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HIGHWAY 404 MIDBLOCK CROSSINGS STUDY - STATUS UPDATE TOWN OF MARKHAM AND TOWN OF RICHMOND HILL

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated June 2, 2011, from the Commissioner of Transportation Services.

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

This report provides a status update of the Highway 404 Midblock Crossings Study as it relates to the planned improvements in the Highway 404 Corridor from Highway 7 to north of 19th Avenue in the Town of Markham and Town of Richmond Hill. A plan showing the study area is appended to this report (*see Attachment 1*).

3. BACKGROUND

Regional Council has previously endorsed the planning for a number of collector road crossings of Highway 404 between the Towns of Markham and Richmond Hill

Collector road crossings of Highway 404 between the Towns of Markham and Richmond Hill have been identified as a required component of the transportation system in the Region's Transportation Master Plan Update (2009), to support transit, walking and cycling. The importance of these crossings is also identified through a number of other Regional and local planning documents and initiatives including the Markham Transportation Planning Study (2002), and Town of Richmond Hill's Transportation Master Plan (2006), and have been the subject of previous reports to Regional and local Councils. The update to the Regional Official Plan has further confirmed these needs.

Not implementing these mid-block connections would compromise the long-term transportation objectives of York Region and the Towns of Markham and Richmond

The analysis for the Region's Transportation Master Plan Update, and update to the Regional Official Plan, have confirmed the benefit of these crossings. Many of these proposed collector crossings will assist in transit servicing, and improve walking and

cycling opportunities of the adjacent developed or developing areas. In addition, these crossings assist in freeing up capacity on the adjacent parallel Regional arterial roadways, intersections and arterial/highway interchanges.

Not proceeding with these crossings would limit longer-term transportation capacity of the road network in the area, limit the ability to develop a comprehensive pedestrian and bicycle network between the two communities, and limit effective transit servicing to these areas. Every study to date recommends construction of the mid-block crossings between Highway 7 and 19th Avenue to support the long term transportation needs in the area.

The Region, recognizing the challenges facing the future of the midblock crossings, initiated strategic collaboration with the local municipalities to develop a plan to fund, protect and implement the midblock crossings

In June 2009 Regional Council requested the Councils of the Town of Markham and the Town of Richmond Hill to direct their staff to participate with Regional staff in developing an implementation framework to protect, fund and construct the future midblock crossings of Highway 404 and 407.

In January 2010, the Region, Town of Richmond Hill and Town of Markham staff established a working group and identified the next steps to plan for the Highway 404 midblock crossings

The working group confirmed the need for study of the Highway 404 corridor including the midblock crossings – north of Highway 7, north of 16th Avenue, north of Major Mackenzie Drive and north of Elgin Mills Road - , the proposed Highway 404 interchange at 19th Avenue and the northbound ramp extension at Elgin Mills.

The study area includes the municipal, regional and provincial infrastructure from Leslie Street in the west to Woodbine in the east, Highway 7 to the south and to the north of 19th Avenue

The analysis is focussed on the six main elements of infrastructure in close proximity to Highway 404. However, the study encompasses a broader range of north-south and east-west Regional arterial roads, and collector road intersections. The study area extends from Highway 7 and 19th Avenue and Leslie Street and Woodbine Avenue.

In the Fall of 2010 Delcan Corporation was retained by York Region to undertake the Highway 404 Midblock Crossings Study

York Region staff with the assistance of staff from the Town of Markham, Town of Richmond Hill and the Ministry of Transportation developed and finalized a terms of reference for the undertaking of a Highway 404 Mid-block Crossings Study. The assignment was awarded to Delcan Corporation.

The transportation analysis undertaken as part of this study provides an assessment of the road network in the Highway 404 Mid-block Crossings Study area which is not currently available from studies and transportation analyses undertaken to-date

This study includes macro level, micro level and the meso level analysis. Meso type analysis is quite new and requires calibrating and rationalizing inputs and outputs to ensure rational findings between the macro and micro level modelling. With the additional “medium” level of analysis the study will determine the impact of including or not including the Highway 404 midblock collector roads, the 19th Avenue interchange and the Elgin Mills ramp extension on the boundary road network including the intersections of arterials, collector roads and highway ramps.

The study consists of four phases of work

The study is to analyze the benefits and impacts to the transportation network resulting from delaying or eliminating infrastructure elements which have been identified in the Region’s Transportation Master Plan. Accordingly, the work program must be traceable, transparent and defensible. The four phases are shown in Table 1.

Table 1
Four Phases of Work Program

Phase	Description	Expected Completion
Phase I: Start Up	• Assembly and Review of background material, • Data Assembly	Complete
Phase II: Integrated Work Plan	Establishment of a Technical Advisory Committee • Refinement of Workplan to address Transportation Master Plan input	Complete
Phase III: Assessment of Alternatives	• Establish Evaluation Criteria • Development of modelling framework/platform based on Macro, Meso, Micro level analysis requirements • Screening/identification of alternatives • Analysis and Evaluation	Early Fall 2011

Phase IV: Delivery	• Working sessions with Transportation Master Plan to develop, test and confirm assessment • Presentations Landowner/Development Representatives of findings • Meetings/Presentations to the Local Municipalities, York Region and Ministry of Transportation Ontario Senior Management to present final results • Documentation: technical memos and reports identifying technical and consultative information	Late Fall 2011
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A base scenario including all six infrastructure elements identified in the Transportation Master Plan was established to compare alternatives

The Transportation Master Plan forms the basis for the future infrastructure needs over the 20-year horizon. This work is considered the highest level of strategic analysis in which the focus is the need for road link improvements, based on the official plan parameters and policy directives.

The base scenario does not represent existing conditions. It represents the future conditions as presented in the Region's Transportation Master Plan, including road widening and transit improvements

The base scenario, as per the Transportation Master Plan, identifies a series of improvements to the area network including widening to six lanes (Transit Priority Network and Rapid Transit) as well as the mid-block collectors, the extension of the Donald Cousens Parkway to 19th Avenue and an interchange at 19th Avenue.

A number of reasonable alternatives will be tested including the base scenario which incorporates all six elements and three other alternative combinations which test the elimination of the one or more of the mid-block crossings / Highway 404 interchange at 19th Avenue.

4. ANALYSIS AND OPTIONS

The technical components of the project are well underway with majority of Phase I and Phase II work complete and resources focussed on Phases III and IV

The study was initiated in November 2010. A majority of tasks associated with Phase I and Phase II were complete by the end of 2010 including the establishment of the Technical Advisory Committee, assembly of existing and future traffic data, land use

assumptions/projections and background information. In addition, a meeting was held in mid-December 2010 with the available landowner/landowner representatives.

Phase III tasks focus on establishing criteria for assessment, development of the model, review and establishment of scenarios/alternatives. Collaborative efforts in conjunction the local municipalities and the Ministry have been critical to ensuring an appropriate base of inputs are established for use in meso and micro modelling for this study.

Coordination between York Region, the Town of Markham and Town of Richmond Hill to resolve variations in the population and employment forecasts has been necessary

In the development of the meso model variations in inputs (population and employment by traffic zone) were discovered between those of York Region and the Town of Markham and the Town of Richmond Hill. The estimates at the municipal level (ie. town wide) were within reason and were found to be consistent with that of the Region. However, when considering the localized area the interpretation of the local municipalities was much different than the “coarser” assumptions considered at the Regional level. This coordination and resolving the variations has resulted in an approximately three-month delay to the project schedule. Every effort will be made to accelerate other aspects of the work and minimize the impact of this delay.

Working meetings with the Technical Advisory Committee are an integral component of the study as all members have a stake in the outcome (York Region, Town Of Markham, Town of Richmond Hill and Ministry of Transportation Ontario)

The local municipality and Ministry perspectives are integral to determine next steps for these six infrastructure elements. Regular Technical Advisory Committee meetings to develop, confirm and finalize input are critical in moving the project forward and ensuring that the basis is correct and defensible. A significant amount of input from all Technical Advisory Committee members has been required in establishing the meso level model including finite land uses assumptions commiserate of the meso level of analysis; local road patterns and linkages to the midblock collectors; assumptions for variables which require rationalization not empirically completed until now for the area including transit mode split for trips to/from uses in/adjacent to the study, impact of hov and rapid transit network as well as future potential changes in land use categorization, (i.e. Buttonville airport lands).

Regular consultation at study milestones will ensure the landowners/development community are part of the solution

All six infrastructure elements require a significant dedication of land and impact the adjacent land development plans. Communication is integral to better understand the localized issues associated with the multiple land parcels, ownership, development plans

and potential impacts and opportunities that will arise from this assessment. The landowner/development community meetings are scheduled to occur at three points within the project – Phase I: Initiation; Phase III: Assessment of Alternatives and Phase IV: Delivery of the findings.

Regular milestones meetings have been well attended by landowners/development community representatives

The first meeting was held in December 2010 to introduce the project, the scope, the timeline and the Technical Advisory Committee representatives. A range of opinions were expressed by those who attended. The unanimous message was the expectation that this study should bring closure to the fate of the crossings and thus not further delay planning and approvals which currently are impeding development.

The second meeting is to be held in late summer/early fall to provide the opportunity to discuss and vet the findings of the four alternative scenarios being assessed.

Assessment of alternatives will form the basis for the final report

With the base model developed the process requires scenario development including coding and configuration of the infrastructure to be tested as well as verification and iteration to ensure model outputs are defensible for all four scenarios. The iterative process will result in a set of output parameters which will be evaluated against a set of criteria. The outcomes to be evaluated include empirical performance measures of throughput versus demand, travel time, delays, queues, speeds. This will be done strategically on various levels of the transportation network including the: network level (ie. the collector roads, the regional and provincial), corridor level (i.e. along a Regional arterial), link level (ie. one midblock collectors) and the intersection level (i.e. MTO ramp/arterial road intersection). A number of outcomes are typically evaluated on a quantitative level including accessibility, mobility of pedestrians and cyclists as well as transit operations. Comparisons of empirical outcomes of each scenario will be used to derive relative comparisons where possible for these evaluation factors (i.e. one scenario provides increased efficiencies over a second scenario).

5. FINANCIAL IMPLICATIONS

Since 2003 the Region's Development Charge By-law has included provision for funding one-third of the capital costs of the collector road crossings of the 400 series highways.

Technical findings will provide the direction with respect to each of the six infrastructure elements. At this time, there are no financial implications to be considered.

6. LOCAL MUNICIPAL IMPACT

The findings of the study will be reported to local municipal councils

The findings of the assessment will be integral to the Capital Programming at Town of Markham, Town of Richmond Hill, the Ministry of Transportation and York Region. Presentations to committees and council of each have been identified as critical by the Technical Advisory Committee members to review the findings and the potential outcomes.

In addition to providing vehicular access, the crossings will provide connectivity between communities

It is recognized that the proposed mid-block collectors not only provide capacity for movement of people and goods. They are part and parcel of the overall vision set by the Official Plan more directly York Region's Transportation Master Plan as well as those of the local municipality to provide greater connectivity/access between businesses', and residents. The consideration of impacts to pedestrians, cyclists, and interaction between communities will need to be considered in a non-empirical means.

The findings of the study will allow local municipalities to regulate land development and protect lands required for the infrastructure

Ultimately programming, funding and implementation plans will be required to be reviewed and vetted by senior officials of all Technical Advisory Committee member organizations. As a result of this study the local municipalities will be able to establish next steps for the future of land development along the Highway 404 corridor and confirm the protection of lands as required.

7. CONCLUSION

The Highway 404 Midblock Crossings Study is well underway. Working sessions with the Technical Advisory Committee and consultation with the landowner/development community representatives are integral to establishing solutions rationalizing the impacts and opportunities of the six infrastructure elements.

York Region staff will complete the study and report back in December 2011.

For more information on this report, please contact Paul Jankowski, General Manager, Roads at Ext. 5901.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause is attached to this report.)

LEGEND

- Multi-Lane Provincial Highway
- Provincial Highway
- Regional Road
- Railway
- Municipal Boundary
- Regional Boundary
- Lake *
- River *
- Project Location

York Region

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