Meeting Date | Purpose of Meeting / Summary |
|---|---|
| | Additional comments were provided by City staff following Open House 2 (email dated January 15, 2019) in regard to the proposed improvements on Langstaff Road. |
| Meeting 3<br>July 15, 2021 | The Project Team provided responses to the above-noted comments in the third meeting with the City of Vaughan. The City of Vaughan noted their concern related to the separation of the cycling facility (placing the cycling facility away from the travel lane or reducing the median width to increase the buffer). The Project Team noted that the proposed right-of-way on Langstaff Road is limited to 36 m; by shifting the planting zone next to the curb, it causes concern with salt from the roadway harming the trees and soil; and the proposed 2.0 m median is reduced to the minimum width to accommodate all the needs within the right-of-way. City of Vaughan noted that there is some guidance to provide Active Transportation facilities along side the sidewalk and having the planting zone closest to the roadway in the Great Street Guideline and suggested that the placement of the sidewalk/planting zone be reconsidered as there is a concern for cyclist safety and salt splash on trees could be potentially mitigated by planting salt-resistant tree species. The Project Team responded that the placement of cross sectional elements may be modified in detailed design within the proposed right-of-way subject to the most up-to-date guidelines at that time.<br><br>The City of Vaughan noted the EA for the extension of Bass Pro Mills Drive from Highway 400 to Weston Road is currently underway and requested information on the proposed Highway 400 / Langstaff Road interchange improvement as it relates to the recommendations of the Bass Pro Mills Drive EA. The Project Team noted that the improvements of the Highway 400 / Langstaff Road are beyond the scope of the Class EA study as the extent of improvement would be extensive and would be subject to a future corridor study for a more comprehensive review. The Project Team noted that since the improvements of Highway 400 / Langstaff Road interchange will not be included as part of the current Class EA study, the Bass Pro Mills Drive EA should assume the conditions based on approved planning documents. |

### 2.3.5 Toronto and Region Conservation Authority

The Toronto and Region Conservation Authority (TRCA) is responsible for the protection and management for all watersheds[1] under their jurisdiction. The Langstaff Road study area falls within the Don River watershed (West Don River east of Keele Street and Westminster Creek west of Dufferin Street) and the Humber River watershed (Black Creek), which are under jurisdiction of TRCA. Two meetings were held with TRCA staff over the course of the study. Meeting minutes can be found in **Appendix C**. A summary of each of the meeting is provided in **Table 2-8**.

#### Table 2-8: TRCA Meeting Summary

| TRCA Meeting Date | Purpose of Meeting / Summary |
|---|---|
| Meeting 1<br>February 16, 2017 | The Project Team met with the TRCA to provide an overview of the study as well as the scope of work for under natural environment |
| Meeting 2<br>April 8, 2018 | The Project Team met with the TRCA to provide a summary of the existing natural features and an overview of the drainage conditions. |

In addition to meetings with TRCA, water resource specialists on the Project Team worked closely with TRCA in updating the hydraulic model associated with West Don River (See **Section 6.4** and **Appendix I** of the ESR).

TRCA is in general agreement with the proposed improvements on Langstaff Road. Meeting minutes are provided in **Appendix C**.

## 2.4 Notice of Study Commencement

The Notice of Study Commencement was issued to introduce and invite participation in the study and to request any preliminary comments or pertinent information. The Notice of Study Commencement was posted in the local newspaper *Vaughan Citizen* on December 9 and December 15, 2016.

The Notice was also mailed to agencies, utilities, Indigenous Communities, Resident Ratepayer Associations bordering the study area, City of Vaughan Local Councillors, interest

[1] A watershed is an area of land that separates water flowing to different rivers

groups, and property owners on January 16, 2017. Property owners (about 12,200) include those within an extended area that is beyond the immediate study area limits which is generally bounded by north of Rutherford Road, west of Weston Road, Thornhill Wood Drive and south of Highway 7. The Notice was also posted on the York Region website, Region Facebook and Twitter accounts on December 9 and December 15, 2016.

See **Appendix C** regarding the Notice of Study Commencement notification logistics, including associated mailing lists. Comments received following Notice of Study Commencement can be found in **Appendix C**.

## 2.5 Open House 1 (June 14, 2017)

The first Open House (OH) was held on June 14, 2017 at Westmount Event Centre at 227 Bowes Road in the City of Vaughan. The OH1 Summary Report is included in **Appendix C** of the ESR.

The purpose of OH1 was to present the study background, EA process overview, existing and future conditions, travel demand analysis, need and justification, alternative solutions, recommended solution, and next steps. OH1 was conducted as an informal drop-in centre (6:30 pm to 8:30 pm) to members of the public with the opportunity to review and comment on the material presented.

Notices for the OH were placed in the June 1 and June 8, 2017 editions of the local newspaper, *Vaughan Citizen*. Appropriate technical agencies, agencies, utilities, Indigenous Communities, Resident Ratepayer Associations bordering the study area, City of Vaughan Local Councillors, interest groups, property owners (approximately 12,200 entries), and members of the public who requested to be on the mailing list were notified via mail on May 30 and 31, 2017. Those who only have an email address on file (one entry) with the Project Team were provided the Notice via email on June 1, 2017. Study mailing lists and other notification logistics can be found in the Open House 1 Summary Report in **Appendix C**. The Notice was also posted on York Region's Facebook and Twitter accounts on June 8 and June 14, 2017, as well as on York Region's study website starting June 8, 2017.

Open House Display materials posted on Region website following Open House 1 on June 14, 2017.

Twenty-eight (28) members of the public signed the attendance register at the OH, including area residents and representatives of the property owners in the study area. The attendance

register and the comment sheets are on file with York Region. Those at the OH were invited to provide comments via the comment sheet available at the OH or via the online survey.

Those at the OH discussed their concerns and comments with representatives of the Project Team. Four (4) comment sheets were received at the OH, four (4) additional comments (emails) were received as of July 14, 2017 (last day of the comment period). The total view count was 197 on York Region's website was from June 14, 2017 to August 8, 2017 for the Langstaff Road EA page on York.ca/langstaffstudy.

**Table 2-9** summarizes the main concerns and interests expressed by those who submitted written comments at OH1 and how those were addressed:

### Table 2-9: Open House 1 (June 14, 2017) Key Public Comments and Responses

| Comment | Response |
|---|---|
| Make streets without streetlights; with mini interchange on Weston Road; Keele Street; Jane Street; Dufferin Street and more intelligent streetlight control | The overall traffic operation of Langstaff Road will be evaluated in the next phase of the study. York Region is continuously monitoring traffic operation at intersections and will make the necessary adjustments to optimize traffic flow when warranted. |
| Comments regarding having six lanes on Dufferin Street, North of Langstaff Road | Current road network in the City of Vaughan is based on the York Region's Official Plan. Amendment to increase lanes or implement HOV lanes will be subject to review and process by York Region's Planning Department and is beyond the scope of the EA study. |
| HOV lanes should be added | Current road network in the City of Vaughan is based on the York Region's Official Plan. Amendment to increase lanes or implement HOV lanes will be subject to review and process by York Region's Planning Department and is beyond the scope of the EA study. |
| Walking and cycling facilities are the most critical need. | Active transportation facilities on Langstaff Road are based on recommendation in the Cycling Master Plan. The facilities will accommodate cyclists and pedestrians and will provide connections to the overall active transportation system in the Region. |

Response letters were provided to those who provided written comments; these are documented in **Appendix C**.

## 2.6 Open House 2 (November 28, 2018)

The second Open House (OH) was held on November 28, 2018 at the Westmount Event Centre at 227 Bowes Road in the City of Vaughan. The OH2 Summary Report is included in **Appendix C** of the ESR.

The purpose of OH2 was to share information and collect feedback on the background and summary of OH1, update of the EA study following OH1, analysis and evaluation of design alternatives, recommended design alternative for the proposed improvements on Langstaff Road and next steps in the study. Various photo renderings were also presented at OH2 to illustrate how the proposed grade separation over Metrolinx GO Transit Barrie Line and the crossing over CN MacMillan Rail Yard will fit into the overall context of the community. The OH was conducted as an informal drop-in type centre (6:30 pm to 8:30 pm) to members of the public with the opportunity to review and comment on the material presented.

Notices for OH2 were placed in the November 15 and November 22, 2018 editions of the local newspaper, *Vaughan Citizen* and *Thornhill Liberal*. Appropriate technical agencies, agencies, utilities, Indigenous Communities, Resident Ratepayer Associations bordering the study area, City of Vaughan Local Councillors, interest groups, property owners (about 12,200 entries), and members of the public who requested to be on the mailing list were provided with the Notice on November 14, 2018. Those who only have an email address on file (approximately 92 entries) with the Project Team were provided the Notice via email on November 15, 2018. Study mailing lists and other notification logistics can be found in the Open House 2 Summary Report in **Appendix C**. The Notice was also posted on York Region's Facebook account on November 15 and November 24, 2018; Twitter account on November 15 and November 25, 2018, as well as York Region's study website starting on November 15, 2018.

Open House Display materials and online Open House (video) posted on York Region's website on November 28, 2018.

Fifty-nine (59) members of the public signed the attendance register at the Open House, including area residents and representatives of the property owners in the study area. The attendance register and the comment sheets are on file with York Region. Those at OH2 were invited to submit comments via the comment sheet available at the OH or via the form on the project website (York.ca/langstaffstudy).

Those who attended the OH discussed their concerns and comments with representatives of the Project Team. Fifteen (15) comment sheets were received at the OH2. Twenty-five (25) additional emails were submitted following the OH2.

**Table 2-10** summarizes the main concerns and interests expressed by those at OH2 and who submitted written comments and how those were addressed:

### Table 2-10: Open House 2 (November 28, 2018) Key Public Comments and Responses

| Comment | Response |
|---|---|
| Concerns with potential property impacts. | The proposed improvements on Langstaff Road has been developed to minimize direct property impact where feasible. For properties directly impacted a result of the proposed improvements of Langstaff Road, York Region will compensate the property owner based on fair market value; subject to negotiation and further discussion during detailed design. |
| Comments related to adding HOV lanes on Langstaff Road. | Langstaff Road is identified as a primary arterial goods movement corridor in the York Region Transportation Master Plan (2016). In the context of the commercial and industrial land uses in the study area, the regional road network servicing the study area experiences greater amounts of commercial vehicles as compared to other such roads within the region. High commercial vehicle traffic levels may result in traffic operational issues given that the widening for Transit/HOV lanes would not accommodate such vehicles in a curb lane combined with a high number of driveway accesses on Langstaff Road which therefore require mixed traffic to use the Transit / HOV lanes for turns.<br><br>Trucks entering / exiting from the adjacent industrial / commercial lands could pose a potential operational concern if they are to weave in and out of the HOV lane for access and significantly reduce the Transit/HOV benefits. The widening of Langstaff Road to a six general-purpose-lane cross-section can also benefit adjacent parallel corridors of Rutherford Road and Highway 7 by providing an opportunity for enhanced modal separation between different travel modes. For |

| Comment | Response |
|---|---|
| | instance, commercial vehicle traffic would likely be drawn away from the parallel roadways to Langstaff Road, which would enhance traffic operations on the Rutherford Road Transit/HOV facility and Highway 7 Rapid Transit corridor for all road users, including motorists, transit passengers, pedestrians and cyclists. |
| Comments related to improvements to the perpendicular roadway network. | York Region Transportation Master Plan (2016), and City of Vaughan Transportation Master Plan (2012) have identified proposed improvements to perpendicular roads in the network (i.e. north-south roads which are perpendicular to Langstaff Road); for example, Keele Street, Jane Street, Creditstone Road, etc. Per the current York Region's Transportation Master Plan, Keele Street from Rutherford Road to Highway 7 is proposed to be widened to six lanes. Per the current City of Vaughan's Transportation Master Plan, Creditstone Road from Rutherford Road to CN Rail, just north of Highway 7, is proposed to be widened to 4 to 5 lanes. The planning for the regional road improvements and the municipal road improvements will be subject to future environmental assessment process by the Region and the City, and is beyond the scope of the current study. |
| Comments related to the need and location of bike lanes. / Mixed support regarding provision for active transportation on both sides of the road. | Planning of active transportation facilities on Langstaff Road are based on recommendation in the York Region Pedestrian and Cycling Master Plan (2008) and the York Region Transportation Master Plan (2016). The facilities will accommodate cyclists and pedestrians and will provide connections within the overall active transportation system in the Region. This will support and encourage active transportation use in the community for pedestrians and cyclists. |
| Comments related to traffic signal synchronization. | Observation of existing traffic signal conditions / synchronization has been forwarded to York Region Traffic Operation Group for consideration. |
| A new crossing is generally well supported and the public recognizes | Comments noted. |

| Comment | Response |
|---|---|
| that there is a need for a new crossing. | |

Response letters were provided to those who provided written comments; these are documented in **Appendix C**.

## 2.7 Meetings with Property Owners

Property owners who are directly impacted by the proposed road crossing were invited to have one-on-one meetings with the Project Team; specifically, property owners at the east and west approaches of the future CN MacMillan Rail Yard crossing. A number of meetings were held with the individual property owners and the meeting minutes are on file with York Region.

Various information packages were also provided to landowner representatives to address their specific concerns and requests.

# 3 STUDY PLANNING CONTEXT

## 3.1 Provincial Policy Framework

### 3.1.1 Provincial Policy Statement (2020)

The Provincial Policy Statement ("PPS"), 2020, is issued under the *Planning Act* and supports the planning of land uses across the Province. The PPS provides policy direction for the use and management of land and infrastructure while protecting the environment and resources, as well as to ensure opportunities for employment and residential development. Sections of the PPS that are applicable to the planning of transportation infrastructure include:

- Part IV Vision for Ontario's Land Use Planning System – The development of land should be optimized to promote efficient use of land, resources and public investment in infrastructure and public service facilities. These land use patterns promote mixed uses including residential, employment, recreation, parks and open space. The supporting transportation infrastructure is to provide choices and promote increased use of active transportation as well as transit before other modes of travel. This is in support of building livable and healthy communities.
- Part V Policies – Specifically, Section 1.6.7 Transportation Systems which outlines the policies for infrastructure and public service facilities under transportation. The policies state that "Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs." A multimodal transportation system is to provide connectivity within and among the transportation systems. Improving connections across jurisdictional boundaries should be considered where possible. Further, land use patterns should be planned to minimize the length and number of vehicle trips, as well as to support existing and future active transportation and transit services.

### 3.1.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)

A Place to Grow: Growth Plan for the Greater Golden Horseshoe ("Growth Plan"), 2020, was prepared and approved under the Places to Grow Act (2005), a legal framework that implements the Province's vision for managing growth within the Greater Golden Horseshoe (GGH).

The Act enables the provincial government to plan for population growth, economic expansion and the protection of the environment, agricultural lands and other resources in a coordinated and strategic manner. A Place to Grow plans for growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life.

The GGH is a dynamic and diverse area, and one of the fastest growing regions in North America. By 2051, this area is forecast to grow to 14.87 million people and 7.01 million jobs. The magnitude and pace of this growth necessitates a plan for building healthy and balanced communities and maintaining and improving our quality of life while adapting to the demographic shift underway.

The Growth Plan accommodates the forecasted growth in the GGH by providing guidance to provincial and municipal decisions on transportation, infrastructure planning, land-use planning, urban form, housing, natural heritage, cultural heritage, climate change, employment, agriculture and resource protection.

The Growth Plan envisions an integrated transportation network will allow people choices for easy travel both within and between urban centres throughout the GGH; automobiles will be only one of a variety of effective and well-used choices for transportation, and transit and active transportation will be practical elements of our urban transportation systems.

Key sections and policies of the updated Growth Plan that are relevant to the Langstaff Road Class EA study are highlighted below:

Population and Employment Forecasts

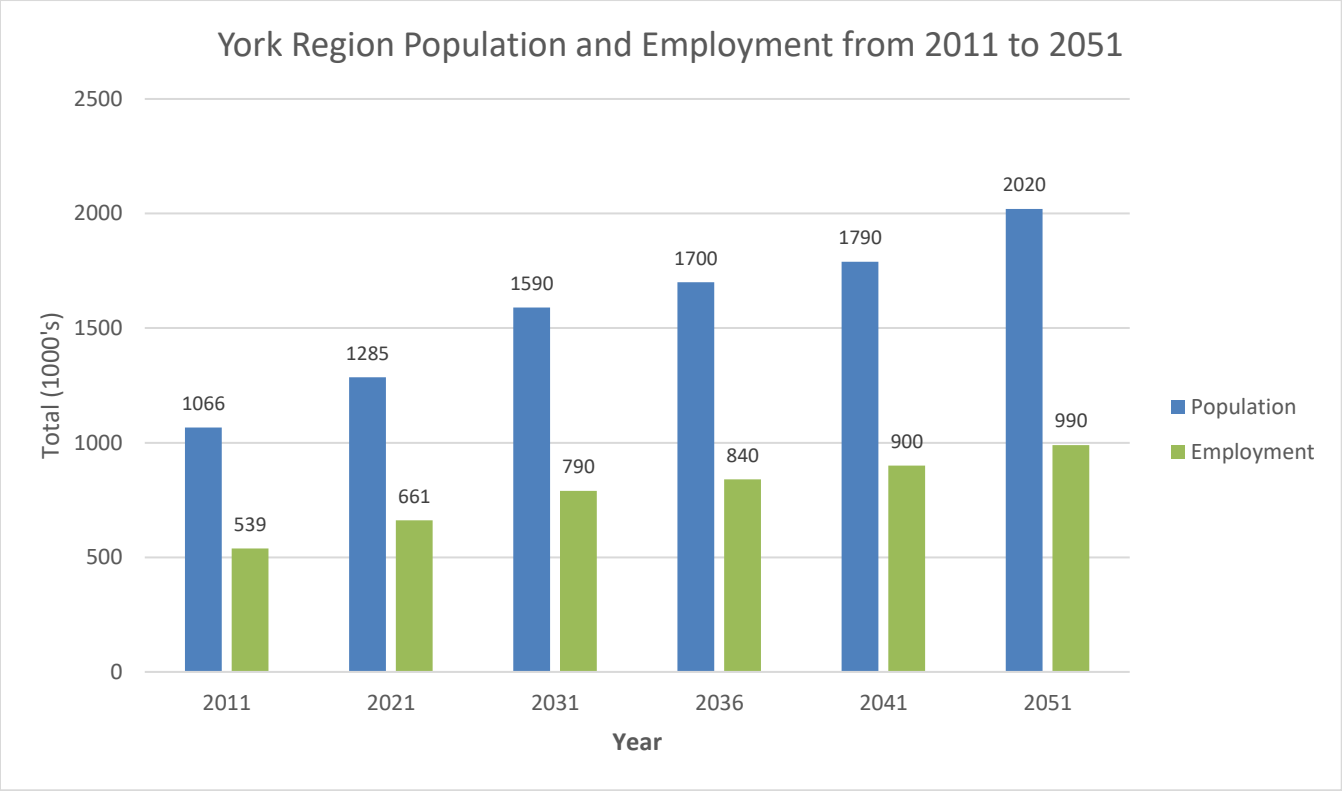
To better co-ordinate planning for growth across the region, the Growth Plan provides population and employment forecasts for all upper- and single-tier municipalities in the Greater Golden Horseshoe (GGH). These growth forecasts are a foundational component of the Plan and are to be reviewed in consultation with municipalities at least every five years.

York Region is the third largest municipality in Ontario and one of the fastest growing regions in Canada. Based on provincial growth targets, the Region expects its population to grow by over 90% from 2011, to a population of 2,020,000 by 2051. Employment is projected to grow by over 85% from 2011, to 990,000 by 2051.

**Exhibit 3-1** illustrates the growth trend of York Region population and employment.

Maintaining existing employment and attracting new high-quality employment is contingent upon a well-functioning transportation system.

## Exhibit 3-1: York Region Population and Employment from 2011 to 2051




*Data source: Places to Grow, as amended 2013 (Schedule 3); A Places to Grow: Growth Plan for the Greater Golden Horseshoe (2019) (Schedule 3), A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020) (Schedule 3)*

Urban Growth Centres

Schedule 4 of the Growth Plan identifies 25 Urban Growth Centres as strategic focal points for growth and intensification. Specifically, the intent of the Urban Growth Centres as defined in Section 2.2.3 of the Growth Plan will be planned to:

- be focal areas for investment in regional public service facilities, as well as commercial, recreational, cultural, and entertainment uses;
- accommodate and support the transit network at the regional scale and provide connection points for inter- and intra-regional transit;

- serve as high-density major employment centres that will attract provincially, nationally, or internationally significant employment uses; and
- accommodate significant population and employment growth.

The Vaughan Metropolitan Centre (VMC), which lies to the south of the Langstaff Road Class EA study area, is a designated Urban Growth Centre in the Growth Plan. The VMC is discussed in greater detail in **Section 3.3.2** of this report. This area is to achieve a minimum density target of 200 residents and jobs combined per hectare by 2031 or earlier; in fact, the VMC is already growing at a quicker rate than originally planned and is already exceeding some of its growth targets. It is anticipated that, as the VMC redevelops and intensifies, surrounding employment lands will also be the focus of redevelopment and intensification with increased employment growth. In this context, Langstaff Road will increase in its importance in the transportation network and the improvements recommended by York Region's Transportation Master Plan (discussed in **Section 3.2.4** of this report) will be necessary to ensure the transportation infrastructure can support and maximize employment growth.

Infrastructure to Support Growth

The Growth Plan states that "well planned *infrastructure* is essential to the viability of Ontario's communities and critical to economic competitiveness, quality of life and the delivery of public services". The infrastructure framework in the Plan requires that municipalities undertake an integrated approach to land use planning, infrastructure investments and environmental protection to support and accommodate forecasted growth.

In terms of transportation system planning and policies, Section 3.2.2 of the Growth Plan states:

1. *Transportation system* planning, land use planning, and transportation investment will be coordinated to implement the Growth Plan.
2. The *transportation system* within the *GGH* will be planned and managed to:
    a. provide connectivity among transportation modes for moving people and for moving goods;
    b. offer a balance of transportation choices that reduces reliance upon the automobile and promotes *transit* and *active transportation*;

c. be sustainable and reduce greenhouse gas emissions by encouraging the most financially and environmentally appropriate mode for trip-making and supporting the use of zero- and low-emission vehicles;

d. offer *multimodal* access to jobs, housing, schools, cultural, and recreational opportunities, and goods and services;

e. accommodate agricultural vehicles and equipment, as appropriate; and

f. provide for the safety of system users.

3. In the design, refurbishment, or reconstruction of the existing and planned street network, a complete streets approach will be adopted that ensures the needs and safety of all road users are considered and appropriately accommodated.

Efficient movement of goods is critical to the success of the Growth Plan, as reflected in the following policies in Section 3.2.4 of the Growth Plan:

1. Linking *major goods movement facilities and corridors*, international gateways and *employment areas* to facilitate efficient goods movement will be the first priority of highway investment.

2. The Province and municipalities will work with agencies and transportation service providers to:

   a. co-ordinate, optimize and ensure the long-term viability of *major goods movement facilities and corridors*;

   b. improve corridors for moving goods across the *GGH* in accordance to Schedule 6 (see **Exhibit 3-2**);

   c. promote and better integrate *multimodal* goods movement and *freight-supportive* land use and *transportation system* planning.

3. Municipalities will provide for the establishment of priority routes for goods movement, where feasible, to facilitate the movement of goods into and out of *employment areas* and other significant commercial activity and to provide alternative routes connecting to the provincial network.

<u>Moving People</u>

York Region's planning of Langstaff Road improvements is consistent with the direction the Growth Plan as it specifically considers the following:

- Municipalities will work with transit operators, the Province, Metrolinx where applicable, and each other to support transit service integration within and across municipal boundaries.
- Municipalities will ensure that active transportation networks are comprehensive and integrated into transportation planning to provide:
    a. safe, comfortable travel for pedestrians, bicyclists, and other users of active transportation; and
    b. continuous linkages between strategic growth areas, adjacent neighbourhoods, major trip generators, and transit stations, including dedicated lane space for bicyclists on the major street network, or other safe and convenient alternatives.

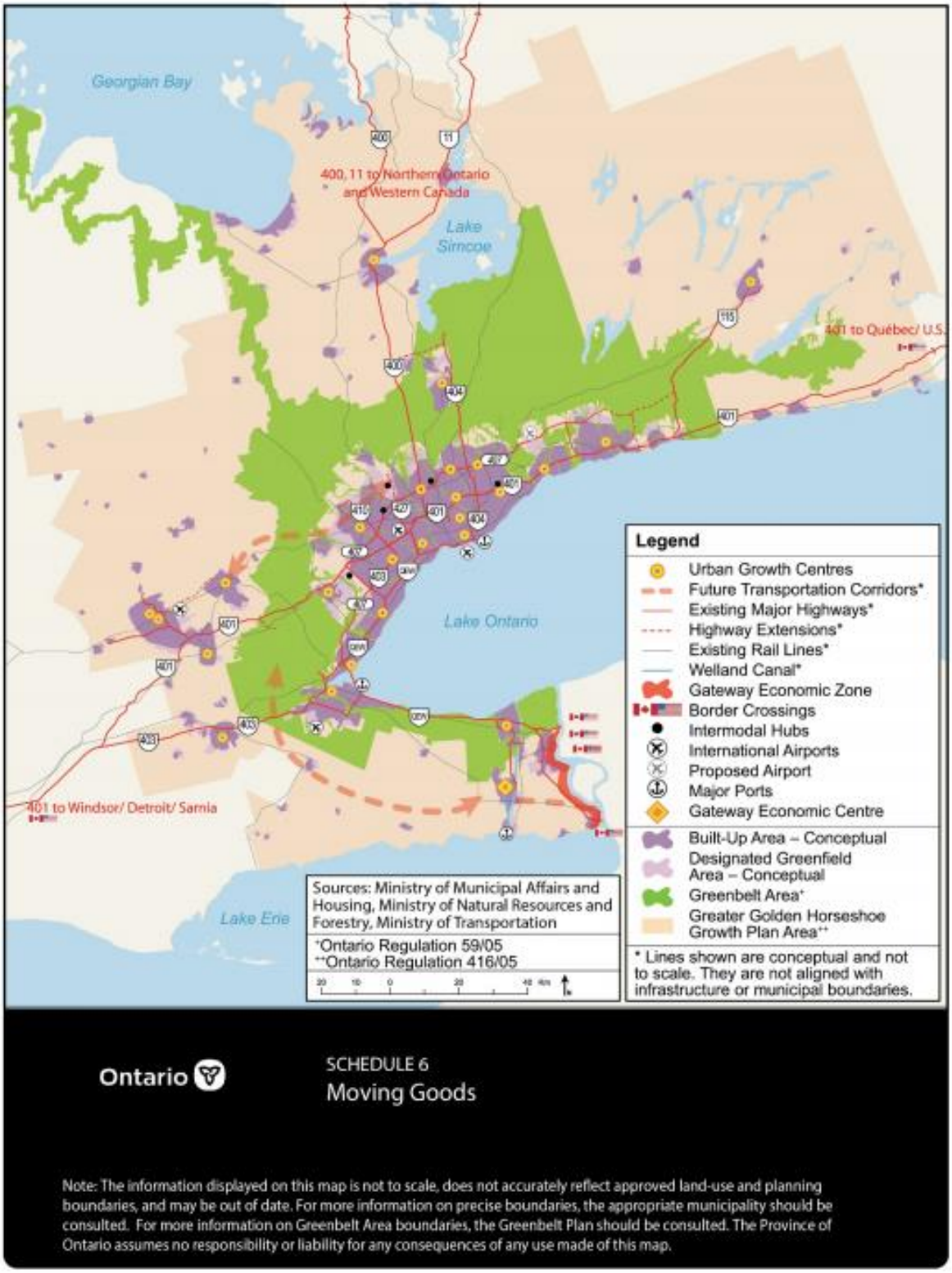
Goods Movement

It is the responsibility of York Region to ensure that the transportation network can support planned growth and provide for efficient movement of goods and people both locally, on a community level, and regionally.

York Region's planning of Langstaff Road improvements is consistent with the direction of the Growth Plan in that it specifically considers the following:

- Provides for connectivity among transportation modes for moving people and for moving goods;
- Increases the efficiency (directness) and flexibility of the transportation network, reducing delays for residents and businesses thereby reducing greenhouse gas emissions and relieving / diffusing demands on arterial roads;
- Improves goods movement corridors and links major goods movement facilities and corridors, international gateways and employment areas to facilitate efficient goods movement; and
- Promotes and integrates multimodal goods movement, freight-supportive land use and transportation system planning.

## Exhibit 3-2: A Place to Grow: Moving Goods in the Greater Golden Horseshoe



### 3.1.3 Greenbelt Plan (2017)

Adopted under the *Greenbelt Act (2005)*, the Greenbelt Plan (2017) guides the protection of environmentally sensitive areas and agricultural lands from urban development and sprawl. The Greenbelt Plan is a cornerstone of the Growth Plan, that identifies where growth should not occur and how new or expanding infrastructure should be designed and constructed to mitigate negative impacts.

The Greenbelt Plan includes lands within, and builds upon the ecological protections provided by the Niagara Escarpment Plan ("NEP"), (2017), and the Oak Ridges Moraine Conservation Plan (ORMCP), (2002).

The Langstaff Road Class EA study area is located outside of the Greenbelt Plan area.

## 3.2 York Region Planning Policies and Related Studies

### 3.2.1 Vision 2051

York Region's Vision 2051 builds on previous long-term strategies Vision 2021 and Vision 2026 and reflects the policies and initiatives developed by the Region and the Province that have influenced how the Region does business. In the face of a significant amount of growth, Vision 2051 reflects a greater emphasis on sustainability coupled with an increasing concern with respect to climate change and energy. Pressures on York Region's transportation, waste, water and social infrastructure, an increasingly diverse and aging population, and meeting the housing and human services and safety needs of York Region's residents are continuing challenges that are considered in Vision 2051.

Vision 2051 establishes priorities and actions to guide decision making in York Region and builds on other recently developed strategies, including the Sustainability Strategy, the Regional Official Plan and Infrastructure Master Plans.

The vision for York Region in 2051 is articulated through eight goals and corresponding action areas. Alignment with these goals and actions help ensure that the decisions made by Regional staff and Council achieve York Region's vision of the future. The goals and actions that are particularly relevant for the Langstaff Road EA study are: *Livable Cities and Complete Communities* and *Interconnected Systems for Mobility* which include the following key aspects:

- Moving our economy
    - Supporting the efficient movement of goods; and

- Providing an interconnected network for mobility that links people to jobs.

- A Network of Complete Streets
  - Supporting a road network that has a hierarchy of road types to increase travel choices;
  - Designing streets to prioritize the most vulnerable users; ensuring accessibility for all;
  - Managing congestion and optimizing the road network through intelligent transportation systems; and
  - Designing streets to be context sensitive and complement adjacent land uses and environmental needs.
- A Vibrant City-Region
  - Focusing intensification in a system of active vibrant Regional City Centres and Corridors that are the hubs of commerce, entertainment and culture;
  - Planning mixed-use pedestrian environments with attractive streets, high-quality urban design and a distinct sense of place;
  - Enhancing mobility within Regional Centres and Corridors through higher order transit systems, including subways and rapid transit; and
  - Maintaining economic competitiveness by encouraging major office, institutional, cultural and entertainment facilities to locate within Regional Centres and Corridors with a goal to achieve a balance of employment and residential opportunities.
- An Integrated Urban System
  - Planning for an integrated urban network of communities, human services, jobs, transportation and infrastructure systems that connect people to places, jobs and services; and
  - Achieving better connections between where people live, work, learn and play.
- Prioritize Alternative Modes of Travel for Active Transportation
  - Providing convenient and reliable alternative modes of travel and prioritizing walking, cycling, public transit and carpooling.

### 3.2.2 Strategic Plan: From Vision to Results (2019 to 2023)

Building on the success of the 2015 to 2019 Strategic Plan, the 2019 to 2023 York Region Strategic Plan: From Vision to Results (“Strategic Plan”) is a road map that guides York Region

toward Council's vision of the future; the Strategic Plan identifies areas requiring focus and aligns the current term of Regional Council with guidance to achieving Vision 2051.

The four strategic priorities are identified as:

1. Economic Vitality: Increase economic prosperity;
2. Healthy Communities: Support community health, safety and well-being;
3. Sustainable Environment: Build sustainable communities and protect the environment; and
4. Good Government: Deliver trusted and efficient services.

Strategic objectives related to strengthening York Region's economy and relevant to the Langstaff Road Class EA study include focusing on networks and systems that connect people, goods and services. Selected strategic objectives related to managing environmentally sustainable growth and pertinent to the Langstaff Road Class EA study are depicted in **Table 3-1**.

The 2019 to 2023 Strategic Plan Year 1 (2019) Progress Report indicated that there was a decline in transit ridership per capita. Further, the Progress Report noted that there was a decline in condition assessment rating of transportation asset due to aging road assets, which previously did not have a sustainable funding source to support the growing and aging asset base. In response, in 2019, Regional Council approved drawing from the Asset Replacement Reserve to fund Transportation Asset Management projects.

As discussed below in **Section 3.2.4**, the Transportation Master Plan (TMP) update was adopted by Regional Council in 2016. The TMP provides the critical policy direction with respect to planning and efficient transportation network that supports the Strategic Plan, and ultimately, Vision 2051.

The Langstaff Road Class EA study is consistent with the Strategic Plan in that it: implements the TMP and moves forward with planning infrastructure to connect people, goods and services; manages traffic congestion / increases capacity of the road network; increases healthy, active transportation; and supports economic growth.

## Table 3-1: Strategic Plan 2019 to 2023 Selected Objectives, Key Activities and Performance Measures

| Objectives | Key Activities | Performance Measures |
|---|---|---|
| **Economic Vitality: Increase Economic Prosperity** | | |
| 2. Increasing access to efficient transportation options | 2.4 Expand the Viva bus rapid transit network | 2.B Increase # of kilometres of bus rapidways |
| | 2.5 Advance Yonge Subway extension | 2.C Increase # of people and employment within 500 metres of transit |
| | 2.7 Install high occupancy vehicle (HOV) lanes with transit<br>2.8 Implement signal priority for higher volume conventional transit routes | 2.D Maintain % of on-time performance on all transit routes |
| | 2.9 Prioritize road improvements that address areas of congestion | 2.E Increase # of road lane kilometres |
| **Healthy Communities: Support Community Health, Safety and Well-Being** | | |
| 1. Supporting safe communities | 1.6 Include sidewalks and/or dedicated bike lanes in urban areas through capital project delivery and as a condition of approval | 1.D Increase % of regional roads with sidewalks and/ or dedicated bike lanes in urban areas |
| **Good Government: Build Sustainable Communities and Protect the Environment** | | |
| 2. Encouraging growth in York Region's centres, corridors and built-up urban areas | 2.1 Participate in reviews of Provincial policies and plans<br>2.2 Update Council's long-range Vison and the Regional Official Plan | 2.A Increase % of growth occurring within the built-up areas |

*Source: 2019 to 2023 Strategic Plan: From Vision to Results – York Region*

### 3.2.3 Regional Official Plan (2010)

The purpose of the York Region Official Plan (2010) is to provide a long-term strategic policy framework for guiding growth and development in York Region while having regard for protecting the environment, and to outline a regional structure that manages this growth within York Region in the most efficient manner. It should be noted that York Region is currently reviewing and updating its Official Plan and has been seeking input from the public through the Municipal Comprehensive Review process. More information may be found on York Region's website at:
https://www.york.ca/wps/portal/yorkhome/yorkregion/yr/municipalcomprehensivereview

Specific York Region Official Plan objectives and policies that guide transportation planning decisions are reflected in Chapters 5 and 7 of the Official Plan. Chapter 5, "*An Urbanizing Region*", includes City building policies and directions related to complete, healthy communities achieved through integrating greenspace, pedestrian and transit network and offering a variety of transportation, housing and employment choices. Chapter 7, "*Servicing Our Population*", is focused on moving people and goods and making efficient use of existing and future transportation infrastructure.

The York Region Official Plan provides a strong policy foundation for the future transportation network by establishing a number of key policies that guide the more detailed policies and recommended actions of the TMP. These include:

- Promote a linked and efficient network for goods movement that minimizes conflicts with sensitive land uses;
- Reduce automobile dependence by enhancing opportunities for residents and workers to cycle, take transit and carpool; and
- Ensure streets support all modes of transportation.

The 2041 proposed transportation network, including roads, transit, goods movement and active transportation are provided in the **Section 3.2.4** of this report.

Chapter 4 of the York Region Official Plan outlines policies related to York Region's Economic Vitality and include policies around the economic strategy, city building and planning for employment lands. Inherent in these policies is the provision of a transportation network capable of supporting the movement of people and goods among places of residence, employment, retail and cultural / recreational nodes.

Selected Official Plan Schedules are provided in **Exhibits 3-3**, **3-4** and **3-5** depicting Regional Structure, Street Network and Cycling Network. As depicted, Langstaff Road, within the Class EA study area, is:

- A key east-west arterial road within the urban area of central York Region and City of Vaughan;
- An important strategic location within the Region, connecting with Highway 400, the CN MacMillan Rail Yard and Highway 7, and in close proximity to Highway 407;
- Planned for a 36 m right-of-way; and
- Identified for a cycling facility.

For more information, the York Region Official Plan may be accessed at the following link: http://www.york.ca/wps/portal/yorkhome/yorkregion/yr/regionalofficialplan/

### 3.2.4 York Region Transportation Master Plan (2016)

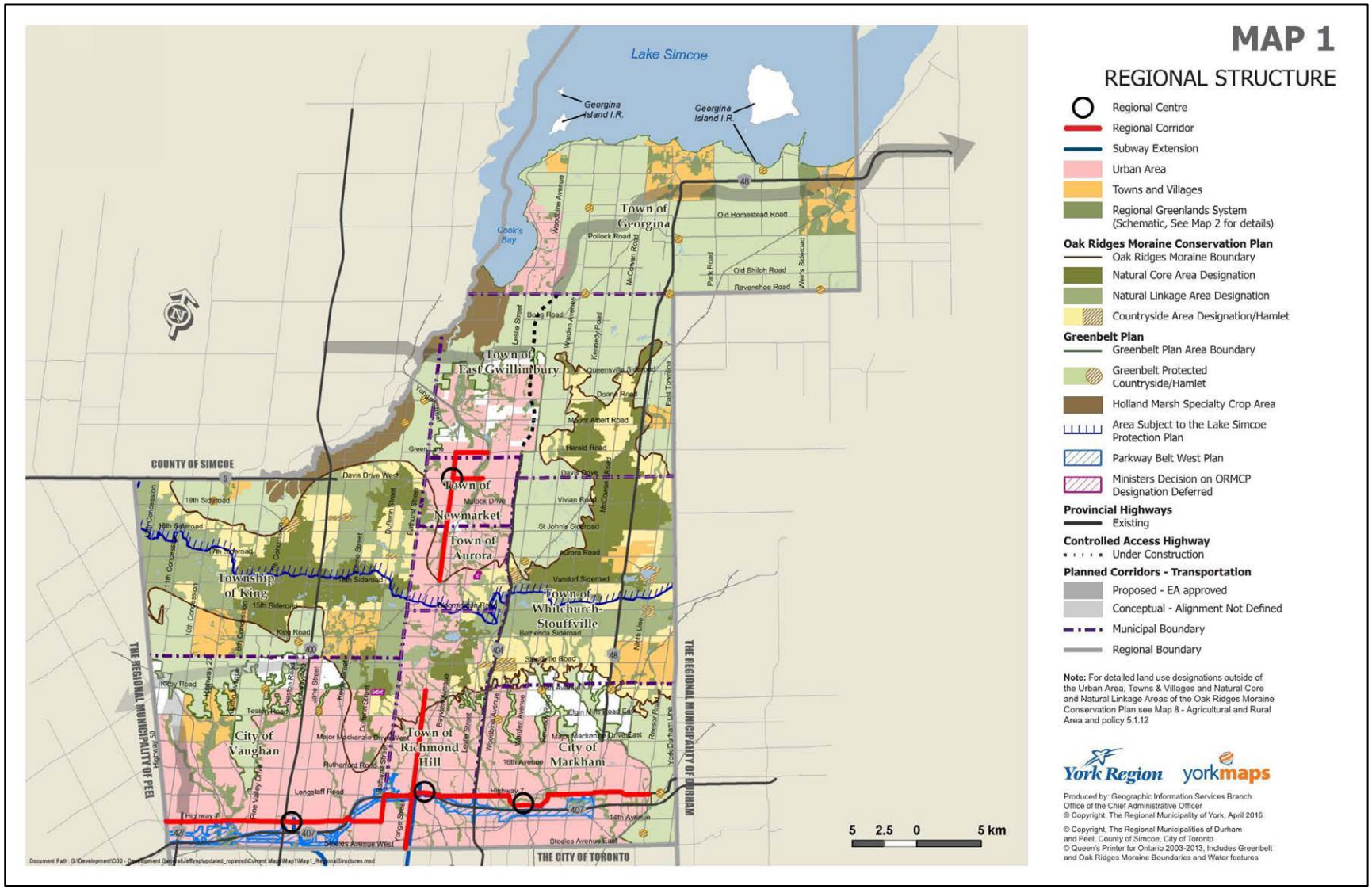
The York Region Transportation Master Plan ("YRTMP") 2016, builds on the Regional Official Plan and sets out the infrastructure and policy requirements required to build and maintain the transportation system. This includes planning and policies for additional transit infrastructure, roads and a system of sidewalks and trails to facilitate active transportation. It should be noted that the Region is currently undergoing an update to the YRTMP, which began in April 2021. More information can be found on York Region's website at York.ca/TMP. For the purpose of the Langstaff Road Class EA study, the discussion in this section will be based on the 2016 YRTMP.

The YRTMP is a fundamental planning / policy document addressing the capacity of the current transportation network and maintaining the quality of life for Region residents and businesses while accommodating the dramatic growth that is forecast by the Growth Plan.

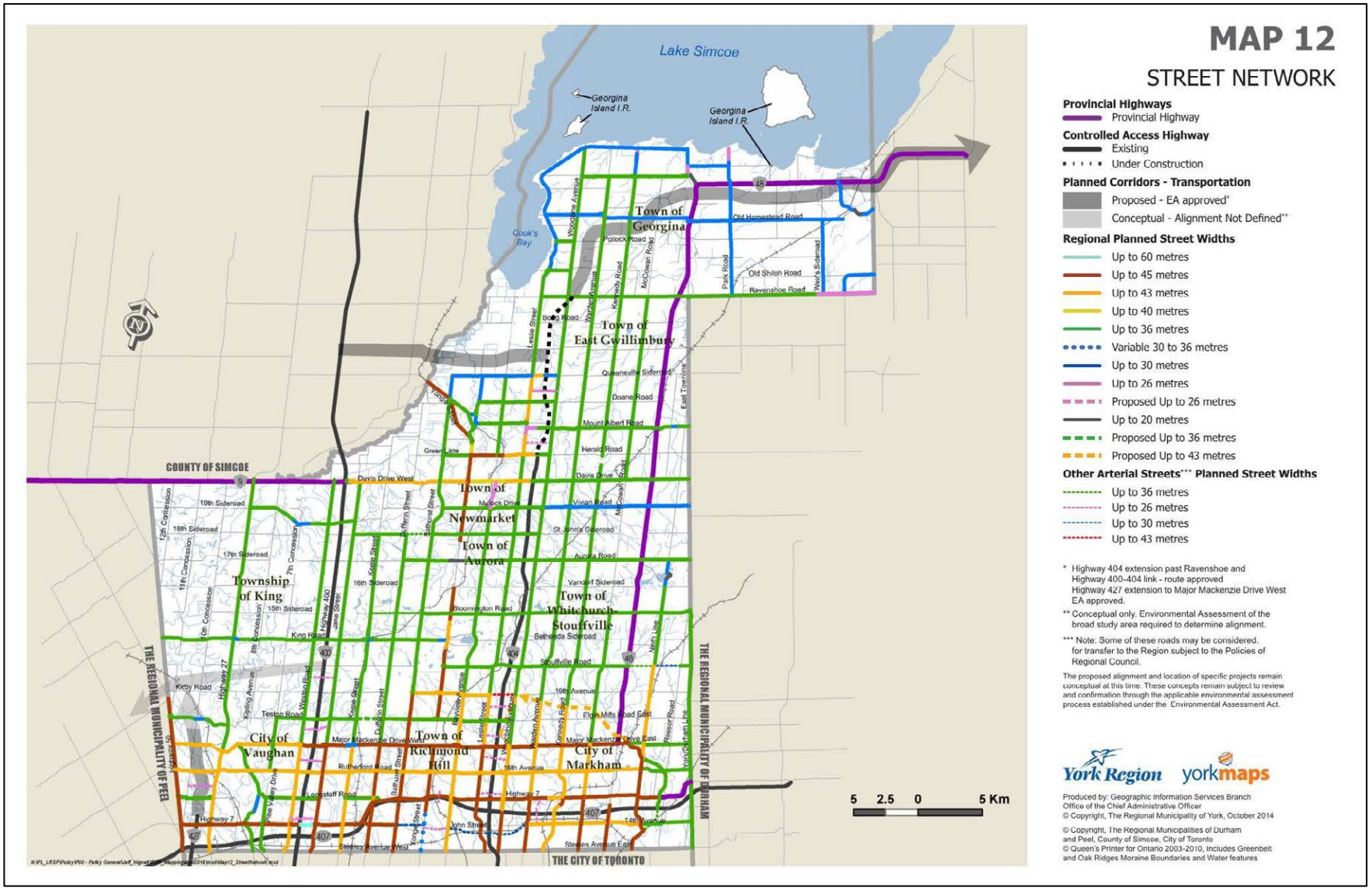
The YRTMP is founded on the following principle:

> *An interconnected mobility system that encourages active transportation, and is supported by compact, complete communities is essential to creating a healthy, economically-vibrant, socially-connected and sustainable Region. The delivery of this interconnected system of mobility is supported by the progressive objectives, policies and actions embedded in many of York Region's Council-approved plans and documents, including Vision 2051, the York Region Official Plan (2010), the 2015 to 2019 Strategic Plan, as well as the previous 2002 and 2009 Transportation Master Plans and the 2008 Pedestrian and Cycling Master Plan.*

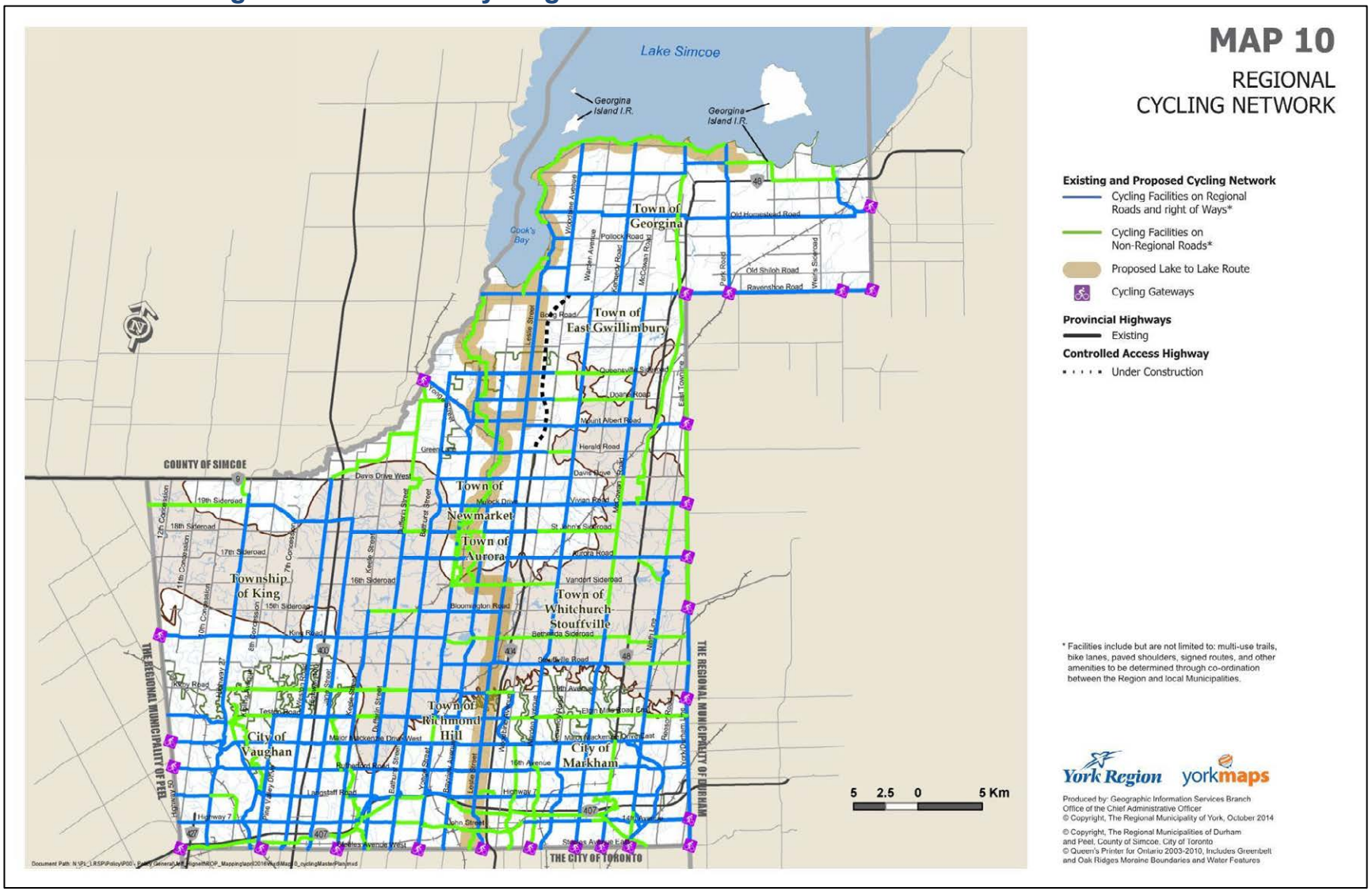
## Exhibit 3-3: York Region Official Plan Regional Structure



## Exhibit 3-4: York Region Official Plan Street Network



## Exhibit 3-5: York Region Official Plan Cycling Network



Traffic congestion continues to be identified as the top issue facing York Region residents, according to an annual survey conducted by an independent third-party organization. Furthermore, in that same survey, residents identified traffic as the greatest threat to quality of life in York Region, followed closely by the high rate of development taking place.

Nevertheless, there is still a very strong reliance on use of vehicles to meet travel needs and in particular movement of goods. The YRTMP provides a detailed overview of a number of issues that may affect future travel demand in York Region and also outlines how the Region will address future growth, respond to emerging trends in transportation, improve options for sustainable travel and manage the road network effectively.

The five objectives of the YRTMP are listed below and some of the specific aspects of each objective are directly relevant to the Langstaff Road Class EA study.

- Objective 1 - Create a World Class Transit System
  - Maximize the potential of Regional Express Rail
  - Improve transit frequency and coverage through implementation of the Frequent Transit Network
  - Extend the Yonge North Subway to Richmond Hill Centre
- Objective 2 - Develop a Road Network Fit for the Future
  - Utilize technology to improve efficiency of the road network
  - Expand high occupancy vehicle/transit network
  - Develop the finer grid road network
  - Build context sensitive multi-modal corridors
  - Complete Langstaff Road “Missing Link”
- Objective 3 - Integrate Active Transportation in Urban Areas
  - Accelerate active transportation infrastructure that connects communities to transit spines, major destinations and Regional Centres
  - Work with MTO to make highway interchanges pedestrian and cycle friendly
  - Complete gaps in sidewalks
- Objective 4 - Maximize the Potential of Employment Areas
  - Complete the Langstaff Road “Missing Link”
  - Designate a Strategic Goods Movement Network
  - Protect for and implement ramp extensions and interchanges
  - Improve connectivity to 400-series highways

- Objective 5 - Make the Last Mile Work
  - Provide safe and convenient walking/cycling opportunities to mobility hubs
  - Manage parking supply and demand with innovation, pricing and technology
  - Embrace emerging technologies and the sharing economy to improve convenience and mobility

The improvements reviewed as part of the Langstaff Road Class EA study directly relate to the many of the objectives and key actions identified in the YRTMP. These are discussed in more detail the subsections below.

#### 3.2.4.1 Create a World Class Transit System

The YRTMP recognizes distinct levels of transit delivery that must be integrated in order to create an efficient and attractive transit system in York Region. Provincial infrastructure plans include Metrolinx's Regional Express Rail (RER) (GO Transit) service and the future 407 Transitway. York Region initiatives include York Region Transit's Viva Bus Rapid Transit; additionally, the Region supports the Yonge North Subway and Spadina Subway extensions, Frequent Transit Network (FTN) and strategies to integrate Regional Viva/York Region Transit (YRT) with Toronto Transit Commission (TTC) and GO Transit services.

The *Proposed 2041 Transit Network* (**Exhibit 3-6**) identifies a Frequent Transit Network (FTN) in urban areas of York Region. Located in key corridors, FTN routes will offer reliable services that are so frequent, customers do not need to use a schedule. The FTN route structure will consider that Viva Network Expansion Plan (VNEP) and future stages of Viva development, as well as the need to connect to TTC subway stations and GO Transit's RER program. FTN routes will operate on shared rights-of-way with arterial roads but will require efficient traffic operations to support service frequency. FTN routes will continue to be complemented by other York Region Transit (YRT) Local, Express, Shuttle and Community Bus services.

The YRTMP identifies Langstaff Road as part of the ultimate FTN system.

It is noted that the Vaughan Metropolitan Centre (VMC) is identified as an Anchor Mobility Hub. Mobility Hubs are major transit stations and the surrounding areas that have significant levels of planned transit, high residential and employment development potential. There are currently six Mobility Hubs defined in the Metrolinx Regional Transportation Plan, including the VMC. The function of the VMC as a Mobility Hub underscores the importance of planning an efficient and well-connected arterial road system in the surrounding areas, which includes the Langstaff Road Class EA study area. This is discussed further in **Section 3.3.3** of this report.

## Exhibit 3-6: Creating a World Class Transit System

**The Region's transit network involves the integration of the following key components:**

### Regional Express Rail

- Metrolinx is transforming the GO Transit network to include electrified GO Trains and two-way all-day service.

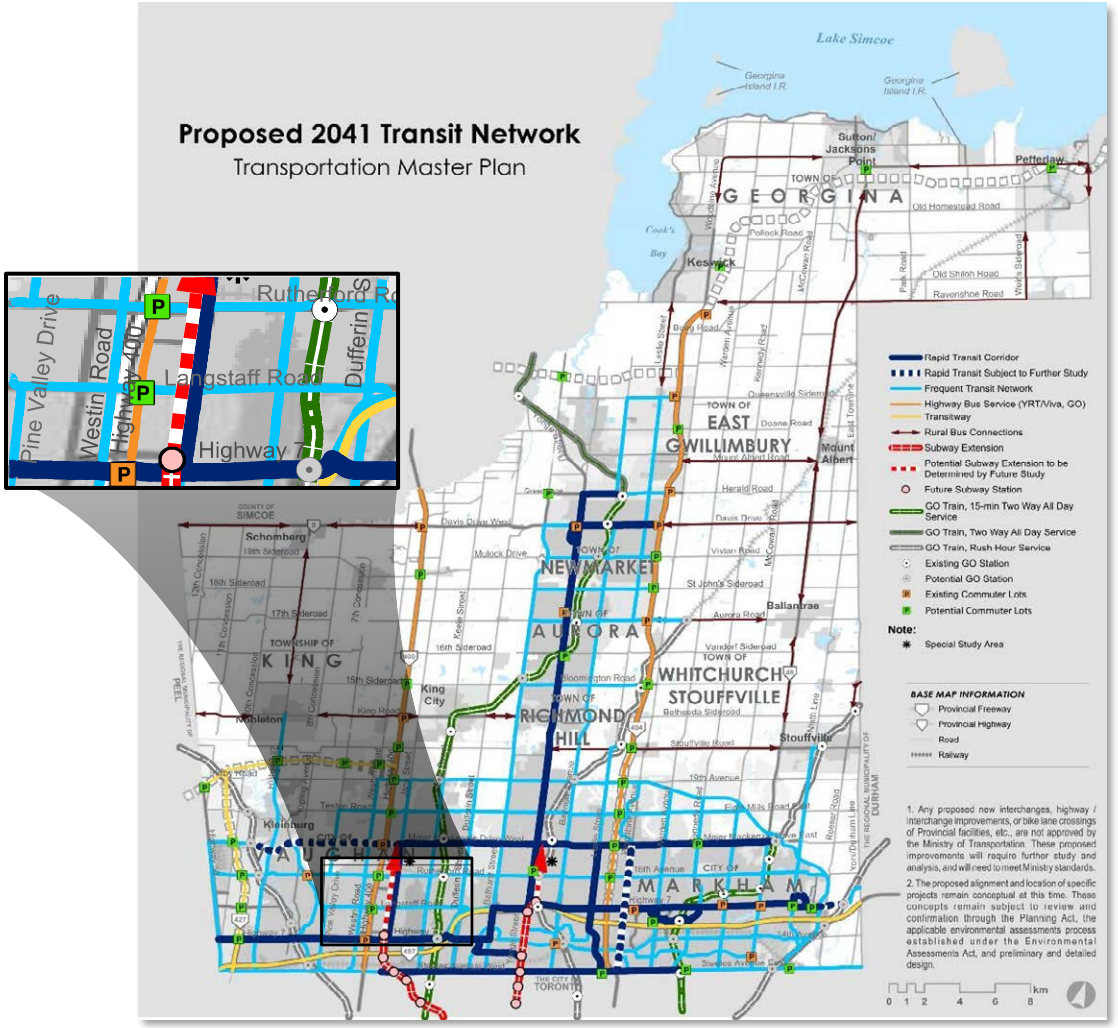
### Rapid Transit

- Rapid transit corridors are planned to connect between Regional Centres. Rapid transit corridors are designated on Major Mackenzie Drive, Highway 7, Steeles Avenue, Jane Street, Yonge Street, and Leslie Street.

### Frequent Transit Network

- Develop a Frequent Transit Network along major corridors in the urban areas to enhance York Region Transit/Viva service levels. Frequent Transit Network will operate at frequencies of 15 minutes

**Langstaff Road is identified as part of the Frequent Transit Network.**



#### 3.2.4.2 Developing A Road Network Fit for The Future

York Region's road network plays a foundational role in mobility. The smooth delivery and operation of York Region's road network is critical to economic health and quality of life. Planning, designing, constructing, operating and maintaining Regional roads in a manner that is consistent with the principles underlying the YRTMP will be fundamental to achieving its goals.

As noted previously, the YRTMP states that increasing traffic congestion is a threat to York Region's livability and economic competitiveness. The YRTMP strategies and policy areas related to the future road network take advantage of technological advancements and adopt new approaches to using public rights-of-way, such as the concept of complete streets which will help the Region encourage alternative modes and managing congestion. Other steps to improve the connectivity of Regional and local collector road networks will also have an important role.

The YRTMP notes that the future road network will provide York Region residents and businesses with benefits, including:

- Supporting the efficient movement of goods and services through implementation of key corridors;
- Supporting communities and managing congestion by providing new and expanded Regional roads;
- Providing greater travel route choices with a finer grid road network; and
- Connecting 'missing links' in the road network by removing physical barriers and providing grade separations.

The Regional road network is set on a grid with several 'missing links', leading to circuitous routing by users and contributing to more traffic congestion. The YRTMP strives to complete the grid network by planning for construction of several key Regional road connections including a connection between Jane Street and Keele Street, across the CN MacMillan Rail Yard.

**Exhibit 3-7** depicts the Proposed 2041 Road Network and highlights the proposed improvements for Langstaff Road, in the context of the broader Regional road network.

## Exhibit 3-7: Transportation Master Plan - Developing a Road Network Fit for the Future

### The Region's strategy for developing the future road network includes:

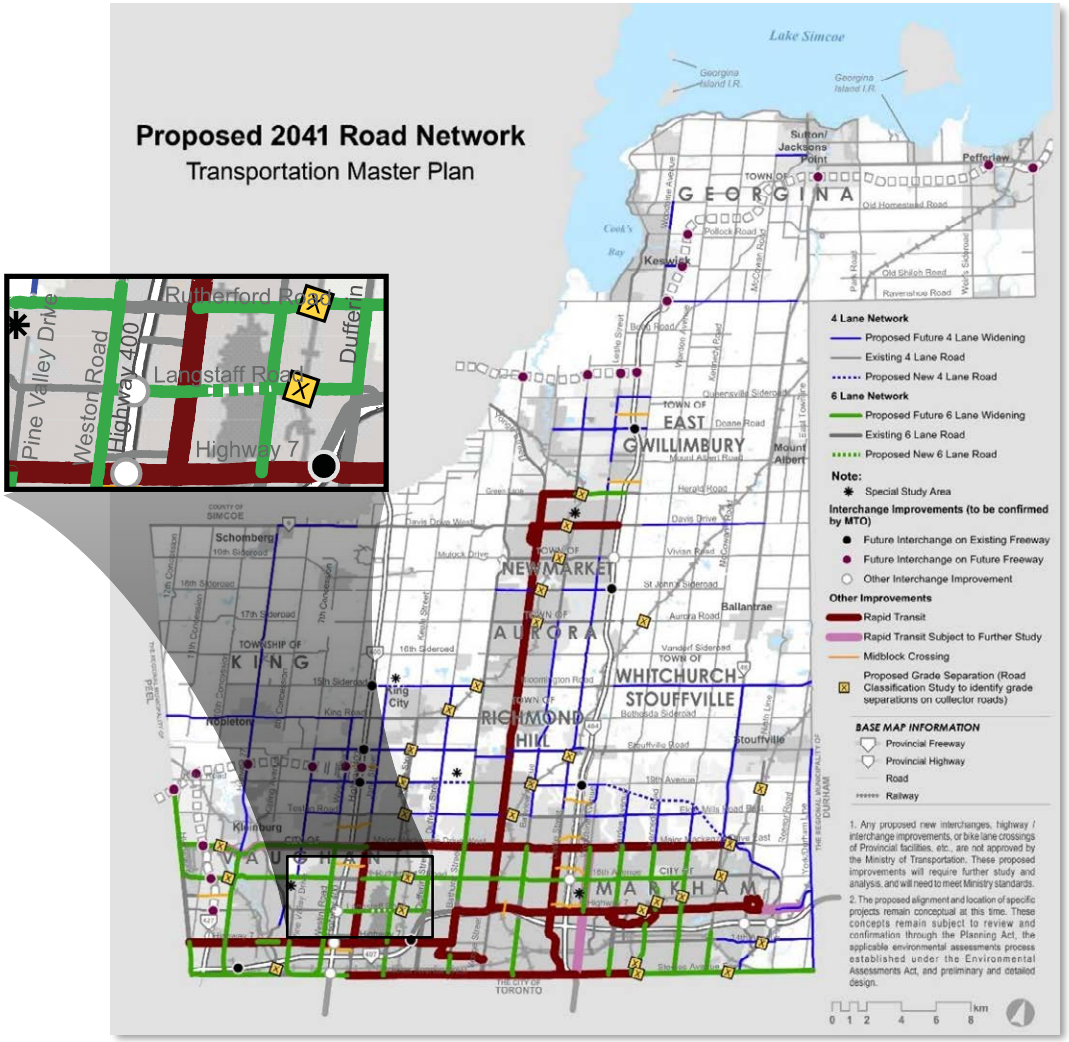
#### Increase Road Capacity in Strategic Areas

- New and expanded roads will be required to serve planned growth areas.

#### Developing the Finer Grid Road Network

- Complete the Langstaff Road connection, which also contributes to the TMP objective of *Maximizing Potential of Employment Areas*.

**Langstaff Road is proposed to be widened to six lanes between Weston Road and Dufferin Street, including a connection crossing the CN MacMillan Rail Yard.**



#### 3.2.4.3 Integrate Active Transportation in Urban Areas

Active transportation includes walking, running, cycling, in-line skating and non-mechanized scooters and wheelchairs. Walking and cycling are fundamental to healthy and sustainable communities. The Region is in the process of improving its Active Transportation Network which creates some challenges because pedestrians and cyclists represent the minority of travellers. Nevertheless, without building the infrastructure, it is unlikely that active transportation use will increase in York Region. The YRTMP aims to make active transportation more comfortable, safe and convenient, to make this a more attractive mobility option. The YRTMP integrates key elements of York Region's 2008 Pedestrian and Cycling Master Plan and strengthens York Region's role in providing on- and off-road facilities for walking and cycling. It focuses on building regional networks, improving connections within Urban Growth Centres and to major destinations, improving access to public transit services and encouraging consistency among local municipalities in the delivery of active transportation infrastructure.

The YRTMP notes that integrating active transportation infrastructure in urban areas will provide benefits to York Region residents and businesses including the following:

- Making sustainable travel choices more attractive and viable with a more connective cycling network;
- Improving access to transit by completing missing links in the cycling and sidewalk network;
- Promoting an active and healthy lifestyle by providing safer, walkable routes to schools and other key destinations; and
- Connecting key destinations and urban areas by prioritizing cycling links.

York Region's Pedestrian and Cycling Master Plan, completed in 2008, set out a vision for a Regional-wide active transportation network integrated with local municipal pedestrian and cycling infrastructure and public transit. Since 2008, the Region has made significant strides in advancing active transportation infrastructure. The network has grown by 154 kilometres of multi-use trails, 28 kilometres of bike lanes and 243 kilometres of paved shoulders.

**Exhibit 3-8** depicts the Proposed 2041 Cycling Network and highlights the proposed "separated" cycling facility for Langstaff Road.

## Exhibit 3-8: Transportation Master Plan - Integrating Active Transportation in Urban Areas

### Strategic Cycling Network

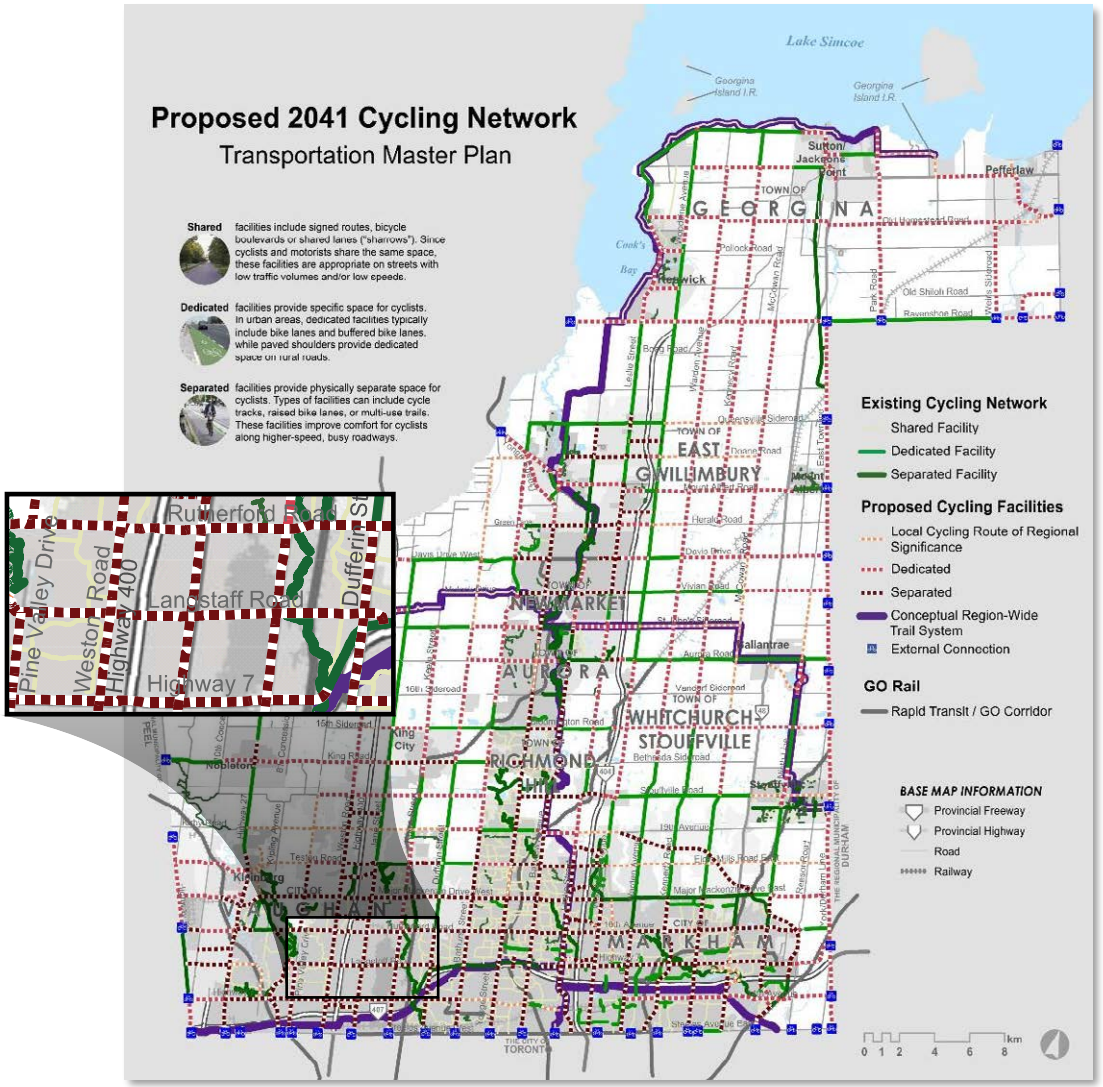
- Linking existing cycling facilities and those planned through road and transit projects to create network connections to Regional Centres, transit stations and adjacent municipalities.

### Addressing Sidewalk Gaps

- Address sidewalk gaps to improve connections to transit stations and destinations.

### New Design Approaches

- To improve safety, comfort and convenience of cyclists and to consider the type of cycling facilities based on traffic speeds and volumes.



#### 3.2.4.4 Maximizing Potential of Employment Areas

One of the objectives in the York Region Transportation Master Plan (2016) ("YRTMP") is to *Maximize the Potential Employment Areas*. The City of Vaughan, in particular, has a significant number of manufacturing and industrial establishments many of which are located within the study area in close proximity to Langstaff Road.

With the growth of York Region's economy and associated freight activities, there are increasing needs for an efficient strategic network to facilitate safe and efficient movement of goods to and from key origins and destinations including:

- Provincial highways;
- Intermodal rail yards, and commercial businesses; and
- Industrial employment areas.

Goods movement is already constrained in this area of Vaughan, particularly in the east-west direction, as a result of physical constraints such as the CN MacMillan Rail Yard, the Boyd Conservation Area and other natural features. These constraints result in Highway 7 being reduced to only four lanes west of Islington Avenue, and Langstaff Road being discontinuous between Jane Street and Keele Street.

During the development of the YRTMP, the Region consulted with businesses and developers regarding maximizing the potential of employment areas and facilitating goods movement and improving connectivity to employment areas. The most commonly heard comments were:

- Need to connect Langstaff Road across the CN MacMillan Rail Yard;
- Regional roads are for all traffic, including trucks, and safety for all modes should remain a priority;
- Intermodal hubs (e.g. CN) and communities/corridors with through truck movements are areas of concern in regard to congestion; and
- A Goods Movement Strategy is needed to address the key generators for commercial vehicle traffic.

The YRTMP indicates that maximizing the potential of employment areas will provide the following benefits:

- An understanding of which corridors give goods movement priority;

- A clear Goods Movement policy and road hierarchy will provide clarity regarding the function and design of Regional roads to support efficient goods movement;
- Increased understanding about the importance of efficient goods movement to York Region's economy, to managing congestion and the environment;
- Ensuring that trucks can easily access 400-series highways and their destinations supporting growth of the York Region's economy;
- Accessibility to employment lands will enable continued growth in York Region; and
- Providing reliable, quality transit service to employment areas will help maximize their potential.

All Regional roads are intended to carry trucks and are part of the general goods movement network. The identification of a limited number of Regional roads as part of a Strategic Goods Movement Network (SGMN) can promote preferred haul routes, prioritize road investments and highlight corridors that could benefit most from the application of freight-supportive street design standards and land use planning. In general, truck routes are intended to permit and focus the movement of trucks carrying hazardous goods, pick-up and delivery vehicles, and heavy or long combination vehicles.

**Exhibit 3-9** depicts the Proposed Strategic Goods Movement Network as well as the criteria for identifying the three levels of goods movement (Exhibit 7.1 of the YRTMP).

Langstaff Road is identified as a *Primary Arterial Goods Movement Corridor* between Highway 400 and Dufferin Street. In order to accommodate trucks on Primary Arterial Goods Movement Corridors, the YRTMP generally considers these roadways to apply freight-supportive street design standards and land use planning policies and are typically future six-lane corridors with inclusion of truck design elements.

The Highway 400 interchange at Langstaff Road is also identified for improvements to support the SGMN.

Lastly, the YRTMP identifies the completion of a connection across the CN MacMillan Rail Yard as being a '*major initiative to support maximizing the potential of employment areas'*.

## Exhibit 3-9: Transportation Master Plan – Maximizing Potential of Employment Areas

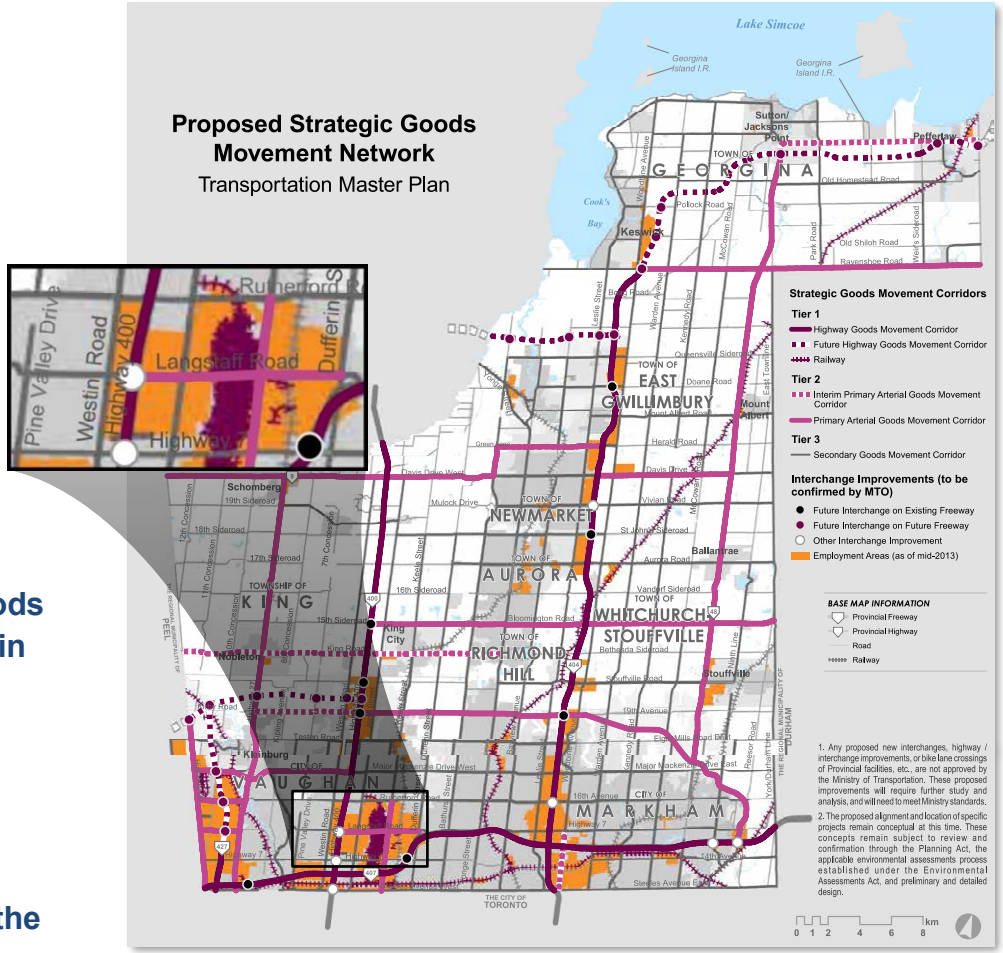
### The TMP identifies three levels of goods movement based on the criteria presented

| CLASSIFICATION AND DESCRIPTION | TYPICAL VOLUMES | ACCOMMODATION OF TRUCKS |
|---|---|---|
| **Highway goods movement corridors**<br>· 400 series freeways and secondary highways | · More than 3,000 trucks per day<br>· More than 5% medium and heavy trucks | · Mixed traffic<br>· May have HOV lanes or shoulder transit lanes |
| **Primary arterial goods movement corridors**<br>· Urban arterials serving employment and industrial lands | · More than 2,500 trucks per 8-hour period<br>· More than 10% medium and heavy trucks | · Mixed traffic<br>· Generally future six-lane corridors<br>· Minimal overlap with rapid transit corridors<br>· Consider truck-only design elements in special cases |
| **Secondary arterial goods movement corridors**<br>· All other Regional arterial roads | · Fewer than 2,500 trucks per 8-hour period<br>· Fewer than 10% medium and heavy trucks | · Mixed traffic |

### Langstaff Road is identified as a Primary Arterial Goods Movement Corridor between Highway 400 and Dufferin Street and is surrounded by employment areas.

### The Highway 400 interchange at Langstaff Road is identified for improvements to support the Strategic Goods Movement Network (SGMN).

### Langstaff Road is proposed to be connected across the CN MacMillan Rail Yard.



### 3.2.5 Designing Great Streets Guidelines (2019)

York Region developed the Designing Great Streets (DGS) guidelines to update its road design process by better integrating road design and land use context, and responding to the challenges of a rapidly growing Region. Through its context-sensitive approach to decision making, DGS shifts the focus from planning for vehicle capacity to planning for streets that provide greater mobility for all users and greater integration with the community. The DGS guidelines are consistent with direction and policies outlined in York Region's 2016 TMP.

The Langstaff Road Class EA study is consistent with the DGS's vision *to create vibrant streets for York Region to provide a range of safe and reliable transportation options, while being sensitive to adjacent land uses and needs of the community*.

## 3.3 City of Vaughan Planning Policies and Related Studies

### 3.3.1 City of Vaughan Official Plan (2020)

The City of Vaughan Official Plan ("OP"), 2010 (As partially approved by Ontario Municipal Board 2020 Office Consolidation) will shape the future of the City and guide its continued transformation into a vibrant, beautiful and sustainable City.

The overall Growth Management Strategy consists of three main components:

- Vision 2020 – the City's Strategic Plan;
- Green Directions – the City's Sustainability Master Plan; and
- A Plan for Transformation – the City's new Official Plan.

The main principles of Vaughan's Vision for Transformation and the resultant policies are summarized through eight key themes. These applicable goals have become the goals of the Official Plan:

- Strong and Diverse Communities;
- A Robust and Prominent Countryside;
- A Diverse Economy;
- A Vibrant and Thriving Downtown;
- A Green and Sustainable City; and
- Directing Growth to Appropriate Locations.

With respect to the goal of a vibrant and thriving downtown, the Province has identified the Vaughan Metropolitan Centre (VMC) as a provincially designated Urban Growth Centre, recognizing its location along the Highway 7 Viva corridor and at the terminus of the Spadina Subway. The VMC is envisioned to become the City of Vaughan's downtown – the highest density node within the City and a focus for civic activities, business, shopping, entertainment and living. The VMC can accommodate a significant amount of Vaughan's planned residential and employment growth and it is an appropriate location for major Institutional uses. Through planning, design, programming and investment, the VMC *will be the focus of Vaughan's identity*.

There are a number of other growth centres (Primary and Local Centres) in close proximity to the Langstaff Road Class EA study area:

- Vaughan Mills Centre;
- Concord GO Centre;
- Weston Road / Highway 7 Secondary Plan area; and
- Carrville Centre.

Vaughan Mills Centre is a 146-hectare site located between Rutherford Road and Bass Pro Mills Drive adjacent to Highway 400 and just north of the Langstaff Road Class EA study area. There is potential for a complete, walkable and mixed-use community with 4,300 residences and 10,900 jobs.

The Concord GO Centre is a 162-hectare site located adjacent to Highway 7, south of the Langstaff Road Class EA study area. This area is planned for mixed-use, higher density developments and inter-urban transit supportive land use. The area is expected to accommodate 4,000 to 8,000 residents and 8000 to 10,000 jobs.

The Weston Road / Highway 7 Secondary Plan area is one of the primary centres and is currently undergoing the planning process for its Secondary Plan and Transportation Master Plan in developing a vision for an urban mixed-used community in the next 30 years and beyond.

Selected Official Plan Schedules are provided in **Exhibits 3-10**, **3-11** and **3-12** and key aspects are summarized below:

- The Vaughan Metropolitan Centre is identified as an intensification area;
- Lands adjacent to Langstaff Road between Weston Road and Dufferin Street are designated for employment;

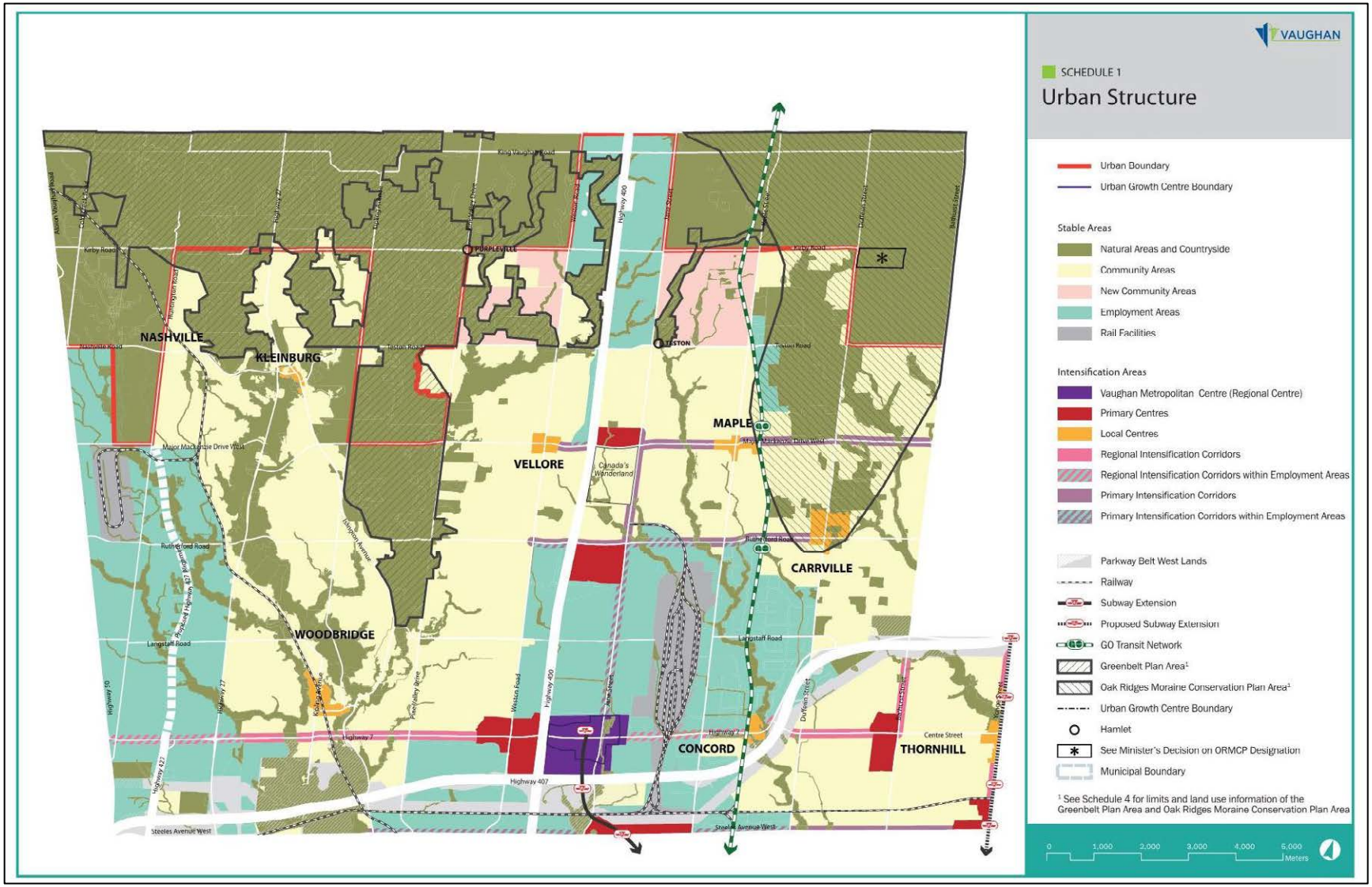
- Lands east of Dufferin Street are designated residential;
- Langstaff Road is identified as a *Proposed New Road Link* between Keele Street and Jane Street;
- Interchange improvements are identified for the Highway 400 / Langstaff Road interchange;
- A rail grade separation is identified for the GO Transit Barrie Line crossing, east of Keele Street;
- Core features of the Natural Heritage Network are identified in three locations: within the Highway 400 interchange; along the valley crossing just east of Keele Street; and at the woodland located in the northeast quadrant of Langstaff Road and Dufferin Street.

Further, the City's OP provides direction in transforming the transportation network within the City. Though the jurisdiction of Langstaff Road remains at the municipal upper-tier level (i.e. York Region), the OP notes the following policies applicable to this Class EA study:

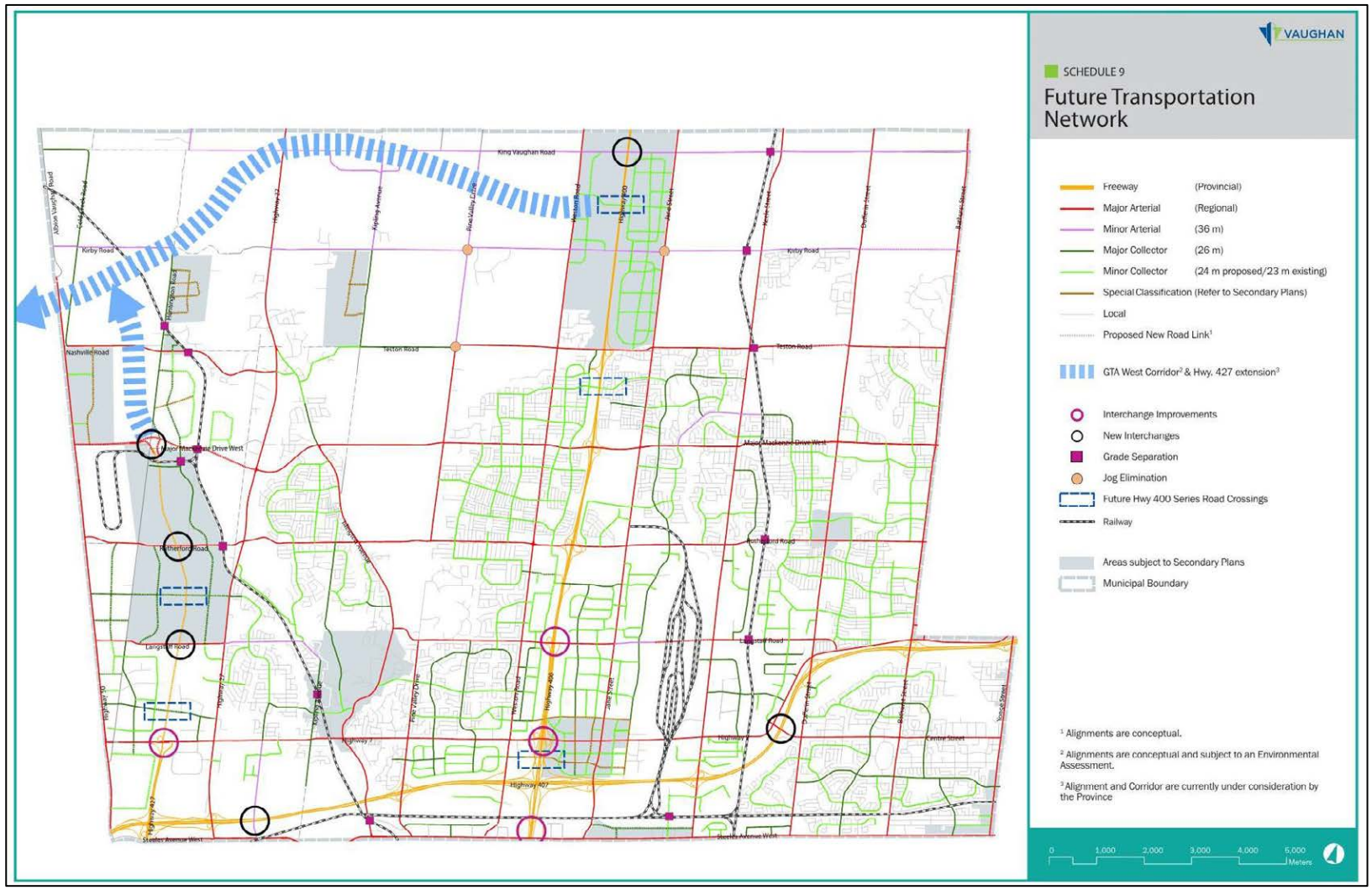
- To implement the various improvements to the street network identified on Schedule 9 in coordination with the York Region, appropriate agencies, utility providers and adjacent municipalities and secure land for such purposes through the development approvals process, improvements include widening as per the right-of ways identified on Schedule 9; completion of incomplete grid connections such as Langstaff Road over the rail corridor, Kirby Road and Teston Road; jog eliminations at intersections; new and improved interchanges with 400-series highways; mid-block crossings of 400-series highways; and, grade separated rail and highway crossings.
- The street network will be the basis for enhanced transportation opportunities, including transit, walking, cycling, and placemaking initiatives. Existing rights-of way should be designed to optimize the efficient movement for a variety of modes, potentially resulting in reduced capacity for cars where overall capacity increases can be achieved.
- To develop a connected and continuous, grid-like street network that supports convenient and efficient travel by all modes of transportation and to discourage the development of street types that disrupt the grid network.
- To plan for a street network that prioritizes safe and efficient pedestrian travel while effectively accommodating cyclists, transit and other vehicles, and to create more pedestrian and transit friendly street cross-sections.

For more information, the City of Vaughan Official Plan may be accessed at the following link: https://www.vaughan.ca/projects/policy_planning_projects/official_planning_2010/Pages/default.aspx

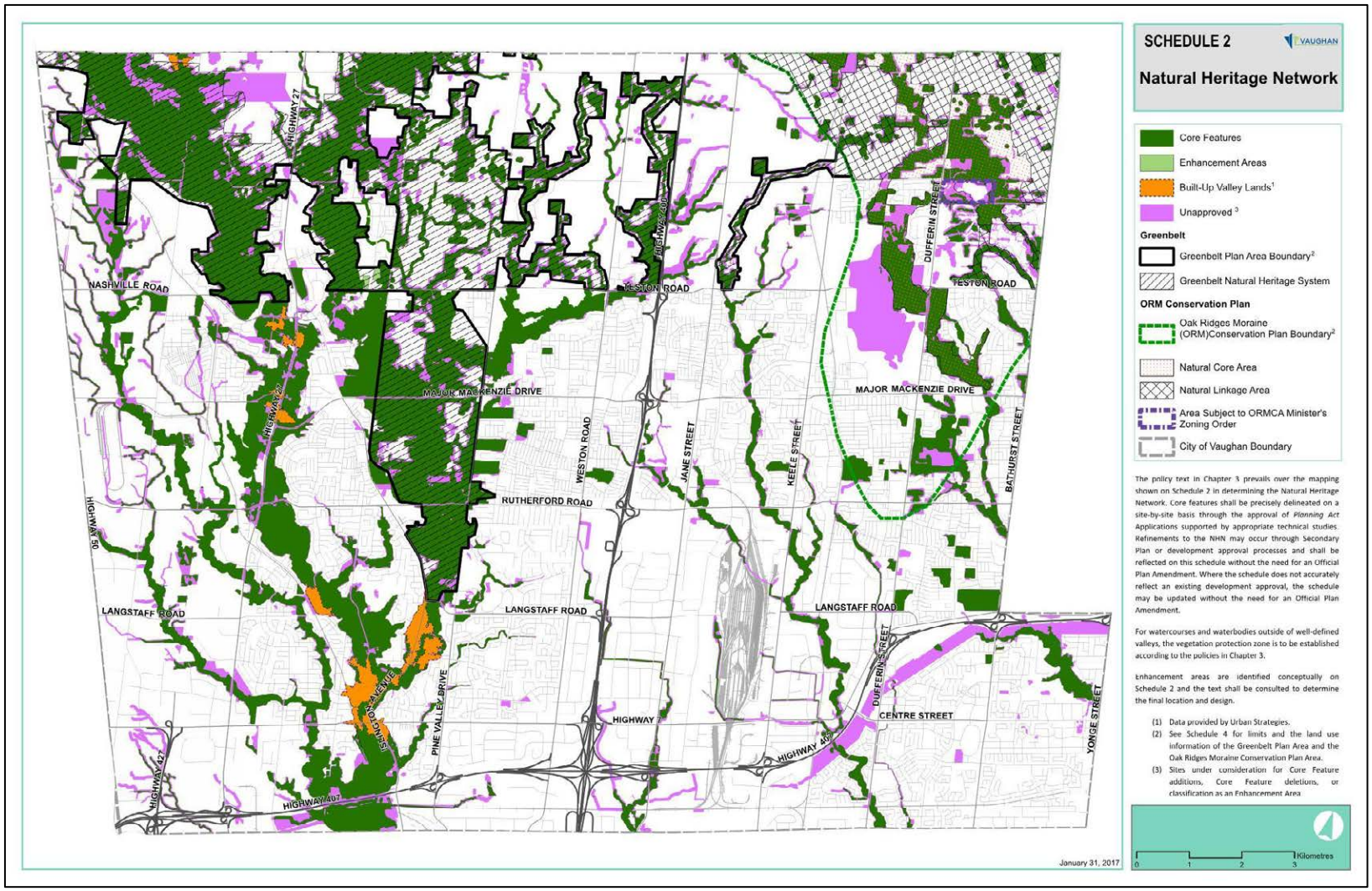
## Exhibit 3-10: City of Vaughan Urban Structure



## Exhibit 3-11: City of Vaughan Transportation System



## Exhibit 3-12: City of Vaughan Natural Heritage Areas



### 3.3.2 City of Vaughan Transportation Master Plan (2012)

The City of Vaughan's Transportation Master Plan ("TMP"), 2012, identified key transportation issues and provided strategic direction on options to set the stage for development of a long-range transportation vision. The City articulated a vision and policy framework for transportation in Vaughan through to the year 2031 and identified the policy and program initiatives needed to support the preferred alternative. It should be noted that the City is currently undergoing an update of the City-wide Transportation Master Plan which commenced in November 2019. For the purpose of the Langstaff Road Class EA study, the discussion in this section will be based on the 2012 TMP. More information can be found on the City's of Vaughan website Vaughan.ca/transportationplan.

The City's TMP acknowledges the following, consistent with this Study:

*A connection of Langstaff Road between Creditstone Road and Keele Street would increase the traffic movements at the Highway 400/Langstaff Road interchange, thus relieving the Highway 7/400 and Rutherford/400 interchanges. This new connection would provide a substantial increase in east-west capacity and would provide significant relief to both Highway 7 and Rutherford Road, including reductions in truck traffic. Such a connection would also contribute to the better accommodation of truck traffic and delivery service to the many firms in the surrounding industrial areas*.

While the Langstaff Road Class EA study is being completed under the jurisdiction of the upper-tier regional level (i.e. York Region), the roadway improvements will be consistent to the local municipal road network vision as it will improve the transportation network at both a regional and local scale.

### 3.3.3 City of Vaughan Pedestrian and Bicycle Master Plan (2020)

The 2020 City of Vaughan Pedestrian and Bicycle Master Plan provides a strategic plan to support the advancement of active transportation across Vaughan to create a more walkable and bikeable city. With a steady increase in societal and governmental interest, support and understanding of walking and cycling as a viable and healthy mode of transportation over the last 10 years, in 2017, the City initiated an update to their original 2007 plan. Since 2007, demand for safer active transportation infrastructure has grown and there has been significant advancement in strategies,

policies, legislation and guidelines for the planning, design, implementation, education, and operation of safer pedestrian and cycling networks.

The plan acknowledges that regional corridors play a critical role in the pedestrian and cycling networks as they represent the most direct routes within the City and are the location of many of the key destinations and amenities. Through the City's study, Langstaff Road was identified as a key priority regional corridor for active transportation. Through the 2020 Pedestrian and Bicycle Master Plan Study, the City adopted a framework for selecting cycling facilities for all ages and abilities that provides the standard to which new cycling facilities being implemented are to meet. In general, the proposed sidewalk and cycle track that emerged as the preferred alternative to accommodate pedestrians and cyclists through the Langstaff EA study align with the City's framework for facility selection.

### 3.3.4 Green Directions Vaughan (2019)

Green Directions Vaughan was first approved by Council in 2009 as the City of Vaughan's Community Sustainability and Environmental Master Plan. As a living document, the actions and priorities in the Green Directions Vaughan have evolved since 2009. In 2019, Council adopted the new 2019 Green Directions Vaughan. The Green Directions Vaughan outlines the City's approach to maintaining a healthy natural environment, vibrant communities and a strong economy by defining six goal areas. These goal areas are further broken down into objectives and sustainability actions.

The following objectives and sustainability actions were considered in the Langstaff Road Class EA study:

**Objective 2.1** – To ensure a climate resilient City and build capacity for local action on climate change.

- 2.1.2 Promote green infrastructure (e.g., street trees, stormwater ponds, LIDs, woodlands, pollinator habitat, etc. to build resilience and mitigate the effects of climate change. Revise green infrastructure design standards, as needed, for climate adaptation.

**Objective 2.2** – To develop Vaughan as a complete community with maximum greenspace and urban form that supports our expected population growth.

- 2.2.2 Develop and implement a land securement strategy for parks, open spaces, trails, woodlands and other natural features, low impact development installations, and community facilities. Inventory the achievements as green infrastructure assets, as appropriate.

**Objective 2.3** – To develop and sustain a network of sidewalks, paths and trails that supports all modes of non-vehicular transportation.

- 3.1.2 Plan and implement a complete streets framework and guidelines to create a safe and attractive environment for all modes of transportation.
- 3.1.3 Maintain non-vehicular networks, such as pedestrian and cycling pathways to support active transportation and enhance safety, accessibility and adaptability.

**Objective 3.3** – Reduce single occupant vehicle (SOV) trips by supporting active transportation, car pooling and public transit.

- 3.3.2 Collaborate with York Region and seek community partners to implement transportation demand management initiatives to reduce traffic congestion and promote transit and active transportation.

### 3.3.5 Vaughan Metropolitan Centre Secondary Plan (2017)

The Vaughan Metropolitan Centre (VMC), as identified in the City of Vaughan's Official Plan, extends from Highway 400 in the west, to Creditstone Road in the east, and from Portage Parkway in the north, to Highway 407 in the south (**Exhibit 3-13**). The VMC is located northeast of the Highway 400 and Highway 407 interchange. In addition to the so defined VMC lands, the Vaughan Official Plan also defines the former Vaughan Corporate Centre area into lands west of Highway 400 and east of Weston Road as a Primary Centre; and lands east of Creditstone Road and west of the CN Rail lands are designated as an Employment Area.

The Vaughan Metropolitan Centre Secondary Plan, 2017, constitutes a part of the City of Vaughan Official Plan was originally approved by the City of Vaughan Council in September 2010 and is intended to guide and regulate development of the Vaughan Metropolitan Centre. The Secondary Plan was partially approved by the Ontario Municipal Board on November 18, 2015, November 18, 2016 and January 23, 2017.

It should be noted that the City is currently undergoing an update of the VMC Secondary Plan which commenced in November 2020. For the purpose of the

Langstaff Road Class EA study, the discussion in this section will be based on the previously approved Secondary Plan. More information can be found on the City's of Vaughan website myvmc.ca/studies-plans/.

The VMC Urban Growth Centres (UGC) is unique amongst the 25 designated UGCs in the *Growth Plan* as it has the greatest potential and is the least developed of all the UGCs. It is one of only two UGCs outside of Toronto that is being served by a subway; it has excellent highway access; and it is not directly adjacent to existing low-density residential fabric.

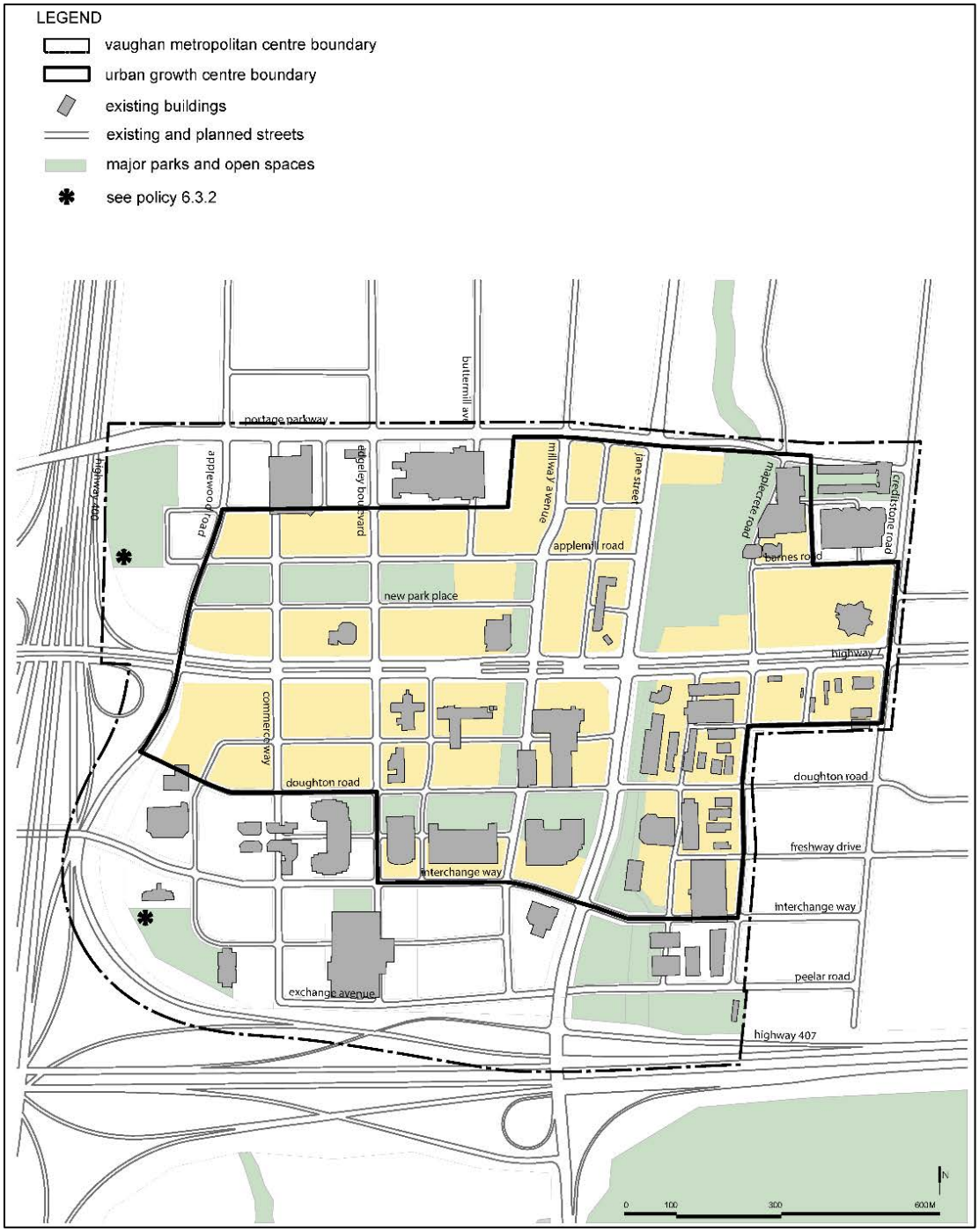
Complementary to the VMC's status as an Urban Growth Centre is its designation as an Anchor Mobility Hub in the Metrolinx's Regional Transportation Plan (RTP). This designation reflects the fact that the VMC is the place where two rapid transit lines – the Spadina Subway and VIVA's Highway 7 line – intersect and converge with the regional bus network. The York Region bus terminal and the VMC TTC Station are located along Millway Avenue in VMC and are connected underground.

Anchor Mobility Hubs are envisaged as the "anchors" of a successful regional transportation network and are recommended to achieve a density of 200-400 people and jobs per hectare. Mobility hubs are ideal locations to develop transit supportive residential and employment densities and should evolve as vibrant places of activity and major regional destinations.

The City of Vaughan Official Plan notes that the VMC will comprise distinct development precincts including residential neighbourhoods, office districts, employment areas and mixed-use areas, all linked by a robust system of parks, squares and open spaces and a fine-grain grid pattern of streets. It establishes growth targets for the VMC of 12,000 residential units and 6,500 new jobs by 2031. The VMC is being planned to become the City's "downtown". Many of the developments have already taken placed and the area is experiencing rapid growth.

The Secondary Plan proposes new local road connections and improvements to the existing local system within the VMC to enhance the connectivity within the centre and with regional roads. The Secondary Plan acknowledges that improvements to Regional roads, including the connection of Langstaff Road across CN Rail lands, improvements to the Highway 400 / Langstaff Road interchange and provision for active transportation and local transit will enhance the overall function of the VMC.

## Exhibit 3-13: Vaughan Metropolitan Centre




*Source: Vaughan Metropolitan Centre Secondary Plan (2017), Schedule A*

### 3.3.6 Vaughan Metropolitan Centre and Surrounding Areas Transportation Study (2013)

The Vaughan Metropolitan Centre (VMC) has been the subject of several transportation studies, the Secondary Planning process described in **Section 3.3.3**, its transit corridor and several environmental assessment studies. These studies have provided direction for specific policies and infrastructure needs to be implemented within the VMC area. However, questions related to the feasibility, cost and operations associated with specific transportation infrastructure recommendations and truck traffic required more detailed analysis.

The purpose of the Vaughan Metropolitan Centre and Surrounding Areas Transportation Study was to further define the transportation infrastructure needed to facilitate planned (and potential) development within the VMC and surrounding areas to ensure feasibility from a technical perspective. The Study, undertaken jointly by the City of Vaughan and York Region, reviewed transportation network issues that had been identified in previous work, including the Highway 400 / Langstaff Road Interchange and the Langstaff Road Extension which are described below.

It should be noted that the City is currently undergoing an update of the VMC Transportation Master Plan which commenced in Fall 2020. For the purpose of the Langstaff Road Class EA study, the discussion in this section will be based on the previously approved Transportation Study. More information can be found on the City's of Vaughan website myvmc.ca/studies-plans/.

*Highway 400 / Langstaff Road Interchange*

The VMC and Surrounding Areas Transportation Study indicated that the provision of a full interchange at Highway 400 and Langstaff Road would greatly improve accessibility to the VMC and surrounding areas, assist in diverting auto and truck traffic from the full movement interchanges at Highway 7 and Rutherford Road and provide an alternate truck route for the industrial lands located west of the CN MacMillan Rail Yard.

The analysis findings showed benefits of providing a full interchange at Highway 400 / Langstaff Road and indicated that the Weston Road and Jane Street corridors between Rutherford Road and Langstaff Road would experience a reduction in traffic volumes as well as reduced traffic volumes on Highway 400 northbound.

*Langstaff Road Extension*

A key network recommendation from the VMC Transportation Study was the connection of Langstaff Road across the CN MacMillan Rail Yard between Creditstone Road and Keele Street as it would aid in the reduction of traffic volumes on both Highway 7 and Rutherford Road, provide alternate routes for truck traffic and provide better servicing options to the industries located in the area, as well as improve the Regional travel linkages from Keele Street westerly to Islington Avenue.

Three concept corridors for the Langstaff Road crossing of the rail yard: a north alignment, a centre alignment and a south alignment were discussed with CN Rail.

*Study Conclusions*

- The study concluded that Langstaff Road improvements would offer substantial benefits to the operation of the overall transportation network, addressing existing and projected traffic congestion on other east-west routes including Highway 7 and Rutherford Road and improving access to VMC and existing / planned industrial development within the VMC and surrounding area.
- The study supported the general feasibility of the Langstaff Road extension and full movement interchange at Highway 400 and identified the technical issues to be addressed in subsequent, more detailed studies.
- The study recommended that these improvements be implemented together in the 'medium-term' (2017 to 2031).

### 3.3.7 Concord GO Centre Secondary Plan (2015) and Transportation Master Plan (on-going)

The Concord GO Centre Secondary Plan (2015) provides policy direction for the potential new Concord GO Centre station area, located on Highway 7 to the east of the CN MacMillan Rail Yard. In late 2018, the City of Vaughan initiated the Transportation Master Plan for the Concord GO Centre along with the already ongoing Concord GO Mobility Hub Study.

The Concord GO Centre Transportation Master Plan study was initiated to develop a multi-modal transportation network by assessing options for street connectivity, accessibility and mobility. The study also considers the impact of a new potential GO Train Station in the study area. More information can be found on the City's website Vaughan.ca/ConcordGOCentre.

### 3.3.8 Bass Pro Mills Drive Extension EA (on-going)

The City of Vaughan is undertaking a Municipal Class Environmental Assessment study to assess the need to extend Bass Pro Mills Dive, from Highway 400 to Weston Road, as recommended in the Vaughan Mills Centre Secondary Plan (2014). This extension is anticipated to provide a new major collector roadway that unites neighbourhoods from Weston Road to Jane Street, redistribute east-west traffic and alleviate congestion on Rutherford Road. This study is still ongoing at the time of the Langstaff Road Class EA ESR filing. For more information, visit the study website at www.Vaughan.ca/BassProMillsEA.

## 3.4 Other Related Planning Context Components

### 3.4.1 Highway 400

The Ontario Ministry of Transportation (MTO) is currently implementing High Occupancy Vehicle (HOV) lanes on Highway 400 from Major Mackenzie Drive to King Road with a target completion date in Fall 2021. MTO has indicated an interest to consider pursuing extending HOV lanes on Highway 400 to south of Major Mackenzie Drive, including through the Langstaff Road interchange area, in the future. Currently, there are no timeframes identified for this work.

### 3.4.2 Canadian National Railway (CN) MacMillan Rail Yard

The Canadian National Railway (CN) MacMillan Rail Yard is the second largest rail classification yard in Canada, after the CN Symington Yard in Winnipeg, Manitoba. It is named after former CN president Norman John MacMillan. A classification yard is where trains are marshalled / organized into new train blocks for their destinations. These train blocks can be combined to form new trains.

The CN MacMillan Rail Yard is located at the junction of the CN York Subdivision and CN Halton Subdivision. The yard measures approximately 4 km in length and 1.6 km in width with a north-south orientation. The property is bordered by four main roads: Highway 7 to the south, Keele Street to the east, Rutherford Road to the north, and Creditstone Road to the west. There are five road entrances into the yard which are designated as: S Yard, Jane Street, CargoFlo, Bowes Street, and Administration Road.

Much of the yard is comprised of side-by-side track, switches, humps, and control tower buildings. The yard is designed to take incoming trains and reorganize and rejoin the individual rail cars based on destination to create new departing trains. The yard operates 24 hours a day and handles over 1 million rail cars (loads and empties) per year. In addition to rail car handling, other yard facilities include locomotive repair, rail car washing, and rail car repair. Additional detail regarding the yard operations can be found in **Section 6.1.4** of this report.

The yard was developed in the late 1950s as part of CN's redesign of its Toronto track network. At the time of construction, Vaughan was a largely rural community, however, subsequent development on adjacent properties has created an industrial area surrounded by a variety of industrial consignors, distributors, and suppliers. Some commercial establishments (e.g., restaurants, retail and wholesale outlets) are located along the perimeter of the yard.

CN Rail has been engaged by York Region as a stakeholder during the Langstaff Road Class EA study and has indicated that currently there are no plans for operational change or improvements / expansion of the CN MacMillan Rail Yard. CN Rail will continue to be engaged through the Langstaff Road Class EA study and any evolving plans by CN Rail will be incorporated into the study, as appropriate.

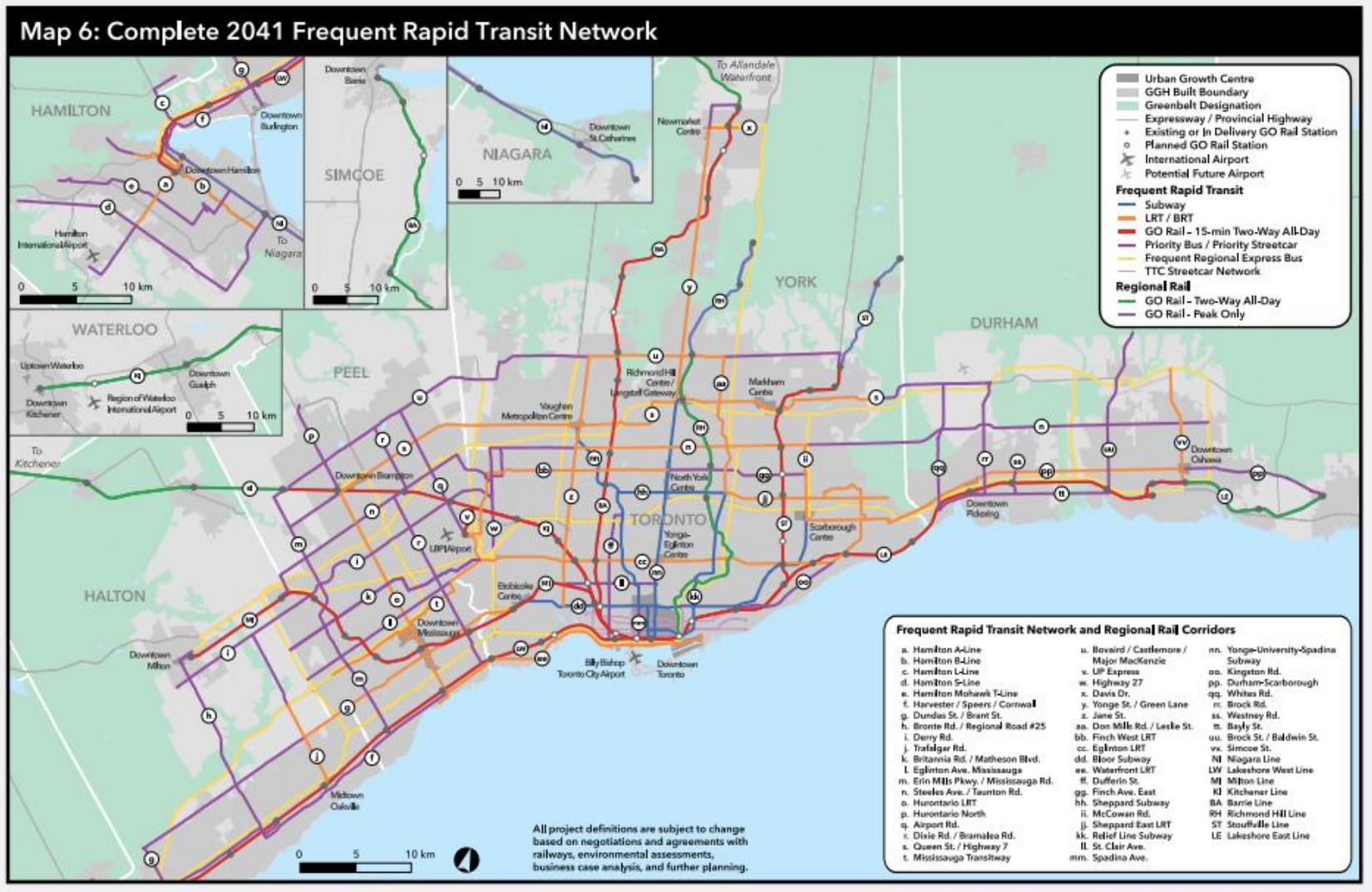
### 3.4.3 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area (2018)

The 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area (“2041 RTP”), 2018, succeeded The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area (“The Big Move”), 2008. The 2041 RTP provides strategies and policy direction to achieve the goal of improving active transportation within the Greater Toronto and Hamilton Area (GTHA); the 2041 RTP cites the Plan’s mission to help guide the increased access to fast, frequent and reliable transit, and to provide easier use to transit, travel by bike or on foot for travellers. 2041 RTP outlines five strategies:

1. Complete the delivery of current regional transit projects
2. Connect more of the region with frequent rapid transit
3. Optimize the transportation system
4. Integrate transportation and land use
5. Prepare for an uncertain future

The 2041 RTP identifies the Barrie GO Transit passenger rail service line as part of Metrolinx's commitment to continue building GO Transit's Regional Express Rail, which extends to 2051 and beyond. The 2041 RTP indicates Metrolinx's intention to operate the two-way, all-day passenger rail service on the GO Transit Barrie Line at 15-minute intervals; this is illustrated in **Exhibit 3-14**. The anticipated increased service will create more frequent road blockages at the existing at-grade Langstaff Road crossing, located just east of Keele Street. In consideration of the increased rail service, this Study identifies and evaluates various alternatives to mitigate anticipated traffic congestion.

## Exhibit 3-14: Complete 2041 Frequent Rapid Transit Network in the Greater Toronto and Hamilton Area



## 3.5 Summary of the Planning and Policy Framework

Several progressive objectives, policies and actions are embedded in many of York Region's Council-approved plans that support the undertaking of the Langstaff Road Class EA study and the consideration of improvements to Langstaff Road, including completion of a road connection across the CN MacMillan Rail Yard and improvements to the Langstaff Road interchange at Highway 400.

York Region's Vision 2051, York Region Official Plan (2010), the Strategic Plan (2019-2023) and the Transportation Master Plan (2016) include the necessary foundation and framework for making decisions about Langstaff Road that fully evaluate economic, environmental and community considerations. The City of Vaughan Official Plan, the City of Vaughan TMP, the VMC Secondary Plan and Surrounding Areas Transportation Study also provide growth and transportation planning and analysis that recommends improvements to Langstaff Road as a vital part of an efficient transportation network. Additionally, the considerations of the on-going Weston Road / Highway 7 Transportation Master Plan (TMP) and Concord GO Centre TMP studies provide general future context of the surrounding nodes of population, employment and multi-modal hubs that are in proximity to Langstaff Road.

The York Region TMP outlines objectives related to active transportation, including developing a road network fit for the future that provides opportunities to support all modes of travel within the Region's right-of-way; integrating active transportation in urban areas to promote the use of alternative travel modes which will help the Region reach its sustainable transportation objectives to reduce single-occupant vehicle trips; and, making the last mile work, meaning increasing the adoption of transit and active transportation while lowering the amount of single-occupant vehicle use especially during peak periods.

From the City of Vaughan planning documents, the 2020 Pedestrian and Bicycle Master Plan provides a strategic plan to support the advancement of active transportation across Vaughan to create a more walkable and bikeable city, in particular along Langstaff Road. The Green Directions Vaughan (2019) also outlines objectives and sustainability actions, such as developing and sustaining a network of sidewalks, paths and trails that support all modes of non-vehicular transportation and reducing single occupant vehicle trips by supporting active transportation, car pooling and public transit, for the City of Vaughan to maintain a healthy natural environment, vibrant communities and a strong economy.

In addition, York Region's Designing Great Streets Guidelines (2019) aids in shifting the focus from planning for vehicle capacity to planning for streets that provide greater mobility for all users and greater integration with the community. The Langstaff Road Class EA study is consistent with the Guidelines vision *to create vibrant streets for York Region to provide a range of safe and reliable transportation options, while being sensitive to adjacent land uses and needs of the community*.

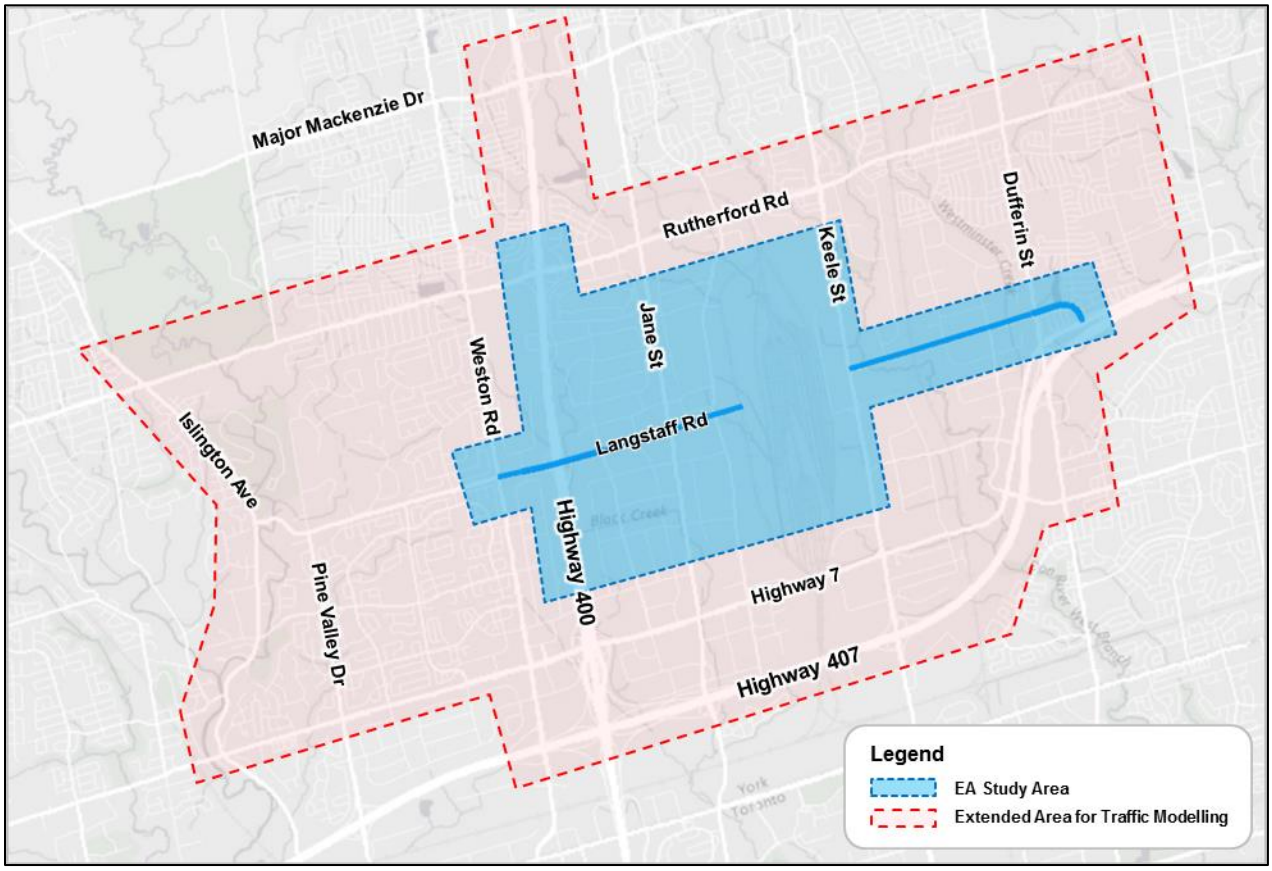
The Langstaff Road Class EA study builds on this planning history and policy framework to deliver a study that looks to: improve mobility for residents and businesses; position the Region to respond to the forecasted population and employment growth; and support the successful implementation of the Vaughan Metropolitan Centre, a Provincial Growth Plan-designated Urban Growth Centre.

# 4 TRANSPORTATION ASSESSMENT

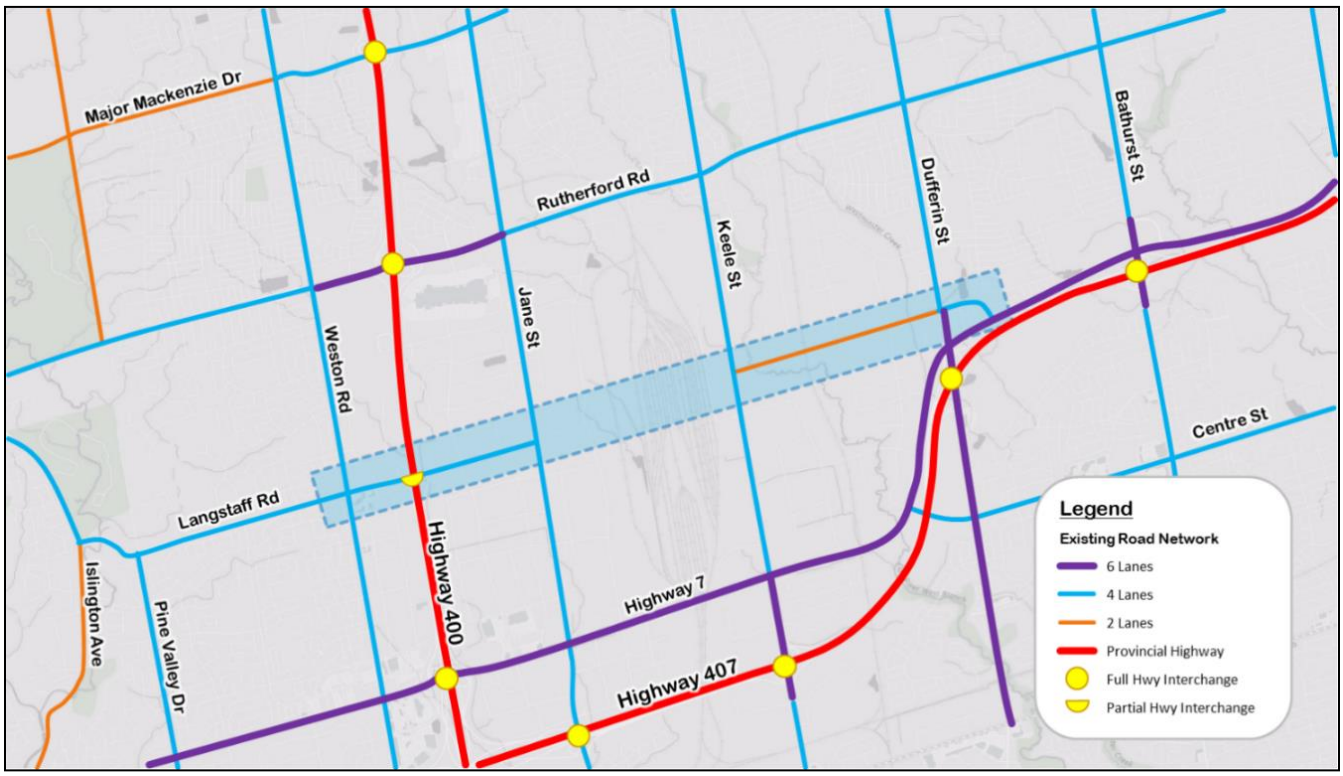
## 4.1 Travel Demand Analysis Study Area

As noted in the introduction to this report, the primary study area for the Langstaff Road Class EA study runs from Weston Road to Highway 7. The travel demand analysis considered an extended area beyond the primary study area, bounded by Rutherford Road to the north, Thornhill Woods Drive to the east, Highway 7 to the south and Islington Avenue to the west. This expanded area allowed for a comprehensive travel demand analysis and review of the impacts associated with potential Langstaff Road improvements. The study area is depicted in **Exhibit 4-1** and the existing Regional road network surrounding the study area is shown in **Exhibit 4-2**.

### Exhibit 4-1: Langstaff Road Class EA Travel Demand Study Area



## Exhibit 4-2: Existing Regional Road Network Surrounding the Langstaff Road Class EA Study Area




Langstaff Road, as it relates to this Class EA study, is a Regional arterial road that runs between Islington Avenue to the west and Highway 7 to the east. The segment of Langstaff Road under consideration in this Class EA study, between Weston Road and Highway 7, is approximately 6 km in length. Due to the location of the CN MacMillan Rail Yard, Langstaff Road is discontinuous between Jane Street and Keele Street; the western segment is currently a four-lane roadway, whereas the eastern segment operates with a two-lane cross-section. A short segment of Langstaff Road west of Jane Street (terminating at the CN MacMillan Rail Yard) is a four-lane collector road under the jurisdiction of the City of Vaughan. **Exhibit 4-2** presents the Langstaff Road study area, including the surrounding Regional road network.

Langstaff Road is connected to Highway 400 through a partial interchange that provides access to and from the south (excluding Highway 407). Highway 400, a provincial highway, is an important element of the transportation system supporting the function and growth of York Region. While it may impose a physical barrier between communities on either side of the highway, its location in the study area serves major business centres and employment areas in the City of Vaughan.

Land uses adjacent to Langstaff Road, between Weston Road and Dufferin Street, are predominately commercial and industrial, whereas land uses between Dufferin Street and Highway 7 are primarily residential. The mix of land use within the Langstaff Road Class EA study area and the discontinued sections of the road due the CN MacMillan Rail Yard pose substantial constraints to the transportation network and require consideration of transportation needs to facilitate a safe, sustainable and efficient travel environment for residents and businesses for the future.

## 4.2 Existing (2016) Traffic Conditions

### 4.2.1 Existing Intersection Lane Configuration

The existing intersection lane configuration and intersection control type for the Langstaff Road Class EA study area is presented in **Exhibit 4-3**. There is a total of 15 signalized intersections, one stop-controlled intersection and one at-grade railway crossing.

### 4.2.2 Existing (2016) Traffic Volumes

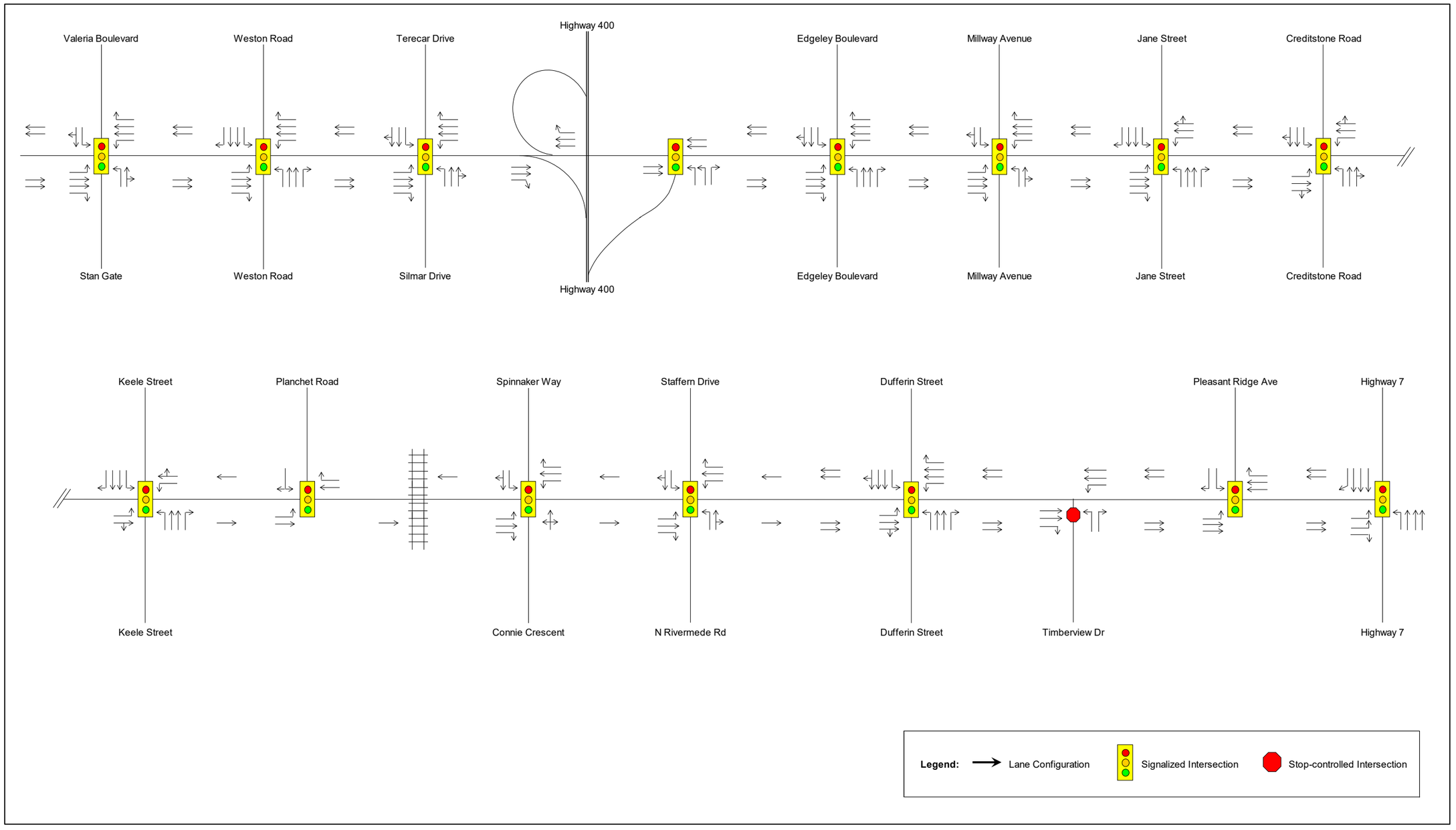
Turning movement counts (TMC) for all regional road intersections were provided by the Region for the purpose of analyzing existing traffic operations. TMC data and automatic traffic record (ATR) counts were also collected from the City of Vaughan, Ontario Ministry of Transportation (MTO) and 407ETR for intersections and ramps, under their respective jurisdictions. Additional details are found in the Traffic Analysis Report (**Appendix D**).

The traffic data was reviewed and balanced to reflect existing conditions on Langstaff Road. Exhibit 4-4 presents the peak hour turning movement volumes representative of typical 2016 weekday conditions. The following morning and afternoon peak periods and peak hours are:

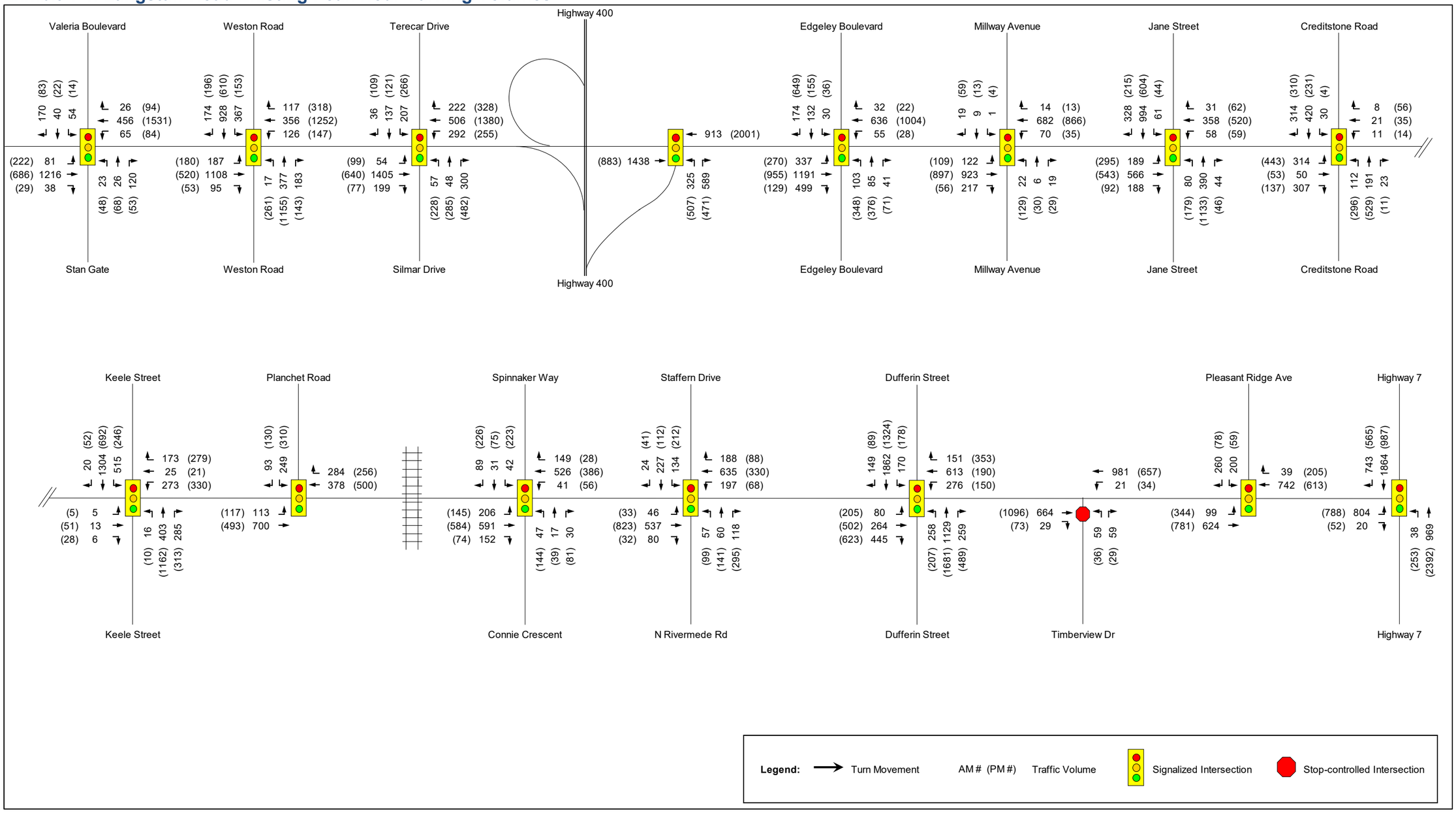
- Morning Peak Period – 06:00 am – 09:00 am
- Morning Peak Hour – 08:00 am – 09:00 am
- Afternoon Peak Period – 03:00 pm – 06:00 pm
- Afternoon Peak Hour – 05:00 pm – 06:00 pm

Available ATR counts were also obtained from York Region to assist in estimating traffic demand on Langstaff Road. These counts reflect the following mid-block locations: Weston Road to Silmar Drive, Highway 400 to Edgeley Boulevard, Millway Avenue to Jane Street, Keele Street to Planchet Road, Staffern Drive/North Rivermede Drive to Dufferin Street and Dufferin Street to Timberview Drive. All of this available information was considered in establishing the turning movement volumes for the study area.

## Exhibit 4-3: Langstaff Road Existing Intersection Lane Configurations



## Exhibit 4-4: Langstaff Road Existing Peak Hour Turning Volumes



### 4.2.3 Existing (2016) Intersection Operations

An evaluation of the existing operations for the intersections along Langstaff Road was performed using an Aimsun-based micro-simulation model. Aimsun is a fully integrated traffic modelling software that incorporates macro-scopic functionalities with meso-scopic and micro-scopic traffic simulation. It facilitates detailed assessments of traffic operations along Langstaff Road, combined with dynamic traffic route choice assignment options relating to the local road network for the study area. The development and calibration of the Aimsun micro-simulation model are detailed in the Traffic Analysis Report, provided in **Appendix D**.

The travel demand was extracted from the York Region Travel Demand Forecasting (YRTDF) model for the 2016 planning horizon and applied in the Aimsun micro-simulation model. The demand was subsequently adjusted to meet the existing Langstaff Road peak hour turning movement volumes, presented above in Exhibit 4-4. Current signal timing plans, provided by York Region and the City of Vaughan, were incorporated for all the signalized intersections within the Langstaff Road Class EA study area corridor. The signal timing plans for the extended study area were obtained for all major intersections between Regional roads, and signal timings for minor intersections (i.e. accesses connecting Rutherford Road and Highway 7) were optimized using Synchro and estimated traffic demand.

The existing traffic operating performance was assessed based on delays, Level of Service (LOS) and queuing conditions. **Table 4-1** summarizes the criteria on which the LOS was determined.

#### Table 4-1: Intersection Level of Service Criteria

| Level of Service | Average Delay Per Vehicle (seconds) | |
|---|---|---|
| | Signalized Intersections | Stop-controlled Intersections |
| -A | ≤ 10 | ≤ 10 |
| B | > 10 and ≤ 20 | > 10 and ≤ 15 |
| C | > 20 and ≤ 35 | > 15 and ≤ 25 |
| D | > 35 and ≤ 55 | > 25 and ≤ 35 |
| E | > 55 and ≤ 80 | > 35 and ≤ 50 |
| F | > 80 | > 50 |

Summaries of weekday morning and afternoon peak hour intersection operations along Langstaff Road from Weston Road to Highway 7 are presented in **Table 4-2** and **Table 4-3**, respectively. It presents the overall intersection delays and LOS, as well as the delays, LOS and 95$^{th}$ percentile vehicular queue lengths for critical movements (i.e., operating at LOS E or

F). These critical movements indicate operational issues resulting in long delays and potential congestion.

### Table 4-2: Langstaff Road Intersection Level of Service (LOS) Summary and Critical Movements – Morning Peak Hour (8:00 am to 9:00 am)

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Stan Gate/Valeria Blvd | 11 s | B | NBL | 58 s | E | 23 m |
| | | | NBTR | 70/16 s | E/B | 23 m |
| | | | SBTR | 60/16 s | E/B | 44 m |
| Weston Rd at Langstaff Rd | 35 s | C | WBL | 87 s | F | 61 m |
| Langstaff Rd at Silmar Dr/Terecar Dr | 18 s | B | NBL | 60 s | E | 9 m |
| | | | SBL | 60s | E | 28 m |
| | | | SBTR | 58/17 s | E/B | 19 m |
| Hwy 400 East Ramp Terminal at Langstaff Rd | 13 s | B | - | - | - | - |
| Langstaff Rd at Edgeley Blvd | 14 s | B | NBL | 56 s | E | 39 m |
| | | | NBTR | 65/59 s | E/E | 9 m |
| | | | SBTR | 56/14s | E/B | 53 m |
| Langstaff Rd at Millway Ave | 8 s | A | NBL | 59 s | E | 33 m |
| | | | NBTR | 63/26 s | E/C | 12 m |
| | | | SBL | 61 s | E | 3 m |
| | | | SBTR | 63/17 s | E/B | 15 m |
| Jane St at Langstaff Rd | 24 s | C | EBL | 70 s | E | 55 m |
| | | | EBTR | 56/22 s | E/C | 86 m |
| Langstaff Rd at Creditstone Rd | 11 s | B | - | - | - | - |
| Keele St at Langstaff Rd | 18 s | B | WBL | 59 s | E | 64 m |
| Langstaff Rd at Planchet Rd | 11 s | B | SBL | 56 s | E | 36 m |
| Langstaff Rd at Connie Cres/Spinnaker Way | 20 s | C | NBL | 58 s | E | 19 m |
| | | | NBTR | 55/9 s | E/A | 16 m |
| | | | SBL | 62 s | E | 65 m |
| | | | SBTR | 62/15 s | E/B | 28 m |
| Langstaff Rd at North Rivermede Rd/Staffern Dr | 31 s | C | NBL | 95 s | F | 66 m |
| | | | NBTR | 55/33 s | E/C | 74 m |

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Dufferin St at Langstaff Rd | 72 s | E | EBL | 56 s | E | 27 m |
| | | | WBL | 134 s | F | 165 m |
| | | | NBL | 151 s | F | 194 m |
| | | | SBL | 100 s | F | 34 m |
| | | | SBTR | 101/88 s | F/F | 281 m |
| Langstaff Rd at Timberview Dr (Stop-controlled) | 2 s | A | - | - | - | - |
| Langstaff Rd at Pleasant Ridge Ave | 15 s | B | - | - | - | - |
| Highway 7 at Langstaff Rd | 12 s | B | - | - | - | - |

During the morning peak hour, all assessed intersections operate with an overall acceptable LOS (i.e. LOS D or better) with the exception of the Langstaff Road intersection with Dufferin Street, which operates at LOS E with an average vehicle delay of 72 seconds. Critical movements operating at LOS E or F are generally observed at left turning movements due to the higher left-turning volumes and higher opposing through volumes; these critical movements are located at the major Langstaff Road intersections with Weston Road, Silmar Drive/Terecar Drive, Jane Street and Keele Street and have delays to 87 seconds at Weston Road, and 95$^{th}$ percentile queue length of 64 m at Keele Street.

For the Langstaff Road and Dufferin Street intersection, significant southbound traffic volumes combined with heavy turning movement volumes from the other approaches result in poor operations at this intersection, operating at LOS E. Simulated average delays of up to 151 seconds and 95$^{th}$ percentile queues of up to 281 m cause congestion on the approaches leading up to the intersection. It is worth noting that this intersection has a substantial eastbound right turn demand of approximately 400 vehicles, and a southbound through and right turn demand of approximately 1,900 vehicles in the morning peak hour.

### Table 4-3: Langstaff Road Intersection Level of Service (LOS) Summary and Critical Movements – Afternoon Peak Hour (5:00 pm to 6:00 pm)

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Stan Gate/Valeria Blvd | 19 s | B | EBL | 77 s | E | 76 m |
| | | | NBL | 59 s | E | 38 m |
| | | | SBL | 59 s | E | 15 m |
| Weston Rd at Langstaff Rd | 59 s | E | EBL | 187 s | F | 105 m |
| | | | WBL | 67 s | E | 89 m |
| | | | WBT | 64 s | E | 158 m |
| | | | NBL | 90 s | F | 114 m |
| | | | NBT | 57 s | E | 183 m |
| | | | SBL | 77 s | E | 45 m |
| Langstaff Rd at Silmar Dr/Terecar Dr | 36 s | D | EBL | 64 s | E | 18 m |
| Hwy 400 East Ramp Terminal at Langstaff Rd | 35 s | C | NBL | 91 s | F | 170 m |
| Langstaff Rd at Edgeley Blvd | 28 s | C | EBL | 70 s | E | 52 m |
| Langstaff Rd at Millway Ave | 14 s | B | NBL | 60 s | E | 37 m |
| | | | NBTR | 58/27 s | E/C | 21 m |
| | | | SBL | 57 s | E | 12 m |
| | | | SBTR | 61/24 s | E/C | 48 m |
| Jane St at Langstaff Rd | 32 s | C | EBL | 75 s | E | 90 m |
| Langstaff Rd at Creditstone Rd | 13 s | B | - | - | - | - |
| Keele St at Langstaff Rd | 13 s | B | - | - | - | - |
| Langstaff Rd at Planchet Rd | 21 s | C | SBLR | 56/50 s | E/D | 52 m |
| Langstaff Rd at Connie Cres/Spinnaker Way | 235 s | F | SBL | 624 s | F | 79 m |
| | | | SBR | 581 s | F | 630 m |
| Langstaff Rd at North Rivermede Rd/Staffern Dr | 27 s | C | NBL | 62 s | E | 58 m |
| | | | NBTR | 63/45 s | E/D | 102 m |
| Dufferin St at Langstaff Rd | 63 s | E | EBL | 60s | E | 101 m |
| | | | WBL | 73 s | E | 69 m |
| | | | NBL | 119 s | F | 84 m |
| | | | NBT | 98 s | F | 296 m |
| | | | SBL | 105 s | F | 22 m |

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Timberview Dr (Stop-controlled) | 2 s | A | - | - | - | - |
| Langstaff Rd at Pleasant Ridge Ave | 10 s | B | - | - | - | - |
| Highway 7 at Langstaff Rd | 16 s | B | - | - | - | - |

As presented in **Table 4-3**, the overall LOS for the afternoon peak-hour conditions are acceptable (i.e. LOS D or better) for the majority of the Langstaff Road intersections. The intersections with LOS E or F include Langstaff Road intersections with Weston Road, Connie Cres/Spinnaker Way, and Dufferin Street. For the Langstaff Road intersections with an acceptable overall LOS, the critical movements are generally left turning movements with higher traffic demands; the average delays and 95$^{th}$ percentile queues at these intersections range up to approximately 91 seconds and 170 m, respectively.

Traffic operational issues at the Langstaff Road intersections with Weston Road and Dufferin Street in the afternoon peak hour cause road congestion that extends past upstream intersections. To the west of the study area, heavy traffic volumes on the east and south approaches of the Langstaff Road and Weston Road intersection cause traffic congestion between Weston Road and Highway 400 eastern ramp terminal.

To the east of the study area, heavy traffic volumes primarily on the west and south approaches of the Langstaff Road and Dufferin Street intersection, result in traffic congestion in the northbound direction from the Highway 407 ramps and in the eastbound direction from Langstaff Road at Staffern Drive/North Rivermede Road. The northbound right turn movement is substantial during the afternoon peak-hour, corresponding to a traffic volume of approximately 670 vehicles.

## 4.3 York Region Transportation Master Plan (2016)

**Section 3.2.4** of this report reviews the key objectives and the Proposed 2041 Transportation Network of York Region's Transportation Master Plan (TMP) that constitute the planning and policy context for the Langstaff Road Class EA study. Additional aspects of the TMP that are particularly relevant to the travel demand analysis are reviewed in this section.

The TMP identifies Langstaff Road improvements between Weston Road and Highway 7 within three sections: Weston Road to Jane Street; Jane Street to Keele Street; and Keele Street to Dufferin Street. York Region has proposed network improvements in each of these

sections with a vision to build and improve transportation network connectivity, provide close live / work opportunities, promote efficient movement of goods and people, and invest in infrastructure to support future growth. These improvements include a new road crossing over the CN MacMillan Rail Yard, widening of Langstaff Road with a provision of Transit/HOV lane in each direction and Highway 400 interchange improvements.

Population and employment within the extended study area (as presented in **Table 4-4**), is expected to increase by approximately 35% from the current 2016 population of 135,698 and 16% from the current employment of 132,969 by 2041, respectively.

The increase in travel demands associated with future growth will continue to reduce the operating performance of the transportation network in the area unless additional transportation capacity and improved transportation network efficiency are provided, particularly in the east-west direction in the vicinity of the CN MacMillan Rail Yard where transportation network capacity is severely limited.

### Table 4-4: York Region Growth Targets within Extended Study Area

| Growth Targets | 2016 | | 2031 | | 2041 | |
|---|---|---|---|---|---|---|
| | Population | Employment | Population | Employment | Population | Employment |
| Total[2] | 135,698 | 132,969 | 163,771 | 147,317 | 183,388 | 154,521 |
| Increase from 2016 | - | - | 28,074 | 14,348 | 47,691 | 21,552 |
| Average Annual Growth Rate (from 2016) | - | - | 1.4% | 0.7% | 1.4% | 0.6% |

## 4.3.1 York Region Transportation Master Plan - Recommended Improvements on Langstaff Road

To address York Region's future mobility needs, the York Region TMP identifies the following improvements and implementation timing on Langstaff Road, within the study area:

- Weston Road to Jane Street (ID: 2079), Keele Street to Dufferin Street (ID: 2081)
    - Widen to six lanes with Transit/HOV lanes
        - TMP Phase (Weston Road to Jane Street): 2027 to 2031

[2] Based on the Region staff-preferred growth scenario with a 45% intensification target, presented in November 2015 as part of York Region's 2016 TMP Update.

        - TMP Phase (Keele Street to Dufferin Street): 2022 to 2026
    - Part of the Frequent Transit Network to support BRT/Rapid Transit
        - GO Transit Barrie Line Grade Separation east of Keele Street
- Jane Street to Keele Street (ID: 2080)
    - Construct connection across CN MacMillan Rail Yard
    - Provide six lanes with Transit/HOV lanes
        - TMP Phase: 2027 to 2031
    - Part of the Frequent Transit Network to support BRT/Rapid Transit

### 4.3.2 York Region Transportation Master Plan - Recommended Improvements on Other Regional Roads

The York Region TMP also recommends the following network improvements within the extended study area:

- Weston Road: Widen to six lanes including Transit/HOV lanes, from Steeles Avenue to Major Mackenzie Drive;
- Jane Street: Rapid Transit Corridor between Highway 7 and Major Mackenzie Drive;
- Keele Street: Widen to six lanes including Transit/HOV lanes from Highway 7 to Rutherford Road;
- Dufferin Street: Widening to six lanes including Transit/HOV lanes from Langstaff Road to Rutherford Road; and
- Rutherford Road/Carville Road/16th Avenue: Widening for Transit/HOV lanes from Jane Street to McCowan Road.

### 4.3.3 Strategic Goods Movement Network

As discussed in **Section 3.2.2.4** of this report, Langstaff Road, between Highway 400 and Dufferin Street, is identified as part of York Region's Strategic Goods Movement Network (SGMN). This strategic network is intended to facilitate safe and efficient movement of goods to and from key origins and destinations including Provincial highways, intermodal rail yards and commercial and industrial employment areas. Langstaff Road is designated as a Primary Arterial Goods Movement Corridor in the SGMN as it meets the following criteria:

- An urban arterial serving employment and industrial lands;

- Is expected to handle more than 2,500 trucks per 8-hour period and more than 10% modal split of medium and heavy trucks;
- Contains mixed traffic and minimal overlap with rapid transit corridors;
- Provides accessibility to employment lands; and
- Ensures that trucks can easily access 400-series highways and their destinations to support regional economic growth.

In order to accommodate trucks on Primary Arterial Good Movement Corridors, the York Region TMP generally considers these roadways to apply freight-supportive street design standards and land use planning policies and are typically future six-lane corridors with inclusion of truck-only design elements in special cases.

The Ontario Trucking Association (OTA) works to represent the trucking industry when new infrastructure projects are being initiated. OTA has expressed their support for the Langstaff Road Class EA study improvements, including the addition of a connection across the CN MacMillan Rail Yard, as the study location is of strategic importance to the trucking and rail industries (**Appendix C**). In an OTA article (March 27, 2017) posted on their website (http://ontruck.org/ota-pushing-truckings-interests-across-the-province/), OTA president Stephen Laskowski stated:

“As a major user of Ontario’s infrastructure, well-maintained highways and the modernization of interchanges are vitally important to the Ontario trucking industry. It’s critical MTO, as well as its consultants and contractors all consider trucking activities both in the design of new infrastructure and the maintenance and upgrading of existing infrastructure.”

## 4.4 Travel Demand Screenline Analysis

A travel demand screenline analysis was undertaken to better understand the existing performance and operation on specific corridors as they apply to the Langstaff Road Class EA study. A screenline is generally an imaginary line on a map composed of one or more roadway segments or a linear feature, such as a road, a river, a rail line or a municipal boundary that is used to evaluate cumulative travel demand of similar roadway facilities crossing such features. Local streets are generally excluded from screenline analyses as their function is to provide accessibility to businesses and neighbourhoods to local collector and Regional arterial roads. A volume over capacity (V/C) ratio was established by comparing the cumulative travel demand to available screenline capacity.

The analysis considered a total of six screenlines, displayed in **Exhibit 4-5**. For the north-south screenlines, the following east-west corridors were considered (from north to south):

- Rutherford Road;
- Langstaff Road; and
- Highway 7.

For the east-west screenline analysis, the north-south roadway corridors considered include (from west to east):

- Edgeley Boulevard;
- Jane Street;
- Creditstone Road;
- Keele Street, and
- Dufferin Street.

## Exhibit 4-5: Screenline Locations


The analysis was conducted using the YRTDF model. This model is an *Emme*-based, conventional four-step transportation demand forecasting model, simulating the morning peak hour travel demands for existing and future planning horizon years. For this Class EA study, the travel demand analysis evaluated the YRTDF model results for the existing (2016) and future (2041) planning horizon.

The assigned arterial traffic volumes and lane capacities were obtained from the YRTDF model and used to calculate the screenline V/C ratios. In general, a capacity of 900 and 500 vehicles per hour per lane was modelled for General-Purpose Lanes (GPL) and High Occupancy Vehicle (HOV) lanes on major arterial corridors, respectively.

The V/C ratios and the respective Level of Service (LOS) are defined by four levels or grades of generalized traffic conditions and characteristics. These commonly used measurements for roadways and intersections are presented in **Table 4-5**

### Table 4-5: Volume to Capacity Ratio Ratings

| V/C Ratio | LOS | Facility Operation | Screenline Operation |
|---|---|---|---|
| ≤ 0.80 | A - C | Free/Stable Flow | Good/Uncongested |
| 0.80 to 0.90 | D | Unstable Flow | Unstable |
| 0.90 to 1.00 | E | Congested | Congested |
| > 1.00 | F | Very Congested | Very Congested |

## 4.4.1 Existing (2016) Conditions - Screenline Results

The 2016 AM peak hour operating conditions for the north-south and east-west screenlines are presented in **Exhibit 4-6** and **Exhibit 4-7**, respectively. The existing link V/C ratios near the CN MacMillan Rail Yard (for Rutherford Road and Highway 7) are presented in **Exhibit 4-8**.

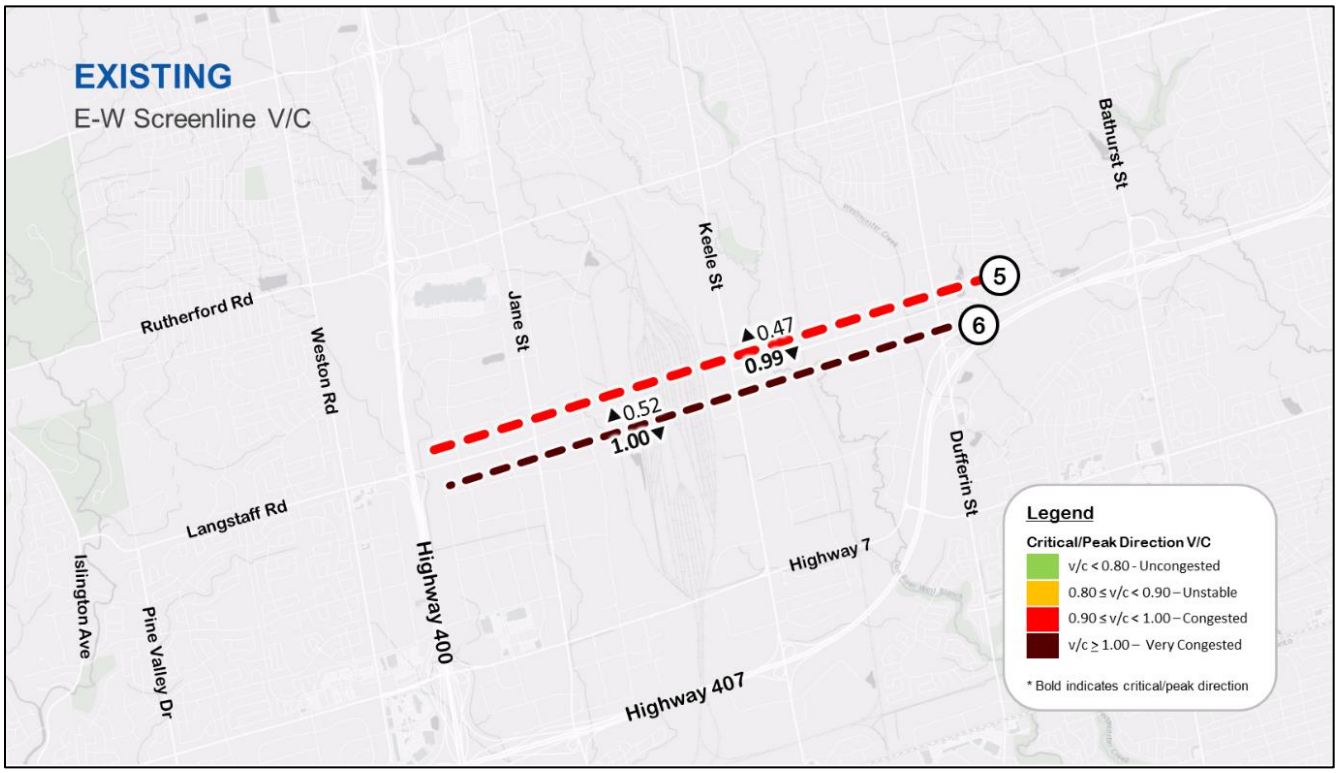
### Exhibit 4-6: Existing - AM Peak Hour North-South Screenline V/C


The north-south screenline analysis results (presented in **Exhibit 4-6**) for the existing morning peak hour conditions demonstrate that traffic flow in the westbound direction, near the CN

MacMillan Rail Yard, operates in an *Unstable* condition with a V/C ratio of 0.87 (Screenline 3). The westbound traffic flow operates in an *Uncongested* condition west of Jane Street with V/C ratios of less than 0.8 (Screenline 1 and Screenline 2), and just west of Dufferin Street with V/C ratio less than 0.7 (Screenline 4).

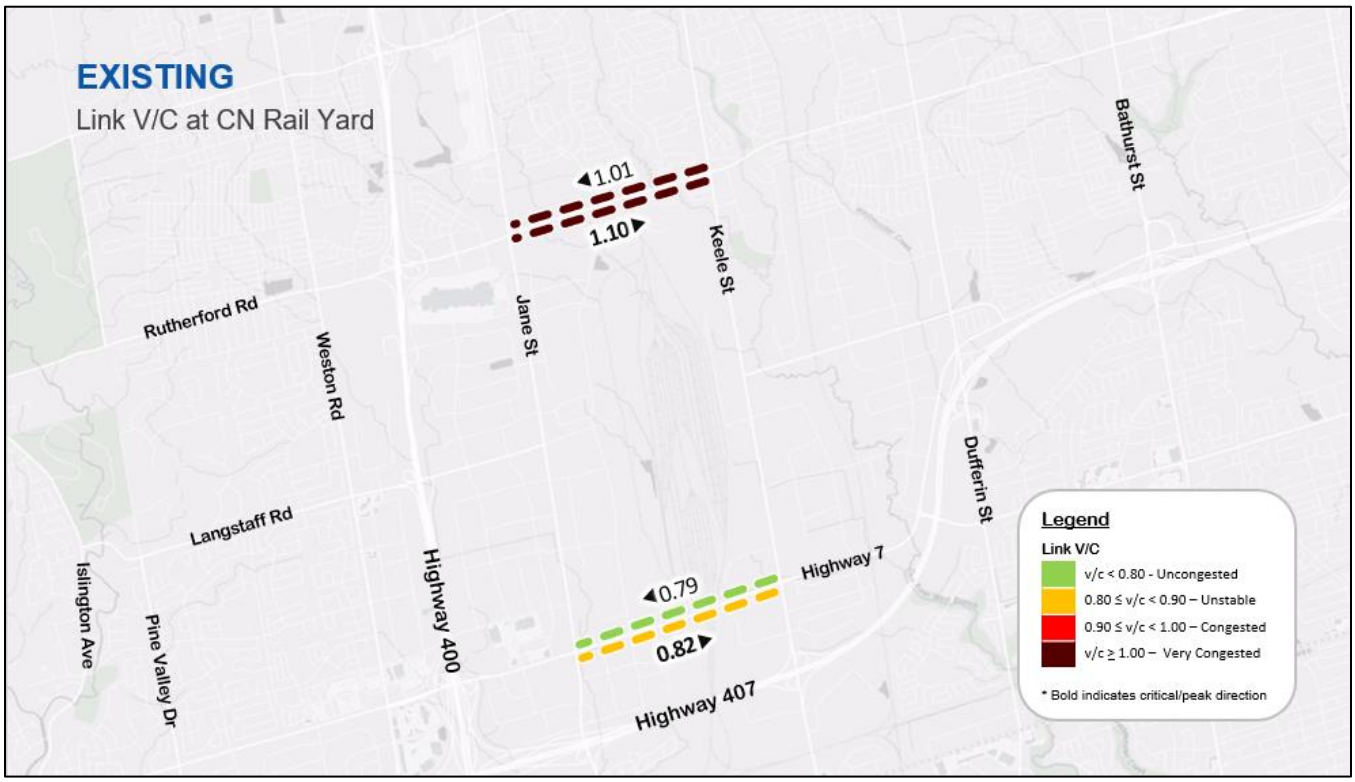
However, in the eastbound direction, the flow of traffic operates in an *Unstable* condition east of Weston Road (Screenline 1) and becomes *Very Congested* with a V/C ratio of 1.08 east of Highway 400 (Screenline 2). The eastbound traffic operates in a *Congested* condition near the CN MacMillan Rail Yard with a V/C ratio of 0.92 (Screenline 3), and then *Uncongested* condition just west of Dufferin Street (Screenline 4). Between Jane Street and Dufferin Street, Langstaff Road is surrounded by industrial and commercial land use, which attracts/generates a significant number of trips to the study area during the morning peak hour.

## Exhibit 4-7: Existing - AM Peak Hour East-West Screenline V/C




The analysis of the east-west screenlines (**Exhibit 4-7**) demonstrate that the northbound traffic is currently operating in *Uncongested* conditions with a V/C ratio of 0.47 and 0.52 north and south of Langstaff Road, respectively. However, southbound traffic is considered to be *Congested* or *Very Congested* with V/C ratios reaching 1.00; indicating that the north-south corridors are at a planning level capacity and are very likely to need additional capacity to accommodate future traffic growth.

## Exhibit 4-8: Existing - AM Peak Hour Link V/C at CN MacMillan Rail Yard




Since Langstaff Road is discontinuous at Keele Street and Jane Street, the east-west traffic often relies on other parallel corridors such as Rutherford Road and Highway 7. Further analysis of the existing east-west links near the CN MacMillan Rail Yard (**Exhibit 4-8**) indicate that Rutherford Road operates in a *Very Congested* condition in both the westbound and eastbound directions, with V/C ratios of above 1.00. The eastbound traffic on Highway 7 between Jane Street and Keele Street operates in an *Unstable* condition with a V/C ratio of 0.82, while the westbound traffic operates in an *Uncongested* condition.

The results for the existing screenline analysis demonstrate that the traffic operation performance is poor and existing roadway capacity on the east-west corridors within the study area is limited, particularly west of Jane Street and across the CN MacMillan Rail Yard during the morning peak hour. The southbound traffic (peak direction during the morning peak hour) demand is also approaching the planning level capacity. These morning peak hour conditions on the existing road network indicate the potential need for additional east-west roadway capacity in the study area.

### 4.4.2 Langstaff Road Improvement Scenarios

To assess the future (2041) transportation conditions with alternative improvements and to identify potential transportation needs within the Langstaff Road Class EA study area, five improvement scenarios (presented in **Table 4-6**) were assessed using the YRTDF. These potential improvements include a six-lane widening of Langstaff Road, with additional Transit / High Occupancy Vehicle (HOV) lanes or General-Purpose Lanes (GPL), provision of a new connection across the CN MacMillan Rail Yard and Highway 400 interchange improvements. It is noted that the following future improvement scenarios consider all other planned/proposed road network and major transit improvements to the surrounding road network, as identified in the 2016 York Region TMP and presented in **Section 4.3.**

**Table 4-6: Langstaff Road Class EA study Improvement Scenarios**

| Improvement Scenarios | Existing Langstaff Road | Langstaff Road Connection Across CN MacMillan Rail Yard | Highway 400 Interchange |
|---|---|---|---|
| 1. 2041 Base Case | No change | No link | No change |
| 2. Langstaff Road East Improvements | 4GPL (between Keele St & Dufferin St) | No link | No change |
| 3. Widen Langstaff Road for Transit/HOV and Build Langstaff Connection | 4GPL+2HOV | 4GPL+2HOV | No change |
| 4. Widen Langstaff Road for Transit/HOV, Build Connection and Interchange Improvement | 4GPL+2HOV | 4GPL+2HOV | Convert to full interchange |
| 5. Widen Langstaff Road for Goods Movement, Build Connection and Interchange Improvement | 6GPL | 6GPL | Convert to full interchange |

Scenario 5 represents the context-sensitive improvement alternative for the study area. Despite being contradictory to current Regional Policy pertaining to six-lane roadway widening projects, the inclusion of this scenario was essential based on the local conditions, adjacent

land use of the commercial and industrial employment areas surrounding the study area and supporting 2016 York Region TMP strategic goods movement network initiatives.

The widening of Langstaff Road to a six GPL cross-section can also benefit adjacent parallel corridors, such as Rutherford Road and Highway 7, by providing an opportunity for enhanced modal separation between different travel modes. In Scenario 5, commercial vehicle traffic would likely be drawn away from the parallel roadways to Langstaff Road, which would enhance traffic operations on the Rutherford Road Transit/HOV facility and the Highway 7 rapid transit corridor for all road users, including motorists, transit passengers, pedestrians and cyclists.

### 4.4.3 Future (2041) Conditions - Screenline Results

**Scenario 1 – Base Case**

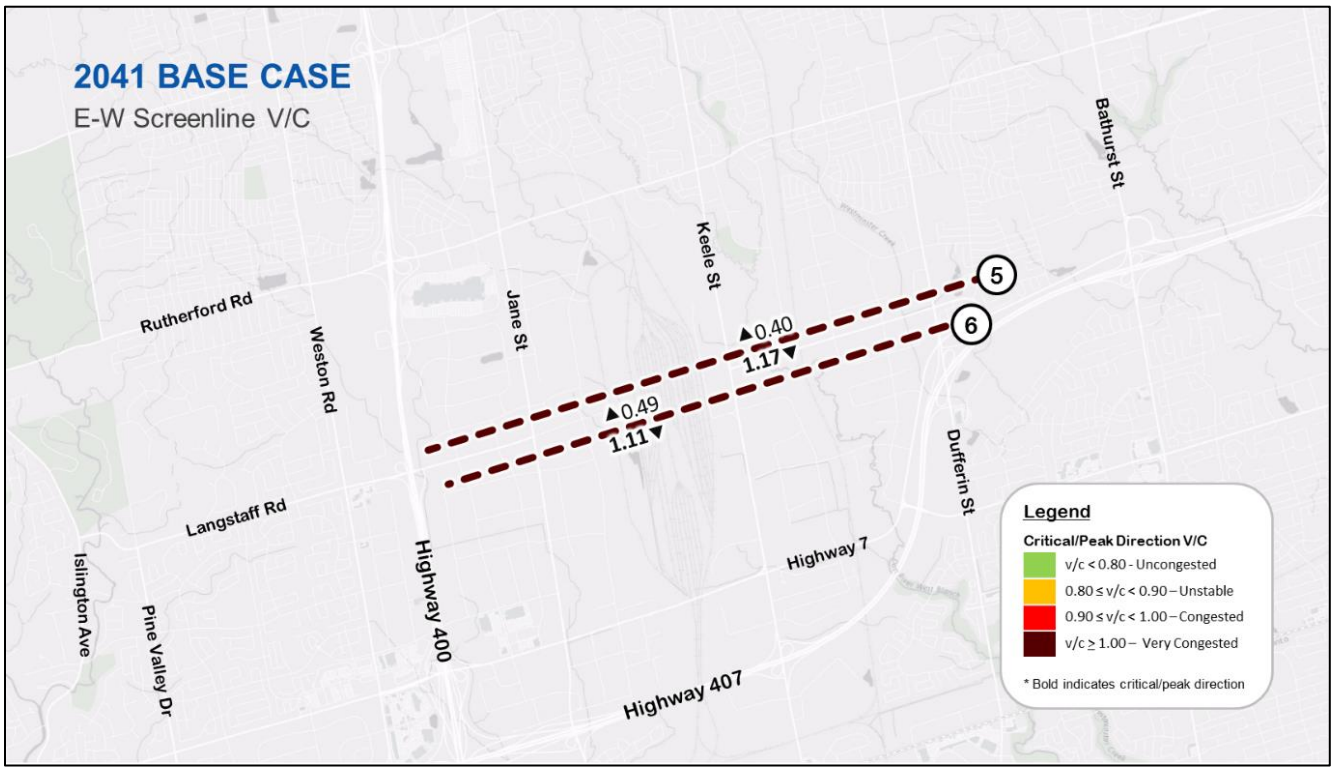
The 2041 AM peak hour operating conditions for the Base Case scenario for the north-south and east-west screenlines are presented in **Exhibit 4-9** and **Exhibit 4-10**, respectively. The future base case V/C ratios for the CN MacMillan Rail Yard (for Rutherford Road and Highway 7) are presented in **Exhibit 4-11**.

## Exhibit 4-9: Future Base Case - AM Peak Hour North-South Screenline V/C


The forecasted traffic growth for the future 2041 planning horizon for the Base Case scenario, shows that the eastbound and westbound corridors will operate with either approaching or heavy traffic demands, or will operate over planning level capacity (**Exhibit 4-9**). The westbound traffic flow near the CN MacMillan Rail Yard (Screenline 3) is expected to operate in *Very Congested* conditions. Traffic flows travelling in the same direction will operate in *Unstable* conditions, with a V/C ratio of 0.80 west of Dufferin Street (Screenline 4); and will operate in an *Uncongested* condition west of Jane Street (Screenlines 1 and 2).

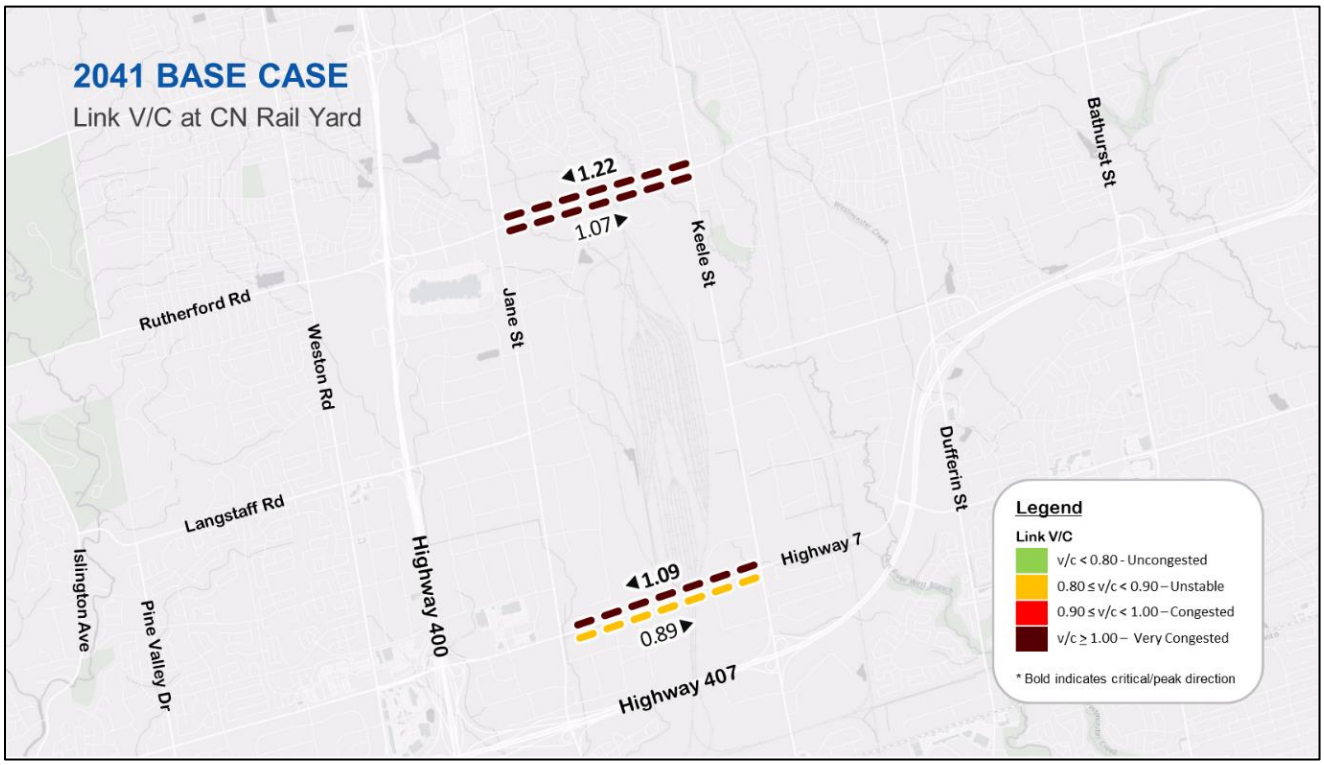
The eastbound direction shows *Congested* conditions with a V/C ratio of 0.95 just east of Weston Road (Screenline 1) and near the CN MacMillan Yard (Screenline 3), and *Very Congested* conditions with a V/C ratio of 1.19 east of Highway 400 (Screenline 2); just west of Dufferin Street (Screenline 4), it is expected to operate in an *Uncongested* condition.

## Exhibit 4-10: Future Base Case - AM Peak Hour East-West Screenline V/C




The east-west screenline analysis results show that the southbound traffic condition will deteriorate from an *Unstable* operation to a *Very Congested* operation by 2041 during the AM Peak Hour, with V/C ratios of 1.17 and 1.11 north of Langstaff Road (Screenline 5) and south of Langstaff Road (Screenline 6), respectively. While the northbound traffic will continue to operate in an *Uncongested* condition.

## Exhibit 4-11: Future Base Case - AM Peak Hour Link V/C at CN MacMillan Rail Yard

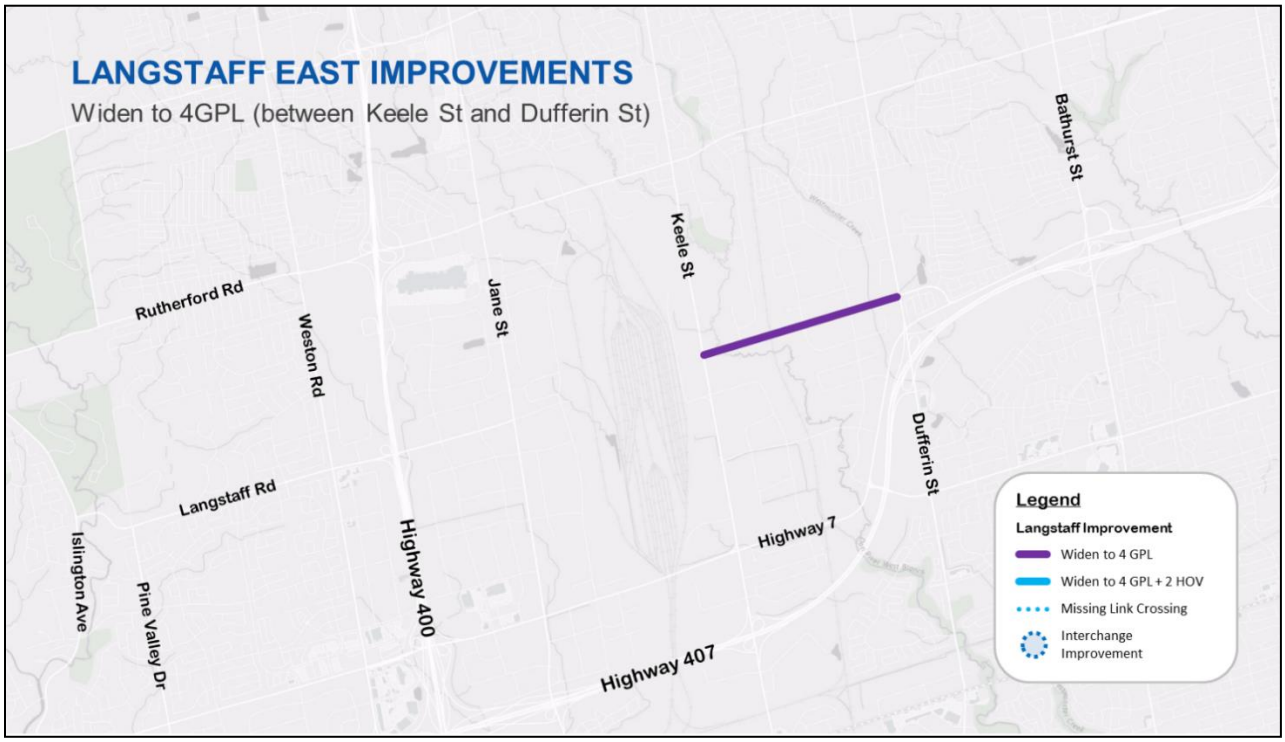



Despite the inclusion other road improvements outlined in the York Region TMP, and specifically the HOV lanes on Rutherford Road, this east-west link at the CN MacMillan Rail Yard will remain over capacity (**Exhibit 4-11**). The eastbound and westbound traffic flows are expected to both operate at *Very Congested* conditions with V/C ratios of 1.07 and 1.22, respectively. At Highway 7, the eastbound traffic is expected to operate at *Unstable* conditions, while the westbound direction is expected to operate in a *Very Congested* condition.

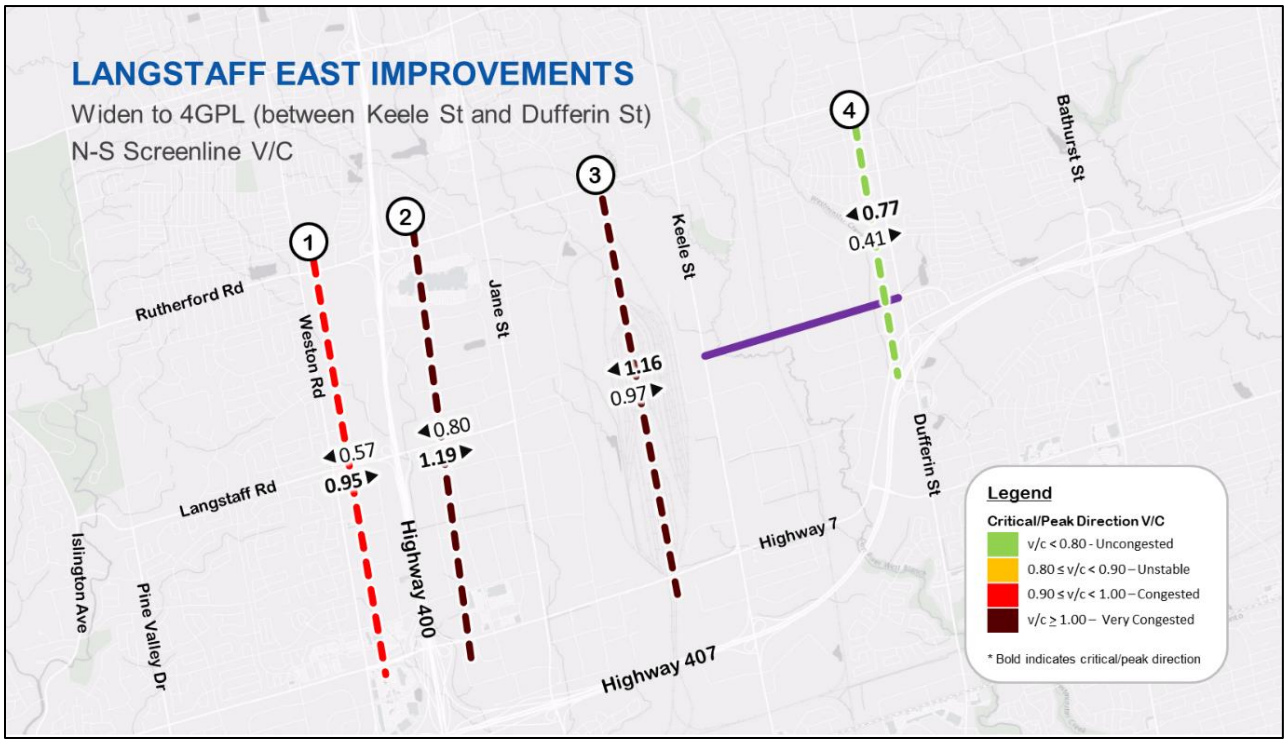
### Scenario 2 – Langstaff Road East Improvements

This scenario includes the widening of Langstaff Road from two GPLs to four GPLs between Keele Street and Dufferin Street only, as shown in **Exhibit 4-12**. This improvement is expected to provide additional capacity for the eastbound and westbound movements on Langstaff Road east of the CN MacMillan Rail Yard. The 2041 AM peak hour operating conditions for Scenario 2 for the north-south, east-west and at the CN MacMillan Rail Yard screenlines are presented in **Exhibit 4-13**, **Exhibit 4-14** and **Exhibit 4-15**, respectively.

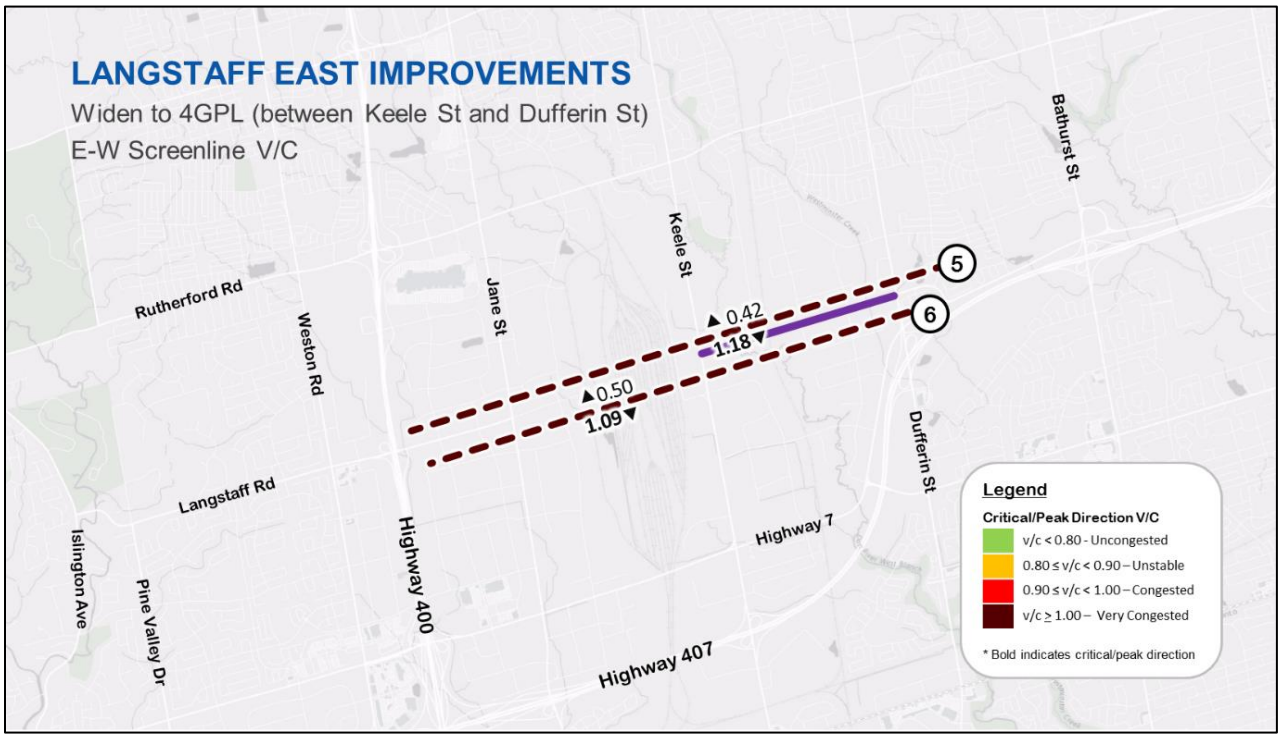
## Exhibit 4-12: Langstaff Road East Improvements



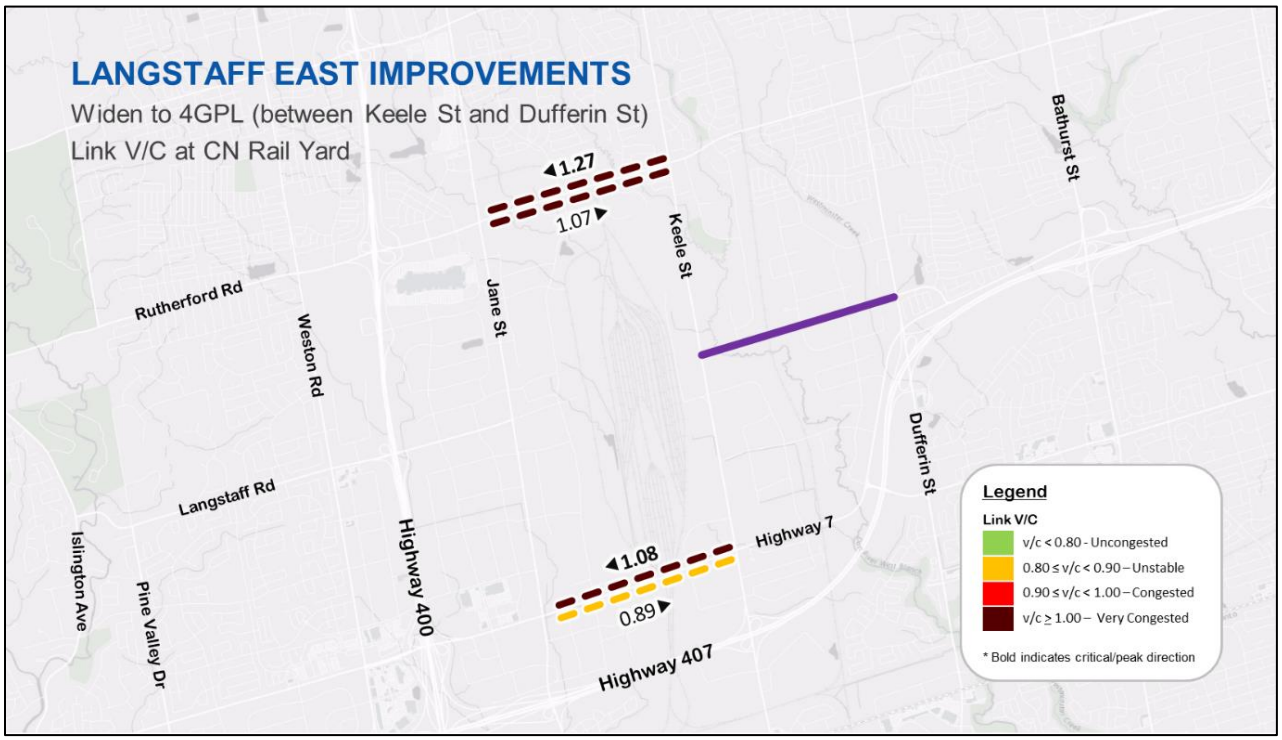
## Exhibit 4-13: Future Langstaff Road East Improvements - AM Peak Hour North-South Screenline V/C



## Exhibit 4-14: Future Langstaff Road East Improvements - AM Peak Hour East-West Screenline V/C



## Exhibit 4-15: Future Langstaff Road East Improvements - AM Peak Hour Link V/C at CN MacMillan Rail Yard



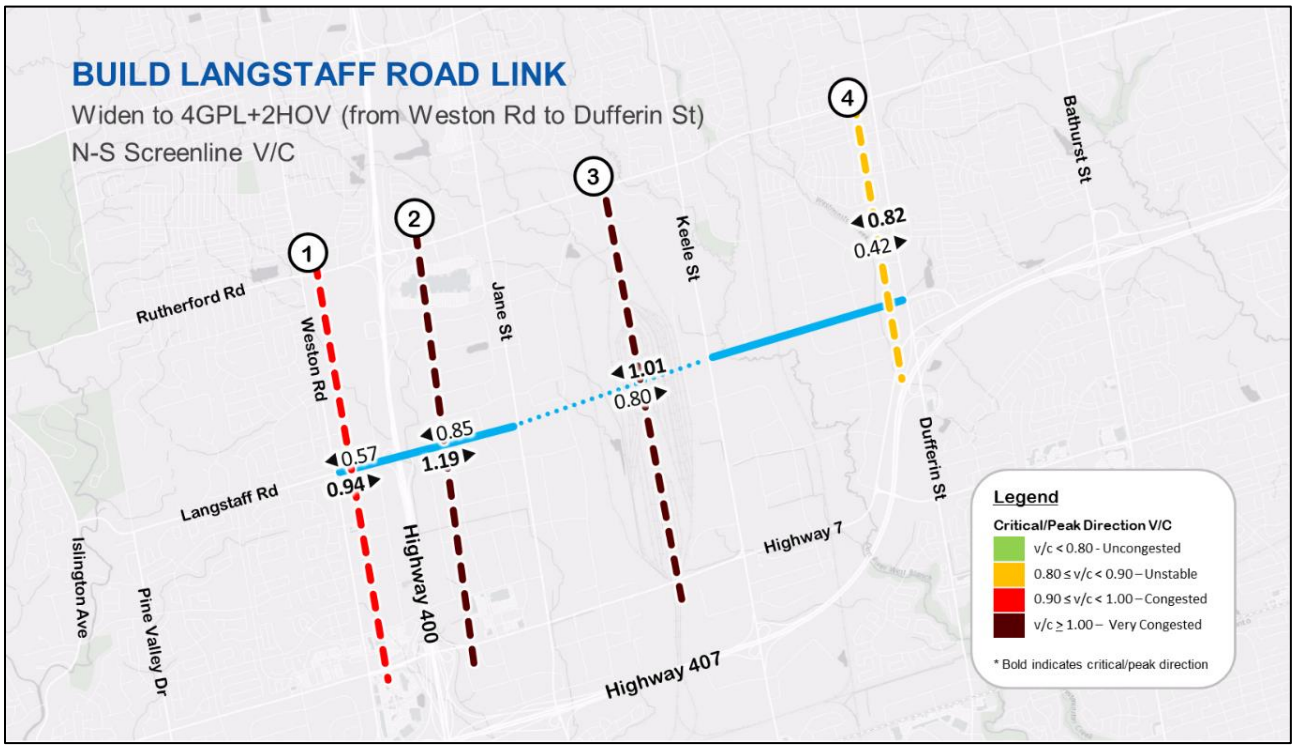

The widening on Langstaff Road between Keele Street and Dufferin Street only, marginally improves the westbound 2041 AM Peak Hour traffic flow west of Dufferin Street from *Unstable* to *Uncongested* conditions, with a V/C ratio of 0.77 (Screenline 4). The analysis results for this scenario show that the operating conditions for all other screenlines are expected to remain similar to the Base Case.

### Scenario 3 – Provision of Langstaff Road Connection and Transit/HOV Lanes

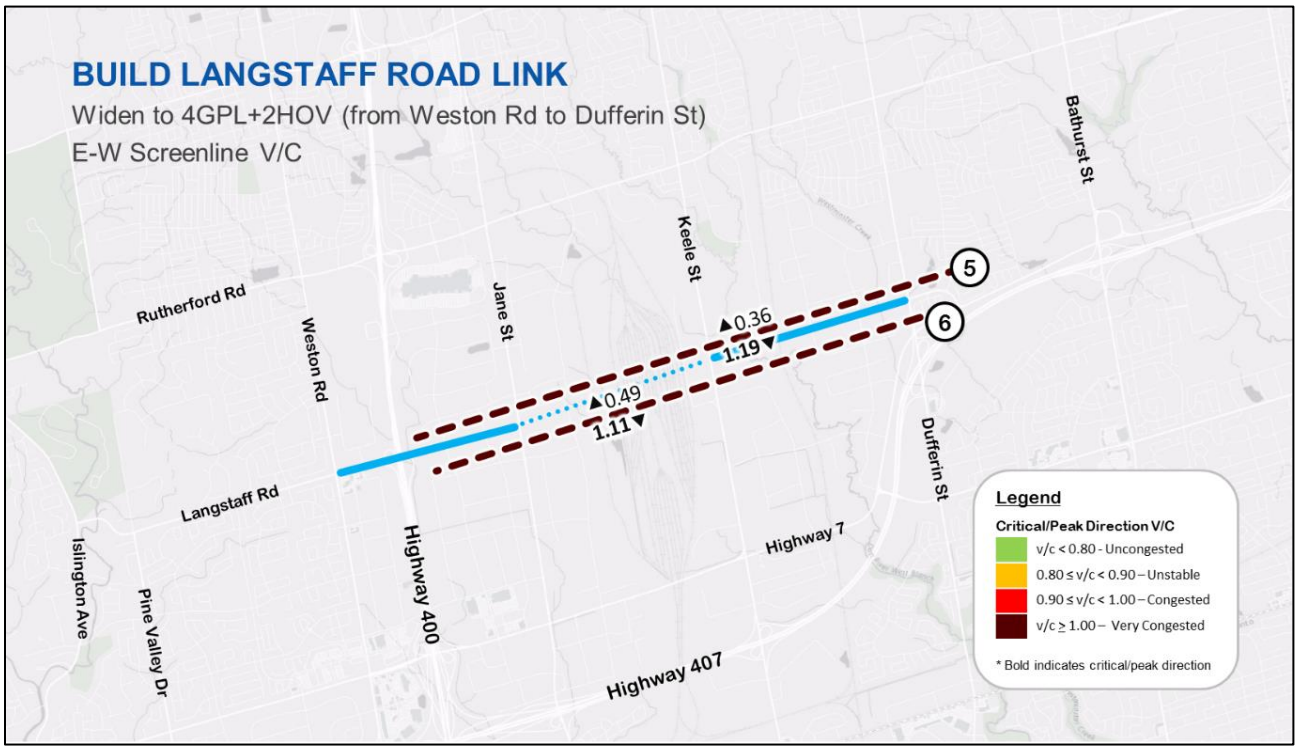
Scenario 3 includes the provision of a connecting link on Langstaff Road across the CN MacMillan Rail Yard between Jane Street and Keele Street, and the widening of Langstaff Road between Weston Road and Dufferin Street to a six-lane cross-section, including a Transit/HOV lane in each direction. As illustrated in **Exhibit 4-16**, provision on the Langstaff Road connection is expected to provide continuity for the eastbound and westbound directions on Langstaff Road and alleviate traffic congestion from parallel corridors within the area. **Exhibit 4-17**, **Exhibit 4-18** and **Exhibit 4-19** illustrate the screenline operating conditions for Scenario 3.

## Exhibit 4-16: Langstaff Road Widened for Transit/HOV and Connection of Langstaff Road

## Exhibit 4-17: Future Build Langstaff Road Connection & Transit/HOV Lanes - AM Peak Hour North-South Screenline V/C

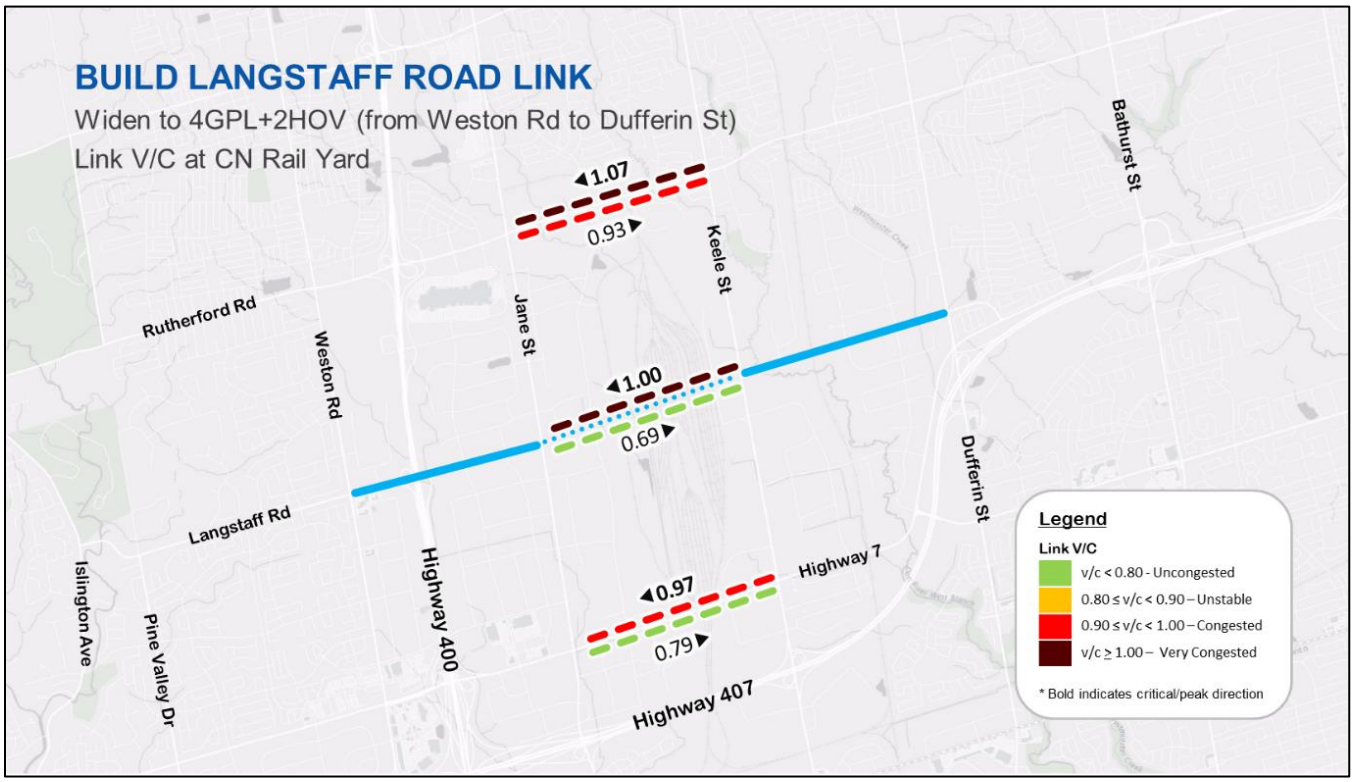


## Exhibit 4-18: Future Build Langstaff Road Connection & Transit/HOV Lanes – AM Peak Hour East-West Screenline V/C




Scenario 3 shows improvements in operating conditions at two screenline locations compared to Scenario 2: at the CN MacMillan Rail Yard (Screenline 3). At the CN MacMillan Rail Yard screenline (Screenline 3), the westbound traffic flow shows a reduction in the V/C ratio at 1.01 compared to 1.16 for Scenario 2. The eastbound traffic flow is also expected to improve from *Congested* to *Unstable* conditions. However, the increased road network capacity along Langstaff Road yields negligible improvement on the screenlines east of Jane Street (Screenline 1 and 2). It is also expected to have slightly more congested conditions just west of Dufferin Street (Screenline 4) from *Uncongested* in Scenario 2 to *Unstable* in Scenario 3. The scenario improvements will also have marginal improvements on the northbound and southbound traffic flow (presented in **Exhibit 4-18**).

## Exhibit 4-19: Future Build Langstaff Road Connection & Transit/HOV Lanes - AM Peak Hour Link V/C at CN MacMillan Rail Yard

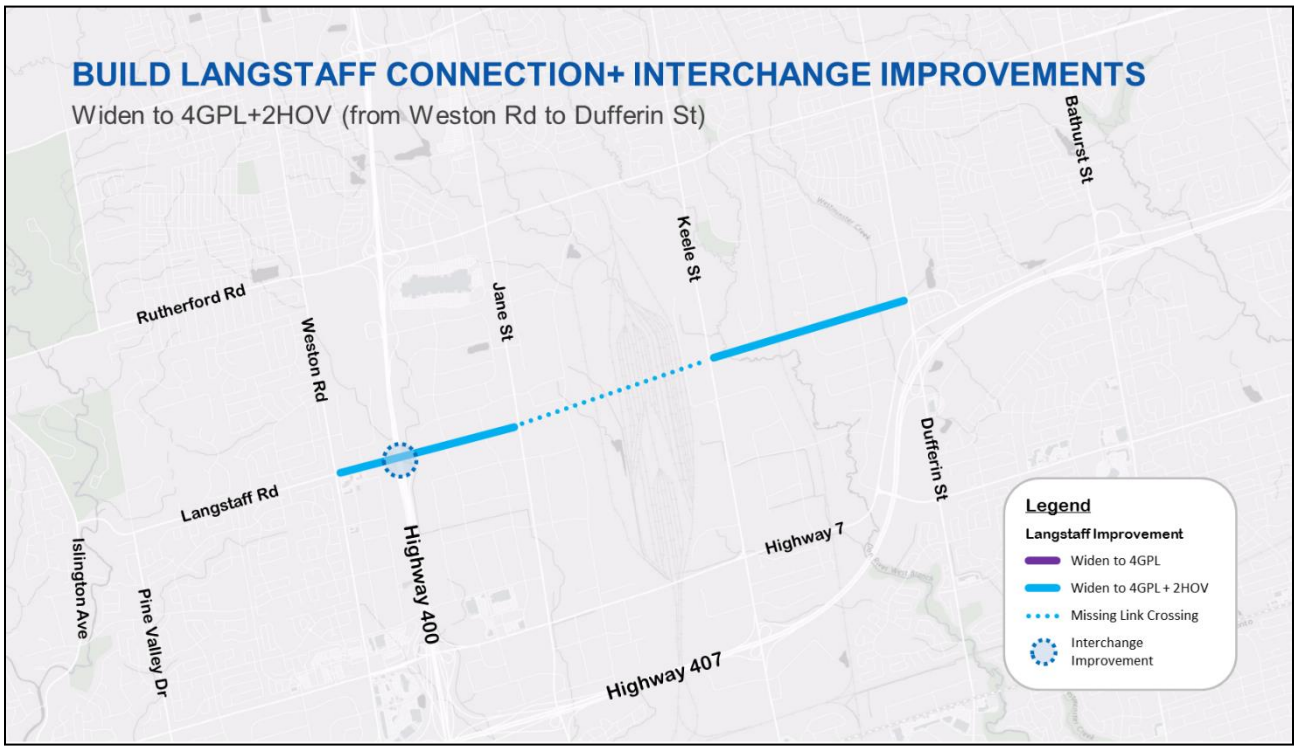



Further analysis of the east-west links near the CN MacMillan Rail Yard shows noticeable improvement to the 2041 AM Peak Hour operating conditions (**Exhibit 4-19**), specifically on Rutherford Road, as traffic in the area will utilize the added network capacity provided by the Langstaff Road connection, reducing travel demand on the parallel corridors. The westbound traffic flow on Rutherford Road could experience a reduction in congestion with a decrease in the V/C ratio from 1.27 (in Scenario 2) to 1.07. In addition, the westbound traffic flow on Highway 7 will improve from being *Very Congested* with a V/C of 1.08 to *Congested* with a V/C of 0.97. The Langstaff Road connection across the CN MacMillan Rail Yard is expected to be fully utilized and manage traffic volumes in the range of 1600-2300 in the morning peak hour; these volumes correspond to operating conditions of *Uncongested* in the eastbound direction and borderline *Very Congested* in the westbound direction.

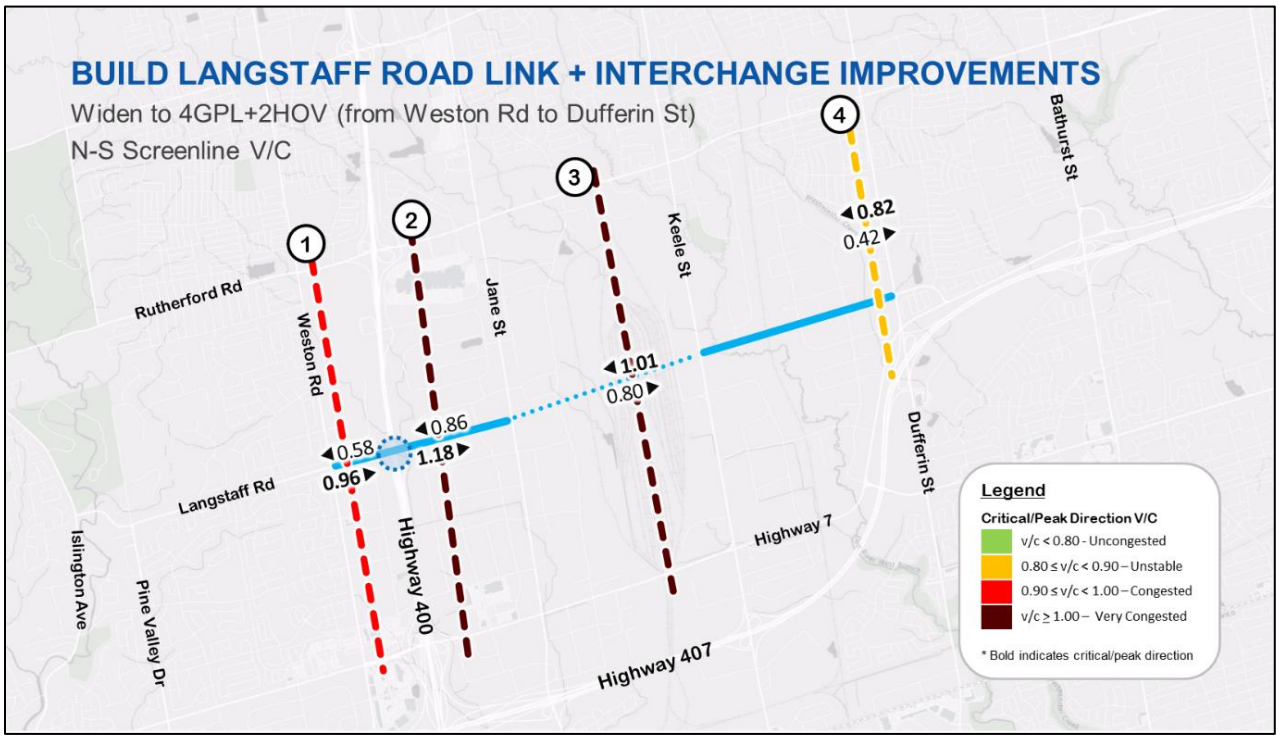
### Scenario 4 – Provision of Langstaff Road Connection, Transit/HOV Lanes and Interchange Improvements

Scenario 4 includes all the provisions considered in Scenario 3, combined with an improvement to the existing Highway 400 partial interchange at Langstaff Road to a full interchange, providing highway access to and from the north. Scenario 4 is presented in **Exhibit 4-20**. The future traffic conditions for Scenario 4 are presented in **Exhibit 4-21**, **Exhibit 4-22** and **Exhibit 4-23**.

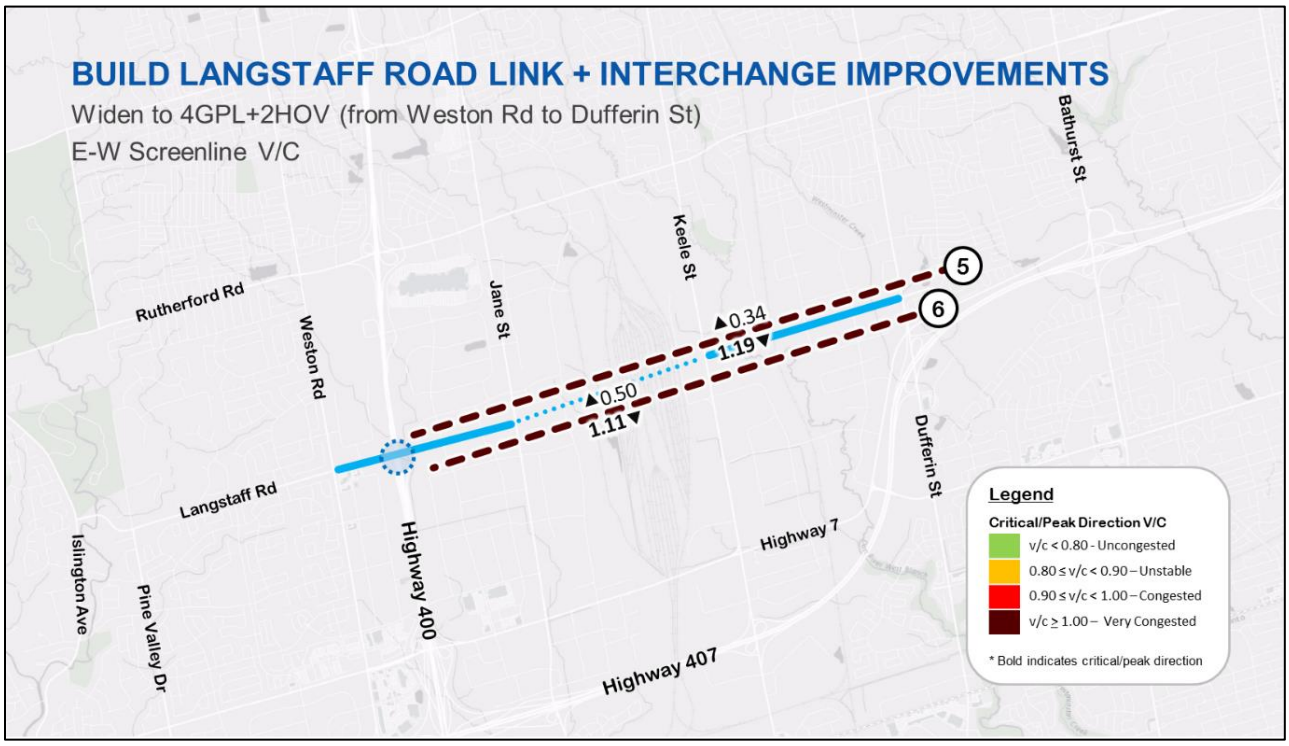
## Exhibit 4-20: Langstaff Road Widened for Transit/HOV, Build Langstaff Road Connection and Interchange Improvements



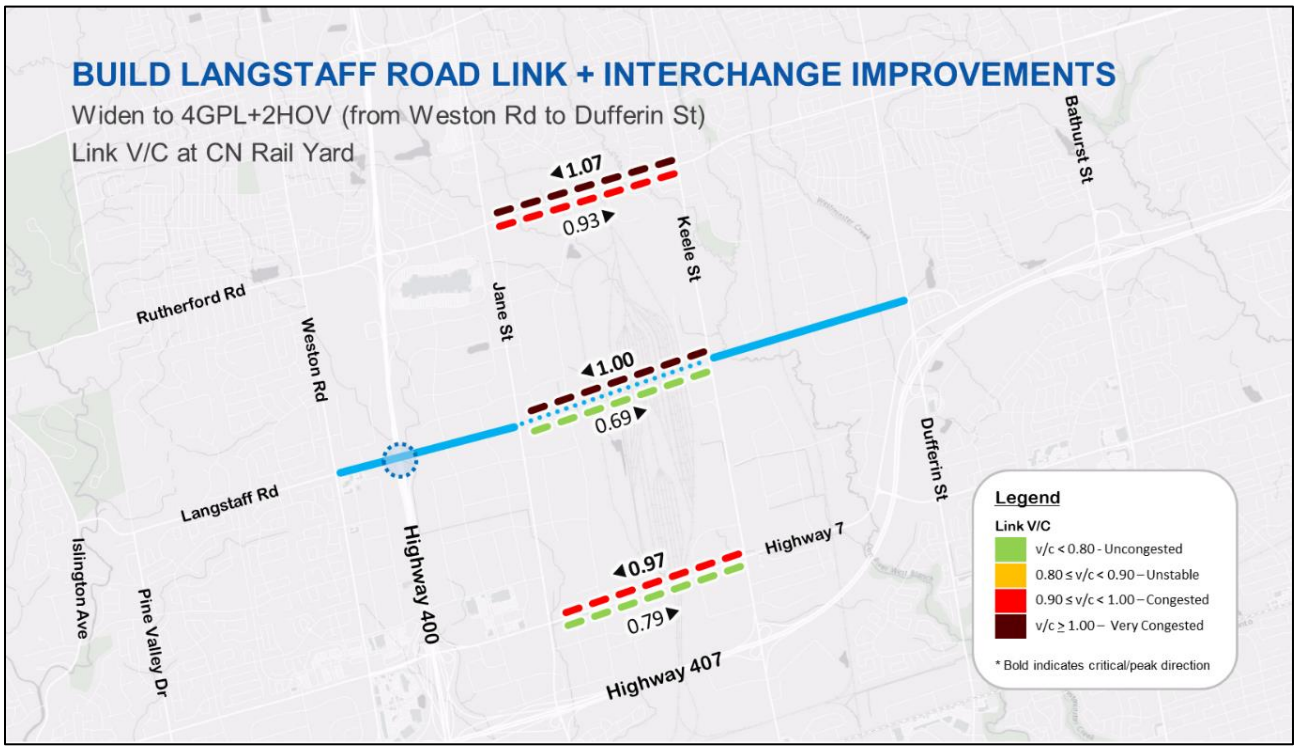
## Exhibit 4-21: Future Build Langstaff Road Connection, Transit/HOV Lanes and Full Interchange - AM Peak Hour North-South Screenline V/C



## Exhibit 4-22: Future Build Langstaff Road Connection, Transit/HOV Lanes and Full Interchange - AM Peak Hour East-West Screenline V/C



## Exhibit 4-23: Future Build Langstaff Road Connection, Transit/HOV Lanes and Full Interchange - AM Peak Hour Link V/C at CN MacMillan Rail Yard




As can be expected using screenline level analysis, results of Scenario 4 show very marginal improvements at the screenline V/C ratios, compared to the Scenario 3, since no additional arterial roadway capacity is introduced.

A detailed examination of the north-south screenlines east of Weston Road and Highway 400 between Scenario 3 and 4 provide a greater understanding in relation to the Highway 400 / Langstaff Road interchange improvement. Inspection of the link volumes adjacent to the interchange along the two screenlines presented in **Table 4-7**, show notable changes in traffic demands on the arterial corridors.

### Table 4-7: Comparison of Volumes for Screenline Adjacent to Highway 400

| Screenline | Arterial Road | Westbound | | Eastbound | |
|---|---|---|---|---|---|
| | | Partial IC (Scenario 3) | Full IC (Scenario 4) | Partial IC (Scenario 3) | Full IC (Scenario 4) |
| East of Weston Road | Rutherford Road | 1025 | 1012 | 2242 | 2185 |
| | Langstaff Road | 669 | 754 | 2318 | 2488 |
| | Highway 7 | 2761 | 2743 | 2739 | 2787 |
| East of Weston Road Screenline Total | | 4455 | 4509 | 7299 | 7460 |
| East of Highway 400 | Rutherford Road | 1920 | 1828 | 3077 | 3070 |
| | Langstaff Road | 1530 | 1743 | 2518 | 2505 |
| | Highway 7 | 3177 | 3144 | 3660 | 3647 |
| East of Highway 400 Screenline Total | | 6627 | 6715 | 9255 | 9222 |

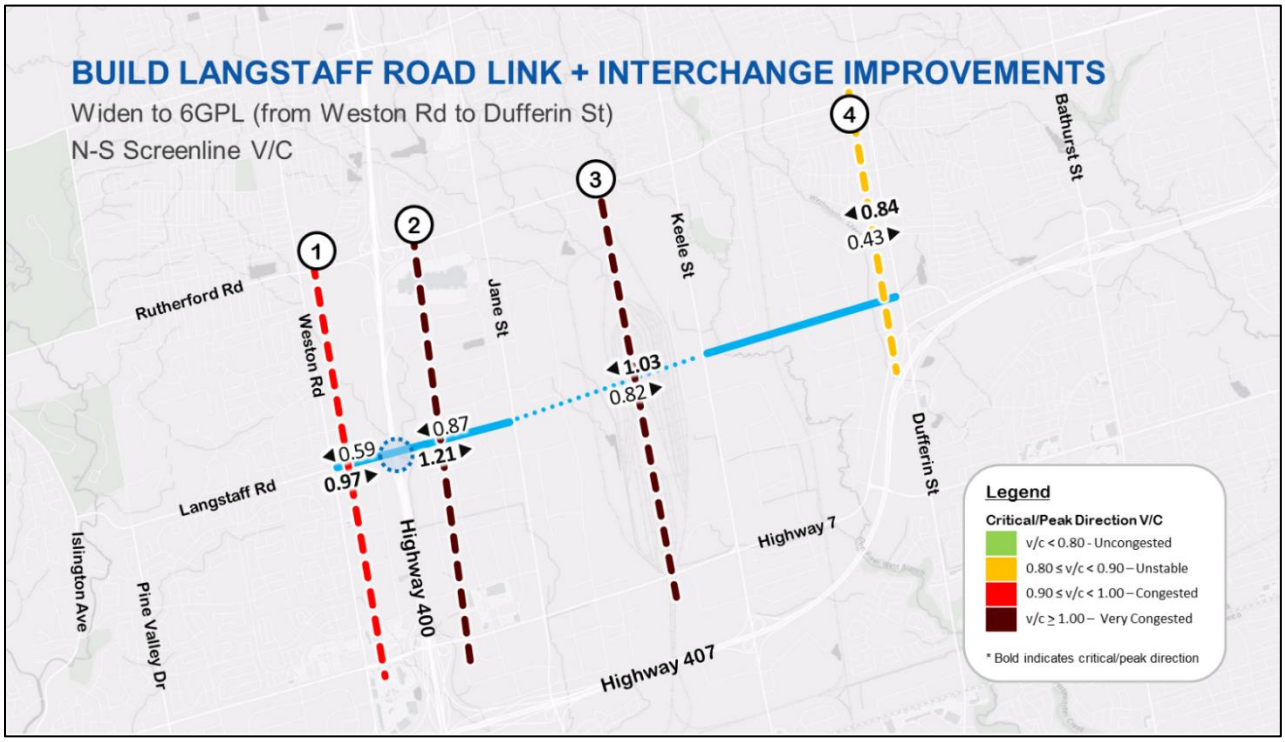
For the screenline east of Weston Road (Screenline 1), the Highway 400 / Langstaff Road interchange draws some additional traffic volumes to the arterial roads, resulting in a combined direction increase of 215 vehicles. Volumes remain relatively consistent between the partial interchange and full interchange alternatives for the screenline east of Highway 400 (Screenline 2), though indicates a redistribution of traffic along the links in the westbound direction; traffic volumes in the westbound direction increase on Langstaff Road and decrease on Rutherford Road and Highway 7.

### Scenario 5 – Provision of Langstaff Road Connection, Interchange Improvements and Widening for Goods Movement Corridor

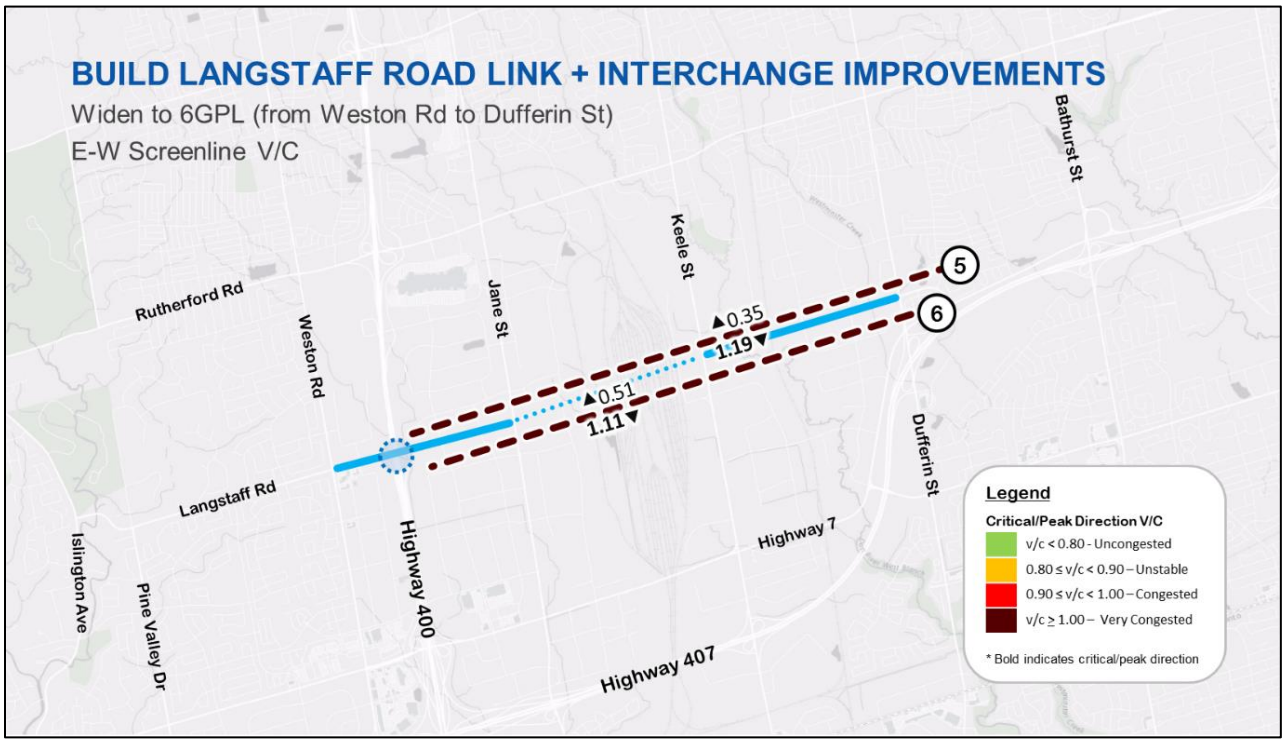
This scenario considers a provision of the Langstaff Road connection across the CN MacMillan Rail Yard between Jane Street and Keele Street, widening of Langstaff Road between Weston Road and Dufferin Street to six GPLs and Highway 400 interchange improvements to provide highway access to and from the north at Langstaff Road.

These improvements provide context-sensitive transportation system improvements relating to the adjacent land use of commercial and industrial employment areas surrounding the Langstaff Road Class EA study area and support the Strategic Goods Movement Network initiatives as outlined in the 2016 York Region TMP. The screenline analysis results for this scenario are presented in **Exhibit 4-24**, **Exhibit 4-25** and **Exhibit 4-26**.

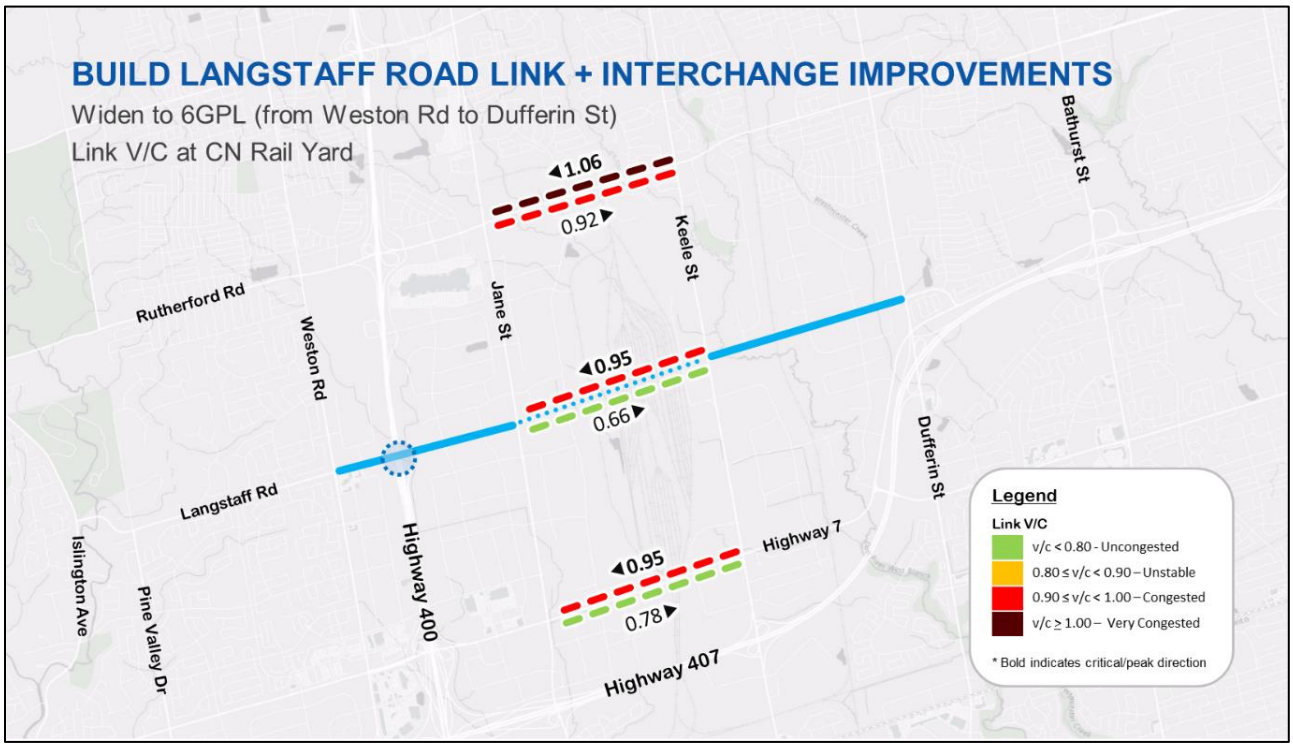
#### Exhibit 4-24: Future Build Langstaff Road Connection, 6 General-Purpose Lanes (GPL) and Full Interchange - AM Peak Hour North-South Screenline V/C



## Exhibit 4-25: Future Build Langstaff Road Connection, 6 General-Purpose Lanes (GPL) and Full Interchange - AM Peak Hour East-West Screenline V/C



### Exhibit 4-26: Future Build Langstaff Road Connection, 6 General-Purpose Lanes (GPL) and Full Interchange - AM Peak Hour Link V/C at CN MacMillan Rail Yard




In general, the operating performance of this scenario is similar to that of Scenario 4, with the exception of the westbound link V/C at the planned Langstaff Road connection, which now operates at *Congested* conditions, as opposed to *Very Congested* conditions in the previous scenario (**Exhibit 4-23**).

## 4.4.4 Capacity Analysis Results

A summary of capacity analysis results (using V/C ratios) for all analysis scenarios is provided in **Table 4-8**. The V/C results were calculated based on the simulated volumes shown in **Table 4-9**.

## Table 4-8: Comparison of Critical Screenline V/C Ratios

| Location | Existing (2016) Conditions | Future (2041) Conditions | | | | |
|---|---|---|---|---|---|---|
| | | Scenario 1: Base Case | Scenario 2: East Improvements | Scenario 3: Widen for Transit/HOV and Build Connection | Scenario 4: Widen for Transit/HOV, Build Connection & Interchange Improvement | Scenario 5: Widen for Goods Movement, Build Connection & Interchange Improvement |
| **North-South Screenline V/C** | | | | | | |
| East of Weston Road (Screenline 1) | 0.81 | 0.95 | 0.95 | 0.94 | 0.96 | 0.97 |
| East of Highway 400 (Screenline 2) | 1.08 | 1.19 | 1.19 | 1.19 | 1.18 | 1.21 |
| At CN MacMillan Rail Yard (Screenline 3) | 0.92 | 1.15 | 1.16 | 1.01 | 1.01 | 1.03 |
| West of Dufferin Street (Screenline 4) | 0.68 | 0.80 | 0.77 | 0.82 | 0.82 | 0.84 |
| **East-West Screenline V/C** | | | | | | |
| North of Langstaff Road (Screenline 5) | 0.99 | 1.17 | 1.18 | 1.19 | 1.19 | 1.19 |
| South of Langstaff Road (Screenline 6) | 1.00 | 1.11 | 1.09 | 1.11 | 1.11 | 1.11 |
| **Connection V/C at CN MacMillan Rail Yard** | | | | | | |
| Rutherford Road | 1.10 | 1.22 | 1.27 | 1.07 | 1.07 | 1.06 |
| Langstaff Road | - | - | - | 1.00 | 1.00 | 0.95 |
| Highway 7 | 0.82 | 1.09 | 1.08 | 0.97 | 0.97 | 0.95 |

Scenario 5 (widening Langstaff Road with six general-purpose lanes, connecting Langstaff Road across CN MacMillan Rail Yard and Highway 400 interchange improvement) will not only provide additional vehicular capacity compared to other scenarios, but it is also expected to improve traffic operations within the study area as this corridor includes a higher share of commercial vehicles and number of commercial accesses.

As segments of Langstaff Road, between Highway 400 and Dufferin Street are designated as Primary Arterial Goods Movement Corridor in the 2016 York Region TMP, the proposed improvements in Scenario 5 will facilitate safe and efficient movement of goods to and from key origins and destinations including Provincial highways, intermodal rail yards and commercial and industrial employment areas.

### Table 4-9: Comparison of Screenline Volumes

| Screenline | Road | Eastbound / Northbound Volumes | | | | | | Westbound / Southbound Volumes | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Existing (2016) Conditions | Scenario 1: Base Case | Scenario 2: East Improvements | Scenario 3: Widen for Transit/HOV and Build Connection | Scenario 4: Widen for Transit/HOV, Build Connection & Interchange Improvement | Scenario 5: Widen for Goods Movement, Build Connection & Interchange Improvement | Existing (2016) Conditions | Scenario 1: Base Case | Scenario 2: East Improvements | Scenario 3: Widen for Transit/HOV and Build Connection | Scenario 4: Widen for Transit/HOV, Build Connection & Interchange Improvement | Scenario 5: Widen for Goods Movement, Build Connection & Interchange Improvement |
| East of Weston Road (Screenline 1) | Rutherford Road | 2051 | 2293 | 2290 | 2242 | 2185 | 2191 | 915 | 1086 | 1081 | 1025 | 1012 | 999 |
| | Langstaff Road | 1442 | 1886 | 1875 | 2318 | 2488 | 2628 | 436 | 424 | 418 | 669 | 754 | 818 |
| | Highway 7 | 2388 | 2777 | 2795 | 2739 | 2787 | 2775 | 2696 | 2694 | 2698 | 2761 | 2743 | 2752 |
| East of Weston Road Screenline Total | | 7189 | 5881 | 6956 | 6960 | 7299 | 7460 | 7594 | 4047 | 4204 | 4197 | 4455 | 4509 |
| East of Highway 400 (Screenline 2) | Rutherford Road | 2292 | 3084 | 3093 | 3077 | 3070 | 3031 | 1902 | 1783 | 1799 | 1920 | 1828 | 1834 |
| | Langstaff Road | 2027 | 1922 | 1915 | 2518 | 2505 | 2735 | 913 | 999 | 1003 | 1530 | 1743 | 1818 |
| | Highway 7 | 3575 | 3686 | 3687 | 3660 | 3647 | 3634 | 2595 | 3013 | 3009 | 3177 | 3144 | 3167 |
| East of Highway 400 Screenline Total | | 7506 | 7894 | 8692 | 8695 | 9255 | 9222 | 9400 | 5410 | 5795 | 5811 | 6627 | 6715 |
| At CN MacMillan Rail Yard (Screenline 3) | Rutherford Road | 1982 | 2458 | 2464 | 2146 | 2145 | 2111 | 1819 | 2815 | 2910 | 2457 | 2451 | 2431 |
| | Langstaff Road | - | - | - | 1598 | 1594 | 1769 | - | - | - | 2294 | 2311 | 2573 |
| | Highway 7 | 2448 | 2662 | 2662 | 2368 | 2373 | 2353 | 2361 | 3258 | 3250 | 2906 | 2904 | 2852 |
| At CN MacMillan Rail Yard Screenline Total | | 3909 | 4430 | 5120 | 5126 | 6112 | 6112 | 6233 | 4180 | 6073 | 6160 | 7657 | 7666 |
| West of Dufferin Street (Screenline 4) | Rutherford Road | 1019 | 1348 | 1253 | 1312 | 1295 | 1306 | 1260 | 1675 | 1538 | 1683 | 1680 | 1674 |
| | Langstaff Road | 777 | 652 | 967 | 1322 | 1333 | 1446 | 995 | 1196 | 1900 | 2625 | 2640 | 2855 |
| | Highway 7 | 1007 | 934 | 933 | 813 | 820 | 794 | 2040 | 2576 | 2505 | 2385 | 2381 | 2350 |

| Screenline | Road | Eastbound / Northbound Volumes | | | | | | Westbound / Southbound Volumes | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Existing (2016) Conditions | Scenario 1: Base Case | Scenario 2: East Improvements | Scenario 3: Widen for Transit/HOV and Build Connection | Scenario 4: Widen for Transit/HOV, Build Connection & Interchange Improvement | Scenario 5: Widen for Goods Movement, Build Connection & Interchange Improvement | Existing (2016) Conditions | Scenario 1: Base Case | Scenario 2: East Improvements | Scenario 3: Widen for Transit/HOV and Build Connection | Scenario 4: Widen for Transit/HOV, Build Connection & Interchange Improvement | Scenario 5: Widen for Goods Movement, Build Connection & Interchange Improvement |
| West of Dufferin Street Screenline Total | | 1658 | 2803 | 2934 | 3153 | 3447 | 3448 | 3546 | 4295 | 5447 | 5943 | 6693 | 6693 |
| North of Langstaff Road (Screenline 5) | Jane Street | 588 | 305 | 276 | 529 | 417 | 518 | 1383 | 1774 | 1747 | 1843 | 1860 | 1856 |
| | Keele Street | 578 | 827 | 1187 | 703 | 662 | 703 | 1786 | 2874 | 2976 | 2896 | 2883 | 2881 |
| | Dufferin Street | 1353 | 1433 | 1231 | 1103 | 1099 | 1050 | 2181 | 2847 | 2858 | 2874 | 2870 | 2866 |
| North of Langstaff Road Screenline Total | | 3057 | 2519 | 2565 | 2694 | 2335 | 2178 | 2271 | 5350 | 7495 | 7581 | 7613 | 7613 |
| South of Langstaff Road (Screenline 6) | Jane Street | 492 | 329 | 305 | 178 | 171 | 166 | 1240 | 1750 | 1750 | 1864 | 1837 | 1856 |
| | Keele Street | 675 | 1033 | 995 | 800 | 821 | 816 | 1580 | 2540 | 2360 | 2345 | 2364 | 2331 |
| | Dufferin Street | 1643 | 1760 | 1923 | 2187 | 2198 | 2272 | 2572 | 2817 | 2858 | 2883 | 2894 | 2929 |
| South of Langstaff Road Screenline Total | | 3099 | 2810 | 3122 | 3223 | 3165 | 3190 | 3254 | 5392 | 7107 | 6968 | 7092 | 7095 |

## 4.5 Future (2041) Traffic Conditions

Based on findings from the Screenline analysis (**Sections 4.4**), Scenario 5 which includes the widening of Langstaff Road to six general-purpose lanes, connecting Langstaff Road across CN MacMillan Rail Yard and the consideration of Highway 400 interchange improvement, will provide additional vehicular capacity and improve traffic operations within the study area.

Throughout the course of the Class EA study, the consideration for the Highway 400 / Langstaff Road interchange improvements was reviewed in consultation with MTO and the City of Vaughan. Based on the review of various Highway 400 / Langstaff Road interchange alternatives and associated traffic analysis completed as part of the Class EA study, it was acknowledged that the planning of the Highway 400 / Langstaff Road interchange will be a complex undertaking. The extent of the improvements associated with the Highway 400 / Langstaff Road interchange is expected to span well beyond the immediate area of Highway 400 / Langstaff Road, and have implication to the Highway 400 corridor. High level design concept and analysis completed during the Class EA study are on file with York Region.

Per above, the planning for the Highway 400 / Langstaff Road interchange improvements is to be reviewed as part of a future study of the Highway 400 corridor to ensure a more thorough, comprehensive and holistic approach, and therefore, will not be included as part of the current Langstaff Road Class EA study.

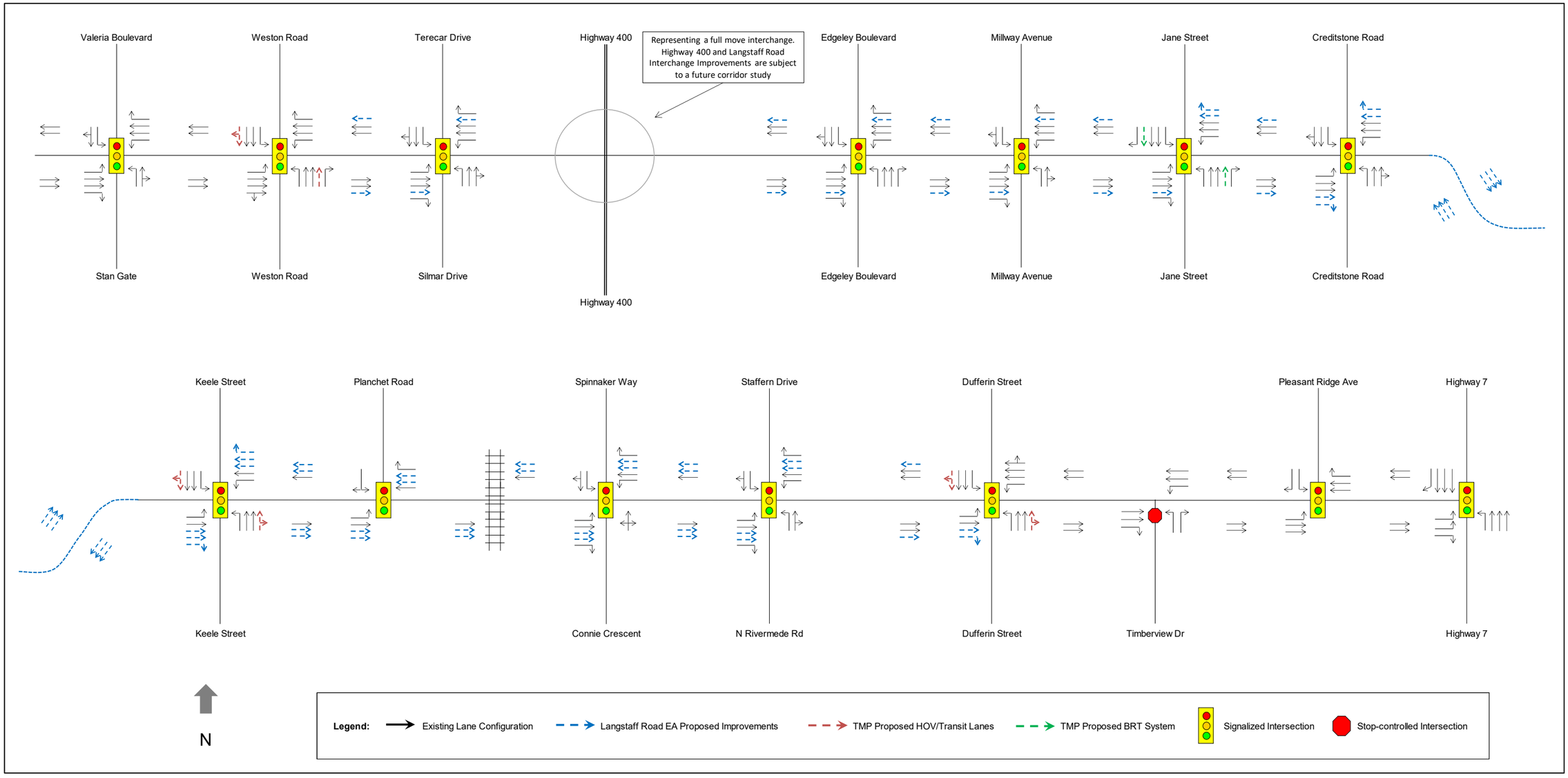
Therefore, for the purpose of the Langstaff Road Class EA study, microsimulation modelling for the future traffic analysis was carried out to reflect two conditions:

- **Section 4.5.1:** Langstaff Road widening to six general purpose lane, CN MacMillan Rail Yard crossing and Metrolinx GO Barrie Line grade separation, with Highway 400 / Langstaff Road improvements (i.e. full move interchange); and
- **Section 4.5.2:** Langstaff Road widening to six general purpose lane, CN MacMillan Rail Yard crossing and Metrolinx GO Barrie Line grade separation) without Highway 400 / Langstaff Road improvements (i.e. partial interchange per existing conditions).

### 4.5.1 Future Intersection Lane Configurations – Simulation 1

The future intersection lane configuration and the control type for roadway intersections are presented in **Exhibit 4-27**. The widening of Langstaff Road to six general-purpose lanes, and the new connection across the CN MacMillan Rail Yard are highlighted in blue, while the additional road improvements, recommended in the York Region TMP outside of the study area, are highlighted in red and green, respectively. A full-move interchange for Highway 400 with Langstaff Road is considered in this proposed intersection lane configurations.

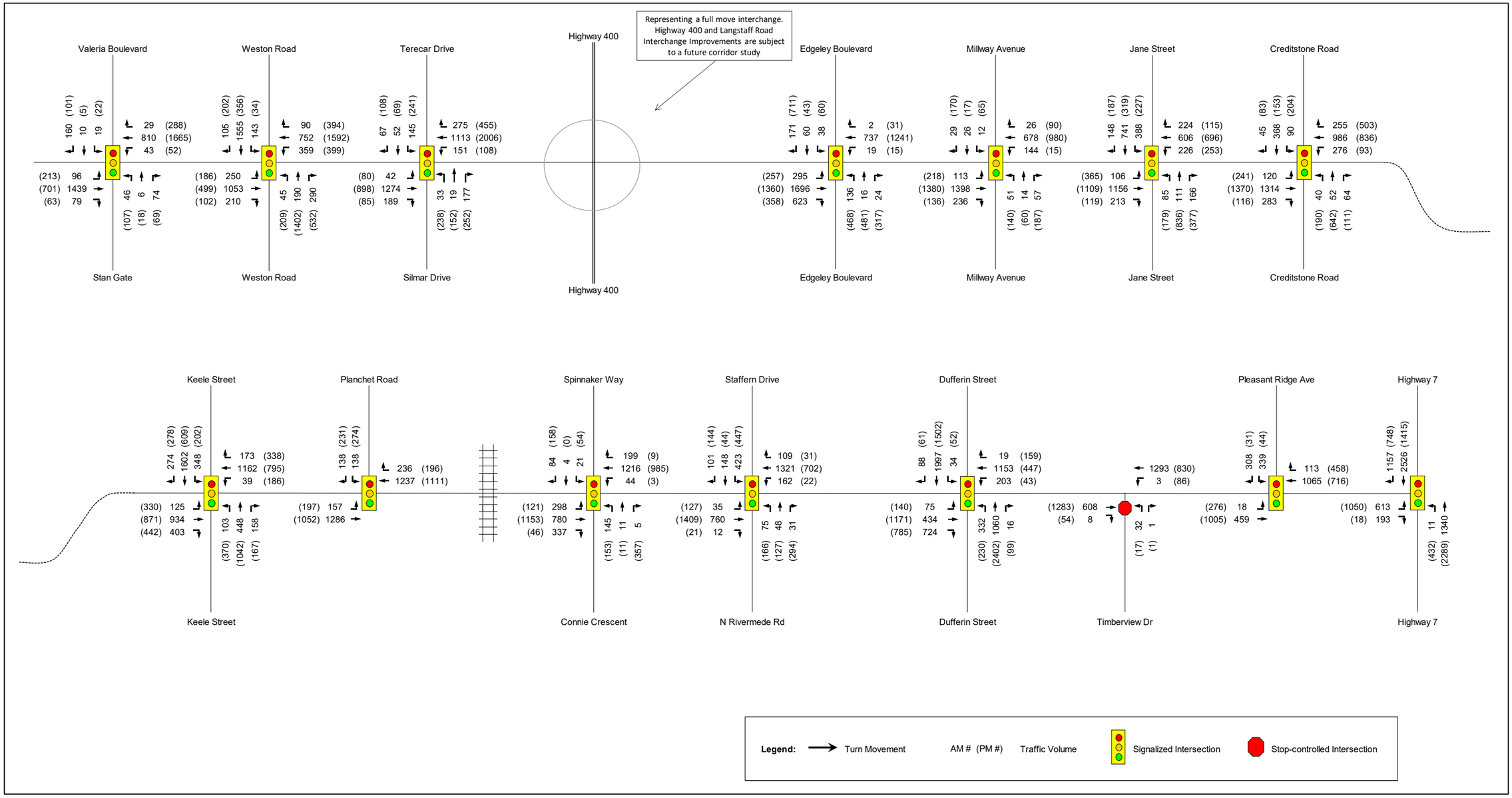
## Exhibit 4-27: Langstaff Road Proposed Intersection Lane Configuration



#### 4.5.1.1 Future (2041) Traffic Volumes

The future simulated peak hour turning volumes are based on the Langstaff Road improvements previously presented in **Exhibit 4-27**. These future traffic volumes were produced using the Aimsun-based micro-simulation model and are presented in **Exhibit 4-28** below, representing a typical weekday condition in 2041. The morning and afternoon peak hours correspond to the hours of 8:00 am to 9:00 am and 5:00 pm to 6:00 pm, respectively.

## Exhibit 4-28: Future (2041) Langstaff Road Peak Hour Turning Volumes



#### 4.5.1.2 Future (2041) Intersection Operations

The future (2041) evaluation for the Langstaff Road intersection operations was performed using the Aimsun-based micro-simulation model. The future traffic operating performance was also assessed based on delays, Level of Service (LOS) and queuing conditions.

Summaries of the future weekday morning and afternoon peak hour intersection operations, within the Langstaff Road Class EA study area, are presented in **Table 4-10** and **Table 4-11**, respectively. It presents the overall intersection delays and LOS, as well as the delays, LOS and 95$^{th}$ percentile vehicular queue lengths for critical movements (i.e., operating at LOS E or F). These critical movements indicate operational issues resulting in long delays and potential congestion.

**Table 4-10: Future (2041) Langstaff Road Intersection LOS Summary and Critical Movements - Morning Peak Hour**

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95$^{th}$ Queue |
| Langstaff Rd at Stan Gate/Valeria Blvd | 10 s | A | NBL | 61 s | E | 21 m |
| | | | NBTR | 64/16 s | E/B | 27 m |
| | | | SBL | 57 s | E | 16 m |
| | | | SBTR | 65/21 s | E/C | 39 m |
| Weston Rd at Langstaff Rd | 40 s | D | EBL | 62 s | E | 95 m |
| | | | EBT | 59 s | E | 102 m |
| | | | WBL | 79 s | E | 153 m |
| | | | NBL | 93 s | F | 31 m |
| Langstaff Rd at Silmar Dr/Terecar Dr | 18 s | B | NBL | 61 s | E | 58 m |
| | | | SBL | 59 s | E | 155 m |
| Hwy 400 West Ramp Terminal at Langstaff Rd | 36 s | D | EBT | 69 s | E | 135 m |
| Hwy 400 East Ramp Terminal at Langstaff Rd | 31 s | C | - | - | - | - |
| Langstaff Rd at Edgeley Blvd | 16 s | B | - | - | - | - |
| Langstaff Rd at Millway Ave | 8 s | A | NBL | 64 s | E | 33 m |
| | | | SBL | 65 s | E | 18 m |
| Jane St at Langstaff Rd | 38 s | D | WBL | 64 s | E | 96 m |
| | 25 s | C | NBL | 62 s | E | 30 m |

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Creditstone Rd | | | SBL | 62 s | E | 48 m |
| | | | SBT | 73 s | E | 76 m |
| Keele St at Langstaff Rd | 42 s | D | EBL | 234 s | F | 149 m |
| | | | WBL | 58 s | E | 23 m |
| | | | NBL | 107 s | F | 59 m |
| | | | SBL | 58 s | F | 126 m |
| Langstaff Rd at Planchet Rd | 8 s | A | - | - | - | - |
| Langstaff Rd at Connie Cres/Spinnaker Way | 10 s | B | NBL | 57 s | E | 48 m |
| | | | SBL | 57 s | E | 20 m |
| | | | SBT | 60 s | E | 34 m |
| Langstaff Rd at North Rivermede Rd/Staffern Dr | 31 s | C | SBL | 86 s | F | 226 m |
| | | | SBTR | 65/59 s | E/E | 242 m |
| Dufferin St at Langstaff Rd | 98 s | F | EBL | 79 s | E | 49 m |
| | | | EBR | 95 s | F | 349 m |
| | | | WBL | 205 s | F | 209 m |
| | | | WBTR | 79/71 s | E/E | 230 m |
| | | | NBL | 90 s | F | 241 m |
| | | | SBL | 185 s | F | 41 m |
| | | | SBT | 150 s | F | 358 m |
| | | | SBR | 123 s | F | 132 m |
| Langstaff Rd at Timberview Dr (Stop-controlled) | 26 s | D | - | - | - | - |
| Langstaff Rd at Pleasant Ridge Ave | 20 s | B | - | - | - | - |
| Highway 7 at Langstaff Rd | 11 s | B | EBL | 67 s | E | 12 m |
| | | | SBL | 63 s | E | 85 m |

During the morning peak hour, all assessed intersections operate with an overall acceptable LOS (i.e. LOS D or better) with the exception of the Langstaff Road intersection with Dufferin Street, which operates at LOS F with an average vehicle delay of 98 seconds.

Critical movements operating at LOS E or F are generally observed at left turning movements due to higher left-turning volumes and higher opposing through volumes; these critical

movements are located at the major Langstaff Road intersections with Weston Road, Silmar Drive/Terecar Drive, Jane Street and Keele Street, and have delays to 234 seconds for the eastbound-left turn at the Keele Street intersection, and 95th percentile queue length of 155 metres for the southbound-left turn at the Silmar Drive/Terecar Drive intersection.

For the Langstaff Road and Dufferin Street intersection, significant southbound traffic volumes combined with heavy turning movement volumes from the other approaches result in poor operations at this intersection, operating at LOS F. Simulated average delays of up to 205 seconds and 95th percentile queues of up to 358 metres cause congestion on the approaches leading up to the intersection. It is worth noting that this intersection has a substantial eastbound right turn demand of approximately 700 vehicles, and a southbound through and right turn demand of approximately 2,100 vehicles in the morning peak hour.

### Table 4-11: Future (2041) Langstaff Road Intersection LOS Summary and Critical Movements - Afternoon Peak Hour

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Stan Gate/Valeria Blvd | 18 s | B | NBL | 56 s | E | 39 m |
| | | | NBT | 55 s | E | 23 m |
| | | | SBL | 64 s | E | 17 m |
| | | | SBT | 77 s | E | 29 m |
| Weston Rd at Langstaff Rd | 49 s | D | EBL | 162 s | F | 146 m |
| | | | NBL | 139 s | F | 134 m |
| | | | NBT | 64 s | E | 173 m |
| | | | SBL | 60 s | E | 24 m |
| Langstaff Rd at Silmar Dr/Terecar Dr | 30 s | C | EBL | 339 s | F | 84 m |
| | | | NBL | 56 s | E | 309 m |
| Hwy 400 West Ramp Terminal at Langstaff Rd | 22 s | C | - | - | - | - |
| Hwy 400 East Ramp Terminal at Langstaff Rd | 29 s | C | - | - | - | - |
| Langstaff Rd at Edgeley Blvd | 37 s | C | EBL | 150 s | F | 312 m |
| | | | WBL | 56 s | E | 13 m |
| | | | SBL | 61 s | E | 32 m |
| Langstaff Rd at Millway Ave | 19 s | B | WBL | 64 s | E | 10 m |
| | | | SBL | 56 s | E | 34 m |

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Jane St at Langstaff Rd | 54 s | D | EBL | 103 s | F | 250 m |
| | | | EBT | 68 s | E | 215 m |
| | | | WBL | 68 s | E | 127 m |
| | | | SBL | 60 s | E | 93 m |
| Langstaff Rd at Creditstone Rd | 60 s | E | EBL | 161 s | F | 189 m |
| | | | WBL | 513 s | F | 220 m |
| | | | NBT | 91 s | F | 172 m |
| | | | NBR | 92 s | F | 177 m |
| | | | SBL | 56 s | E | 73 m |
| Keele St at Langstaff Rd | 76 s | E | EBL | 198 s | F | 329 m |
| | | | WBL | 71 s | E | 86 m |
| | | | NBL | 216 s | F | 294 m |
| | | | NBT | 115 s | F | 294 m |
| | | | NBR | 90 s | F | 95 m |
| | | | SBL | 84 s | F | 95 m |
| Langstaff Rd at Planchet Rd | 18 s | B | EBL | 59 s | E | 96 m |
| | | | SBL | 63 s | E | 136 m |
| Langstaff Rd at Connie Cres/Spinnaker Way | 13 s | B | NBT | 59 s | E | 106 m |
| Langstaff Rd at North Rivermede Rd/Staffern Dr | 44 s | D | WBL | 73 s | F | 20 m |
| | | | NBL | 95 s | F | 85 m |
| | | | NBTR | 88/84 s | F/F | 192 m |
| Dufferin St at Langstaff Rd | 76 s | E | EBL | 150 s | F | 105 m |
| | | | EBT | 132 s | F | 287 m |
| | | | EBR | 75 s | E | 255 m |
| | | | WBL | 85 s | F | 36 m |
| | | | NBL | 106 s | F | 133 m |
| | | | NBTR | 85/58 s | F/E | 255 m |
| | | | SBL | 84 s | F | 28 m |
| Langstaff Rd at Timberview Dr (Stop-controlled) | 9 s | C | - | - | - | - |
| Langstaff Rd at Pleasant Ridge Ave | 9 s | A | SBL | 63 s | E | 24 m |

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Highway 7 at Langstaff Rd | 30 s | C | EBL | 119 s | F | 224 m |

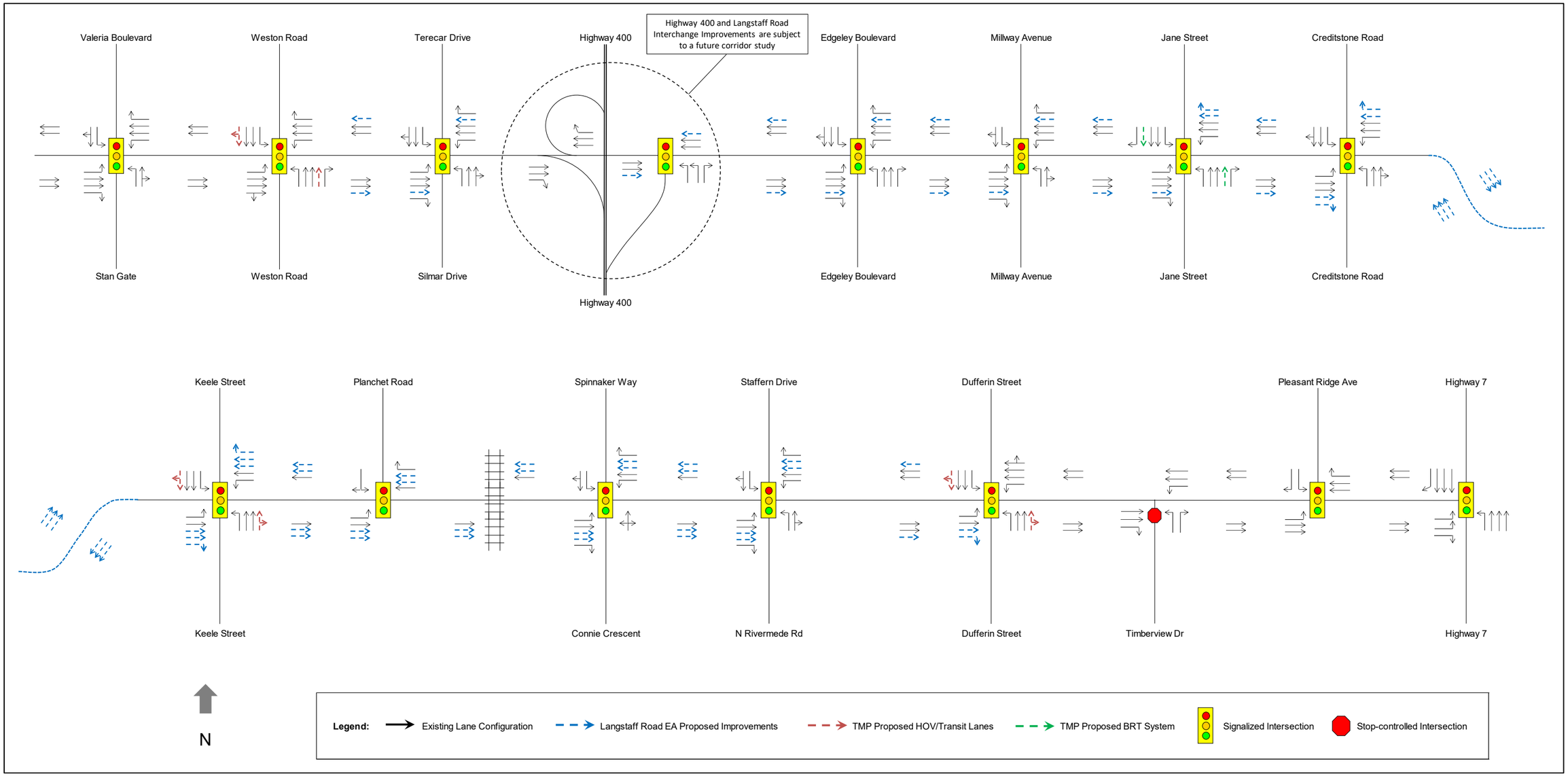
The overall LOS for the afternoon peak-hour conditions are acceptable (i.e. LOS D or better) for the majority of the Langstaff Road intersections. Intersections with LOS E include the Langstaff Road intersections with Creditstone Road, Keele Street and Dufferin Street. For the Langstaff Road intersections with an acceptable overall LOS, the critical movements are generally left turning movements with higher traffic demands; the average delays and 95$^{th}$ percentile queues at these intersections range up to approximately 513 seconds and 329 metres, respectively.

Traffic operational issues at the Langstaff Road intersections with Keele Street and Dufferin Street in the afternoon peak hour cause road congestion that extends past upstream intersections. To the east of the study area, heavy traffic volumes primarily on the west and south approaches of the Langstaff Road and Dufferin Street intersection, result in traffic congestion in the northbound direction from the Highway 407 ramps and in the eastbound direction from Langstaff Road at Staffern Drive/North Rivermede Road. The additional lane capacity at this intersection causes an increase in traffic volumes of approximately 600 vehicles for the eastbound movement, when compared to the 2041 No-Build Scenario.

### 4.5.2 Future Intersection Lane Configurations – Simulation 2

The future intersection lane configuration and the control type for roadway intersections in the Langstaff Road Class EA study area are presented in **Exhibit 4-28**. The widening of Langstaff Road to six general-purpose lanes, and the new connection across the CN MacMillan Rail Yard are highlighted in blue, while the additional road improvements, recommended in the York Region TMP outside of the study area, are highlighted in red and green, respectively. A partial interchange for Highway 400 with Langstaff Road (i.e. existing conditions) is considered in this proposed intersection lane configurations.

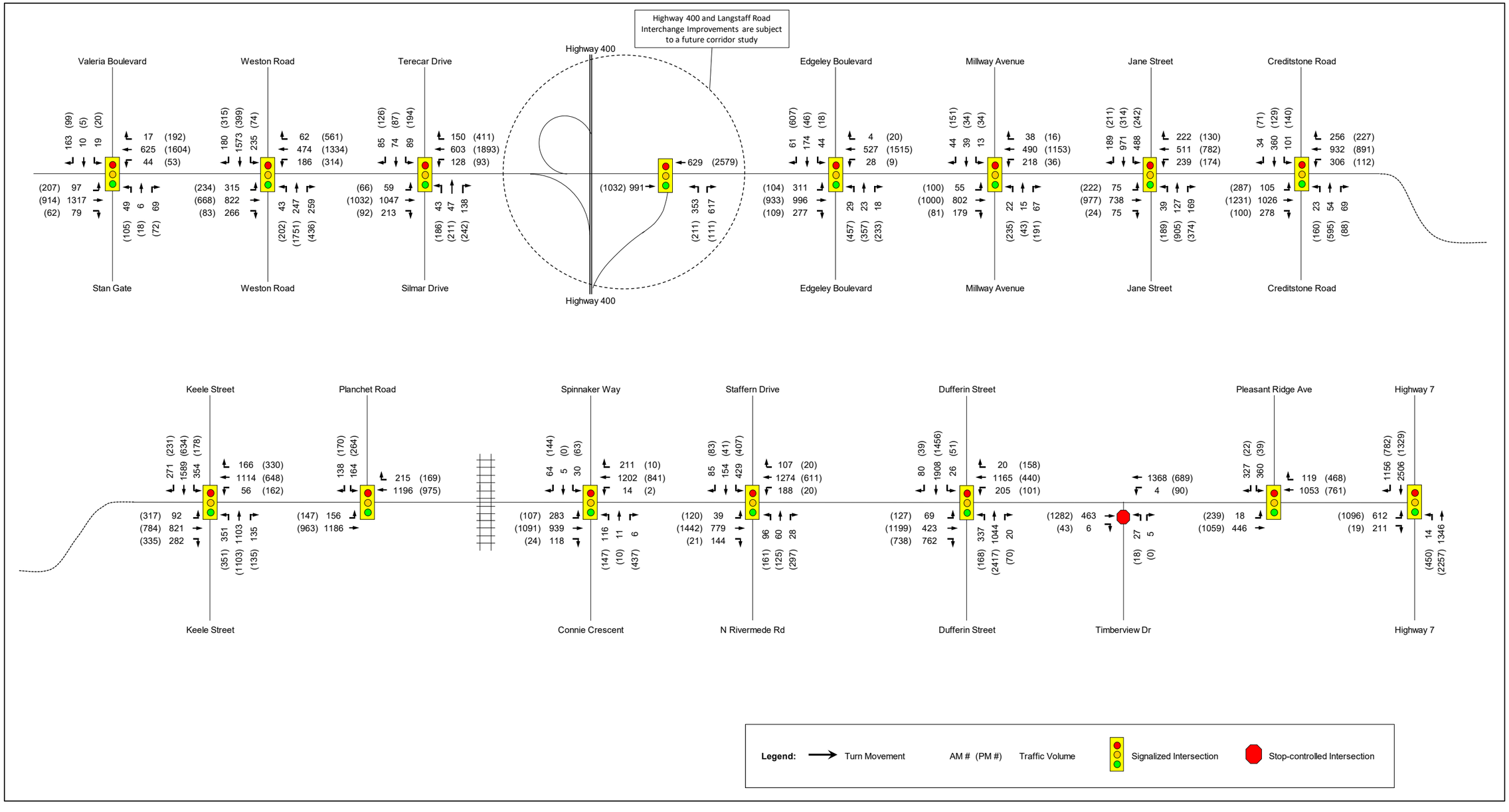
## Exhibit 4-29: Langstaff Road Proposed Intersection Lane Configuration



#### 4.5.2.1 Future (2041) Traffic Volumes

The future simulated peak hour turning volumes are based on the Langstaff Road improvements previously presented in **Exhibit 4-29**. These future traffic volumes were produced using the Aimsun-based micro-simulation model and are presented in **Exhibit 4-30** below, representing a typical weekday condition in 2041. The morning and afternoon peak hours correspond to the hours of 8:00 am to 9:00 am and 5:00 pm to 6:00 pm, respectively.

## Exhibit 4-30: Future (2041) Langstaff Road Peak Hour Turning Volumes



#### 4.5.2.2 Future (2041) Intersection Operations

Similar to Simulation 1, the future (2041) evaluation for the Langstaff Road intersection operations was performed using the Aimsun-based micro-simulation model. The future traffic operating performance was also assessed based on delays, Level of Service (LOS) and queuing conditions.

Summaries of the future weekday morning and afternoon peak hour intersection operations, within the Langstaff Road Class EA study area, are presented in **Table 4-12** and **Table 4-13**, respectively. It presents the overall intersection delays and LOS, as well as the delays, LOS and 95$^{th}$ percentile vehicular queue lengths for critical movements (i.e. operating at LOS E or F). These critical movements indicate operational issues resulting in long delays and potential congestion.

**Table 4-12: Future (2041) Langstaff Road Intersection LOS Summary and Critical Movements - Morning Peak Hour**

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95$^{th}$ Queue |
| Langstaff Rd at Stan Gate/Valeria Blvd | 10s | B | NBL | 59s | E | 21 m |
| | | | NBTR | 63/16s | E/B | 26 m |
| | | | SBL | 56s | E | 17 m |
| | | | SBTR | 63/19s | E/B | 39 m |
| Weston Rd at Langstaff Rd | 39s | D | EBL | 71s | E | 130 m |
| | | | NBL | 102s | F | 36 m |
| Langstaff Rd at Silmar Dr/Terecar Dr | 19s | B | NBL | 62s | E | 221 m |
| | | | SBL | 57s | E | 252 m |
| | | | SBTR | 56/26s | E/C | 27 m |
| Hwy 400 East Ramp Terminal at Langstaff Rd | 86s | F | EBT | 148s | F | 260 m |
| | | | WBT | 97s | F | 147 m |
| Langstaff Rd at Edgeley Blvd | 15s | B | NBL | 70s | E | 22 m |
| | | | NBT | 55s | E | 10 m |
| Langstaff Rd at Millway Ave | 13s | B | NBL | 70s | E | 21 m |
| | | | SBL | 58s | E | 15 m |
| | | | SBT | 56s | E | 41 m |
| Jane St at Langstaff Rd | 38s | D | WBL | 70s | E | 115 m |
| | 29s | C | WBL | 60s | E | 116 m |

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Creditstone Rd | | | NBL | 58s | E | 21 m |
| | | | SBL | 68s | E | 49 m |
| | | | SBT | 72s | E | 77 m |
| Keele St at Langstaff Rd | 54s | D | EBL | 131s | F | 105 m |
| | | | NBL | 96s | F | 51 m |
| | | | SBL | 80s | F | 156 m |
| | | | SBT | 82s | F | 269 m |
| | | | SBR | 83s | F | 122 m |
| Langstaff Rd at Planchet Rd | 9s | A | - | - | - | - |
| Langstaff Rd at Connie Cres/Spinnaker Way | 10s | A | NBL | 62s | E | 43 m |
| | | | NBT | 55s | E | 20 m |
| | | | SBT | 71s | E | 31 m |
| Langstaff Rd at North Rivermede Rd/Staffern Dr | 44s | D | SBL | 144s | F | 389 m |
| | | | SBTR | 113/97s | F/F | 459 m |
| Dufferin St at Langstaff Rd | 112s | F | EBL | 85s | F | 75 m |
| | | | EBR | 104s | F | 361 m |
| | | | WBL | 260s | F | 264 m |
| | | | WBTR | 84/71s | F/E | 299 m |
| | | | NBL | 83s | F | 196 m |
| | | | SBL | 208s | F | 24 m |
| | | | SBT | 183s | F | 417 m |
| | | | SBR | 156s | F | 180 m |
| Langstaff Rd at Timberview Dr (Stop-controlled) | 95s | F | NBL | 140s | F | 22 m |
| Langstaff Rd at Pleasant Ridge Ave | 28s | C | SBL | 56s | E | 94 m |
| Highway 7 at Langstaff Rd | 12s | B | EBL | 65s | E | 10 m |
| | | | SBL | 61s | E | 89 m |

During the morning peak hour, most assessed intersections operate with an overall acceptable LOS (i.e. LOS D or better) with the exception of the Langstaff Road intersection with Highway

400 East Ramp Terminal, Dufferin Street and Timberview Drive, which all operate at LOS F with an average vehicle delay of 86 seconds, 112 seconds and 95 seconds, respectively.

Critical movements operating at LOS E or F are generally observed at left turning movements due to high opposing through volumes. These critical left-turn movements are located at the major Langstaff Road intersections with Weston Road, Jane Street and Keele Street, and have the highest delay of 131 seconds for the eastbound-left turn at the Keele Street intersection, and 95$^{th}$ percentile queue length of 156 metres for the southbound-left turn at the Keele Street intersection.

At the Langstaff Road and Dufferin Street intersection, significant southbound traffic volumes combined with heavy turning movement volumes from the other approaches result in poor operations at this intersection, operating at LOS F. Simulated average delays of up to 260 seconds for the westbound-left turn, and 95$^{th}$ percentile queues of up to 417 metres for the southbound-through, are observed as the most critical and contribute towards the overall congestion at the intersection. It is worth noting that this intersection also has a substantial eastbound right turn demand of approximately 760 vehicles, and a southbound through and right turn demand of approximately 1,900 vehicles in the morning peak hour.

### Table 4-13: Future (2041) Langstaff Road Intersection LOS Summary and Critical Movements - Afternoon Peak Hour

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Stan Gate/Valeria Blvd | 14s | B | NBT | 56s | E | 36 m |
| | | | SBL | 63s | E | 17 m |
| | | | SBT | 75s | E | 29 m |
| Weston Rd at Langstaff Rd | 88s | F | EBL | 217s | F | 277 m |
| | | | NBL | 184s | F | 114 m |
| | | | NBT | 183s | F | 369 m |
| | | | NBR | 134s | F | 205 m |
| | | | SBL | 94s | F | 40 m |
| Langstaff Rd at Silmar Dr/Terecar Dr | 28s | C | EBL | 95s | F | 39 m |
| Hwy 400 East Ramp Terminal at Langstaff Rd | 12s | B | NBL | 58s | E | 47 m |
| Langstaff Rd at Edgeley Blvd | 25s | C | EBL | 78s | E | 68 m |

| Intersection | Intersection | | Critical Movements | | | |
|---|---|---|---|---|---|---|
| | Delay | LOS | Movement | Delay | LOS | 95th Queue |
| Langstaff Rd at Millway Ave | 24s | C | SBL | 60s | E | 22 m |
| | | | SBT | 57s | E | 54 m |
| Jane St at Langstaff Rd | 40s | D | SBL | 56s | E | 92 m |
| Langstaff Rd at Creditstone Rd | 39s | D | EBL | 62s | E | 99 m |
| | | | WBL | 122s | F | 72 m |
| | | | NBT | 62s | E | 111 m |
| | | | NBR | 62s | E | 114 m |
| | | | SBL | 57s | E | 54 m |
| Keele St at Langstaff Rd | 70s | E | EBL | 175s | F | 254 m |
| | | | WBL | 60s | E | 66 m |
| | | | NBL | 142s | F | 199 m |
| | | | NBT | 108s | F | 284 m |
| | | | NBR | 85s | F | 83 m |
| | | | SBL | 61s | E | 69 m |
| Langstaff Rd at Planchet Rd | 15s | B | SBL | 60s | E | 139 m |
| Langstaff Rd at Connie Cres/Spinnaker Way | 14s | B | NBT | 56s | E | 116 m |
| Langstaff Rd at North Rivermede Rd/Staffern Dr | 43s | D | NBL | 96s | F | 90 m |
| | | | NBTR | 90/80s | F/F | 196 m |
| Dufferin St at Langstaff Rd | 83s | F | EBL | 150s | F | 95 m |
| | | | EBT | 147s | F | 283 m |
| | | | EBR | 84s | F | 227 m |
| | | | WBL | 223s | F | 128 m |
| | | | NBL | 104s | F | 129 m |
| | | | NBTR | 88/63s | F/E | 271 m |
| | | | SBL | 96s | F | 28 m |
| Langstaff Rd at Timberview Dr (Stop-controlled) | 18s | C | - | - | - | - |
| Langstaff Rd at Pleasant Ridge Ave | 9s | A | SBL | 68s | E | 25 m |
| Highway 7 at Langstaff Rd | 48s | D | EBL | 183s | F | 294 m |
| | | | EBT | 69s | E | 309 m |

During the afternoon peak-hour, the overall LOS are acceptable (i.e. LOS D or better) for the majority of the Langstaff Road intersections. Intersections with LOS E or F include the Langstaff Road intersections with Weston Road, Keele Street and Dufferin Street, with overall average vehicle delays of 88 seconds, 70 seconds and 83 seconds, respectively. These intersections cause road congestion that extends past upstream intersections.

To the west of the study area, heavy traffic demands in the northbound direction of the Langstaff Road and Weston Road intersection contribute to significant delays of 184 seconds and 95$^{th}$ percentile queue lengths of up to 369 metres. Significant delays of 217 seconds are also observed for the eastbound-left turn.

To the east of the study area, heavy traffic demands primarily on the northbound approaches to the Langstaff Road and Dufferin Street intersection, result in traffic congestion and 95$^{th}$ percentile queue lengths of up to 271 metres extending to the Highway 407 ramps. The heavy traffic demand at the eastbound approaches also contribute to significant 95$^{th}$ percentile queue lengths of up to 283 metres.

## 4.6 Summary of Travel Demand and Traffic Operational Analysis

Travel demand analysis for the existing (2016) and future (2041) transportation conditions for Langstaff Road has been conducted to assess the road network improvement needs and justification. This analysis applied the YRTDF model to forecast future travel demands based on regional population and employment growth targets. The key aspects of this analysis are summarized below:

- To assess the future (2041) transportation conditions with alternative improvements and to identify potential transportation needs within the study area, five improvement scenarios were assessed. The potential improvements include six-lane widening of Langstaff Road to accommodate Transit/HOV lanes or general-purpose lanes (GPL), connecting Langstaff Road across the CN MacMillan Rail Yard and Highway 400 interchange improvements (to provide access to and from the north).
- The existing (2016) travel demand analysis result confirms that east-west traffic volumes are operating at *Very Congested* conditions near the CN MacMillan Rail Yard crossing, and approaching planning level capacity at other screenline locations within the study area. The 2016 York Region TMP indicates that population within the extended study area is expected to increase by 47,700 persons and employment by 21,500 in 2041—this represents approximately a significant 35% and 16% increase in population and employment from 2016 (i.e. 1.4% and 0.6% growth per annum), respectively.

- The future (2041) travel demand analysis for the Base Case (Scenario 1) accounted for all regional TMP recommended improvements *excluding* Langstaff Road improvements. Findings under Scenario 1 indicate that the east-west corridors (Rutherford Road, Langstaff Road and Highway 7) will be operating with very high delays under *Very Congested* conditions. This scenario highlights the need for additional transportation capacity within the study area.
- With the provision of the new connection of Langstaff Road across the CN MacMillan Rail Yard and widening of Langstaff Road between Weston Road and Dufferin Street with 4 GPL + 2 HOV (Scenario 3), congestion within the study area could be reduced significantly. The connection across CN MacMillan Rail Yard could provide much needed transportation capacity within the study area by relieving capacity constrained conditions on Rutherford Road and Highway 7. The new connection will also provide opportunity for truck traffic to access area highways directly, thereby reducing truck traffic from other regional arterial roads.
- Scenario 4 improvements (Scenario 3 plus Highway 400 interchange at Langstaff Road) are expected to attract additional traffic volumes to Langstaff Road. At the screenline level, analysis of this scenario shows very marginal improvements in screenline V/C ratios when compared to Scenario 3; this is expected since no additional arterial roadway capacity was introduced. For the screenline east of Weston Road (Screenline 1), the Highway 400 interchange at Langstaff Road draws slightly more additional traffic, resulting in a 2041 AM Peak Hour combined direction increase of 215 vehicles. Volumes remain relatively consistent between the two scenarios for the screenline east of Highway 400 (Screenline 2), but show a redistribution of traffic along the links in the westbound direction; an increase on Langstaff Road and decrease on both Rutherford Road and Highway 7.
- In the context of the commercial and industrial land uses in the study area, the Regional road network servicing the study area experiences greater amounts of commercial vehicles as compared to other such roads within the region. High commercial vehicle traffic levels may result in traffic operational issues given that the proposed widening for Transit/HOV lanes would not accommodate such vehicles in a curb lane combined with a high number of driveway accesses on Langstaff Road which therefore require mixed traffic to use the Transit/HOV lanes for turns. Trucks entering/exiting from the adjacent industrial/commercial lands could pose a potential operation concern and significantly reduce the Transit/HOV lanes benefits. Scenario 5 addresses this concern by allocating the widening of Langstaff Road to six general-purpose lanes.
- The proposed improvements in Scenario 5 are recommended based on the following:

- Travel demand modelling results shows that improvements under Scenario 5 would provide additional vehicular—in particular goods movement—capacity compared to Scenario 4, which would reduce congestion within the study area, leading to improved overall traffic operations;
- A relatively short distance of Transit/HOV lane network on Langstaff Road would not add overall benefits to the greater transportation network; and
- High number of accesses and proportion of commercial vehicles in the study area which would be better served with six GPLs.

- ***In summary, from a travel demand analysis standpoint using screenline and link analysis techniques, needs and justification have been identified for the following preliminary Langstaff Road improvements:***
  - Widening Langstaff Road to six general-purpose lanes;
  - Provision of a new connection on Langstaff Road across the CN MacMillan Rail Yard; and
  - Consideration for improvements to the existing partial Highway 400 interchange in the future (see **Section 8.5**).
- Based on the travel demand analysis findings for Scenario 5, two additional scenarios (Simulation 1 and Simulation 2) were considered for the microsimulation traffic operations analysis using Aimsun. Both simulations included the widening of Langstaff Road to six general purpose lanes, grade separation with the Metrolinx Barrie GO Line, and a new connection across the CN MacMillan Rail Yard; however, Simulation 1 included a full move interchange at Highway 400, while Simulation 2 included the existing partial interchange.
  - Future 2041 traffic conditions under both simulations indicate that operations at the majority of the Langstaff Road intersections will operate with an overall acceptable LOS (i.e. LOS D of better) for both the morning and afternoon peaks with exception of Dufferin Street which operates at LOS E or F under both simulations. The overall delay at this intersection under Simulation 1 is expected to be approximately 98 seconds and 76 seconds during the morning and evening peak-hours, respectively. A slight deterioration to the delay at the intersection during Simulation 2, results in an overall delay of 112 seconds and 83 seconds during the morning and evening peak-hours, respectively.
  - It should also be noted that under Simulation 2, the east ramp terminal during morning peak-hour has an overall delay of 86 seconds (LOS F), but an overall delay of 31 seconds (LOS C) under Simulation 1. However, based on the review of various Highway 400 / Langstaff Road interchange alternatives and associated

traffic analysis completed as part of the Class EA study, it was acknowledged that the planning of the Highway 400 / Langstaff Road interchange will be a complex undertaking. The extent of the improvements associated with the Highway 400 / Langstaff Road interchange is expected to span well beyond the immediate area of Highway 400 / Langstaff Road, potentially include the consideration of a core/collector system. The planning for the Highway 400 / Langstaff Road interchange improvements is to be further reviewed in the future, and will not be included as part of the current Langstaff Road Class EA study.

- Even without the Highway 400 / Langstaff Road interchange improvement, the implementation of other proposed improvements on Langstaff Road, which include the widening to six general purpose lanes, grade separation with the Metrolinx GO Barrie Line and crossing of the CN MacMillan Rail Yard, will provide the following benefits:
  - Congestion reduction in east-west corridors (i.e. Rutherford Road and Highway 7);
  - Supports Langstaff Road as a Primary Arterial Goods Movement Corridor;
  - Direct access to area highways, which can reduce truck traffic on surrounding arterial roads; and
  - General improvement of traffic operations throughout the study corridor.

# 5 PROBLEM AND OPPORTUNITY STATEMENT

## 5.1 Summary of Problems and Opportunities

Based on the review of the planning and policy context and the detailed travel demand analysis presented in this report for both the existing and future conditions, the problems and opportunities identified for Langstaff Road are summarized below (also see **Exhibit 5-1**).

- Traffic congestion continues to be identified as the top issue facing York Region residents. Furthermore, residents identify traffic as the greatest threat to quality of life in York Region, followed closely by the high rate of development taking place.
- The delivery of an interconnected system of mobility (including vehicle, transit and active transportation) is supported by the progressive objectives, policies and actions embedded in many of York Region's Council-approved plans and documents, including Vision 2051, the York Region Official Plan (2010), the 2015 to 2019 Strategic Plan (which was reviewed at the start of the EA study and York Region has since updated it to be the 2019 to 2023 Strategic Plan) , and the York Region TMP (2016).
- Within the Langstaff Road Class EA study area, the existing (2016) east-west traffic volumes are operating at *Very Congested* conditions near the CN MacMillan Rail Yard crossing, and approaching capacity at other east-west and north-south roads within the study area such as Highway 7 and Rutherford Road.
- The York Region TMP indicates that population within the extended study area (**Exhibit 3-1**) is expected to increase by 47,700 persons and employment by 21,500 by 2041, which represents approximately a significant 35% and 16% increase in population and employment from 2016 (i.e. 1.4% and 0.6% growth per annum), respectively. This will result in deteriorating traffic conditions on all roads in the area.
- The lack of connectivity at the CN MacMillan Rail Yard severely limits the contribution that Langstaff Road can make to the overall east-west arterial road network, and limits active transportation connectivity between the west to the east, requiring those walking or cycling to travel an approximately five additional kilometres around to connect between Creditstone Road / Langstaff Road and Keele Street / Langstaff Road. The at-grade crossing at the GO Transit Barrie Line and the partial interchange at Highway 400 also impacts the efficiency of this route. In addition, the Bartley Smith Greenway and Vaughan Super Trail traverse Langstaff Road limiting connectivity.
- The York Region Transportation Master Plan (TMP), which was endorsed by Regional Council in June 2016, sets out the infrastructure and policy requirements to enable the

Region to build and maintain an interconnected transportation system to accommodate growth to 2041. The TMP recommends the following improvements for Langstaff Road within the study area:

- Widen to six lanes with Transit/HOV lanes;
- Frequent Transit Network;
- Designated cycling facilities;
- GO Transit Barrie Line Grade Separation; and
- Connect across CN MacMillan Rail Yard.

- The TMP also recommends the following network improvements to other Regional arterial roads within the extended study area:
  - Weston Road: Widen to six lanes including Transit/HOV lanes, from Steeles Avenue to Major Mackenzie Drive;
  - Jane Street: Rapid Transit Corridor between Highway 7 and Major Mackenzie Drive;
  - Keele Street: Widen to six lanes including Transit/HOV lanes from Highway 7 to Rutherford Road;
  - Dufferin Street: Widening to six lanes including Transit/HOV lanes from Langstaff Road to Rutherford Road; and
  - Rutherford Road/Carville Road/16$^{th}$ Avenue: Widening for Transit/HOV lanes from Jane Street to McCowan Road.
- Langstaff Road, between Highway 400 and Dufferin Street, is identified as part of York Region's Strategic Goods Movement Network (SGMN). This strategic network is intended to facilitate safe and efficient movement of goods to and from key origins and destinations including Provincial highways, intermodal rail yards and commercial and industrial employment areas. Langstaff Road is designated as a Primary Arterial Goods Movement Corridor in the SGMN as it meets the following criteria:
  - Is an urban arterial serving employment and industrial lands;
  - Is expected to handle more than 2,500 trucks per 8-hour period and more than 10% modal split of medium and heavy trucks;
  - Contains mixed traffic and minimal overlap with rapid transit corridors;
  - Provides accessibility to employment lands; and
  - Ensures that trucks can easily access 400-series highways and their destinations to support regional economic growth.

- The higher number of commercial vehicles in the study area necessitates the need to provide separated pedestrian and cycling facilities.
- Various improvement scenarios examined in the travel demand analysis for Langstaff Road confirm that additional vehicular capacity would reduce congestion within the study area, leading to improved overall traffic operations including more efficient movement of goods and better access to employment areas.
- A relatively short distance of Transit/HOV lane network on Langstaff Road, as considered by the TMP, would not benefit the transportation network; as travel time benefits associated with designated Transit/HOV lanes are typically realized over a greater distance. The high number of accesses and proportion of commercial vehicles in the study area which would be better served with six general-purpose lanes.
- The travel demand analysis demonstrates that the following improvements should be considered:
    - Widening Langstaff Road to six general-purpose lanes;
    - Provision of a new connection on Langstaff Road across the CN MacMillan Rail Yard; and
    - Conversion of the existing partial Highway 400 interchange to a full interchange (providing highway access to and from the north). This feasibility and benefit is to be studied further using micro-simulation analysis.
- The travel demand analysis suggests that implementation of these improvements would provide the following benefits:
    - Congestion reduction in other east-west corridors (i.e. Rutherford Road and Highway 7);
    - Supports Langstaff Road as a Primary Arterial Goods Movement Corridor;
    - Direct access to area highways, which can reduce truck traffic on surrounding arterial roads; and
    - General improvement of traffic operations throughout the study corridor.

## Exhibit 5-1: Summary of Problems and Opportunities

## 5.2 Problem and Opportunity Statement

Langstaff Road is a major Regional east-west arterial road, designated as part of York Region's Strategic Goods Movement Network, strategically located within an intensifying employment area, and in close proximity to the Vaughan Metropolitan Centre and other primary growth areas in the City of Vaughan.

The role and function of Langstaff Road in York Region's future transportation network is severely limited by: 1) the lack of connection across the CN MacMillan Rail Yard; 2) the restricted access to Highway 400 at the partial interchange; 3) the need for additional road capacity to serve employment areas; and 4) the at-grade crossing of the GO Transit Barrie Line.

These limitations will continue to create additional pressure on adjacent east-west arterial routes and interchanges at Rutherford Road and Highway 7.

Improvements to Langstaff Road are necessary to accommodate long term travel demands, support key growth policies, maximize the potential of employment areas and support the goods movement network.

There is an opportunity to significantly improve the overall function of Langstaff Road in the Regional transportation network, facilitate more efficient movement of people, vehicles and goods, improve access to transit and provide sustainable transportation choices by linking the active transportation network.