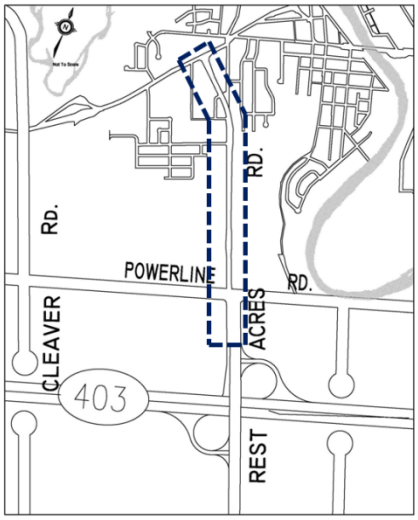
County of Brant

CLASS ENVIRONMENTAL ASSESSMENT FOR REST ACRES ROAD CAPACITY FROM KING EDWARD STREET TO HIGHWAY 403, PARIS



FINAL ENVIRONMENTAL STUDY REPORT

AUGUST, 2012

IBI GROUP

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EXECUTIVE SUMMARY

Purpose of Study

The County of Brant has targeted Southwest Paris with a portion of the County's future 20 year population growth and employment growth. The Southwest Paris Urban Settlement Servicing Study in 2004 and Transportation Master Plan in 2008 both recommend enhancing the capacity of Rest Acres Road to serve the transportation needs generated by this growth. The purpose of this Municipal Class EA study is to select the preferred capacity enhancement for Rest Acres Road to accommodate future traffic growth, and the EA with the provincial Ministry of the Environment.

The study area extends along Rest Acres Road from King Edward Street to the north side ramp terminals of the Highway 403 interchange. The preferred design does not require revisions to this Highway 403 interchange. In the event in the future that revisions to the interchange are contemplated, such changes will need to meet the requirements of the MTO Class EA for Provincial Transportation Facilities (2000).

Public Consultation

Three Public Information Centre's (PIC) were held to present and request comments from the public and stakeholders.

- PIC #1 was held on June 20, 2011 to present the study purpose and roadway capacity enhancement needs
- PIC #2 was held on October 27, 2011 to present capacity enhancement alternatives
- PIC #3 was held on February 23, 2012 to present the recommended capacity enhancement plan

Public feedback from these sessions focused largely on intersection operations, pedestrian crossing safety, negative impacts of truck traffic and the need for noise attenuation, sidewalks and cycling facilities.

Problem / Opportunity Statement

The County's Transportation Master Plan, completed in 2008, forecasts that by 2021, the SW Paris area will require one additional arterial travel lane per direction to serve area traffic, and this is recommended on Rest Acres Road as the designated urban arterial road connecting to a Highway 403 interchange.

Widening Rest Acres Road also provides the opportunity to urbanize the cross section and extend sidewalks, accommodate cycling, improve intersections and provide improvement streetscaping along the road as a primary gateway into the Paris area.

Condition Inventory

The inventory of natural heritage conditions identified no species at risk or designated natural areas within or nearby the study area except for some localized wetlands which will not be impacted by the road.

The area has archaeological potential but because the existing road has severely damaged the integrity of any potential archaeological resources, the Rest Acres Road, King Edward Street, and Powerline Road rights-of-way do not require additional archaeological assessment, with the exception of the lands adjacent to the Paris Cemetery and the Sacred Heart Cemetery boundaries where Stage 2 test pit analysis and a Cemetery Investigation may be required if impacted by road widening.

Roadway noise is a main issue associated with this study, so an Acoustical Study was conducted that predicts existing and future noise levels at noise sensitive locations along the road calibrated with actual noise measurements. The results were compared with provincial noise criteria to determine warrants for noise attenuation, showing that attenuation is warranted for the Hanlon Place residential units backing onto Rest Acres Road just south of King Edward Street, and for the lots abutting the west side of Rest Acres Road along Laurie Ann Lane. Warrants for the condo units backing onto Rest Acres Road immediately north of Cobblestone Drive were less conclusive but should be confirmed at the detailed design stage along with the type and style of attenuation.

Design Alternatives

Rest Acres Road is recommended as the preferred urban arterial route for Southwest Paris Area until full buildout of the Southwest Paris Area when additional arterial capacity is recommended in the Transportation Master Plan to be developed on Bishopsgate Road.

The capacity options evaluated for the Rest Acres Road are;

1. Do Nothing and leave as 2 lanes,
2. Widen to 4 lanes undivided,
3. Widen to 4 lanes with a narrow 1.6 m median and
4. Widening to 4 lanes with a wide 4.2 m median.

Pedestrian and Cycling options evaluated included; multi-use trails – 3.0m wide asphalt trails for cycling and walking on both sides of the road, or only on multi use trail on the east side with a standard sidewalk on the west side.

Traffic control options evaluated for each intersection included; stop controls, traffic signals, and using modern roundabouts.

Stormwater Management options evaluated for the 3 defined Stormwater drainage areas (north, central and south) included; onsite and offsite Stormwater control options.

Recommended Design

After evaluating the advantages and disadvantages of each option and presenting them at PIC #2, a 4 lanes urban cross-section from King Edward Street to Powerline Road with a wide centre median for streetscaping and multi-use trails on both sides was selected as the recommended

design. With MTO approval, a 4 lane rural cross-section is recommended from Powerline Road to the Highway 403 ramps with open ditches and no sidewalks, trails or landscaped centre median. With this configuration, the Paris gateway will be at Powerline Road and not immediately off Highway 403.

The existing road right-of-way width is sufficient to accommodate this cross-section without any property acquisition except for very minor property-taking to accommodate recommended roundabouts at the planned Arlington Parkway, Street H and Street I. These roundabouts will assist side street access onto and off the arterial, act as traffic calming features to help slow traffic speeds and provide streetscape opportunities for this gateway road.

A roundabout at King Edward Street is not recommended because the existing signals will continue to provide good level of service, there is no collision problem at this location and the life cycle cost would be about twice that of signals.

A roundabout at King Edward Street is not recommended because forecasted turning movement volumes at Powerline Road would require a 3 lane roundabout capacity which is inappropriate for this location, so signals with additional turn lanes are recommended.

The recommended stormwater management is:

- In the north drainage area it is recommended to provide on-site storage within the Rest Acres Road right-of-way;
- For the central drainage area, off-site storage in stormwater management ponds planned in subdivisions to the east is recommended, subject to the timing of Rest Acres Road and subdivision construction;
- In the south drainage area, on-site storage in roadside ditches south of Powerline Road is recommended given the unknown timing of development in this area.

The recommended EA road improvements are estimated to cost $8.1 million including widening from King Edward Street to the Highway 403 north side ramp terminal, multi-use trails, streetscaping, stormwater management, engineering and contingency.

Implementation

The County's 2012 budget includes funds to resurface the road in order to extent the surface life for 5-7 years.

The County is recommended to evaluate the need to implement the EA capacity enhancements based on actual area growth.

The EA is valid for 10 years from approval.

1. INTRODUCTION

1.1 Study Purpose

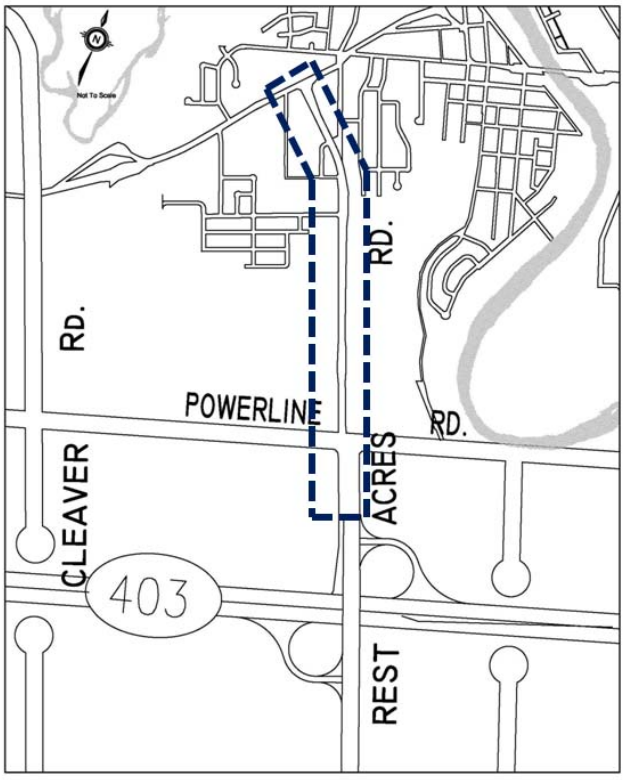
The County of Brant has targeted Southwest Paris with 70% of the County's future population growth and most of its employment growth. The County completed a Southwest Paris Urban Settlement Servicing Study in 2004 and a Transportation Master Plan in 2008. These plans have, in part, recommended that the County plan on enhancing the operational capacity of Rest Acres Road from King Edward Street to Highway 403.

The purpose of this Municipal Class EA study is to obtain County approval of a Schedule "C" Municipal Class Environmental Assessment (EA) to accommodate future approved growth in Southwest Paris to 2031, and file this EA with the provincial Ministry of the Environment. The EA will recommend the best methods of enhancing the operational capacity of the section of Rest Acres Road that is the subject of this study, eventually leading to construction and operation of an improved link in the County's roadway network in the Paris area

1.2 Study Area

The study area for this EA extends 30 m either side of the existing Rest Acres Road centreline from King Edwards Street south to the north side ramp terminals of Highway 403 in order to take into consideration the existing physical conditions and existing and planned land use abutting the road. This includes existing and future roads intersecting with Rest Acres Road. The resulting study area is shown on Exhibit 1-1:

Exhibit 1-1: Study Area



1.3 Study Team

The EA study was conducted under the direction of Lee Robinson, P. Eng., Manager of Infrastructure Services and Matt D'Hondt, Public Works Technologist with the County of Brant.

The EA study was conducted by the following consultant team from IBI Group:

- Don Drackley, MCIP, RPP, Project Manager
- Scott Lang, P. Eng., Project Engineer
- John Vleeming, A.SC.T, Road Design
- Andy Kroess, P. Eng., Stormwater Management
- Andreas Houlios, EA Coordination

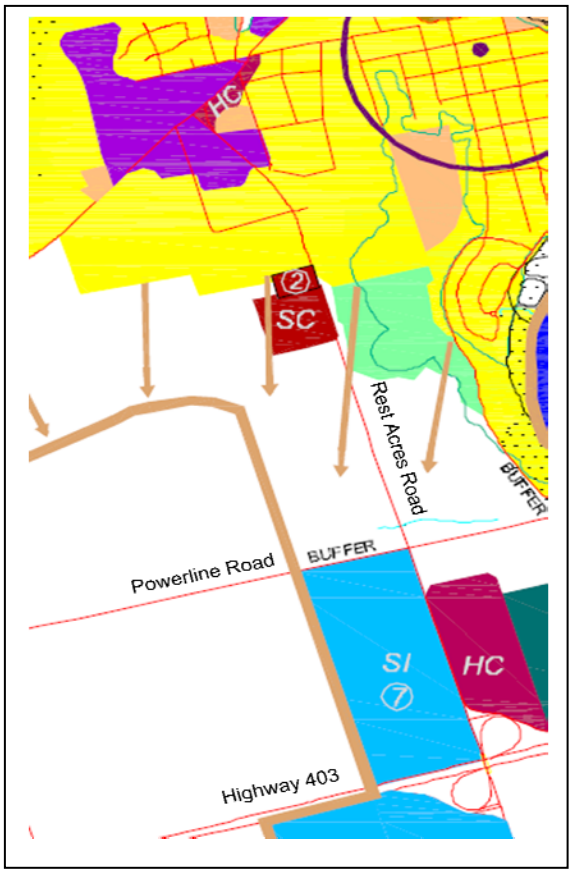
1.4 Related Studies

1.4.1 COUNTY OF BRANT OFFICIAL PLAN

According to the County of Brant Official Plan Schedule "A" (September 2011 Update), lands abutting the Rest Acres Road study area are designated for the following land uses as shown on Exhibit 1-2. All the lands are included within the designated Settlement Boundary of the Paris Area:

Exhibit 1-2: Official Plan Land Use Designation, Schedule "A", September, 2011 Update

Institutional
Urban Residential
SC Shopping Centre Commercial
Woodlands
SI Special Industrial
HC General Commercial



More specific zoning of property abutting and in the vicinity of Rest Acres Road is provided in Zoning Bylaw # 110-01. It has most lands south of the future planned Arlington Parkway on the west side (see Exhibit 3-3) and south of the existing development on the east side of Rest Acres Road currently zoned Agricultural and will require rezoning to facilitate development.

1.4.2 SOUTHWEST PARIS URBAN SETTLEMENT AREA PLAN

The County of Brant retained consultants to assist staff and Council in the preparation of a Southwest Paris Urban Settlement Area Plan. A Servicing Study for this Plan was completed by URS in October 2004 which included transportation recommendations for the Southwest Paris development area.

In this Settlement Area Plan, the transportation plan developed for Southwest Paris was based on the following development yield for future land use in the Southwest Paris Urban Settlement Area as conceptually shown in Exhibit 1-3 (all estimated and approximate):

- 1,900 low density single family housing units;
- 700 medium-high density townhouse/condo dwellings;
- 130,000 m2 (1.4 M ft2) of gross floor area for commercial-retail uses;
- 180 hectares of employment lands with a forecasted 6,020 employees; and
- 6 hectares related to school uses.

Based on this growth potential and the existing roadway network in Southwest Paris, the Settlement Area Plan concluded that general road widenings would be needed to provide for additional through lanes, exclusive left turn lanes, right turn lanes and signalized traffic control improvements.

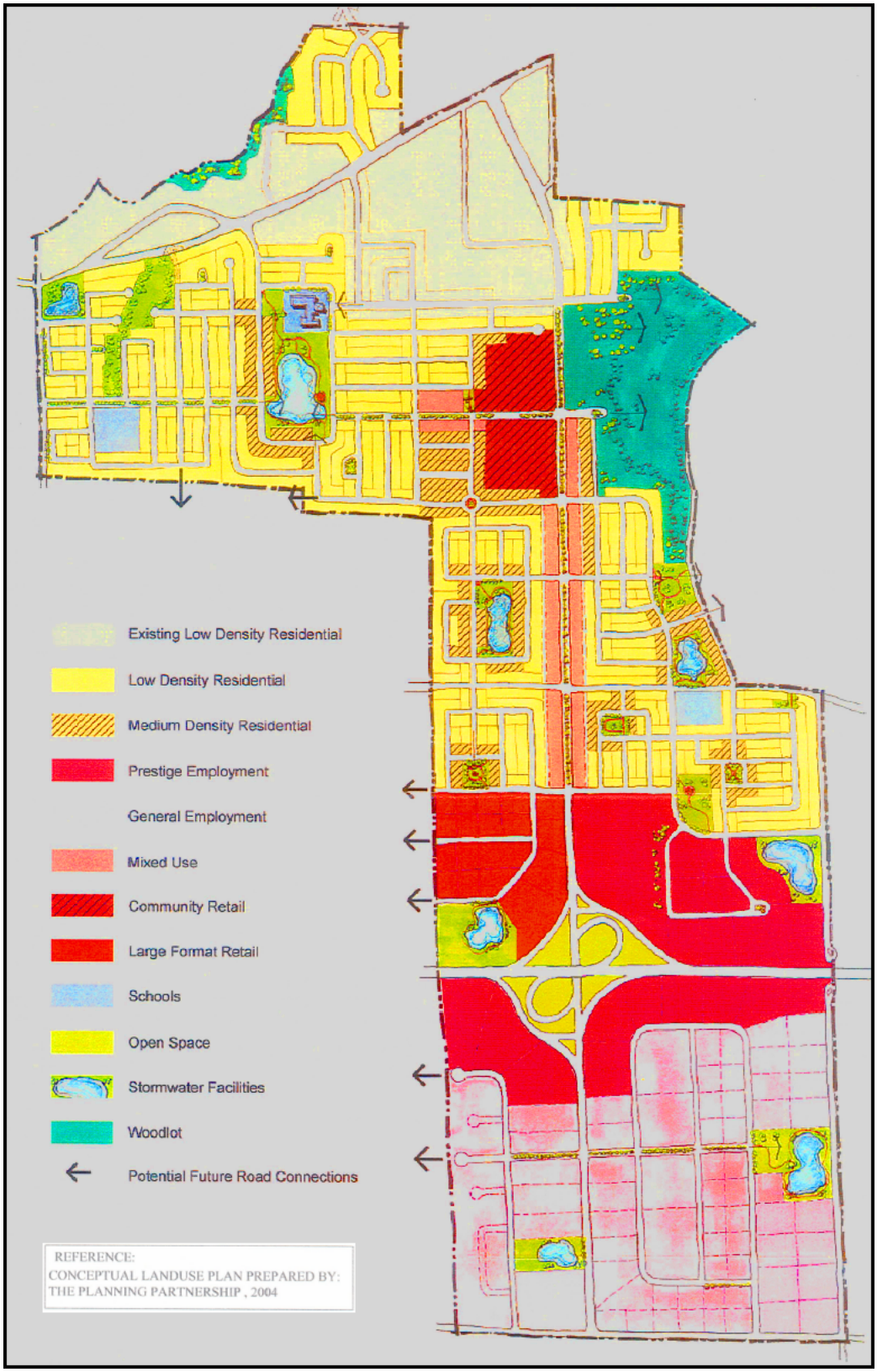
The Plan recognized that installing additional traffic signals along Rest Acres Road would result in short signal spacing based on the existing and planned location of intersecting streets. Therefore, the Plan recommended that traffic conditions be monitored throughout the development of the Southwest Paris area to confirm the warranting of proposed traffic signals. This recognized that some future signals would never be installed. In this EA, alternatives to signal installation at some intersecting streets have been considered and evaluated.

Another key finding of the Southwest Paris Plan was that based on maintaining lane continuity and providing decorative and landscaped median opportunities, the Plan recommended that Rest Acres Road be widened to a four-lane section south of King Edward Street to Bethel Road. This EA study extends only to the Highway 403 ramps, so any future widening of Rest Acres Road from these ramps to Bethel Road would be the subject of a separate EA based on the pace of planned land development south of Highway 403.

1.4.3 PLACES TO GROW PLAN

The County of Brant is included in the province's Places To Grow legislation as part of the Greater Golden Horseshoe (GGH). More specifically, the Paris area is designated as a "Built-Up Area". Therefore, plans to enhance the capacity of Rest Acres Road should be compatible with the policies of Places To Grow.

Exhibit 1-3: Conceptual Land Use Plan, Southwest Paris Urb an Settlement Area Plan, The Planning Partnership, 2004



Places to Grow is the Ontario government's initiative to manage growth and development in Ontario in a way that supports economic prosperity, protects the environment and helps communities achieve a high quality of life.[1] This EA adheres to the following relevant policies of Places to Grow:

- Infrastructure to Support Growth – Transportation components supported by widening and reconstruction this section of Rest Acres Road that is the subject of this EA include:
  - **Connectivity** between modes of moving people (roads, transit, cycling, walking) and moving goods (roads, rail, air);
  - **Balance** transportation choices provided by the opportunity to provide transit service in the Rest Acres Road corridor;
  - **Sustainability** by optimizing use of existing infrastructure (i.e. Rest Acres Road) and encouraging only the most financially and environmentally appropriate modes of future trip-making; and
  - **Coordinated** long-range provincial infrastructure planning through the integration of the Rest Acres Road corridor with Highway 403.
- Strategies for Moving People – The Rest Acres Road widening and upgrading provides for improved transit and pedestrian service opportunities in the corridor, and helps support more future transit-supportive land use in the corridor area; and
- Strategies for Moving Goods – The Rest Acres Road project recognizes the great importance of the movement of goods within and through not only the County of Brant, but also the western Greater Toronto Area Region and province of Ontario as part of the Region's and Province's economic base. This includes recommendations for improved goods movement access to and from Highway 403 in the Paris area.

1.4.4 PROVINCIAL POLICY STATEMENT

The Provincial Policy Statement came into effect on March 1, 2005 under the authority of the Planning Act. It requires that in planning matters, including development of infrastructure, decisions "shall be consistent with" policy statements issued under the Act. In the case of this Rest Acres Road EA, the following Provincial Policies are supported:

- Policy 1.6.5: Transportation Systems
  - Rest Acres Road facilitates the movement of people and goods, and potential widening and reconstruction are appropriate to address projected needs;
  - The Rest Acres Road project is based on efficient use being made of the County of Brant's existing and planned transportation infrastructure;
  - Rest Acres Road improvements support active transportation (cycling and walking) in the improved road corridor.
- Policy 1.6.6: Transportation and Infrastructure Corridors – Rest Acres Road capacity enhancements respond to the need to protect required transportation corridor improvements and additions in the short, medium and long term.

[1] Ontario Ministry of Public Infrastructure Renewal

2. ENVIRONMENTAL ASSESSMENT PROCESS

2.1 Ontario Environmental Assessment Act

The provincial Environmental Assessment Act (EA Act) identifies two types of environmental assessment and approval processes:

- Individual EA's are large complex projects with extensive potential for environmental impacts for which a Terms of Reference and an individual environmental assessment are carried out and submitted to the Ministry of the Environment for approval.

- Class EA's include projects which are approved subject to compliance with an approved class EA process. Projects proceed provided that this approval process is followed and the proponent has complied with the EA Act requirements.

2.1.1 MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA) PROCESS (2011)

A Municipal Class EA is described as an approved planning process for an undertaking (project) that must be followed in order to meet the requirements of the provincial Environmental Assessment Act. Since environmental impacts vary from project to project, Class EA projects are classified in terms of the following schedules:

Schedule A – Normal or emergency operational and maintenance activities with minimal environmental effects, and so are pre-approved;

Schedule A+ – Also pre-approved by requiring public notice prior to construction;

Schedule B – Improvements and minor expansions to existing facilities with potential for some adverse environmental impacts, and so requires a screening process including consultation prior to construction; and

Schedule C – Construction of new facilities and major expansion of existing facilities that must proceed through the Class Environmental Assessment planning process.

The proponent of this Class EA is the County of Brant. The County has conducted this EA as a Schedule "C" project because this project is a *"Reconstruction or widening where the reconstruction road or other linear paved facilities will not be for the same purpose use, capacity or the same location as the facility being reconstruction (e.g. additional lanes), and expected to cost more than $2.7 million to construct".*

The Municipal Class EA process, as shown in Exhibit 2-1, involves the following five mandatory phases:

- Phase 1 – Identify the Problem or Opportunity
- Phase 2 – Identify alternative solutions to address the problem or opportunity
- Phase 3 – Examine alternative methods and implement the preferred solution
- Phase 4 – Document in the Environmental Study Report (ESR) a summary of the rationale and planning
- Phase 5 – Design and consultation process used for the project; Implement the project with contract drawings and tender documents, through project.

As this study follows the Schedule "C" project of the EA process, a Class EA document (i.e. Environmental Study Report) is required for MOE for approval. The approved Class EA document establishes a streamlined planning process for proponents to follow in order to fulfill the requirements of the Environmental Assessment Act (EAA) for approval of a project within the class of undertakings. This is a self-assessment proponent-driven process where the proponent of a project is responsible for meeting the requirements in the Class EA prior to implementing a project.

The Class EA approach allows for evaluation of the environmental effects of alternatives to an undertaking and alternative methods of carrying out a project, includes mandatory public consultation requirements, and expedites the environmental assessment of smaller recurring projects (e.g., road widening/upgrading).

The ESR is made available for a minimum of 30 day period for public review. If concerns are raised that cannot be resolved through discussion with the proponent of the project during the Class EA process period, the public and agencies can write to the Minister of the Ministry of Environment for a "Part II Order" request, which will be described in details in Section 2.1.2. However, the public, stakeholders and agencies are encouraged to work together to determine the preferred solution of addressing the problem and opportunity during the EA study period.

2.1.2 PART II ORDERS

A common feature of the Class EA process is a provision which enables any individual, group or agency that has significant environmental concerns with a project to write to the Minister of the Ministry of the Environment (MOE) requesting that the project be required to comply with Part II of the EA Act, and be conducted as an Individual EA. If approved by the Minister, this does not stop a project, but rather it requires the proponent to follow the Individual EA process to complete the project.

All Part II Order requests are reviewed by the MOE's Environmental Assessment and Approvals Branch (EAAB). MOE staff would consult with the requester(s), the proponent and any other agency or group potentially affected by the Minister's decision. Information would be summarized by MOE staff and a recommendation is made to the Minister who is ultimately responsible for a decision. Evaluation criteria for Part II Order requests include the purpose of the EAA, factors suggesting that the proposed undertaking differs from other undertakings in the class to which the Class EA applies, the significance of these factors and differences, the nature of concerns raised by the requester(s), and the benefits of carrying out an Individual EA. MOE staff would also evaluate the applicability and effectiveness of other legislation and decision-making processes to address the concerns of the requester(s).

The EAAB has 45 days to review a Part II Order request and prepare a report for the Minister's or delegate's consideration. There is no time limit on making this decision, and the Minister has four options for a decision on a Part II Order request:

- Deny the request
- Deny the request with conditions
- Refer to mediation
- Grant the request and require the proponent to undergo an Individual EA.

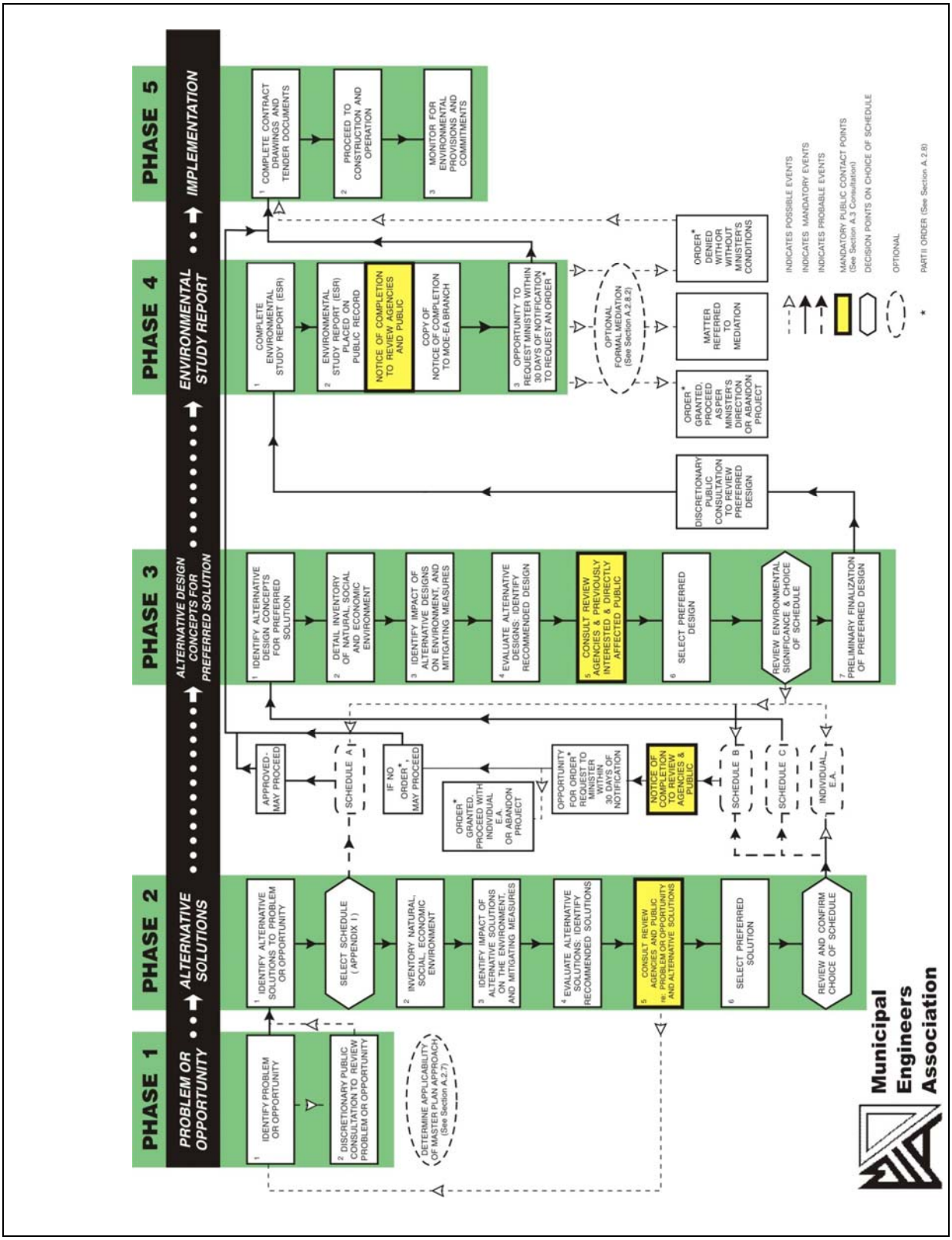


Exhibit 2-1: Municipal Class EA Process

2.1.3 ENVIRONMENTAL STUDY REPORT

As noted above, this Environmental Study Report documents the overall Class EA study process to determine the recommended alternative and the environmentally significant aspects of the planning, design and construction of Rest Acres Road improvements. The ESR includes the identification of problems being addressed, transportation solutions that were considered, environmental impacts and mitigation measures, the recommended plan and commitment to future work and consultation and monitoring associated with the implementation of the project.

2.1.4 MINISTRY OF TRANSPORTATION CLASS EA FOR PROVINCIAL TRANSPORTATION FACILITIES (2000)

The south limit of the Rest Acres Road Class EA study area is the interchange ramp terminals on the north side of Highway 403. The complete interchange itself is not part of this Municipal Class EA, and the preferred solution for Rest Acres Road does not require revisions to the interchange. In the event in the future that revisions to the interchange are contemplated, changes will need to meet the requirements of the MTO Class EA for Provincial Transportation Facilities (2000).

Furthermore, the County expects that widening of Highway 24 over Highway 403 south to Bethel Road will be reviewed within the next 5-8 years. Any changes to the interchange required by this longer term widening of Highway 24 will need to meet the requirements of the MTO Class EA for Provincial Transportation Facilities (2000).

Finally, under the Public Transportation and Highway Improvement Act (PTHIA), any site specific development proposals in proximity to Rest Acres Road will require MTO review and approval by the Corridor Control Section. This may include stormwater management reports, traffic impact studies, drainage plans and other plans that could potentially impact Highway 403.

2.2 Canadian Environmental Assessment Act (CEAA)

Under the Canadian Environmental Assessment Act (CEAA), a federal environmental assessment may be required if the following conditions apply to the project if it is:

1. funded with federal money
2. on federal land
3. likely to affect a line or property regulated by the National Energy Board or a railway
4. expected to affect fish or fish habitat or a navigable waterway
5. likely to affect Indian reserve lands.

None of these conditions apply to this EA, and so the CEAA does not apply.

2.3 Public Consultation

During the preparation of this Class EA, external agencies, stakeholder groups and the public were contacted to provide input and respond to project proposals. This was done largely through the issuing of project notices and holding three Public Information Centres including notification to involved First Nations. A Consultation Plan dated July 2011 was prepared to guide these consultation activities, and is included as the separate **Appendix 1** of this ESR.

2.3.1 NOTICES

The following three project notices were circulated to mailing addresses within the designated study coverage area, mailed to those on the project mailing list and posted in local newspapers as follows. Further details on the provision of project notices is provided in the three Public Information Centre summary reports included as the separate **Appendix 2** of this ESR:

- Notice of Study Commencement and Public Information Centre #1, June 20, 2011:
    - Posted on the County's project web site;
    - Hand-delivered to coverage area addresses;
    - Posted in Brantford Expositor June 11 and 18, 2011; and
    - Posted in Paris Star June 9 and 16, 2011.
- Notice of Public Information Centre #2, October 27, 2011:
    - Posted on project web site;
    - Hand-delivered to coverage area addresses;
    - Posted in Brantford Expositor October 15 and 22, 2011; and
    - Posted in Paris Star October 20, 2011.
- Notice of Public Information Centre #3, February 23, 2012:
    - Posted on project web site;
    - Hand-delivered to coverage area addresses;
    - Posted in Brantford Expositor February 11 and 18, 2012; and
    - Posted in Paris Star February 16 and 23, 2012.

2.3.2 PUBLIC INFORMATION CENTRES

A summary of the arrangements, project information, public comments and project responses from the three Public Information Centres is included in **Appendix 2** to this report. The major issues identified at each Centre that were incorporated into the project as information and for use in evaluating options and selecting the preferred road improvement plan are listed as follows:

<u>Public Information Centre #1, June 20, 2011:</u>

- Increase in road noise and vibration by attracting more traffic to Rest Acres Road and associated impacts on nearby properties;
- Redirect truck traffic to other roads rather than Rest Acres Road;
- Difficult to access Rest Acres Road from side streets and properties; and
- Need sidewalks and pedestrian crossings along Rest Acres Road.

Public Information Centre #2, October 27, 2011:

- Truck traffic should be moved away from Rest Acres Road;
- Noise walls should include vegetation for better aesthetics;
- Ability of trucks to manoeuvre through roundabouts and car/truck conflicts;
- Include turn lanes on Rest Acres Road where required;
- Heavy trucks should use a Paris bypass; and
- Need traffic signals on Rest Acres Road at Powerline Rd.

Public Information Centre #3, February 23, 2012:

- Favour the multi-use trials;
- Favour the proposed roundabouts as effective traffic movers and slow traffic speed;
- Do not favour roundabouts owing to traffic hazards and ability of heavy truck to use them;
- Cobblestone Dr. intersection requires traffic signals;
- Support plan for added noise attenuation; and
- There is a lack of controlled pedestrian crossings along Rest Acres Road.

2.3.3 FIRST NATIONS CONSULTATION

The Notice of Study Commencement issued for this project included a notification letter to all federal and provincial First Nations departments, First Nations and Métis Nation of Ontario agencies as well as to established contacts for the Six Nations of the Grand River First Nations, the Haudenosaunee Resource Centre and the Mississauga's of the New Credit First Nations. No specific concerns were reported from this initial First Nations consultation.

On June 28, 2011, a presentation was also made to the Six Nations Works Committee on current County of Brant capital works projects including the Rest Acres Road EA. Based on the location of the roadway study area, no specific concerns were noted about the project from that presentation.

The contacts at the Six Nations of the Grand River and Mississauga's of the New Credit First Nations also received notices for each of the three PICs held as part of this EA process.

2.3.4 RESPONSE TO NOTICE OF COMPLETION PUBLIC REVIEW PERIOD

The Notice of Study Completion was first posted on June 21, 2012 with the mandatory 30-day public review period ending July 24, 2012. Comments from three members of the public were received during this period, plus comments from the Ministry of Transportation and Hydro One. Responses were provided to each, and appropriate edits made to this ESR document in response to these comments.

3. PROBLEM / OPPORTUNITY STATEMENT

3.1 Roadway Capacity

The County of Brant Transportation Master Plan (December 2008) forecast the distribution of traffic generated from the planned Southwest Paris Urban Settlement Area. The forecasts show that Southwest Paris growth can be accommodated by the existing road network at least to 2011.

However, by 2021 the peak hour trip volumes to and from Brantford will begin to approach the need for one additional travel lane per direction. This is expected to grow to a need for two added travel lanes per direction by 2031 based on a planning capacity for arterial roads of 800 vehicle/lane/hour.

With 70% of the County's population growth and most of its employment growth located in Southwest Paris, the Transportation Master Plan recommends that the County plan on enhancing the capacity of Rest Acres Road by widening the road to two lanes per direction from King Edward Street to the Highway 403 interchange in the medium term by 2021. The capacity of this critical link should also be protected by limiting access to Rest Acres Road from surrounding new developments.

Beyond 2021, as the Southwest Paris area grows to planned buildout by 2031, one additional travel lane per direction will be required in the area to serve the ultimate trip generation. The options for this added capacity enhancement that were considered in the Master Plan were:

- **6-Lane Rest Acres Road -** Further widen Rest Acres Road to three lanes per direction. This was not recommended since a six lane road would not be compatible with the "avenue" character planned for Rest Acres Road through the Southwest Paris Urban Settlement Area;

- **Cleaver Road -** Upgrade Cleaver Road between King Edward Street and Highway 403 or Bethel Road with a new interchange provided at Highway 403 as a municipal initiative following the MTO Class EA. However, the Master Plan concluded that there may be insufficient weaving distance between Cleaver Road and the existing Rest Acres Road interchange to make this feasible; and therefore may not be acceptable to MTO[2]; and

- **Bishopsgate Road -** Upgrade Bishopsgate Road with a new interchange at Highway 403, as a municipal initiative following MTO's Class EA process. Although located outside and west of the Southwest Paris Urban Settlement Area, Bishopsgate Road offers the potential to attract traffic from north and west of the Paris area and provide access to Highway 403. The Master Plan also concluded that improving Bishopsgate Road would have the potential to improve traffic access west of the Paris area as a potential Paris bypass route.

One of the purposes of each of these capacity enhancement options is to increase the attractiveness and use of Highway 403 as a major traffic carrier in the Paris area, linking the Paris area with Brantford and points east. The Transportation Master Plan therefore recommends that Rest Acres Road be protected for an ultimate four lane cross-section with turn lanes or roundabouts at limited access locations.

[2] Weaving distance is the length needed for vehicles to enter or leave a freeway

3.2 Existing Traffic Conditions

In order to review the existing condition of traffic operations along Rest Acres Road, intersection traffic counts were conducted at the intersections of Rest Acres Road with King Edward Street, Laurie Ann Lane/Hanlon Place and Cobblestone Drive in August 2011 (see separate **Appendix 3**). The intersection of Rest Acres Road and Cedar Street was counted in December 2011.

Traffic count (June 2011) and signal timing information for the Ministry of Transportation (MTO) traffic signal at the intersection of Rest Acres Road and the westbound Highway 403 exit ramp was provided by the Ministry while traffic count information for the intersection of Rest Acres Road and Powerline Road was obtained from the "*Grandville Subdivision Phase 3 Transportation Impact Study*" by Paradigm Transportation Solutions Ltd (April 2011).

Exhibit 3-2 illustrates the existing AM and PM peak hour traffic volumes along Rest Acres Road.

These existing volumes, along with the existing intersection layouts were assessed using the intersection assessment tool *SYNCHRO 7* by Trafficware Limited. The results are summarized below as existing intersection Level-Of-Service in Exhibit 3-1. As indicated in this exhibit, all of the exiting intersections within the study area appear to be operating at very acceptable levels-of-service (LOS) during both the AM and PM peak hour periods. There were no existing traffic movements identified as a concern through this assessment.

Exhibit 3-1: Existing Traffic Level-of-Service

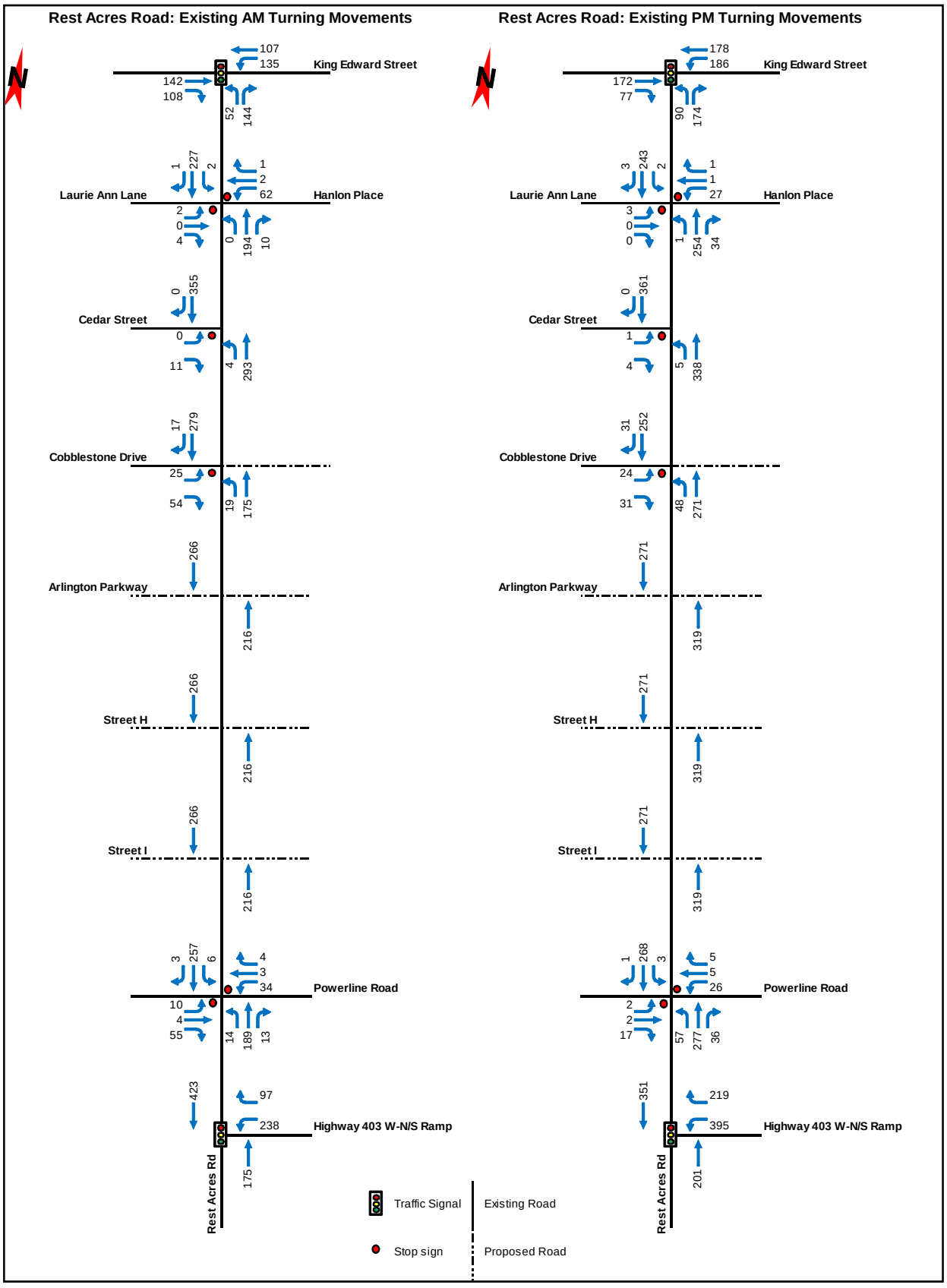
Location		AM Peak Hour			PM Peak Hour		
Rest Acres Road at:		Level of Service	Delay	V/C	Level of Service	Delay	V/C
King Edward Street	Intersection	B	11.9	0.21	B	11.3	0.29
(Signalized)	Critical Movement						
Laurie Ann Lane	Intersection	A	1.9	-	A	0.8	-
(Un-Signalized)	Critical Movement						
Cedar Street	Intersection	A	0.2	-	A	0.2	-
(Un-Signalized)	Critical Movement						
Cobblestone Drive	Intersection	A	1.9	-	A	1.6	-
(Un-Signalized)	Critical Movement						
Powerline Road	Intersection	A	2.7	-	A	2.1	-
(Un-Signalized)	Critical Movement						
Highway 403	Intersection	B	14.3	0.48	B	13.5	0.58
(Signalized)	Critical Movement						

3.3 Traffic Reviews

Rest Acres Road and the area immediately surrounding it has been the subject of a number of traffic and related development studies in recent years. Studies that have specifically included traffic evaluations involve the following documents, and all were reviewed as part of the existing and future traffic analysis conducted as part of this EA. The findings, conclusions and recommendations of each study are summarized in the **Appendix 3** Transportation Report dated January 2012:

- *Southwest Paris Subdivision – Traffic Impact Study* (July 2001)
- *Grandville Phase 2 – Traffic Impact Study* (June 2003)

Exhibit 3-2: Existing (2011) Traffic Volumes



- *Southwest Paris Urban Settlement Area Servicing Study Report* (October 2004)
- *Proposed Southwest Paris Business Park – Traffic Impact Study* (February 2007)
- *Zavarella/Kulmatycky Residential Development Traffic Impact Study* (October 2008)
- *King Edward Street Reconstruction from Church Street to Rest Acres Road Class EA* (January 2010)
- *Proposed Commercial Development Rest Acres Road at Cobblestone Drive – Traffic Impact Study* (September 2010)
- *Grandville Subdivision Phase 3 – Transportation Impact Study* (April 2011)

These traffic studies generally provide limited useful information in terms of overall assessment of Rest Acres Road requirements in that most only deal with the isolated impacts of a small subsection of the overall Southwest Paris Urban Settlement Area. The scope of all but one of these traffic-related reviews is on specific development areas near Rest Acres Road, and so do not acknowledge potential traffic that will be generated as a result of the fully planned Southwest Paris Settlement Area, except for a general increase in background traffic in the order of 1-2% annually.

The exception to this observation is the 2004 Southwest Paris Urban Settlement Area Servicing Study Report. As explained in the Environmental Study Report's **Appendix 3** Transportation Report, the only significant change to the land use scenario utilized in this servicing study and the current development plans for the area is that the employment lands to the south of Highway 403 have been extended to the west by approximately 90 acres.

Based on this development planning update, the Southwest Paris Servicing Study and its recommendations were used as the basis for the EA study's forecasting of future traffic operations.

3.4 Future Traffic Operations

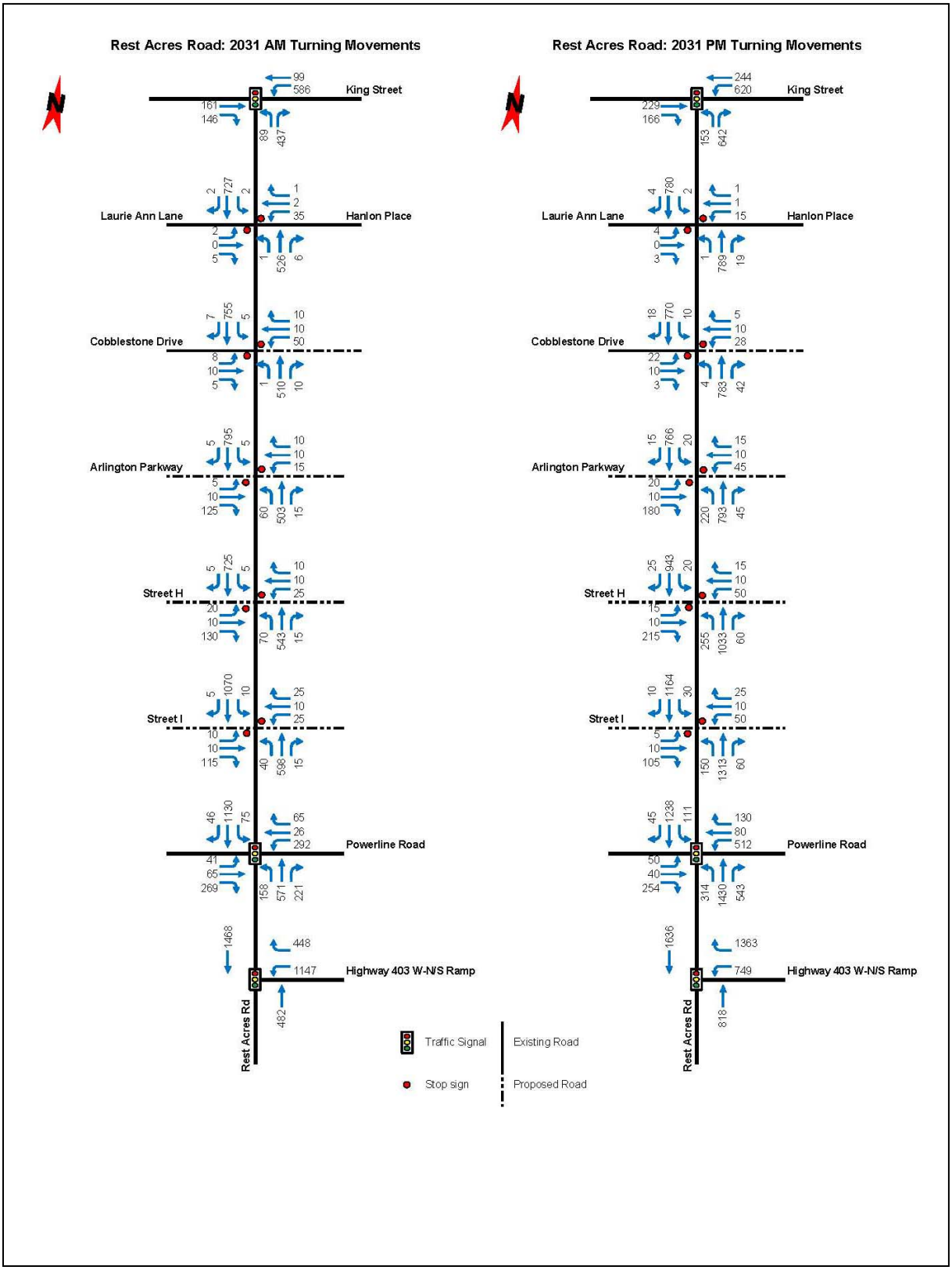
3.4.1 FUTURE TRAFFIC PROJECTIONS

As indicated in the previous section, the 2004 Southwest Paris Urban Settlement Area Servicing Study Report completed a comprehensive assessment of projected 2024 traffic volumes based on build out of the conceptual land use plan previously shown in Exhibit 1-3. The study concluded that a widening of Rest Acres Road to four lanes was required. Since then, the only significant change in land use between the 2004 plan and the current Official Plan (Exhibit 1-2) is in a 90 acre expansion of the employment area south of Highway 403. This development change has been incorporated for this Class EA using the same trip generation and distribution assumptions contained in the original servicing study report to arrive at a revised 2024 volume projection.

The revised 2024 volumes were then further extrapolated to the ultimate 2031 horizon for this Class EA by increasing background traffic volumes (assumed 1% annual background growth of recent traffic counts along Rest Acres Road as a base) from 2024 to 2031 levels.

The final adjustment of the traffic projections resulted from an agreement between the County of Brant and the Ministry of Transportation to eliminate any new collector road intersection on Rest Acres Road between the Highway 403 exit ramp and Powerline Road. The net effect of this decision was that turning movements previously anticipated to occur at a side street intersection at this location would have to occur at the Powerline Road intersection. The resulting 2031 traffic projections at existing and planned Rest Acres Road intersections are illustrated in Exhibit 3-3.

Exhibit 3-3: 2031 Traffic Volume Projections



3.4.2 2031 OPERATIONAL ASSESSMENT

An assessment of future lane configuration and the 2031 projected volumes using *SYNCHRO 7* resulted in the projected intersection performance along Rest Acres Road listed in Exhibit 3-4.

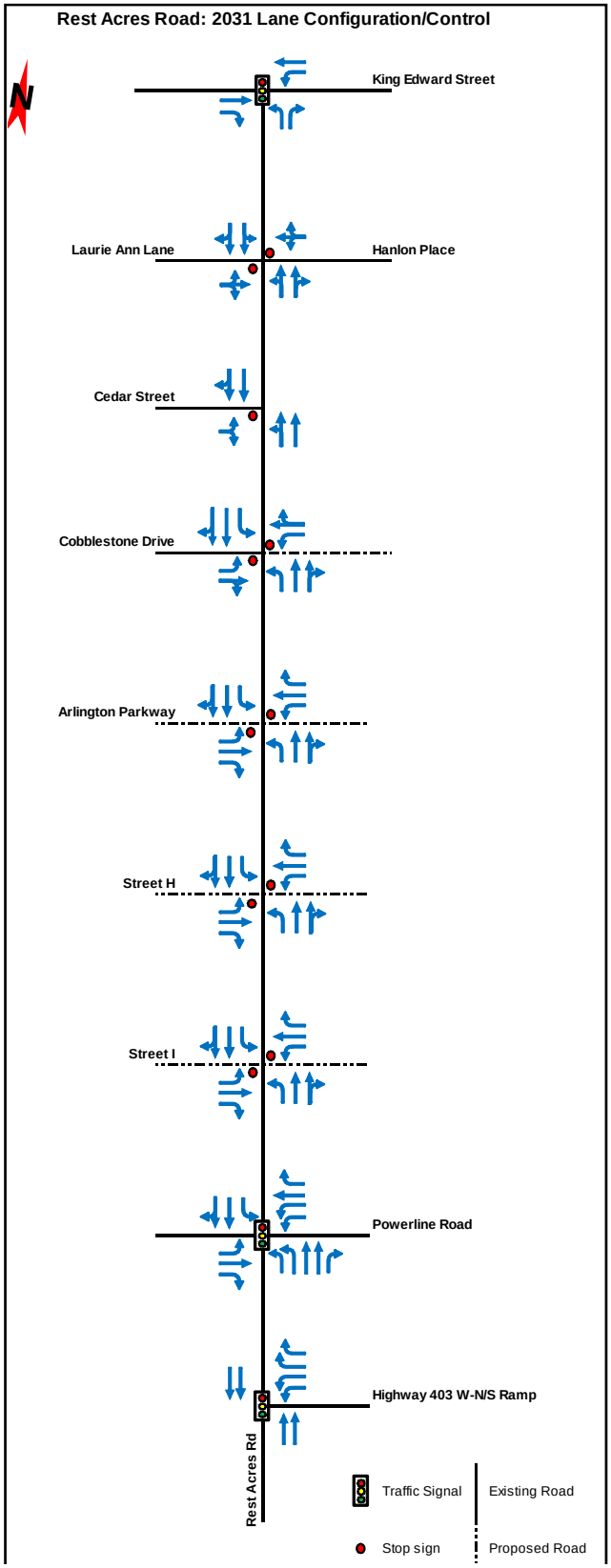
Exhibit 3-4: 2031 Intersection Performance

Location		AM Peak Hour			PM Peak Hour		
Rest Acres Road at:		Level of Service	Delay	V/C	Level of Service	Delay	V/C
King Edward Street (Signalized)	Intersection	B	15.0	0.60	B	19.2	0.69
	Critical Movement						
Laurie Ann Lane (Un-Signalized)	Intersection	A	0.9	-	A	0.6	-
	Critical Movement				WBD - E	40.2	0.15
Cedar Street (Un-Signalized)	Intersection	A	0.2	-	A	0.1	-
	Critical Movement						
Cobblestone Drive (Un-Signalized)	Intersection	A	2.0	-	A	2.4	-
	Critical Movement				EBD L - F	51.0	0.24
					EBD TR - E	46.7	0.14
					WBD L - F	56.9	0.31
					WBD TR - E	41.6	0.14
Arlington Parkway (Un-Signalized)	Intersection	A	2.7	-	A	36.5	-
	Critical Movement	EBD L - E	42.2	0.05	EBD L - F	342.9	0.84
		WBD L - E	46.7	0.16	WBD L - F	1367.4	2.97
					WBD T - F	89.0	0.40
Street H (Un-Signalized)	Intersection	A	3.6	-	B	Err	-
	Critical Movement	EBD L - E	46.8	0.20	EBD L - F	Err	Err
					EBD T - F	54.9	1.12
		WBD L - F	55.4	0.28	WBD L - F	Err	Err
					WBD T - F	442.6	1.10
Street I (Un-Signalized)	Intersection	A	3.9	-	B	Err	-
	Critical Movement	EBD L - F	87.1	0.20	EBD L - F	Err	Err
					EBD T - F	780.5	2.35
		WBD L - F	99.4	0.43	WBD L - F	Err	Err
					WBD T - F	951.8	2.10
Powerline Road (Signalized)	Intersection	B	19.7	0.65	C	24.0	0.82
	Critical Movement						
Highway 403 (Signalized)	Intersection	C	27.8	0.88	B	15.1	0.79
	Critical Movement						

90 second signal cycle length 100 second signal cycle length

The lane/control configuration required at existing and planned Rest Acres Road intersections in response to this 2031 intersection performance forecasts is shown on Exhibit 3-5 based on the 2031 AM and PM traffic volume forecasts. This includes elimination of a collector side street intersection on Rest Acres Road between Powerline Road and the Highway 403 ramp, resulting in a concentration of turning movements at the intersection of Rest Acres Road and Powerline Road that will require the introduction of northbound and westbound double left-turn lanes at this location as shown in Exhibit 3-5: 2031 Lane/Control Configuration.

Exhibit 3-5: 2031 Lane/Control Configuration



As indicated in Exhibit 3-6, intersections within the study area are generally expected to operate at very acceptable levels of service (LOS A - C) during both the AM and PM peak periods. Notwithstanding this overall rating of service, the projected increase in north/south traffic volumes along Rest Acres Road at some specific unsignalized intersections will result in significant delays to side street traffic attempting to turn left or to cross Rest Acres Road.

Simulations of the Rest Acres Road corridor using the SimTraffic traffic simulation model suggests that side-street delays (based on an average of five simulation cycles) will not be as extreme as those projected by SYNCHRO as reported in Appendix 3, but they are nonetheless significant as shown in Exhibit 3-6.

Exhibit 3-6: 2031 Simulated (Sim Traffic) Movement Delays

Location		AM Peak Hour		PM Peak Hour	
Rest Acres Road at:		Movement	Delay	Movement	Delay
Laurie Ann Lane (Un-Signalized)	Intersection	A		A	
	Critical Movement			WBD	10.3
Cobblestone Drive (Un-Signalized)	Intersection	A		A	
	Critical Movement			EBD L	14.6
				EBD TR	7.3
				WBD L	13.4
				WBD TR	16.2
Arlington Parkway (Un-Signalized)	Intersection	A		A	
	Critical Movement	EBD L	10.4	EBD L	24.4
		WBD L	10.1	WBD L	30.3
				WBD T	21.3
Street H (Un-Signalized)	Intersection	A		B	
	Critical Movement	EBD L	15.9	EBD L	54.6
				EBD T	32.6
		WBD L	19.9	WBD L	56.6
				WBD T	38.4
Street I (Un-Signalized)	Intersection	A		B	
	Critical Movement	EBD L	22.5	EBD L	32.4
				EBD T	48.1
		WBD L	0.0	WBD L	66.9
				WBD T	44.9

Signal warrant calculations indicate that based on the projected 2031 volumes, traffic signals may be warranted at the intersections of Rest Acres Road with Arlington Parkway and Street H at some point in the future. Arlington Parkway is intended to function as a collector roadway into the Granville Subdivision area and as a result signalization at this location may be given a higher priority and could draw the delayed left-turn and through movements from the adjacent intersections if the available internal road connections are provided (strengthening the signal justification at this location and potentially reducing the requirements at adjacent locations).

3.5 Problem / Opportunity Statement

Problem - With 70% of the County of Brant population growth and most of its employment growth located in Southwest Paris, the County's Transportation Master Plan completed in 2008 forecasts that by 2021, the Southwest Paris area will require one additional arterial travel lane per direction to serve area traffic, and this is recommended on Rest Acres Road as the designated urban arterial road connecting to a Highway 403 interchange. A second arterial lane per direction will be needed by 2031 as the Southwest Paris is built out as planned, and this is planned on Bishopsgate Road with a new Highway 403 interchange.

In addition to these road capacity enhancement requirements, existing intersections along Rest Acres Road from King Edward Street to Powerline Road will require capacity and operational improvements as the volume of turning movements onto and off the road continues to grow.

Opportunity - Widening Rest Acres Road provides the opportunity to urbanize the cross section and extend sidewalks, accommodate cycling, improve intersection operations and provide improved streetscaping along the road planned a s primary gateway into the Paris area. Improving the capacity and operations of Rest Acres Road will also help avoid traffic intrusion within the existing and future adjacent neighbourhoods that could occur as a result of Rest Acres Road congestion.

4. EXISTING ENVIRONMENTAL CONDITIONS

4.1 Land Use

Transportation problems and opportunities identified through this Class EA for the Rest Acres Road corridor are mainly related to planned population and employment growth in the Southwest Paris Urban Settlement Area. The amount and allocation of this growth is shown in the conceptual land use plan previously shown on Exhibit 1-3. If any significant changes are made to the amount or location of Southwest Paris growth, revised traffic generation forecasts and related operational assessment may be required.

This Class EA has incorporated and considered the impacts of Rest Acres Road improvements on adjacent planned and proposed developments

4.2 Natural Heritage

4.2.1 PHYSIOGRAPHY AND SOILS

The soils in the study area are classified as Guelph Soils, Urban Land, and Wilsonville Soils. The study limits north of Powerline Road are classified as Urban Land and this encompasses approximately two-thirds of the study area. The soils of the study limits south of Powerline Road, the remaining one-third of the study area, are classified as Guelph Soils and Wilsonville Soils (Acton 1989). Further information on these soil types is provided in the **Appendix 4** Natural Heritage Report: Existing Conditions by LGL Limited dated September 2011.

4.2.2 AQUATIC HABITAT AND COMMUNITIES

The study area is located in the Grand River watershed and is within Grand River Conservation Authority (GRCA) and Ministry of Natural Resources (MNR) Guelph District jurisdiction. According to Grand River Conservation Authority Interactive Mapping, portions of the study area are within the Regulation Limit of the Grand River. Ontario Base Mapping data illustrates one first order watercourse near the intersection of Rest Acres Road and Powerline Road.

Based on a review of the Distribution of Fish Species at Risk and Distribution of Mussel Species at Risk published by Fisheries and Oceans Canada, Ministry of Natural Resources and Grand River Conservation Authority (2011), there are no aquatic species at risk records within the study area.

LGL conducted a survey of aquatic habitat on August 17, 2011 to characterize the aquatic habitat within the study area. The fish habitat was assessed approximately 50 m upstream and 100 m downstream of each feature, where applicable. Physical habitat features were surveyed in sufficient detail to enable mapping and identification of key habitat types. The physical habitat attributes assessed included: (a) instream cover, (b) bank stability, (c) substrate characteristics, (d) stream dimensions, (e) barriers, (f) stream morphology, (g) terrain characteristics, (h) stream canopy cover, (i) stream gradient, (j) aquatic vegetation, (k) ground water seepage areas, and (l) general comments. Habitat conditions were noted in the field and representative photographs were taken. The Natural Heritage Report: Existing Condition in **Appendix 4** provides additional information on these features.

4.2.3 VEGETATION AND VEGETATION COMMUNITIES

Vegetation communities located within the study area consist of a mixture of cultural communities. The limits of the study area include portions of vegetation communities that are already in a disturbed state as a result of the existing roadways. Evidence of disturbance includes a high

proportion of non-native plant species that are well adapted to persist in areas that are regularly disturbed including species that are adapted to high light conditions, limited soil moisture, and species that are tolerant of salt spray.

Two community types were identified within the study limits during the vegetation survey. The community types include: Dry-Moist Old Field Meadow (CUM1-1) and Norway Spruce- European Larch Coniferous Plantation (CUP3-9). All of the vegetation communities identified within the study area are considered widespread and common in Ontario and are secure globally. These communities are delineated in the **Appendix 4** Natural Heritage Report: Existing Conditions.

A total of 97 plant species have been recorded within the study area, with 32 (33%) identified being native to Ontario and 65 (67%) plant species are considered introduced and non-native to Ontario. A list of vascular plants is presented in **Appendix 4.** No plant species that are regulated under the Ontario *Endangered Species Act* or the Canada *Species at Risk Act* (those plant species regulated as Special Concern, Endangered, Threatened) were encountered during the botanical investigation conducted for this EA.

4.2.4 WILDLIFE AND WILDLIFE COMMUNITIES

Wildlife and wildlife habitat was found to be distributed across the entire study area, however given the cleared landscape practices (agriculture and development) and disturbed nature of the study area, natural heritage features were generally restricted to several areas. These included: small inclusions of cultural meadow, coniferous forest plantation and a storm pond situated east of Cedar Street. These natural areas provide the most suitable wildlife habitat in the study area; however, only a small assemblage of bird and mammal species was documented within these habitats.

Natural areas within the study area are fragmented from surrounding natural areas by the presence of roads and cleared agricultural lands. No significant wildlife habitat or passage corridors were identified within the lands examined. This disturbed landscape supports minimal natural heritage features, resulting in the presence of wildlife species generally considered urban or tolerant of anthropogenic features and disturbance.

Based on field observations, eight species of wildlife could be verified in the study area and the majority of these recordings came from mammalian signs or identification (through calls and sightings) of bird species. However, by comparing the natural heritage features found in the study area with secondary source information that describes wildlife previously recorded within this region, there is potential for a total of 36 wildlife species as reported in **Appendix 4**.

Background information indicated that of the 36 wildlife species recorded within the study area, none are regulated under the Ontario *Endangered Species Act* or the Canada *Species at Risk Act*. Sixteen recorded species of bird are protected under the *Migratory Birds Convention Act* (MBCA) and one bird is protected under the *Fish and Wildlife Conservation Act* (FWCA). Four bird species found within the study area are recommended by Bird Studies Canada as priority species for conservation. Nine of ten species of mammal are offered protection under the FWCA.

The NHIC database for rare species records indicates that within the vicinity of the study area there is a historic occurrence of American Badger (*Taxidea taxus jacksoni*). The American Badger (Ontario Population) is regulated as ‘Endangered’ under the Ontario *Endangered Species Act* and the Canada *Species at Risk Act*. Little is known about American Badger abundance, distribution, habitat requirements and population trends in Ontario (Ontario American Badger Recovery Team 2010). The preferred habitat of the American Badger includes natural and undisturbed grasslands, shrubby areas and woodlots (Baker 1983). Suitable habitat for this species is unlikely to exist within the study area. However, the species in known to have a very large home range so transient movement through the study area by this species is possible.

4.2.5 DESIGNATED NATURAL AREAS

Designated natural areas include areas identified for protection by the Ontario Ministry of Natural Resources (OMNR), upper and lower tier municipalities. A review of the Natural Heritage Information Centre (OMNR 2011) indicates that there are no Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), or Environmentally Significant/Sensitive Areas (ESAs) located within the study area. However, there are wetlands west and east of Rest Acres Road that are located within the Grand River Conservation Authority Regulation Limit. The location of these wetlands are presented in **Appendix 4.**

4.2.6 CONCLUSIONS – POTENTIAL NATURAL HERITAGE IMPACTS

Because the Rest Acres Road corridor and its right-of-way have historically been disturbed for transportation, cultivation, farmstead and urban development purposes, no natural heritage features of local, provincial or federal significance will be impacted by this project.

4.3 Socio-Cultural

4.3.1 NOISE AND NOISE ATTENUATION

The impact of roadway noise and associated warrants for any additional noise attenuation along Rest Acres Road abutting existing land use was an important issues to be resolved in this study. As part of the background studies completed for this EA study, IBI Group conducted an acoustical assessment to examine the impacts of noise created by the projected increased traffic volumes on the adjacent residential properties in accordance with Provincial noise attenuation policy and County of Brant Official Plan policies.

This ESR document summarizes the results of the noise assessment and documents both existing and future forecasted noise levels. The more detailed Acoustical Study provided in the separate **Appendix 5** of this report compares the noise levels to both MOE/MTO noise guidelines and includes recommendations for mitigation measures as needed.

No standardized noise walls are located within the study area. There is an existing privacy fence for the townhouse on the east side of Rest Acres Road at King Edward Street but this fence is not built to a noise fence standard. Similarly, a privacy fence is located on the west side of the road for the houses along Laurie Anne Lane but it also does not meet standard noise fence requirements.

Furthermore, a noise study entitled Noise Impact Report, Residential Development Grandville Townhomes by John E Coulter and Associates dated March 17, 2003"was previously conducted for the existing development in the northwest quadrant of the Rest Acres Road / Cobblestone Drive intersection. The report recommended that the units backing onto Rest Acres Road be constructed with a 2.1m high retaining wall/berm combination to reduce noise, and that the units have a warning clause attached to the property advising residents that there may be noise from the roadway. This berm and retaining wall are currently in place.

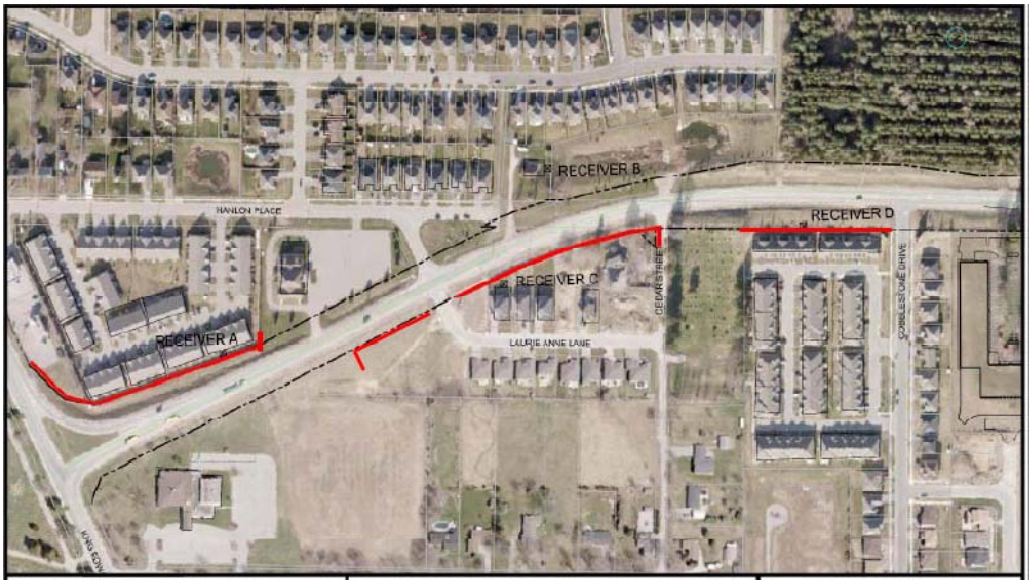
In June 2003, a Noise Impact Report for the residential subdivision Grandville Phase 2, Residential Development, Paris Ontario, was prepared by J.E.Coulter and Associates for the lands in the southwest quadrant of the Rest Acres Road / Cobblestone Drive intersection. This report did not identify any issues with traffic noise at that time since the proposed land use in the southwest quadrant was commercial, so there were no recommendations for mitigation or noise warnings. Copies of both reports are attached as **Appendix 5** separate from this ESR report.

In terms of future noise attenuation needs, standard noise forecasting modelling (STAMSON) was used to estimate the noise levels produced by the expected future traffic volumes along Rest Acres

Road with the road being four lanes. The results from this analysis are included in the **Appendix 5** Acoustical Study including detailed STAMSON model outputs. The results show that predicted noise levels at Locations A and C shown on Exhibit 4-1 exceed the criteria of 60 dBA and therefore warrant noise attenuation. As such, mitigation in the form of a noise wall should be planned for these residential properties backing onto Rest Acres Road.

In response to public input provided at PIC #2, the existing noise environment was further monitored during the AM Peak half hour (30 minutes) on October 26 and November 02, 2011 at selected locations using a Bruel and Kjaer 2250 sound meter. The noise meter was positioned at Receiver C and D shown on Exhibit 4-1. The result of the noise monitoring was that the measured noise level was 2.75dBA higher at receiver C and 13.5dBA higher at receiver D than the predicted noise levels. It can also be expected that traffic noise will fluctuate on an hourly basis from low to high and will also fluctuate on a daily basis depending on traffic volumes and speed.

Exhibit 4-1: Recommended Noise Attenuation Locations



NOTE: This conceptual sketch does not denote the exact location and style of any noise attenuation treatments eventually approved for this section of Rest Acres Road as part of the detailed design process.

4.3.2 ARCHAEOLOGICAL ASSESSMENT

Archaeological Services Inc. (ASI) conducted a Stage 1 Archaeological Assessment: Background Research and Property Inspection for this EA, with the report included separately in **Appendix 6** of this ESR. The Stage 1 background research determined that 19 archaeological sites have been registered within 1 km of the study area. In addition, a review of the geography of the study area suggests that the study area has the potential for the identification of Aboriginal and Euro-Canadian archaeological resources.

The Stage 1 property inspection also determined that the right-of-way (ROW) for Rest Acres Road, King Edward Street, and Powerline Road have been subject to deep and extensive disturbances that has severely damaged the integrity of any archaeological resources. The property inspection also revealed that lands beyond the ROWs of the Rest Acres Road study area exhibit

archaeological potential. In light of these results, The Stage 1 Archaeological Assessment makes the following recommendations:

- Due to extensive and deep land alterations that have severely damaged the integrity of any potential archaeological resources, the Rest Acres Road, King Edward Street, and Powerline Road ROWs do not require additional archaeological assessment with the exception of the lands adjacent to the Paris Cemetery and the Sacred Heart Cemetery boundaries;

- Several small areas of potential exist within the study area beyond the disturbed ROW. Should the proposed work confirmed during the Detailed Design process impact these lands, then a Stage 2 archaeological assessment must be conducted;

- The ROW lands adjacent to both the Paris Cemetery and the Sacred Heart Cemetery retain archaeological potential. Should the proposed work confirmed during the Detailed Design process impact the lands with archaeological potential, a Stage 2 test pit survey of the ROWs adjacent to both cemeteries is required to determine the archaeological potential of these lands;

- According to background research undertaken by the County of Brant, the boundaries of the Sacred Heart Cemetery established in 1861 appear to have remained the same through to the present. As such a Cemetery Investigation is not required for the ROW in front of the property. However, should human remains be discovered during construction work must stop immediately and the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services must be notified;

- Should the proposed work impact the ROW lands between the sidewalk and Paris Cemetery fence, to be determined at the Detailed Design process, a Cemetery Investigation is required to confirm the presence or absence of unmarked graves. The most cost-effective method of determining whether or not burials exist adjacent to the existing cemetery or in the vicinity of any grave markers is by the controlled removal of topsoil by Gradall (or smaller machine if required) under the supervision of a licensed archaeologist. The exposed subsoil will then be shovel-shined and thoroughly examined for the presence of burial shafts. This work would be done in accordance with the MTC's 2011 Standards and Guidelines for Consultant Archaeologists and the Ontario Cemeteries Act; and

- Should the proposed work extend beyond the current Rest Acres Road study area then further Stage 1 assessment would need to be conducted to determine the archaeological potential of the surrounding lands.

4.3.3 CULTURAL HERITAGE ASSESSMENT

A background historic research and review of secondary source material, including historic mapping, were conducted by Archaeological Services Inc. (ASI) and reported in the Cultural Assessment Report included separately in **Appendix 7** of this ESR document. The assessment revealed a study area that was settled in the mid-to-late nineteenth century and which has undergone a steady pace of transition from agricultural to predominantly residential land uses, with small portions of the study area developed for industrial, recreational, and commercial uses. A review of available data regarding protected properties confirms that there are no properties located in the study area which have been designated under Part IV or Part V of the Ontario Heritage Act or listed on a municipal heritage register.

A field review of the study area confirmed that there are several properties located along Rest Acres Road that retain cultural heritage value and which include nineteenth century agricultural-related

and spiritual/religious cultural heritage landscapes. Road capacity improvements have the potential to affect cultural heritage resources in a variety of ways, but no specific impacts in relation to the Rest Acres Road EA have been identified. General cultural heritage sensitivities to road improvements along Rest Acres Road have been identified based on the results of data collection and field survey activities.

Based on the results of the background data collection and a field review, the following recommendations have been made:

- Proposed road capacity improvements to Rest Acres Road should be undertaken to avoid impacts to cultural heritage resources as described in Section 3.5 of the Cultural Heritage Report;

- Attention should be paid to design alternatives that avoid cultural heritage landscape boundary markers such as fencing and stone entrance pillars and/or posts and mature vegetation as well as standing buildings located in close proximity to the road right-of-way; and

- When project alternatives have been developed, identified cultural heritage resources should be reviewed to determine if specific impacts are expected and to propose appropriate recommendations and/or mitigation measures.

5. DESIGN OPTIONS

5.1 Alternative Routes

As previously reported in Section 3.1 of this ESR, the planned full buildout of the Southwest Paris area to 2031 will require two additional arterial road travel lanes per direction to serve the ultimate trip generation. The alternative routes for these lanes that were considered in the County's Transportation Master Plan and reviewed again in this EA were:

- **6-Lane Rest Acres Road -** This alternative would add the two required additional travel lanes only to Rest Acres Road. This was not recommended since a six lane road would not be compatible with the "avenue" character planned for Rest Acres Road through the Southwest Paris Urban Settlement Area;

- **Cleaver Road –** This alternative route would upgrade Cleaver Road between King Edward Street and Highway 403 or Bethel Road with a new interchange provided at Highway 403 as a municipal initiative following the MTO Class EA. However, the Transportation Master Plan concluded that there may be insufficient weaving distance between Cleaver Road and the existing Rest Acres Road interchange to make this feasible; and therefore may not be acceptable to MTO[3]; and

- **Rest Acres Road / Bishopsgate Road -** Upgrading Bishopsgate Road to two lanes per direction and with a new interchange at Highway 403 as a municipal initiative following the MTO Class EA would provide the two required travel lanes per direction in Southwest Paris. Although located outside and west of the Southwest Paris Urban Settlement Area, Bishopsgate Road offers the potential to attract traffic from north and west of the Paris area and provide access to Highway 403. The Transportation Master Plan also concluded that improving Bishopsgate Road would have the potential to improve traffic access west of the Paris area as a potential Paris bypass route.

One of the purposes of each of these alternative routes is to increase the attractiveness and use of Highway 403 as a major traffic carrier in the Paris area with links east into Brantford, Hamilton and the rest of the GTA, and west into southwestern Ontario. This Transportation Master Plan therefore selected an ultimate four lane Rest Acres Road as a component of the long term road capacity enhancement for the Southwest Paris area.

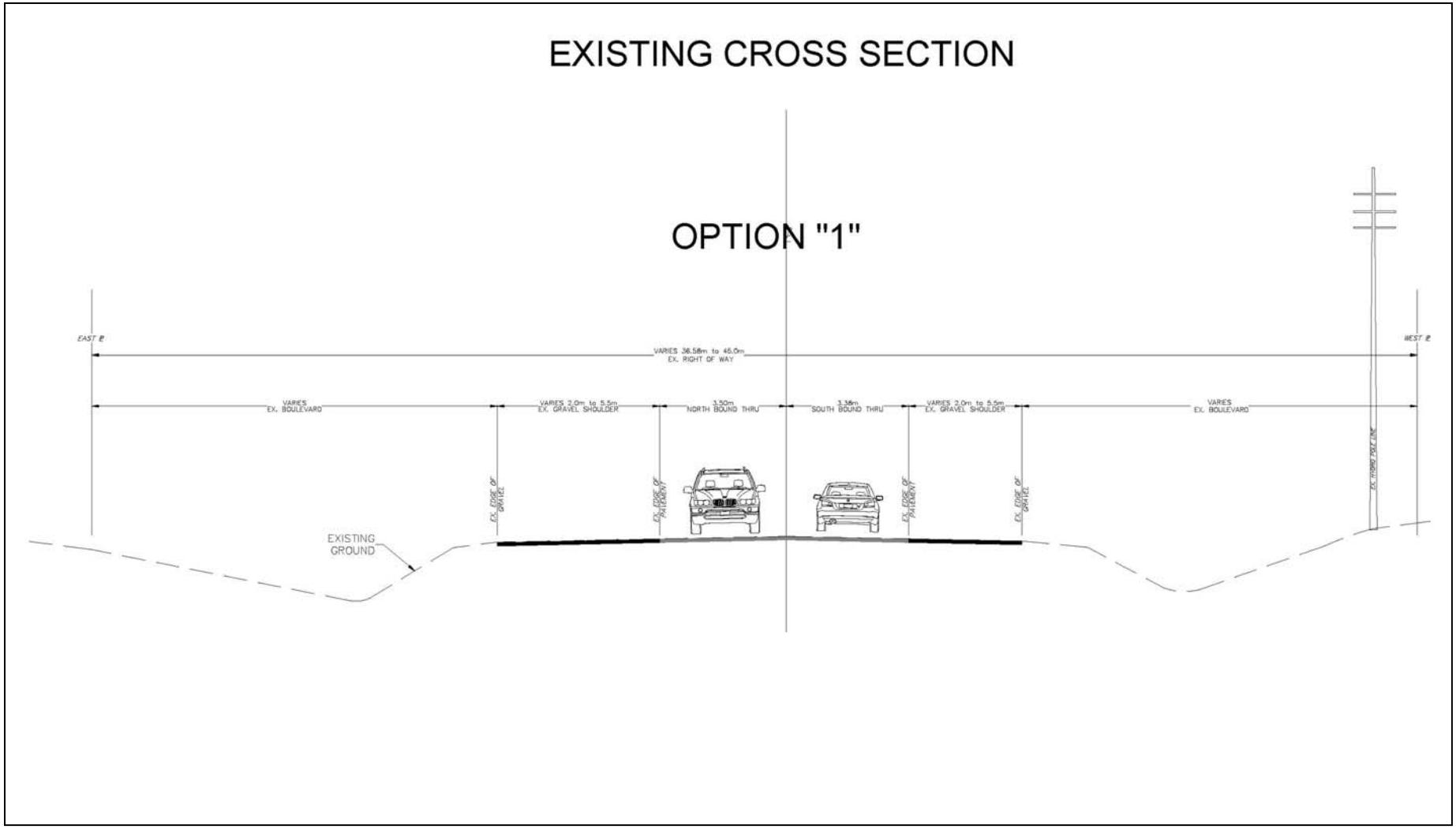
5.2 Road Capacity Improvement Options

Four (4) road capacity options were developed and evaluated for the Rest Acres Road study area, with an evaluation summary of the advantages and disadvantages of each provided as follows along with along with a standard mid-block cross-section for each:

Option 1: Do Nothing (see Exhibit 5-1) – This option is required by the Class EA process so that the impacts of other options can be compared against doing nothing. In this case the existing cross-section of Rest Acres Road would remain as a two lane road with no extension of sidewalks or bike lanes. As stated in the Section 3.5 Problem / Opportunity Statement, the capacity of a two lane arterial road for Rest Acres Road is insufficient to meet future travel demands and still maintain an adequate level-of-service.

[3] Weaving distance is the length needed for vehicles to enter or leave a freeway

Exhibit 5-1: Capacity Option 1 - Do Nothing



Advantages:

- Least capital cost although Rest Acres Road still requires extensive reconstruction and pavement improvements.

Disadvantages:

- Does not provide required transportation capacity for motor vehicles, cyclists and pedestrians.
- Does not improve accessibility from side streets.
- Does not address traffic noise concerns.

Option 2: 4 Lane Undivided (see Exhibit 5-2) – This option would provide the 4 lane capacity required for Rest Acres Road, with the inclusion of multi-use trails for cycling and walking on each side, or a multi-use trail and sidewalk on the east side and sidewalk only on the west side.

Advantages:

- Provides required transportation capacity for motor vehicles, cyclists and pedestrians.
- Provides stormwater management options within road right-of-way.
- Not including a median reduces capital cost.

Disadvantages:

- Wide pavement width encourages speeding.
- 4 lanes of traffic for pedestrians to cross with no stop.

Option 3: 4 Lane Narrow Median (see Exhibit 5.3) – Same as Option 2 but with the addition of a narrow concrete or asphalt median separating the travel directions.

Advantages:

- Concrete centre median visually and physically narrows the driving surface to help slow vehicles speeds.
- Provides stormwater management options within the road right-of-way.

Disadvantages:

- Added capital cost for median.
- Median width not sufficient to act as a pedestrian crossing refuge.

Exhibit 5-2: Capacity Option 2 - 4 Lane Undivided

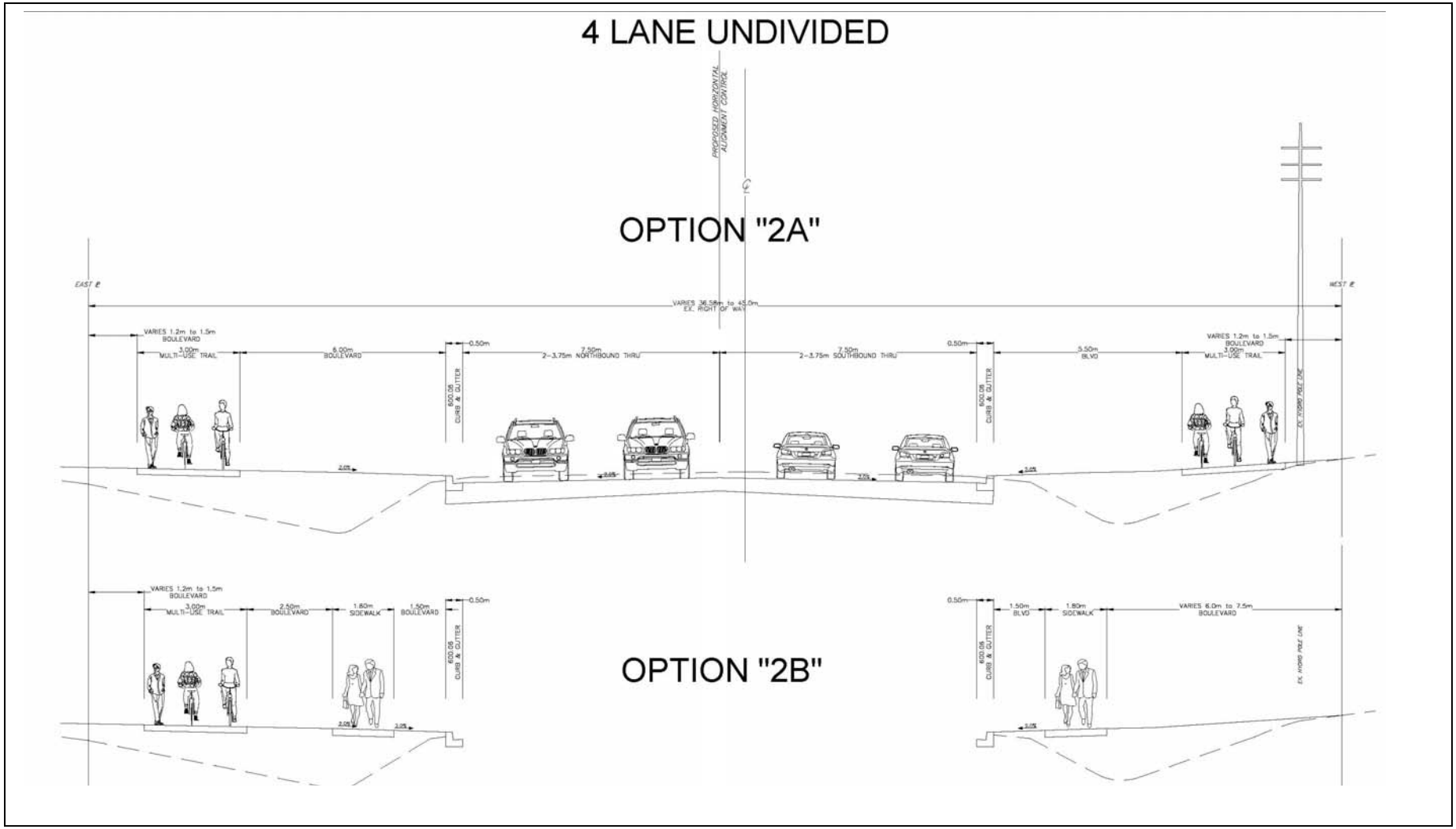
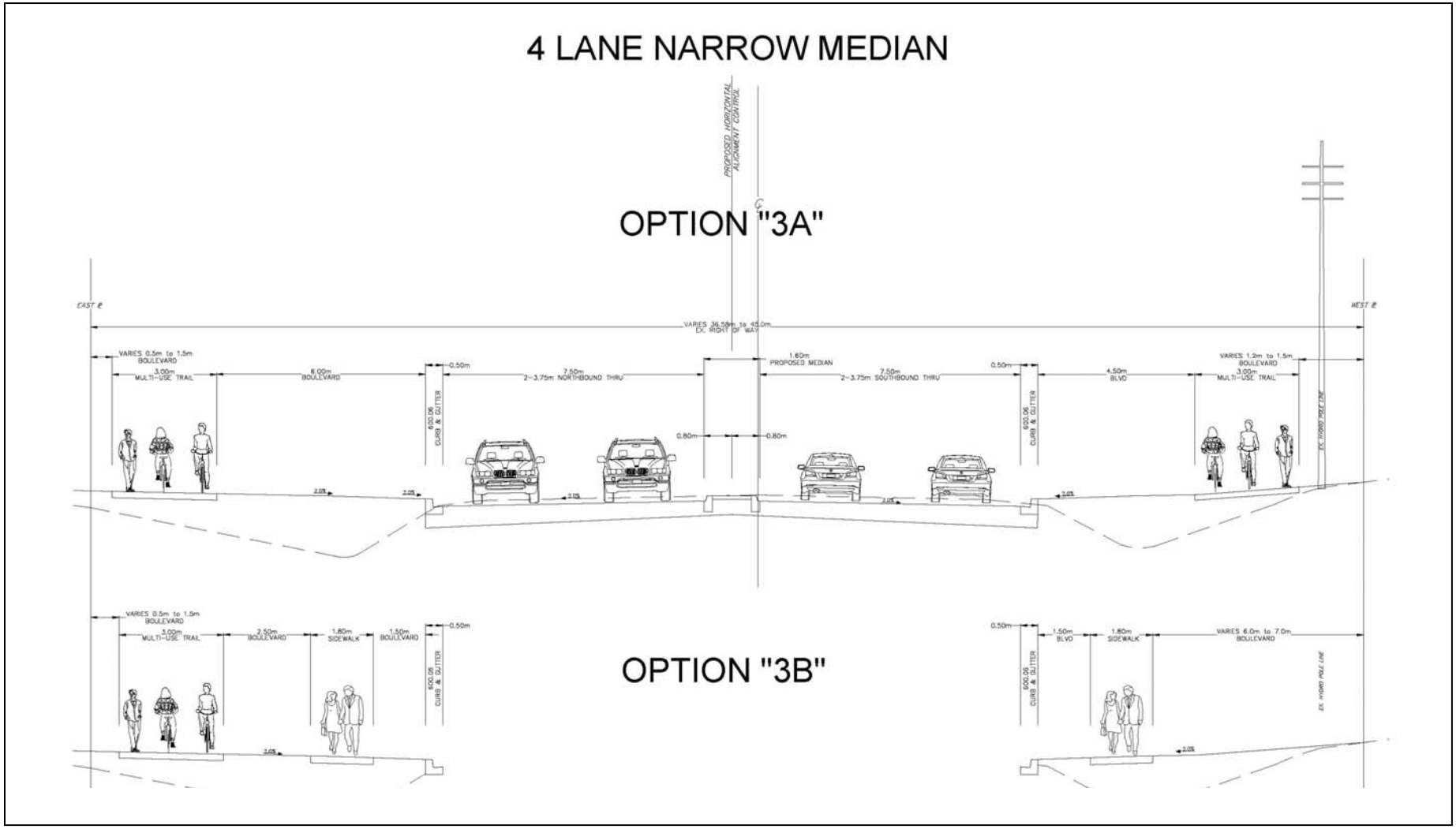


Exhibit 5-3: Capacity Option 3 - 4 Lane Narrow Median



Option 4: **4 Lane Wide Median (see Exhibit 5.5) –** Same as Alternative 2 but with the addition of a wide landscaped median separating the travel directions.

Advantages:

- Provides median space for landscaping as a "gateway" road into the Paris area.
- Provides pedestrian crossing refuge.
- Improves roadway stormwater management.
- Provides channelization of left turn lanes at side streets.
- Narrowed driving surfaces help slow vehicle speeds.
- Can be accommodated within existing road right-of-way without property acquisition.

Disadvantages:

- Highest capital and maintenance cost option.

5.3 Alternative Intersection Capacity / Traffic Control Improvements

5.3.1 INTERSECTION OPERATIONS

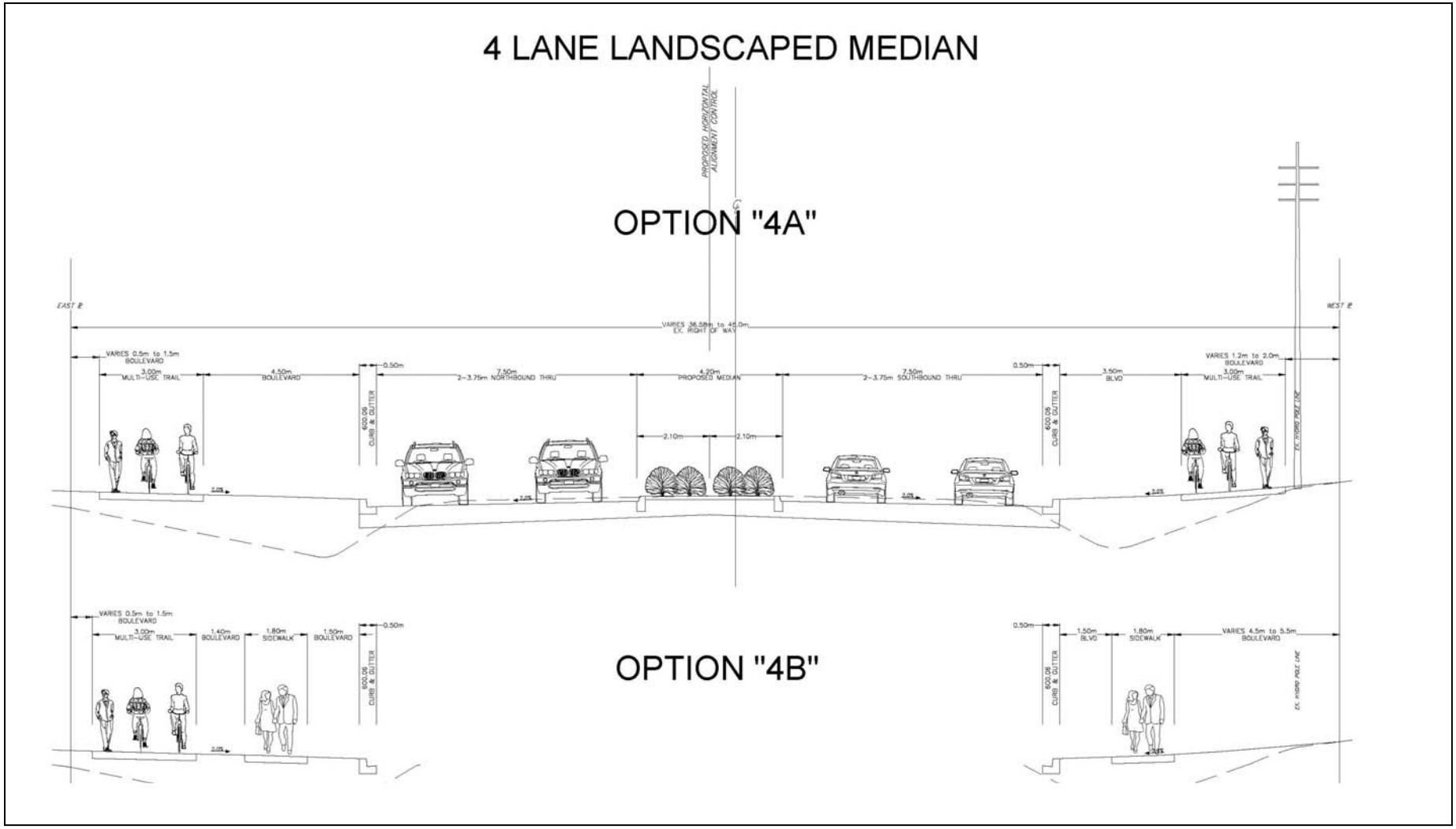
Existing intersection operations were measured for this project using updated 8 hour peak period turning movement data collected at the following intersections:

Exhibit 5-4: Intersection Data

Intersection:	Count Date:	Source:
Rest Acres Rd. and King Edward St.	August 23, 2011	Pyramid Traffic
Rest Acres Rd. and Laurie Ann Lane/Hanlon Place	August 23, 2011	Pyramid Traffic
Cedar St.	December 16, 2011	Pyramid Traffic
Rest Acres Rd. and Cobblestone Dr.	August 23, 2011	Pyramid Traffic
Rest Acres Rd, and Powerline Rd.	April 2011	Grandville Sub'n Phase 3 Traffic Impact Study
Rest Acres Rd. and Hwy 403 ramp	--	MTO

The data shows that currently, these intersections are all operating at a good Level of Service (LOS) with very acceptable delays and volume/capacity ratios during both the AM and PM peak periods. Traffic forecasts to 2031 show that based on planned growth in the SW Paris area, the following intersection conditions and changes to intersection control and/or geometry will be required along Rest Acres Road:

Exhibit 5-5: Capacity Option 4 - 4 Lane Wide Median



- King Edward Street - Traffic signals at this intersection are expected to provide good LOS through to 2031 (LOS B) The option of constructing a modern roundabout at this location was evaluated based on the screening process employed by the Region of Waterloo, and suggested that this option at King Edward/Rest Acres Road is not a reasonable because of four main reasons:

    1. A signalized intersection at this location can continue to operate at a good LOS to 2031 with no critical movements and operational concerns;

    2. Collision occurrence at this intersection is very low and does not justify roundabout conversion;

    3. Forecasted turning movement volumes at this intersection do not justify conversion to a roundabout; and

    4. The estimated life cycle cost of constructing and operating a roundabout at this location over a 13 year life cycle ($807,400) is about twice the cost of maintaining the existing signals ($494,600).

- Laurie Ann Lane/Hanlon Place - Good LOS maintained to 2031 with signals not warranted;

- Cedar Street – Turning movement volumes recorded and forecast at this intersection are within the same range of magnitude as at the Laurie Ann Lane/Hanlon Place intersection so signals are not warranted at this location;

- Cobblestone Drive - Very good overall unsignalized intersection LOS is currently provided, but with poor EBD and WBD left and through movements in the PM Peak Hour with the street extended to the east by 2031. Signals are not warranted;

- Future Arlington Parkway - Very good overall unsignalized intersection LOS but with poor left turn and through movements in Peak Hours. Signals may be warranted in the future. See previous Exhibit 3-5 for the conceptual location of future intersections at Arlington Parkway, Street H and Street I. (see Note below);

- Future Street H - Very good overall unsignalized intersection LOS but with poor LT and through movement performance in Peak Hours. Signals may be warranted in the future (see Note below);

- Future Street I - Very good overall unsignalized intersection LOS but with poor LT and through movement performance in Peak Hours. Signals not warranted;

- Powerline Road – Good LOS can only be provided by 2031 through use of signals and dedicated left and right turn lanes. With removal of Street J to the south, a 2-lane roundabout cannot accommodate Peak Hour volumes at this intersection; and

- Highway 403 Ramp – Good LOS can be maintained as per MTO standards and requirements.

Note: 2031 turning movement volumes have been projected for intersections that do not currently exist. When these volumes are used in the traffic signal warrant calculations for a ‘future’ condition not existing today, they must satisfy the warrant by 150% to reflect the uncertainty of forecasts compared to actual volumes. So for Arlington and Street H, both intersections need to meet 150% of the warrant criteria with the projected 2031 turning movements, and they do not. However, when the streets are built and traffic volumes grow as projected, signals may be warranted at that time.

Therefore, the intersection control options available to the County to address forecasted traffic demands at these future intersections involve:

1. traffic signals where warranted by OTM Book 12;
2. roundabouts; or
3. Stop control.

5.4 Preferred Rest Acres Road Capacity Improvements

Based on the inventory of land use, natural heritage, archaeological and build heritage conditions along the Rest Acres Road study area, and the forecasting and analysis of traffic conditions as the Southwest Paris grows over the next 20 years, the preferred ultimate improvements for Rest Acres Road to serve transportation needs at least to 2031 are to widen the capacity of the road to four travel lanes plus intersection turn lanes. The preferred traffic control features at intersections are presented in Section 5.3.1 and further summarized in Section 6.1 of this ESR.

6. PROJECT DESCRIPTION

6.1 Project Features

6.1.1 ROADWAY FEATURES

The main capacity improvement features recommended for Rest Acres Road are shown on Exhibit 6-1 and listed as follows:

- Widen the road to a four lane urban cross-section from King Edward Street to Powerline Road within the existing right-of-way with 3.0 m wide multi-use trails on both sides of the road and with a wide 4.2 m wide centre median suitable for streetscaping;
- Widen the section of Rest Acres Road from Powerline Road south to the Highway 403 ramps to four lanes in a rural cross-section with open ditches and no sidewalks, trails or landscaped centre median. This cross-section must be approved by the Ministry of Transportation;
- Install signals at the Powerline Road intersection with dedicated left and right turn lanes in all intersection approaches;
- Install two-lane roundabouts on Rest Acres Road at the future Arlington Parkway, Street H and Street I intersections;
- Maintain stop control onto Rest Acres Road at the Hanlon Place, Laurie Anne Lane, Cedar Street and Cobblestone Drive intersections; and
- Include dedicated turn lanes off Rest Acres Road onto all intersecting streets except those planned for roundabouts where increased entrance and exit delays on the road may be expected with the growth in traffic volume.

6.2 Main Design Criteria

	King Edward to 1 Km North of Powerline	**1 Km North of Powerline to South**
Design Speed	70 km/hr	90 km/hr
Posted Speed	60 km/hr	80 km/hr
Min. Sight Line Distance LT & RT Vehicles Entering Rest Acres Road	250 m	300 m
Min. Sight Line Distance Decision Stopping Distance on Rest Acres Road	240 m	270 m

Exhibit 6-1A: Preferred Design Concept

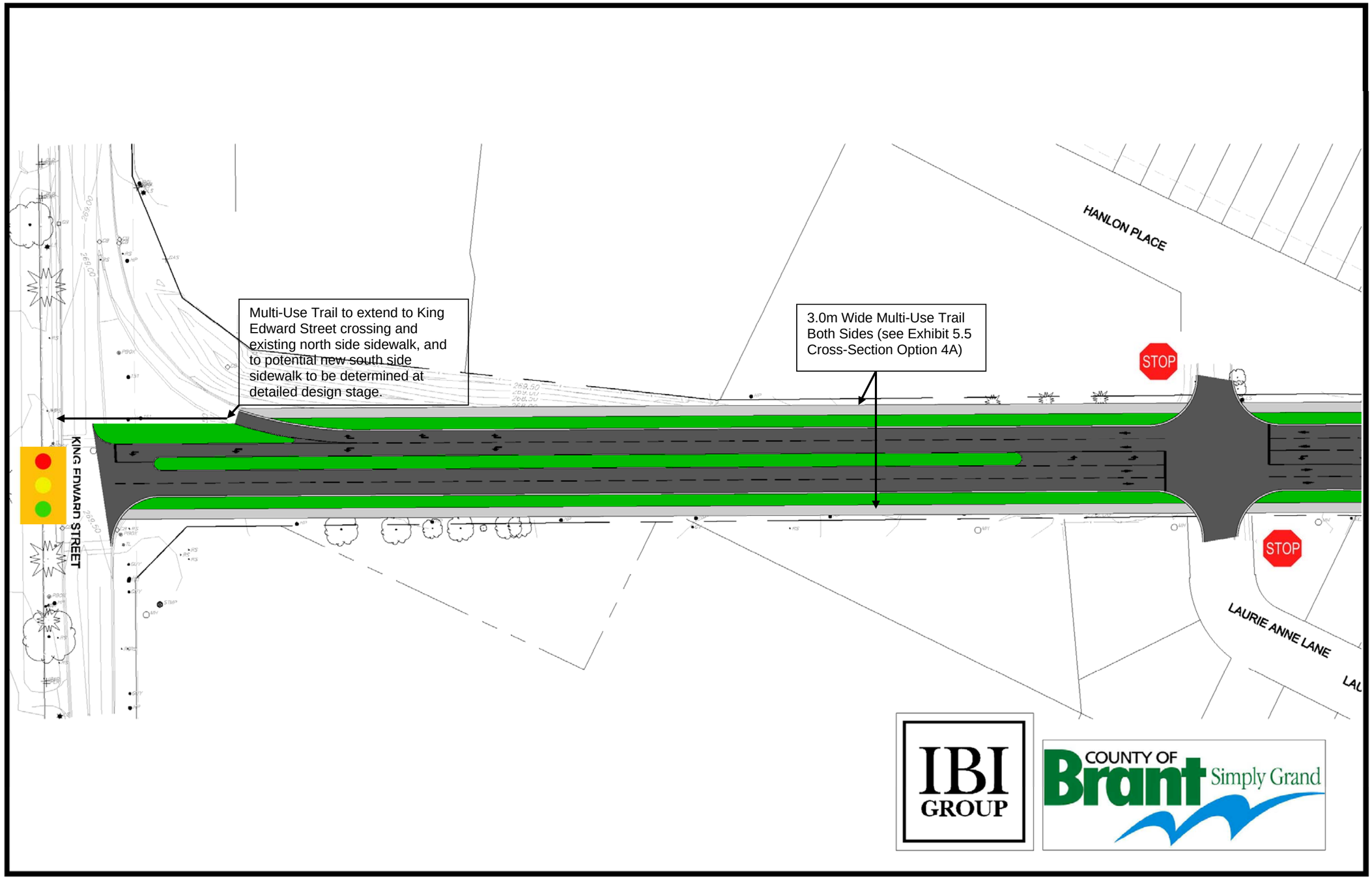


Exhibit 6-1B: Preferred Design Concept

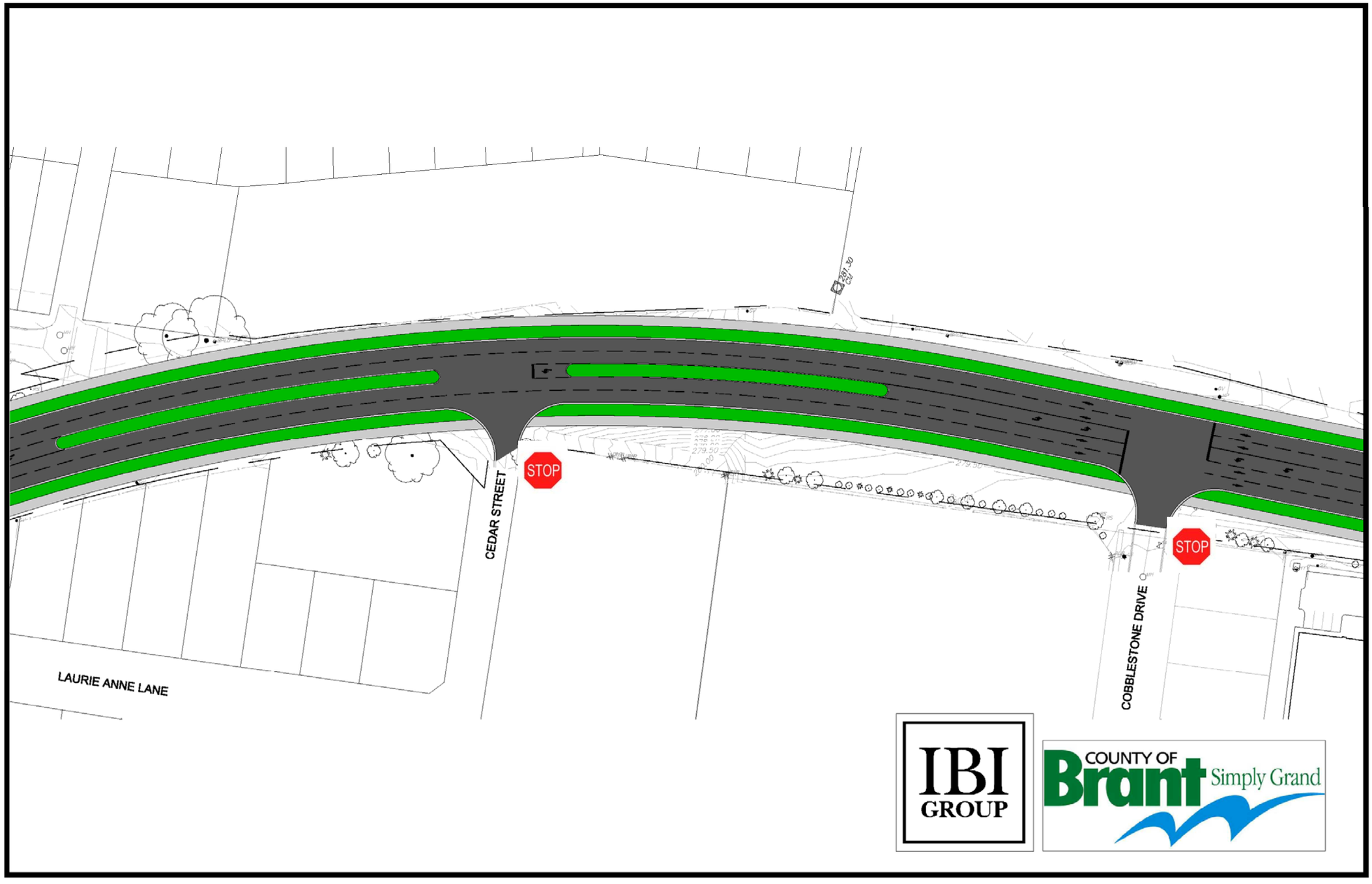


Exhibit 6-1C: Preferred Design Concept

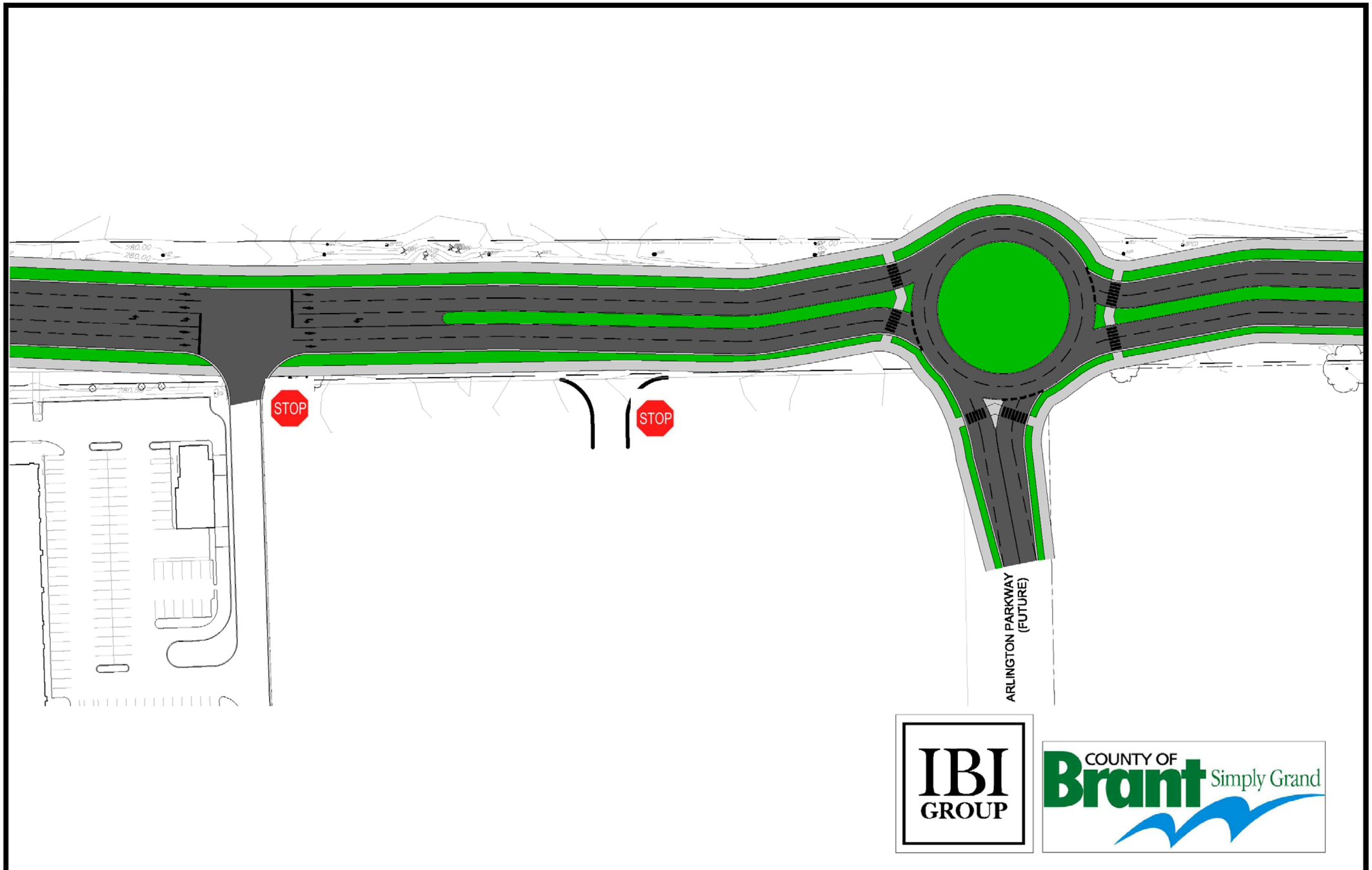


Exhibit 6-1D: Preferred Design Concept

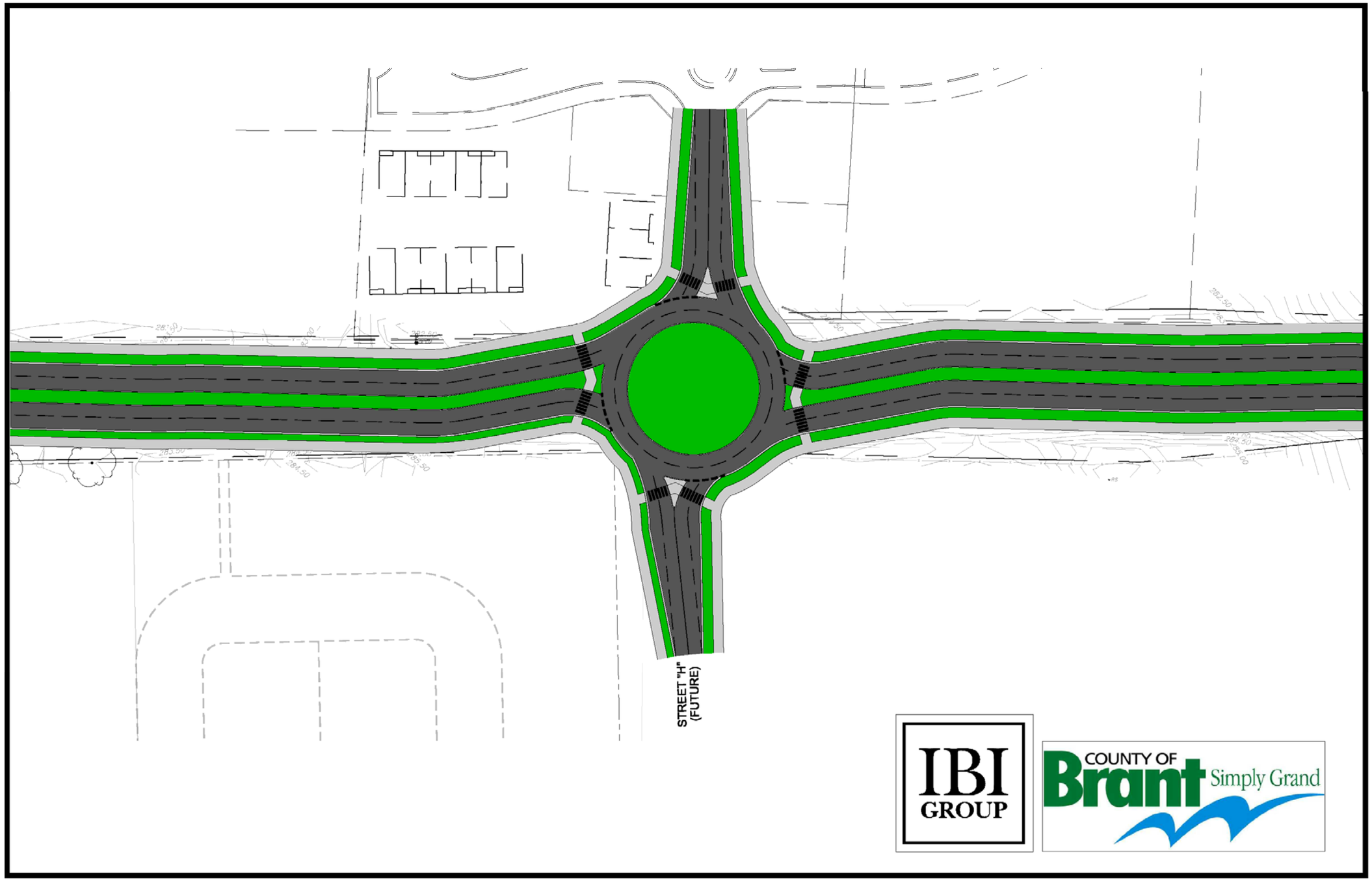


Exhibit 6-1E: Preferred Design Concept

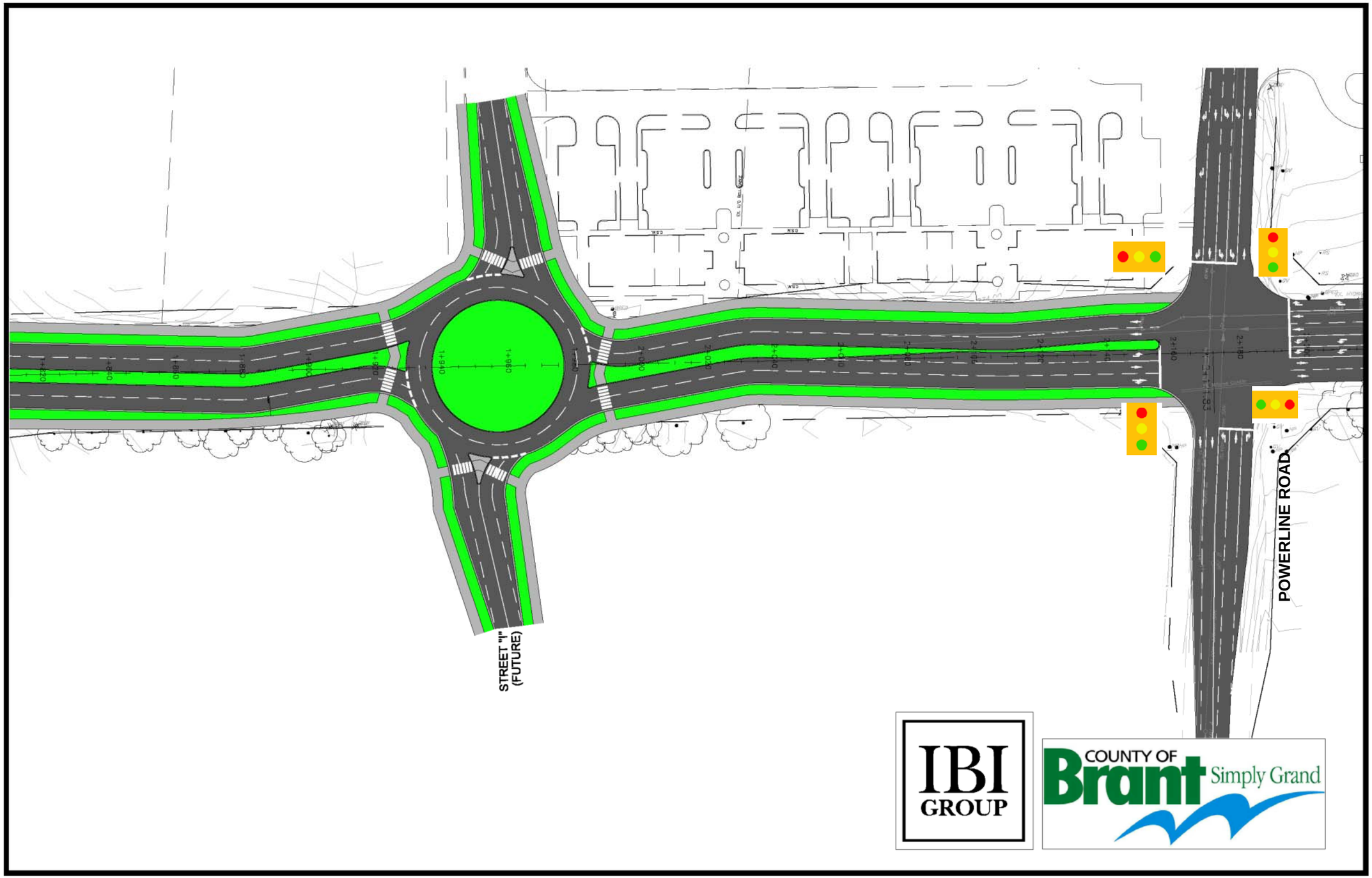


Exhibit 6-1F: Preferred Design Concept

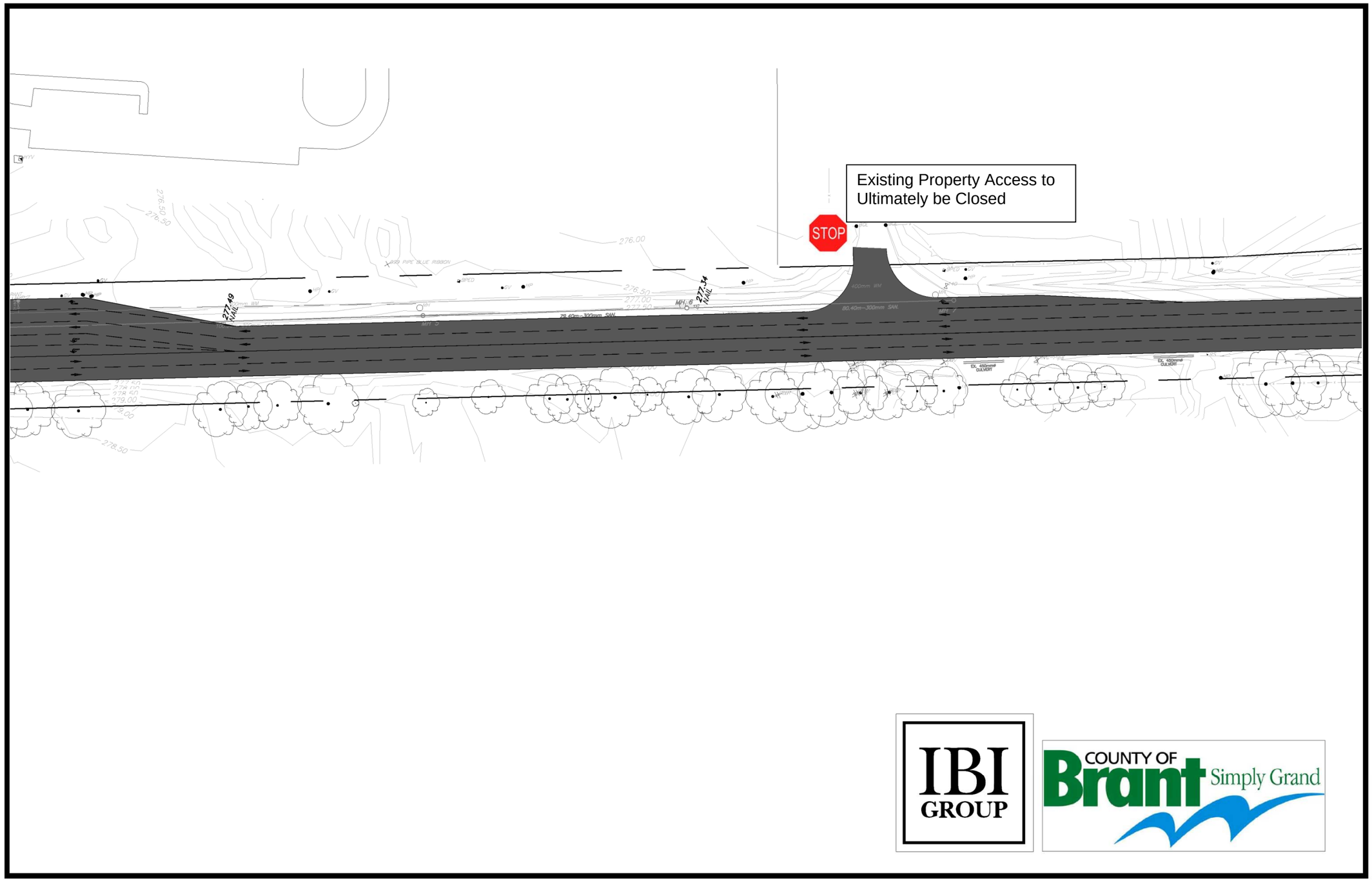
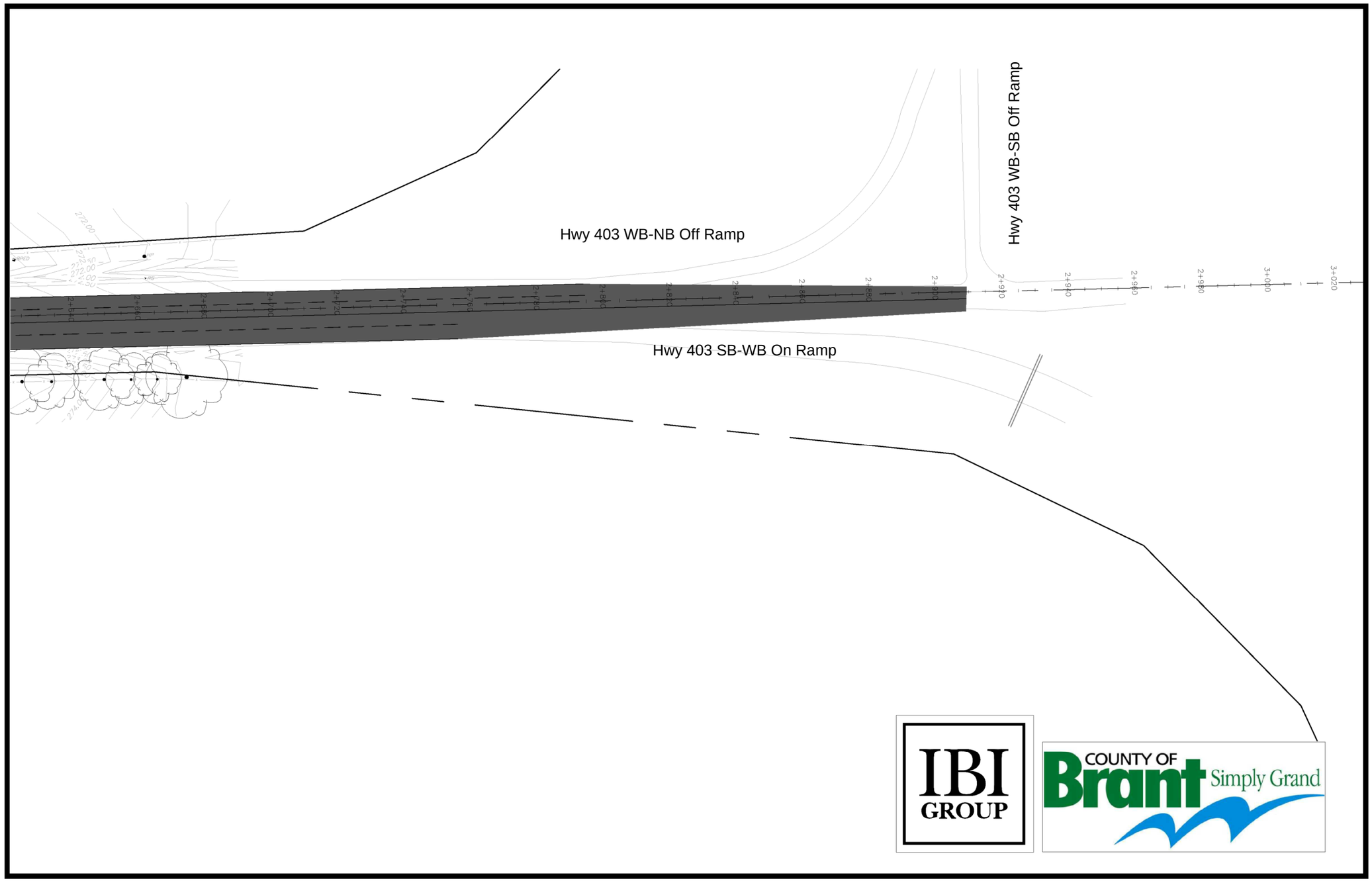


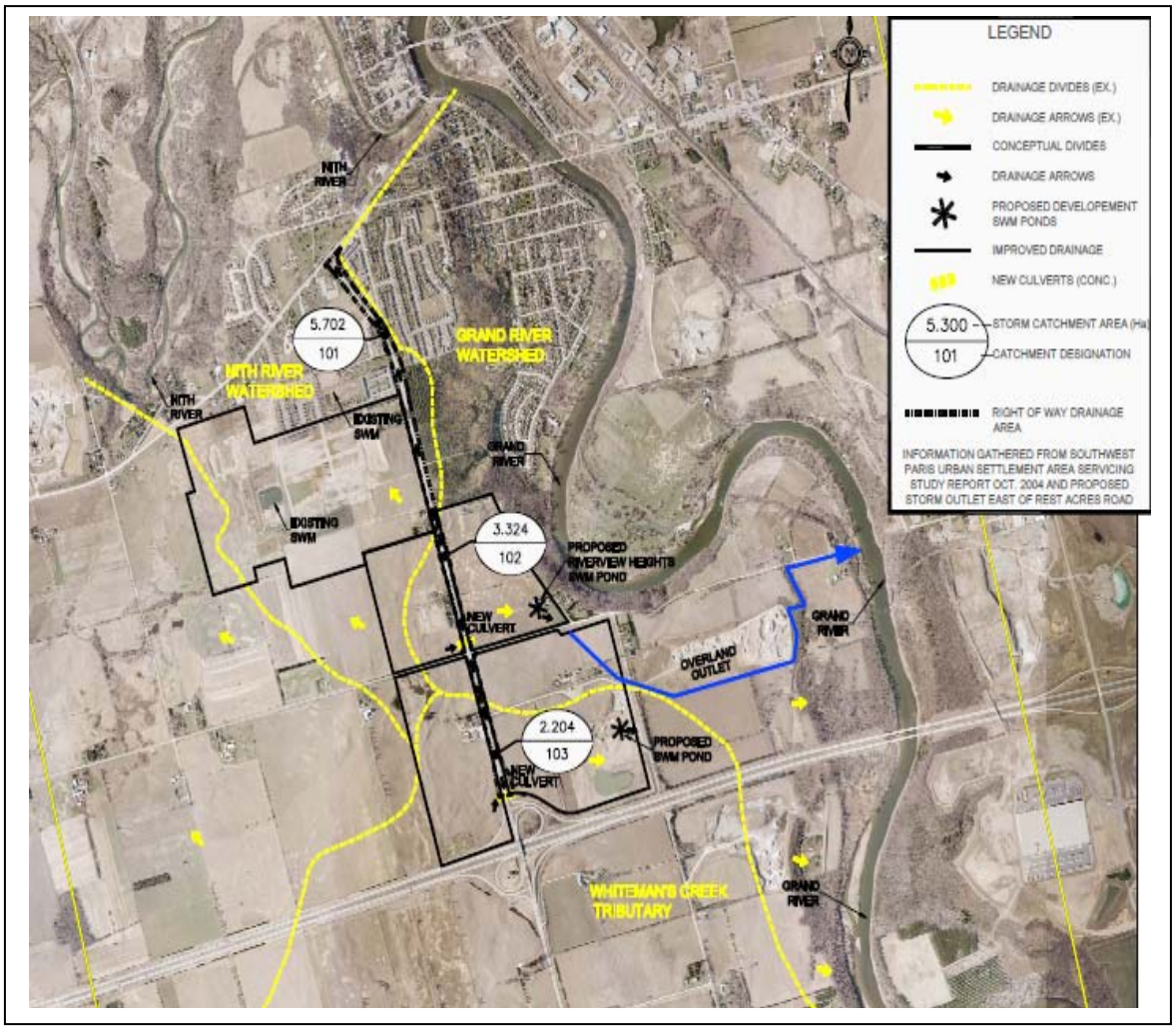
Exhibit 6-1G: Preferred Design Concept



6.3 Drainage and Stormwater Management

A technical memo report was prepared by IBI Group dated February 10, 2012 on the stormwater management options that are available as part of improvements to Rest Acres Road, and is included separately in **Appendix 8** in the ESR Appendix document. The main options and preferences for drainage and stormwater control and quality control in the three drainage areas shown on Exhibit 6-2 are summarized as follows.

Exhibit 6-2: Drainage Areas



6.3.1 NORTH DRAINAGE AREA

The following stormwater quantity control alternatives could be used to address the additional drainage from the improved Rest Acres Road in the north drainage area shown on Exhibit 6-2:

A. Replace the existing storm sewers from MH 579 (PRS11201) to MH 460 (PRS10460) to eliminate any surcharge. The section of sewer would need to be replaced with a 1050mm storm sewer from MH32 (PRS11202) to MH 575 (PRS11200) and 1200mm from MH 575

(PRS11200) to MH 460 (PRS10460). The estimated cost to remove and replace the storm sewer would be in the area of $400,000;

B. Allow some minor surcharge in the existing system and control flows from Rest Acres Road to 50% of the post improvements flows (essentially controlling the flow to existing conditions levels for the 5 year storm). This would require the construction of a storage facility within the Rest Acres Road right of way at or near the King Edward Street intersection. The location could be under the road median subject to detailed design of the road and utilities. The estimated volume of the tank would be 275 m^3 (as calculated in **Appendix 8** MIDUSS output) and this storage could take the form of super pipes, precast concrete tanks or other storage options that may be available at the time of construction. Total cost of construction of the storage tank is in the area of $140,000.00.

Neither of these two alternatives requires any property acquisition beyond existing road right-of-way. Therefore, either alternative can be decided at the Detailed Design stage, but since the existing storm sewer under King Edward Street was recently replaced, and the cost to replace it is significantly higher than the cost of a storage facility within the road right-of-way, the underground storage facility alternative (Alternative B) is preferred if Rest Acres Road is to be widened within the next 10 years.

Stormwater quality control can include on-site treatment for the proposed Rest Acres Road right-of-way using an oil/grit separator (OGS) device, bio-swales in the right-of-way, or a combination of both based on the area and imperviousness identified in the **Appendix 8** report (Table 1). This will be determined at the Detailed Design stage.

6.3.2 CENTRAL DRAINAGE AREA

Stormwater quantity and erosion control options in this area shown on Exhibit 6-2 include the following:

A. Off-site storage to attenuate flows up to the 100 year storm to existing levels that can be accommodated by the drainage system to the east. Off-site facilities would require approximately 500 m^2 of area to provide 250 m^3 of storage volume (refer to **Appendix 8** MIDUSS model);

B. Off-site storage in the stormwater management pond for the proposed private Draft Plan of Subdivision development identified as the proposed Edgar Subdivision (J.H. Cohoon Engineering Limited, March 1, 2010) and also included on the Edgar-Stolp-Gurney land proposed storm outlet overall plan (J.H. Cohoon Engineering Limited, May 31, 2011). The proposed pond for this development would be located to the east of Rest Acres Road, and would need to accommodate the area and flow rates (identified in **Appendix 8** Table 2), and an additional 250 m^3 of storage volume cost-shared with the developer.

Option B is recommended subject to the relative timing of construction of Rest Acres Road and the private developments to the east. Stormwater quality control alternatives include the following:

A. On-site treatment for the proposed Rest Acres Road right-of-way using an oil/grit separator (OGS) device, bio-swales in the right-of-way, or a combination of both. On-site storage for stormwater quality control in the form of a surface pond or constructed wetland would not be feasible due to space limitations;

B. Off-site storage in the stormwater management pond for the proposed Edgar Subdivision. The stormwater quality component of the off-site ponds would need to accommodate the area and proposed imperviousness identified in **Appendix 8** Table 2.

Since a centralized facility providing stormwater quantity and quality control for a large drainage area is most effective in terms of cost and required area, providing stormwater management for the central Drainage Area in the proposed Edgar Subdivision pond is the recommended option (Option B), again subject to the relative timing of construction of Rest Acres Road and the private developments to the east. The capital cost of providing 250 m^3 of storage volume with OGS devise is estimated to be approximately $40,000 excluding property.

6.3.3 SOUTH DRAINAGE AREA

Stormwater quantity and erosion control options for the South Drainage Area shown on Exhibit 6-2 include the following:

A. On-site storage to attenuate flows up to the 100 year storm to existing levels that can be accommodated by the drainage system to the east. Facilities would require approximately 130 m^3 of storage volume (**Appendix 8** MIDUSS model). This volume could potentially be stored in the proposed rural roadside ditches south of Powerline Road , with a controlled outlet;

B. If insufficient volume is available within the roadside ditches, off-site facilities would require approximately 300 m^2 of area to provide 130 m^3 of storage volume;

C. Off-site storage in stormwater management ponds proposed in the Edgar-Stolp-Gurney lands proposed storm outlet overall plan to the east (J.H. Cohoon Engineering Ltd., May 31, 2011). A pond located to the east of Rest Acres Road would need to accommodate the area and flow rates identified in **Appendix 8** Table 3, and an additional 130 m^3 of storage volume.

Similar to the central drainage area, the selection of alternative C would normally be preferred. Providing approximately 130 m^3 of storage volume with OGS devise would cost in the order of $35,000 excluding property. However, it would be subject to timing of development of the land to the east. Since the land includes an active aggregate operation and there are no plans to develop, Option A with roadside ditches is recommended for the purposes of this EA.

The options for stormwater quality control in the south drainage area:

A. On-site treatment for the proposed Rest Acres Road right-of-way using an oil/grit separator (OGS) device, bio-swales in the right-of-way, or a combination of both;

B. Off-site storage in stormwater management ponds proposed in the Edgar-Stolp-Gurney lands to the east (J.H. Cohoon Engineering Ltd., May 31, 2011).

The selection of Option B would normally be preferred. However, it would be subject to timing of development of the land to the east. Therefore Option A is recommended for this EA.

6.4 Provisions for Cyclists and Pedestrians

The need for cycling and pedestrian facilities along Rest Acres Road originated from five main sources:

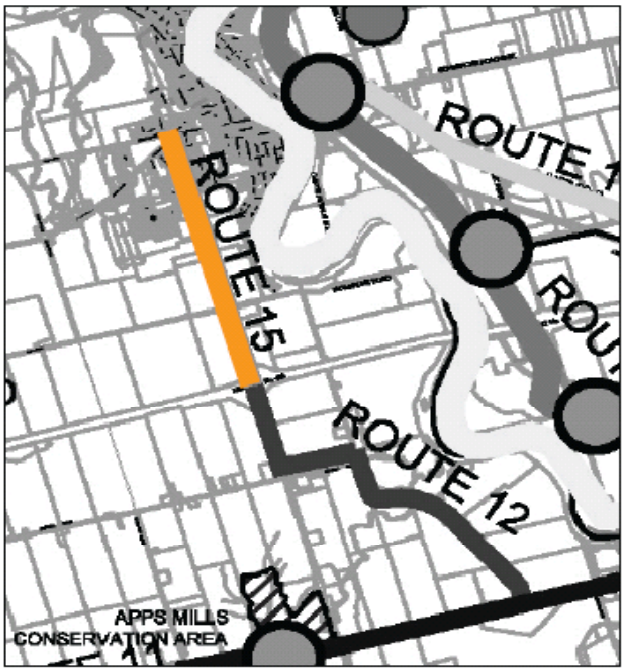
- Transportation Master Plan guidelines for the development of off and on-road cycling routes in Plan section 6.9 and 6.10 respectively;
- Public input on need for sidewalk and bike routes along Rest Acres Road noted at the PICs;

- The County's Draft Trail Master Plan as of August 2011 recommending a Rest Acres Road Trail;
- Warrants for traffic signals from Ontario Traffic Manual Book 12 or the Transportation Association of Canada (TAC); and
- Direction from the County Public Works Committee.

The County's Draft Trails Master Plan recommends a Rest Acres Road Trail as a secondary trail shown on Exhibit 6.3. This multi-use trail is proposed to be built adjacent to road upgrades along the easement on either the east or west side of the road to serve both cyclists and pedestrians. This recommendation is incorporated into the preliminary design concept for this EA and is to have a tread width of 3.0 m and a cleared area of 4.0 m for use by walkers, hikers and cyclists.

This EA also considered the use of marked, exclusive on-road bike lanes on Rest Acres Road to serve cyclists. This option was considered by the County's Public Works Committee and it was decided that such on-road bike lanes not be included for the Rest Acres Road improvements because the planned multi-use trails on both sides of the road will provide for cycling, and the road is a high volume route.

Exhibit 6-3: Proposed Rest Acres Road Trail



Source: Draft Trail Master Plan, August 2011

At the detailed design stage for Rest Acres Road widening, a review will be conducted of pedestrian crossing requirements at the Cobblestone Road intersection and other potential pedestrian crossing locations. Transportation Association of Canada (TAC) or Ontario Traffic Manual (OTM) warrants will be reviewed for intersection pedestrian signals at these locations, or the use of school crossing guards based on established County of Brant practices.

6.5 Streetscaping

The recommended cross-section for Rest Acres Road shown on Exhibit 5.4 includes a 4.2 m wide centre median along with a wide 3.5 m boulevard space on the west side and a wider 4.5 m boulevard space on the east side. Although these spaces are conceptual and will be confirmed as part of the detailed design process, they show that the available road right-of-way provided for Rest Acres Road provides the County with significant opportunities along this route. North of Powerline Road, these opportunities could result in a major streetscape gateway into the Paris area, and furthermore into the County of Brant from the provincial/international Highway 403. It is recommended that development of these streetscape opportunities be included in the detailed design process.

South of Powerline Road, the recommended Rest Acres Road preliminary design concept changes to a rural cross-section with ditches and no sidewalks or cycling facilities. Depending on MTO requirements for this section, this concept may not provide streetscape opportunities south of Powerline Road except for signage potential. This means that the visual gateway into the Paris area and County of Brant off Highway 403 will start at Powerline Road, not off the Highway 403 ramps.

An estimated 30 existing Hydro One poles will also need to be relocated within the existing Rest Acres Road right-of-way to accommodate the planned cross-section. The exact number and cost of hydro pole relocation will be confirmed at the detailed design stage, but for EA purposes the relocation cost is estimated to be $300,000 and is included in the project's preliminary capital cost estimate provided in Exhibit 6-4.

6.6 Property Acquisition Requirements

Almost all of the recommended Rest Acres Road improvements fit within the existing road right-of-way except for approximately 3,625 m2 (0.36 ha) of property in total from the three planned intersections where the following property acquisition may be required depending on the final detailed design. It is expected that these properties can be acquisition by the County as part of road dedications from associated subdivision approvals:

Arlington Parkway Roundabout – On the west side of this location, approximately 245 m2 of property would be required from the northwest quadrant (Activa Stage 1, Phase 1, RP 2M-1893), and 360 m2 from the southwest quadrant (Grandville Stage 2-Phase 2) to provide for the recommended modern roundabout at this location. An additional 550 m2 of property would be required on the east side of Rest Acres Road for the roundabout. There is currently no development plan or application involving this property;

Future Street H – At this recommended roundabout intersection, approximately 650 m2 of property would be required from the Riverview Highlands Subdivision property on the east side of Rest Acres Road at the intersection on planned Street "J", and 560 m2 on the west side where there is no current development plan or application; and

Future Street I – At this recommended roundabout location, approximately 560 m2 of property would be required from the east side of Rest Acres Road at the intersection of planned Street "F" in the Edgar Subdivision Phase 1. An additional 700 m2 of property would be required on the west side of Rest Acres Road at this location where there is no current development plan or application.

6.7 Construction Staging

The staging of construction for the recommended Rest Acres Road improvements can be planned in response to land development along the route. The following three stages are proposed for planning purposes only:

1. The initial stage should be the section from King Edward Street to Cobblestone Drive serving the existing land use and associated trip generation in this area, including noise attenuation, stormwater management and intersection improvements;

2. The section from Cobblestone Drive to the planned Arlington Parkway could be constructed as the second stage to serve planned residential development on both sides of Rest Acres Road; and

3. The final stage could extend from Arlington Parkway to the Highway 403 ramps to include recommended roundabouts at the new intersecting streets and signalization of the Powerline Road intersection.

According to the Municipal Class EA, the first stage of construction must commence within then (10) years of the filing of this ESR with the Ministry of the Environment. If initial construction starts later than that, the County could have to conduct a review of this ESR to determine if any changes or updates are required based on changing conditions. After the stage one construction is started, there is no time limit on when the remaining stages of the project must be completed.

6.8 Preliminary Construction Cost Estimate

As shown in Exhibit 6-4, the total estimated capital cost to construct the urban cross-section improvements recommended in this ESR from King Edward Street to 200m south of Powerline Road is approximately $7.4 Million including allowances for engineering design, contingencies and streetscaping. An additional $0.7 Million is estimated for rural cross-section widening of the road from 200m south of Powerline Road to the Highway 403 north side ramp terminals. These costs do not include any potential property acquisition.

Assumptions used in preparing this estimate include:

1. All existing underground services (water, sanitary) will not be replaced;
2. Storm sewer is based on average 1 manhole and catchbasin/70 m of road;
3. Estimates works extend 50m on both sides of Rest Acres Road at all existing intersections;
4. Estimated that 50% of all excavated material to be disposed off site and the remainder used to construct boulevards;
5. Average storm sewer size is 600mm;
6. Full urban cross-section from Powerline Road to King Edward Street and rural cross-section south of Powerline Road;
7. Extends 150m east and 75m west of Rest Acres Road for Powerline Road upgrades; and
8. Median planting to be low maintenance, low elevation ground cover.

Exhibit 6-4: Capital Cost Estimate

Urban Cross-Section, King Edward Street to 200m south of Powerline Road

Total length metres		2200		
Item	**unit**	**quantity**	**unit price**	**total**
Remove and dispose asphalt	sm	21275	$ 10.00	$ 212,750.00
Earth excavation:				
dispose off site	cm	24108	$ 15.00	$ 361,620.00
dispose on site	cm	24108	$ 8.00	$ 192,864.00
Granular B (600mm)	tonne	64145	$ 13.00	$ 833,885.00
Granular A (150mm)	tonne	14523.75	$ 15.00	$ 217,856.25
HL3 (40mm)	tonne	3873	$ 82.00	$ 317,586.00
HL8 (80mm)	tonne	7746	$ 80.00	$ 619,680.00
Barrier curb	lm	3800	$ 35.00	$ 133,000.00
Curb and gutter	lm	4400	$ 40.00	$ 176,000.00
Muilti use trail including 150mm granular a base	lm	3960	$ 100.00	$ 396,000.00
Storm sewer	lm	1980	$ 290.00	$ 574,200.00
Storm water management storage:				
north section	cm	275	$ 500.00	$ 137,500.00
central Section	cm	250	$ 300.00	$ 75,000.00
Topsoil and sod	sm	13200	$ 7.50	$ 99,000.00
Island planting	lm	1900	$ 200.00	$ 380,000.00
Hydro pole relocation	each	30	$10,000	$ 300,000.00
Sub Total				$ 5,026,941.25
contingency			15%	$ 754,041.19
Engineering			15%	$ 754,041.19
Sub total				$ 6,535,023.63
HST			13%	$ 849,553.07
Total estimated cost				$ 7,384,576.70

Exhibit 6-4: Capital Cost Estimate (continued)

Rural Cross-Section, 200 m south of Powerline Road to Highway 403 North Side Ramp Terminals

Total length metres	540				
Item	**unit**	**quantity**	**unit price**		**total**
Remove and dispose asphalt	sm	1080	$ 10.00	$	10,800.00
earth excavation					
dispose off site	cm	4860	$ 15.00	$	72,900.00
dispose on site	cm	4860	$ 8.00	$	38,880.00
Granular B (600mm)	tonne	12156	$ 13.00	$	158,028.00
Granular A (150mm)	tonne	3040.5	$ 15.00	$	45,607.50
HL3 (40mm)	tonne	324	$ 82.00	$	26,568.00
HL8 (80mm)	tonne	648	$ 80.00	$	51,840.00
Storm water management storage South section	cm	130	$ 300.00	$	39,000.00
topsoil and sod	sm	4320	$ 7.50	$	32,400.00
Sub Total				$	465,223.50
contingency			15%	$	69,783.53
Engineering			15%	$	69,783.53
Sub total				$	604,790.55
HST			13%	$	78,622.77
Total estimated cost				$	683,413.32

7. PROJECT COMMITMENTS

7.1 Archaeology / Cultural Heritage

As noted previously, this ESR document makes the commitment that if in the detailed design stage, the proposed work extends beyond the current Rest Acres Road right-of-way, then further Stage 1 archaeological assessment may be required to determine the archaeological potential of the surrounding lands.

Furthermore, should the proposed work impact the ROW lands between the back of sidewalk and Paris Cemetery fence, to be determined at the Detailed Design process, a Cemetery Investigation will be conducted to confirm the presence or absence of unmarked graves.

Several small areas of potential archaeological value exist within the study area beyond the disturbed ROW. Should the proposed work confirmed during the detailed design process impact these lands, then a Stage 2 archaeological assessment must be conducted.

7.2 Noise Attenuation

The type and style of noise attenuation determined to be warranted at locations A, B and D along Rest Acres Road as previously shown on Exhibit 4-1 will be confirmed as part of the detailed design preparation.

7.3 Property Access

All existing direct access from Rest Acres Road to abutting properties will be maintained during the construction process until alternative access opportunities are provided from planned internal roadway networks as the Southwest Paris area is developed.

7.4 Monitoring

The County of Brant will continue to monitor traffic volumes and turning movements along the Rest Acres Road study area to ensure an up to date record is available on traffic generation and distribution, roadway level-of-service and existing/future intersection operations. Any proposed land development along or in proximity to the study area will also be required to submit a Traffic Impact Study describing in part of the impact of the project on the planned Rest Acres Road capacity improvements. This information, combined with the pace of land development and associated traffic generation, will help confirm the staging of Rest Acres Road capacity improvements.