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### **MID-YORK EAST-WEST TRANSPORTATION CORRIDOR STUDY**

**The Planning and Economic Development Committee recommends the adoption of the recommendations contained in the following report dated May 25, 2010, from the Commissioner of Planning and Development Services and Commissioner of Transportation Services.**

#### **1. RECOMMENDATIONS**

It is recommended that:

1. Staff be authorized to proceed with a feasibility and preliminary engineering study to investigate Highway 400 interchange alternatives and associated east-west road improvements in the corridor north of Teston Road and south of Highway 9.
2. Following completion of the feasibility and preliminary engineering study, staff report back on the results of the study and a strategy for moving forward with an EA for the mid-York east-west transportation corridor improvements.
3. A copy of this report be forwarded by the Regional Clerk to the Ministry of Transportation and to the Clerks at the Township of King, City of Vaughan and Towns of Richmond Hill, Aurora and Newmarket.

#### **2. PURPOSE**

The Region's Transportation Master Plan – November 2009 (TMP) identified the need for road improvements in the mid-York east-west transportation corridor. This report summarizes the results of the travel demand and capacity analysis undertaken for this study area and provides recommendations for moving forward with a feasibility and preliminary engineering study to define some of the key alternative road improvements to address the travel demand.

#### **3. BACKGROUND**

##### **The Region's Official Plan and TMP identified the need for a study**

The Region's Official Plan adopted by Council ( December 2009) and the approved TMP identify the need for a study of a mid-York east-west transportation corridor to address road capacity and connectivity issues in the central part of York Region to service forecast travel demand.

Section 7.2 Policy #44 of the Region's Official Plan identifies the following policy of Council:

*To investigate establishing a continuous alternative east-west corridor(s) in the central part of the Region.*

Section 6.3 of the TMP identifies road network issues and includes the following recommendations for major road network improvements in this corridor:

*Mid-York East-West Corridor and King Vaughan Road Improvements – add two additional arterial lanes of capacity between Highway 400 and Bathurst Street, and further study of travel demand needs in the corridor.*

A map showing the 2031 Road Network recommended in the TMP is included in *Attachment 1* and identifies the mid-York east-west corridor needs study in footnote 3 of the map.

**Many of the east-west road corridors in the central part of the Region are discontinuous with limited access to Highway 400**

Highway 400 interchanges are widely and unevenly spaced in the central part of the Region particularly between Teston Road and Highway 9, a distance of 18 km (6 km between interchanges at Teston Road and King Road, 9 km between King Road and Lloydtown/Aurora Road and 3 km between Lloydtown/Aurora Road and Highway 9). In addition, the existing east-west road network in the central part of the Region includes a number of arterial and rural concession roads (Teston Road, Kirby Road, Stouffville Road/King-Vaughan Line, Bloomington Road/15<sup>th</sup> Sideroad, Lloydtown-Aurora Road, St. John's Sideroad/18<sup>th</sup> Sideroad, and Mulock Drive/19<sup>th</sup> Sideroad) which are discontinuous west of Bathurst Street. King Road and Highway 9 being the exception are consequently heavily relied upon for travel in this corridor. The various sections of the existing road network that are discontinuous within the study area can be seen in Attachment 2.

**The lack of alternative east-west corridors results in heavy traffic volumes on King Road**

These issues impact east-west travel in the area and result in King Road being heavily utilized by commuter and truck traffic. In addition to the important role of King Road in the existing road network for longer distance trips, it also serves an important community role for residents and businesses in King City and Nobleton. The Township of King has indicated concern with the amount of traffic on King Road, particularly truck traffic, and a desire to seek alternative corridors to reduce existing traffic volumes through King City and Nobleton.

**The previous King City Bypass Class EA identified the need for additional road capacity in the mid-York east-west corridor**

An earlier study (the King City Bypass Class EA, draft report April 2000) concluded that there would be a need for a total of 8 east-west arterial lanes with access to Highway 400 by 2021 and ultimately 10 lanes for the corridor between Teston Road and Highway 9. The network solution included a recommended widening of the King-Vaughan Line to 4-lanes to serve as a bypass of King City as well as other road improvements. A final resolution with the King City Bypass Class EA was not reached with stakeholders and the EA was halted in 2002.

**King Township has identified the issue of heavy traffic through King City and Nobleton and the need for improved access to Highway 400**

At its meeting of February 26, 2007, King Council adopted the following Motion regarding King Road through the urban communities of King City and Nobleton:

*"That the Region of York be formally requested to undertake the necessary actions and approvals and commence an Environmental Assessment Study on alternate traffic routing patterns through the Settlement Areas of King City and Nobleton with a view to significantly reducing "flow through" traffic volumes through these Communities to and from Provincial Highway 400; it being pointed out that current volumes of traffic have reached overload proportions resulting in a complete dissection of these communities by King Road as it intersects with Keele Streets (King City) Highway 400 and Regional Road 27 (Nobleton); and further that throughout the process the Region of York also include, consult and communicate with the Council of the Township of King and the affected residents of the Township as this project proceeds."*

At its meeting of October 19<sup>th</sup>, 2009, King Council adopted the following Motion regarding the York Region TMP update:

*It is recommended that Region staff report back to the Township with details of the plans for the Lloydtown-Aurora Road (Y.R. 16), Jane Street (Y.R. 55), and the Highway#400 Interchange. The Region should advise the Township if there are plans to construct a new interchange at the point where the 18th Sideroad terminates at Highway 400.*

*It is recommended that the Township of King support, in principle, the need to undertake improvements to Regional Roads to ensure that future capacity needs are met and that an efficient and sustainable network of Regional Roads is maintained.*

*It is recommended that the Region be requested to expand the east-west mid-York Transportation Needs Study to include all of the area west of Highway #400, and to consider population growth in Peel Region and Simcoe County and the expansion*

*of arterial roads in those municipalities. This study should also consider the north-south transportation needs in the area west of Highway #400.*

**Stakeholders have been consulted in the past and will continue to be consulted with regard to the mid-York east-west transportation corridor**

A meeting was held in October 2006 with municipal and agency stakeholders to develop guiding principles for the mid-York east-west transportation corridor needs study. In attendance was staff from King Township, Richmond Hill, Aurora, Newmarket, Vaughan, MTO, TRCA, and York Region. York Region staff also met with King Township staff in April 2007 to discuss their concern with heavy traffic on King Road through King City and Nobleton.

The Municipal and Agency stakeholders agreed that completion of the York Region TMP would be the first step followed by more detailed needs assessment and feasibility study leading ultimately to a new EA to identify the preferred road improvements. Now that the TMP has been completed, the next step is to proceed with the more detailed study.

The guiding principles developed for the study recognize the importance of coordination and information sharing with other studies in the area, including the GTA West Transportation Corridor EA, the Western Vaughan Transportation Improvements EA and the Highway 427 Extension EA. The consultation for the mid-York east-west transportation corridor will build upon previous work and will ensure that the Area Municipalities and key technical agencies are involved throughout the planning for this corridor.

#### **4. ANALYSIS AND OPTIONS**

**Additional travel demand and capacity analysis was completed to confirm the key transportation issues**

Infrastructure Planning staff have conducted an in-house travel demand and capacity analysis of the mid-York east-west corridor. The study area for this analysis is shown in *Attachment 2* and is bounded by Teston Road to the south, Highway 9 to the north, Bathurst Street to the east and the York-Peel boundary to the west. The travel demand and capacity analysis included the following key steps:

1. Identify the future growth in east-west travel demand within the analysis area to the horizon year 2031.
2. Assess the impact of the future 2031 traffic demand on the existing road network should no improvement take place (“Do-Nothing” scenario) and identify areas of capacity deficiency.

3. Estimate the total number of arterial lanes of capacity required to meet the future travel demand in the corridor.
4. Assess the impacts of the 2031 travel demand on the future 2031 transportation network recommended in the TMP (“Base Case” scenario) and identify any outstanding deficiencies.
5. Test additional transportation network improvements and assess their ability to address any outstanding deficiencies (“Base Case Plus” scenario).
6. Make recommendation based on the analysis results.

### **Three alternatives were assessed as part of the travel demand analysis**

Three scenarios were examined to assess future deficiencies in the road network. The first scenario assumes no road network improvement (“Do-Nothing” scenario) to allow for an assessment of basic improvement needs for the 2031 horizon year and to confirm the recommendations from the TMP. The second scenario assumes all road network improvements recommended in the TMP are in place to assess if these improvements address all of the forecast travel demand in the study area (“Base Case” scenario).

The third scenario (“Base Case plus”) includes additional road improvements to address the key transportation issues in the study area as noted previously, that being the lack of alternative continuous east-west roads in the central part of the Region that have access to Highway 400.

### **2031 “Do-Nothing” scenario shows widespread capacity deficiencies**

The “Do-Nothing” scenario involved analyzing the effects of the 2031 travel demand on the road network if no road improvements were implemented. The analysis has reconfirmed the need identified in the TMP and the findings of other studies, including the previous King City Bypass Class EA. The “Do Nothing” scenario identified widespread road capacity issues throughout the study area.

### **2031 “Base Case” scenario addressed much of the travel demand but capacity issues and congestion on King Road would remain**

The “Base Case” scenario assumes all road network improvements recommended in the TMP are in place to assess if these improvements address the 2031 forecast travel demand. The improvements are shown in *Attachment 2* and include the following:

- New 4 lane road link in the Teston Road corridor from Keele St to Dufferin St.
- Widen King-Vaughan Line (add 2 lanes) plus Highway 400 interchange.
- Widen King Rd west of Highway 400 to 4 lanes.
- New GTA West Freeway from Highway 400 to the west.
- Highway 427 extended to the GTA West Freeway

- Widen Highway 400 from 3 to 4 lanes
- Widen Weston Rd, Jane St, Keele St, Dufferin St and Highway 27 (add 2 lanes)

The TMP improvements included in the “Base Case” capacity analysis represent a total of 6 additional lanes of east-west capacity (both directions) at the screenline level west of Dufferin Street between Teston Road and Highway 9 (includes a new 4 lane road link in the Teston Road corridor from Keele St to Dufferin St. and a 2-lane widening of the King-Vaughan Line with an interchange to Highway 400).

The analysis of this scenario highlighted the benefits of the road improvements recommended in the TMP. Even with the TMP improvements, there will still be capacity deficiencies remaining in the network and King Road will continue to be heavily relied upon for travel in the east-west direction and for access to Highway 400. The analysis results confirmed the need for additional improvements which were assessed in the “Base Case Plus” scenario.

### **2031 “Base Case Plus” scenario focused on lack of alternative continuous east-west arterial roads with access to Highway 400**

The third scenario (“Base Case Plus”) includes additional road improvements to address the key transportation issues in the study area; that being the lack of alternative continuous east-west roads in the central part of the Region with access to Highway 400.

The “Base Case Plus” scenario assessed the effects of a new interchange with Highway 400 including a continuous east-west arterial road corridor north of King Road and south of the Lloydtown-Aurora Road. With the additional improvements in the east-west road network and the additional access to Highway 400, the 2031 forecast travel demand will be addressed and the forecast traffic on King Road will be reduced significantly. Based on the analysis results, the “Base Case Plus” scenario is preferred.

### **A feasibility and preliminary engineering study to investigate Highway 400 interchange alternatives is the next step in corridor planning**

There are a number of possible alternatives for a new Highway 400 interchange north of Teston Road, including Kirby Road, King-Vaughan Line, 15<sup>th</sup> Sideroad, 16<sup>th</sup> Sideroad, 17<sup>th</sup> Sideroad and 18<sup>th</sup> Sideroad. Each of these road corridors will have advantages and disadvantages with regard to road improvements and a future Highway 400 interchange. There are also potentially significant constraints on some of these alternatives resulting from the Highway 400 vertical alignment in this area and MTO design standards for new interchanges as well as potential impact to environmentally significant features.

A feasibility and preliminary engineering study is recommended as the next logical step in the mid-York east-west corridor planning before proceeding with an environmental assessment. Infrastructure Planning staff will lead the feasibility and preliminary engineering study and Transportation Services staff are recommended to lead the future environmental assessment study.

The feasibility and preliminary engineering study is proposed to include the following key steps:

- Identify potential Highway 400 interchange locations and configurations from north of Teston Road to the Lloydtown-Aurora Road.
- Identify existing conditions in the area of each potential interchange and associated east-west road corridor.
- Develop preliminary design for each potential interchange location and connecting east-west road.
- Assess the impacts of each alternative on a wide range of factors including design/technical issues, natural environmental impacts, potential archaeological impact, land use/socio-economic impact, cost etc.
- Consult with Municipal and Agency stakeholders.
- Identify feasible alternatives to be carried forward to the environmental assessment stage.

## **5. FINANCIAL IMPLICATIONS**

A consulting assignment to undertake the feasibility and preliminary engineering study as recommended in this report is estimated to cost approximately \$200,000 and will involve a number of specialized engineering and environmental services. There are sufficient funds in the approved 2010 Budget to undertake this assignment (project number 83470 – mid-York east-west transportation study).

## **6. LOCAL MUNICIPAL IMPACT**

The mid-York east-west corridor will provide the framework for which long term growth and development in the area will be supported. It also provides the next step in addressing the Township of King's request to study routing alternatives for reducing through traffic in the communities of King City and Nobleton. York Region staff will consult with all affected municipal staff throughout the feasibility and preliminary engineering study including the development of the study terms of reference.

As a result of the long history with the King City Bypass EA, it is important that King Township concurs with this approach to studying road improvements in this corridor and supports the conclusions of the feasibility and preliminary engineering study before proceeding with an EA for the mid-York east-west corridor.

## **7. CONCLUSION**

The Region's Official Plan and TMP identify the need for a study of mid-York east-west transportation corridor improvements to address road capacity and connectivity issues in the central part of York Region.

Additional travel demand and capacity analysis was completed to confirm the key traffic issues in this corridor. The traffic issues result from widely spaced Highway 400 interchanges north of Teston Road and in particular north of King Road as well as the lack of continuous east-west road corridors in the central part of the Region, with the exception of Highway 9 at the north limit and King Road near the south limit of the study area which are consequently heavily utilized by commuter and truck traffic. The travel demand and capacity analysis demonstrated the significant benefit of having an additional Highway 400 interchange in the central part of the Region and improvements to the associated east-west corridor.

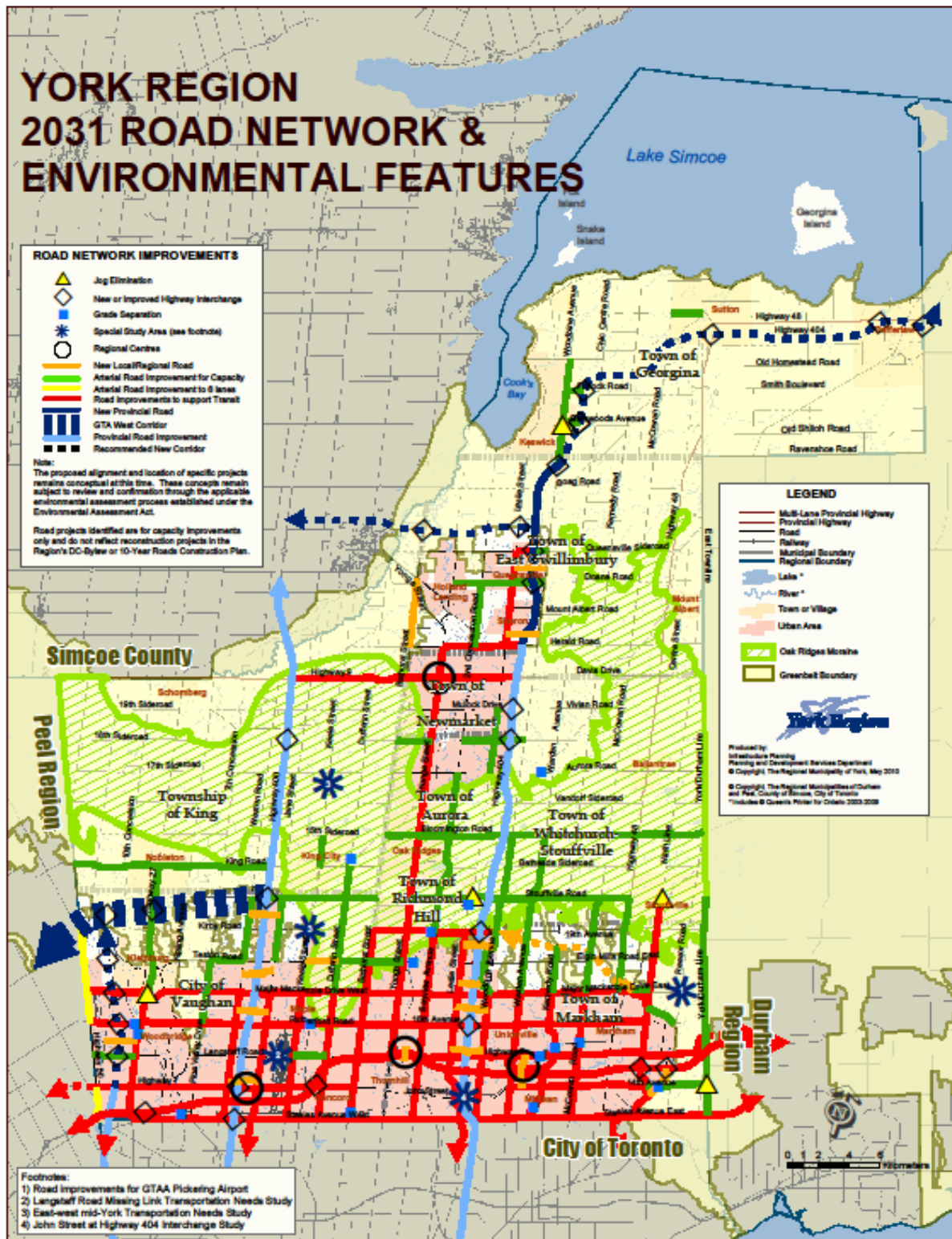
A feasibility and preliminary engineering study to investigate Highway 400 interchange alternatives and associated east-west corridor improvements is recommended as the next step in corridor planning before proceeding with an environmental assessment.

For more information on this report, please contact Steve Mota, Program Manager-Transportation Engineering, Infrastructure Planning Branch at 905-830-4444 Ext. 5056 or Loy Cheah, Director, Infrastructure Planning at Ext. 5024.

The Senior Management Group has reviewed this report.

*(The two attachments referred to in this clause are attached to this report.)*

Council Attachment 1  
TMP - 2031 Road Network and Environmental Features



Council Attachment 2  
Mid-York East-West Transportation Corridor

Study Area for travel  
demand and capacity  
analysis (completed)

Study Area for Highway 400 interchange  
Feasibility and Preliminary Engineering  
Study (proposed next step)

