



EnvironmentalAssessment –

Harmonized MTO Group 'C'/Municipal Schedule 'B' Class Environmental Assessment

Proposed Operational Improvements at Rest Acres Road/Highway 24 & Highway 403
Harmonized Environmental Screening Document/Project File

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Executive Summary

E-1 The Project

A Class Environmental Assessment (Class EA) and Preliminary Design Study was initiated by the County of Brant for the planning of operational improvements to the Rest Acres Road/Highway 24 and Highway 403 interchange. These interchange improvements will address traffic operation and safety requirements associated with increased traffic demand to/from the Brant 403 Business Park.

This Study completed all required phases of the Class Environmental Assessment for Provincial Transportation Facilities (1997) as amended July 2000 and the Municipal Class Environmental Assessment (2007) as amended in 2015. The Study established the need and justification for the project, considered all alternatives and proactively involved the public in defining a Recommended Plan for improvements.

The Class EA was initiated as a Provincial Group B/Municipal Schedule C Class EA, and was stepped down to a Provincial Group C/Municipal Schedule B Class EA based on step-down criteria of no significant environmental effects, property issues being identified, or significant issues identified by the public/agencies.

The Harmonized Environmental Screening Document (ESD)/Project File document examined alternative interchange improvement opportunities. Improvement alternatives considered both geometric design alternatives and traffic signal optimization.

E-1.1 Study Area

The extent of the Study Area that is identified on **Figure E1** considered the Rest Acres Road/Highway 24 and Highway 403 interchange, and extended along Rest Acres Road/Highway 24 from Powerline Road to the north to Bethel Road to the south. The Study Area also considered downstream affects and influences of potential improvements. The technical investigations and environmental inventories were focused on the area of the ramp terminals where construction will occur.

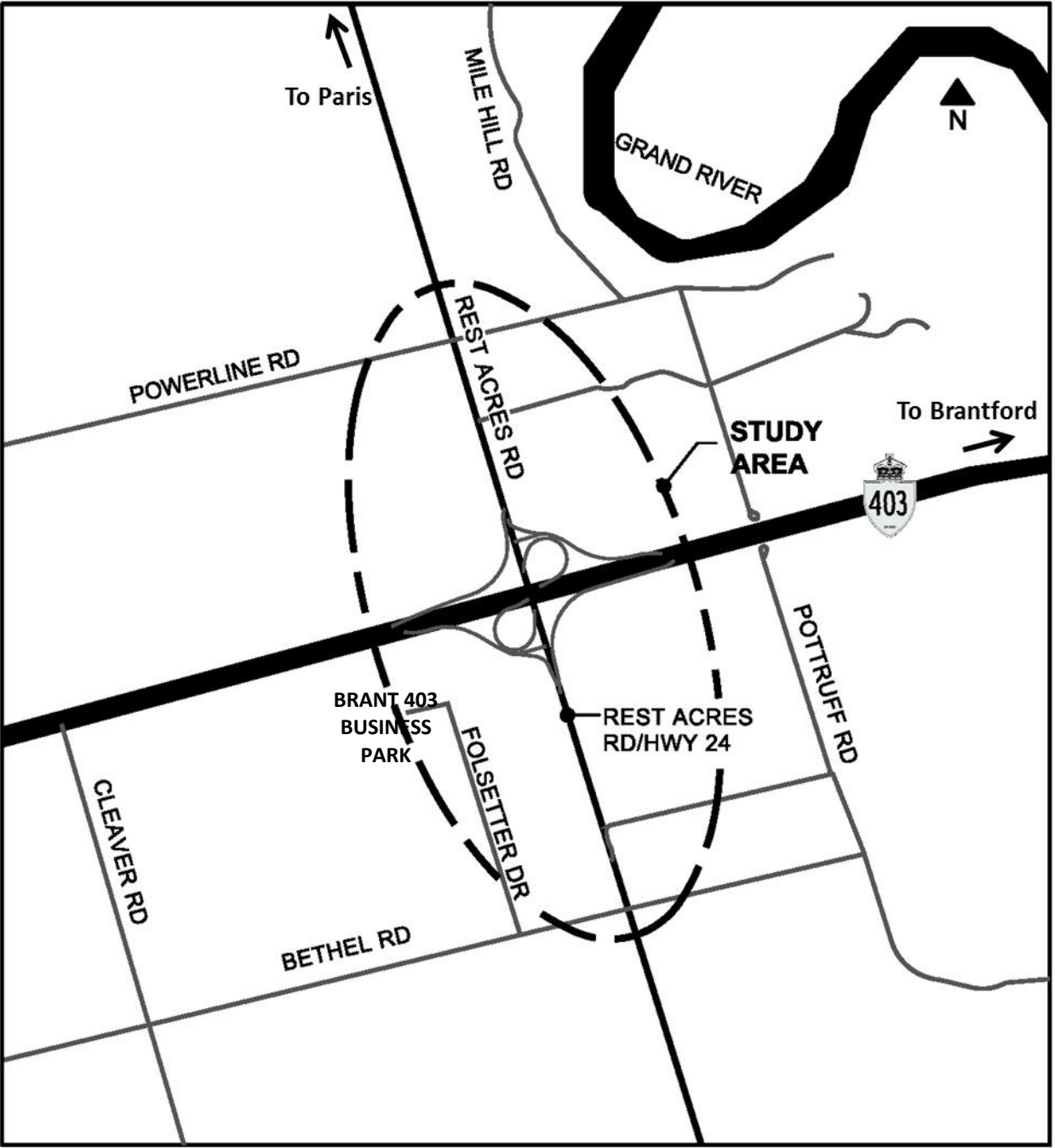


Figure E1: Study Area

E-2 Class EA Process

This Study is a harmonized Group ‘C’ (MTO) and Schedule ‘B’ (Municipal) undertaking, based on the range of effects, with alternatives affecting both provincial and municipal roadways. The County of Brant is the proponent of the project, and MTO is the regulatory agency and has Corridor Control within 400 m of the freeway.

The harmonized Class EA followed the Group ‘C’ requirements under the MTO “Class Environmental Assessment for Provincial Transportation Facilities” amended in 2000 (**Figure E2**) and the Schedule ‘B’ requirements under the Planning and Design process of the “Municipal Class Environmental Assessment”, as amended in 2015 (**Figure E3**). These Provincial Class EAs follow a detailed self-assessment process that includes public consultation.

The Harmonized Class EA Process was undertaken in a series of phases commencing with identifying the problem and culminating in the filing of a harmonized Environmental Screening Document (ESD)/Project File. The process included an evaluation of all reasonable alternatives and the selection of a preferred alternative(s) with acceptable effects (including mitigation measures) on the natural and social/cultural environments. Guidance on the Study was provided by a Technical Advisory Committee as described in **Section E-3**.

E-2.1 Provincial Class EA Process

The planning process for the Group C “Class Environmental Assessment for Provincial Transportation Facilities” as amended in 2000 is illustrated in **Figure E2**.

E-2.2 Municipal Class EA Process

The planning process for the “Municipal Class Environmental Assessment, 2015” for a Schedule B project is illustrated in **Figure E3**.

The Harmonized Class EA process includes an evaluation of all reasonable alternatives and the selection of a preferred alternative(s) with acceptable effects (including mitigation measures) on the natural and social/cultural environments. The Class EA process entails five phases:

- Phase 1: Identify the Problem
- Phase 2: Alternative Solutions
- Phase 3: Alternative Design Concepts for the Preferred Solution
- Phase 4: Project File
- Phase 5: Implementation

This study will only be completed to the end of the Project File Phase (i.e. Phase 4).

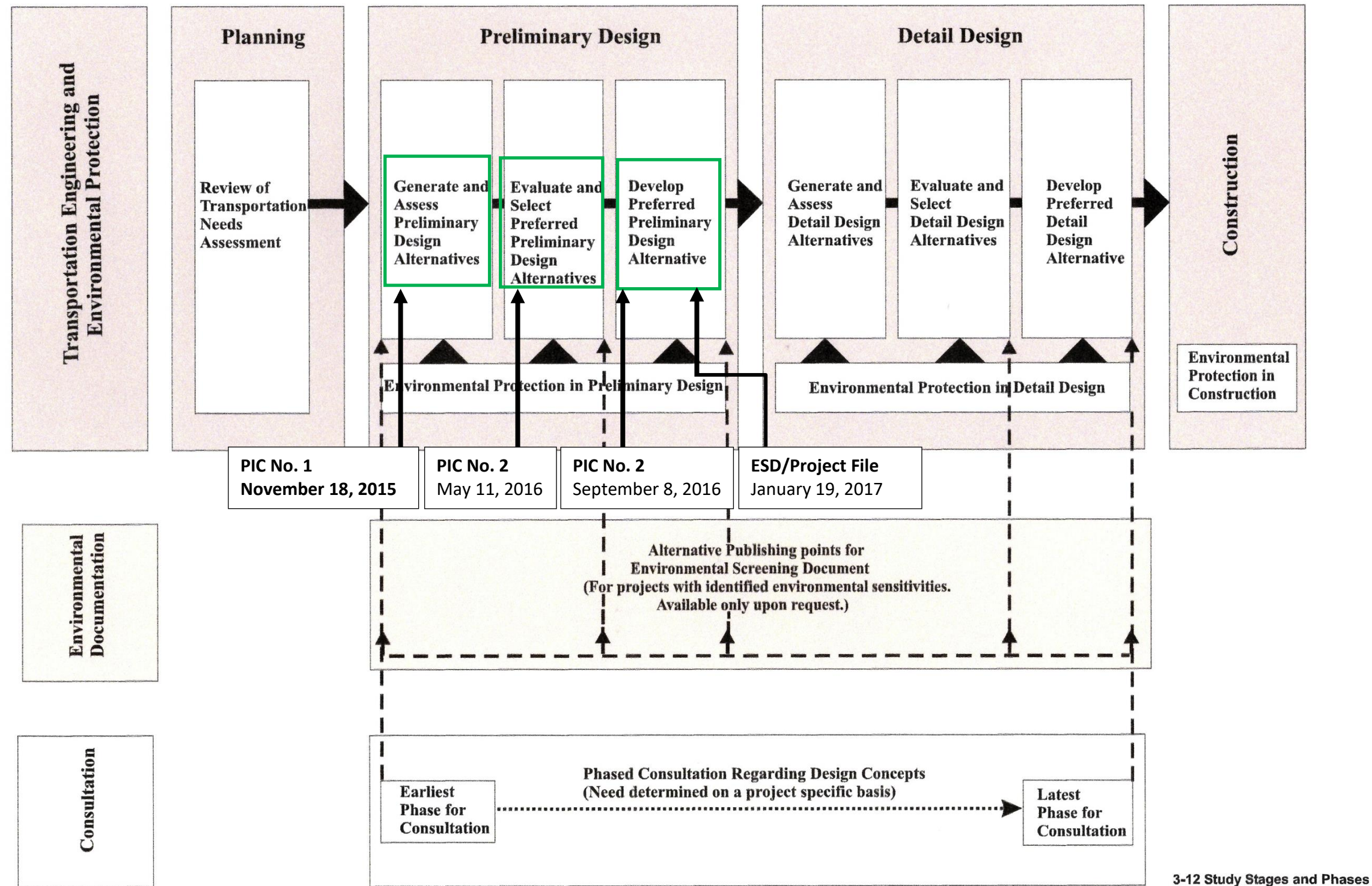


Figure E2: Ministry of Transportation Class EA Planning and Design Process

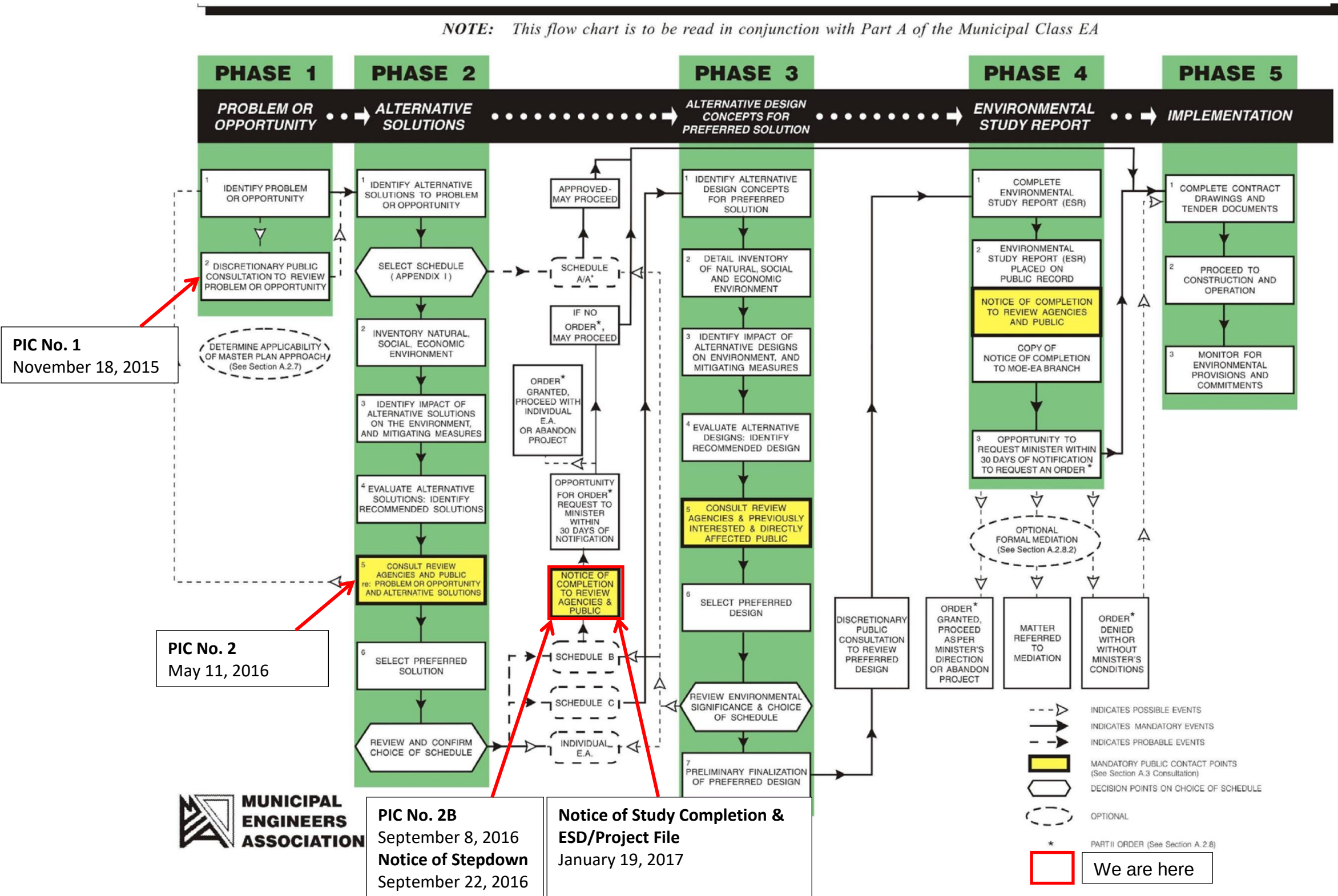


Figure E3: Municipal Class EA Planning and Design Process

E-3 Consultation

The public consultation approach used several techniques to proactively involve the public and stakeholders. The study was carried out in consultation with County of Brant staff, MTO, external agencies, the general public and business owners, adjacent property owners and technical specialists. The consultation utilized the following tools:

Technical Advisory Committee

A Technical Advisory Committee (TAC) was formed and met nine (9) times during the study. The TAC involved participants from MTO, County of Brant, and consultants.

Ministry and Agency Consultation

Ministries and external agencies were involved throughout the study including: study commencement, PIC 1 (to present the need and justification of the project), PIC 2 (to present technical recommendations), PIC 2B (to present refinements to the technical recommendations), the recommendation for step-down, and at the study completion. Ministries and Agencies included: Ministry of Transportation; Ministry of the Environment and Climate Change; Ministry of Natural Resources and Forestry; Ministry of Tourism, Culture and Sport; Ministry of Aboriginal Affairs; Infrastructure Ontario; Ontario Federation of Agriculture; Grand River Conservation Authority; OPP Brant County; County of Brant Fire Department; County of Brant Ambulance Services; Bell Canada; Cogeco; Rogers; Brant County Power Inc.; Hydro One Networks; Telus; and Union Gas.

First Nation Consultation

The following First Nations were also consulted with throughout the project: Six Nations of the Grand River, Mississaugas of the New Credit First Nation, Metis Nation of Ontario, and the Haudenosaunee Resource Centre.

Public Consultation

Notices for the Study Commencement, PIC, Step-Down Notice and Notice of Filing Study Completion were publicized as follow:

- Study Commencement & PIC No. 1 – The Brantford Expositor: Thursday, October 29, 2015 and Thursday, November 5, 2015
- PIC No. 2 – The Brantford Expositor: Thursday, April 28, 2016 and Thursday, May 5, 2016
- PIC No. 2B – Thursday, August 25, 2016 and Thursday, September 1, 2016
- Notice of Environmental Classification Step-down – Thursday, September 22, 2016
- Notice of Study Completion – January 19, 2017

Three Public Information Centres (PIC) were held to present the project goals, problem and opportunity statement, environmental inventories, traffic analysis and seek public/agency input/feedback. They also presented the assessment of alternatives and the Recommended Alternative. The PIC's were held on the following dates:

- PIC No. 1 – Wednesday, November 18, 2015
- PIC No. 2 – Wednesday, May 11, 2016
- PIC No. 2B – Thursday, September 8, 2016

Feedback was received on the Technically Preferred Alternative through this consultation. See **Appendix B** for Notice of Study Commencement, PIC reports, Notice of Environmental Classification Stepdown and Notice of Study Completion.

This harmonized Environmental Screening Document/Project File is presented to the public and review agencies for a 30-day comment period, with the Notice of Study Completion being advertised on January 19, 2017.

E-4 Analysis and Evaluation

The analysis and evaluation followed the more rigorous process outlined in the MTO Class EA document, which involves a 2-step process for decision-making. Accordingly, the ESD/Project File document follows this process - the analysis and evaluation of “Alternatives to the Undertaking/Alternative Planning Solutions”, followed by the subsequent assessment of preliminary design alternatives (“Alternative Methods” of carrying out the preferred Alternative).

E-4.1 Assessment of Alternatives to the Undertaking/Alternative Planning Solutions

A detailed table illustrating the generalized planning process is presented in **Figure E4**, which includes the assessment of Alternatives to the Undertaking Planning Solutions and Alternative Methods of Carrying out the Undertaking Preliminary Design Alternative phase. The relevant documentation of this phase is presented in **Appendix N**.

Five Alternative Planning Solutions were considered for the operational improvements to the Rest Acres Road/Highway 24 and Highway 403 interchange, namely:

- Do Nothing
- Restrict Development
- Improved Transit
- Transportation Demand Management
- Operational Improvements

The TAC selected operational improvements as the preferred alternative. The Do Nothing, Restrict Development, Improved Transit, and Transportation Demand Management alternatives would not accommodate the existing and future traffic demands as standalone solutions.

This recommendation was presented at PIC No. 2.

E-4.2 Generation and Assessment of Preliminary Design Alternatives (Alternative Methods of Carrying Out the Undertaking)

The analysis and evaluation process is a central requirement of the Class EA process and has recently been the subject of review by the Ministry of the Environment and Climate Change (MOECC). MOECC’s review of *Evaluation Methods in Environmental Assessment* (1990) provided the framework for the detailed evaluation processes followed for this study.

In adhering to this process within the Study Area, a number of interchange operational improvement alternatives were generated for consideration. A “long list” of alternatives was generated in an attempt to ensure consideration of a wide range of alternatives in addressing the identified needs (i.e. all reasonable alternatives are considered). This wide range of alternatives was subjected to a coarse screening analysis before proceeding with the detailed evaluation.

The following is the subsequent short list of potential interchange operational improvement alternatives:

North Ramp Terminal

- Alternative N1: Provision of a double left on the E-S Ramp
- Alternative N2: Replace existing traffic signals with a roundabout

South Ramp Terminal

- Alternative S2: Provision of a 2-lane roundabout
- Alternative S7: Widen the structure to accommodate 2 southbound through lanes and a southbound speed change lane (SCL)

E-5 Recommended Plan

The Recommended Plan selected for operational improvements to the Highway 403 interchange was determined to be Alternative N2/S2 (provision of roundabouts). The Multi-Attribute Trade-off System (MATS) screening process, used for the evaluation of the access alternatives allowed the TAC an opportunity to assess trade-offs involved in the evaluation.

The Recommended Preferred Plan was presented to the public at Public Information Centre (PIC) No. 2 on May 11, 2016. A minor refinement to this design was made to the S-E ramp to avoid relocation of a major hydro pole. This Refined Recommended Plan was presented to the public on September 8, 2016, and is shown in **Figure E5**.

The Recommended Plan contains key features with flexibility for refinements during detailed design including:

- Extensions or modifications to the splitter islands on the roundabout approaches;
- Potential to carry two northbound lanes through the north ramp terminal roundabout as a future project if and when the County extends 4 lanes north of the interchange;
- Potential minor offset of roundabouts to improve safety; and
- Potential extension of the median northerly to restrict driveways to right-in/right-out (both east and west of Rest Acres Road), Change in land use/access will be subject to County and MTO approval.

E-6 Environmental Classification Step-down

Based on the range of anticipated effects and the capital cost of the Rest Acres Road/Highway 24 and Highway 403 operational improvements, the project was recommended to be stepped down from a Municipal Schedule C/Provincial Group B to a Municipal Schedule B/Provincial Group C project. On September 22, 2016 a Notice of Environmental Classification Step-down was published. During the 30-day review period no comments were received objecting to the step-down.

E-7 **Next Steps**

At the end of the 30-day public review period, should there be no objections to the project; the MTO may proceed with detail design, subject to MTO approvals of detail design, followed by the construction of the recommended plan subject to County of Brant funding.

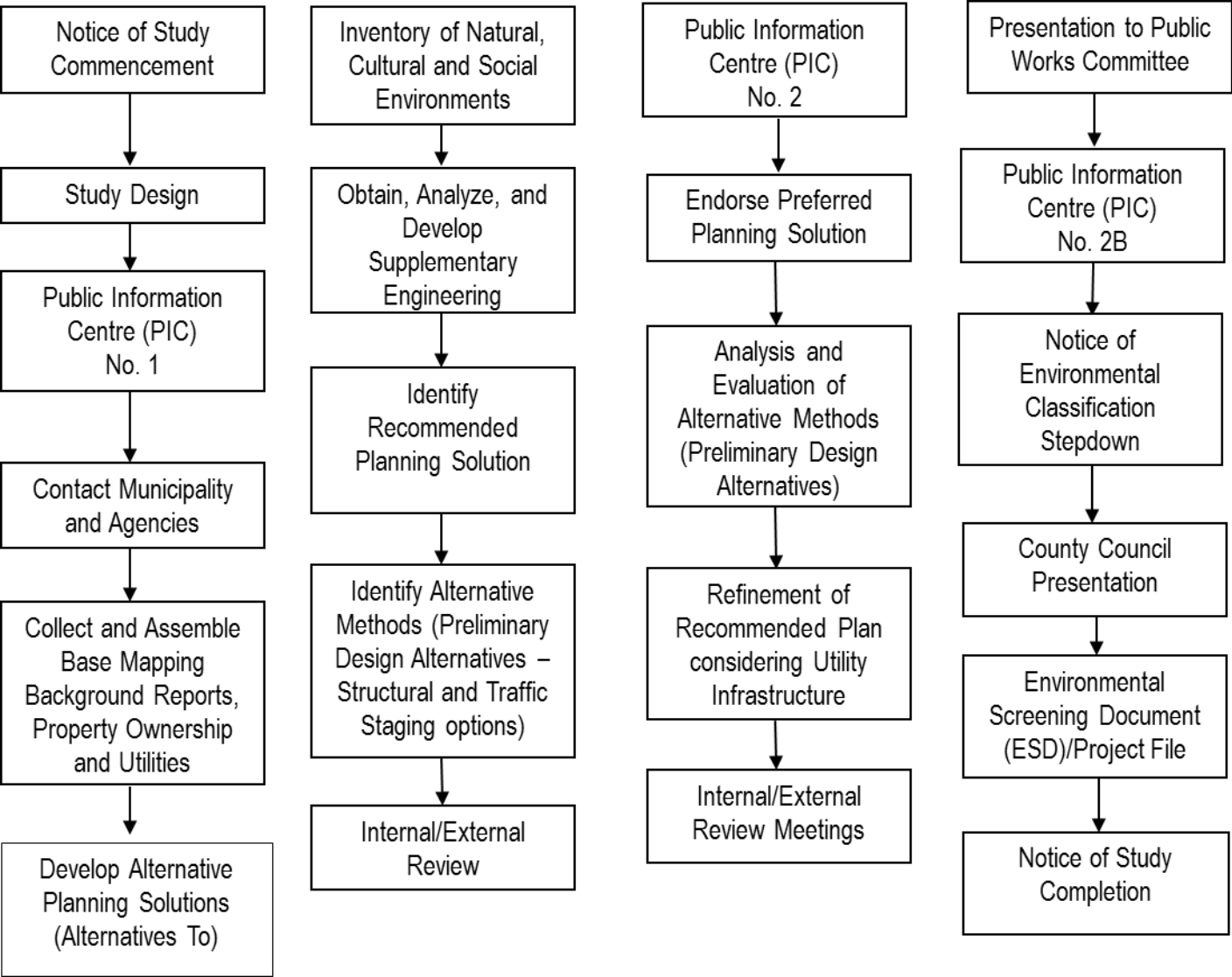


Figure E4: Generalized Ministry of Transportation Planning and Preliminary Design Planning Process

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1.0 Introduction

A Preliminary Design and Class Environmental Assessment (Class EA) was initiated by the County of Brant for the planning of operational improvements at the Rest Acres Road/Highway 24 and Highway 403 interchange. This Study was undertaken as a harmonized Group B (Ministry of Transportation) and Schedule C (Municipal) Class EA, and was stepped down to a harmonized Group C (Ministry of Transportation) and Schedule B (Municipal) Class EA undertaking based on the range of environmental effects and public comments.

This Study completed all required phases of the Class Environmental Assessment for Provincial Transportation Facilities (1997) as amended July 2000 and the Municipal Class Environmental Assessment (2007) as amended in 2015. This Study established the need and justification for the projects, considered all alternatives and proactively involved stakeholders and the public in defining a Recommended Plan for improvements.

This Study documents the transportation need and the Recommended Plan to address current and future transportation demand and the associated operational improvements to the Rest Acres Road/Highway 24 and Highway 403 interchange. These improvements will address traffic operation and safety requirements associated with increased traffic demand to/from the Brant 403 Business Park.

1.1 Study Area

The Study Area, illustrated in **Figure 1**, is located south of Paris in the County of Brant. The Study Area encompasses the Rest Acres Road/Highway 24 and Highway 403 interchange, and runs north-south along Rest Acres Road between Bethel Road to the south and Powerline Road to the north. The Study Area extends to the existing ramps on Highway 403 to the east and west. The Study has developed a Recommended Plan that incorporates new interchange designs at the north and south ramp terminals of the Rest Acres Road/Highway 24 and Highway 403 interchanges.

The Study Area defines a broader area to consider the downstream affects and influences of potential improvements. The technical investigations and environmental inventories focused on the area of the ramp terminals where construction is anticipated to occur.

1.2 Need and Justification

Operational improvements to the Rest Acres Road/Highway 24 and Highway 403 interchange are required to meet the current and future peak traffic demand to/from the Brant 403 Business Park. The business park is located at the southwest quadrant of the interchange, and has a zoned development plot of 144 acres. In addition, traffic is forecast to increase from the County's future development in the Southwest Paris Settlement Area.

Highway 403 is a well-travelled freeway for residential and commercial traffic between southwestern Ontario and the Greater Toronto Area. This coupled with the expected increase in residential and commercial traffic from new developments in the area has led to an operational review of the interchange.

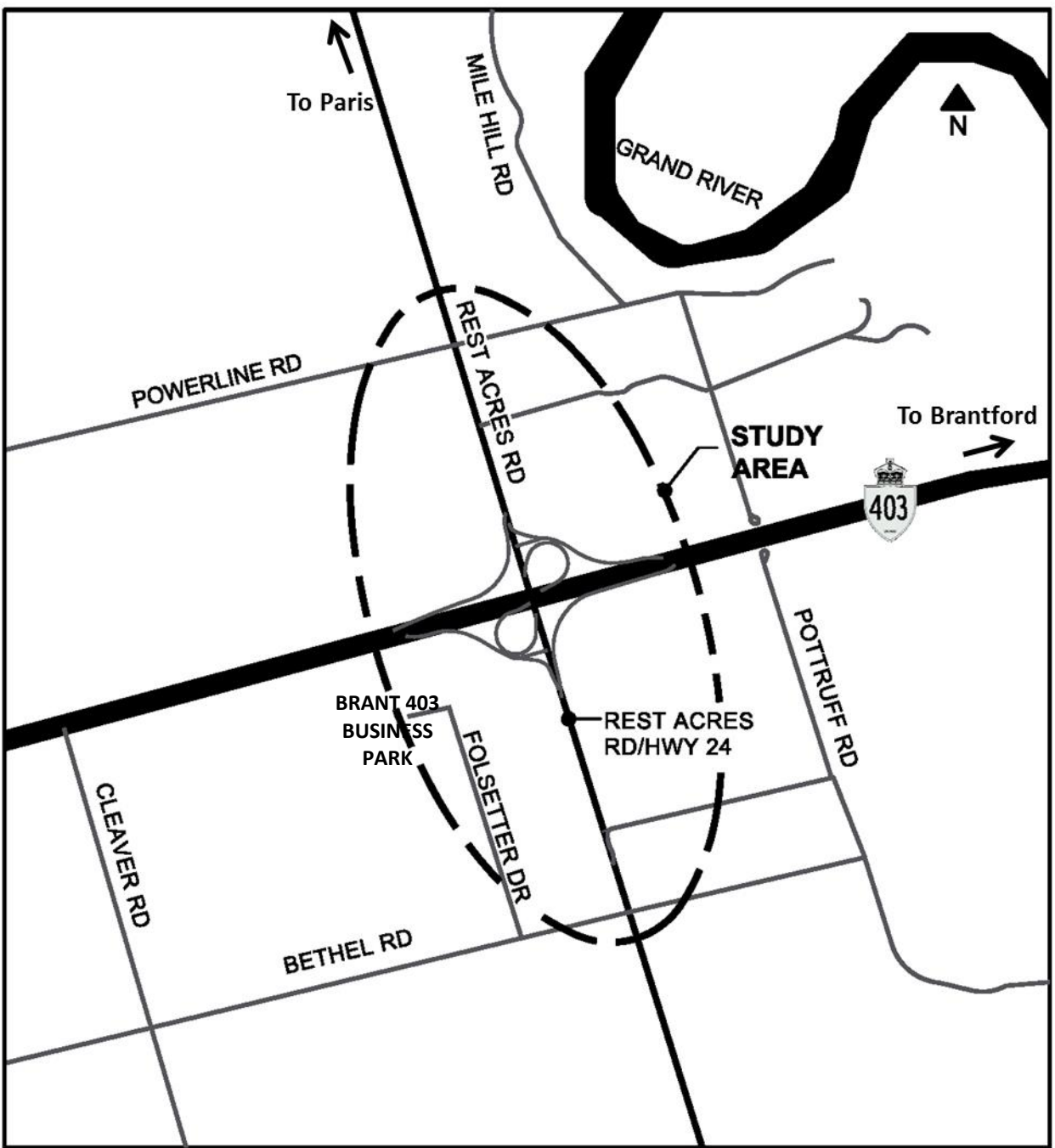


Figure 1: Study Area

2.0 Class EA Process

The harmonized Class EA follows the Group C requirements under the “MTO Class Environmental Assessment for Provincial Transportation Facilities” amended in 2000 and the Schedule B requirements under the Planning and Design process of the “Municipal Class Environmental Assessment”, as amended in 2015. These Class EAs identify a detailed self-assessment process that includes mandatory public consultation. The study was initiated by publishing a draft Study Design document that described the proposal work plan, public consultation and process to be followed to complete the environmental assessment to meet the requirements of both the Provincial Class EA (MTO) and Municipal Class EA (Municipal process). The Final Study Design included in Appendix A described that the Class EA would be initiated to allow flexibility to be finalized as an MTO Group B and Municipal Schedule C process if the magnitude of the project involved high complexity and cost. If the study recommendations included works of lower complexity and cost then the study design described that the process would be completed as a MTO Group C and Municipal Schedule B process. Based on the scope of the final recommendation the project is an MTO Group C and Municipal Schedule B project. A formal notice of this decision was advertised in September 2016 and presented at PIC No. 2B.

2.1 Environmental Assessment Process

The approach includes the MOECC’s five guiding principles for Class EA studies, namely:

- Consider all reasonable alternatives;
- Provide a comprehensive assessment of the environment;
- Utilize a systematic and traceable evaluation of net effects;
- Undertake a comprehensive public consultation program; and,
- Provide a clear and concise documentation of the decision-making process and public consultation program.

The harmonized Class EA Process was undertaken in a series of phases commencing with problem identification and culminating in the filing of an Environmental Screening Document (ESD)/Project File. Guidance on the Study was provided by a Technical Advisory Committee as described in **Section 3.0**.

2.1.1 Provincial Class EA Process

The Project has followed the phases identified in the Group B requirements under the “MTO Class Environmental Assessment for Provincial Transportation Facilities” as amended in 2000 and illustrated in **Figure 2**.

Phase 1: Needs Assessment

- Step 1: Identify problems and opportunities
- Step 2: Generate Alternatives to the Undertaking
- Step 3: Evaluate and select Preferred Planning Alternative
- Step 4: Public Information Centre No. 1

Phase 2: Preliminary Design

- Step 1: Generate and assess preliminary design alternatives
- Step 2: Evaluate and select preferred preliminary design alternative(s)
- Step 3: Public Information Centre No. 2
- Step 4: Develop preferred preliminary design alternative following public and agency review
- Step 5: Public Information Centre No. 2B

Phase 3: Environmental Screening Document

Phase 4: Detail Design

Phase 5: Construction

2.1.2 Municipal Class EA Process

This project has also followed the procedures identified in the “Municipal Class Environmental Assessment (amended 2015)” for a Schedule B project, as illustrated in **Figure 3**. This document specifies the procedures required to plan specific municipal projects according to an approved planning process. The Municipal Class EA process includes an evaluation of all reasonable alternatives and the selection of a preferred alternative(s) with acceptable effects (including avoidance and mitigation of any residual effects) on the natural and social/cultural environments. The Municipal Class EA Schedule B process also entails five phases similar to the MTO Class EA, namely:

Phase 1: Identify the Problem

- Step 1: Identification and description of the problem or opportunity
- Step 2: Discretionary Public consultation (undertaken by circulating a draft Study Design)
- Step 3: Public Consultation at Public Information Centre (PIC) No. 1

Phase 2: Alternative Solutions

- Step 1: Identification of alternative solutions to the problem
- Step 2: Identify the study area and a general inventory of the natural, social and cultural environments.
- Step 3: Identification of the net positive and negative effects of each alternative solution
- Step 4: Evaluation of Alternative Solutions and preliminary recommendation of a preferred solution.
- Step 5: Public consultation at Public Information Centre (PIC) No. 2
- Step 6: Selection of the preferred solution, following public and agency review.
- Step 7: Refinements to the preferred solution.
- Step 8: Public consultation at Public Information Centre (PIC) No. 2B
- Step 9: Notice of Environmental Classification Step Down
- Step 10: Documentation of the ESD/Project file
- Step 11: Notice of Study Completion

Phase 3: Alternative Design Concepts for the Preferred Solution

Not included as part of this study.

Phase 4: Environmental Study Report (ESR)

Not included as part of this study.

Phase 5: Implementation
Not included as part of this study.

This study will only be completed to the end of the Alternative Solutions phase (i.e. Phase 2).

2.2 Federal Environmental Assessment Process

Projects such as this one no longer require a Canadian Environmental Assessment Act (CEAA) Screening even if a former ‘federal EA trigger’ existed; however, these types of municipal or provincial projects will still be subject to the relevant federal laws, regulations and standards, as applicable. Before federal agencies/departments subject to CEAA make any decision that would allow a project to proceed, they must determine whether a project is likely to cause significant adverse environmental effects.

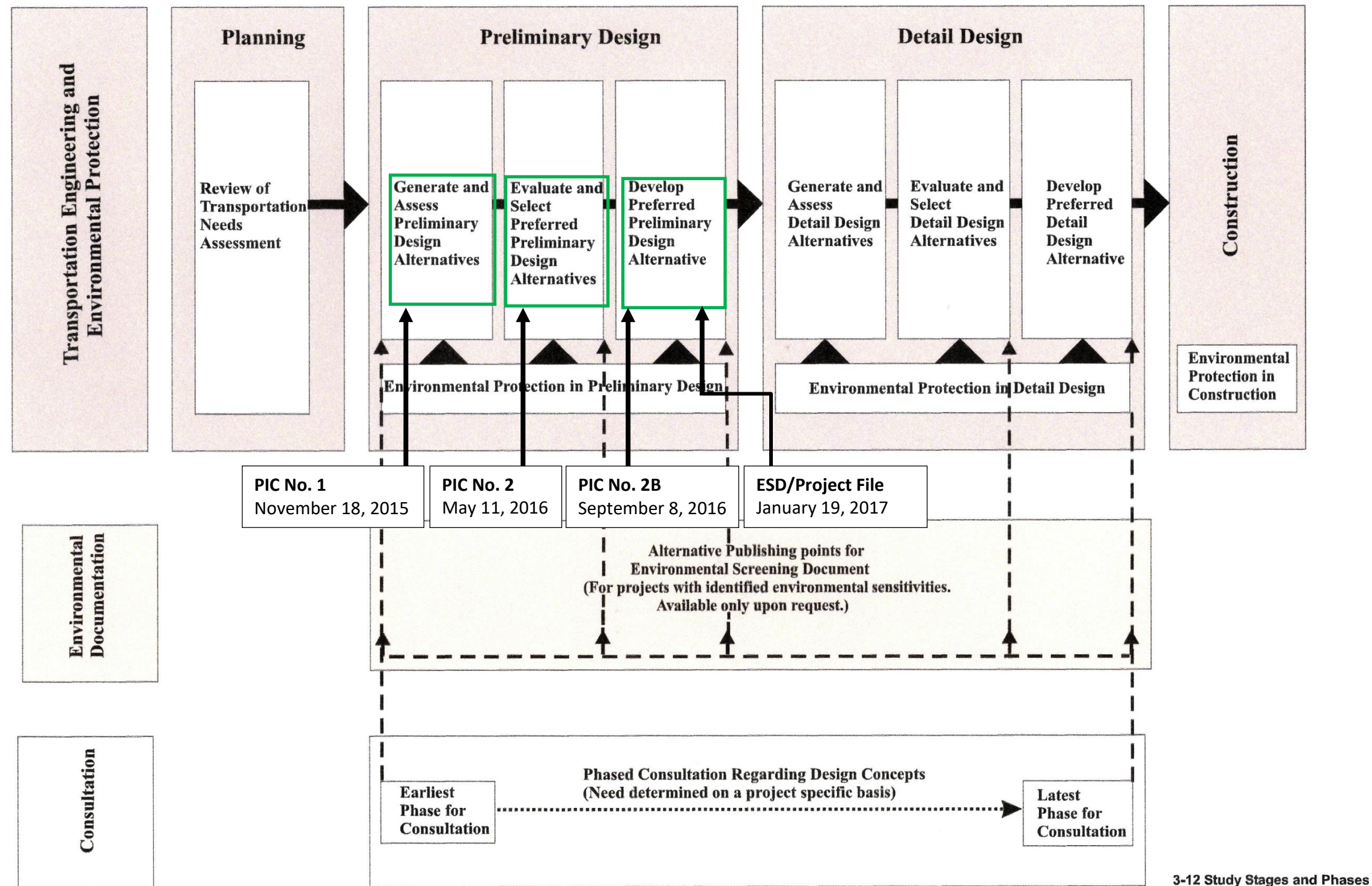


Figure 2: Ministry of Transportation Class EA Planning and Design Process for Group C Projects

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA

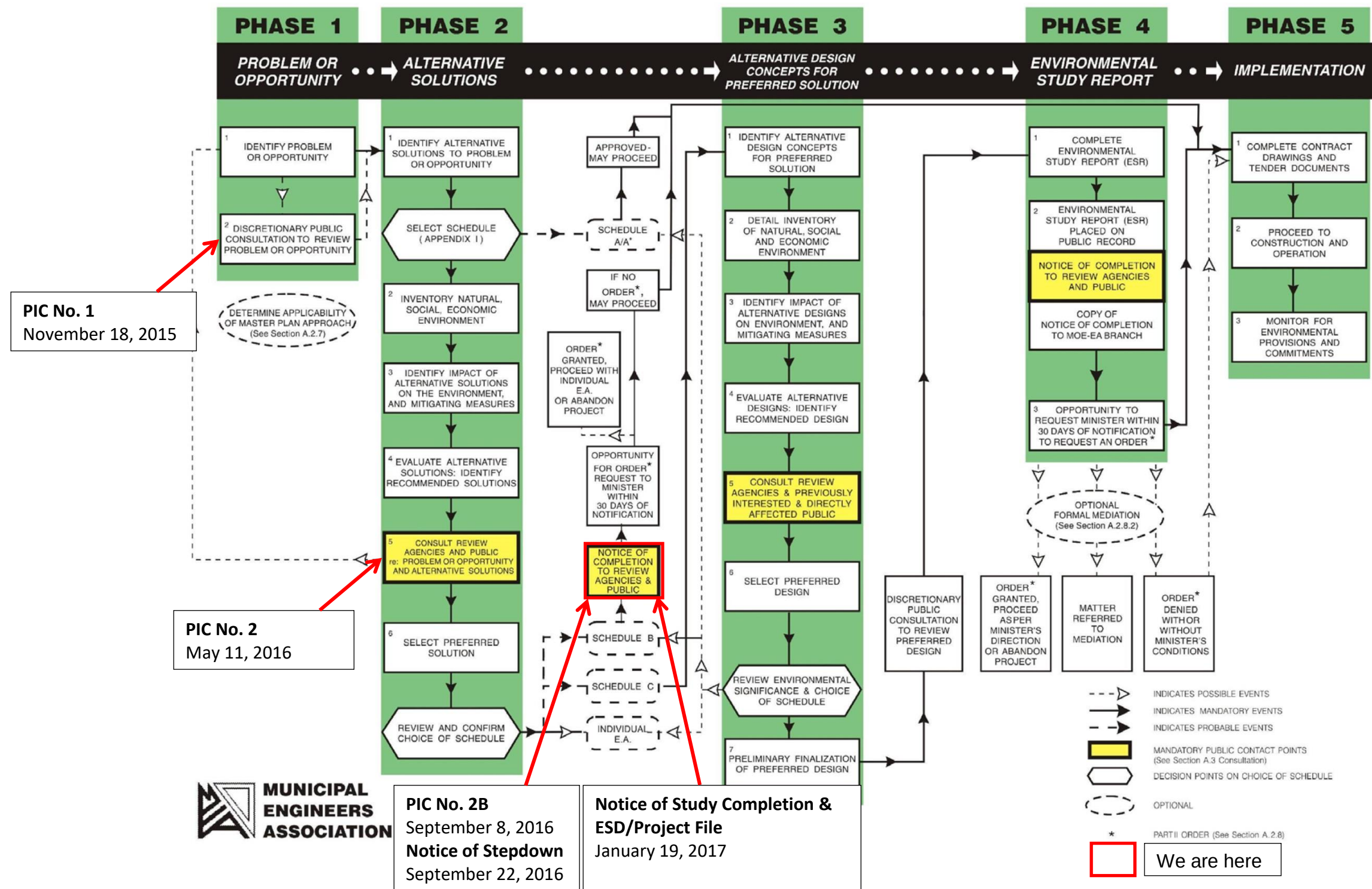


Figure 3: Municipal Class Planning Design Process

3.0 Consultation Program

The following sections provide a summary of the consultation activities held during the study.

3.1 Notices

Notices for the Study were publicized as follows:

- Study Commencement & PIC No. 1 – The Brantford Expositor: Thursday, October 29, 2015 and Thursday, November 5, 2015
- PIC No. 2 – The Brantford Expositor: Thursday, April 28, 2016 and Thursday, May 5, 2016
- PIC No. 2B – Thursday, August 25, 2016 and Thursday, September 8, 2016
- Notice of Environmental Classification Step-down – Thursday, September 22, 2016
- Notice of Filing of Study Completion – January 19, 2017

See **Appendix B** for copies of the Notice of Study Commencement, the PIC reports, the Notice of Environmental Classification Step-down and the Notice of Filing of Study Completion.

3.2 Contact List

A public/agency mailing list was developed at the outset of the study, and was updated throughout the duration of the study. Approximately 2,000 flyers were hand delivered to property owners in the Study Area to inform them of the Study Commencement. See **Section 3.5** for the list of agencies contacted.

3.3 Public Information Centre's (PIC's)

Three Public Information Centre meetings were held throughout the duration of the study to present the project, the assessment of opportunities, and the preliminary transportation improvement alternatives. These meetings were an integral component of the study – seeking input and comments from the local road users/stakeholders. These meetings were held jointly with the ongoing Class Environmental Assessment for the new Bishopsgate Road/Highway 403 or Maple Avenue/Highway 403 Interchange.

At each PIC a series of display panels were displayed that included descriptive text, photos and drawings around the meeting room for viewing. The public and agency representatives were encouraged to provide input/feedback.

County of Brant, MTO and consultant staff were available to respond to any verbal comments/questions.

See **Appendix B** for Notice of Study Commencement & PIC No. 1, Notice of PIC No. 2, PIC No. 2B, Notice of Environmental Classification Step-down and Notice of Study Completion. See **Appendix B** for Comment Sheets and PIC Summary Reports.

3.3.1 Public Information Centre (PIC) No. 1

PIC No. 1 was held on Wednesday November 18, 2015 at the Brant County Sports Complex at 944 Powerline Road, Paris ON, from 4:30 to 7:30 pm. The meeting presented information on the Municipal and Provincial Class EA Processes, the need and justification of the study, and the StudyArea issues.

Approximately 2,000 flyers were hand delivered to property owners within the Study Area inviting them to attend the PIC, and a combined Notice of Study Commencement and PIC No. 1 was publicized in the Brantford Expositor on October 29, 2015 and November 5, 2015.

Seventy-five (75) members of the public registered at the Public Information Centre. Four (4) comment sheets were received at the PIC, and one (1) comment sheet was subsequently submitted.

3.3.2 Public Information Centre (PIC) No. 2

PIC No. 2 was held on Wednesday May 11, 2016 at the Brant County Sports Complex at 944 Powerline Road, Paris ON, from 4:30 to 7:30 pm. The meeting presented information on the evaluation of alternatives and the Technically Preferred Alternative.

The notice of PIC No. 2 was publicized in the Brantford Expositor on April 28, 2016 and May 5, 2016.

Eighty-six (86) members of the public registered at the Public Information Centre. Two (2) comment sheets were received at the PIC, and two (2) comment sheets were subsequently submitted.

3.3.3 Public Information Centre (PIC) No. 2B

PIC No. 2B was held on Thursday September 8, 2016 at the Brant County Sports Complex at 944 Powerline Road, Paris ON, from 4:30 to 7:30 pm. The meeting presented information on the refinements to the Technically Preferred Alternative and the recommendation for environmental reclassification step-down.

The Notice of PIC No. 2B was publicized in the Brantford Expositor on October 29, 2015 and November 5, 2015.

One hundred and twenty-six (126) members of the public registered at the Public Information Centre. Two (2) comment sheets were received at the PIC, and one (1) comment sheet was subsequently submitted.

3.4 Technical Advisory Committee

A Technical Advisory Committee (TAC) was formed at the start of the project and subsequently met nine (9) times during the study. The TAC included participants from County of Brant, Ministry of

Transportation and the consultant. Additional meetings were held with MTO Senior Management, the MTO Roundabout Implementation Team, and the County of Brant Public Works Committee as follows:

3.4.1 MTO Senior Management Meeting

The MTO Senior Management meeting was held on Thursday, December 17, 2015 to review the progress of the study and the material to be presented at PIC No. 2. The meeting outlined the preliminary design alternatives and BTE’s recommended plan for interchange improvements at Rest Acres Road/ Highway 24 and Highway 403. MTO Senior Management indicated that the preliminary design alternatives must go through the MTO Roundabout Implementation Team before being presented to the public.

3.4.2 MTO Roundabout Implementation Team Meeting

The MTO Roundabout Implementation Team Meeting was held on Wednesday, January 27, 2016 to review the preliminary design alternatives and the VISSIM traffic analysis results. The Roundabout Implementation Team identified minor refinements to the technically preferred alternative, and provided approval for BTE to move forward with PIC No. 2.

3.4.3 County of Brant Public Works Committee Meeting

The County of Brant Public Works Committee Meeting was held on July 12, 2016 to review the recommendation of environmental classification step-down. Based on the criteria of no significant environmental effects or property issues being identified, BTE recommended that the project be stepped down from a Group B (MTO Class EA)/Schedule C (Municipal Class EA) to a Group C (MTO Class EA)/Schedule B (Municipal Class EA) project. The Public Works Committee approved the environmental classification step-down approach.

3.5 Stakeholder Consultation

3.5.1 Interest Groups and Agencies

All agencies or groups that may have had an interest in the project or any documentation to contribute to the study were contacted at the start of the Class EA for their input. These ministries, agencies and utilities were invited to attend the PIC meetings.

- Ministry of the Environment and Climate Change
- Ministry of Natural Resources and Forestry

- Ministry of Tourism, Culture and Sport
- Ministry of Aboriginal Affairs
- Infrastructure Ontario
- Ministry of Municipal Affairs and Housing
- Ministry of Transportation
- Ontario Federation of Agriculture
- Grand River Conservation Authority
- County of Brant Ambulance Services
- County of Brant Fire Department
- OPP Brant County
- Brant Haldimand Norfolk Catholic District School Board
- Conseil Scolaire de District Catholique Centre-Sud
- Grand Erie District School Board
- Brantford-Brant Chamber of Commerce
- Paris Downtown BIA
- Brantford Airport Commission
- CN Rail

3.5.2 First Nations

The following First Nations groups were contacted at various milestones throughout the project, including Class EA Commencement, PIC’s, Notice of Environmental Classification Step-down and prior to Study Completion.

- Metis Nation of Ontario
- Mississaugas of the New Credit First Nations
- Six Nations of the Grand River
- Aboriginal Affairs and Northern Development Canada
- Six Nations Economic Development Corporation
- Haudenosaunee Resource Centre

Appendix D includes select correspondence received from interested individuals, ministries, agencies and First Nations contacts.

4.0 Transportation

The existing roadway geometry and traffic control is presented in **Figure 4**. The Rest Acres Road/Highway 403 interchange is a Parclo A4 configuration. To the south, Highway 24 was widened in 2014 to a 4-lane cross section, and to the north Rest Acres Road currently is still a 2-lane cross section. Traffic signals are currently provided at the intersection of Rest Acres Road and the E-S ramp while the south ramp terminal remains unsignalized.

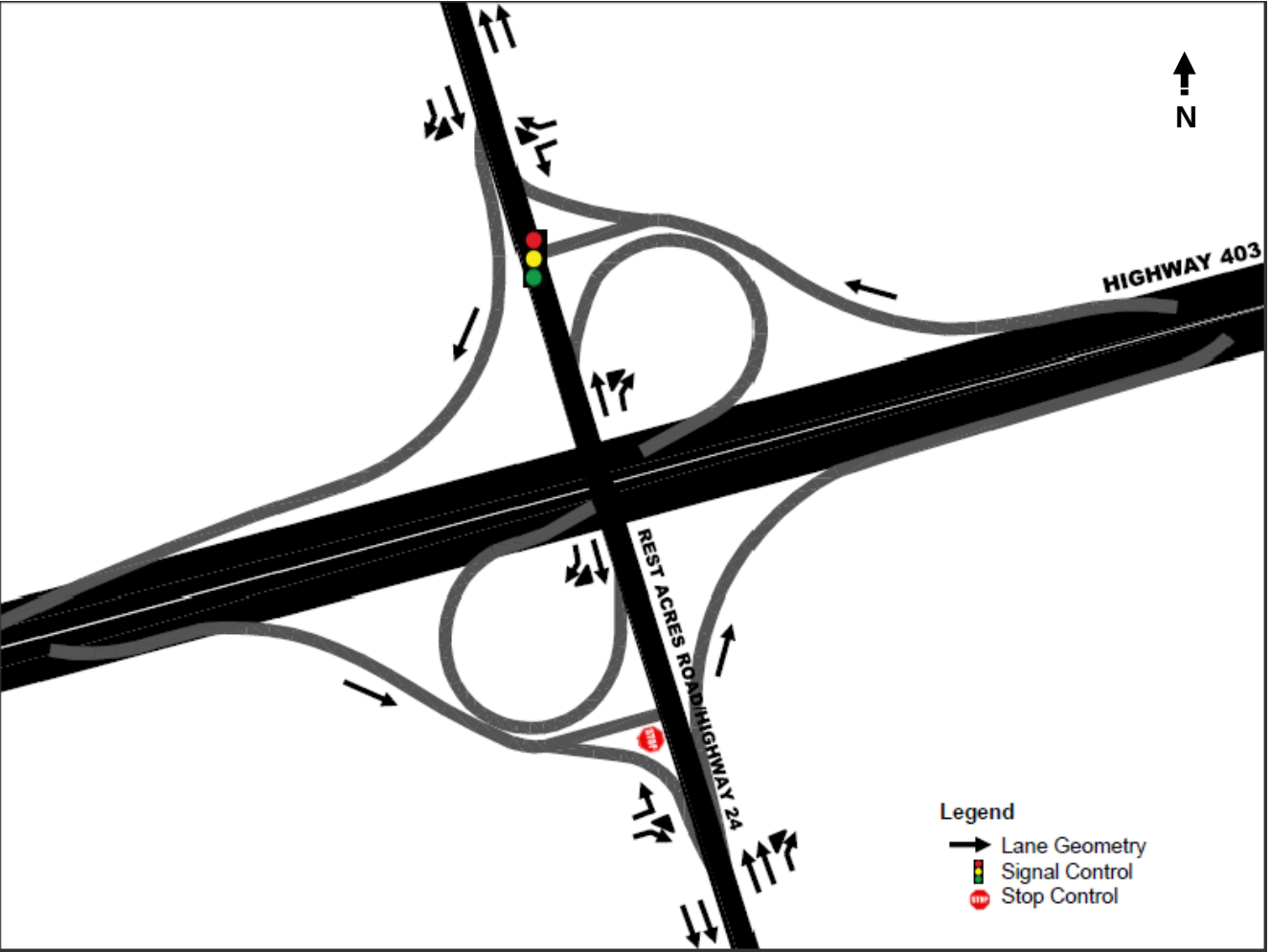


Figure 4: Lane Configuration of the Highway 403 and Rest Acres Road/Highway 24 interchange

The existing Average Annual Daily Traffic volumes (AADT), cross-sections, and posted speeds at the Rest Acres Road/Highway 24 and Highway 403 interchange are as follows:

Corridor	AADT	Cross-Section	Posted Speed	Comments
Highway 24 (from Highway 403 south to Bethel Road)	15,400	4-lane	80 km/h	• Widened in 2014 • North-south arterial
Rest Acres Road/Highway 24 (from Highway 403 north to Powerline Road)	10,500	2-lane	80 km/h	• North-south arterial
Highway 403	21,600 (to the west) 30,500 (to the east)	4-lane	100 km/h	• Controlled access east-west freeway • Connects Southwestern Ontario to GTA

The existing peak hour volumes of the interchange are presented in **Figure 5**.

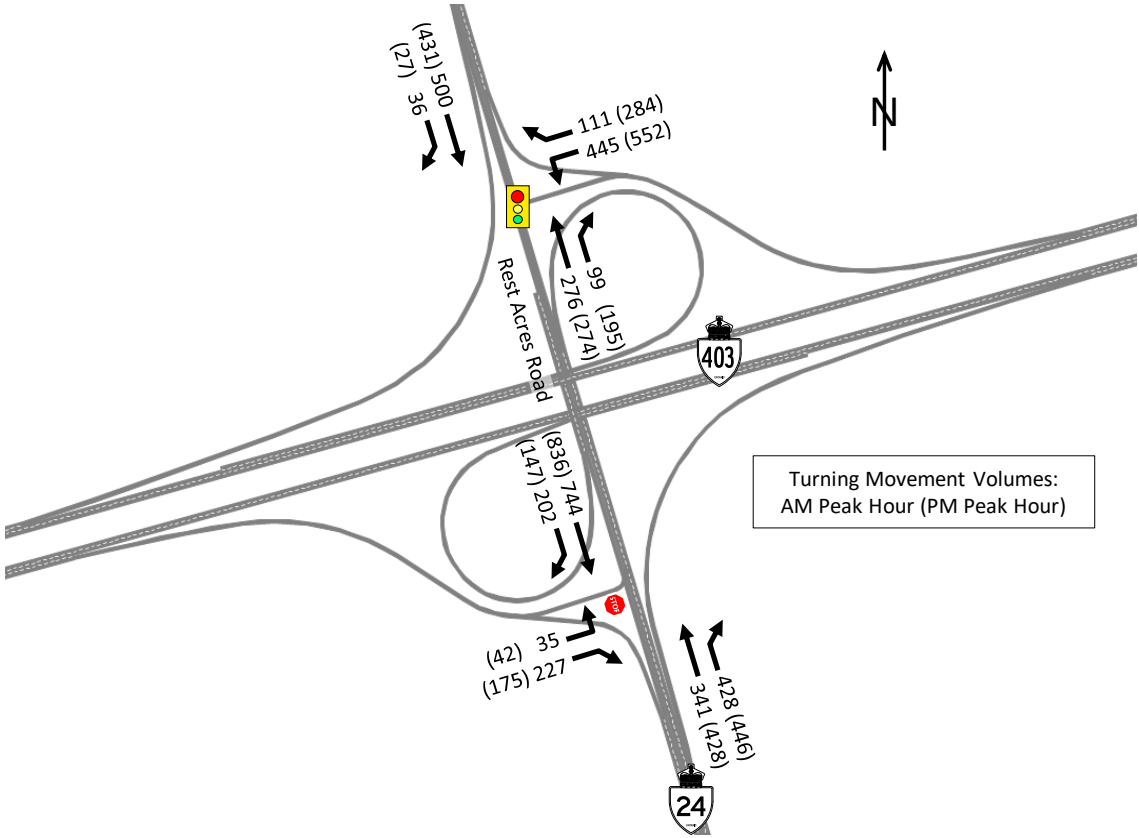


Figure 5: Existing Peak Hour Traffic Volumes

The Rest Acres Road/Highway 24 and Highway 403 interchange is the primary access to Paris, Ontario, and to the Brant 403 Business Park. The need for interchange improvements was identified in the Brant 403 Business Park Long-term Traffic Impact Study (IBI, June 2015) to accommodate

continued development of the Highway 403 Business Park and planned development in the Southwest Paris Urban Settlement Area. IBI's 2036 traffic projections were used for the analysis of the interchange alternatives. The traffic volume projections are presented in **Figure 6**.

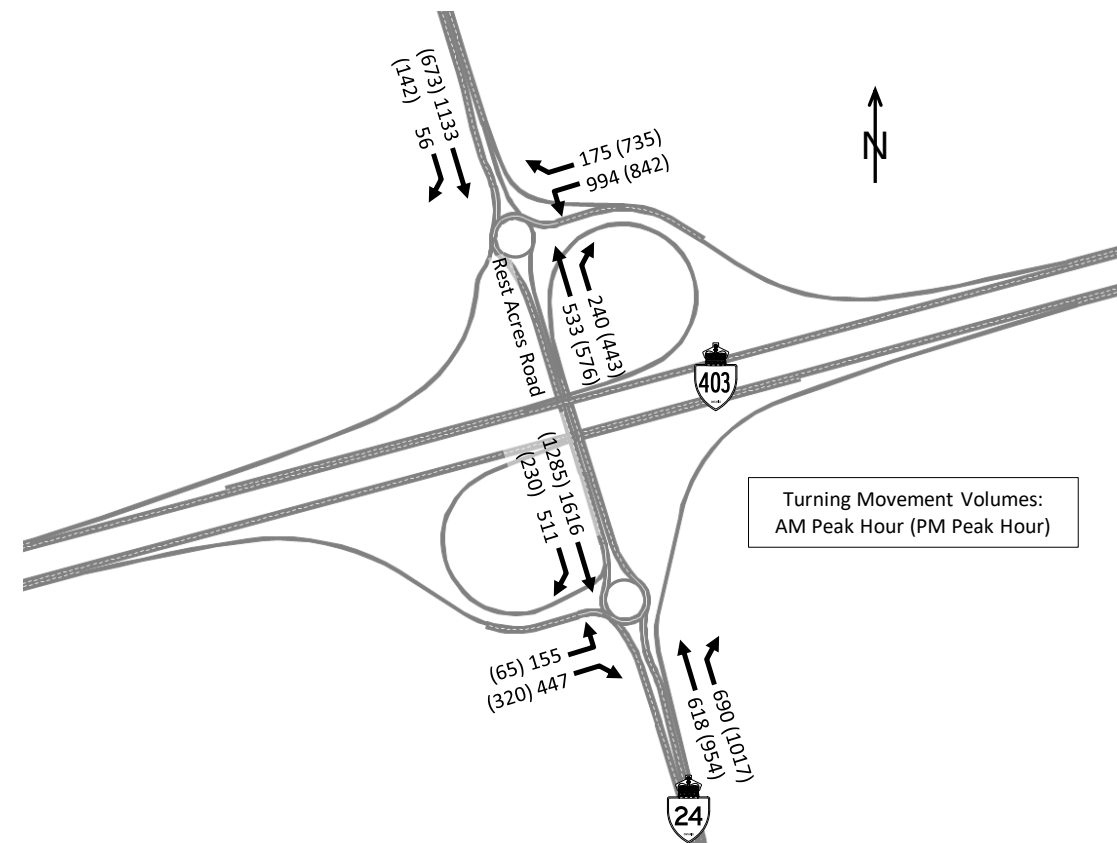


Figure 6: Recommended Plan with 2036 Peak Hour Traffic Projections

BTE completed an initial analysis of the interchange alternatives at Rest Acres Road/Highway 24 and Highway 403 using Synchro 9 (signalized alternative), and ARCADY (roundabout alternative). The traffic operations analysis of the ramp terminal alternatives is summarized in **Table 1** and **Table 2**. This analysis demonstrated that roundabouts would operate very well at the ramp terminals of the interchange, and would result in improved traffic operations and safety in comparison to signalized intersections.

Table 1: 2036 Signalized Traffic Operations (Synchro 9)									
Ramp Terminal Intersection		AM Peak Hour				PM Peak Hour			
		v/c	Delay (s)	LOS	95 th queue (m)	v/c	Delay (s)	LOS	95 th queue (m)
North Ramp Terminal	WBL	0.85	32.6	C	104.7	0.7	23.9	C	83.6
	NBT	0.69	18.9	B	93.5	0.7	25.7	C	90.7
	NBR	0.31	2.8	A	9.8	0.46	7.3	A	30.2
	SBT	0.77	24.3	C	122.4	0.49	19.2	B	60.7
	SBR	0.08	4.4	A	6.5	0.21	3.4	A	10.1
	Overall			C			20.0	C	
South Ramp Terminal	EBL	0.45	34.2	D	43.8	0.21	29.7	D	23.5
	NBT	0.3	7.9	A	32.5	0.47	9.1	A	41.1
	NBR	0.62	3.0	A	11.6	0.82	7.1	A	10.2
	SBT	0.83	16.4	B	152.2	0.63	12.7	A	97.1
	SBR	0.49	3.2	A	27.3	0.24	0.6	A	1.4
	Overall		9.0	A			5.2	A	

Table 2: 2036 Roundabout Traffic Operations (ARCADY)									
Ramp Terminal Intersection		AM Peak Hour				PM Peak Hour			
		v/c	Delay (s)	LOS	95 th queue (m)	v/c	Delay (s)	LOS	95 th queue (m)
North Ramp Terminal	Westbound	0.57	4.14	A	6.7	0.76	7.08	A	32.7
	Northbound	0.41	4.81	A	< 6	0.38	4.4	A	6.5
	Southbound	0.73	8.03	A	26.0	0.47	3.87	A	< 6
	Overall		5.78	A			5.56	A	
South Ramp Terminal	Eastbound	0.15	4.06	A	< 6	0.05	3.21	A	< 6
	Northbound	0.28	2.22	A	< 6	0.43	2.86	A	< 6
	Southbound	0.71	5.52	A	32.7	0.60	3.92	A	12.9
	Overall		4.24	A			3.32	A	

To confirm the results of the ARCADY analysis, a more detailed analysis of the roundabout operations was completed using the microscopic simulation tool PTV VISSIM. The results of the intersection performance analysis are presented in **Table 3**.

Table 3: Roundabout Traffic Operations, 2036 Projection									
Intersection Movement ¹		AM Peak Hour				PM Peak Hour			
		Delay (s)	Level of Service	Average Queue (m)	Maximum Queue (m)	Delay (s)	Level of Service	Average Queue (m)	Maximum Queue (m)
North Ramp Terminal	WBL	8	A	8.4	90.1	7	A	5.8	68.2
	WBR	0	A	0.0	0.0	0	A	0.0	0.0
	NBT	1	A	0.0	0.0	1	A	0.0	0.0
	NBR	1	A	0.0	0.0	1	A	0.0	0.0
	SBT	10	A	6.9	101.0	3	A	0.5	27.2
	SBR	15	B	6.9	101.0	6	A	0.5	27.2
	Overall	6	A			3	A		
South Ramp Terminal	EBL	71	E	28.4	145.0	10	A	3.2	71.5
	EBR	19	B	28.4	145.0	8	A	3.2	71.5
	NBT	1	A	0.0	15.9	1	A	0.0	7.0
	NBR	0	A	0.0	0.0	0	A	0.0	0.0
	SBT	1	A	0.0	0.0	1	A	0.0	0.0
	SBR	1	A	0.0	0.0	0	A	0.0	0.0
	Overall	6	A			1	A		

The results of the intersection performance analysis indicate that the provision of roundabouts at the ramp terminals would adequately meet the traffic demand with the exception of the eastbound left-turn movement at the south ramp terminal during the AM Peak Hour. Based on the projected 2036 traffic volumes, the eastbound left-turn movement could at times experience significant delays during the AM peak hour due to slower moving trucks on the ramp turning to go north on Rest Acres Road. The microsimulations of the traffic operations showed that any traffic queues quickly cleared once the truck had completed its turn. This will be mitigated by the diversion of most eastbound left turning trucks to the planned new interchange on Highway 403 at Bishopsgate Road or Maple Avenue.

The Traffic Analysis Reports are documented in **Appendix E**.

5.0 Environmental Conditions

Existing conditions of the natural environment, land use and property, and socio-economic environment in the Study Area are described in this section.

5.1 Natural Environment

5.1.1 Terrestrial

The terrestrial environment assessment was completed in June 2016 and concluded that the proposed improvements present no negative impact implications for significant natural environment features or functions, nor are requirements for any impact mitigation anticipated. The Study Area has been completely transformed from a natural condition and the entire site is characterized by non-natural habitat that is found abundantly along most highways in southern Ontario. This habitat contains no intrinsic natural significance. Additionally, with adjacent lands in a comparably transformed state and thus supporting little or no natural habitat, no habitat enhancement measures or actions are appropriate or recommended. A view of the existing terrestrial environment is illustrated in **Photo 1**.



Photo 1: Study Area Terrestrial Environment

The Environment Impact Statement documenting existing conditions can be reviewed in its entirety in **Appendix F**.

5.1.2 Aquatic Environment

Thorough investigations of the Study Area found that there are no fish habitats in the vicinity of the Rest Acres Road/Highway 24 and Highway 403 interchange.

The Aquatic Environment Memo is documented in **Appendix G**.

5.2 Social and Cultural Environment

5.2.1 Archaeological Assessment

A Stage 1 archaeological assessment was conducted for the proposed operational improvements to the Rest Acres Road/Highway 24 and Highway 403 Interchange by TMHC in August 2015. Based on the review of the available historic mapping, geological data, land use history, and culture history, it was determined that the lands within the existing interchange and right-of-way are extensively disturbed and do not retain archaeological potential. The lands outside of the right-of-way, as illustrated in **Figure 7**, have archaeological potential, and if impacted will require a Stage 2 Archaeological Assessment as part of Detailed Design.

The Stage 1 Archaeology Report is documented in **Appendix H**.

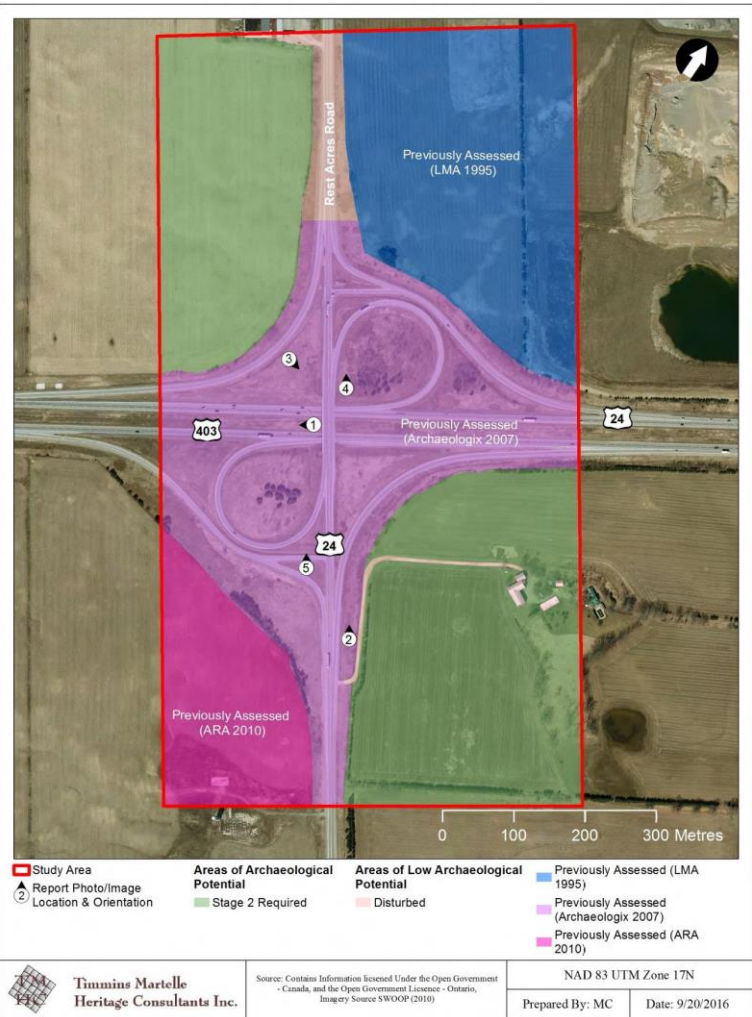


Figure 7: Map of Archaeological Potential

5.2.1 Land Use Planning

The site is generally bounded to the north by Powerline Road, to the south by Bethel Road, and to the east and west by the Highway 403 ramp terminals. The surrounding area is predominantly commercial, residential and agricultural, with a limited amount of vegetation along the corridor.

The northwest and southeast quadrants are predominantly farmland, and a gravel pit operation is located in the northeast quadrant. The Brant 403 Business Park is a commercial/industrial park located in the southwest quadrant of the interchange.

The site of the interchange improvements at Rest Acres Road/Highway 24 and Highway 403 has been completely altered by the highway corridors and road construction, and will have no significant impact on the surrounding land uses.

The Land Use Planning Report is documented in **Appendix I**.

5.2.2 Cultural Environment Assessment

Based on the review of background documents, the extent and location of the proposed improvements, the field investigation and consideration of the guidance provided by Reg. 9/06 of the Ontario Heritage Act, the Rest Acres Road/Highway 24 and Highway 403 interchange improvements do not impact any existing or potential heritage resources. Further study, such as a Heritage Impact Assessment, is not considered necessary.

The Cultural Heritage Assessment Memorandum is documented in **Appendix J**.

5.2.3 First Nations

BTE has actively consulted with the Six Nations of the Grand River throughout the Class EA Process. The County of Brant has acted in the spirit of cooperation outlined in the Grand River Notification Agreement. The Study Area is within the traditional lands of the Six Nations of the Grand River.

Appendix O describes the traditional land use and outstanding interests of First Nations groups in the Study Area.

5.3 Geotechnical Investigations

A geotechnical desktop review was completed by Cambium Inc. in August 2016, and is detailed in **Appendix K**. The overview of the existing geotechnical conditions is:

Physiography

- Part of the spillway physiographic landform
- General characteristics of this area consist of till, including clay, silt, sand, and gravel to extended depths

Well Records

- Fine grained material
- Minimum depth of limestone bedrock is approximately 37m

Geohazards

- Permafrost, landslide hazards and seismic hazards are not expected

5.4 Hydrological Investigations

Sanchez Engineering Inc. carried out a preliminary hydrology study to determine the existing drainage configurations, the effect on runoff, and the recommended stormwater management plan. The Rest Acres Road/Highway 403 interchange is located within the watershed of a small tributary of Whitemans Creek. The proposed interchange improvements do not modify appreciably the drainage patterns of the interchange. The recommendations for the Stormwater Management Plan can be found in the Preliminary Hydrology Report Memorandum in **Appendix L**.

5.5 Structural Investigation

Brown|Co carried out a site review of the Rest Acres Road structure on November 12, 2015. The existing bridge is a two span concrete structure with spans of 33.5m and 33.5m and a width of 18.2m. The structure was visually inspected and was found to be in good condition with no sign of structural distress. The recommendations of the Structural Investigation can be found in **Appendix M**.

5.6 Utilities

Various public and privately owned utilities exist within the limits of the Study Area and are described below.

Bell Canada

Bell Canada has existing buried and above ground infrastructure in the immediate project area.

The majority of the infrastructure is conduit protected and travels north-south along Rest Acres Road on the east side. Conduits crossing travelled roadways are limited to:

1. Across Rest Acres Road just north of the Highway 403/Rest Acres Road interchange
2. Across the northbound on-ramps to eastbound and westbound Highway 403
3. Across the Highway 403 westbound off-ramp

There are also two short runs of existing unprotected buried cable running parallel to the conduit. These runs are mapped as occurring across the northbound on-ramps to eastbound and westbound 403 starting and ending approximately 10 metres on either side of the ramps.

A number of manholes, handholes and pedestals are also present along the buried infrastructure.

Hydro One & Energy+

Hydro One owns and operates four-phase wooden hydro poles which run through the project area.

The poles travel north-south along Rest Acres Road on the east side of the roadway. The poles are approximately 15 metres in height with the lowest sagging aerial cable approximately 7 metres above ground level. There are aerial crossings across Rest Acres Road to guy poles with anchoring on the west side of the roadway.

The local power authority, Energy+, owns circuits (conductors) running on these poles which will be affected by the proposed work.

Provincial Infrastructure

Provincial infrastructure is located at the Highway 403/Rest Acres Road interchange within the project limits. Traffic signals are located at the T-intersection of the Highway 403 westbound off-ramp and Rest Acres Road as illustrated in **Photo 2**.



Photo 2: Traffic Signals at Highway 403 Westbound Off-Ramp

Street lighting is also present at the interchange on both the east and west sides of Rest Acres Road. The lighting consists of aluminum poles approximately 20 metres in height with concrete footings.

6.0 Analysis and Evaluation

The analysis and evaluation involves a 2-step process for decision-making. The initial assessment is the analysis and evaluation of “Alternatives to” the Undertaking (Alternative Planning Solutions), which considers different approaches to address the problem. The second step is the assessment of preliminary design alternatives (“Alternative Methods” of carrying out the preferred Alternative) which considers different designs. These two steps in the evaluation are described in Appendix N and the following sections.

6.1 Assessment of Alternatives to the Undertaking/Alternative Planning Solutions

A detailed table illustrating the generalized planning and preliminary design process is presented in **Figure 8**, which includes the assessment of Alternatives to the Undertaking/Alternative Planning Solutions and Alternative Methods or Carrying Out the Undertaking/Preliminary Design Alternatives. The relevant documentation of this phase is presented in **Appendix N**.

Five alternative planning solutions were considered for improvements to the Rest Acres Road/Highway 24 and Highway 403 interchange, namely:

- Do Nothing;
- Restrict Development;
- Improved Transit;
- Transportation Demand Management; and
- Operational Improvements.

The Technical Advisory Committee (TAC) assessment selected Operational Improvements to the interchange as the preferred alternative. The Do Nothing, Restrict Development, and Improved Transit approaches do not accommodate the existing and future traffic demands associated with planned growth. This planned growth is defined in the County’s Official Plan and recently updated Transportation Master Plan (TMP). The Transportation Demand Management alternative has a higher potential for enhancement of the travelling public and is considered part of the integrated transportation plan, but was not selected to be carried forward as a standalone solution.

This recommendation was presented at PIC No. 2. It is consistent with the County’s TMP and there were no objections received from the public to this conclusion.

6.2 Generation and Assessment of Preliminary Design Alternatives (Alternative Methods of Carrying Out the Undertaking)

The analysis and evaluation process is a central requirement of the Class EA process and has been the subject of review by the Ministry of the Environment and Climate Change (MOECC). MOECC’s review of *Evaluation Methods in Environmental Assessment* (1990) provided the framework for the detailed evaluation processes followed for this study.

In adhering to this process within the Study Area, a number of operational improvements for the Rest Acres Road/Highway 24 and Highway 403 interchange were generated for consideration which would improve traffic operations of the two ramp terminals to meet future traffic demand. A “long list” of alternatives was generated in an attempt to ensure consideration of a wide range of alternatives in addressing the identified needs (i.e. all reasonable alternatives are considered). The consideration of ideas included a Value Planning Workshop to foster innovation and creativity. The Value Planning Report can be found in Appendix C. This wide range of alternatives was subjected to a coarse screening analysis before proceeding with the detailed evaluation.

The following is the subsequent short list of potential operational improvement alternatives:

North Ramp Terminal

- Alternative N1: Provision of a double left on the E-S ramp
- Alternative N2: Replace existing traffic signals with a roundabout

South Ramp Terminal

- Alternative S2: Provision of a 2-lane roundabout
- Alternative S7: Widen the structure to accommodate 2 southbound through lanes and a southbound speed change lane (SCL)

The second step in the analysis and evaluation process is to assess preliminary design alternatives which reflect design concepts to implement the preferred planning solution. For this study, these alternatives include variations of operational improvements to the Rest Acres Road/Highway 24 interchange with Highway 403. Each alternative has specific trade-offs and the study has used an iterative approach of considering all feasible alternatives, coarse screening options with significant operational or environmental effects, and then systematically comparing competing options based on the performance, environmental impacts and costs of those options.

6.2.1 Coarse Screening of Alternatives

Six alternatives were evaluated for operational improvements to the north ramp terminal, and eight alternatives were evaluated for the south ramp terminal. The coarse screening analysis was endorsed by the TAC.

The recommendation was to carry forward two alternatives for the north ramp terminal, and two alternatives for the south ramp terminal. The options carried forward represent the solutions with the greatest potential for implementation, and are illustrated in **Figure 9** and **Figure 10**. This coarse screening analysis was presented at PIC No. 2. No objections to this analysis were received from the public.

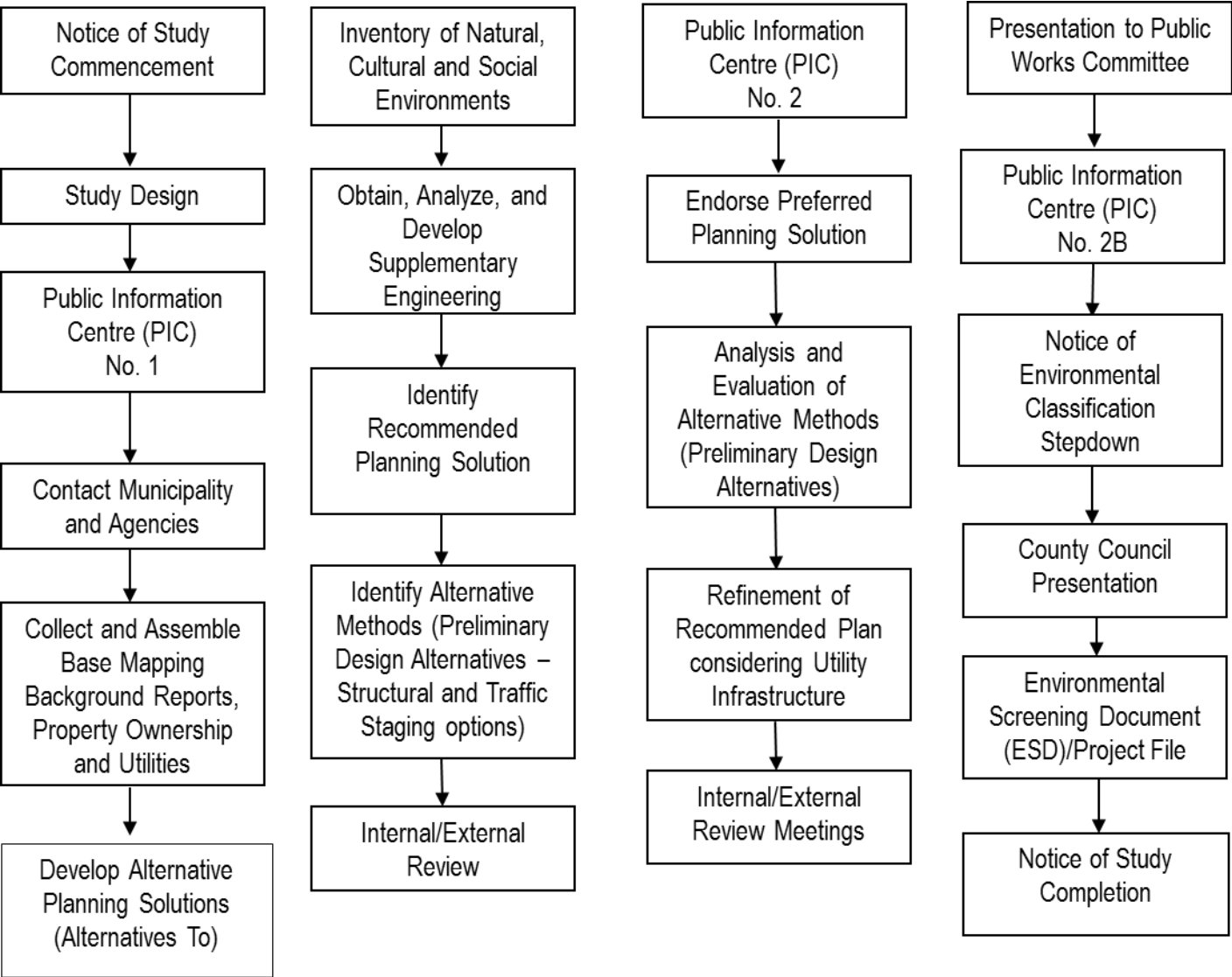


Figure 8: Generalized Planning and Preliminary Design Planning Process

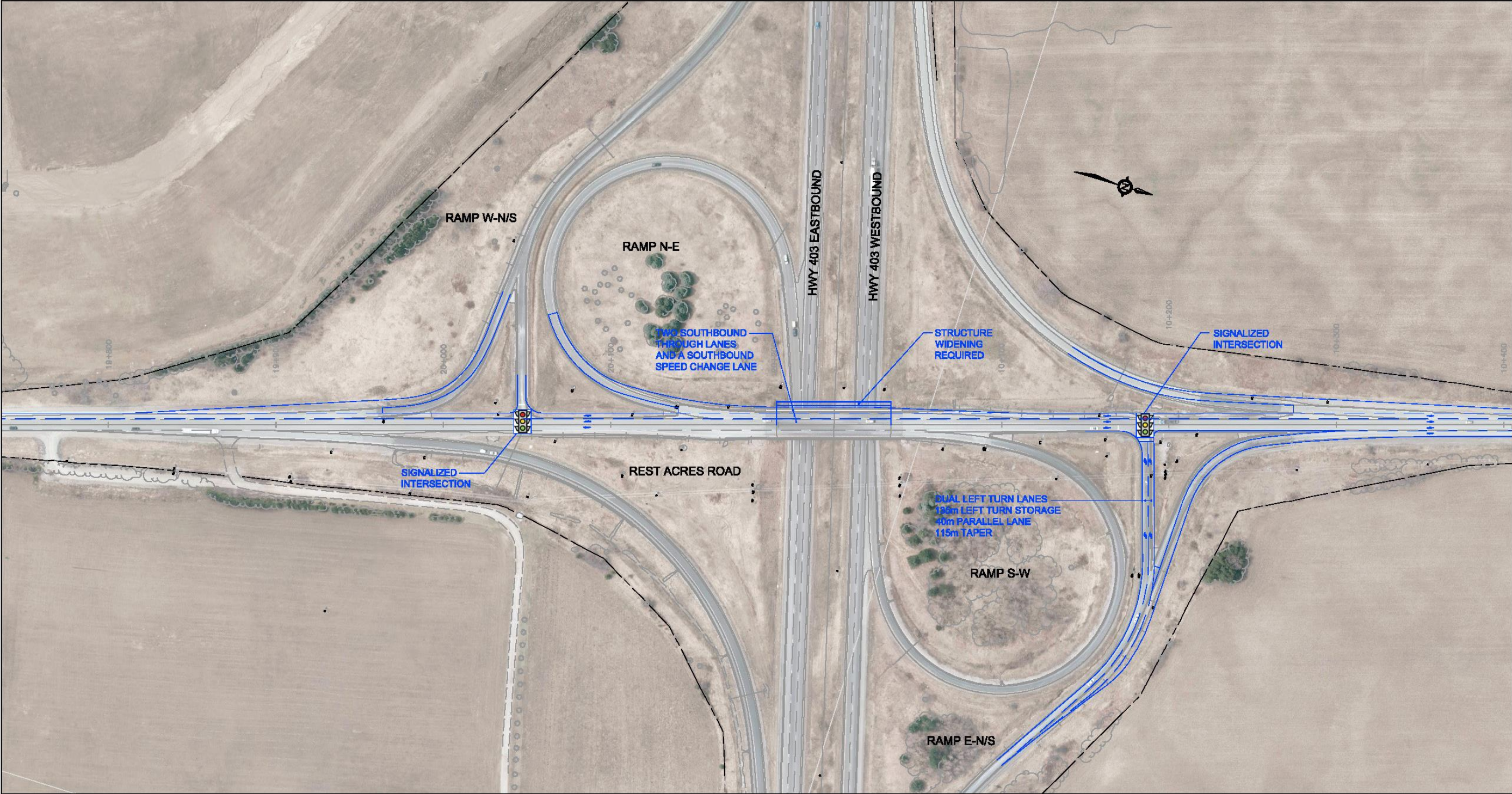


Figure 9: Alternative N1/S7 (Conventional/Signalized)

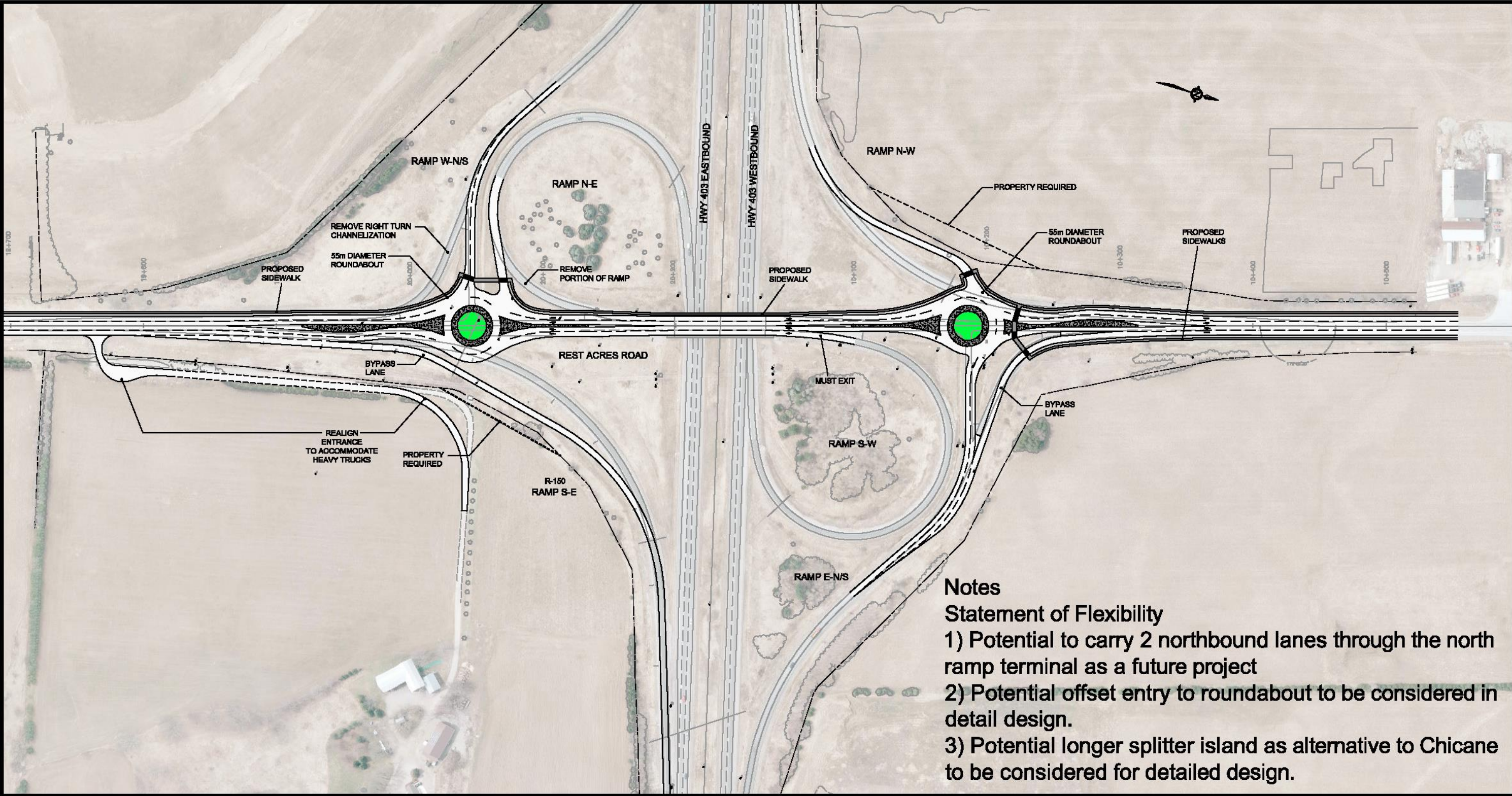


Figure 10: Alternative N2/S2 (Roundabouts)

6.3 Evaluation of Operational Improvement Alternatives

The evaluation of the design alternatives was completed using a quantitative assessment to compare the net effects and performance of the alternatives. This assessment used a weighted average score method to mathematically determine the options being considered using various global factors. This process is described briefly in **Section 6.3.1** and in detail in **Appendix N**.

6.3.1 Multi-Attribute Trade-off System (MATS) Method

The quantitative approach is based on the “Weighted Additive Method” which focuses on the differences between the alternatives, addressing the complexity of the base data collected and providing a traceable decision-making process. Sensitivity tests are also performed to determine the impact of the alternatives and the trade-offs between each alternative.

Overall scores are assigned to each alternative and the option with the highest score is selected as the preferred alternative to complete the evaluation. The initial task in the evaluation is to develop criteria from which alternatives will be evaluated with and assessed. This process includes the identification of “global” groups of factors followed by the selection of a number of “local” sub-factors, or sub-factors, under these global groups.

The evaluation criteria are grouped into broad categories (global factors) to describe the study specific engineering and environmental concerns. Six global factors were selected for the evaluation of the access alternatives:

- Transportation;
- Natural Environment;
- Social and Cultural Environment;
- Economic Environment;
- Land Use and Property; and
- Cost.

Under each of the six global factors, a number of sub-factors were selected under which measurements could be made. Each sub-factor must adequately describe the issue or aspect of the environment to be evaluated and the unique features of each alternative. A long list of potential sub-factors was generated through discussions with the Technical Advisory Committee (TAC), stakeholders and the public. Each sub-factor was then reviewed and screened and those sub-factors considered equal or not applicable among the alternatives eliminated. The long list and short list can be found in **Appendix N**. The screening process was presented at the second Public Information Centre (PIC) for public review and comment.

To evaluate the alternatives using the short-listed criteria, the TAC rated each global factor and sub-factor based on their opinion. Every person assigning weights has a personal bias and understanding of

the scope of the project, with various life experiences. Hence, the TAC was comprised of a diversified team of professionals with varied backgrounds ranging from transportation planners, environmental planners, and structural and transportation engineers and technicians.

Each member of the TAC assigned percentage weights to each global factor and sub-factor based on their opinion of the relative importance of each. Their individual weights were then averaged to determine the TAC weight for each global factor and sub-factor.

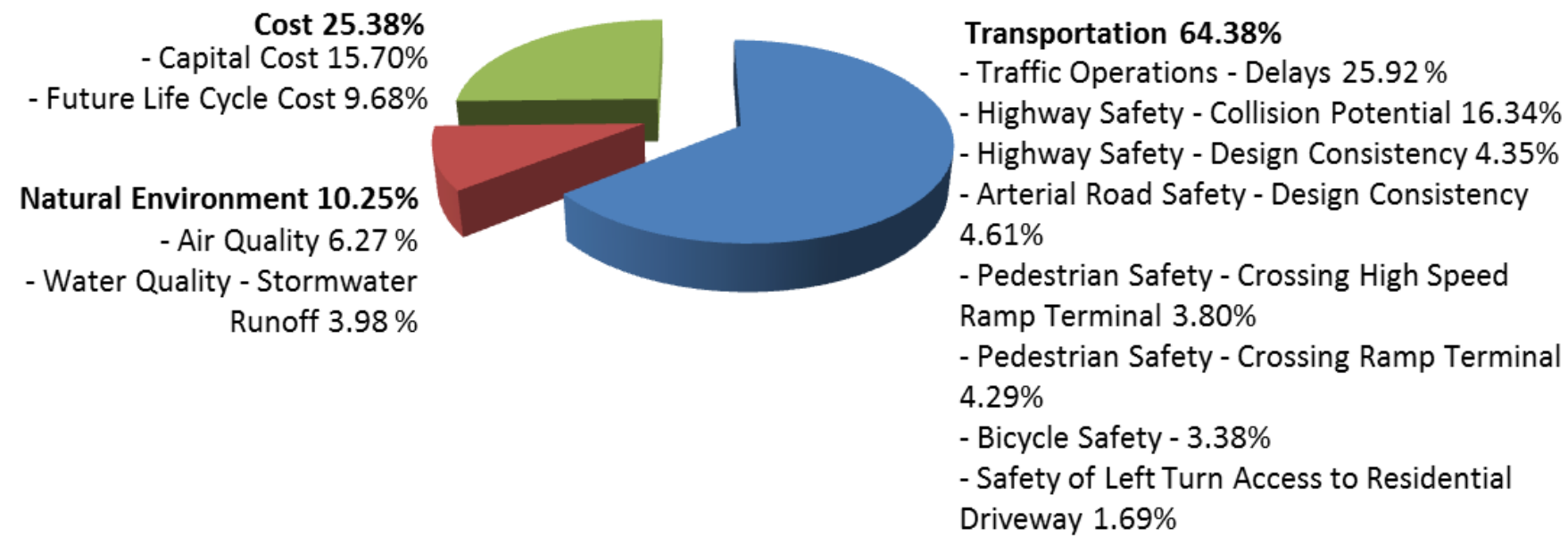


Figure 11: Weighting Results of the MATS Evaluation

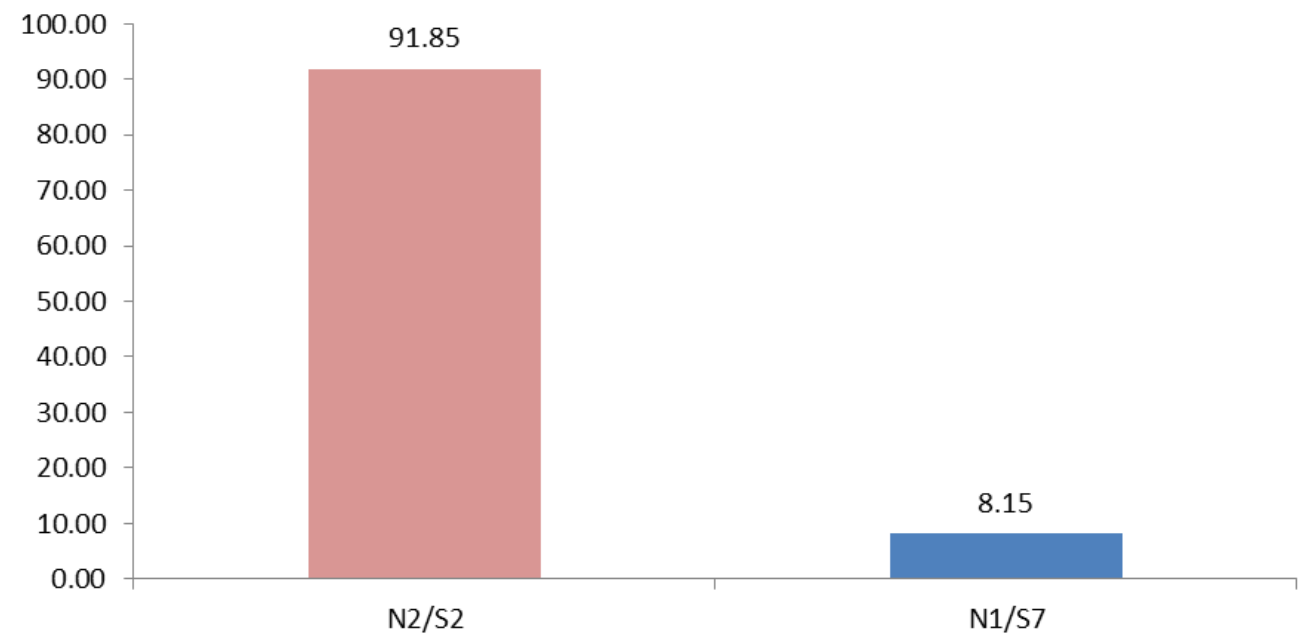


Figure 12: Weighted Ranking of the Alternatives

Sensitivity Tests

Sensitivity testing is essential in the analysis to determine if the nature of the evaluation is sensitive to the weights assigned to each criterion. Since each specialist assigns weights based on their professional opinions, there is a spread of values for the selection of weights. The range is dependent on the value judgement of individuals and specialists. Using the average of the group does not necessarily capture what the standard deviation was among individual scores. Therefore, sensitivity testing is conducted to test a range of weights either higher or lower than the group’s average.

6.3.2 Analysis and Evaluation Results For Access Alternatives

MATS Weights and Ranking

The results of the weighting exercise for each alternative are provided in detail in **Appendix N**, and are illustrated on **Figure 11** and **Figure 12**, respectively.

Sensitivity Tests

A series of tests were completed varying the weight for each global factor. The three tests included:

- Average TAC weight
- Highest weight in a factor group by any TAC member
- Lowest weight in a factor group by any TAC member

The sensitivity test results, shown in **Table 4**, demonstrated that there were no trade-offs for the Technically Preferred Alternative.

Table 4: Sensitivity Testing Results			
Alternatives		Alt N2/S2	Alt N1/S7
Score		91.85	8.15
RANK		1	2
Transportation	High	1	2
	Low	1	2
Natural Environment	High	1	2
	Low	1	2
Cost	High	1	2
	Low	1	2

6.3.3 Technically Preferred Alternative

The technically preferred alternative for operational improvements to the Rest Acres Road/Highway 24 and Highway 403 interchange is Alternative N2/S2 (Roundabouts), and is illustrated in **Figure 13**.

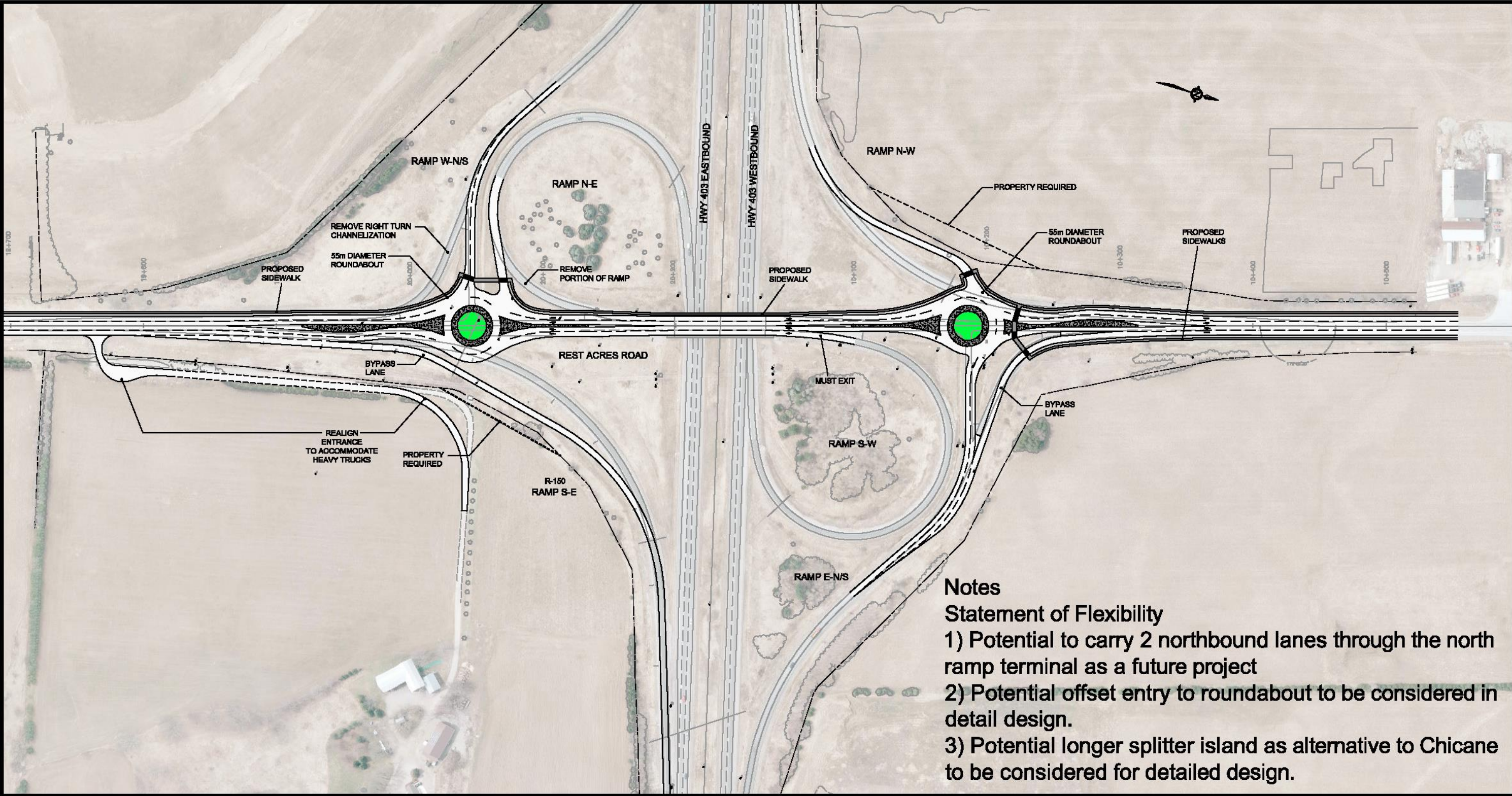


Figure 13: Technically Preferred Alternative

7.0 Recommended Plan

The Technically Preferred Alternative described in **Section 6.3.3** was presented to the MTO Roundabout Implementation Team and the public/stakeholders at PIC No. 2, and then subjected to refinements based on input. These refinements are described in **Section 7.1**.

7.1 Refinements to Technically Preferred Alternative (TPA)

Following the MTO Roundabout Implementation Team meeting refinements were made to the TPA to reflect input from the MTO. These revisions included:

- Revision to the south ramp terminal roundabout to have a single lane for the west to north movement.
- Identified potential property acquisition in the northwest quadrant of the interchange to allow for flexibility for potential future realignment for westbound on-ramp geometry in detailed design.

Additionally, following PIC No. 2 refinements were made to the TPA to avoid impacting a hydro pole in the southeast quadrant of the interchange. This revision relocated the S-E Ramp to accommodate a 4m clear zone from the pole, and resulted in a slight increase of property required from the southeast quadrant.

7.1.1 Statement of Flexibility

The Recommended Plan for interchange operational improvements contains key features with flexibility for refinements during detailed design including:

- Extensions or modification to the splitter islands on the roundabout approaches;
- Potential to carry two northbound lanes through the north ramp terminal roundabout as a future project if and when the County extends 4 lanes north of the interchange;
- Potential minor offset of roundabouts to improve safety; and
- Potential extension of the median northerly to restrict driveways to right-in/right-out (both east and west of Rest Acres Road). Change in land use/access will be subject to County and MTO approval.

7.2 Description of Recommended Plan

The Recommended Plan for this project includes refinements to the TPA based on agency and stakeholder input, described above. The Recommended Plan, illustrated in **Figure 14**, for this project includes the following key features:

North Ramp Terminal

- Two-lane 55m diameter roundabout with a single-lane for south to north and south to west movements
- Bypass lane for east to north movement
- Sidewalks on both sides of corridor north of ramp terminal, and on west side of corridor south of ramp terminal

South Ramp Terminal

- Two-lane 55m diameter roundabout with a single-lane for west to north movement
- Bypass lane for south to east movement
- Sidewalk on the west side of the corridor

7.3 Endorsement of Recommended Plan

The Technically Preferred Plan reflects the opinion of the TAC. Following the presentation of the TPP to the public and adjacent landowners, the plan including refinements was carried forward as the Recommended Plan. This plan was presented to at PIC No. 2B in September 2016 with no objections from the public to this recommended plan.

7.4 Effects and Mitigation

Effects on the environment were considered in accordance with the Provincial and Municipal Class planning, preliminary design and initial detail design phases of the harmonized Class EA process. Based on a thorough examination of the Study Area it was determined that there are no significant environmental effects, engineering issues or property impacts. As a result the project's environmental classification was stepped down from a MTO Group B/Provincial Schedule C project to a MTO Group C/Provincial Schedule B project.

The remaining areas of concern, related to the Recommended Plan, will be mitigated to minimize or remove any detrimental effects. Mitigation measures include:

- Stage 2 Archaeological Assessment for impacted land outside of the right-of-way
- Erosion and sediment control measures to address all short term construction impacts
- Property acquisition which will include compensation to owners in the northwest quadrant and southeast quadrant

No other effects requiring mitigation were identified in this study.

7.5 Property Requirements

The proposed operational improvements to the Rest Acres Road/Highway 24 and Highway 403 interchange require the acquisition of property in the northwest and southeast quadrants of the interchange. Property acquisition will be carried out by the County of Brant in advance of the detailed design phase of the project.

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- Legend:**
- Existing Property Fabric (Existing Fence)
 - Property Requirements
 - Proposed Raised Concrete Island
 - Proposed Sidewalk/Recreational Path

- Notes:**
Statement of Flexibility
- 1) Potential to carry 2 northbound lanes through the north ramp terminal as a future project.
 - 2) Potential offset entry to roundabout to be considered in detail design.
 - 3) Potential longer splitter island as alternative to Chicane to be considered for detailed design.

FIGURE 14
RECOMMENDED PLAN

**PROPOSED OPERATIONAL IMPROVEMENT AT
REST ACRES ROAD/HIGHWAY 24 & HIGHWAY 403
ENVIRONMENTAL ASSESSMENT**



SCALE
15m 0 30m
HORIZONTAL 1:3,000

8.0 Future Activities

At the end of the 30-day review period, should there be no objections to the project or new issues, the project will have achieved Environmental Assessment Clearance under the Environmental Assessment Act. Accordingly, the County may proceed with detailed design and construction of the recommended plan, subject to availability of funding and construction priorities.

Glossary of Terms

• AADT	Annual Average Daily Traffic – the average 24-hour, two-way traffic for the period from January 1st to December 31st.
• Alignment	The vertical and horizontal position of a road.
• Alternative	Well-defined and distinct course of action that fulfils a given set of requirements. The EA Act distinguishes between alternatives to the undertaking and alternative methods of carrying out the undertaking.
• Alternative Planning Solutions	Alternative ways of solving problems or meeting demand (Alternatives to the Undertaking). As defined in the Municipal Class Environmental Assessment.
• Alternative Design Concepts	Alternative ways of solving a documented transportation deficiency or taking advantage of an opportunity. (Alternative Methods).
• Alternative Project	Alternative Planning Solution, see above.
• Alternative Methods	Alternative ways of solving a documented transportation deficiency or taking advantage of an opportunity. (Alternative Design Concepts). As defined in the Class Environmental Assessment for Provincial Transportation Facilities.
• Alternatives to the Undertaking	Alternative ways of solving problems or meeting demand (Alternative Planning Solutions). As defined in the Class Environmental Assessment for Provincial Transportation Facilities.
• ANSI	Area of Natural or Scientific Interest
• Berm	Earth landform used to screen areas.
• BMP	Best management practice.
• BRT	Bus Rapid Transit
• Bump-Up	The act of requesting that an environmental assessment initiated as a class EA be required to follow the individual EA process. The change is a result of a decision by the proponent or by the Minister of Environment to require that an individual environmental assessment be conducted.
• Bypass	A form of realignment in which the route is intended to go around a particular feature or collection of features.

• Canadian Environmental Assessment Act (CEAA)	The CEAA applies to projects for which the federal government holds decision-making authority. It is legislation that identifies the responsibilities and procedures for the environmental assessment.
• Class Environmental Assessment Document	An individual environmental report documenting a planning process which is formally submitted under the EA Act. Once the Class EA document is approved, projects covered by the class can be implemented without having to seek further approvals under the EA Act provided the Class EA process is followed.
• Class Environmental Assessment Process	A planning process established for a group of projects in order to ensure compliance with the Environmental Assessment (EA) Act. The EA Act, in Section 13 makes provision for the establishment of Class Environmental Assessments.
• Compensation	The replacement of natural habitat lost through implementation of a project, where implementation techniques and other measures could not alleviate the effects.
• Corridor	A band of variable width between two locations. In transportation studies a corridor is defined area where a new or improved transportation facility might be located.
• Criterion(a)	Explicit feature or consideration used for comparison of alternatives.
• Cultural Heritage Landscape	A defined geographical area of heritage significance which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. The Provincial Policy Statements states that significant built heritage resources and significant cultural heritage landscapes shall be conserved.

• Cumulative Effects Assessment	Cumulative Effects Assessment assesses the interaction and combination of the residual environmental effects of the project during its construction and operational phases on measures to prevent or lessen the predicted impacts with the same environmental effects from other past, present, and reasonably foreseeable future projects and activities.
• Decibel (dB)	A logarithmic unit of measure used for expressing level of sound.
• dBA	‘A’ weighted sound level; the human ear cannot hear the very high and the very low sound frequencies as well as the mid-frequencies of sound, and hence the predicted sound levels, measured in dBA, are a reasonable accurate approximation of sound levels heard by the human ear.
• Detail Design	The final stage in the design process in which the engineering and environmental components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared, and contract documents and drawings are produced.
• DFO	Department of Fisheries and Oceans.
• EA	Environmental Assessment
• EA Act	Ontario Environmental Assessment Act (as amended by S.O. 1996 C.27), RSO 1980.
• Environment	• Air, land or water, • Plant and animal life, including man, • The social, economic and cultural conditions that influence the life of man or a community, • Any building structure, machine or other device or thing made by man, • Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities or man, or • Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.

• Environmental Effect	A change in the existing conditions of the environment which may have either beneficial (positive) or detrimental (negative) effects.
• Environmentally Sensitive Areas (ESA’s)	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.
• Equivalent Sound Level (Leq)	The level of a continuous sound having the same energy as a fluctuating sound in a given time period. In this report Leq refers to 24-hour, 16 or 18-hour averages.
• ESR	Environmental Study Report.
• Evaluation	The outcome of a process that appraises the advantages and disadvantages of alternatives.
• Evaluation Process	The process involving the identification of criteria, rating of predicted impacts, assignment of weights to criteria, and aggregation of weights, rates and criteria to produce an ordering of alternatives.
• External Agencies	Include Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
• Factor	A category of sub-factors.
• Flyover	A grade separation with the side road over the freeway. Also described as an underpass.
• Freeway	Freeways are controlled access median divided highway facilities with grade separated crossings and interchanges (e.g. Highway 401).
• Grade Separation	The separation of a cross road with a vertical grade difference from the freeway. Also see overpass, underpass or flyover.
• GRCA	Grand River Conservation Authority
• HADD	Harmful Alternation, Disturbance or Destruction of fish habitat.
• Harmonized EA Process	Harmonized planning process for this project that will meet both the Provincial and Federal EA requirements.

• Individual Environmental Assessment	An environmental Assessment for an undertaking to which Assessment the EA Act applies and which requires formal review and approval under the Act.
• Interchange	The intersection between two roadways at different levels with connecting ramps for traffic turning between them.
• LRT	Light rail transit.
• Mitigating Measure	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
• Mitigation	Taking actions that either remove or alleviate to some degree the negative impacts associated with the implementation of alternatives.
• MNRF	Ministry of Natural Resources and Forestry.
• MOECC	Ministry of the Environment and Climate Change.
• MTO	Ministry of Transportation Ontario
• Noise Attenuation	A mitigation measure used to lessen the intensity of the noise level (dBA) where the noise level is increased in a noise sensitive area greater than 5 dBA 10 years after completion.
• NSA	Noise Sensitive Area is a noise sensitive land use, which has an outdoor living area associated with the residential unit.
• OLA	Outdoor Living Area is the part of an outdoor amenity area provided for the quiet enjoyment of the outdoor environment.
• Part II Order	The Environmental Assessment Act (EAA) has provisions that allow and interested person, Aboriginal community, or government agency to ask for a higher level of assessment for a class environmental assessment (Class EA) project if they feel that there are outstanding issues that have not been adequately addressed. This is known as a Part II Order
• Planning Alternatives	Planning alternatives are “alternative methods” under the EA Act. Identification of significant transportation engineering opportunities while protecting significant environmental features as much as possible.

• Planning Solutions	That part of the planning and design process where alternatives to the undertaking and alternative routes are identified and assessed. Also described as “Alternative Project” under the federal EA Act. The MTO Provincial Class EA describes these alternatives as Alternatives to the Undertaking.
• PIC	Public Information Centre.
• Prime Agricultural Areas	Prime agricultural areas as defined in municipal official plans and other government policy sources.
• Project	A specific undertaking planned and implemented in accordance with this Class EA including all those activities necessary to solve a specific transportation problem.
• Proponent	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having change, management, or control of an undertaking.
• Public	Includes the general public, interest groups, associates, community groups, and individuals, including property owners.
• RA	Responsible Authority from the Federal government who will act as the lead agency in administering the processing of the federal CEAA screening for this project
• Realignment	Replacement or upgrading of an existing roadway on a new or revised alignment.
• Recommended Plan	That part of the planning and design process, during which various alternative solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements of lands and rights-of-way are satisfactorily identified, and that the basic design criteria or features to be contained in the design, have been fully recognized and documented in sufficient graphic detail to ensure their feasibility.
• Route Alternatives	Location alternatives within a corridor.

• SADT	Summer Average Daily Traffic – the average 24-hour, two-way traffic for the period from July 1 st to August 31 st including weekends.
• Screening	Process of eliminating alternatives from further consideration, which do not meet minimum conditions or categorical requirements.
• Study Team	The Study Team will include the City of Cambridge and Consultant Technical management team who will lead all technical elements of the study.
• Sub-factor	A single criterion used for the evaluation. Each sub-factor is grouped under one of the factors.
• TAC	Technical Advisory Committee.
• TESR	Transportation Environmental Study Report
• TMP	Transportation Master Plan.
• Traceability	Characteristics of an evaluation process which enables its development and implementation to be followed with ease.
• Underpass	Major road goes under the minor road.
• Undertaking	In keeping with the definition of the Environmental Assessment Act, a project or activity subject to an Environmental Assessment.

Disclaimer

All personal information has been removed, including names and addresses, under the Freedom of Information and Protection of Privacy Act.