

## **SPECIAL COMMITTEE OF THE WHOLE WORKING SESSION- FEBRUARY 27, 2009**

### **HIGHWAY 407 INTERCHANGE IMPROVEMENT AT CENTRE STREET WARD 4**

#### **Recommendation**

The Commissioner of Engineering and Public Works recommends:

That this report and the associated presentation by Region of York staff be received for information purposes.

#### **Economic Impact**

There are no economic impacts associated with this report.

#### **Communications Plan**

The Region of York will be apprised of any resolution passed by Council on this item.

#### **Purpose**

The purpose of this report and the associated presentation from Regional staff is intended to provide additional information on the findings of the Traffic and Financial Model Study for Highway 407 Interchange Improvements in York Region, in particular the Centre Street interchange, pursuant to Council direction.

#### **Background - Analysis and Options**

In 1999, Highway 407 was sold to a private sector consortium as part of the Province of Ontario's privatization efforts with obligation to construct and complete seven interchanges along the existing highway including an interchange at Centre Street. The construction of the Centre Street interchange was deferred as per the agreement between the Province and the 407 ETR for a period of 15 years to 2020. The 407 ETR is obligated to initiate an independent study of the technical and financial feasibility of the Centre Street interchange to determine whether construction is warranted or further deferral of the Centre Street interchange is required.

In response to the full interchange proposal on Highway 407 at Centre Street that was documented in the agreement between the Province and the 407 ETR, Vaughan Council, at its meeting on August 25, 2003, enacted the following resolution:

*"Whereas the proposed interchange at Highway 407, Centre Street and Dufferin Street has the potential to disrupt the adjacent residential area with traffic noise, interfere with the community feeling of the area and adversely affect the aesthetics of the area; and*

*Whereas the area is well served by the existing interchange at Dufferin Street; and*

*Whereas the community does not perceive a benefit from the construction of the interchange of Centre Street and in fact many area residents are strongly opposed to an interchange at this locations;*

*Now therefore, the Council of the City of Vaughan resolves that the Ministry of Transportation/ETR be requested to remove any plans for construction of an interchange*

*at Highway 407 and Centre/Dufferin Streets from its program for future development of Highway 407.”*

On June 22, 2006, Regional Council authorized Region staff to engage the IBI Group to undertake a Traffic and Financial Model Study for Highway 407 Interchange Improvements in York Region included the Centre Street interchange. The Study was completed in June 2008 and identified three alternative interchange design concepts for a possible future interchange at Highway 407 and Centre Street. These three alternatives included two new partial interchange concepts from the west and the full interchange alternative as per the agreement between the Province and the 407 ETR as illustrated on Attachments 1, 2 and 3, respectively. The Study concluded that all three alternatives were technically feasible but only the partial interchange options were financially viable for construction in year 2021. It is important to note that a further independent study of the technical and financial viability of the Centre Street Interchange is to be commissioned by 407 ETR prior to this timeframe.

On November 17, 2008, staff submitted Report No. 57, Item 7 to the Committee of the Whole which provided an overview of the Traffic and Financial Model Study for Highway 407 Interchange Improvement Study and recommended the following:

- 1. That Council endorse the proposed partial east-oriented interchange on Highway 407 at Martin Grove Road and authorize staff to continue to work with the Region of York, 407 ETR and the Ministry of Transportation to facilitate the implementation of this interchange;*
- 2. That Council provide direction to staff on whether to support the protection of the necessary lands for a possible future partial interchange on Highway 407 at Centre Street or to maintain Council's resolve of August 23, 2003 that requested the Ministry of Transportation and 407-ETR remove any plans for construction of an interchange at Highway 407 and Centre Street from its program for future development of Highway 407; and*
- 3. That copy of this report be forwarded to the Region of York.”*

Council, at its meeting of November 24, 2008, adopted the above noted recommendations of Report No. 57 Item 7 of the Committee of the Whole as follows:

- 1. The Clauses 1 and 3 of the recommendation contained in the following report of the Commissioner of the Engineering and Public Works, dated November 17, 2008, be approved;*
- 2. That Clause 2 be referred to a future Committee of the Whole (Working Session) meeting and that staff be requested to provide a further detailed report.*

In response to the direction in clause 2 above, City and Regional staff have met and arranged for Regional staff to provide a presentation to the Committee of the Whole Working Session on the results of the Traffic and Financial Model Study for the Highway 407 Interchange Improvements.

#### **Relationship to Vaughan Vision 2020**

This report is consistent with the priorities previously set by Council Vaughan Vision 2020 strategic initiatives:

- To enhance and ensure community safety, health and wellness;
- To lead and promote environmental sustainability;

- To plan and manage growth and economic vitality.

This report is therefore consistent with the priorities previously set by Council.

### **Regional Implications**

The Region of York is seeking an input from the City with respect to the protection of a possible future partial interchange on Highway 407 at Centre Street.

### **Conclusion**

Based on the presentation by Regional staff, staff is seeking direction from a Council on a possible future partial interchange on Highway 407 at Centre Street as outlined in Report No. 57, Item 7 of the Committee of the Whole on November 17, 2008.

### **Attachments**

1. Hwy 407/Centre Street Interchange – Alternative Concept No.1
2. Hwy 407/Centre Street Interchange – Alternative Concept No.2
3. Hwy 407/Centre Street Interchange – Alternative Concept No.3
4. Report No. 57, Item 7 of the Committee of the Whole on November 17, 2008, Proposed Highway 407 Interchange Improvements In Vaughan.
5. Region of York staff report No. 9 of the Planning and Economic Development Committee, Regional Council Meeting of October 23, 2008, Highway 407 Interchange Improvements Study Final Report.

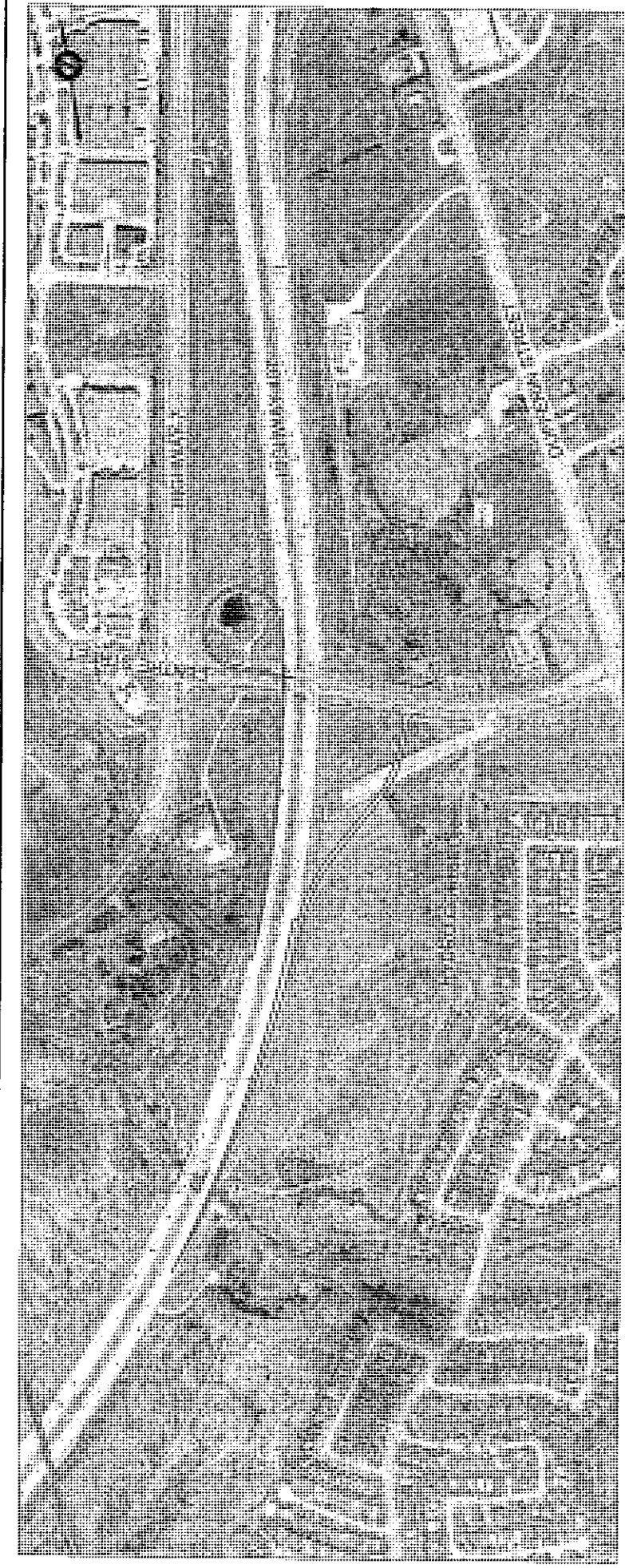
### **Report prepared by:**

Selma Hubjer, Transportation Engineer, Ext. 8674

Respectfully submitted,

Bill Robinson, P. Eng.  
Commissioner of Engineering  
and Public Works

Andrew Pearce, C.E.T.  
Director of Development/  
Transportation Engineering



**ATTACHMENT No. 1**

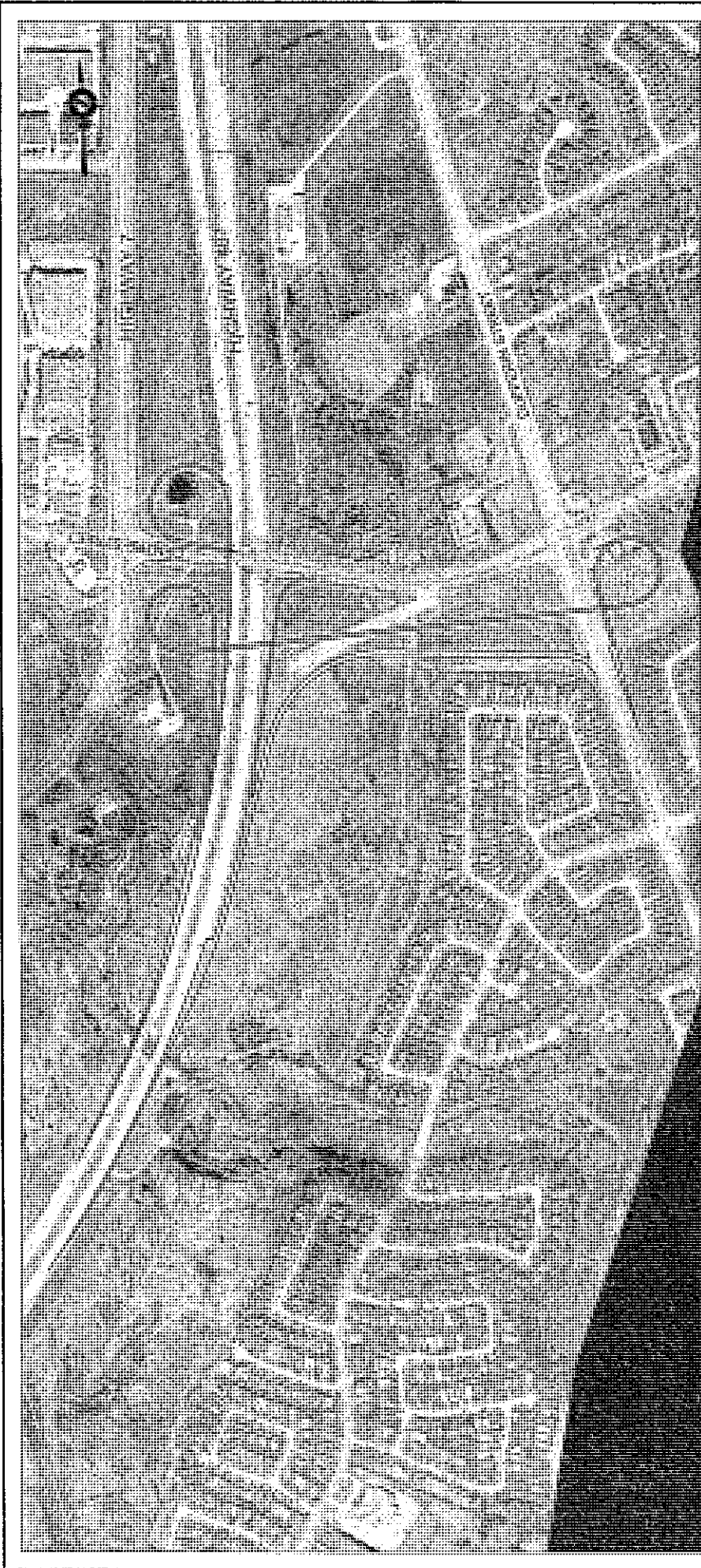
EXHIBIT B-5  
ALTERNATIVE CONCEPT NO. 1  
CENTRE STREET AT HIGHWAY 407

Figure 1



**ATTACHMENT No. 2**

EXHIBIT B-6  
ALTERNATIVE CONCEPT NO. 2  
CENTRE STREET AT HIGHWAY 407



**ATTACHMENT No. 3**

EXHIBIT B-7  
ALTERNATIVE CONCEPT NO. 3  
CENTRE STREET AT HIGHWAY 407

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# ATTACHMENT No. 4

## CITY OF VAUGHAN

### EXTRACT FROM COUNCIL MEETING MINUTES OF NOVEMBER 24, 2008

Item 7, Report No. 57, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on November 24, 2008.

#### 7 PROPOSED HIGHWAY 407 INTERCHANGE IMPROVEMENTS IN VAUGHAN

The Committee of the Whole recommends:

- 1) That Clauses 1 and 3 of the recommendation contained in the following report of the Commissioner of Engineering and Public Works, dated November 17, 2008, be approved; and
- 2) That Clause 2 be referred to a future Committee of the Whole (Working Session) meeting and that staff be requested to provide a further detailed report.

#### Recommendation

The Commissioner of Engineering and Public Works recommends:

1. That Council endorse the proposed partial east-oriented interchange on Highway 407 at Martin Grove Road and authorize staff to continue to work with the Region of York, 407 ETR and the Ministry of Transportation to facilitate the implementation of this interchange;
2. That Council provide direction to staff on whether to support the protection of the necessary lands for a possible future partial interchange on Highway 407 at Centre Street or to maintain Council's resolve of August 23, 2003 that requested the Ministry of Transportation and 407-ETR remove any plans for construction of an interchange at Highway 407 and Centre Street from its program for future development of Highway 407; and
3. That copy of this report be forwarded to the Region of York.

#### Economic Impact

There are no economic impacts associated with this report.

#### Communications Plan

A copy of this report will be forwarded to the Region of York.

#### Purpose

The purpose of this report is to provide Council with an overview of the Traffic and Financial Model Study that the Region of York undertook to investigate the feasibility for potential new interchanges along Highway 407 within York Region, in particular at Martin Grove Road, Kipling Avenue, Islington Avenue and Centre Street.

#### Background - Analysis and Options

In 1999, Highway 407 was sold to a private sector as part of the Province of Ontario's privatization efforts with obligations to construct and complete seven interchanges along the existing highway. The original agreement identified specifically the ramps to be constructed, but subsequently agreements between the Province and the 407 ETR deferred the construction of the Centre Street and Kipling Avenue interchanges in the City of Vaughan for a period of 15 years

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to 2020. During this timeframe, an independent study of the technical and financial feasibility of each interchange is to be initiated by the 407 ETR to determine whether construction of either or both are warranted or further deferral of the interchanges is required.

On June 22, 2006, Regional Council authorized York Region staff to engage a consultant to assist in conducting a traffic and financial model study of possible interchange improvements opportunities along Highway 407 in York Region. The study was initiated in response to a request from the Town of Markham to undertake a study for possible future interchanges along Highway 407 at Ninth Line and Donald Cousens Parkway.

The Regional study examined potential new interchanges or interchange improvements along Highway 407 at Donald Cousens Parkway and Ninth Line in the Town of Markham, Leslie Street in the Town of Richmond Hill and at Centre Street, Islington Avenue, Kipling Avenue and Martin Grove Road in the City of Vaughan. Vaughan staff participated as technical advisor on the study Transportation Advisory Committee (TAC) together with representatives from the Towns of Markham and Richmond Hill, York Region, 407 ETR and the Ministry of Transportation (MTO).

The Highway 407 traffic and financial analyses of the feasible options were conducted for the 2011, 2021 and 2031 horizon years and were used to develop a business case for each of the recommended improvements at the above locations. 407 ETR is prepared to consider business cases which demonstrate future revenue from traffic utilizing new interchanges or interchange improvements that show a positive five-year net present value (NPV) benefit to 407 ETR.

**Council Directions for Centre Street and Martin Grove Road Proposed Interchanges**

Vaughan staff advised the Technical Advisory Committee early in the study process of Council's previous positions regarding the proposed 407 ETR interchanges at Martin Grove Road and Centre Street, in particular:

Council, at its meeting on August 23, 2003, adopted the following resolution:

*"Whereas the proposed interchange at Highway 407, Centre Street and Dufferin Street has the potential to disrupt the adjacent residential area with traffic noise, interfere with the community feeling of the area and adversely affect the aesthetics of the area; and*

*Whereas the area is well served by the existing interchange at Dufferin Street; and*

*Whereas the community does not perceive a benefit from the construction of the interchange of Centre Street and in fact many area residents are strongly opposed to an interchange at this locations;*

*Now therefore, the Council of the City of Vaughan resolves that the Ministry of Transportation/ETR be requested to remove any plans for construction of an interchange at Highway 407 and Centre/Dufferin Streets from its program for future development of Highway 407."*

Council, at its meeting on June 15, 2005, adopted the following resolution:

*"That the Ministry of Transportation be requested to immediately commence the studies necessary for the construction of a partial (east-oriented) interchange at Highway 407/ETR and Martin Grove Road."*

The Region of York supported the City of Vaughan's request to the Ministry regarding a partial interchange at Highway 407 and Martin Grove Road at its Regional Council Meeting of June 23, 2005.



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#### Potential New Interchanges along Highway 407 in the City of Vaughan

##### Western Interchange Options (Martin Grove Road, Kipling Avenue, and Islington Avenue)

Early in the study process, it was decided to group the three interchanges in the west, as only one would be feasible due to the proximity of the arterial road crossing of Highway 407 between the existing full interchange at Pine Valley Road and Highway 27:

- Partial interchange at Martin Grove Road, to and from the east;
- Full/partial interchange at Kipling Avenue; or,
- Partial interchange at Islington Avenue, to and from the west.

After further analysis, it was found that the Islington Avenue partial interchange option to and from the west is not practical due to significant issues associated with the crossing of the Humber River valley and the CPR line. Accordingly, the Islington Avenue partial interchange option was excluded from further consideration.

##### Martin Grove Road

Given the existing ramp configuration for the Highway 27/407 interchange and the existing land use in the area, it is not geometrically and operationally feasible to construct full interchange at Martin Grove Road. However, a partial interchange to and from the east is feasible and could generally be constructed within the existing Highway 407 right-of-way. This interchange configuration is illustrated in Attachment No. 1.

Construction of a new partial interchange at Martin Grove Road would result in traffic increases on this facility and decreases on the Highway 27 to the west. Traffic travelling through the intersection with Highway 407 would be reduced. Resulting increase in volume from traffic using the new interchange would be larger and would result in a net increase in traffic volumes on Martin Grove Road. The increase in traffic would be approximately 65% in 2011, resulting in reduced level of service and increase in delay on this facility, although not approaching capacity.

Revenue net increase forecast was prepared for this option and was found that existing demands for this partial interchange at Martin Grove Road result in a positive five-year net present value immediately, regardless of the property acquisition costs.

##### Kipling Avenue

The latest identified MTO interchange configuration that was deferred from construction obligation with the 407 ETR was assumed in the analysis as per direction from the Technical Advisory Committee. This interchange improvement consists of a Parclo A-3 configuration that provides a direct connection to Martin Grove Road to the north of Highway 407 avoiding some significant environmental impacts, but also provides no access to the west (Attachment No. 2).

For the analysis purposes it was assumed that the Kipling Avenue extension north of Steeles Avenue West to Martin Grove would be completed by 2011, although no planned/approved completion date is anticipated at this time.

The introduction of a new interchange at Kipling Avenue would lead to increase in traffic on this facility. Traffic travelling through the intersection with Highway 407 would be reduced. Traffic volumes on Martin Grove Road, Highway 27 and Pine Valley Drive would decrease. Resulting increase in volume from traffic using the new interchange would be larger and would result in a net increase in traffic volumes on Kipling Avenue.

The traffic increase on Kipling Avenue would be approximately 160% in the southbound direction south of Highway 407 in 2011, resulting in reduced level of service and increase in delay on this facility, though not approaching capacity even with this significant increase.

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Due to the high capital cost of \$50 million, \$10 million in the property acquisition costs and annual operating and maintenance costs, the implementation of Kipling Avenue ramps would not reach positive investment status within the timeframe of this study. Positive investment status would be reached around 2031 if property costs are not considered.

#### Centre Street

Three alternative interchange improvement design concepts were developed and identified for the Centre Street Ramp Option analysis as illustrated in Attachment No. 3 to No. 5 (two partial interchanges to and from the west and the full interchange).

#### *Option No.1 (partial interchange)*

Option No. 1 includes the provision of a loop ramp in the northeast quadrant, from Centre Street northbound to 407 ETR westbound, and a directional to a signalized "T" intersection at Centre Street ramp in the southwest quadrant from 407 ETR eastbound (Attachment No. 3).

#### *Option No.2 (partial interchange)*

Option No. 2 includes the provision of a loop ramp in the northeast quadrant, from Centre Street northbound to 407 ETR westbound, and a loop ramp in the southeast quadrant from 407 ETR eastbound to a signalized "T" intersection at Centre Street (Attachment No. 4).

#### *Option No. 3 (full interchange)*

Option No. 3 includes the provision of a loop ramp in the northeast quadrant, from Centre Street northbound to 407 ETR westbound, a directional ramp in the southwest quadrant from 407 ETR eastbound that would split to directly connect to Centre Street and Dufferin Street, and a connecting road on the west side of Centre Street over Highway 407 between 407 ETR westbound and Dufferin Street northbound. This option was deferred from the construction obligation by the 407 ETR to 2020 (Attachment No. 5).

The feasibility analyses found that all three design options are technically feasible and were carried through more detailed development. Based on the analysis, demand for each option would be approximately the same as would the traffic impacts for the most part.

Options No. 1 and No. 2 would have fewer impacts on the existing residential development in the southwest corner of Dufferin Street and Centre Street. No direct connection with Dufferin Street would be provided as illustrated in the provided Attachments. A connecting road on the west side of Centre Street over Highway 407 between 407 ETR westbound and Dufferin Street northbound would be eliminated. There could be potential for noise barrier installation with Option No. 1 due to the directional ramp in the southwest quadrant from eastbound 407 ETR, however, these impacts would be significantly less than the Ramp Option No. 3.

Construction of a new full interchange at Centre Street would result in traffic increases on this facility and decreases on Dufferin Street (north of Centre Street), Highway 7, Steeles Avenue West and Keele Street. Traffic travelling through the intersection with Highway 407 would be reduced. The resulting increase in volume from traffic using the new full interchange would be larger and would result in a net increase in traffic volumes on Centre Street.

For Options No. 1 and No. 2, the projected traffic increase on Centre Street would be approximately 15% in the westbound direction between the interchange and Dufferin Street in 2011, and would result in unacceptable levels of congestion. For Option No.3, this increase would be less as traffic to/from Dufferin Street south of Centre Street would be accommodated by ramps parallel to Centre Street.

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Due to the significant difference in construction cost, each option is analyzed separately from a financial performance perspective. Revenue net increase forecasts were prepared and was found that Option No. 1 and No. 2 would reach a neutral investment status sometime around 2021. The much larger cost of Option No. 3 would preclude this option from reaching a positive investment status within the timeframe of the study regardless of property acquisition cost.

#### Thornhill-Centre Street Study and Relation to the Proposed Centre Street Interchanges

The vision for the Thornhill Centre Street Study Area is being implemented through the Official Plan Amendments #671 (Thornhill Town Centre) and #672 (Centre Street Spine).

As the character of the Centre Street corridor varies in terms of land use, building height, streetscape, connectivity and adjacent uses, for the purposes of the study the corridor was divided into three separate sections: the Eastern Gateway/Town Centre, the Central Spine and the Western Gateway.

The Western Gateway includes a number of large vacant or undeveloped parcels of land surrounding the Dufferin Street and Centre Street intersection. It is a focus and entry point to the Thornhill community from the west and north. The Gateway is largely influenced by the Provincial government in terms of the disposition of lands in the south half of the Gateway.

The full interchange option, Option No. 3, would have significant impacts on the future Gateway developments opportunities. This option could preclude the implementation of OPA #672 in the south half of the Western Gateway.

The partial interchange options do not prevent development opportunities in the Western Gateway area as partial ramps would be located on lands west of Hydro Corridor and are outside of the Thornhill Centre Street Study Area.

#### Relationship to Vaughan Vision 2020

This report is consistent with the priorities previously set by Council Vaughan Vision 2020 strategic initiatives

- To enhance and ensure community safety, health and wellness;
- To lead and promote environmental sustainability;
- To plan and manage growth and economic vitality.

This report is therefore consistent with the priorities previously set by Council.

#### Regional Implications

Region of York is proponent of the study and Regional and City staff have jointly reviewed the analysis and recommendations of the study. Region of York staff have been consulted on this report and are supportive of its recommendations.

Regional Council, at its meeting on October 23, 2008, adopted the recommendations of Report No. 9 Item 1 of the Planning and Economic Development Committee as follows:

1. *The communication from Sandra Yeung Racco, Councillor, City of Vaughan, be received;*
2. *Recommendations 1, 3, 4 and 5 contained in the following report dated September 11, 2008, from the Commissioner of Planning and Development Services and Commissioner of Transportation Services, be adopted as follows:*

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### EXTRACT FROM COUNCIL MEETING MINUTES OF NOVEMBER 24, 2008

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1. *Regional Council endorse the June 2008 Final Report for the Traffic and Financial Model Study for Highway 407 Interchange Improvements.*
2. *Regional Council endorse the recommendations to the City of Vaughan to protect lands for a possible future partial interchange at Centre Street.*
3. *Regional Council authorize staff to work with City of Vaughan, 407 ETR, and the Ontario Ministry of Transportation to pursue the implementation of a Martin Grove Road interchange.*
4. *Regional staff report back to Council on the status of any discussion with 407 ETR and the progress of the interchange implementation projects and future needs.*
5. *The Regional Clerk forward a copy of this report to the Clerk of the City of Vaughan, and Towns of Markham and Richmond Hill, 407 ETR, and the Ministry of Transportation.*

3. *Recommendation 2 be referred to staff for further consultation with the City of Vaughan.*

#### **Conclusion**

The Region of York completed the Traffic and Financial Model study for seven potential new interchanges or interchange improvements along Highway 407 in York Region. Four of the potential interchanges are located in the City of Vaughan, and include: Martin Grove Road, Kipling Avenue, Islington Avenue and Centre Street.

The report concluded that the existing demand for Martin Grove Road partial interchange to and from the east results in a positive five-year net present value if constructed in 2008. This option would provide immediate benefit to the residents and businesses in the area and would reduce the need for extended travel on Regional Road 7 to access 407 ETR. It is recommended that Council endorse this option and request the Region of York to present a business case and enter into discussion with MTO and 407 ETR to build a new partial interchange at Martin Grove Road. Should Council endorse the Martin Grove Road interchange, the future feasibility of the Kipling Avenue Interchange would be precluded.

Based on the Traffic and Financial Model Study findings it was found that the Centre Street partial interchange Option No. 1 and No. 2 would reach a neutral investment status around 2021. As such, both options would be subject to the technical and feasibility study by 407 ETR prior to year 2020 as per agreement between the Province and the 407 ETR. Based on the partial interchange design, the ramps would be located outside the Thornhill Centre Street Study area. Given that this is a new partial interchange proposal, staff is seeking direction from Council on whether to protect the necessary lands for a possible future partial interchange on Highway 407 at Centre Street or to maintain Council's resolve of August 23, 2003 that request the Ministry of Transportation and 407-ETR to remove any plans for construction of an interchange at Highway 407 and Centre Street from its program for future development of Highway.

#### **Attachments**

1. Martin Grove Road Interchange Option
2. Kipling Avenue Interchange Option
3. Centre Street Alternative Concept No.1
4. Centre Street Alternative Concept No.2
5. Centre Street Alternative Concept No.3

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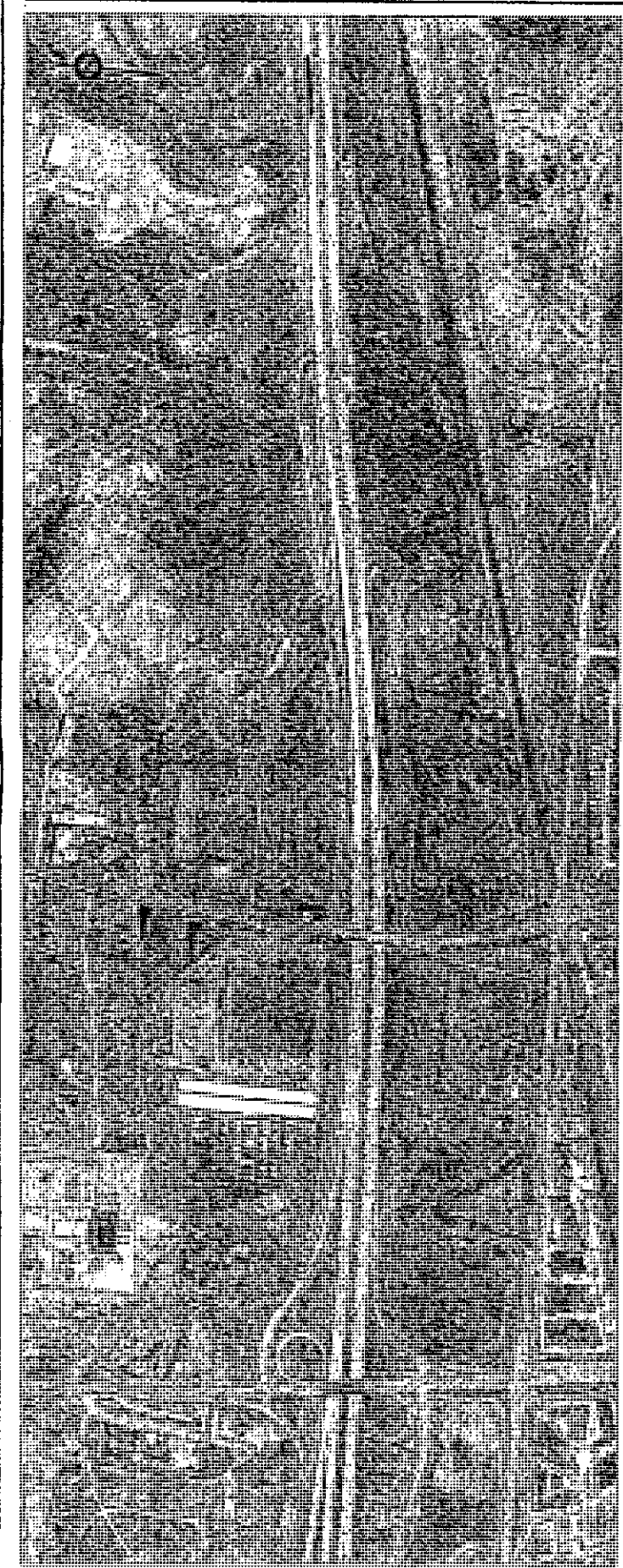
EXTRACT FROM COUNCIL MEETING MINUTES OF NOVEMBER 24, 2008

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**Report prepared by:**

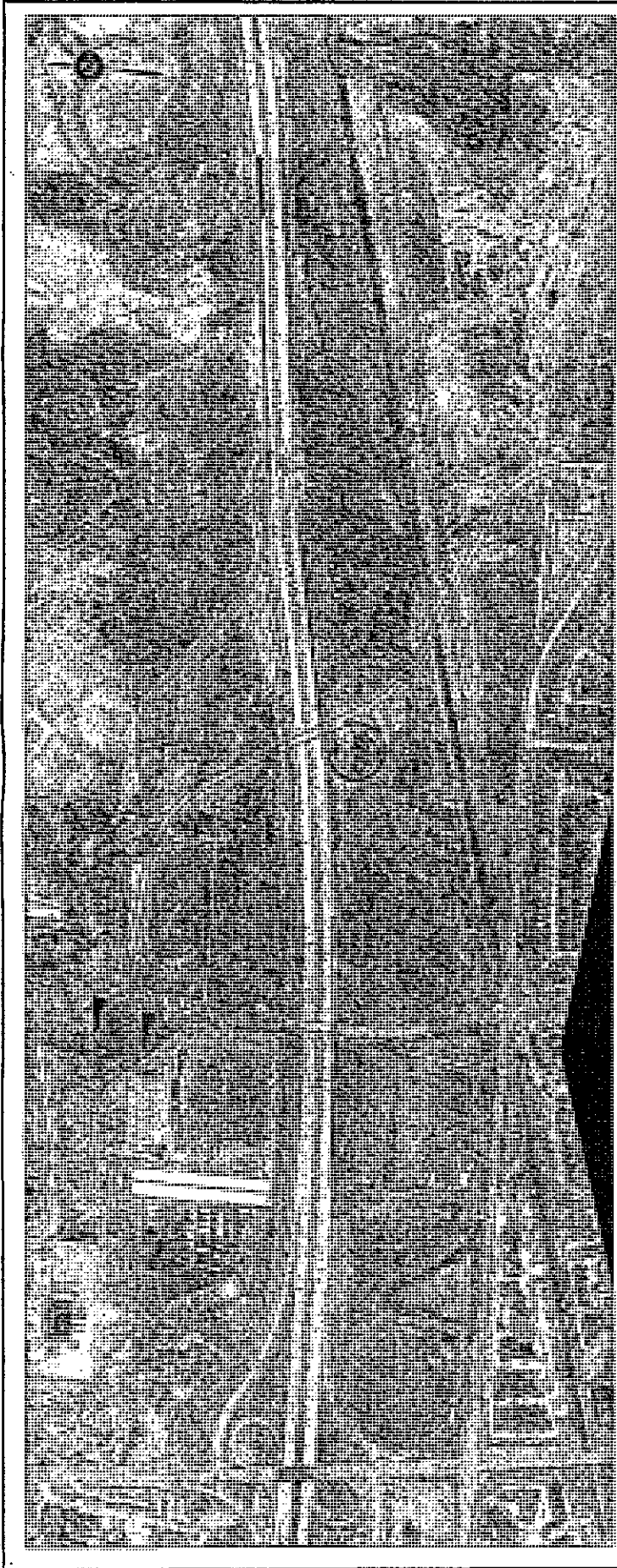
Selma Hubjer, Transportation Engineer, Ext. 8674

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)



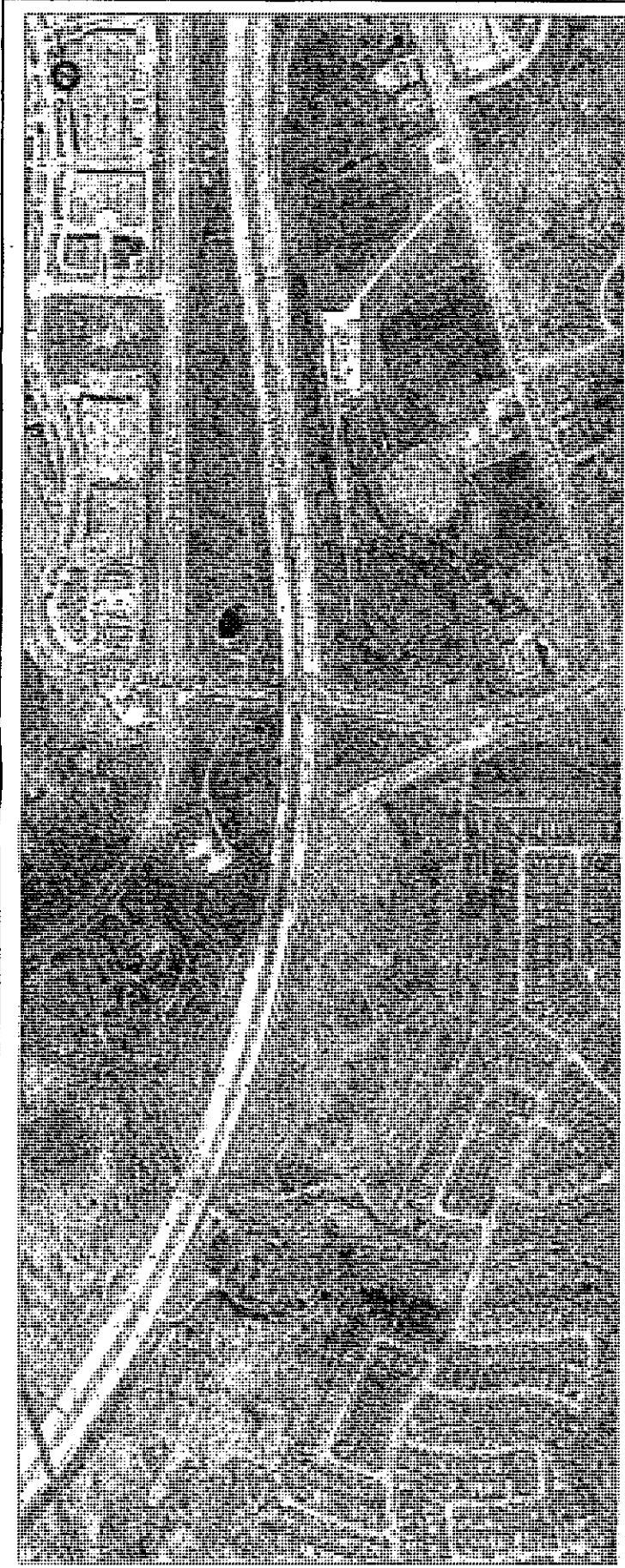
MARTIN GROVE ROAD AT HIGHWAY 407

ATTACHMENT No. 1



KIPLING AVENUE AT HIGHWAY 407

ATTACHMENT No. 2



ALTERNATIVE CONCEPT NO. 1  
CENTRE STREET AT HIGHWAY 407

ATTACHMENT No. 3





ALTERNATIVE CONCEPT NO. 2  
CENTRE STREET AT HIGHWAY 407

ATTACHMENT No. 4



ALTERNATIVE CONCEPT NO. 3  
CENTRE STREET AT HIGHWAY 407

ATTACHMENT No. 5

## **ATTACHMENT No. 5**

Report No. 9 of the Planning and Economic Development Committee  
Regional Council Meeting of October 23, 2008

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### **1**

#### **HIGHWAY 407 INTERCHANGE IMPROVEMENTS STUDY FINAL REPORT**

The Planning and Economic Development Committee recommends the following:

1. The communication from Sandra Yeung Racco, Councillor, City of Vaughan, October 1, 2008, be received;
2. Recommendations 1, 3, 4 and 5 contained in the following report dated September 11, 2008, from the Commissioner of Planning and Development Services and Commissioner of Transportation Services, be adopted; and
3. Recommendation 2 be referred to staff for further consultation with the City of Vaughan.

#### **1. RECOMMENDATIONS**

It is recommended that:

1. Regional Council endorse the June 2008 Final Report for the Traffic and Financial Model Study for Highway 407 Interchange Improvements.
2. Regional Council endorse the recommendation to the City of Vaughan to protect lands for a possible future partial interchange at Centre Street.
3. Regional Council authorise staff to work with the City of Vaughan, 407ETR, and the Ontario Ministry of Transportation to pursue the implementation of a Martin Grove Road interchange.
4. Regional staff report back to Council on the status of any discussions with 407ETR and the progress of the interchange implementation projects and future needs.
5. The Regional Clerk forward a copy of this report to the Clerk of the City of Vaughan, and Towns of Markham and Richmond Hill, 407ETR, and Ontario Ministry of Transportation.

#### **2. PURPOSE**

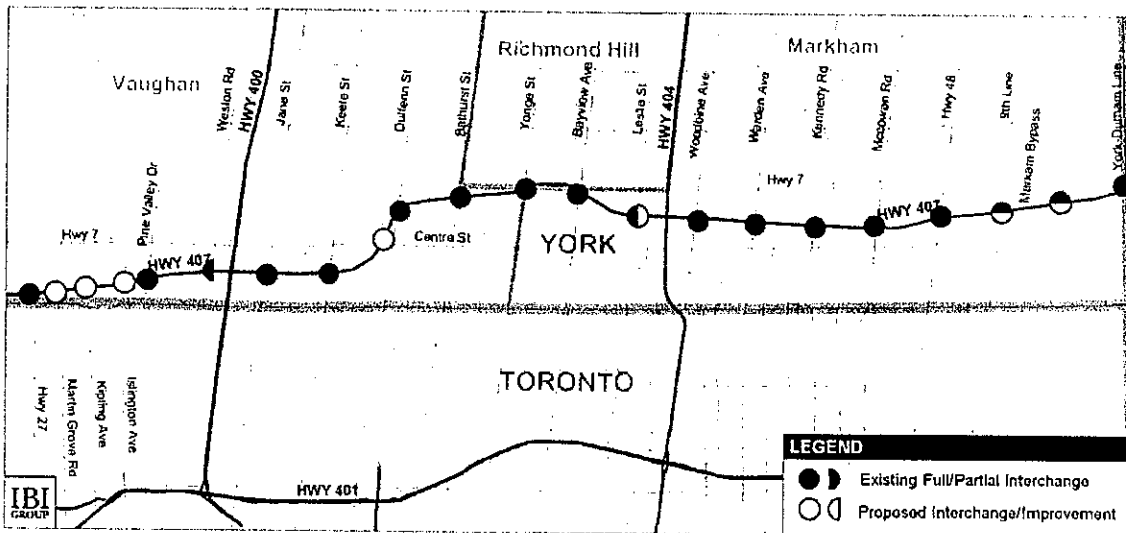
This report seeks Council's endorsement of the final report for the Highway 407 Interchange Improvements Study and authorization for staff to recommend and develop positions with the City of Vaughan to consider future interchanges at Martin Grove Road and Centre Street.

### 3. BACKGROUND

#### **A comprehensive study of additional Highway 407 interchange improvements covering the entire southern York Region to provide a business case**

In response to a request from Town of Markham Council to conduct a study for additional ramps on Highway 407 at 9<sup>th</sup> Line and Donald Cousens Parkway, York Region staff recommended expanding the traffic and financial study to comprehensively cover the entire southern York Region. The study examined Highway 407 interchange improvement potential at the following locations:

- Donald Cousens Parkway
- 9<sup>th</sup> Line.
- Leslie Street.
- Centre Street.
- Islington Avenue.
- Kipling Avenue.
- Martin Grove Road.



York Region retained the consultancy firm of IBI Group and the study commenced in March 2007. A Technical Advisory Committee was established for the project and included staff from the Towns of Markham and Richmond Hill, City of Vaughan, Ontario Ministry of Transportation (MTO), and 407ETR.

The purpose of the study was to assess the feasibility of potential interchange improvements and provide 407ETR with a business case for any recommended

improvements. 407ETR will continue to monitor the system with York Region and review the studies and business cases to determine when improvements are needed.

#### 4. ANALYSIS AND OPTIONS

##### Study showed opportunities for interchange improvements at several locations

The final report for the *Traffic and Financial Model Study for Highway 407 Interchange Improvements* is presented in Committee Attachment 1. The report documents the approach and technical analyses carried out to assess the construction feasibility, traffic and revenue forecasts by location. The financial analysis includes forecasts to year 2031 with a five-year net present value assessment for a payback period.

Table 1 summarizes the findings of the study and the feasibility of various ramp improvements at each location.

**Table 1**  
Study Conclusions for Highway 407 Interchange Improvements

Interchange Location(s)	Improvement Options and Combinations	Construction Feasibility	Implementation for Five-Year Payback
Don Cousens Pkwy (DCP)	<ul style="list-style-type: none"> <li>• south to west ramp only</li> <li>• south to east ramp only</li> </ul>	Yes Yes	Now About 2021
9 <sup>th</sup> Line	<ul style="list-style-type: none"> <li>• south to west and south to east ramps</li> </ul>	Yes	Now
9 <sup>th</sup> Line and Don Cousens Pkwy	<ul style="list-style-type: none"> <li>• 9<sup>th</sup> Line from south and DCP south to west ramps</li> </ul>	Yes	Now
Leslie Street	<ul style="list-style-type: none"> <li>• 2 design concepts considered</li> </ul>	No	N/A
Centre Street	<ul style="list-style-type: none"> <li>• 2 partial interchanges with ramps in the NW and SW or SE quadrants</li> </ul>	Yes	About 2021
Islington Avenue	<ul style="list-style-type: none"> <li>• ramps to/from the west</li> </ul>	No	N/A
Kipling Avenue	<ul style="list-style-type: none"> <li>• ramps to/from east and one from the west only</li> </ul>	Yes <sup>1</sup>	About 2031
Martin Grove Road	<ul style="list-style-type: none"> <li>• ramps to/from the east</li> </ul>	Yes <sup>1</sup>	Now

Notes: N/A = Not Applicable

1. Kipling Avenue and Martin Grove Road ramps cannot be constructed together

The results show that several ramp improvements can be implemented immediately or in the future subject to approvals under the *Environmental Assessment Act*, while some are not feasible as follows:

**Immediate Implementation**

- 9<sup>th</sup> Line south to west and east ramps
- Donald Cousens Parkway south to west ramp
- Martin Grove Road ramps to/from east

**Future Implementation**

- Donald Cousens Parkway south to east ramp
- Centre Street partial interchange
- Kipling Avenue partial interchange (only if Martin Grove Road ramps are not constructed)

**Not Feasible**

- Leslie Street ramps to/from east (numerous physical, operational, safety, and property constraints)
- Islington Avenue ramps to/from west (major environmental and cost constraints)

**Potential 9<sup>th</sup> Line and Donald Cousens Parkway ramp improvement combinations are currently feasible**

The study showed that various ramp combinations at the 9<sup>th</sup> Line and Donald Cousens Parkway can be feasible and provide a five year payback to 407ETR if implemented now.

**Ramp Improvements at 9<sup>th</sup> Line and Donald Cousens Parkway were negotiated with 407ETR**

In February 21, 2008, Regional Council authorized Senior Management to negotiate with 407ETR on interchange ramp improvements recommended for the 9<sup>th</sup> Line and Donald Cousens Parkway locations. These negotiations were urgently needed because of the 2009 construction schedule for the Highway 407 widening project from Markham Road to York-Durham Line.

Chairman Bill Fisch carried out the negotiations for the 9<sup>th</sup> Line and Donald Cousens Parkway interchange ramps with 407ETR in May 2008. As a result, 407ETR will be implementing the south to west loop ramp at 9<sup>th</sup> Line immediately and work with the Region to monitor the other ramps.

**Leslie Street interchange additional ramps to and from the east are not feasible**

The Leslie Street interchange currently has ramps to and from the west. Two design concepts were considered in the study to demonstrate the constraints to and from the east. The study concluded that there are no feasible opportunities to provide additional ramps

to and from the east at the Leslie Street interchange due to numerous physical, operational, safety, and property constraints.

### **Centre Street partial interchange options are possible**

Three options for a Centre Street interchange were considered, two of them being partial interchange configurations and the third being a full interchange configuration that was deferred from construction obligation by 407ETR. The full interchange option did not show a financial payback within the 2031 timeframe considered in this study, while the two partial interchange options had a five-year payback if the project was implemented around 2021. The two partial interchange options at Centre Street consists of:

1. A loop ramp in the northeast quadrant and a directional ramp in the southwest quadrant.
2. A loop ramp in the northeast quadrant and a loop ramp in the southeast quadrant.

### **Recommend protection of property for possible future partial interchange at Centre Street**

In terms of recognizing the potential for a future interchange at Centre Street, Amendment No. 1 of the Highway 407 Concession and Ground Lease Agreement between the Province and 407ETR deferred the construction of a Centre Street interchange to year 2020. It also indicates that an independent study of the technical and financial viability of a Centre Street interchange is to be commissioned by 407ETR prior to this timeframe.

However, the City of Vaughan Council at its Committee of the Whole meeting of August 25, 2003, resolved to request the Province and 407ETR to remove any plans for construction of an interchange at Highway 407 and Centre/Dufferin Streets. Reasons for this position were mainly based on opposition by area residents and potential adverse impacts to the community. This position was based on a full-interchange concept for Centre Street which would be a very expensive undertaking and have significant impacts. Whereas, this study has considered two partial interchange options which are much more feasible with less impact.

In light of these matters, Regional staff recommend that the City of Vaughan protect lands in the vicinity of Highway 407 and Centre Street until such time as 407ETR's obligation for a technical and financial viability study is fulfilled for the Centre Street interchange. Based on findings from this current study, staff recommend that lands in the northeast, southwest and southeast quadrants be protected for a possible future partial interchange at Highway 407 and Centre Street.

**Only a Martin Grove Road interchange or Kipling Avenue interchange is possible, but not both**

The interchange improvement options in the western part of Vaughan included an assessment of potential configurations at Islington Avenue, Kipling Avenue, and Martin Grove Road, or a combination of these locations. Options at Islington Avenue were eliminated given major environmental, regulatory, and cost issues.

Both the Martin Grove Road and Kipling Avenue locations had interchange options which were carried forward in the financial analysis. The results showed that a partial interchange to and from the east at Martin Grove Road would provide a five-year payback if implemented immediately while the configuration at Kipling Avenue due to some significant environmental and property impacts would not be financially viable until 2031. It was noted that due to the proximity and geometric constraints of the two locations, only a Martin Grove interchange or Kipling Avenue interchange can be built, but not both.

**Staff to work with City of Vaughan to pursue the implementation of a Martin Grove Road interchange**

The business case showed that a Martin Grove Road partial interchange with ramps to and from the east would provide a financial return that could justify its immediate construction. Implementation of an interchange at the Martin Grove Road location would mean that a Kipling Avenue interchange configuration would not be possible. However, a Kipling Avenue interchange is currently identified in the Highway 407 Concession and Ground Lease Agreement as a potential interchange location deferred until 2020. As such, an amendment to the Agreement may be required in order for the Martin Grove Road interchange to be constructed.

Martin Grove Road and Kipling Avenue are currently under the jurisdiction of the City of Vaughan. It is understood that on June 15, 2005, Vaughan Council at its Committee of the Whole endorsed a recommendation from the City's Commissioner of Engineering and Public Works to request the Province to implement an interchange at Highway 407 and Martin Grove Road. Given the City's position and the significant positive impacts on traffic patterns and accessibility in the adjacent communities and nearby arterial roads, it is recommended that Regional staff work with the City of Vaughan, 407ETR, and MTO to pursue the implementation of a Martin Grove Road interchange.

**Staff will report back to Council on the status of the projects and needs**

Regional staff will report back to Council on the status of any discussions with 407ETR and MTO on the progress of interchange implementation projects and future needs.



## 5. FINANCIAL IMPLICATIONS

This report does not have any direct financial implications.

## 6. LOCAL MUNICIPAL IMPACT

The study has addressed the Town of Markham's request to examine Highway 407 ramp improvement opportunities at 9<sup>th</sup> Line and Donald Cousens Parkway. As well, the study scope has been expanded to include other interchange opportunities in southern York Region. The comprehensive study assessed Highway 407 accessibility and ramp opportunities to help divert traffic from Regional and local municipal roads and reduce circuitous, undesirable and unsafe turning movements to/from the highway.

The study Technical Advisory Committee included staff representatives from the Towns of Markham and Richmond Hill, and the City of Vaughan.

## 7. CONCLUSION

A study to assess the feasibility of potential Highway 407 interchange improvements and provide 407ETR with a business case for any recommended improvements was completed. This report seeks Council's endorsement of the Final Report for the Traffic and Financial Model Study for Highway 407 Interchange Improvements.

The study recommends the following interchange improvements and timeframe for implementation subject to approval under the *Environmental Assessment Act*:

### Immediate Implementation

- 9<sup>th</sup> Line south to west and east ramps
- Donald Cousens Parkway south to west ramp
- Martin Grove Road ramps to/from east

### Future Implementation

- Donald Cousens Parkway south to east ramp
- Centre Street partial interchange
- Kipling Avenue partial interchange (only if Martin Grove Road ramps are not constructed)

The study shows that there is potential for a future partial interchange configuration at the Centre Street location, however, further study is required as part of 407ETR's obligation and deferral of the Centre Street interchange construction to 2020. This report seeks Council's endorsement of a recommendation to the City of Vaughan to protect lands for a possible partial interchange at Highway 407 and Centre Street.

Regional staff also seek Council's authorization to work with the City of Vaughan to pursue a partial interchange to/from the east on Highway 407 at Martin Grove Road. As Martin Grove Road and Kipling Avenue are under the jurisdiction of the City of Vaughan, staff believe that supporting Vaughan's position on the Martin Grove Road interchange would have traffic relief benefits on the adjacent communities and surrounding arterial road network.

Staff will also continue to monitor and advocate for the remaining Highway 407 ramps at 9<sup>th</sup> Line and Donald Cousens Parkway.

For more information on this report, please contact Richard Hui, Program Manager in Transportation Planning, at 905-830-4444, Ext. 1578, or Loy Cheah, Manager, Transportation Planning at Ext. 5024.

The Senior Management Group has reviewed this report.

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