




TO: GENERAL COMMITTEE

SUBJECT: ESSA ROAD TRANSPORTATION IMPROVEMENTS (BRYNE DRIVE/ARDAGH ROAD TO ANNE STREET) - MUNICIPAL CLASS EA, PHASES 3 & 4

PREPARED BY AND KEY CONTACT: R. E. SCHEUNEMANN, P. Eng.
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SUBMITTED BY: R. W. MCARTHUR, P. Eng. 
DIRECTOR OF ENGINEERING

GENERAL MANAGER APPROVAL: R. J. FORWARD, MBA, M.Sc., P. Eng. 
GENERAL MANAGER OF INFRASTRUCTURE, DEVELOPMENT & CULTURE

CHIEF ADMINISTRATIVE OFFICER APPROVAL: JON M. BABULIC 
CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That the Preferred Design Alternative for the Municipal Class Environmental Assessment for Essa Road (Class EA), from east of Anne Street to west of Bryne Drive, Phases 3 & 4 be adopted as outlined in Staff Report ENG035-11.
2. That the Director of Legal Services be authorized to commence expropriation proceedings against the properties identified in the Phases 3 & 4 Essa Road Class EA and to settle the expropriation in an amount up to a maximum of \$5,500,000 for all of the subject properties in conjunction with attempts to acquire the properties through negotiated settlements.
3. That the Corporation of the City of Barrie make an application to City Council, as approving authority, for approval to expropriate the said lands and that the Mayor, and the City Clerk, be authorized to execute the necessary forms of application.
4. That the "Notice of Application for Approval to Expropriate" be served and published and that any requests for inquiries received, pursuant to the "Notice of Application for Approval to Expropriate" be forwarded to the Chief Inquiring Officer and the Chief Inquiring Officer be requested to report to Council with respect to any such request.
5. That the Mayor and the City Clerk be authorized to execute all associated and required documents in a form approved by the Director of Legal Services.
6. That in accordance with the requirements of the Class EA process, the Engineering Department publish a Notice of Completion for the Essa Road Environmental Study Report (ESR).
7. That the additional property acquisition costs of \$5.5 million be funded from Development Charges Reserve (Account 11-05-0520) in the amount of \$3,553,000 (64.6%) and \$1,947,000 (35.4%) from the Tax Capital Reserve (Account 13-04-0440). Any proceeds from the sales of remaining lands will be returned to the Development Charges Reserve and the Tax Capital Reserve in the same proportion.

PURPOSE & BACKGROUND

8. In 1999 the City of Barrie Transportation Study identified the need for additional east-west vehicular capacity to meet existing and future traffic demands. Essa Road is an arterial route. The Average Annual Daily Traffic (AADT) on Essa Road varies from 20,000 to 30,000 vehicles per day over the study area (see Appendix "A" for overview of study area). This traffic volume is expected to increase to 56,000 on Essa Road at Highway 400 in the future.

9. Significant improvements on Essa Road are therefore required as the road currently exists as a four lane cross-section generally within a 20.1 metre right-of-way. The proposed road configuration to address the future traffic volumes of 56,000 vehicles per day is generally a six lane cross-section with both left and right turn lanes at strategic locations. These improvements are proposed to be implemented in two phases. An ultimate condition and an interim condition as illustrated in Appendix B and C respectively.

Former Barrie Event Centre Lands

10. Osmington Inc. (Osmington) has developed concept plans for the Event Centre lands located at 175 and 199 Essa Road (approximately 425,000 s.f. of commercial development) and has investigated servicing and traffic issues associated with the development. Numerous meetings/discussions have occurred with MTO staff, City staff and local residents.
11. One of the most significant issues facing the proposed Osmington development relates to traffic and potential development delays associated with resolving the traffic issues as identified by the MTO and the City of Barrie.
12. There is currently no registered site plan agreement with the proposed developers of the Event Centre lands (Osmington). The City is currently in negotiations/finalizing the site plan agreement with the developer. Per Council Resolution 08-A-284, Osmington is required to contribute \$1,050,000 towards the Essa Road improvements.

Planning for Essa Road

13. The first Public Information Centre (PIC) for the Essa Road EA (from west of Bryne Drive to east of Anne Street) was held on December 7th and 9th, 2004, to allow the public and applicable review agencies the opportunity to review the alternatives and ask any questions. Comment sheets containing the public/review agency comments and/or concerns from the first PIC were considered in the development of the Preferred Alternative Solution.
14. A chronology of the Municipal Class Environmental Assessment (Class EA) process is provided in Appendix "D" and summarizes the various PIC and various motions from Council that have occurred throughout the process. Design alternatives were established to address the concerns from businesses and property owners and mitigate any impacts resulting from the proposed alternatives.
15. For a summary of the major concerns raised from the second PIC, both Open House's, and the City's response to those concerns, please see Appendix "E".

Property Needs

16. The existing Essa Road right-of-way generally at 20.1 metres is not sufficient to allow for the required road widenings and improvements proposed as part of the Design Alternatives. Additional property must therefore be acquired from properties fronting Essa Road.
17. The process of acquiring property is through a combination of negotiated acquisition and expropriation as required.

ANALYSIS

18. This report presents the interim and ultimate transportation improvements required to accommodate the predicted traffic volumes of 56,000 vehicles per day. The proposed interim works include road widenings on Essa Road generally to six lanes from Anne Street to Fairview Road, from the southbound Highway 400 off-ramp to Bryne Drive/Ardagh Road and associated intersection and Highway 400 ramp improvements. The ultimate works involve widening of the Highway 400 underpass to accommodate the revised six lane Essa Road cross-section and includes additional turning lanes and ramp improvements.

19. Comments received, along with the Engineering Department's responses to the comments, are summarized in the Environmental Study Report (ESR) which is available in the Councillors' Lounge for review and major concerns are summarized in Appendix "E". Areas of major concern include:
- o Loss of full movement access to properties resulting from the implementation of the proposed median (medians would restrict access to right-in right-out only)
 - o Loss of property
 - o Construction Impacts.

The following information was summarized from the US Department of Transportation website on Safe Access is Good for Business http://ops.fhwa.dot.gov/publications/amprimer/access_mgmt_primer.htm

a) Loss of Full Movement Access/Medians

The proposed medians on Essa Road, between Fairview Road and Anne Street, would restrict the current full movement access to and from the existing commercial businesses on both sides of Essa Road between Fairview Road and Anne Street. This was repeatedly raised as a major concern by many of the adjacent businesses and property owners.

Medians reduce crashes and traffic delay. Driver safety is reduced when access is not properly designed. Good access is important to every business. Poorly designed entrances and exits not only present a traffic hazard, but also cause congestion that can create a negative image for the adjacent business. If a business location is difficult or unsafe to enter or exit, then customers may be dissuaded from visiting. Internal connections between businesses can allow customers to circulate without reentering a busy road. Raised medians reduce the number of collision over an undivided road or a road with a center turning lane.

Additional safety justification details for medians can be reviewed in Appendix "F".

b) Loss of Property

The Preferred Alternative Solution has minimized property impacts by shifting the alignment of the road fronting the Osmington Development to the north, by reducing the boulevard width and by reducing the lane width east of Fairview Road.

c) Construction Impacts

Adverse impacts during construction can be minimized. Two key issues during construction are maintaining open access to businesses for customers and deliveries and having sufficient sign visibility so customers know the business is open for business and know how to enter and exit the site during this period. When the road is scheduled for reconstruction, the City of Barrie will notify the adjacent businesses advising what to expect in terms of duration of construction and any foreseeable disruptions.

Design Alternative Selection (Interim and Ultimate)

20. The MTO has been consulted and is in support of the City of Barrie proceeding to the City of Barrie Council with interim and ultimate transportation improvement recommendations on the condition that the following is addressed during the design of the interim transportation improvements:
- a) That outstanding design issues are resolved at detail design of the interim transportation improvements.

- b) That an implementation plan is developed to minimize traffic delays during the construction and the interim transportation improvements do not impact the constructability of the ultimate transportation improvements.
- c) That a construction phasing plan be developed for the replacement of the existing Highway 400 bridge over Essa Road in the ultimate construction phase.
- d) To assess if ultimate ramp improvements can be implemented in the interim phase of construction.

Should the ultimate ramp improvement be implemented in the interim phase, there may be opportunity to cost share the ramp improvements with the MTO.

21. The ranking of the various alternatives detailed in Appendix G on the comment sheets were tabulated and results are summarized below (the public Preferred Design Alternative has a rank of 1):

Design Alternative	1	2	3	4	5	6
Rank	4	3	2	1	6	5

The public Preferred Design Alternative 4 which includes bike lanes, no boulevards and curb faced sidewalk in part because it minimizes property impacts. The Preferred Design Alternative also minimizes property impacts by shifting the alignment and by reducing lane width (outside of MTO jurisdiction).

22. The design alternatives were evaluated in consideration of comments received to determine the best design alternative based on pre-determined criteria and the relative importance of the criteria. The Preferred Design Alternative is a combination of the design alternatives presented at the PIC #2 and developed in consideration of comments received. The scoring of the design alternatives can be found in the Environmental Study Report (ESR). For the Preferred Ultimate Design Alternative see Appendix "B". The Preferred Design Alternative includes the following:
- a) 1.0m boulevard and 1.5m sidewalk with 2.0m curb-faced sidewalk between the Highway 400 Ramps and through the Highway 400 structure on both sides of Essa Road
 - b) A raised non-traversable median
 - c) Three 3.5 m wide through lanes in each direction between Fairview Road and Bryne Drive
 - d) Three 3.3 m wide through lanes in each direction east of Fairview Road to just east of Anne Street
 - e) Nine 3.5 m wide lanes under the Highway 400 structure consisting of three westbound through lanes, three eastbound through lanes, a center turning lane/median, an eastbound deceleration lane for the northbound on-ramp and a westbound deceleration lane for the southbound on-ramp
 - f) Widening of the north and southbound Highway 400 Off-Ramps
 - g) Widening on Fairview Drive at the intersection of Essa Road
 - h) Eastbound Essa Road to southbound Highway 400 ramp
 - i) Essa Road westbound right turn lane into the commuter parking lot
 - j) Essa Road westbound right turn lane onto Ardagh Road
 - k) Essa Road eastbound channelized right at Fairview Road
23. Interim transportation improvements are required until the Highway 400 bridge structure is widened and the interchange can be fully reconstructed. The interim project includes widening Essa Road east and west of the north and south highway off-ramps (see Appendix "C"), with operational improvements at the existing interchange ramp intersections and widening the two Highway 400 off-ramps to increase storage capacity.

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24. For the Preferred Interim Design Alternative please see Appendix "C". The Interim Preferred Design Alternative includes the following:
- a) 1.0m boulevard and 1.5m sidewalk on Essa Road east of Fairview Road.
 - b) A raised non-traversable median on Essa Road east of Fairview Road.
 - c) Three 3.5 m wide through lanes in each direction on Essa Road east of the Southbound Highway 400 Off-Ramp
 - d) Three 3.3 m wide through lanes in each directions on Essa Road east of Fairview Road.
 - e) Widening of the north and southbound highway 400 Off-Ramps.
 - f) Widening on Fairview Road at the intersection of Essa Road.
 - g) Eastbound right-turn lane for the northbound On-Ramp.
 - h) Westbound right turn lane from Essa Road to Ardagh Road.
 - i) Eastbound channelized right from Essa Road to Fairview Road.
25. In accordance with the City's Policy for minimizing construction impacts on business, the contract documents will require that one lane of traffic in each direction be maintained during the construction, where possible.
26. Some creek relocation, culvert upgrades and extensions will be required to convey the 1:100 year design storm to meet City policy. The Hotchkiss Creek Master Drainage Plan (2000), recommends a storm sewer under Essa Road east of Fairview Road to convey the 1:100 year storm event. This storm sewer upgrade will be included as part of detail design and the incremental cost increase over and above what is required for local drainage is minimal when compared to the overall project cost.
27. Should the timing of the proposed development on the Event Centre lands (Osmington development) and/or the site plan agreement not be finalized before the start of construction, it is recommended that the need for the new proposed traffic signals into the Event Centre lands (Osmington development) off of Essa Road and the access issues on Essa Road (east of Fairview Road) be reviewed.
28. Some of the adjacent property and business owners on Essa Road, east of Fairview Road, feel that the timing of the proposed transportation improvements on Essa Road are being undertaken for the sole benefit of the proposed Osmington development. Many of the transportation improvements on Essa Road are required even without the proposed development of the Event Centre lands but some of the transportation improvements, including the proposed traffic signals and associated turning lanes, may not be needed until the proposed Osmington development is constructed. The need/justification for the proposed medians is based on TAC guidelines. If the development of the Event Centre lands is delayed, the TAC guidelines suggest that medians may still be needed but to a lesser degree. The recommendations included in this staff report are consistent with direction previously received from Council per Motion 07-G-468 in support of Osmington's development at 175 Essa Road.
29. The City will encourage property owners to negotiate cross-access easement agreements between private property owners, as identified in the ESR, to allow alternate access to properties on the north and south side of Essa Road, between Anne Street and Fairview Road, to mitigate restricted access concerns resulting from the proposed median. The affected property owners generally do not support the implementation of the proposed cross-access easement or the median. If the cross-access easements are not implemented, then the purchase of 178 and 182 Essa Road may not be required.
30. As part of the annexation studies, consideration will be given to developing policies on when to use centre turning lanes and medians.

ENVIRONMENTAL MATTERS

31. This project has followed the guidelines for a Municipal Class Environmental Assessment, and physical, natural, social, cultural and economic environmental matters have been considered in the development of the recommendations. The ESR discusses how environmental matters have been considered in the development of the recommended alternative. The ranking and scoring process considered all natural, social and economic environmental matters, property, noise, pedestrian, cyclists etc.

ALTERNATIVES

32. The following alternatives are available for consideration by General Committee:

Alternative #1 General Committee could alter the proposed recommendations by selecting another Preferred Design Alternative.

This is not recommended because the Preferred Design Alternative solution provides for transportation improvements which minimize the effects to the physical, natural, social, cultural and economic (financial) environments.

FINANCIAL

33. The following preliminary cost estimate for the Preferred Design Alternative is based on reconstructing existing roads.

Alternative	Gross Land Acquisition Costs (\$ millions)	Recovery Land Costs (\$millions)	Construction Costs Hwy. 400 Corridor Including Structure⁽⁴⁾ (\$ millions)	Road Costs⁽⁵⁾ (\$ millions)	Total Cost (\$ millions)
Preferred Design Alternative	\$5.16 – 6.06	\$0.95 - \$1.30	\$26.4	\$4.64	\$34.9 – \$36.15

Note 1: Cost does not include utility relocates, culvert improvements or taxes. Cost also assumes road widening, not reconstruction.

Note 2: Please see Appendix "G" for costs associated with all of the Ultimate Design Alternatives.

Note 3: Should 178 & 182 Essa Road not be required for the cross-access easement, the Gross Land Costs would be \$1.70 - \$1.93 million with a Recovery Land Cost of \$0.25 - \$0.30 million.

Note 4: Construction Costs Hwy. 400 Corridor include from just west of the southbound Highway 400 Off-ramp to just east of Fairview Road, including all ramps.

Note 5: Costs not covered by Note 4. Cost of these interim improvements do not include ramp improvements or intersection improvements at the Highway off ramps

34. There is currently \$1,673,799 funding in 2011 for interim property, design, utilities and construction related to the proposed transportation improvements on Essa Road from Anne Street to Bryne Drive as follows: Property - \$484,941, Design - \$292,392, Utilities - \$650,000 and Construction - \$246,466. Construction funding is from the deferred channelized right turn lane project from eastbound Essa Road to southbound Fairview Road (14-16-2510-0666). The above property amounts do not include outright property purchase.

35. The completion of the Class EA has involved significantly more time and effort than originally anticipated to resolve concerns with the Ministry of Transportation and directly affected residents and business owners along Essa Road. As a result of efforts to mitigate concerns with all stakeholders, there were modifications to the required property acquisitions from that originally anticipated earlier in the process. Those originally anticipated property costs were estimated well before the completion of the Class EA process in an effort to fast track the Class EA, design and property acquisition and eventual reconstruction of Essa Road in support of the Osmington Development on the former Event Centre property.
36. The property acquisition costs as a result of mitigating issues are \$5.5 million. This includes the proposed purchase of the commercial properties at 178 and 182 Essa Road to facilitate the construction of a signalized intersection allowing adjacent properties to utilize this intersection through cross-access agreements negotiated between property owners. The proposed purchase of the residential properties at 134, 147 and 148 Essa Road is due to the additional right-of-way requirements impacting the actual structure located on the property. The additional funds for property acquisition includes property (whole or in part), business relocation, demolition and loss in property value. Please see drawings in Appendix "B".
37. The additional property acquisition costs (\$5.5 million) are proposed to be funded 64.6% from Development Charges Reserve (Account 11-05-0520) and 35.4% from the Tax Capital Reserve (Account 13-04-0440). Any proceeds from the sales of remaining lands (\$0.95 million- \$1.3 million) will be returned to the Development Charges Reserve and the Tax Capital Reserve in the same proportion.
38. Road reconstruction projects typically follow a phased approach involving environmental assessments (1 - 2 years), design (1 year), property and utilities (1 year), and construction (1 - 3 years). Preliminary budgets are established for entire projects at the outset. Budgets are refined as phases are completed and more information becomes available and project details are solidified. Issues arise when final budgets for subsequent phases are developed in advance of completing the current phase. In the case of this project, design and property budgets were developed prior to completing the environmental assessment phase and prior to completing mitigation strategies with businesses and property owners.
39. The additional \$5.5 million for property acquisitions were not included in the 2012-2014 Capital Plan and as such, projects currently included in the 2012-2014 Capital Plan will need to be reconsidered to reflect the reduced availability of development charges and tax capital reserve funding.
40. Staff are requesting authorization to commence expropriation proceedings so as to ensure that there are no delays with construction timelines. As with all City of Barrie property acquisitions, a negotiated settlement is the preferred method of acquiring the subject lands and will be undertaken concurrently with the expropriation process.
41. The Preferred Design Alternative includes the following additional life cycle costs which would become part of the City's asset inventory:

Asset Life Cycle Cost

Asset Type	Length (m)	Useful life (Years)	Annual Renewal Cost (\$/year) ¹
Roads – Arterial	1400	45	\$16,500

Note 1: Renewal costs are based on 2010 dollars

Note 2: Replacement costs not included

42. Renewal costs are based on best practice lifecycle activities for roadways that are required in order to reach their maximum potential life. The total cost of lifecycle activities has been estimated, summed, and divided by the expected useful life to determine the average annual renewal cost. Additional investigation into the lifecycle costs, associated with various assets, is ongoing as part of the implementation of the Corporate Asset Management Strategy.
43. The additional operating costs, associated with the maintenance of extra road lanes and sidewalks in the ultimate condition, will be added to future business plans. Acceptance of the Preferred Ultimate Design Alternative will increase future operating and maintenance funding requirements due to the addition of assets to the City's asset inventory. It is anticipated that the costs will be offset, in part, by property taxes collected from increased development in the south end of Barrie. The increases in service related costs, once the Preferred Design Alternative is implemented, will be approximately as follows:

	Lane Length (km)	Annual Operating Cost (\$/year/km)	Annual Operating Cost (\$/year) ^{1,2}
Roads (e.g. Street Sweeping)	2.8	\$2,529	\$7,081
Winter Control	2.8	\$3,424	\$9,587
Storm Sewers	1.4	\$2,938	\$4,113
Total Service Delivery Costs			± \$20,800

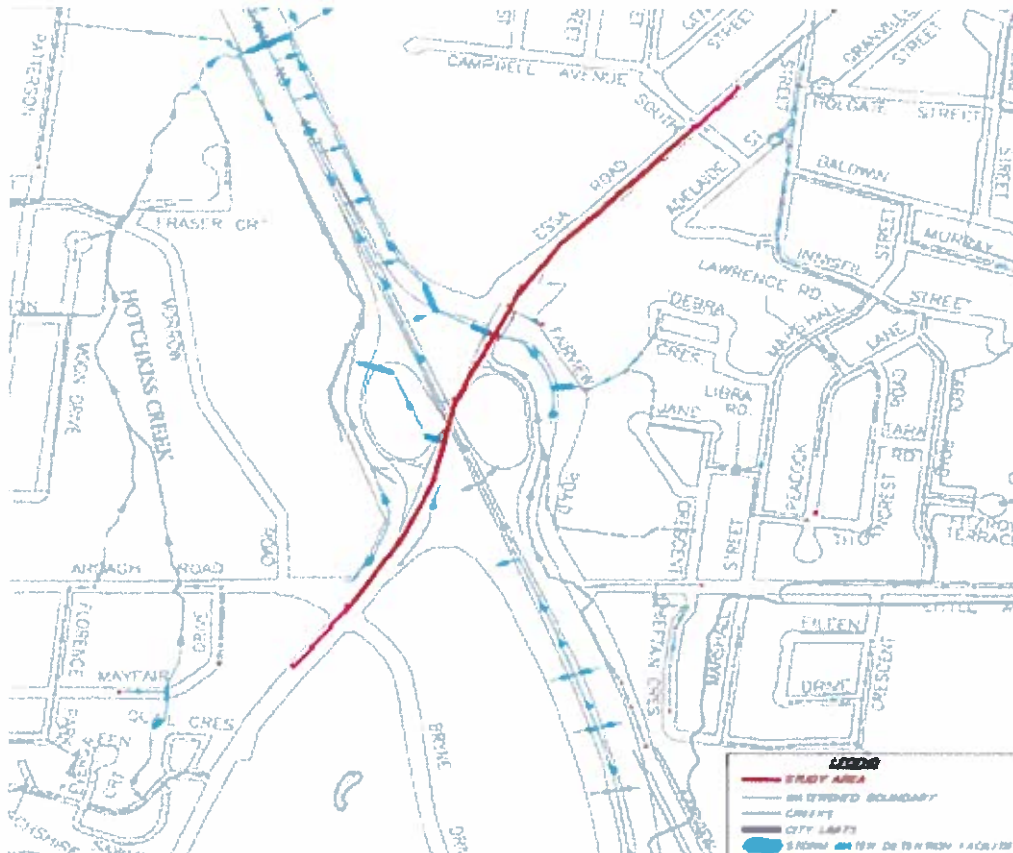
Note (1): Annual operating costs are derived from the 2009 cost estimates based on OMBI.

Note (2): Costs do not include potential additional cost from snow lift operation.

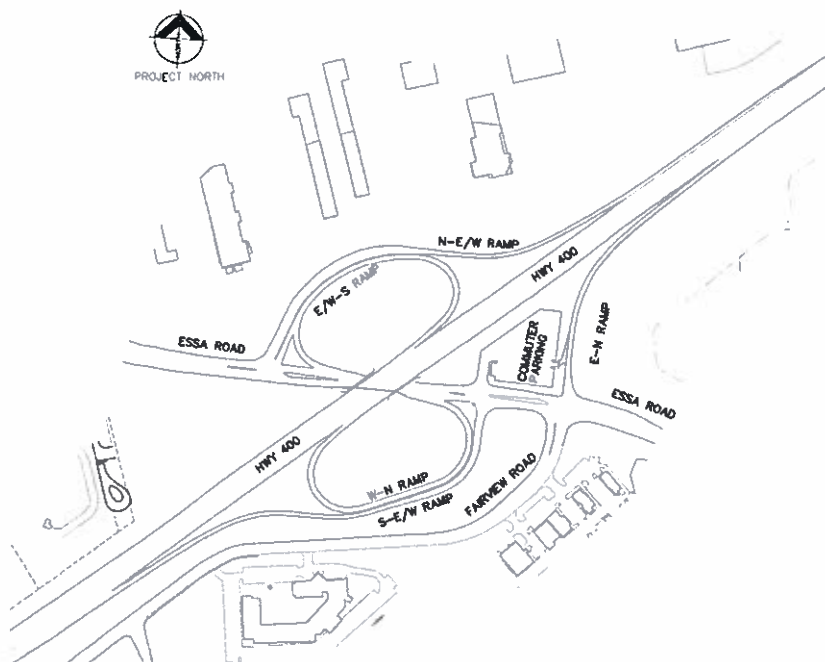
LINKAGE TO 2010 – 2014 COUNCIL STRATEGIC PLAN

44. The recommendations included in this Staff Report support the following goals identified in the 2010-2014 City Council Strategic Plan:
- ☒ Manage Growth and Protect the Environment
45. This Class EA Study for the widening of Essa Road demonstrates good, long range transportation planning. Good transportation linkages are critical in planning for, and accommodating, future growth in the City of Barrie.

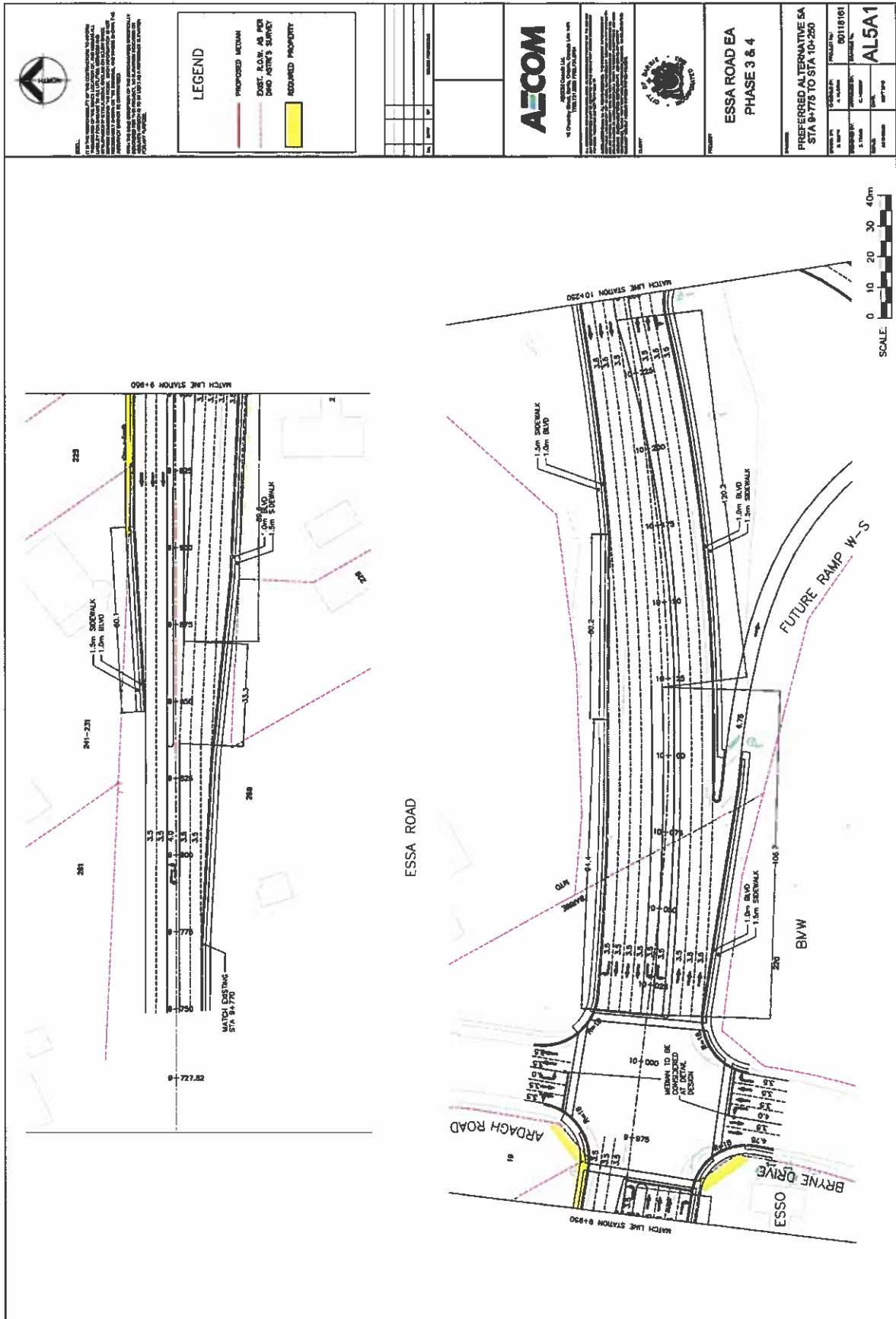
APPENDIX "A" – Study Area

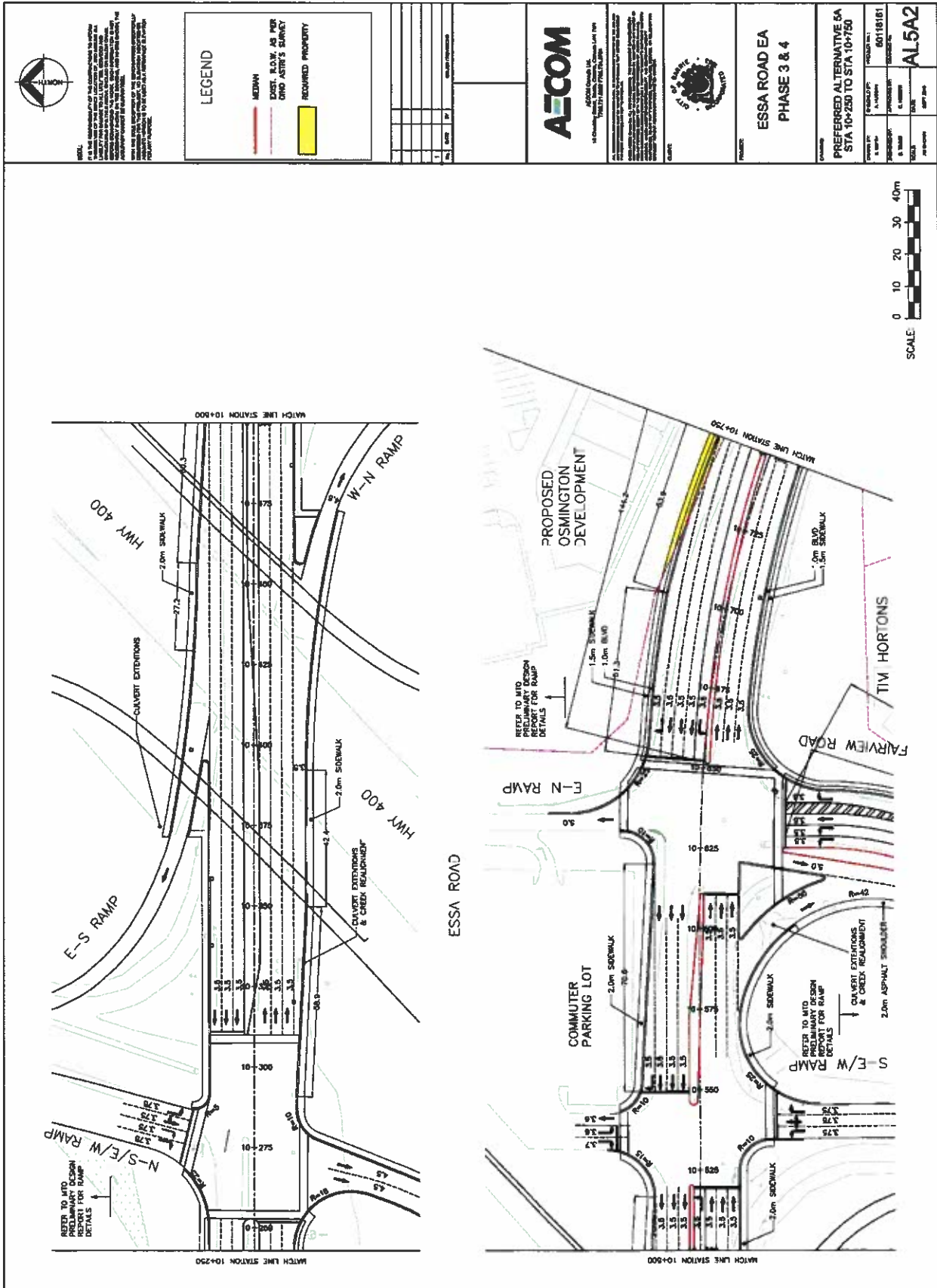


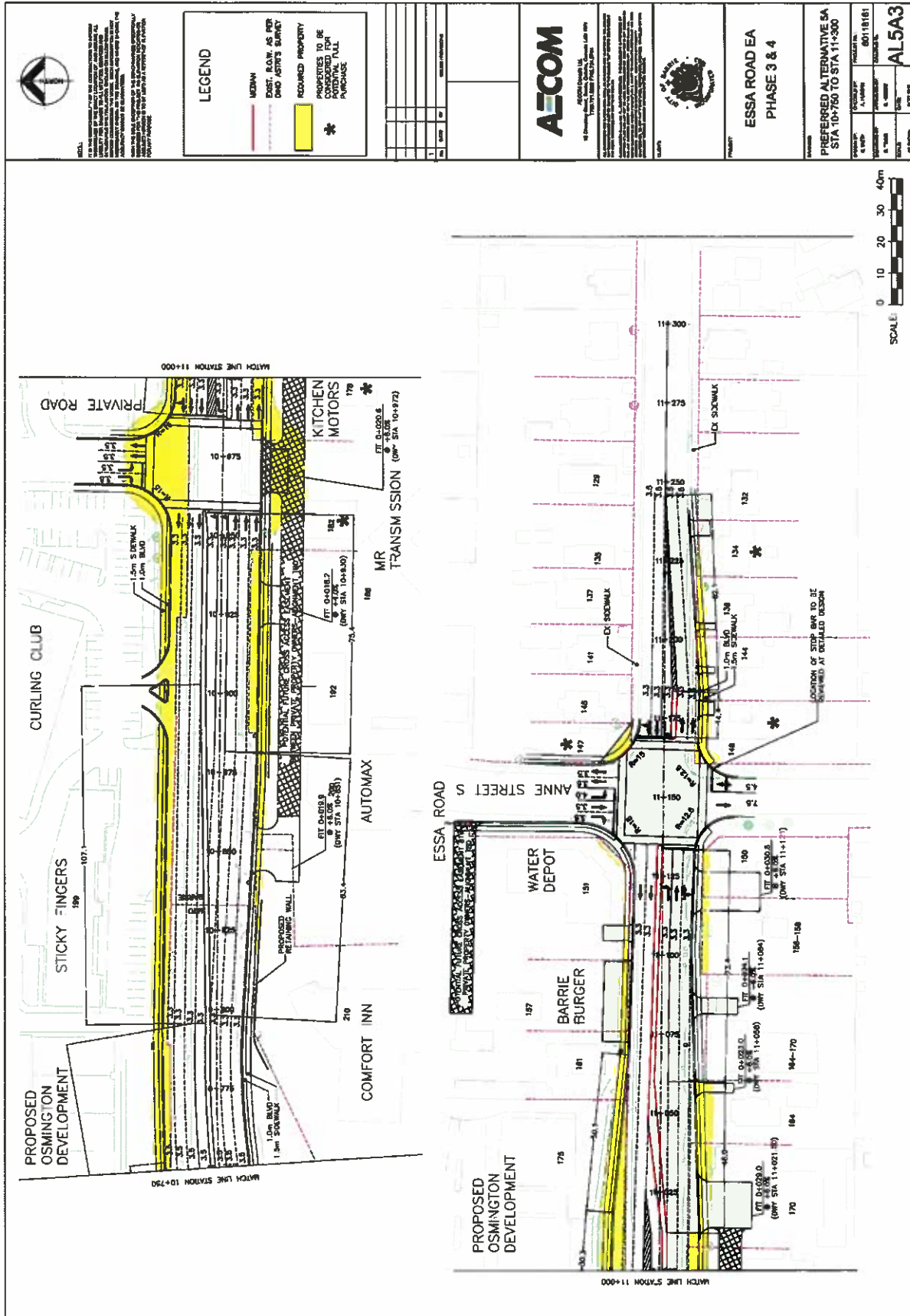
Essa Road & Highway 400 Interchange Configuration



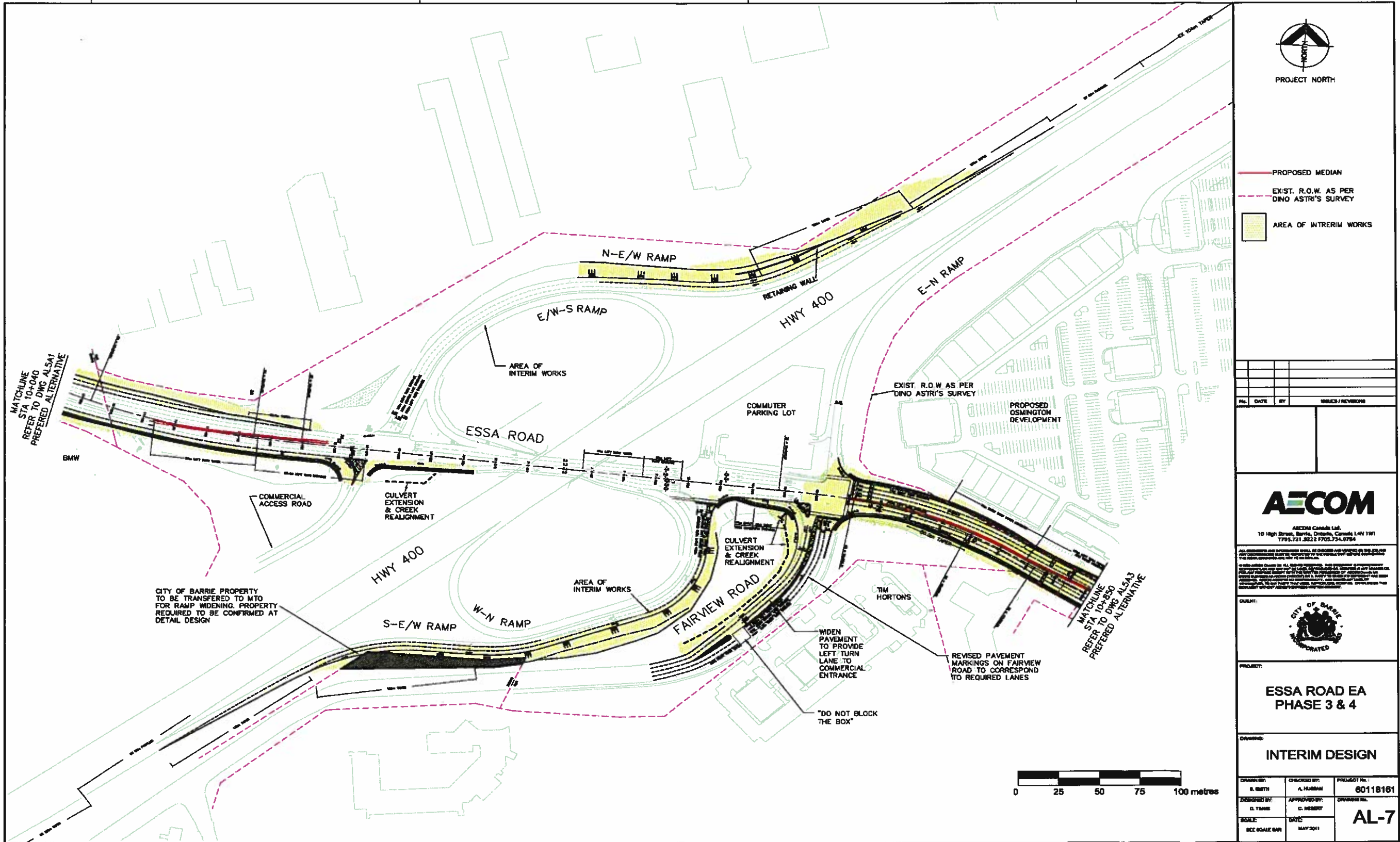
APPENDIX "B" – Ultimate Design Alternative







APPENDIX "C" – Interim Design Alternative



Appendix "D" – Class EA Background

1. On June 20, 2005, Barrie Council, adopted 05-G-343 as follows:

"That based on the "Municipal Class Environmental Assessment (Class EA) for Barrie Streets at Highway 400 Under/Overpasses and Interchanges", the following be endorsed as the preferred alternatives for Essa Road from Ardagh Road to Anne Street:

 - a) That the proposed structure under Highway 400 will have six (6) through lanes and two (2) ramp lanes for a total of eight (8) lanes under the structure;
 - b) That Essa Road be widened by one (1) through lane in each direction for a total of six (6) through lanes (three (3) in each direction) from Bryne Drive to Anne Street, plus operational improvements at intersections; and
 - c) Sidewalks are recommended on both sides of the structure and roadways."
2. On December 3, 2007, Barrie Council under Motion 07-G-643, approved retaining the consulting firm Aecom Canada Ltd. (formally TSH) to undertake Phases 3 & 4 of the Essa Road EA:

"That the Request for Proposal FIN #07-116, Municipal Class Environmental Assessment Phases 3 and 4, Essa Road from Anne Street to Bryne Drive (Class EA), be awarded to Totten Sims Hubicki Associates (TSH), in accordance with their proposal dated October 18, 2007.

That the costs associated with undertaking the Class EA be paid by the Developer of 175 Essa Road (also known as the Event Centre Lands) until the 2008 Capital Budget is approved, at which time the Developer would be reimbursed, without interest, for any invoices paid.

That the City includes funds in the amount of \$100,000 in the 2008 Capital Budget to pay the costs related to the Class EA, and reimburse the Developer."
3. On September 10, 2007, Barrie Council under Motion 07-G-468 approved the following related to the proposed development of the Event Centre Lands:

"That the City of Barrie is supportive of the Osmington Inc. development of the property at 175 Essa Road, commonly referred to as the Event Centre, and is prepared to commit the necessary resources to ensure that the Essa Road and Essa Road/Highway 400 interchange improvements, both current and future, will be undertaken when necessary subject to the submission and approval of a site plan application and finalization of the associated site plan agreement together with any ancillary cost sharing and/or front ending agreements with Osmington Inc. and the MTO all in accordance with City policies."
4. A second PIC was held on June 19, 2008, to allow the public and applicable review agencies the opportunity to review the design alternatives and ask any questions. Comment sheets containing the public/review agency comments and/or concerns from the second PIC have been considered in the development of the Preferred Design Alternative Solution.

5. The following design alternatives were presented to the public and review agencies at the PIC (please see Appendix "G" for a comparison table of elements and the associated costs):
 - Alternative 1** – Reconstruct to six (6) through lanes with turning lanes at intersections as appropriate with boulevards and sidewalks. Pavement width varies 26 m minimum to 36 m maximum. Right-of-way width varies 35 m minimum to 45 m maximum.
 - Alternative 2** – Reconstruct to six (6) through lanes with turning lanes at intersections as appropriate with raised median, curb faced sidewalk and without boulevards. Pavement width varies 26 m minimum to 36 m maximum. Right-of-way width varies 33 m minimum to 43 m maximum.
 - Alternative 3** – Reconstruct to six (6) through lanes with turning lanes at intersections as appropriate with bike lanes, boulevards and sidewalks. Pavement width varies 29 m minimum to 39 m maximum. Right-of-way width varies 38 m minimum to 48 m maximum.
 - Alternative 4** – Reconstruct to six (6) through lanes with turning lanes at intersections as appropriate with bike lanes, no boulevards and with curb faced sidewalks. Pavement width varies 29 m minimum to 39 m maximum. Right-of-way width varies 35 m minimum to 46 m maximum.
 - Alternative 5** – Reconstruct to six (6) through lanes with turning lanes at intersections, as appropriate, including shift of centreline alignment. Pavement width varies 26 m minimum to 36 m maximum. Right-of-way width varies 29 m minimum to 39 m maximum.
 - Alternative 6** – Reconstruct to six (6) through lanes with turning lanes at intersections as appropriate with boulevards and sidewalks. Lane widths narrow to 3.3 m. Pavement width varies 24.8 m minimum to 34 m maximum. Right-of-way width varies 33.8 m minimum to 43 m maximum.
6. Eighteen (18) people signed the attendance register at the second PIC. Thirteen (13) comment sheets/responses were received pertaining to this Class EA. Based on the responses received, the Preferred Design Alternative choice was Alternative 4.
7. In 2009, approximately \$245,000 was budgeted for a channelized right turn from eastbound Essa Road to southbound Fairview Road. The project did not receive approval from the MTO and was therefore, deferred to coincide with the construction of the Essa Road transportation improvements.
8. An Open House was held on March 11, 2010, to allow the adjacent property owners the additional opportunity to review the property impacts resulting from transportation improvements including the proposed median and cross-access easement and to allow them to ask any questions. Comments and responses received from the Open House were also considered in the development of the Preferred Alternative Solution.
9. A second Open House was held on March 24, 2011, to allow the adjacent property owners the additional opportunity to review the property impacts resulting from transportation improvements including the proposed median and cross-access easement and to allow them ask any questions. Comments and responses received from the Open House were also considered in the development of the Preferred Alternative Solution.

APPENDIX "E"

Summary of Major Public and Review Agency Comments and Concerns

Comments	Response
Bicycle lanes should be added.	The Preferred Alternative does not include the provision of bike lanes adjacent to the traveled lanes given the constraints of property acquisition. In addition, Essa Road is not a designated bicycle route in the City's Parks, Trails and Bicycle Routes plan. Tiffin Street is a designated bicycle route, and on Essa Road cyclists can share the curb lane.
Proposed construction start and finish?	<p>Construction will start once property acquisition is complete and budget is approved, potentially 2012.</p> <p>It is anticipated that the widening will be done while traffic is maintained on the existing roadway by providing one lane of traffic in each direction. Depending upon the extent of widening it may be possible to maintain two lanes per direction with lane narrowing.</p> <p>While it is not anticipated to close the roadway, there may be short periods of time where, for ease of construction and/or safety, a closure may be required.</p>
We are concerned about restricted access and the ability to turn in and out in both directions at all times.	It is proposed that a raised median will be implemented as part of the Preferred Design Alternative to mitigate safety concerns due to increased traffic volumes and number of lanes. The City will encourage property owners to negotiate cross-access easement agreements between private property owners as identified in the ESR to allow alternate access to properties on the north and south side of Essa Road, between Anne Street and Fairview Road, to mitigate restricted access concerns resulting from the proposed median. Access concerns expressed by emergency services will be reviewed and mitigated at detail design.
Impacts during construction.	Adverse impacts during construction can be minimized. Two key issues during construction are maintaining open access to businesses for customers and deliveries and having sufficient sign visibility so customers know you are open for business and know how to enter and exit your site during this period. When your road is scheduled for reconstruction, the City of Barrie will notify the adjacent businesses advising what to expect in terms of duration of construction and any foreseeable disruptions.
Consider using roundabouts.	A roundabout has been reviewed and is detailed in the study document. It is not technically feasible to construct a roundabout in this location given the various constraints.

<p>We have also come to understand that the detailed design component of the preferred Essa Road alternative has not been initiated yet. Accordingly, we request that the City of Barrie include the main access improvements as well as maintaining the Sticky Fingers driveway access as proposed as part of the detailed design assignment for the Essa Road widening.</p>	<p>Decisions with respect to the inclusion of the two noted entrances in the detailed design are subject to a satisfactory agreement between the City of Barrie and the Developer with regard to access, cost sharing and other site plan issues.</p>
<p>All natural heritage features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures.</p>	<p>Studies of the natural and cultural environment were undertaken as part of the Phase 1 and 2 report. Where required, recommendations resulting from that report have been incorporated into this report and the preferred design. The agencies identified have been contacted and will continue to be contacted throughout detailed design as may be appropriate.</p>
<p>Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. MOE's Stormwater Management Planning and Design Manual (2003) - should be referenced in the ESR and utilized when designing stormwater control methods.</p>	<p>Given the developed nature of the surrounding lands little opportunity exists for the placement of stormwater quantity controls such as ponds save for the currently undeveloped areas between the Highway 400 ramps. The City should partner with the MTO to facilitate the construction of stormwater ponds for quantity and quality control as part of the Highway 400 widening.</p>
<p>Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken.</p>	<p>Appropriate testing of the soils will be undertaken during detailed design to determine the correct methodology for disposal. Should contaminated soils be identified during that testing, appropriate measures will be undertaken to limit impacts and ensure correct disposal methods.</p>
<p>Please note that as part of the required stakeholder and agency consultation, you are advised to contact the Ministry of Aboriginal Affairs and the Department of Indian and Northern Affairs to determine potentially affected Aboriginal communities in this project area.</p>	<p>First Nations communities have been identified and consulted. Copies of correspondence are included in the appendices.</p>

APPENDIX "F" - Medians

The safety benefits of medians on urban roadways flow from several factors. The introduction of a median provides positive separation between opposing directions of vehicular traffic. This reduces the potential for head-on and sideswipe collisions. The presence of a median also serves an access control function reducing potential conflicts resulting from turning movements and allowing designers and traffic engineers to properly focus such activities at controlled locations with appropriate design features. Urban medians can also serve an important function in terms of accommodating pedestrian crossings at arterial intersections and if desired at designated mid-block and properly controlled crossing locations.

Table 15: Estimated total collisions/ kilometre/ year (42)

ADT	Collisions Per Kilometre Per Year		
	Undivided	TWLTL	Raised Median
10,000	30	24	20
20,000	78	37	34
30,000	118	57	48
40,000	157	70	53

Table 15 clearly shows that traffic volume is a primary determinant of collisions per kilometre per year: the number of collisions per kilometre per year was found to increase dramatically as the ADT increases. Again, in all traffic volume groupings, the raised median alternative provided superior safety performance, followed by the TWLTL and then the undivided roadway. Not surprisingly, the differences in safety performance become more significant as traffic volumes increase – with the raised median alternative having a 33% lower collision rate than an undivided facility at an ADT of 10,000, but a 67% lower collision rate at an ADT of 40,000.

TWLTL = Two Way Left Turn Lane

Excerpts taken from Chapter 8 of TAC, April 2010

NOTE: For additional information please see US Department of Transportation website on Safe Access is Good for Business at the following link:

http://ops.fhwa.dot.gov/publications/amprimer/access_mgmt_primer.htm

Appendix "G" – Design Alternatives Comparison Table

Design Alternatives	1	2	3	4	5	6	Preferred Alternative
Lane Width	3.5 m	3.5 m	3.5 m	3.5 m	3.5 m	3.3 m	3.3 – 3.5 m
Boulevard Width	1.5 m	0.0 m	1.5 m	0.0 m	0.0 m	1.0 m	0.0-1.0m
Alignment Shift	No	No	No	No	Yes	No	Yes
Sidewalk Width	1.5 m	2.0 m	1.5 m	2.0 m	No	1.5 m	1.5-2.0m
Type of Sidewalk	Standard	Curb Faced	Standard	Curb Faced	n/a	Standard	Standard & Curb Faced
Median	No	Yes	No	No	No	Yes	Yes
Bike Lanes	None	None	1.5 m	1.5 m	None	None	None
Pavement Width	26 to 36 m	26 to 36 m	29 to 39 m	29 to 39 m	26 to 36 m	24.8 to 34 m	24.8 to 34m
ROW Width	35 to 45 m	33 to 43 m	38 to 48 m	36 to 46 m	29 to 39 m	33.8 to 43 m	33.8 to 43 m
Hwy 400 Corridor Including Structure ⁽²⁾	\$26.40	\$26.40	\$26.40	\$26.40	\$26.40	\$26.40	\$26.40
Road Costs ⁽²⁾	\$4.84	\$4.84	\$5.47	\$5.47	\$4.42	\$4.81	\$4.64
Gross Land Cost ^{(1) (2)}	\$8.65	\$7.89	\$10.37	\$9.81	\$5.42	\$8.19	\$5.16 - \$6.06
Total Cost ⁽²⁾	\$39.89	\$39.13	\$42.24	\$41.68	\$36.24	\$39.4	\$36.20 – 37.10 ⁽³⁾

Note (1) Land costs exclude those lands obtained through the development process

Note (2) All costs are in Millions of Dollars

Note (3) Total Costs does not account for Recovery Land Costs