

**CITY OF HAMILTON**

**PUBLIC WORKS DEPARTMENT**  
**Environment & Sustainable Infrastructure Division**

<b>TO:</b> Chair and Members Public Works Committee	<b>WARD(S) AFFECTED:</b> WARD 12
<b>COMMITTEE DATE:</b> June 18, 2012	
<b>SUBJECT/REPORT NO:</b> Highway 403 Westbound On Ramp at Mohawk Road (PW12051) - (Ward 12)	
<b>SUBMITTED BY:</b> E. (Beth) Goodger Acting General Manager Public Works Department	<b>PREPARED BY:</b>  Mohan Philip (905)546 2424, Extension 3438
<b>SIGNATURE:</b>	

**RECOMMENDATION**

- (a) That the General Manager, Public Works Department, be authorized and directed to undertake the next phase (Municipal Class EA process, and Modelling and Operational analysis) of the proposed Highway 403 Westbound On-Ramp at Mohawk Road;
- (b) That the Ministry of Transportation (MTO) be advised of the City of Hamilton's intention to proceed with the next phase in the process to seek approval of a westbound on-ramp to Highway 403 at Mohawk Road including modelling and operational analysis;
- (c) That the General Manager, Public Works Department, report back to the Public Works Committee and City Council during the 2013 budget deliberations; and
- (d) That the budget allocation for the Highway 403 Ramp Studies (Capital Budget Project ID 4031255215) be increased by \$195,000 to undertake the next phases of the study and that this increase be funded by a transfer of funds from the Ancaster Transportation Master Plan - Phase 3 & 4 EA (Capital Budget Project ID 4030955945).

**EXECUTIVE SUMMARY**

The Public Works Department has completed a preliminary investigation of the feasibility of a westbound "On-Ramp" to Highway 403, from Mohawk Road in Ancaster.

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From the preliminary assessment, the estimated cost of the project would be in the range of \$3.6 to \$6.4 million. This estimate includes approximately \$550,000 for undertaking additional Ministry of Transportation (MTO) required studies.

Two (2) concept plans were developed for the Mohawk Road Ramp as shown in Appendix A and B. Ministry of Transportation (MTO) staff have also reviewed these concepts and provided their comments after a cursory review of the concept plans. The Ministry of Transportation (MTO) staff have indicated that “the concept plans appear acceptable from a geometric design perspective”. Specific Ministry of Transportation (MTO) comments on the plans and requirements can be addressed if the study process is authorized to continue.

From this preliminary investigation, it appears both alternatives are feasible, from a geometric design perspective including the need to make provisions for the future High Occupancy Vehicle (HOV) lanes. With these alternatives we don't anticipate a reconstruction of the existing Golf Links Road Bridge. The properties required for this project are mainly City owned; however, contingencies have been included in the estimates if the City needs to pursue adjacent private property to complete the construction project. Impacts on private properties appear to be very minimal. Revisions to these concept plans will be needed once a final decision is made on which concept to pursue to detailed design. The scope of work of the current study was to prepare a concept plan and cost estimate for the proposed Mohawk Road ramp. This work has been completed at a cost of \$15,000.

There are a number of additional technical studies the Ministry of Transportation (MTO) will require the City to undertake, before they provide their final approval of the project. Financial aspect of the project will also require additional consideration, during subsequent project phases.

The additional Ministry of Transportation (MTO) required studies to be completed include the following:

- Municipal Class EA process
- Modeling and operational analysis
- Traffic micro simulation
- Detailed design
- Risk analysis

The scope of work for each of the studies needs to be finalized in discussion with Ministry of Transportation (MTO). Staff's assessment of these additional studies, EA and design, is projected to take twenty five (25) months to complete. Staff's recommendation is to undertake all these studies by a single Ministry of Transportation (MTO) approved consultant.

The cost for undertaking the next phase of the study is estimated at \$360,000 (Class EA and modeling and operational analysis). The balance of the budget remaining in “Highway 403 Ramp Studies” (Project ID 4031255215) is \$165,000. No other specific funds are available in the current budget for undertaking further ramp studies. Recommendation (d) of the report recommends transferring funds available in the

“Ancaster Transportation MP – Phase 3&4 EA” (Project ID 4030955945) to address the budget shortfall of \$195,000 for the next study phases in 2012.

If directed to proceed, a budget sheet will also be prepared for the 2013 capital budget to undertake the traffic microsimulation, design and risk assessment. (refer to Table 2 on page 4)

**Alternatives for Consideration - See Page 9**

<b>FINANCIAL / STAFFING / LEGAL IMPLICATIONS</b>
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**Financial:**

The Council direction from the Public Works Committee Report PW09086, dated September 15, 2009 includes:

- (a) *That the Ministry of Transportation (MTO) be advised of the City of Hamilton’s desire for additional westbound access to Highway 403, and that the investigation of future ramps from the Ancaster area and from Main Street, West, should be a collaborative effort between the City of Hamilton and the MTO.*

This council resolution was forwarded to Mr. D. Scott Thompson, Assistant Deputy Minister, Ministry of Transportation on October 1, 2009. However, in the letter dated August 26, 2011, from Ministry of Transportation (MTO) Regional Director, Lou Politano, addressed to Jill Stephen, Director, ESI Division, it was stated that the City would be financially responsible for the design and construction of the ramp. It is recommended that the City pursue a cost sharing agreement with the Ministry of Transportation (MTO).

From the preliminary assessment, the estimated cost for engineering and construction of the Mohawk Road Ramp would be in the range of \$3.6 to \$6.4 million. This estimate includes approximately \$550,000, for completing all the Ministry of Transportation (MTO) required studies and engineering. The estimate also includes a new, additional Ministry of Transportation (MTO) requested study for high-mast illumination related works.

This estimated cost range does not include any cost related to the proposed High Occupancy Vehicle (HOV) lane, as it would be a Ministry of Transportation (MTO) initiated project, if undertaken in the future.

The financing of the next phases of studies and construction is currently not included in any Capital Budget and forecast. If the Ministry of Transportation (MTO) does not share the cost for the provision of the Westbound On-Ramp at Mohawk Road, the entire cost would be the responsibility of the City, and included in the appropriate Capital Budget and forecast. Staff will bring a forecast of costs as part of the 2013 Capital Budget Submissions.

The expense for completing the concept plan and cost estimate was approximately \$15,000, funded from the “Highway 403 Ramp studies” (project ID 4031255215), see details below.

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**TABLE 1**

Study Description	Period (months)	Completion Timing	Cost \$
Concept Plan preparation and cost estimation	2	–Complete	15,000

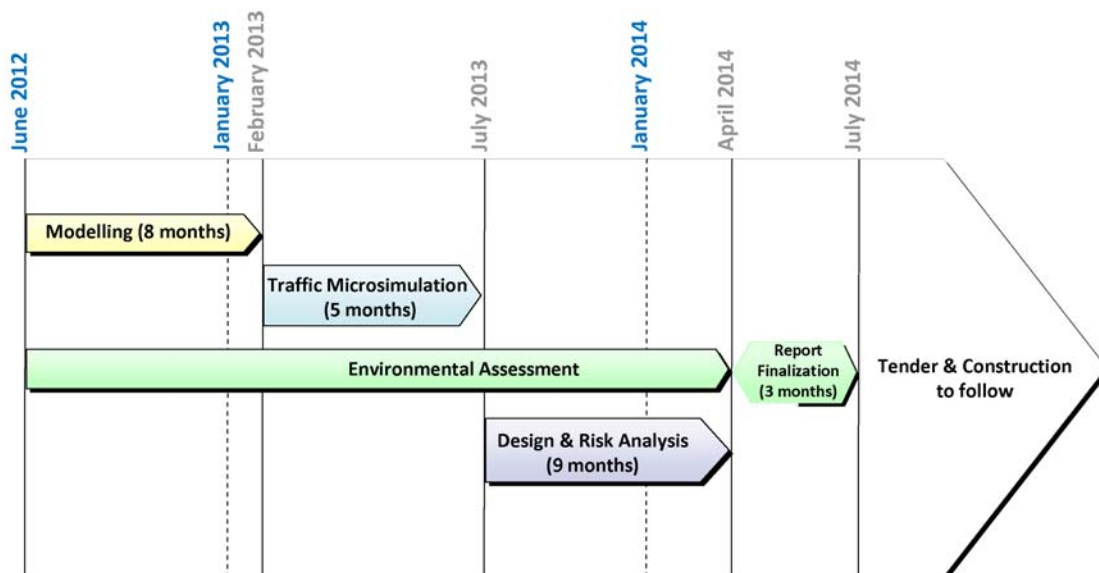
The preliminary estimate and time needed for undertaking the remaining Ministry of Transportation (MTO) required studies are as follows.

**TABLE 2**

Study description	Estimated budget \$
Municipal Class EA process	160,000
Modelling and operational analysis	200,000
Traffic micro simulation	80,000
Design	80,000
Risk analysis	30,000
<b>Sub Total</b>	<b>550,000</b>
Tendering & construction to follow	3,080,000 - 5,830,000
<b>Total</b>	<b>3,630,000 - 6,380,000</b>

### Estimating Study Timeline

Completion of EA Studies & Design = 25 Months



This estimate and timing is on the assumption that the works will be undertaken through a single consultant. Under the above work plan, Class EA process, and Modeling & Operational Analysis will be initiated at the same time. Similarly, Design and Risk Analysis will be undertaken concurrently. However, micro-simulation and design may at times necessitate an iterative process and would require additional time. Staff also note that depending on Ministry of Transportation requirements, revisions and approvals, this may impact the preliminary schedule.

Staff will have budget submissions for the ongoing Ministry of Transportation (MTO) required studies as part of the 2013 capital budget process.

**Staffing:**

No additional staff requirement

**Legal:**

Generally, projects of this type within the Ministry of Transportation (MTO) jurisdiction undergo the MTO's Environmental Assessment Process. However, for this ramp project, the MTO staff indicated that the City could undertake a Municipal Class EA process on behalf of the MTO.

Municipal undertakings such as road; water and wastewater, and transit projects are subject to Ontario's Environmental Assessment (EA) Act. The Act allows for the approval of Class Environmental Assessments and the municipality has the option of following the planning process, set out in the Municipal Engineers Association Class Environmental Assessment (October 2000, as amended in 2007 and 2011).

For this project, if authorized to proceed, the City would undertake the Municipal Class EA process concurrently with Modelling and Operational Analysis.

Under the provisions of subsection sixteen (16) of the Environmental Assessment Act, there is an opportunity for the Minister of the Environment to review the status of a project (Part II Order Request, commonly referred to as a "bump up"). During the review period of the Class EA process members of the public, interest groups and review agencies may request the Minister to require a proponent to comply with Part II of the EA Act (which addresses individual EA's), before proceeding with a proposed undertaking. The Minister makes the decision on the "Part II Order" request and the Minister's decision will be final.

**HISTORICAL BACKGROUND**

A Westbound Ramp from Mohawk Road to Highway 403 existed prior to 2001. When the Highway 403-LINC interchange was reconstructed in 2001, the Westbound Ramp was eliminated for several reasons. The respective Ministry of Transportation study was approved, which followed the appropriate EA process, including public and stakeholder consultation. The Ancaster residents are aware of this, and with the increasing traffic infiltration and cut through traffic on Wilson Street, the residents are asking for this ramp to be reinstated. The reasons for eliminating the ramp have not been clearly documented in the earlier Ministry of Transportation studies. However there are

indications of low forecast volumes, no provision of return movement for the on-ramp, interference with the truck climbing lane and high speed east to south bridge ramp.

In 2011 the City completed the Ancaster Transportation Master Plan (TMP) and a staff report PW11027 dated April 18 2011 was submitted to the Public Works Committee and approved by City Council on April 27, 2011. The Council directions include the following:

- (c) That the Ministry of Transportation (MTO) be advised of the City of Hamilton's concerns with respect to the capacity deficiency currently being experienced and forecast for Highway 403 between Highway 6 and "New Highway 6" in Hamilton and that improvements proposed through the previous MTO studies for this corridor be implemented;*
- (i) That the City continue best efforts to encourage the MTO to construct west bound access to the 403 at Main Street West in Hamilton, and Mohawk Road or as an alternative Golf Links Road in Ancaster;*

On February 4, 2011, close to the completion of the Ancaster TMP, the MTO advised that they prefer the Mohawk Road location for a new Westbound Ramp and that this ramp location is more consistent with the expectation from the travelling public for highway access.

In April 2011, City Council directed Public Works to continue best efforts to encourage the MTO to construct westbound access to the 403 at Main Street West in Hamilton, and Mohawk Road or as an alternative, Golf Links Road in Ancaster.

Councillor Lloyd Ferguson and Ted McMeekin, MPP, met with the former Minister of Transportation, Kathleen Wynne, and senior MTO staff on August 24, 2011 to discuss the City's initiative for the proposed westbound ramps. The outcome of this meeting is documented in a letter from the Regional Director, Lou Politano, dated August 26, 2011, and a letter from the Minister dated August 29, 2011.

To further advance this project and to identify the next steps in the study process, a meeting was held on November 10, 2011 with Councillor Lloyd Ferguson, City and MTO staff. The discussions included the potential impacts and relative project cost for the proposed Mohawk Road ramp in Ancaster and the Main Street West ramp in Ainslie Wood. The discussions resulted in identifying the Westbound On-Ramp at Mohawk Road as the first priority for further investigation, and that several studies be completed before the geometric and operational feasibility of the ramp can be established. The City's plan is to complete these studies in a step by step process, with staff reporting to Council at the completion of each step.

In January 2012, the project team submitted an Information Report (PW11027a) to update the Committee on the status of the projects and the various considerations and the steps leading towards pursuing the Mohawk Road ramp option. At both the Main Street West and Mohawk Road locations various issues were identified that would impact the construction of these facilities. The concerns include environmental issues, safety, potential expansion of highway network, impact on existing bridge, storm water

management, impacts on Hydro installation, property requirements, constructability and cost.

A technical meeting was held on January 27, 2011 with the Ministry of Transportation to further discuss the study requirements and scope of work. Following this the concept plan preparation and project cost estimation work was initiated.

The Consultant, IBI, has now completed two (2) concept plan designs and preliminary cost estimates for the Mohawk Road ramp location. This exercise helps staff to understand the constraints and issues that we will be faced with in order to proceed with this project, including the financial implications before going forward with the detailed analysis/studies.

The Mohawk Road ramp is expected to reduce the cut through traffic on Wilson Street section south of Rousseaux St. This proposed ramp could potentially draw more traffic originating from Dundas/McMaster area passing through Old Dundas Road/Main Street West, Wilson Street, Rousseaux Street, Mohawk Road corridor. This would be dependent on the traffic Level of Service on Highway 403 (between Aberdeen interchange and LINC) and a direct ramp access to westbound Highway 403 from Main Street West.

## **POLICY IMPLICATIONS**

A number of Strategic City documents, including, but not limited to, the Corporate Strategic Plan, Public Works Innovate Now Business Plan, GRIDS, Vision 2020, the Hamilton Transportation Master Plan, and the Ancaster TMP, in addition to provincial studies and legislation, relate to the Highway 403 westbound ramp in many ways, including:

- Influencing provincial policy development to benefit Hamilton; the MTO will be the approving authority for the ramp as Highway 403 and the ramps are within their jurisdiction
- Maintaining effective relationships with other public agencies; we are coordinating and collaborating with the MTO to establish the feasibility of the ramp
- Reducing air and greenhouse gas emissions; reducing traffic delay and congestion will reduce greenhouse gas emissions
- To be innovative through creative solutions: the provision of the on-ramp is identified as one of the solutions to address the current problems
- To be a leader in the Greening and stewardship of the City; provision of direct access to the highway is expected to reduce traffic delay and cut through traffic, which adds to greening
- To provide sustainable, strategic transportation infrastructure options; road network improvements are important in strategic transportation planning

### **RELEVANT CONSULTATION**

The development of a concept plan and approximate cost estimate for the proposed Mohawk Road Ramp has not followed the Environmental Assessment process to date as it is not required at this time. The EA will be undertaken in the next phase of the study process.

In developing the plans, discussions were held with Ward 12 Councillor, Lloyd Ferguson, City's Engineering and Design Section and the MTO. The proposal for a westbound ramp was part of the Ancaster TMP Municipal Class EA process which included public and stakeholder consultations. Discussions were also held with Ward 1 Councillor, Brian McHattie at the time of investigating the Main Street West ramp proposal.

### **ANALYSIS / RATIONALE FOR RECOMMENDATION**

The Ancaster TMP study identified the need for a Westbound On-Ramp to Highway 403 from the Ancaster neighbourhood area. The best solution was one (1) ramp in Ancaster and (1) one in Ainslie Wood. However, with the higher environmental impacts and cost for the Main Street West Ramp, and with the priority for the Mohawk Road ramp, the decision was to undertake further studies for the Mohawk Road Ramp; per the content of Report PW11027a.

The two (2) concept plans prepared for the proposed Mohawk Road ramp are found to be feasible, from a geometric design perspective. Both alternatives appear to have no impact on the existing Golf Links Road, i.e. no reconstruction is needed for the bridge. It is recommended that field measurements be undertaken to confirm the existing highway, bridge and right-of-way conditions. Further studies would be required to determine the operational feasibility of the ramp.

Both design alternatives considered the newly proposed ramp merge with the existing ramp, prior to merging with the Highway 403 southbound lanes. This would allow the improvements along Highway 403 to terminate prior to the Southcote bridge.

Both concept plans are prepared on the presumption that the merged ramp would have future capacity needs. If the traffic volumes forecast on the merged ramp are found to be exceeding capacity, then an alternative ramp configuration of either successive entrances to the freeway or a two (2) lane ramp freeway entrance have to be considered, which would require extending the construction beyond the Southcote Road underpass.

Alternative one (1) would require cutting into the existing earth berm located west of existing ramp and northerly extension of existing noise barrier.

Alternative two (2) proposes to shift the highway lanes by narrowing the Highway median by a full lane width, which would require a crown shift along the Highway southbound lanes.



Alternatives one (1) and two (2) are expected to represent the two (2) extremes from an impact perspective.

All the above eventualities have been accounted for in the cost estimate. The estimated cost also includes construction staging & traffic control, retaining wall, utility relocation, contaminated material disposal, storm sewer modifications, and culverts.

It is assumed that the existing storm sewers will be sufficient to accommodate the additional pavement runoff, even after provision of HOV lanes. No archaeological investigations are included in the cost estimate, as the land has been disturbed at the time of construction and elimination of the earlier ramp and reconstruction of the current highway intersection. No geotechnical investigations are also included as no major structural foundations are anticipated for the ramp.

The proposed westbound on-ramp appears feasible from the preliminary investigation carried out so far and hence the recommendation is to proceed to the next phase of the study process.

The focus of the next phase will be the Municipal Class EA process and traffic operational feasibility of the Highway 403 and the ramp. The traffic modelling and simulation studies are required by the MTO in order for them to determine traffic related impacts to Highway 403 and adjacent roads connected to their network. The MTO requires this analysis because once a ramp is constructed it becomes the responsibility and liability of the province. A detailed analysis to clearly identify any liability issues and impacts is therefore required. The MTO also wishes to protect for future highway improvements and do not wish to be faced with limitations as a result of any works undertaken at this time.

#### **ALTERNATIVES FOR CONSIDERATION**

The preferred location (at Mohawk Road) for the Highway 403 Westbound Ramp was determined pursuant to MTO preference and City Council's direction. Based on the preliminary investigation and discussions, it was concluded that the environmental impact will be less for the Mohawk Road Ramp when compared to the Main Street West ramp. This was also the option preferred by the residents.

There are three (3) alternatives for the committee to consider:

1. To consider the second priority of providing the Westbound Ramp at Main Street West in Ainslie Wood. The potential impacts and cost will be much higher. This option can be further investigated depending on the future need for an additional Westbound Ramp to Highway 403 or if the Mohawk Road Ramp, for any reason, is determined not feasible through the detailed analysis and investigations to be completed in the next phases. Not recommended.
2. To reconsider the Golf Links Road Ramp proposal. The MTO is not supportive of this option, citing difficulties in achieving the geometric requirements. The proposal also included an "Off-Ramp" to Golf Links Road from Eastbound Highway 403. The public had a mixed reaction to this option. Based on the MTO

considerations and Council direction, this option has the lowest priority among the three locations for the westbound ramp. Not recommended.

3. Not to further investigate the feasibility of Westbound Ramps, until MTO's Niagara to GTA Corridor Study recommendations and future improvement plans for the Highway 403 are identified by MTO. We do not know at this point whether the Highway 403 through Ancaster would become part of the Niagara-GTA (NGTA) corridor. This was one (1) of the several considerations of the study; however, the problem with this option is that these are long term projects and we do not have any timing for this from MTO. The City of Hamilton would not be able to provide any Westbound Ramp until such time and the cut through traffic on Wilson Street section south of Rousseaux Street may continue to increase. Not recommended.

## **CORPORATE STRATEGIC PLAN**

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

### ***Skilled, Innovative & Respectful Organization***

- ◆ A culture of excellence
- ◆ More innovation, greater teamwork, better client focus
- ◆ Council and SMT are recognized for their leadership and integrity
- ◆ Better co-operation with Provincial Government

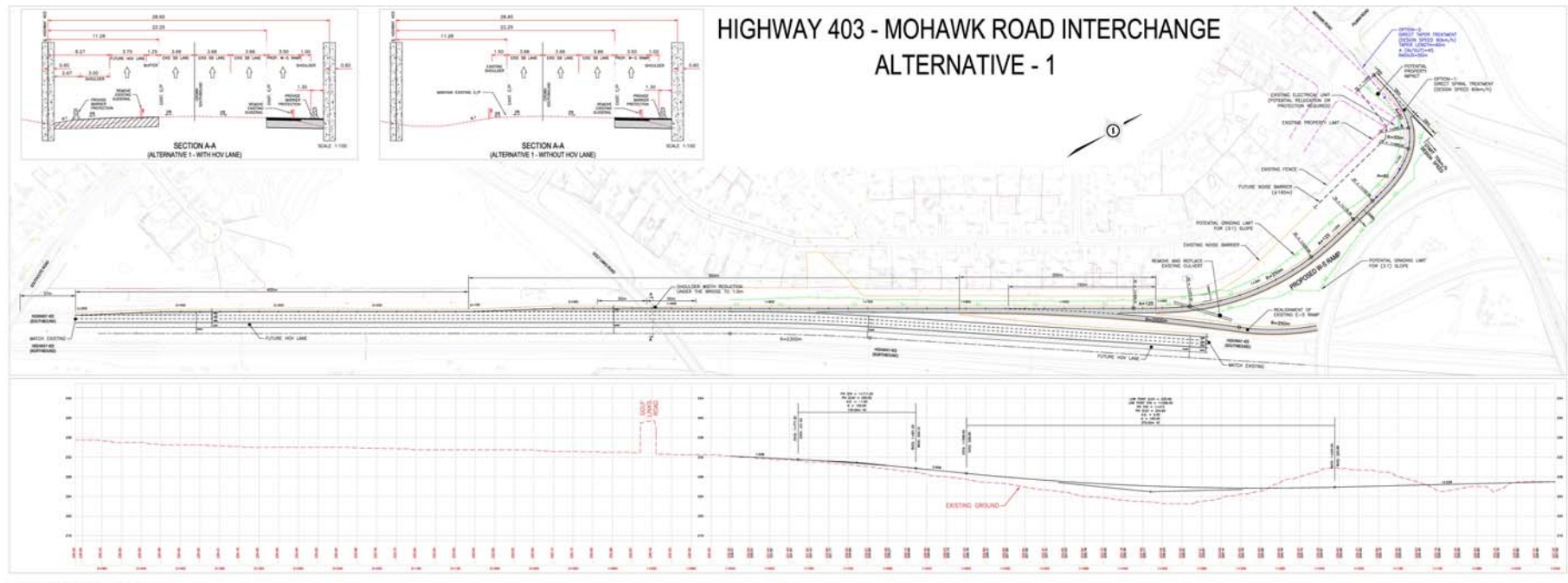
### ***Financial Sustainability***

- ◆ Effective and sustainable Growth Management
- ◆ Delivery of municipal services and management capital assets/liabilities in a sustainable, innovative and cost effective manner

## **APPENDICES / SCHEDULES**

- Appendix "A"      Concept Plan, Alternative 1  
Appendix "B"      Concept Plan, Alternative 2

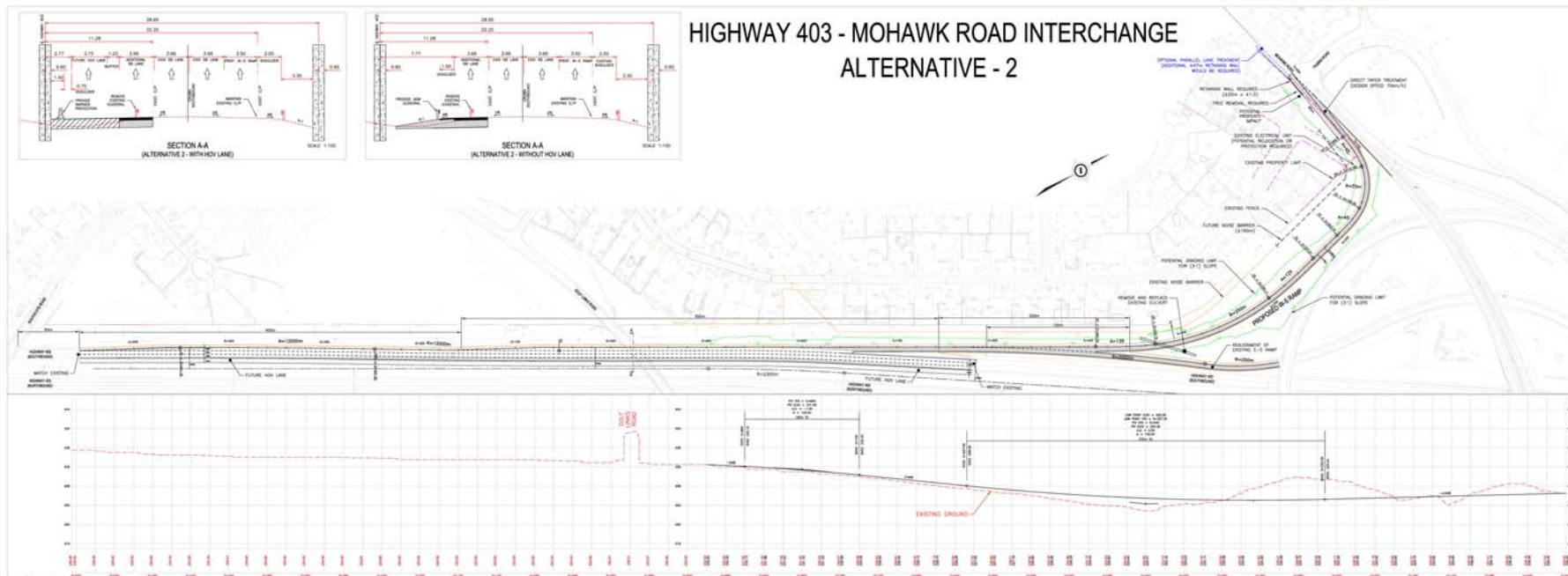
### Concept Plan, Alternative 1



**Alternative one (1) would require cutting into existing earth berm located west of existing ramp and northerly extension of existing noise barrier.**

Please note: A full scale version of this document will be provided on presentation board at the June 18<sup>th</sup> Committee meeting.

## Concept Plan, Alternative 2



Alternative two (2) propose to shift the highway lanes by narrowing the Highway median by a full lane width, which would require crown shift along the Highway southbound lanes.

Please note: A full scale version of this document will be provided on presentation board at the June 18<sup>th</sup> Committee meeting.