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MID-YORK EAST-WEST TRANSPORTATION IMPROVEMENTS STUDY PROGRESS UPDATE

The Transportation Services Committee recommends:

1. **Receipt of the deputation by Antony Niro, Vaughan resident; and**

2. **Adoption of the recommendations contained in the following report dated December 15, 2011, from the Commissioner of Transportation and Community Planning.**

1. RECOMMENDATIONS

It is recommended that:

1. Council approve the preliminary recommendations of the Mid-York East-West Transportation Improvements Study as follows:

    a. King-Vaughan Road, 15th Sideroad and Kirby Road are recommended to be carried forward.
    b. Final recommendation for 18th Sideroad is subject to further consideration regarding MTO's planned reconstruction of the Lloydtown-Aurora Road interchange.
    c. 16th and 17th Sideroads are not recommended to be carried forward.
    d. Proceeding with an EA for the carry-forward alternatives is contingent on having a recommended configuration for the GTA West – Highway 400 interchange.

2. The Regional Clerk circulate this report to the Ministry of Transportation and to the Clerks of the Township of King, City of Vaughan, and Towns of Richmond Hill, Aurora and Newmarket.

2. PURPOSE

This report provides a progress update on the Mid-York East-West Transportation Improvements Feasibility and Preliminary Engineering Study.

3. BACKGROUND

The Region's Official Plan and Transportation Master Plan identify the need for a study

The Region's Official Plan and Transportation Master Plan identify the need for a study of mid-York east-west transportation improvements 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 Transportation Master Plan 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.*

The Study was initiated in early 2011

When staff last reported to Council in June 2010 on the need for mid-York east-west transportation improvements, Council authorized staff to proceed with this Study. Following are the recommendations from Report No. 5 of the Planning and Economic Development Committee, Regional Council Meeting of June 24, 2010.

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.

In February 2011, McCormick Rankin Corporation was retained to assist with the conduct of this Study.

Improving access to Highway 400 is a key issue in the study area

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). This is in contrast to the spacing of interchanges along Highway 404 in the central part of York Region, with typical spacing ranging from 2 km in the vicinity of urban areas to 4 km along more rural sections (2 km between interchanges at Green Lane, Davis Drive and Mulock Drive, 4 km between interchanges at Mulock Drive, Wellington Street, Bloomington Road, Stouffville Road and Elgin Mills Road).

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/15th Sideroad, Lloydtown-Aurora Road, St. John's Sideroad/18th Sideroad, and Mulock Drive/19th Sideroad) which are discontinuous west of Bathurst Street. King Road and Highway 9 being the exception are consequently heavily relied upon for travel and goods movement.

The study area for the Mid-York East-West Transportation Improvements Study extends from north of Teston Road to south of Highway 9, and from Bathurst Street to Weston Road. The study area and alternatives assessed are shown on *Council Attachment 1*. Providing improved access to Highway 400 in the central part of York Region and reducing congestion through King City are the main objectives of this Study.

Study focus is on technical feasibility of alternatives, potential environmental impacts and effectiveness in addressing travel demand

The Mid-York East-West Transportation Improvements Study includes the following key steps:

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

The findings of this Study will assist in formulating a strategy, in consultation with stakeholders, for moving forward to the Environmental Assessment stage.

Six alternative Highway 400 interchange locations and associated road improvements are being assessed

The six alternative Highway 400 interchange locations being assessed include:

- Kirby Road
- King-Vaughan Road
- 15th Sideroad (Bloomington Road)
- 16th Sideroad (Henderson Drive)
- 17th Sideroad (Wellington Street)
- 18th Sideroad (Lloydtown-Aurora Road/St. John's Sideroad)

For the purposes of the assessment in this Study, each option assumes improvements to provide for a four-lane capacity east-west roadway from Weston Road to Bathurst Street.

A comprehensive list of factors are used in the assessment of alternatives

The factors used in the assessment of alternatives are grouped into broad categories including transportation performance, technical/engineering considerations, natural environment, socio-economic and cultural heritage.

Transportation factors assess the ability or effectiveness of each alternative to attract traffic, the ability to address forecast 2031 travel demand and potential to divert traffic from other congested corridors, particularly King Road. Transportation factors also assess the potential impact each alternative may have on Highway 400 mainline operations and overall road network compatibility/connectivity.

Technical and engineering factors assess the constructability, degree of design challenge and construction cost for each alternative.

Natural Environment factors include potential impacts on Oak Ridges Moraine and Greenbelt features, fish and aquatic habitat, terrestrial ecosystem features (woodlands, wetlands), wildlife habitat and associated wildlife movement corridors/ habitat linkages, potential groundwater impacts, etc.

Socio-economic and cultural heritage factors include potential impacts to properties, community activity/mobility, community character, compatibility with government policies, potential impacts to cultural heritage and archaeological resources.

The list of assessment factors is provided in *Council Attachment 2.*

Municipalities and Agencies have been consulted to-date and will have an opportunity to provide input on the draft and final Study Report

Technical Advisory Committee meetings were held in June and October 2011, and included representatives from King Township, Vaughan, Aurora, Newmarket, Richmond Hill, Ministry of Transportation, Ministry of Natural Resources, Toronto and Region Conservation Authority and Lake Simcoe Region Conservation Authority.

The purpose of the June 21, 2011 Technical Advisory Committee meeting was to introduce the project to the Municipal and Agency stakeholders, present the study background and purpose, provide an overview of existing conditions in the study area, introduce the alternative interchange locations to be studied and assessment factors to be considered.

The second Technical Advisory Committee meeting was held on October 27, 2011 and included information on the effectiveness of each alternative in meeting travel demand and diverting traffic from King Road, a review of the detailed assessment of alternatives, results of the assessment related to feasibility/impacts associated with each alternative, preliminary recommendations for carry-forward alternatives and implications related to the GTA West Corridor.

Individual meetings with the Ministry of Transportation and Conservation Agencies helped to refine the technical assessment of alternatives

Prior to the second Technical Advisory Committee meeting, the project team met with the Ministry of Transportation on October 5, 2011 to discuss the implications of the ongoing GTA West Corridor EA on the Mid-York East-West Transportation Improvements Study, and to refine the draft assessment of alternatives particularly related to engineering considerations at Highway 400 and network compatibility.

In addition, the project team met with Conservation Agencies and the Ministry of Natural Resources on October 20, 2011 to refine the assessment of alternatives particularly related to natural environment considerations.

Issues identified and input received assists in guiding the Study

Input received from Municipal and Agency stakeholders has been extremely helpful in guiding the study analysis and in reaching the preliminary recommendation presented in this report. Several of the issues raised include:

- The need to better articulate how the current Mid-York East-West Transportation Improvements Study fits into the overall transportation planning objectives identified in the Region's Transportation Master Plan and how a future EA will build on the

results of this focused study to develop a broad multi-modal solution to deal with travel in the area.

- The need to provide an overview of significant transportation issues and context outside the current study area, and how those challenges will be addressed (including dealing with inter-Regional travel demand and associated planning for the GTA West Corridor and the Bradford Bypass).
- The need to better recognize the current status of the GTA West Corridor EA being conducted by the Ministry of Transportation and avoid making specific assumptions related to the detailed GTA West alignment until the alignment is determined through the ongoing EA.
- In the event that more than one new Highway 400 interchange is proposed between Teston Road and Lloydtown-Aurora Road, that the next phase of planning proceed as a single EA so that all of the effects, including potential effects to traffic operations along the Highway 400 mainline, can be captured and assessed under a single EA process.
- Regardless of what recommendations are carried forward as part of mid-York east-west transportation improvements, this should not restrict local improvements along the corridor to address intersection, traffic safety and other operational needs.
- The need to undertake additional traffic analysis (select link analysis) on King-Vaughan Road immediately west of Bathurst Street to better understand the travel routes being utilized (i.e. since King-Vaughan Road does not continue as a through-road east of Bathurst Street, what easterly routes are being utilized to get to and from King-Vaughan Road).

The project team will address all of these issues in the final study report. Several of the issues are discussed in greater detail below.

4. ANALYSIS AND OPTIONS

STUDY OBSERVATIONS AND PRELIMINARY RECOMMENDATIONS

EA phase will build on the results of the Mid-York East-West Transportation Improvements Study with a multi-modal transportation solution

There are sensitive natural environmental features in the study area (such as the Oak Ridges Moraine Natural Core Areas) that may significantly impact the feasibility of potential road improvements. One of the overall objectives of the Mid-York East-West Transportation Improvements Study is to eliminate further consideration of potential Highway 400 interchanges and associated road improvements that are not feasible based on consultation with Technical Agencies, and thereby avoid raising unnecessary public concern during the future EA phase.

During the future EA phase, the Region will build on the extensive transportation network and program planning undertaken as part of the Transportation Master Plan, and will develop a preferred transportation strategy to address travel needs in the study area that will include the full range of broad transportation alternatives, including transit, cycling, travel demand management and road improvements.

King-Vaughan Road and 15th Sideroad are most effective in reducing traffic on King Road

Council Attachment 3 summarizes the results of the traffic analysis to determine traffic diversion from King Road. A new Highway 400 interchange at King-Vaughan Road and 15th Sideroad would be the most effective in reducing traffic on King Road (28 and 24% respectively) as they are the closest parallel east-west roadways to King Road, and they attract the greatest amount of forecast travel demand. Alternatives on 16th, 17th and 18th Sideroads exhibit moderate effectiveness in diverting traffic from King Road. Kirby Road is moderately effective at attracting forecast travel demand in the area, but least effective at diverting traffic from King Road.

Without an alignment for the GTA West Corridor, the feasibility of King-Vaughan Road and Kirby Road alternatives cannot be fully assessed

A range of preliminary design options were considered at King-Vaughan Road and Kirby Road in the vicinity of the future GTA West/Highway 400 freeway-to-freeway interchange. Constructability and potential operational issues were explored at a high level to understand the underlying advantages and disadvantages of each of the options. However, a detailed assessment of their feasibility cannot be undertaken as part of this Study since they are contingent on the outcome of the GTA West EA which is ongoing.

Traffic analysis indicated that maximum connectivity between King-Vaughan Road, GTA West and Hwy 400 is preferred. A run-out connection from GTA West to King-Vaughan Road provides a direct link and is highly effective at attracting traffic.

Council Attachment 4 shows a schematic run-out option from GTA West to King-Vaughan Road and a summary of the effectiveness in attracting traffic from King Road and other interchanges.

Kirby Road is less effective at diverting traffic from King Road, but is effective at attracting forecast travel demand, reflecting its proximity to significant planned development in this area of Vaughan, particularly in the vicinity of Highway 400. In addition to servicing development related travel demand, interchange improvements may be needed at Kirby Road to address connectivity to the GTA West and Highway 400, should maximum connectivity at King-Vaughan Road not be achievable.

Proceeding with a single EA for Mid-York east-west Transportation Improvements is also contingent on having a recommended configuration for the GTA West – Highway 400 interchange

As noted previously in this report, one of the issues highlighted in consultation with Municipal and Agency stakeholders was the desire to proceed with a single EA for all proposed mid-York east-west transportation improvements so all of the effects, including potential effects to traffic operations along the Highway 400 mainline, can be captured and assessed under a single EA process. The project team certainly supports this approach in principle but also recognizes this will have implications on the timing of the EA phase.

Proceeding with an EA for an interchange and associated road improvements in the area of King-Vaughan Road and Kirby Road is certainly contingent on having a recommended configuration for the GTA West – Highway 400 interchange. Should planning for all of the mid-York east-west transportation improvements proceed as a single EA, then any proposed Highway 400 interchanges north of King Road would be subject to the same timing constraint and would therefore not proceed to an EA until the GTA West – Highway 400 interchange configuration is confirmed by MTO.

Refinements to the alternatives will be further analysed at the EA phase through specific alignment and design options

A number of the alternatives assessed in this Study include discontinuous road segments within the study area, notably:

- 16th Sideroad between Bathurst Street and Dufferin Street
- 15th Sideroad between Keele Street and Jane Street
- Kirby Road from Bathurst Street to Dufferin Street.

Alternative road alignments were considered at a high level in this Study to mitigate potential environmental effects and confirm the feasibility of reasonable alternatives. During the EA phase, specific alternatives will be developed and assessed in greater detail to address the need for mitigation measures. At this stage, the study focused on ensuring reasonable alternatives could be developed in the EA phase and therefore the broader alternative should be carried forward, as opposed to identifying the most preferred alignment to be carried forward.

As an example, the project team considered alignment options for the missing segment of 15th Sideroad between Keele Street and Jane Street. Options included aligning the road to the north to provide a buffer between the road and the existing Kingscross Estates residential area. It was found that alternatives were feasible and therefore 15th Sideroad should be a carry-forward alternative. The purpose at this stage is not to identify every potential alternative alignment for the missing road segment, or to identify the most

preferred alignment alternative, but simply to confirm feasibility so that the broader corridor alternative can be carried forward.

Similarly, the project team recognizes that during previous EA studies, specific alternatives were developed that utilized new road alignments parallel to existing rail corridors, with the potential benefit of mitigating effects on existing residential areas. These corridor options and linkages will be considered during the EA phase and have not been assessed in this current Study since it would not impact the feasibility of a corridor alternative proceeding to the EA phase.

Although a broad alternative may not be recommended to be carried forward, this will not restrict implementation of localized improvements

As noted in the summary of issues, highlighted in consultation with Municipal and Agency stakeholders, regardless of which corridor alternatives are carried forward as part of mid-York east-west transportation improvements, this should not impact the implementation of local improvements along any of the corridors to address intersection, traffic safety and other operational needs.

Local traffic operational improvements can continue to be planned and implemented independent of the Mid-York East-West Transportation Improvements Study, and can also be included in the more detailed multi-modal alternatives to be developed and assessed in the EA phase. An example of implementing independent operational improvements in the area is the recently completed intersection improvements at Keele Street and 15th Sideroad (jog elimination, new intersection turning lanes and traffic signals).

Preliminary results show King-Vaughan Road and 15th Sideroad are most advantageous to carry forward to the EA phase

King-Vaughan Road was found to be highly effective in diverting traffic from King Road. It provides the greatest opportunity to maximize arterial network connection to the GTA West and Highway 400, with lower overall impact to natural environmental features. Many of the potential impacts can be minimized or mitigated through design.

Similar to King-Vaughan Road, 15th Sideroad is also highly effective in diverting traffic from King Road and many of the potential impacts can be minimized or mitigated. Potential impacts to existing residential areas in proximity to this alternative can also be addressed through alternative road alignments and design elements such as landscape screening.

18th Sideroad should also be carried forward to the EA phase

18th Sideroad is moderately effective at diverting traffic from King Road. Also, it provides the opportunity to improve Highway 400 access in this area compared to the

underutilized Lloydtown-Aurora Road interchange. The 18th Sideroad alternative also has lower overall impact to natural environment features and many of the potential impacts can be minimized or mitigated. Given the close spacing between 18th Sideroad and the Lloydtown-Aurora Road interchange (1 km), an interchange at 18th Sideroad would need to be considered in combination with relocation of the Lloydtown-Aurora Road interchange, or as an interchange couplet potentially with ramps to and from the south at 18th Sideroad and ramps to and from the north at Lloydtown-Aurora Road.

The Ministry of Transportation is currently preparing the detailed design for reconstruction of the existing Lloydtown-Aurora Road interchange to accommodate the planned widening for HOV lanes on Highway 400 from Major Mackenzie Drive to Highway 9. The timing of the planned improvements to Highway 400 and the Lloydtown-Aurora Road interchange will ultimately affect the feasibility of a new interchange at 18th Sideroad. This will be assessed further and a final recommendation determined as the Mid-York East-West Transportation Improvements Study proceeds to completion.

Kirby Road should be carried forward for consideration of improvements in the vicinity of Highway 400 and the GTA West

As noted previously, the Kirby Road alternative has lower traffic diversion effectiveness from King Road but does have the potential to attract a significant amount of traffic associated with area development and if improvements to King-Vaughan Road are not achievable. The Kirby Road alternative has potentially high overall impact to natural environmental features, particularly related to the missing road segment between Dufferin Street and Bathurst Street, which would cross a large section of the Oak Ridges Moraine Core Area. Interchange improvements at Kirby Road may be needed to address network connectivity and development-related needs in the area of the GTA West and Highway 400 freeway-to-freeway interchange should maximum interchange connectivity at King-Vaughan Road not be achievable. Kirby Road is therefore recommended to be carried forward for consideration of improvements in the vicinity of Highway 400 and the GTA West.

16th and 17th Sideroad are not recommended to be carried forward

The 16th Sideroad alternative has the highest impact to significant natural environmental features since it traverses a large section of the Oak Ridges Moraine Core Area and is not compliant with policies in the Oak Ridges Moraine Conservation Plan.

Oak Ridges Moraine Conservation Plan
Section 41

(3) An application for a transportation, infrastructure or utilities use with respect to land in a Natural Core Area shall not be approved unless the applicant demonstrates that,
(a) the requirements of subsection (2) have been met;

(b) the project does not include and will not in the future require a highway interchange or a transit or railway station in a Natural Core Area; and
(c) the project is located as close to the edge of the Natural Core Area as possible.

16th Sideroad is not recommended to be carried forward as part of the Mid-York east-west Transportation Improvements.

17th Sideroad has moderate traffic diversion effectiveness with potentially high socio-economic impacts through the community of Snowball. 17th Sideroad is also not recommended to be carried forward as part of mid-York east-west transportation improvements.

Summary of preliminary Study results

- King-Vaughan Road, 15th Sideroad and Kirby Road are recommended to be carried forward.
- Final recommendation for 18th Sideroad is subject to further consideration regarding MTO's planned reconstruction of the Lloydtown-Aurora Road interchange.
- 16th and 17th Sideroads are not recommended to be carried forward.
- Proceeding with an EA for the carry-forward alternatives is contingent on having a recommended configuration for the GTA West – Highway 400 interchange.

Next Steps include Study documentation and reporting to Council in early 2012

A draft study report is expected to be completed and circulated to the Technical Advisory Committee before the end of 2011. Input received from the Technical Advisory Committee will be incorporated into a final Mid-York East-West Transportation Improvements Study Report, expected to be completed in early 2012. Staff will report to Council in early 2012 with the final recommendations of this Study, Municipal and Agency feedback, and next steps related to the EA phase.

Link to Key Council - approved Plans

This report supports the 2011 to 2015 Strategic Plan in the following priority area:

- Continue to deliver and sustain critical infrastructure.

5. FINANCIAL IMPLICATIONS

There are no financial implications as a result of this report. The consulting assignment for this study is expected to be completed on time and within the approved 2011 budget.

6. LOCAL MUNICIPAL IMPACT

The Township of King, City of Vaughan and Towns of Aurora, Newmarket and Richmond Hill have been actively engaged in the study through participation in Technical Advisory Committee meetings. Municipalities will also be provided with an opportunity to provide input on the draft and final Study Report. The project team will also present the study findings to Local Councils upon request.

Potential benefits of mid-York east-west transportation improvements will reduce traffic pressure in the area road network, including both Regional roads and rural concession roads under local municipal jurisdiction. In the absence of an alternative route, King Road is already heavily utilized for commuting and goods movement and would therefore benefit significantly from improvements to alternative routes in the mid-York area.

7. CONCLUSION

This report includes a progress update and discussion of the key observation and draft recommendations reached as part of the Mid-York East-West Transportation Improvements Study.

Municipal and Agency stakeholders have been actively engaged in this Study through participation on a Technical Advisory Committee and will also be provided with an opportunity to provide input on the draft and final Study Report.

A final Study Report is expected to be completed in early 2012. Staff will report to Council in early 2012 with final recommendations from this Study and a strategy for next steps.

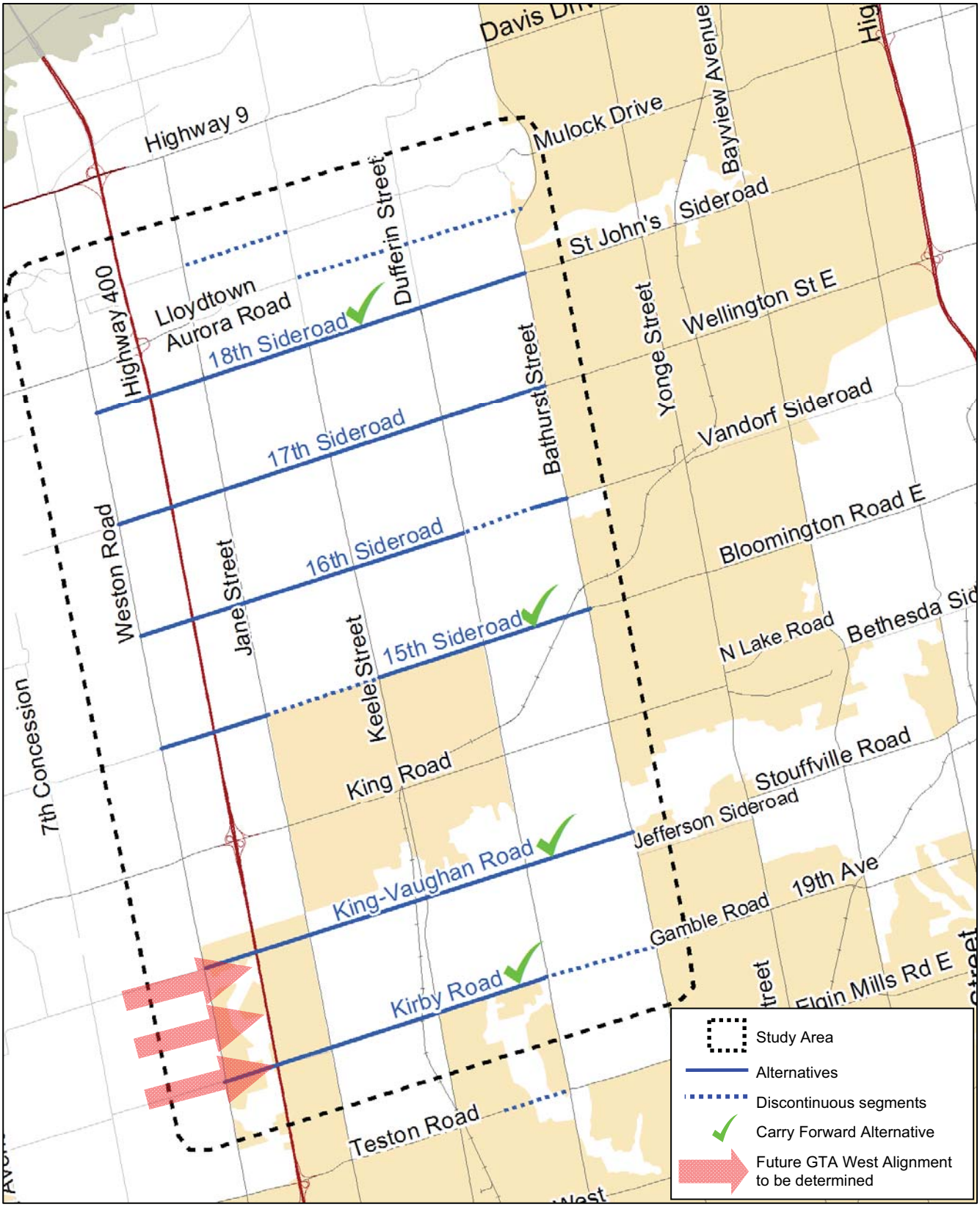
For more information on this report, please contact Steve Mota, Program Manager-Transportation Engineering, Infrastructure Planning Branch at 905-830-4444 Ext. 5056 or Loy Cheah, Director, Infrastructure Planning at Ext. 5024.

The Senior Management Group has reviewed this report.

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

COUNCIL ATTACHMENT 1

Study Area, Existing Road Network and Alternatives



Decision-Relevant Assessment Factors

Transportation Factors
- Traffic volume forecast to utilize each alternative
- Potential diversion of traffic from King Road, Highway 9 and Teston Road
- Potential for new interchange to conflict with Highway 400 mainline operations
- Compatibility with future GTA West
- Overall road network connectivity
- Compatibility with planned transit services and cycling facilities

Engineering and Technical Factors
- Constructability Issues
- Compliance with MTO and York Region design standards
- Degree of design challenge
- Construction cost

Natural Environment Factors
Potential impact to:
- Oak Ridges Moraine Plan and Greenbelt Plan Areas
- Fish and aquatic habitat
- ANSI and ESA designated areas
- Wetlands
- Woodlands and other upland vegetation
- Wildlife habitats and linkages
- Ground water
- Natural Heritage Systems (NHS)

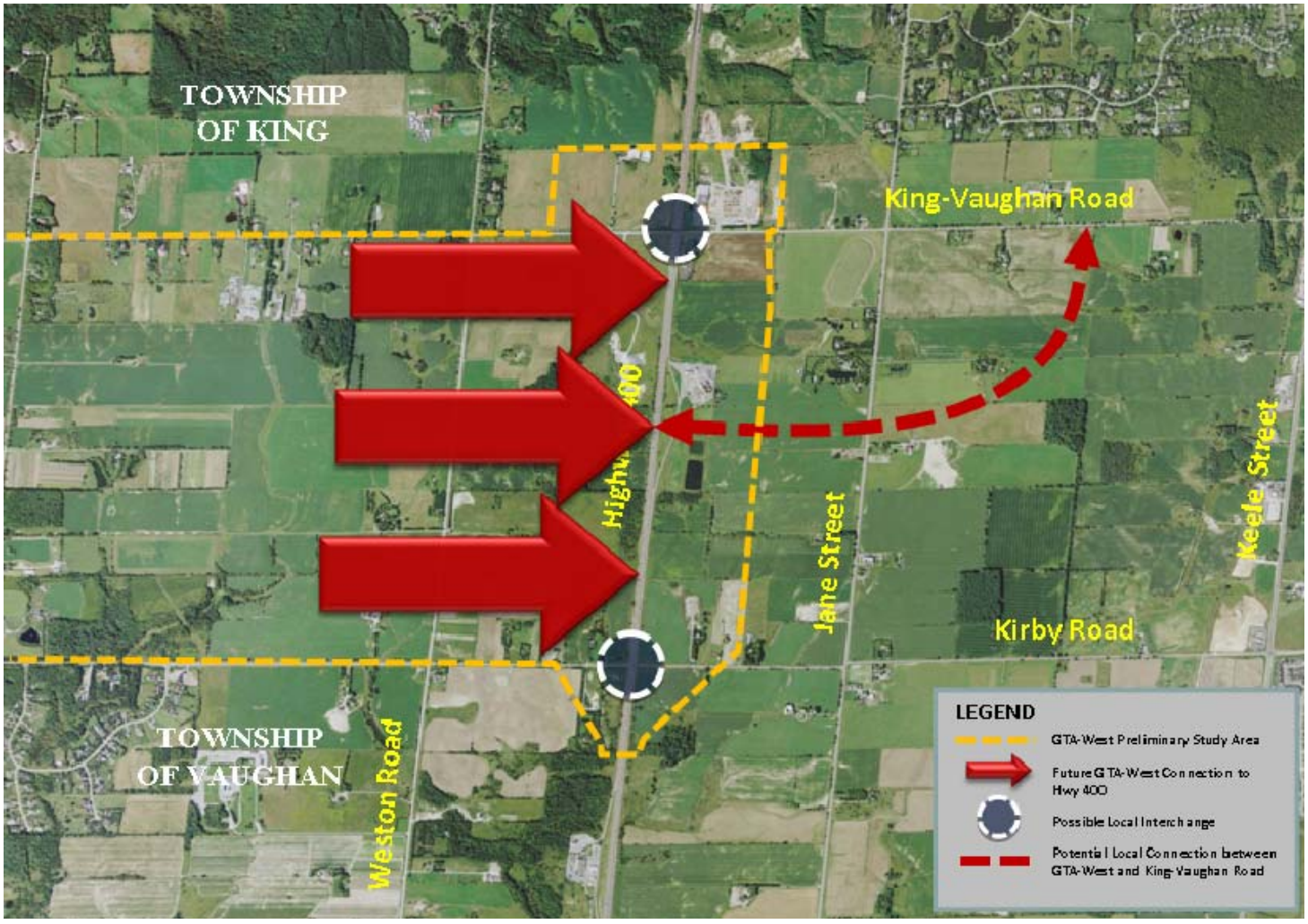
Socio-Economic and Cultural Heritage Factors
Potential impacts to:
- Properties (land takings)
- Site access
- Cemeteries, schools, places of worship, unique community features
- Community activity/mobility and community character
- government goals/objectives/policies
- Agricultural operations
- Built heritage features and cultural heritage landscapes
- Provincial and local parks and recreation sites
- Archaeological resources

Summary of Effectiveness of Traffic Diversion

Corridor Alternatives	Carry Forward Alternatives	Traffic Volume on the Corridor (2031 a.m. peak hour both directions)	Traffic Diversion (%) from Existing Interchanges		
			Teston Road	King Road	Highway 9
Kirby	✓	3,300	16.4%	6.8%	1.3%
King-Vaughan	✓	4,700	10.8%	28.3%	1.2%
15th	✓	2,600	1.2%	23.7%	7.3%
16th		2,300	0.9%	15.2%	7.6%
17th		2,200	0.7%	16.6%	12.1%
18th*	✓	2,900	0.6%	16.0%	16.4%

* Assumes existing interchange at Lloydtown-Aurora Road removed

Schematic of Run-out Option and its Effectiveness



Type of King-Vaughan Road Interchange	Traffic Diversion from King Road (%)	Total Diversion from 3 existing interchanges (%)
Full Interchange with Highway 400 and GTA West	28	13
Full Interchange with Highway 400 plus GTA West 'run-out' connection to King-Vaughan Rd	47	24