

Item:



Committee of the Whole Report

DATE: Tuesday, June 05, 2018

WARD(S): 1

**TITLE: NORTH VAUGHAN AND NEW COMMUNITIES
TRANSPORTATION MASTER PLAN (NVNCTMP)**

FROM:

Stephen Collins, Deputy City Manager, Public Works

ACTION: DECISION

Purpose

This report informs Council of the findings and conclusions of the City's North Vaughan and New Communities Transportation Master Plan (NVNCTMP) Study and recommends that the Study Report be adopted in principle and that the Notice of Study Completion be issued.

Report Highlights

- The NVNCTMP study has been carried out in accordance to the Municipal Class Environmental Assessment (EA) process for Master Plans and has addressed phases one and two of the five-phase EA process.
- The NVNCTMP project team worked in close coordination with Block 27 and Block 41 Secondary Plans project teams in developing the transportation networks for the New Community Areas including the Kirby Transit Hub Sub-Study.
- The NVNCTMP made recommendations considering the impact of various Provincial and Regional transportation decisions on the North Vaughan Area, especially with the development need of the New Community Areas. Such considerations include the Region's 2016 Transportation Master Plan recommendations, impact of not having GTA West Corridor, and opening of the proposed new Kirby GO station in Block 27.

Recommendations

1. That the conclusions and recommendations of the Draft North Vaughan and New Communities Transportation Master Plan (NVNCTMP) study report be approved in principle;
2. That the Mayor and City Clerk be authorized to execute the necessary agreements with Metrolinx to integrate Kirby Road grade separation into the Kirby GO Station project; and
3. That a copy of this report be forwarded to the Regional Municipality of York and Metrolinx;

Background

In January 2015, City staff commenced the North Vaughan and New Communities Transportation Master Plan study (NVNCTMP). The NVNCTMP is a long range plan that recommends policies, programs and infrastructure required to meet the existing and future (2031) mobility needs and provide context for transportation decisions within North Vaughan area. The objective of this plan is to look at both internal and external factors that contribute to achieving sustainable transportation for residents and businesses while ensuring recommendations of the plan address needs ranging from immediate to future growth. This study follows Phases 1 and 2 of the five-phase Municipal Class Environmental Assessment (MCEA) process (October 2000, as amended in 2007, 2011 and 2015) to identify the Problem and Opportunity and Alternative Solutions for infrastructure projects. Phases 3 through 5 will be carried out through subsequent Environmental Assessment (EA) studies focusing on design alternatives and detail design elements of a project. The NVNCTMP study was conducted in coordination with the Block 27 and 41 Secondary Plan Studies for the New Community Areas.

The NVNCTMP Study was carried out in two Phases:

- Phase 1 assessed existing conditions, context and challenges; and
- Phase 2 developed network plans and identified triggers for different infrastructure needs, phasing of projects and an action plan.

In April 2016, the Scope of work for the NVNCTMP was expanded to include the assessment of infrastructure and transportation improvements needed to support the proposed Kirby GO Transit Hub area.

The Region, neighbouring municipalities, and agencies were consulted through Technical Advisory Committee Meetings during each phase of the study. Other key stakeholders such as landowners, community and reatepayers associations, and

Indigenous Communities, and the Vaughan Bicycle Users group were also consulted through a Stakeholder workshop held on August 19, 2015. Members of the public had the opportunity to be involved and provide input through Community Outreach Events, Community Workshops and Public Information Centres (PIC). PICs were held during each phase of the study.

The Final Draft Study Report was circulated to members of the Technical Advisory Committee for comments in March 2018 and were requested to provide comments by mid-April 2018.

Previous Reports/Authority

[Report 17, of the Committee of the Whole, Award of Request for Proposal 15-064 Selection of Consultant for North Vaughan and New Communities Transportation Master Plan \(NVNCTMP\)](#)

[Request for Additional Funding and Extension of Contracts for RFP 14-281 and RFP 15-064 for the North Vaughan and New Communities Transportation Master Plan \(NVNCTMP\) Kirby GO Mobility Hub Sub-Study File: 26.4.1](#)

Analysis and Options

Two Transportation Network Alternatives were assessed to identify a Preferred Network that best address the needs of the North Vaughan and New Community Areas

Two transportation network alternatives were assessed to see how effective they will be in addressing the issues and support the transportation vision for the North Vaughan study area. The alternatives considered for the NVNCTMP were:

1. Alternative Network 1 – York Region TMP (minus GTA West corridor)
2. Alternative Network 2 – Enhanced Network (York Region TMP network with local improvements)

Alternative Network 1 – York Region Transportation Master Plan (YRTMP 2016) Recommended Network excluding GTA West Corridor

Alternative Network 1 incorporates the planned regional transportation improvements from the YRTMP 2016. At the time of the NVNCTMP study, the GTA West Corridor study was put on hold by the province; therefore, the assumption was made that the GTA West Corridor would not be in place by the planning horizon of this study and was excluded from the Alternative Network 1 assessment. On February 9, 2018, the Ministry of Transportation announced that the province will no longer proceed with the GTA West corridor which validated this assumption. In place of the GTA West Corridor, the province is proceeding with the Northwest GTA Corridor Identification Study, which will ensure that lands are protected so that new infrastructure, such as transit or utilities,

can be developed to support and accommodate future growth and development. The City will continue to plan and protect for the corridor area identified in the Northwest GTA Corridor Identification Study.

Alternative 1, reflecting the Region's recommended transportation improvements within the North Vaughan Study Area are shown and listed in ATTACHMENT 1.

Sensitivity Test of Alternative Network 1 to assess the impact of York Region's assumption to include GTA West Corridor

As the GTA West Corridor was included as part of the YRTMP 2016, a sensitivity test was developed to determine the effect that the GTA West Corridor has on the transportation network as the outcome of the GTA West study was uncertain at the time of the analysis.

An evaluation of Alternative Network 1 with and without the GTA West Corridor concluded that the GTA West Corridor could play an important role in reducing congestion within the Study Area. With the GTA West Corridor, the percent of kilometres travelled in congestion is reduced by nearly 40% (20,450 vehicle kilometres), resulting in an 8% difference of overall network congestion and the percent of hours travelled in congestion is reduced by over 35% (1,000 hours). However, since the corridor is no longer considered for a new freeway, the preferred alternative will not include this corridor.

Alternative Network 2 – Enhanced Network with YRTMP 2016 Recommendations and localized improvements

Building upon Alternative Network 1, an enhanced network adding localized improvements to address the development needs of North Vaughan and New Community Areas was assessed.

The localized improvements added within the study area are as follows:

- Reconstruction of Pine Valley Drive from Teston Road to Kirby Road,
- Reconstruction of Kirby Road from Highway 27 to Weston Road, and
- At least one midblock crossing over Highway 400 between Teston Road and King-Vaughan Road.

The road reconstruction of Pine Valley Drive and Kirby Road refers to replacement/enhancement of the underlying pavement structure and the increased width of shoulder areas to the roadway within the existing right-of-way (ROW). These improvements should increase safety for all road users and accommodate higher levels of traffic and active transportation as development in the North Vaughan Area takes place.

In order to improve connectivity of the Highway 400 North Employment Areas and support the arterial network, at least one midblock crossing over Highway 400 was also recommended between Teston Road and King-Vaughan Road.

ATTACHMENT 2 illustrates the transportation network for Alternative Network 2.

Two Sensitivity Tests were conducted under Alternative Network 2 to understand network impacts of key infrastructure improvements and the timing of them

Two sensitivity analyses were also conducted to understand the network impacts of not including certain improvements in the Study Area such as:

1. Alternative Network 2A – Alternative Network 2 without constructing the Kirby Road missing link between Dufferin and Bathurst by 2031
2. Alternative Network 2B – Alternative Network 2 taking out the projects excluded from YRTMP 2016 as per York Region 2017 Development Charge Bylaw

Based on the sensitivity test of Alternative Network 2A, the analyses confirmed the need for the Kirby Road missing link by 2031. Without this link, over 4,000 extra kilometres traveled during the morning peak hour due to vehicles that are required to re-route to the already congested Teston Road or to King-Vaughan Road. This translates to an additional 150 person hours spent in congestion overall in the Study Area in the morning peak hour.

The results from sensitivity test of Alternative Network 2B show that exclusion of several projects in the study area from the 2017 Development Charge Bylaw, would result in over 14,000 additional kilometres traveled and over 1,000 additional person hours spent in congestion during the morning peak hour. Based on York Region's Staff report on the 2018 Development Charge Background Study Bylaw Amendment brought to the Committee of the Whole Finance Administration on May 10, 2018, several road projects that are in the YRTMP 2016 but were placed on a contingency list are recommended to be included in the 2017 DC Bylaw.

Alternative Network 2 – Enhanced Network is recommended to be carried forward

Based on analyses conducted for Alternative Network 1 and Alternative Network 2, along with sensitivity testing of these alternatives, Alternative Network 2 - The Enhanced Network is recommended to be carried forward as the preferred North Vaughan and New Community Areas Transportation Master Plan alternative. This recommended network alternative includes improvements recommended in the York Region Transportation Master Plan 2016 with the assumption that the GTA West Corridor will not be in place and localized improvements to accommodate development in the North Vaughan Areas would be required.

The growth within the NVNCTMP study area, by 2031, needs to be supported by the planned York Region Transportation Master Plan improvements. The removal of

improvements within and surrounding the NVNCTMP study area will have significant negative impacts on overall mobility and growth of the study area. The recommended network is illustrated in ATTACHMENT 3.

Analysis of transportation infrastructure required to support proposed Kirby GO station confirms the need for Grade Separation of Kirby Road at Barrie GO Rail Line to ensure safety and efficiency

As part of the supporting work for the Kirby Transit Hub Sub-Study, the project team looked at the transportation infrastructure required to:

- Ensure safe operations of the proposed Kirby GO station,
- Provide accessibility to surrounding neighborhoods,
- Connect higher order transit with local transit in the North Vaughan areas,
- Coordinate approval and construction staging of the road and station works, and
- Minimize disruption to neighborhoods, station operation and throwaway construction costs

With the frequency of All-day Two-way GO train services on Barrie GO line, and the forecasted traffic on Kirby Road, analysis shows that a grade separation at Kirby Road is recommended by 2031 to minimize train delay and conflicts with auto traffic, pedestrians, and cyclists. Kirby Road is currently a City owned 2-lane rural road. With the development of Block 27 and proposed Kirby GO station, Kirby Road from Keele Street to the west of the GO rail line needs to be upgraded to an urbanized cross-section, including the accommodation of turning lanes to access the GO station.

Given the need to improve Kirby Road in order to service the proposed GO station and the need for grade separation, it is preferred to coordinate and integrate the projects in order to minimize disruption to the proposed GO station, the travelling public and reduce construction costs. Should the grade separation be built after the opening of the GO station, a costly detour road would likely be required and a newly upgraded Kirby Road would be impacted.

The recommended Implementation strategy considers the timing of Regional improvements, the pace of New Community Areas development, servicing availability and the need to facilitate the proposed Kirby GO station

Transportation modelling analysis for the interim 2021 and 2026 horizon years was conducted to understand the timing requirements to support growth in the study area. The recommended phasing based on the YRTMP 2016 was reviewed and recommendation to advance some improvements was identified where needed to support the proposed development of the area. An implementation plan for projects within the NVNCTMP Study area are shown in ATTACHMENT 4.

The implementation plan focuses on supporting the opening of the proposed Kirby GO station as a priority and the major collector roads required for the development within Block 27 related to connectivity and porosity of the Block. The remainder of the transportation network within Block 27 and 41 would be built as development progresses within these Blocks.

It is also recommended that the supporting studies required for the Special Study Areas identified in Block 27 and Block 41 Secondary Plans, including environmental assessment and transportation studies, be completed as part of the Block Plan process.

Financial Impact

There are no immediate budgetary impacts resulting from the adoption of this report. Additional operating and capital funding will be required in future years to successfully implement the recommendations of the NVNCTMP.

The NVNCTMP identifies the need for capital improvements to the City's transportation system in the North Vaughan Area including:

- New transportation network in the New Community Areas Block 27 and Block 41 where numerous crossings of environmental features would also be required,
- Construction of a new Highway 400 mid-block crossings between Teston Road and King-Vaughan Road,
- Jog-elimination at the intersection of Kirby Road and Jane Street,
- Grade Separation of Kirby Road at the GO rail line,
- Reconstruction of Kirby Road between Hwy 27 and Weston Road,
- Reconstruction of Pine Valley Drive between Teston Road and Kirby Road,
- Widening of Kirby Road between Weston Road and Dufferin Street,
- Construction of Kirby Road between Dufferin Street and Bathurst Street, and
- Cycling Facilities along Kirby Road between Hwy 27 and Bathurst Street.

For the most part, these transportation improvements are growth related projects and collectively the construction costs are estimated to be approximately \$249 million, excluding the property acquisition costs. These projects are included in the current Development Charge Background Study update. The increase in operating and maintenance costs associated with this new transportation infrastructure will need to be considered through the long term financial forecasting exercise.

Broader Regional Impacts/Considerations

The results of the NVNCTMP study shows that all the Regional improvements recommended in the YRTMP 2016 are required to support overall mobility and growth of the NVNCTMP study area. Any delay to the delivery of the Regional improvements

as shown in the York Region 2017 Development Charge By-law would negatively impact the development of the North Vaughan and New Community areas.

The introduction of Regional Express Rail (RER) and the addition of Kirby GO station will transform transit usage in the North Vaughan area. The increase in north-south capacity along the Barrie rail corridors will complement existing and future YRT/Viva services connecting the North Vaughan and New Community Areas to the rest of the Region and GTHA more efficiently while providing an attractive alternative mode of transportation besides driving.

Furthermore, advancing grade separation and associated road improvements on Kirby Road will provide far more continuous uninterrupted east-west corridor movement in the North Vaughan area and minimize interruption to GO train services.

Conclusion

The NVNCTMP study report encompasses the culmination of three years of extensive public and stakeholder consultation, coordination, research and technical analysis. It is a key component of the City's overall consolidated Growth Management Strategy of the North Vaughan and New Community Areas to the year 2031.

The NVNCTMP provides a framework for accommodating the growth in the North Vaughan and New Community Areas and supporting the development of the proposed Kirby GO station. Active transportation facilities, travel demand management policies and programs, and innovative mobility program were recommended to an overall sustainable transportation system. The proposed Kirby GO station and expansion of RER program will play a significant role in making public transit an attractive mode of travel in the North Vaughan area. The City must therefore continue to proactively work with Regional and Provincial partners to advance Regional improvements wherever applicable and coordinate and integrate related projects to ensure efficient and timely implementation of transit services to support new development.

For more information, please contact Selma Hubjer, Manager, Transportation Planning

Attachments

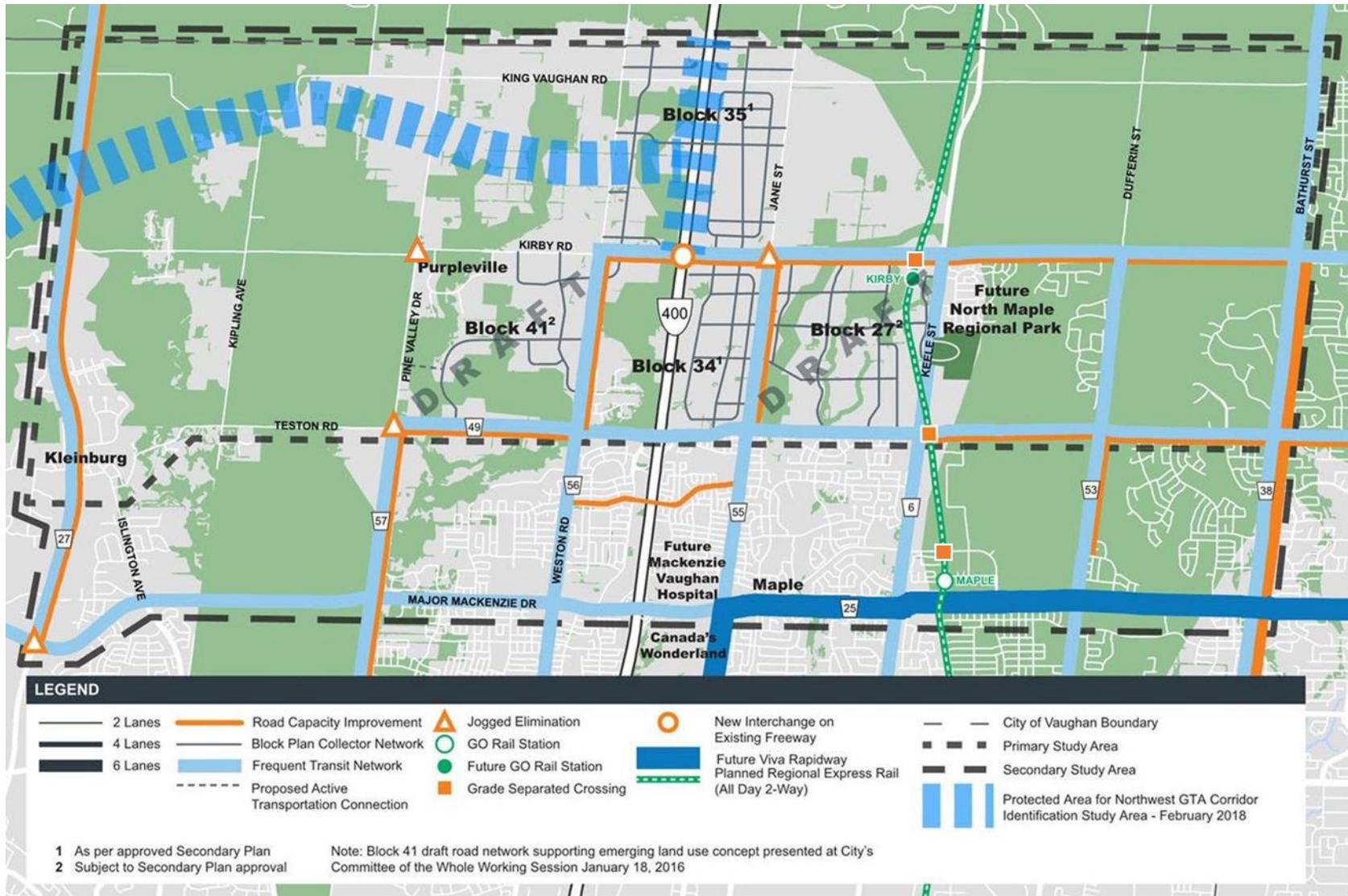
1. Alternative Network 1 – York Region TMP without GTA West Corridor
2. Alternative Network 2 – Enhanced Network
3. Recommended Transportation Network
4. Implementation Plan for Projects within the Study Area

Prepared by

Winnie Lai, Transportation Project Manager, 8192

In Consultation With

Bill Kiru, Director, Policy Planning and Environmental Sustainability

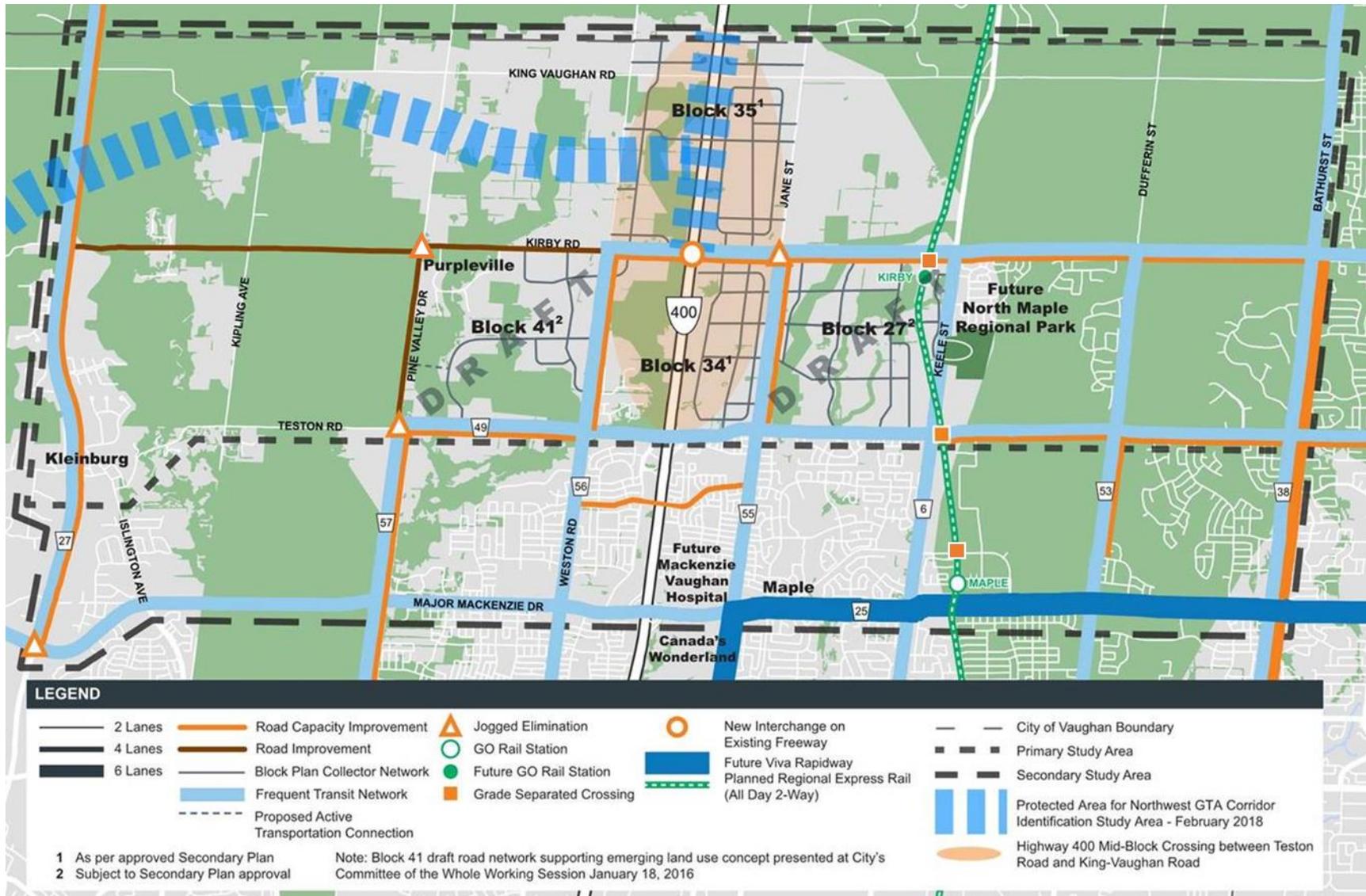


Alternative Network 1 – York Region TMP without GTA West

Note: Potential GTA West Corridor Protection Area illustrated as per Vaughan Official Plan, 2014

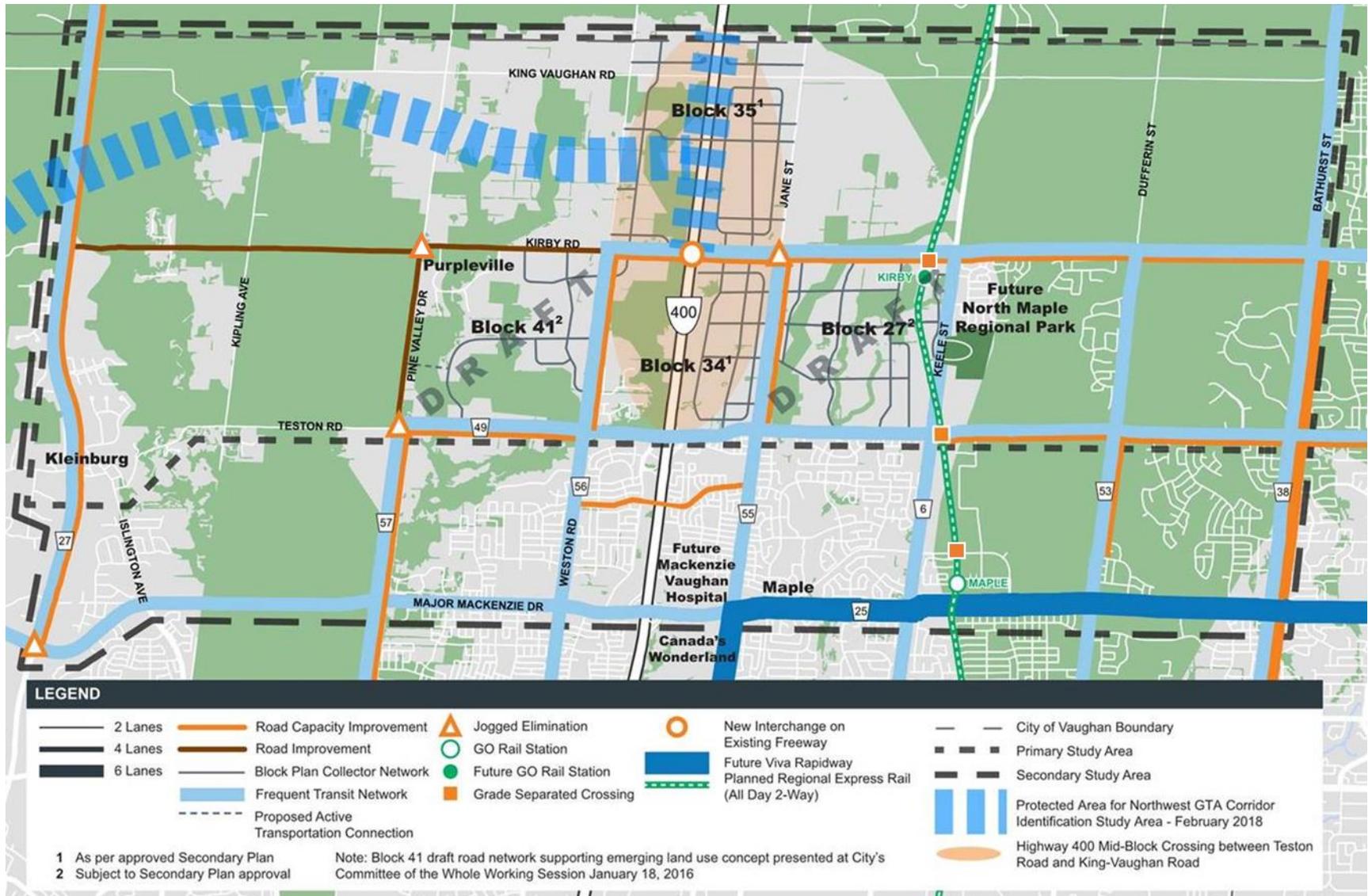
York Region Transportation Master Plan Recommended Improvements within the NVNCTMP Study Area include:

- Highway 400 interchange at Kirby Road,
- Road widening from two to four lanes of:
 - Highway 27 from Major Mackenzie Drive to King Road,
 - Pine Valley Drive from Major Mackenzie Drive to Teston Road,
 - Weston Road from Teston Road to Kirby Road,
 - Jane Street from Teston Road to Kirby Road,
 - Dufferin Road from north of Major Mackenzie Drive to Teston Road,
 - Teston Road from Pine Valley Drive to Weston Road and from Keele Street to Yonge Street, and
 - Kirby Road from Weston Road to Bathurst Street.
- Road widening from four to six lanes of Major Mackenzie Drive from Weston Road and east for Viva Rapidway,
- Road widening from four to six lanes of Bathurst Street from Kirby Road to Highway 407,
- Connection of Teston Road from Keele Street to Dufferin Street,
- Connection of Kirby Road from Dufferin Street to Bathurst Street,
- New mid-block crossing between Major Mackenzie Drive and Teston Road,
- Jog eliminations of:
 - Kirby Road and Pine Valley Drive,
 - Kirby Road and Jane Street, and
 - Teston Road and Pine Valley Drive,
- Grade separation of the Barrie GO Rail at Kirby Road and Teston Road,
- Kirby GO Rail Station,
- Regional Express GO Rail Service (all-day 2-way service on the Barrie GO Line),
- Viva service on Major Mackenzie Drive and Jane Street, and
- Implementation of a Frequent Transit Network² (FTN) to service:
 - Teston Road east of Pine Valley Drive,
 - Kirby Road east of Weston Road,
 - Pine Valley Drive south of Teston Road,
 - Weston Road, Jane Street, Keele Street, and Dufferin Street south of Kirby Road, and
 - Bathurst Street from Newmarket south to Toronto



Alternative Network 2 - Enhanced Network

Note: Potential GTA West Corridor Protection Area illustrated as per Vaughan Official Plan, 2014



Recommended Transportation Network

ATTACHMENT 4

Implementation Plan for Projects within the Study Area

Project	Jurisdiction	York Region TMP Recommended Phasing	Recommended Timing
Block 27 Major collector Roads (Streets 2, 5, and 8)	City of Vaughan	-	Built in conjunction with first phase of development to provide connectivity and porosity
Block 27 Minor Collector Roads	City of Vaughan	-	Built in conjunction with development
Block 41 Collector Roads	City of Vaughan	-	Built in conjunction with development
Cycling Facilities - Kirby Road, Highway 27 to Bathurst Street	City of Vaughan	-	2017 - 2026
Dedicated Viva Rapidway - Major Mackenzie Drive	York Region	2027 - 2031	York TMP
Frequent Transit Network - Kirby Road	York Region	2028 - 2031	2017 - 2026
Frequent Transit Network - Bathurst Street	York Region	2017 - 2021	York TMP
Frequent Transit Network - Dufferin Street	York Region	2027 - 2031	2017 - 2026
Frequent Transit Network - Highway 27	York Region	2027 - 2031	York TMP
Frequent Transit Network - Jane Street	York Region	2022 - 2026	York TMP
Frequent Transit Network - Keele Street	York Region	2022 - 2026	York TMP
Frequent Transit Network - Major Mackenzie Drive	York Region	2017 - 2021	York TMP
Frequent Transit Network - Pine Valley Drive	York Region	2027 - 2031	York TMP
Frequent Transit Network - Teston Road	York Region	2027 - 2031	York TMP
Frequent Transit Network - Weston Road	York Region	2027 - 2031	2017 - 2026
Grade Separation - Kirby Road - Barrie Rail Corridor	Metrolinx + York Region + City of Vaughan	2027 - 2031	2017 - 2026
Grade Separation - Teston Road - Barrie Rail Corridor	Metrolinx + York Region	2022 - 2026	York TMP
Highway 400 Interchange at Kirby Road	MTO	2027 - 2031	2017 - 2026
Highway 400 Midblock Crossing, between Major Mackenzie Drive and Teston Road (4 lanes)	York Region + City of Vaughan	2027 - 2031	York TMP
Highway 400 Midblock Crossing, between Teston Road and King-Vaughan Road (at least one, 4 lanes)	York Region + City of Vaughan	2027 - 2031	York TMP
Jog Elimination - Kirby Road and Jane Street	York Region + City of Vaughan	2027 - 2031	York TMP
Jog Elimination - Major Mackenzie Road and Highway 27	York Region	2017 - 2021	York TMP
Jog Elimination - Teston Road and Pine Valley Drive	York Region	2022 - 2026	York TMP

ATTACHMENT 4

Project	Jurisdiction	York Region TMP Recommended Phasing	Recommended Timing
Kirby GO Station	Metrolinx	2017 - 2026	York TMP
Regional Express Rail - Barrie Corridor	Metrolinx	2017 - 2026	York TMP
Road Reconstruction - Kirby Road, Highway 27 to Weston Road	City of Vaughan	-	2027 - 2031
Road Reconstruction - Pine Valley Drive, Teston Road to Kirby Road	City of Vaughan	-	2027 - 2031
Widening - Bathurst Street, Major Mackenzie Drive to Kirby Road (6 lanes)	York Region	2022 - 2026	York TMP
Widening - Dufferin Street, north of Major Mackenzie Drive to Teston Road (4 lanes)	York Region	2022 - 2026	York TMP
Widening - Highway 27, Major Mackenzie Drive to North City Limit (4 lanes)	York Region	2022 - 2026	York TMP
Widening - Jane Street, Teston Road to Kirby Road (4 lanes)	York Region	2027 - 2031	York TMP
Widening - Kirby Road, Weston Road to Bathurst Street (4 lanes)	York Region + City of Vaughan	2027 - 2031	2017 - 2026
Widening - Major Mackenzie Road, Jane Street to Highway 27 (6 lanes)	York Region	2017 - 2021	York TMP
Widening - Pine Valley Drive, Major Mackenzie Road to Teston Road (4 lanes)	York Region	2022 - 2026	York TMP
Widening - Teston Road, Keele Street to Bathurst Road (4 lanes)	York Region	2022 - 2026	York TMP
Widening - Teston Road, Pine Valley Drive to Weston Road (4 lanes)	York Region	2022 - 2026	York TMP
Widening - Weston Road, Teston Road to Kirby Road (4 lanes)	York Region	2027 - 2031	York TMP