

**HERBERT STREET EXTENSION AND
INDUSTRIAL PARK**

GANANOQUE, ONTARIO

**Environmental Study Report (ESR)
April, 2010**

Prepared for:

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TABLE OF CONTENTS

THE PUBLIC RECORD.....	1
E EXECUTIVE SUMMARY.....	2
1 INTRODUCTION.....	3
1.1 INTRODUCTION.....	3
1.2 ONTARIO ENVIRONMENTAL ASSESSMENT ACT (OEAA)	3
1.2.1 <i>Municipal Class Environmental Assessment Process.....</i>	<i>4</i>
1.2.2 <i>Part II Order.....</i>	<i>6</i>
1.2.3 <i>Purpose of the Environmental Study Report.....</i>	<i>7</i>
1.3 STUDY APPROACH.....	7
1.4 PUBLIC AND AGENCY CONSULTATION	8
1.4.1 <i>Consultation.....</i>	<i>8</i>
2 THE ENVIRONMENT – EXISTING CONDITIONS	11
2.1 TOWN OF GANANOQUE	11
2.2 TRANSPORTATION ENVIRONMENT	12
2.2.1 <i>Kings Highway 401.....</i>	<i>12</i>
2.2.2 <i>King Street.....</i>	<i>13</i>
2.2.3 <i>Stone Street.....</i>	<i>15</i>
2.2.4 <i>Charles Street.....</i>	<i>16</i>
2.2.5 <i>Herbert Street.....</i>	<i>17</i>
2.2.6 <i>James A. Brennan Road.....</i>	<i>18</i>
2.2.7 <i>Cemetery Road.....</i>	<i>19</i>
2.3 ECONOMIC ENVIRONMENT	20
2.4 NATURAL ENVIRONMENT.....	20
2.4.1 <i>Natural Areas.....</i>	<i>20</i>
2.4.2 <i>Vegetation Communities.....</i>	<i>21</i>
2.4.3 <i>Rare Species.....</i>	<i>21</i>
2.4.4 <i>Stocking Hill Creek.....</i>	<i>22</i>
2.4.5 <i>Gananoque River.....</i>	<i>23</i>
2.5 UTILITIES & INFRASTRUCTURE	23
2.5.1 <i>Water Treatment & Distribution.....</i>	<i>23</i>
2.5.2 <i>Sanitary Sewer Collection & Treatment.....</i>	<i>24</i>
2.5.3 <i>Stormwater Collection & Treatment.....</i>	<i>25</i>
2.5.4 <i>Solid Waste Management - Landfill.....</i>	<i>25</i>
2.6 SOCIAL/CULTURAL/HERITAGE ENVIRONMENT	26
3 THE ALTERNATIVE SOLUTIONS.....	26
3.1 DO NOTHING.....	26
3.2 #1 CONNECT HERBERT STREET AND JAMES A. BRENNAN ROAD	27
3.3 #2 HERBERT STREET DEAD END AND NEW CHARLES STREET CONNECTION	28
3.4 #3 HERBERT STREET DEAD END WITH AND CHARLES STREET CONNECTION VIA CEMETARY ROAD.....	29
3.5 #4 CONNECT HERBERT STREET AND WILSON DRIVE	30
3.6 #5 HERBERT STREET DEAD END AND NEW KING STREET CONNECTION.....	31
4 CRITERIA FOR EVALUATION OF ALTERNATIVE SOLUTIONS	32

4.1	TRANSPORTATION	32
4.2	PROPERTY ACCESS	33
4.3	NATURAL ENVIRONMENT.....	34
4.4	ECONOMIC	34
4.5	MUNICIPAL SERVICES	35
5	EVALUATION OF ALTERNATIVE SOLUTIONS	36
5.1	DO NOTHING	36
5.2	#1 CONNECT HERBERT STREET AND JAMES A. BRENNAN ROAD	37
5.3	#2 HERBERT STREET DEAD END AND NEW CHARLES STREET CONNECTION	39
5.4	#3 HERBERT STREET DEAD END WITH AND CHARLES STREET CONNECTION VIA CEMETARY ROAD.....	41
5.5	#4 CONNECT HERBERT STREET AND WILSON DRIVE	43
5.6	#5 HERBERT STREET DEAD END AND NEW KING STREET CONNECTION.....	44
6	PREFERED ALTERNATIVE.....	47

List of Appendices

APPENDIX A – CONTACT LIST
APPENDIX B – MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS FLOW CHART
APPENDIX C – PUBLIC MEETING DOCUMENTS
APPENDIX D – CONTACT WITH AUTHORITIES
APPENDIX E – GANANOQUE TRAIL MAP
APPENDIX F – WATER TREATMENT AND DISTRIBUTION
APPENDIX G – SANITARY COLLECTION AND TREATMENT
APPENDIX H – TRAFFIC ASSESSMENT
APPENDIX I – PROPERTY DEVELOPMENT TABLE
APPENDIX J – CONSTRUCTION COST ESTIMATE

List of Figures

FIGURE 1: KEY MAP – GANANOQUE AND SURROUNDING AREA	11
FIGURE 2: KING STREET.....	14
FIGURE 3: STONE STREET	16
FIGURE 4: CHARLES STREET	17
FIGURE 5: HERBERT STREET	18
FIGURE 6: JAMES A. BRENNAN ROAD.....	19
FIGURE 7: CEMETERY ROAD.....	19
FIGURE 8: STOCKING HILL CREEK	22
FIGURE 9: ALTERNATIVE #1.....	27
FIGURE 10: ALTERNATIVE #2.....	28
FIGURE 11: ALTERNATIVE #3.....	29
FIGURE 12: ALTERNATIVE #4.....	30
FIGURE 13: ALTERNATIVE #5.....	31

THE PUBLIC RECORD

This Environmental Study Report document has been sent to the following offices of the **Ministry of the Environment** to be placed in the Public Record:

- **Ministry of the Environment
Kingston Regional Office**
Box 22032
1259 Gardiners Road
Kingston, Ontario
K7M 8S5
Phone: 1-800-267-0974 or 613-549-4000
Fax: 613-548-6908

This Environmental Study Report document is available at the following **Municipal Offices**:

- **Town of Gananoque
Town Hall**
30 King Street East – Box 100
Gananoque, Ontario
K7G 2T6
Phone: 613-382-2149
Fax: 613-382-8587

E EXECUTIVE SUMMARY

To be completed for final Document.

1 INTRODUCTION

1.1 Introduction

In November, 2009 the Town of Gananoque made a request for proposals for professional engineering services for studies to advance the extension of Herbert Street northerly to provide better access to Highway 401. The purpose of this extension would be to encourage development of industrial lands. The Town had received funding for this assignment through the Communities in Transition program (CIT) and as a condition of this funding the study was to be completed by March 31, 2010. The assignment was awarded to The Greer Galloway Group and immediately started in January of 2010.

Herbert Street is the single point of entry into one of Gananoque's few industrial zoned lands (M1). Unfortunately it is not a through street and "dead-ends" just south of Hwy 401. This dead-end street is a deterrent to the potential development of this area.

The Town has had enquiries from site selectors looking for available industrial space along the 401 corridor. They are specifically looking for smaller lots that reflect the current trend towards smaller niche manufacturing. There are presently over 20 acres of privately owned land available for development on Herbert Street, but because accessibility is an issue, the value of this land is diminished. A study to determine how best to open up this street to promote development in this area is the objective.

The study would explore the feasibility of extending Herbert Street (currently a dead-end street), thereby enhancing access to Hwy 401 and potentially opening up land-locked private and municipally owned property for commercial development.

Components of the study should include:

- An identification of options to push road through (east/west).
- Servicing and stormwater management options.
- An assessment of the costs and property requirements.
- Optimal lot arrangement (Municipally owned property).
- An assessment of Industrial/commercial development/Greenfield development options.

The study will provide an overview of costs and opportunities, while at the same time fulfilling the preliminary phases of a Class Environmental Assessment and funding and scheduling constraints.

1.2 Ontario Environmental Assessment Act (OEAA)

The Ontario EA Act applies to municipal infrastructure projects including roads, water and wastewater projects. The purpose of the Act is to provide for:

“...the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment (Part I – Section 2).”

To achieve this, the Ontario EA Act ensures that: public consultation is addressed early in and throughout the process; considerations are given to a reasonable range of alternatives; the effects on all aspects of the environment are identified; a thorough evaluation of all alternatives is conducted; and documentation of the decision making process is recorded.

The Act allows project proponents to meet those obligations by following the Municipal Class EA (MCEA). When followed through to notice of completion plus a 30 day opportunity for public review without objection the project is deemed to be approved.

1.2.1 Municipal Class Environmental Assessment Process

The Municipal Class Environmental Assessment process (MCEA) is one of 11 Class EA’s developed by various public sectors to provide, where appropriate, an approved process for project proponents to meet the requirements of Ontario’s Environmental Assessment Act.

Each “parent class EA” is limited in scope to those types of projects normally carried out by the parent class EA proponents. The Municipal Class EA covers public projects associated with the maintenance and construction of Municipal Roads and Bridges, Municipal Sewer and Water works as well as Public Transit.

Following the MCEA ensures that the intent of the Environmental Assessment Act is met by requiring that alternatives be evaluated, environmental concerns be identified, mitigating measures be considered and consultation with the public and external agencies be completed. When this approved process is followed projects and activities included under the MCEA do not require formal review and approval under the EA Act.

The MCEA process incorporates the 5 key principles of successful planning under the EA Act, specifically:

- Consultation with affected parties early in and throughout the process, such that the planning process is a cooperative venture.
- Consideration of a reasonable range of alternatives, both the functionally different “alternatives to” and the “alternative methods” of implementing the solution. The do-nothing alternative must be considered to provide a benchmark for evaluation.
- Identification and consideration of the effects of each alternative on all aspects of the environment. i.e. the impact on the natural, social, cultural, technical and economic/financial environment.
- Systematic evaluation of alternatives in terms of their advantages and disadvantages, to determine their net environmental effects.

- Provision of clear and complete documentation of the planning process followed, to allow “traceability” of decision making with respect to the project.

There are four schedules contained in the MCEA that differentiate the planning/consultation requirements based on predicted environmental impact or operational urgency.

Schedule A projects are limited in scale, have minimal adverse environmental effects and include a number of municipal maintenance and operational activities. These projects are pre-approved and may proceed to implementation without following the full Class EA planning process.

Schedule A⁺ projects are also pre-approved; however the public is to be advised prior to project implementation. Such notice to be determined by the proponent. Unlike schedules B and C as follows there is no opportunity to request a Part II order. The final decision is by Municipal Council.

Schedule B projects have the potential for some adverse environmental effects. The proponent is required to undertake a screening process involving mandatory contact with directly affected public and relevant review agencies to ensure that they are aware of the project and that their concerns are addressed.

Schedule C projects have the potential for significant environmental effects and must proceed under the full planning and documentation procedures specified in the MCEA. Schedule C projects require that an Environmental Study Report be prepared and filed for review by the public and review agencies.

Both Schedule B and C projects are subject to public notice of the preferred alternative once selected and allow for a minimum 30 day appeal period.

The decision as to Schedule B or C process is intended to be determined once work has progressed to the point that a recommendation on a “preferred” alternative can be made. That analysis requires a conceptual construction cost estimate as well as public feedback on acceptability.

In either case upon the decision of Council with respect to a “preferred alternative” a notice of Completion is posted for a minimum 30 day period during which time a Part II Order request can be made to the:

Minister of the Environment.
135 St Clair Avenue, 10th Floor
Toronto ON M4V 1P5

Such a request must to be received by the Minister and the Project Consultant within the 30 day period following the date of notice.

A summary flow chart detailing the Municipal Class EA Planning and Design Process is provided in Appendix B for reference.

1.2.2 Part II Order

A Part II Order request is an appeal mechanism that asks the Minister to designate the project as one that requires an individual EA for the reasons stated in the request.

The following are excerpts from “Code of Practice – Preparing, Reviewing and Using Class Environmental Assessments in Ontario” November 2008 pages 84-85.

What a Part II Order Request Should Be

- A way in which the proponent, an interested person, Aboriginal community, or government agency with a significant concern about the potential environmental effects of a proposed class environmental project, can request that a higher order of environmental assessment be undertaken so that the concerns can be addressed.

What a Part II Order Request Should Not Be

- A mechanism to stop, delay or frustrate the planning and implementation of a class environmental assessment process.
- A mechanism to revisit issues with which the requester does not agree and that have already been decided through another planning process such as Official Plans, Growth Plans and Infrastructure Plans.
- A mechanism to be used simply because the project is not desired in a community.
- A means to resolve issues that can be dealt with through other methods such as permits, licences or other planning processes (local municipal by-laws, building permits).
- A mechanism to deal with broad policy issues that do not have government policy direction and are not directly related to the proposed class environmental assessment project such as adequacy of funding for transit or meeting the Kyoto Accord.

Timing of a Part II Order Request

- A part II Order is considered to be premature when it is received during the early planning stages of the class environmental assessment process, prior to the issue of the notice of completion.
- It may be that the nature of the issues and concerns raised in the request warrant the ministries consideration of the issues raised at the time it is received. For example, it may be appropriate to address issues that deal with rationale and alternatives to early in the process, as early resolution of these matters would allow the process to proceed without revisiting the matter at a later stage. In this situation the proponent should be asked to determine the validity of the issues and whether the proponent should continue to pursue the proposed solution. This dialogue should be documented.

- If the request is premature the Project Evaluator will advise the requestor by letter that it should bring its issues to the attention of the proponent.
- Part II Order Requests may be made during the review period once the notice of Completion has been published.

A Valid Part II Order request

- Must be made in writing to the Minister or delegate with a copy to the proponent.
- Must be made after all of the planning is complete so that all of the potential environmental effects and impact management measures are understood.
- Must not be made for the sole purpose of delaying, stopping or frustrating the planning and implementation of a class environmental project (such requests will not be considered).
- Must focus on potential environmental effects of the project, the class environmental process, and not on decisions made outside the class environmental assessment process (for example land use planning decisions made under the Planning Act or issues related to municipal funding of projects).
- Should be withdrawn promptly by the requester if the proponent has satisfied the concerns of the requester.

Note – Part II Order requests that raise issues that are not related to the project will not be considered

Part II Order requests should include a rationale as to why a higher level of assessment would address the concerns raised in the request.

1.2.3 Purpose of the Environmental Study Report

As stipulated in Phase 4 of the planning and design procedure of the Class EA process, an ESR is required for all Schedule ‘C’ projects. The ESR documents the activities conducted in Phases 1, 2 and 3 of the process, including detailed descriptions of:

- The problem/opportunity and relevant background information.
- The rationale utilized in selecting the preferred solution and subsequently, the preferred design.
- The potential environmental impacts of the preferred design.
- The potential mitigating measures and the efforts employed to minimize adverse environmental effects.
- The consultation and monitoring process.

1.3 Study Approach

While working within the framework of the Municipal Class Environmental Assessment Process the scope and timeline of each ESR must be set in a manner appropriate to each particular situation. In this case, the deadline for completion was limited to 3 months. To accommodate this timeline the focus of this process was to maximize agency and public consultation, identification

of both the challenges facing each alternative and potential solutions based on the information that was immediately available.

It has been acknowledged that at the completion of this study there will remain some areas in need of further investigation if any of the considered alternatives are to proceed – including but not limited to field verification of species of interest locations, municipal servicing studies, geotechnical investigations, flood plain analyses and other detail design related activities.

1.4 Public and Agency Consultation

Consultation is a fundamental part of the EA planning process. Effective consultation ensures that potentially interested stakeholders including the general public, affected property owners, community representatives, interest groups, review agencies and other municipalities are notified of the study's progress and are provided with an opportunity to convey information and to aid in the decision making process with respect to the:

- Existing conditions of the study area.
- Problems/opportunities being addressed.
- Alternative solutions and potential impacts.
- Alternative design concepts.
- Recommended design.
- Proposed mitigating measures.

The discretionary and mandatory points of consultation are shown on the Municipal Class EA Planning and Design Process flowchart in Appendix B.

1.4.1 Consultation

The following points of public contact occurred over the course of the study:

Contact Point #1 - Notice of Study Commencement & Public Information Centre #1

- Both the Notice of Study Commencement and Public Information Centre #1 was advertised in the local paper, mailed to affected residents, and advertised on the Town of Gananoque website.
- PIC #1 was held on Jan. 28, 2010 from 5:00 to 7:00 at the Town of Gananoque Emergency Services Building (340 Herbert Street) in Gananoque.
- The intent of this introductory public consultation was to:
 - Introduce the MCEA process and the public's role.
 - Present preliminary Herbert Street / Industrial Park extension alternatives for discussion.
 - Encourage input from the public both at the meeting and throughout the process.

- A total of 13 people attended the PIC with 3 of them submitting comment sheets. The main comments are summarized as follows:
 - Opening the subject area up would promote development.
 - Fire/police service would benefit from the improved access to the 401.
 - Alternatives to the west were seen as the most beneficial.
 - General recognition of the problem being addressed with many people indicating the need for development opportunities in the industrial sector.
 - Generally supportive of the project.

- Copies of advertisements and Comment Sheets are provided in Appendix C.

Contact Point #2 – Public Information Centre #2

- Notice of Public Information Centre #2 was advertised in the local paper, mailed to affected residents, and advertised on the Town of Gananoque website.

- PIC #2 was held on March 3, 2010 from 5:00 to 7:00 at the Town of Gananoque Emergency Services Building (340 Herbert Street) in Gananoque.

- The intent of this second public consultation was to:
 - Reinforce the MCEA process and the public's role.
 - Present preliminary Herbert Street / Industrial Park extension alternatives, costing and evaluation matrix for discussion.
 - Encourage input from the public both at the meeting and throughout the process.

- A total of 11 people attended the PIC with none of them submitting comment sheets. The main comments are summarized as follows:
 - Similar support and comment to those received in PIC #1.
 - Discussion regarding the site specific challenges associated with the connection to James A. Brennan Road.
 - Examples of previous activities known to have occurred on the subject lands – most interestingly early military training east of Hebert Street.
 - A couple residents had shared ownership with others not locally available to attend the meetings. Information was provided via email for them to pass along.
 - Reinforced the principal that this process was to identify a preferred alternative only. There would be a variety of tasks to be completed from this point prior to 'shovels going in the ground'.

- Copies of advertisements and Comment Sheets are provided in Appendix C.

Contact Point #3 – Open Meeting of Council

- A draft Environmental Study Report was presented to council at the Town of Gananoque April 6, 2010 open council meeting.

- **To be completed for final document.**

Contact Point #4 – Public Information Centre #4

- **To be completed for final document.**

Contact Point #5 – Notice of Study Completion of ESR

- **To be completed for final document.**

Copies of advertisements, comment sheets and other public meeting documents are provided in Appendix C.

2 THE ENVIRONMENT – EXISTING CONDITIONS

Various ‘environments’ may be affected by the alternatives under consideration for the extension of Herbert Street and industrial lands. This section of the document will provide a summary of existing conditions associated with the region in general and/or specific environments being considered.

2.1 Town of Gananoque

The Town of Gananoque is located in southern Ontario in Leeds and Grenville County. It is bordered to the north by the Kings Highway 401 and the St. Lawrence River to the south.

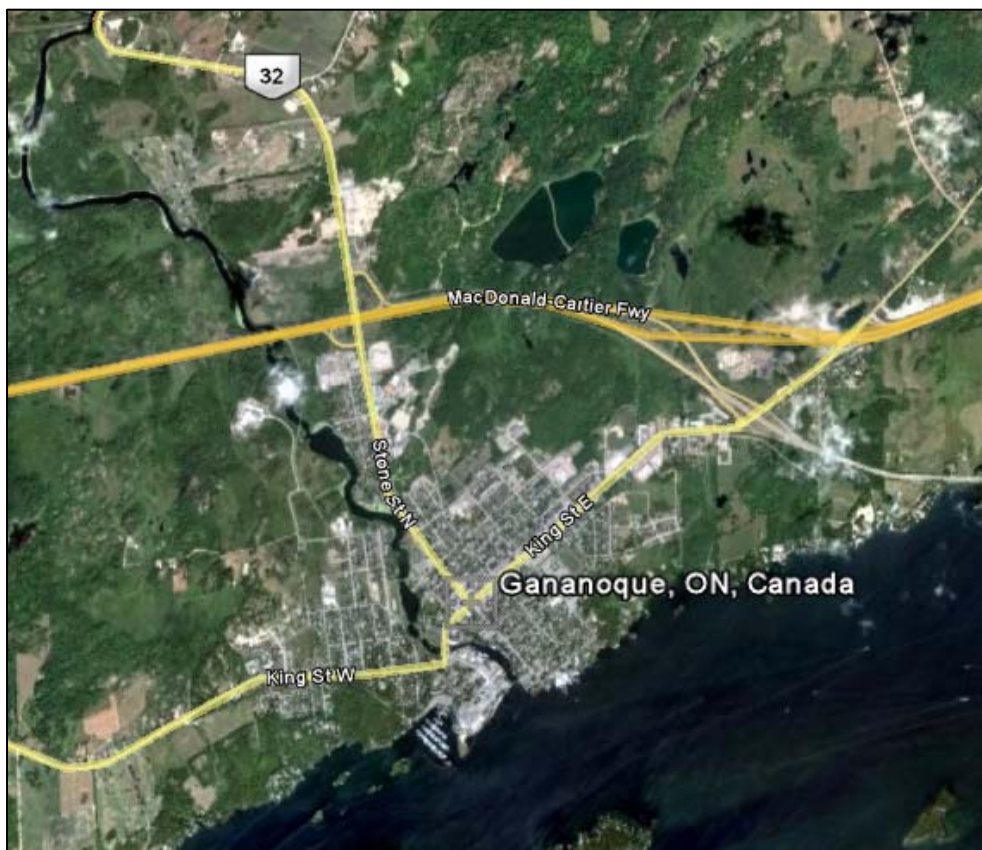


Figure 1: Key Map – Gananoque and Surrounding Area

The following is an excerpt from the Municipal website (www.townofgananoque.ca) describing the greater Gananoque region.

“The Town of Gananoque has long been known as the Canadian Gateway to the 1000 Islands. Throughout the twelve months of the year the town has much to offer for people of all ages-

entertainment, recreation, and much more. This beautiful region is an attractive place for visitors and residents alike.

As of 2006 Statistics Canada reported Gananoque having a population of 5,285 residents. Throughout the twelve months of the year the town has much to offer for people of all ages- entertainment, recreation, and much more. The diversity of the businesses and their services has allowed the town to emerge as a tourist destination year round.

Furthermore, Gananoque is a strategic business location. The town is located on the Detroit/Windsor-Montreal corridor on Highway 401, along this route resides two thirds of Canadas population, and approximately three hours east of Toronto, three and a half hours west of Montreal, and one hour south of Ottawa, via Hwy 416. Access to the United States and its markets is only twenty minutes east of Gananoque at the 1000 Islands International Bridge, which connects Hwy 401 to U.S. Interstate 81.

Gananoque is at the center of a market that includes 12 million consumers, with over half of the North American industry within a days travel. Businesses located here enjoy the proximity of three of the major Canadian cities, in addition to quick and easy access to the United States.”

2.2 Transportation Environment

Transportation through the Gananoque area has been critical to the success of the community, be it the St. Lawrence or Gananoque Rivers when the town began or the modern Highway 401.

The subject of this ESR focuses on the impact the various alternatives may have on the road network – or more specifically the local road network.

As with any road network, a change to one part of the system will impact the rest of the system. For the purpose of this ESR descriptions and impact assessments have been provided for individual sections of the network that will be directly and significantly impacted by the alternatives under consideration

2.2.1 Kings Highway 401

Kings Highway 401 in the area of Gananoque is a divided 4-lane freeway.

Access to the Town of Gananoque is provided via two interchanges.

Interchange #645 is located immediately north of the Town and provides access to Stone Street in Gananoque and Leeds and Grenville County Road 32 to the north.

Interchange #648 is located east of the Town and provides access to King Street in Gananoque, Highway 2 to the northeast and the Thousand Islands Parkway to the southeast.

The Ontario Ministry of Transportation Traffic Volumes 1988 – 2006 document suggests Highway 401 in the area of the Town of Gananoque has average annual daily traffic volumes in the order of 24,000 to 28,000 vehicles with seasonal peaks of up to 34,000 vehicles per day.

While improving access to Highway 401 is one of the primary goals of the Herbert Street and industrial park extension alternatives under consideration, there will be little impact on the operation of the freeway or its interchanges. For that reason information provided specific to this highway is limited to that which is provided above.

2.2.2 King Street

King Street is the primary east-west street through the Town of Gananoque.

King Street West runs from the western town boundary (where Highway 2 continues to Kingston) to the downtown core at the intersection of Stone Street. Serving the area west of the Gananoque River recorded traffic volumes suggest average annual daily traffic volumes of approximately 4,025 to 8,400 vehicles.

Summary of Traffic Count Data (AADT):

- Town West Limits: 2005 – 5,030 vehicles, 2007 – 4,900 vehicles, 2008 – 4,025 vehicles.
- West of Main Street (Gananoque River): 2005 – 8,400 vehicles, 2007 – 7,200 vehicles.

King Street East runs from Stone Street to the eastern town boundary (where Highway 2 continues to Mallorytown and Brockville) and Highway 401 interchange / Thousand Islands Parkway. Serving the area east of the Gananoque River – including both Stone Street and King Street Highway 401 interchanges – recorded traffic volumes suggest average daily traffic volumes of approximately 9,825 to 14,950 vehicles.

Summary of Traffic Count Data (AADT):

- Charles Street: 2005 – 12,877 vehicles, 2007 – 12,150 vehicles, 2008 – 11,050 vehicles.
- Elizabeth Street: 2005 – 14,950, 2008 – 12,350.
- Recreation Centre: 2005 – 14,700, 2007 – 13,600.
- Town East Limits: 2005 – 10,770, 2007 – 11,075, 2008 – 9,825.

King Street East is of particular interest to this ESR and the Herbert Street Extension and industrial park expansion through its intersection with Herbert Street, Wilson Drive and possible new intersection east of Carmichael Drive.

Traffic flow in King Street east is in large part controlled by the congestion in the downtown area. Though a problem throughout the year, it is most notable during summer months where traffic activity is at its peak.

It is interesting to note that the peak traffic volumes are recorded east of the downtown core. This may suggest that 1,000 – 2,000 (10 – 15%) vehicles are currently ‘by-passing’ the downtown core via the several side street alternatives that are available.

The two most common destinations for traffic ‘by-passing’ the downtown is either north to Stone Street and County Road 32 / Highway 401 or the Water Street bridge and the west end of town.

From Stone Street to Charles Street, King Street East is a 2 lane urban, signalized street with one eastbound lane, one westbound lane, and parking lanes on both sides. From Charles Street to the East Town limits, King Street East is a 3 lane urban, signalized street with one eastbound lane, one westbound lane, and a single centre left turn lane utilized for both directions.

King Street West is a 2 lane urban, signalized street with one eastbound lane and one westbound lane.

King Street is a Class 3 road according to Ontario Regulation 239/02. The speed limit is 50km/h through the Town of Gananoque. King Street contains mixed commercial including the higher density ‘historic’ downtown core to lower density commercial (small plazas, restaurants, hotels and associated businesses).

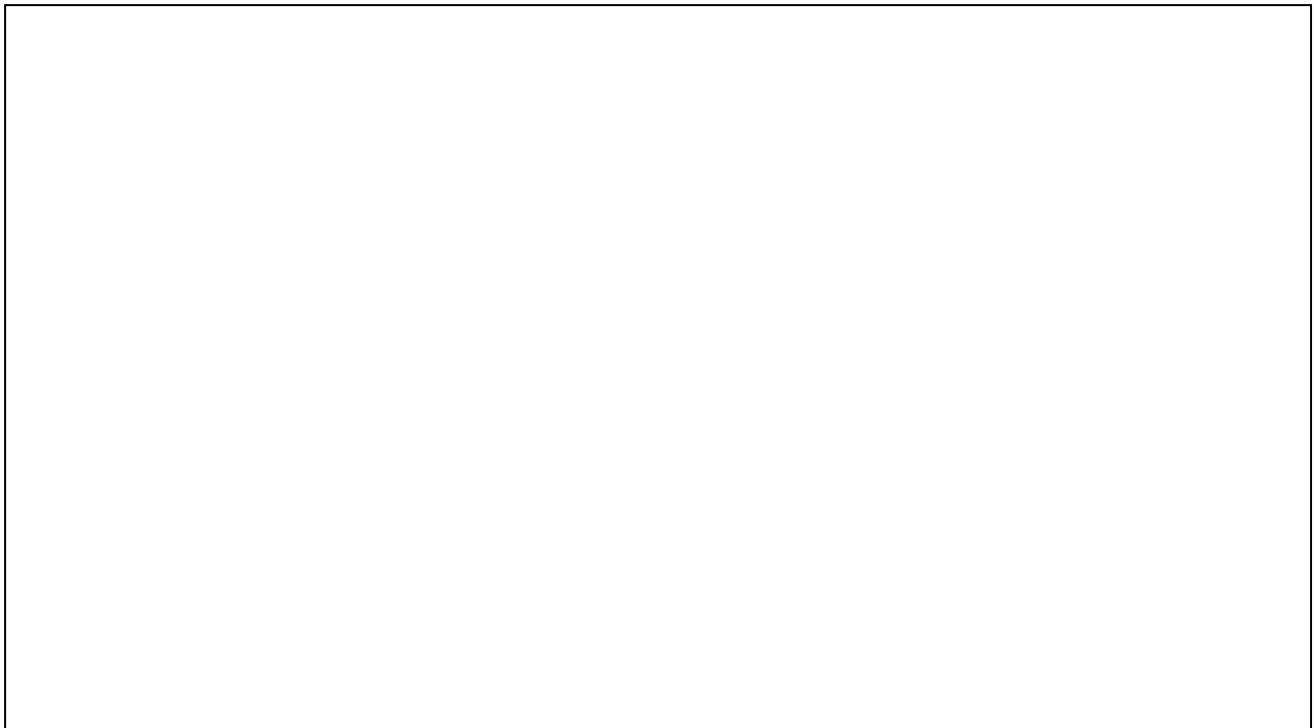


Figure 2: King Street

2.2.3 Stone Street

Stone Street (County Road 32) is the primary north-south street through the Town of Gananoque.

Stone Street North runs from the Highway 401 interchange to the downtown core at King Street. Recorded traffic volumes suggest average annual daily traffic volumes of approximately 5,400 to 7,555 vehicles. The volume records south of Charles St. in 2008 have been disregarded as Charles St. was closed from Georgiana St. to James A. Brennan Rd. for reconstruction.

Summary of Traffic Count Data (AADT):

- South of the 401: 2005 – 7,555 vehicles, 2007 – 6,225 vehicles, 2008 – 6,500 vehicles
- South of Charles.: 2005 – 6,910 vehicles, 2007 – 5,400 vehicles, 2008 – 2,050 vehicles
- South of Coopers Alley: 2004 – 6,325 vehicles, 2007 – 5,750 vehicles

Stone Street South runs from King Street south to the St. Lawrence River. Recorded traffic volumes suggest average annual daily traffic volumes of approximately 1,590 to 2,098 vehicles.

Summary of Traffic Count Data (AADT):

- South of Sydenham St.: 2004 – 2,098 vehicles, 2007 – 1,725 vehicles, 2008 – 2,050 vehicles, 2009 – 1,590 vehicles

Stone Street North is of interest to this ESR and the Herbert Street Extension and industrial park expansion through its intersection with Charles St which is immediately adjacent to the Charles St. / James A. Brennan intersection.

Traffic flow on Stone Street is in part controlled by the congestion in the downtown area. Though a problem throughout the year, it is most notable during summer months where traffic activity is at its peak.

It is interesting to note the peak traffic volume recorded is north of the downtown core. This may suggest that 500 – 800 (10%) vehicles are currently 'by-passing' the downtown core via Charles Street or other residential side streets.

Stone Street is a 2 lane urban, signalized street with one northbound lane, one southbound lane, and parking lanes in the downtown area.

Stone Street is a Class 3 road according to Ontario Regulation 239/02. The speed limit is 50km/h through the Town of Gananoque. Stone Street serves a combination of residential, school, park and downtown commercial.

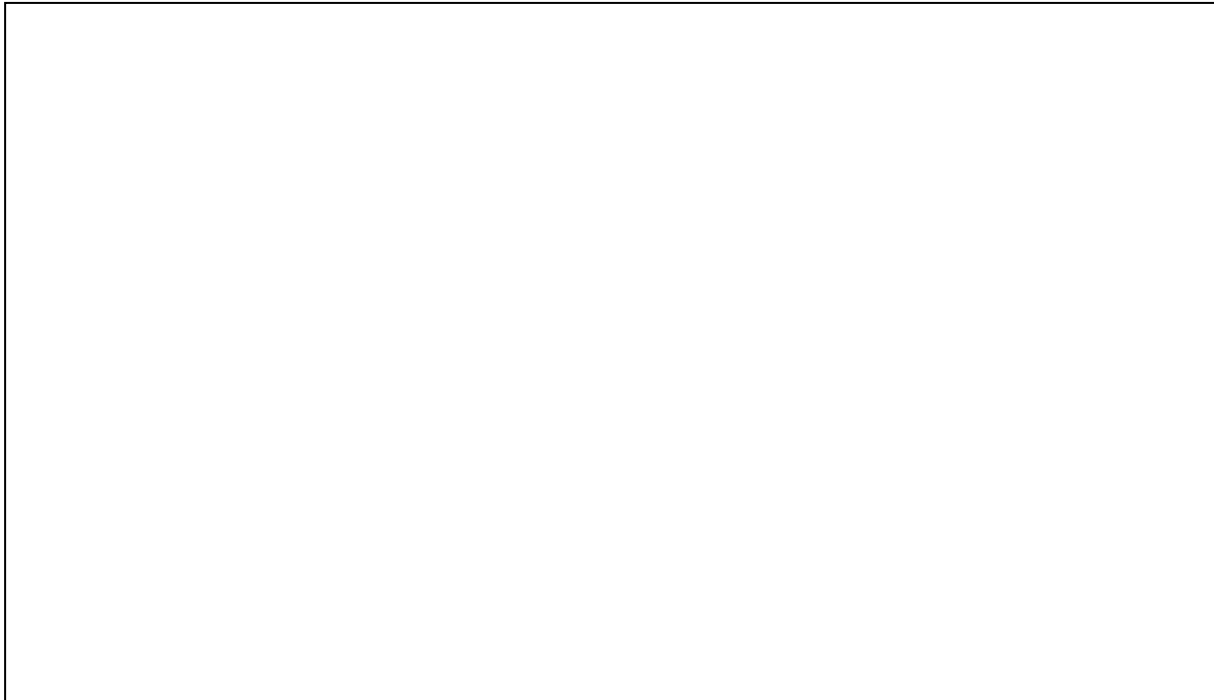


Figure 3: Stone Street

2.2.4 Charles Street

Charles Street is a secondary north-south street through the Town of Gananoque.

Charles Street North runs south from its intersection with Stone Street to the downtown core at King Street. Recorded traffic volumes suggest average annual daily traffic volumes of approximately 3,530 to 5,070 vehicles. The volume recorded north of King Street in 2008 has been disregarded as Charles St. was closed from Georgiana St. to J.A.Brennan Rd. for reconstruction.

Summary of Traffic Count Data (AADT):

- East of James A. Brennan Rd.: 2005 – 3,706 vehicles
- North of Georgiana St.: 2004 – 3,530 vehicles, 2007 – 3,800 vehicles
- North of King St.: 2005 – 5,070 vehicles, 2008 – 2,900 vehicles

Charles Street South runs from King Street south to the St. Lawrence River. Recorded traffic volumes suggest average annual daily traffic volumes of approximately 780 to 2,570 vehicles.

Summary of Traffic Count Data (AADT):

- South of King St.: 2005 – 2,570 vehicles
- South of Sydenham St.: 2004 – 780 vehicles, 2007 – 1,250 vehicles

Charles Street North is of particular interest to this ESR and the Herbert Street Extension and industrial park expansion through its intersection with James A. Brennan Rd. and possible new intersections with Herbert Street.

Charles Street is a 2 lane urban street with one northbound lane, one southbound lane, and parking lanes in the downtown area.

Charles Street is a Class 4 road according to Ontario Regulation 239/02. The speed limit is 50km/h. Charles Street serves a combination of residential, school, park, industrial and downtown commercial.

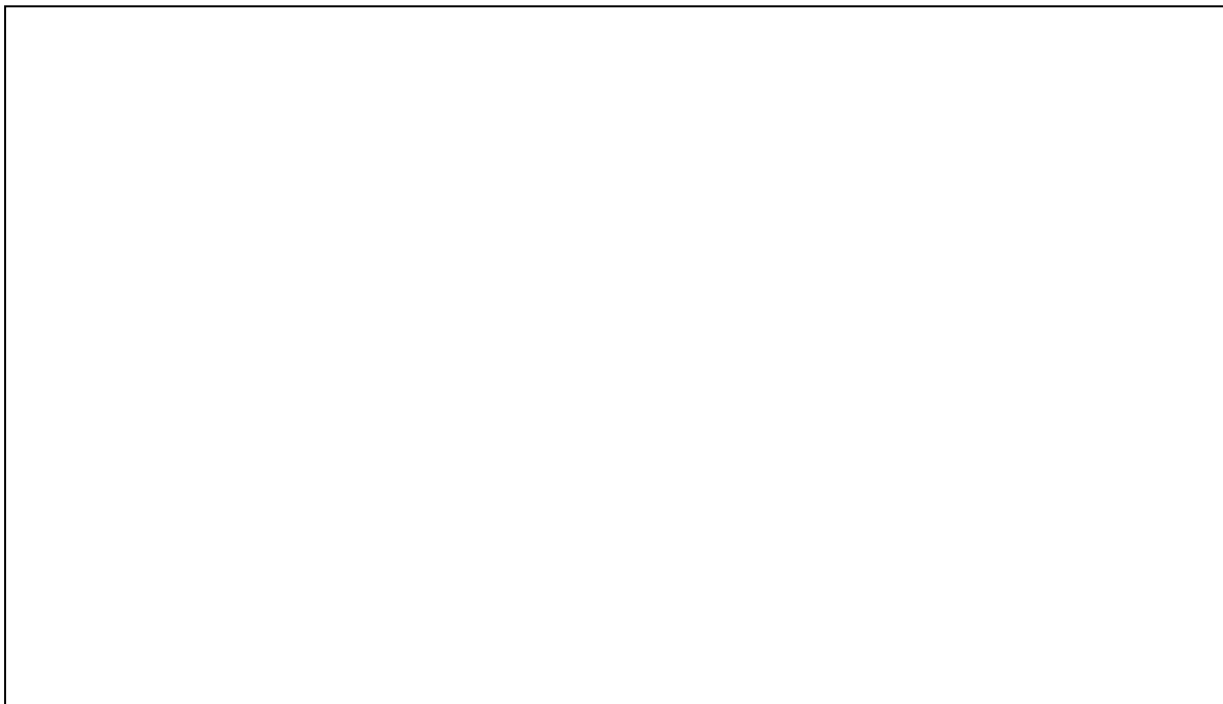


Figure 4: Charles Street

2.2.5 Herbert Street

Herbert Street is the main access to one of two industrial areas in the Town of Gananoque. Recorded traffic volumes suggest average annual daily traffic volumes of approximately 1,650 vehicles.

Summary of Traffic Count Data (AADT):

- North of King St.: 2004 – 1,655 vehicles, 2008 – 1,625 vehicles

Herbert Street is the primary focus of this ESR. The aim is to provide better access to the 401 from Herbert Street as well as to expand the industrial park.

Herbert Street is a local 2 lane dead end road of asphalt construction with no curb, gutter, sidewalk or road markings. It is a Class 4 road according to Ontario Regulation 239/02. The speed limit is 50km/h. Herbert Street serves a combination of residential and industrial traffic.



Figure 5: Herbert Street

2.2.6 James A. Brennan Road

James A. Brennan Rd. is the only access to the second industrial area in the Town of Gananoque. Recorded traffic volumes suggest average annual daily traffic volumes of approximately 500 vehicles.

Summary of Traffic Count Data (AADT):

- North of Charles St.: 2005 – 494 vehicles

James A. Brennan Rd. is of particular interest to this ESR and the Herbert Street Extension and industrial park expansion through its possible connection with Herbert Street.

James A. Brennan Rd. is a local 2 lane dead end road of asphalt construction with no curb, gutter, sidewalk or road markings. It is a Class 5 road according to Ontario Regulation 239/02. The speed limit is 50km/h. Herbert Street serves primarily light industrial traffic.

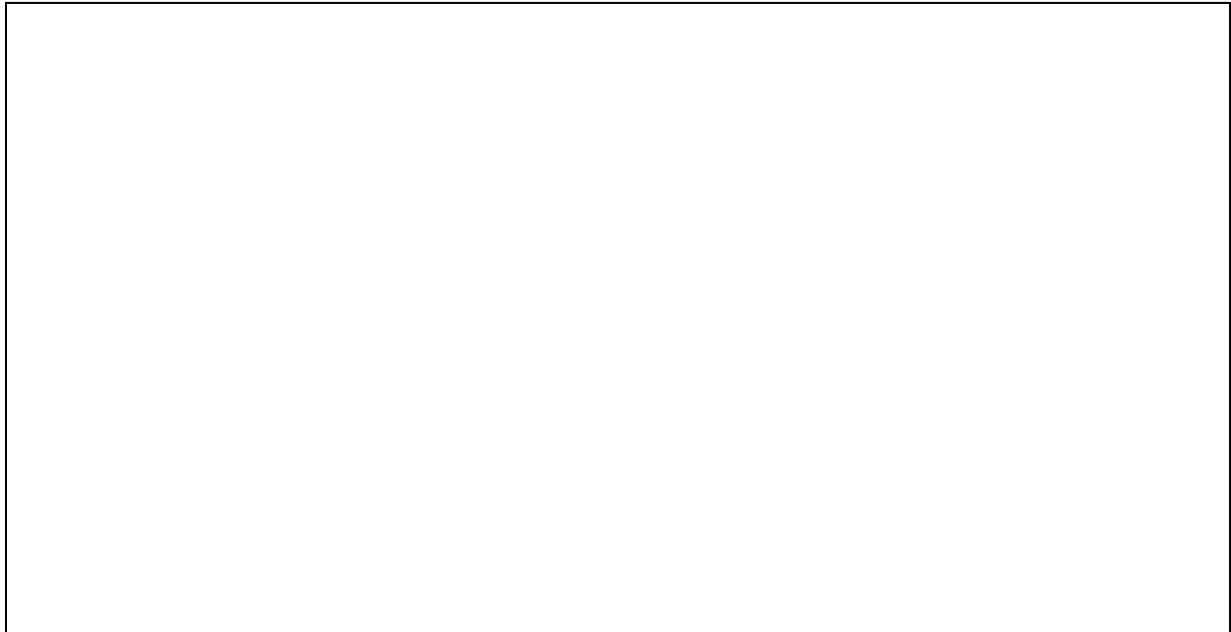


Figure 6: James A. Brennan Road

2.2.7 Cemetery Road

Cemetery Rd. is currently little more than a gravel laneway to provide access to the cemetery and property fronting onto Charles St. It is a Class 6 road according to Ontario Regulation 239/02.

Cemetery Rd. is of particular interest to this ESR and the Herbert Street Extension and industrial park expansion through a possible connection with Herbert Street.



Figure 7: Cemetery Road

2.3 Economic Environment

As of 2006 Statistics Canada reported Gananoque having a population of 5,285 residents. Throughout the twelve months of the year the town has much to offer for people of all ages- entertainment, recreation, and much more. The diversity of the businesses and their services has allowed the town to emerge has a tourist destination year round.

Furthermore, Gananoque is a strategic business location. The town is located on the Detroit/Windsor-Montreal corridor on Highway 401, along this route resides two thirds of Canada's population, and approximately three hours east of Toronto, three and a half hours west of Montreal, and one hour south of Ottawa, via Hwy 416. Access to the United States and its markets is only twenty minutes east of Gananoque at the 1000 Islands International Bridge, which connects Hwy 401 to U.S. Interstate 81.

Gananoque is at the center of a market that includes 12 million consumers, with over half of the North American industry within a days travel. Businesses located here enjoy the proximity of three of the major Canadian cities, in addition to quick and easy access to the United States.

Primary industrial sectors are light manufacturing, transportation, and services with the manufacturing industry accounting for 20%, retail 10%, construction 9% and public administration 8% of the labour force. Though Gananoques labour force is focused on manufacturing it also has a strong service/tourism oriented economy.

2.4 Natural Environment

In addition to information available through the Cataraqui Region Conservation Authority, Ministry of the Environment, Town staff and field observations - the Ministry of Natural Resources through the Natural Heritage Information Centre (NHIC) compiles, maintains and distributes information on natural species, plant communities and spaces of conservation of interest in Ontario.

Through the NHIC online resources a search for Natural Areas, Vegetation Communities and Rare Species Locations has been completed for the study area. Species locations are identified graphically by a 1 km by 1km square area and not exact locations. (As this is a publicly accessible resource the intent is to restrict exact location information and minimize traffic and further stress on the species from 'eco-tourist' traffic.) In several cases it is possible if not likely the species listed is actually located outside the study area however this should be confirmed prior to or as part of future design activities.

2.4.1 Natural Areas

A Natural Area is defined as an area identified as having significant or unique natural heritage features. Natural Areas listed in the Natural Areas Database, may be identified by the Ministry of Natural Resources, Conservation Authorities, the International Biological Program (IBP) or by non-governmental organizations such as the Federation of Ontario Naturalists, the Nature

Conservancy of Canada or Bird Studies Canada. Natural areas include evaluated wetlands, Areas of Natural and Scientific Interest (both life science and earth science), provincial and national parks, Conservation Areas, IBP Sites and nature reserves.

No 'Natural Areas' were identified in the study area by the NHIC online database.

2.4.2 Vegetation Communities

A Vegetation Community is defined by Conservation data centres as recurring assemblages of plants, having a consistent composition, structure, and habitat.

No 'Vegetation Communities' were identified in the study area by the NHIC online database.

2.4.3 Rare Species

The NHIC database identifies the following species in or around the study area:

<u>Scientific Name</u>	<u>Common Name</u>	<u>Srank</u> *	<u>Comment</u>
Peltandra Virginica	Green Arrow Arum	S2	- Aquatic Plant
Aeshna Verticalis	Green-Striped Darner	S3	- Insect, Dragonfly
Notropis Anogenus	Pugnose Shiner	S2	- Fish - 1 to 2 inches in size
Arigomphus Furcifer	Lilypad Clubtail	S3	- Insect, Dragonfly - Found in ponds with floating vegetation
Crataegus Corusca	Hawthorn	SNA	- Shrub

*Definitions:

Srank - Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation, needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.

(S2) Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

(S3) Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

(SNA) Not Applicable - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

2.4.4 Stocking Hill Creek

The primary watercourse of interest to this ESR is Stocking Hill Creek. This creek runs in a generally southwest direction from its origin (approximately 2 kilometers north of Highway 401, south of Station Road) past the municipal sewage treatment lagoons, under Highway 401, across Charles and Stone Streets in Gananoque where it outlets to the Gananoque River.



Figure 8: Stocking Hill Creek

This creek and its flood plain are of interest to this ESR – specifically Alternatives 1, 2 and 3 – for its impact on road construction and developable lots.

As no flood plain analysis has been completed on this creek by the Cataraqui Region Conservation Authority, the Town or otherwise the following assumption has been made for the purpose of this ESR and the evaluation of alternatives:

- The flood plain elevation for Stocking Hill Creek will be estimated to be equal to the low point of Charles Street (at or near its crossing of Stocking Hill Creek) plus 300 mm (1 foot) which corresponds to an elevation of approximately 85.8m.

While this is an assumption, it has been discussed with the conservation authority and is felt to be conservative considering the marginal influence of the Gananoque River backwater, flow limiting effect of upstream structures and the size of the contributing area.

Prior to developing lands that may be impacted by the flood plain it is recommended that further investigation be done to more accurately identify the limits of this floodplain.

2.4.5 Gananoque River

The Gananoque River runs through the Town of Gananoque and outlets to the St. Lawrence River. Though the Gananoque River is a significant watercourse its impact on this ESR is limited to possible backwater conditions up Stocking Hill Creek.

As provided by the Cataraqui Region Conservation Authority, the flood plain elevation for the Gananoque River in the subject area is 83.4m. As the channel elevation for Stocking Hill Creek east of Charles Street is approximately 83.5m, backwater conditions from the Gananoque River will not impact the evaluation of ESR alternatives.

2.5 Utilities & Infrastructure

2.5.1 Water Treatment & Distribution

Community potable water is provided via a traditional urban system including a surface water source, filtration based treatment plant, pumps, clearwell and elevated tower storage, chlorination and piped distribution system.

Water Treatment Plant

The Town of Gananoque operates as a Large Municipal Residential Water System as defined by the Safe Water Drinking Act and Drinking-Water Systems Regulation (O. Reg. 170/03) – i.e. it is municipally owned/operated and serves more than 100 residences.

The James W. King Water Treatment Plant is fed from a surface water source (the St. Lawrence River) and includes pre-chlorination at the inlet, chemically assisted filtration, clearwell and 1,200 m³ storage reservoir. An additional 1,327 m³ storage is provided via an elevated water tank located southeast of the Charles Street/James A. Brennan Road intersection.

The water treatment plant is rated for 10,226 m³/day.

Water Distribution System

The distribution system includes approximately 48 km of water mains ranging in size from 100 to 350mm in diameter.

Water demands for 2008 averaged 3,193 m³/day – well under the rated capacity for the treatment plant.

No pressure or fire flow concerns were raised for the subject area – or the community in general.

See Appendix F for an illustration of the distribution system and associated pipe sizes.

2.5.2 Sanitary Sewer Collection & Treatment

Community wastewater is collected via a traditional urban system of pipes, pump stations, forcemains and treatment lagoons.

Sanitary Sewer Collection System

The sanitary sewer collections system consists of pipes ranging in size from 150 to 600mm in diameter, made from a combination of vitrified clay (VC), asbestos cement (AC), concrete (Conc.) and PVC, many of which were installed as early as 1904.

As illustrated in a March 2007 Totten Sims Hubicki Associates (TSH) drawing titled Inflow & Infiltration Study – Sewershed Areas, the collection system is separated into 6 distinct drainage areas as summarized below:

Area 1 (Northwest) – 47.9 ha, 5,572.62 m of pipe to the Stone Street pump station.

Area 2 (Southwest) – 63.4 ha, 5,973.59m of pipe to the Main Street pump station.

Area 3 (Northcentral) – 36.2 ha, 3,932.96m of pipe to Area 2/Main Street pump station.

Area 4 (Southcentral) – 64.8ha, 5,338.81m of pipe to the Water Street pump station.

Area 5 (South) – 5.2 ha, 764.73m of pipe to the Water Street pump station.

Area 6 (East) – 10.8 ha, 561.00m of pipe to the East End pump station.

Note: The drainage areas shown on this TSH drawing are not consistent with what is understood to be there today – specifically that the Herbert Street sanitary sewer is connected to both Area 3 and Area 4. Though not critical to this ESR it is understood that regular sewer flow from Herbert Street goes to Area 4, however there is a connection to Area 3 at Brock Street which may receive flow under certain ‘overflow’ conditions through an elevated connection. While this may affect the actual drainage areas/lengths of pipe in each area, the overall operation of the system remains unchanged.

Sanitary Sewer Lagoons

There are a series of 3 sanitary sewer treatment lagoons located north of Highway 401. The lagoons are fed from the East End pump station through a forcemain that crosses King Street east of McDonalds (at or around the lot considered for the easterly connection to King Street in Alternative #5).

The lagoons outlet to Stocking Hill Creek, a natural watercourse that runs southwest (through the area considered for Alternative 1 and adjacent to the area considered for Alternatives 2 and 3) to the Gananoque River.

Based on the Ministry of the Environment Certificate of Approval the Gananoque lagoons have a rated capacity of 5,300 m³/day. Average annual daily flow for 2009 was 4,103 m³.

Through the Ministry of the Environment Procedure D-5-1 the remaining capacity for the Town of Gananoque lagoons has been assessed. The calculation (see Appendix G) suggests that in 2008 there was an uncommitted hydraulic reserve capacity of 438 m³/day, or approximately 220 households.

2.5.3 Stormwater Collection & Treatment

Gananoque is bordered by several water bodies including the St. Lawrence River, Gananoque River, and Stocking Hill Creek. The accessibility of these outlets has allowed multiple, shallow systems to be used across the community. Each system is responsible for the collection of runoff from the urban areas, conveyance and treating surface water runoff for both water quality and quantity flow control appropriate to each outlet receiving body.

2.5.4 Solid Waste Management - Landfill

A former municipal landfill site is located south of the east end of James A. Brennan Road. Little information is available on this site. In an effort to collect all available information, a meeting with the Ministry of the Environment – specific to the presence and impact of this landfill on the EA – occurred February 24th, 2010. The content of that meeting is summarized below.

- The landfill had its Certificate of Approval (A440201) revoked in 1987 noting the site had been abandoned since 1972.
- Waste incineration had occurred on the site.
- Because more than 25 years has elapsed since the site has been active there is no requirement for a MOE permit to use the land for road or service installation.
- Concerns expressed were related to any excavation into the waste material where ground water may be present and may be released into the trench backfill where it may gravitate to the Creek. Avoidance of saturated material or clay barriers imposed in trench backfill to prevent ground water migration may be appropriate.
- Earth Excavations containing Waste material would have to be disposed of in a licenced landfill and any Hazardous material excavated taken to an appropriately licenced location.
- Raising the road grade and utilizing insulation to protect the water main may be an appropriate approach should this route be selected.
- Any design and tender documents should make appropriate commitments regarding materials handling once field testing has been performed and evaluated against design line and grade.
- The potential for Methane gas issues needs to be recognized.

Because the limits, contents and condition of the landfilled material, any development on or near this site should be done so with caution and with appropriate investigation.

2.6 Social/Cultural/Heritage Environment

The Town of Gananoque and its surrounding area has significant social, cultural and heritage features. This is evidenced by the various local and international recognitions including a designation as a United Nations biosphere reserve recognizing a truly unique ecosystem and residents' land stewardship.

The Township straddles the Frontenac Axis, a geological formation linking the Canadian Shield to New York's Adirondack Mountains. This accounts for unrivaled natural beauty and a focal point for the local industry.

Though these environments are significant to the region, their impact on the alternatives being considered are comparatively minor and are not the focus of this study.

3 THE ALTERNATIVE SOLUTIONS

3.1 Do Nothing

In every EA process, the option to "Do Nothing" must be explored.

While this alternative does not address the areas of concern or opportunities for improvement identified, it is included in the evaluation to provide a benchmark against which other alternatives are compared.

3.2 #1 Connect Herbert Street and James A. Brennan Road

The direct connection of Herbert Street to James A. Brennan Road would:

- Involve the construction of approximately 510 m of new road and associated services.
- Connect two currently dead ended roads providing an opportunity to improve both traffic and the operation of municipal services.
- Provide improved access to the Stone Street Highway 401 interchange from the east end of town – which may result in reduced truck traffic and congestion in the downtown.
- Provide access to additional municipally owned industrial lands.
- Have potentially significant impacts on the Stocking Hill Creek watercourse and associated floodplain.
- Involve construction adjacent to or across a former municipal landfill whose limits and content is not well known.

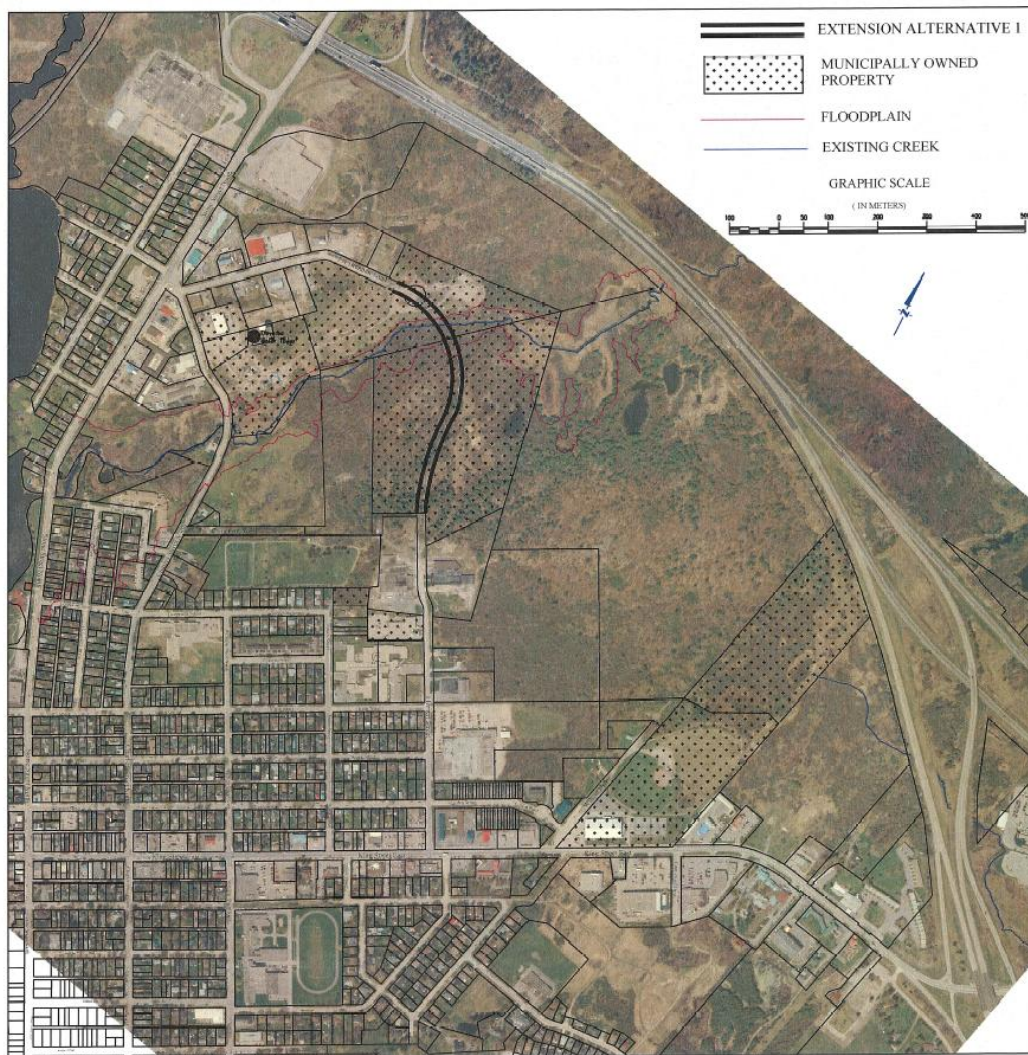


Figure 9: Alternative #1

3.3 #2 Herbert Street Dead End and New Charles Street Connection

The extension of Herbert Street to a dead end turn-a-round with a new westerly connection to Charles Street would:

- Provide improved access to the Stone Street Highway 401 interchange from the east end of town – which may result in reduced truck traffic and congestion in the downtown.
- Provide access to additional municipally owned industrial lands.
- Have some impact on the Stocking Hill Creek floodplain.
- Require property acquisition of privately owned lands for the new road right of way.
- Provide an opportunity to phase the dead end extension and Charles Street connection separately to accommodate cost concerns and municipal priorities.

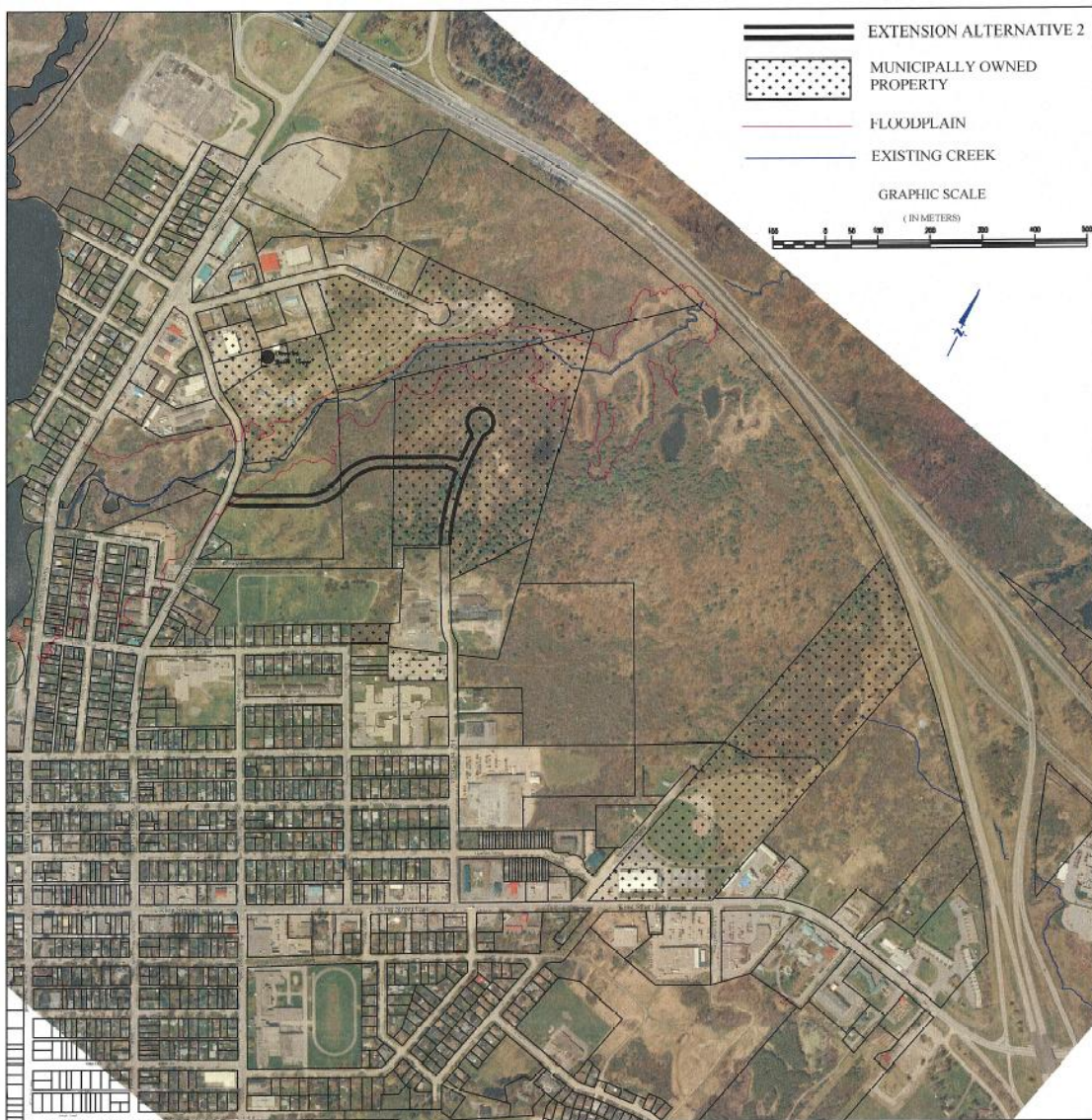


Figure 10: Alternative #2

3.4 #3 Herbert Street Dead End with and Charles Street Connection via Cemetary Road

The extension of Herbert Street to a dead end turn-a-round with a westerly connection to Charles Street via Cemetary Road would:

- Be similar to alternative #2 however it would make use of the existing right of way for Cemetary Road.
- Provide improved access to the Stone Street Highway 401 interchange from the east end of town – which may result in reduced truck traffic and congestion in the downtown.
- Provide access to additional municipally owned industrial lands.
- Have some impact on the Stocking Hill Creek floodplain.
- May require property acquisition of privately owned lands for a widened right of way.
- Provide an opportunity to phase the dead end extension and Charles Street connection separately to accommodate cost concerns and municipal priorities.

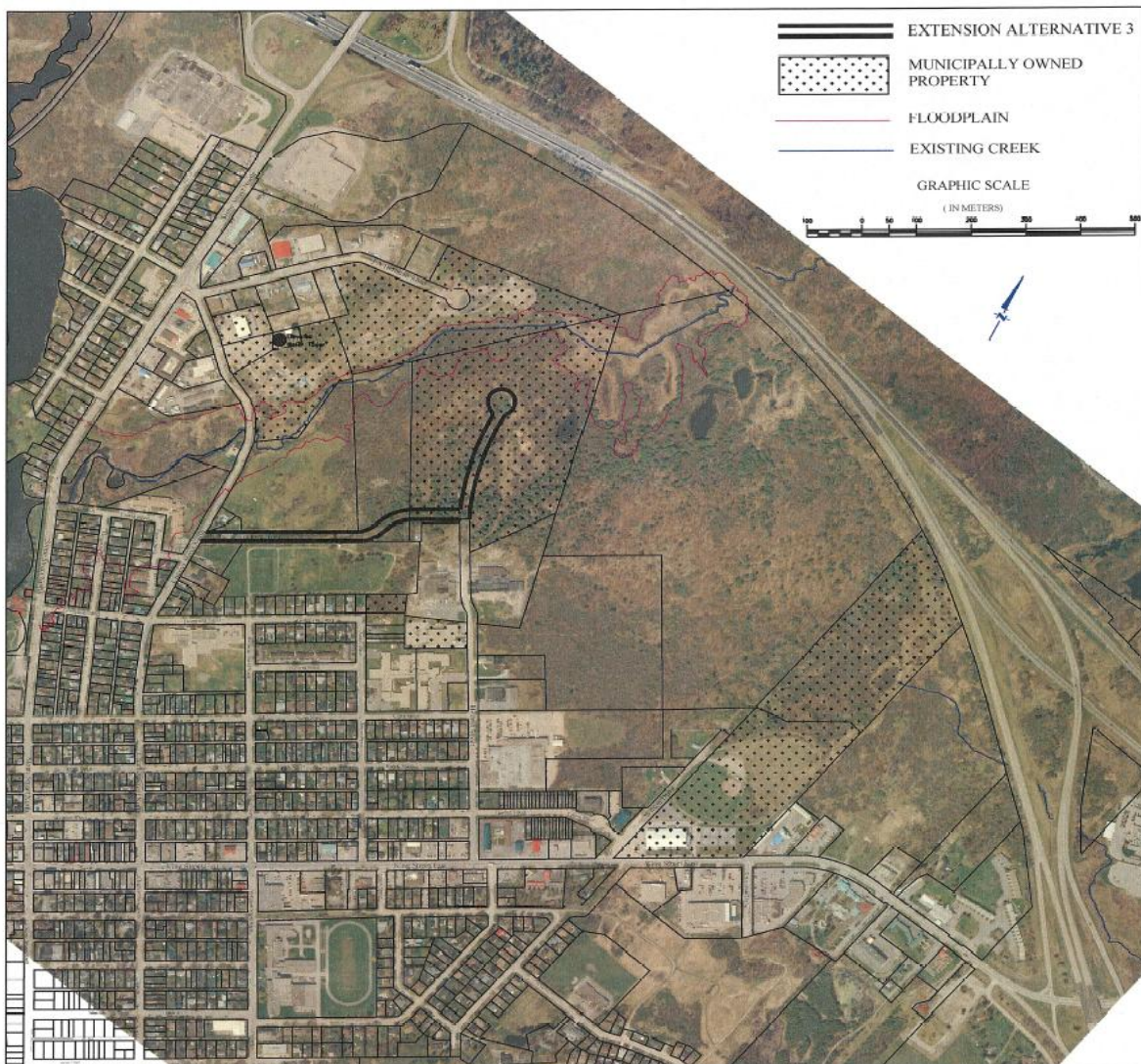


Figure 11: Alternative #3

3.5 #4 Connect Herbert Street and Wilson Drive

The connection of Herbert Street easterly to Wilson Drive would:

- Provide access to additional municipally owned industrial lands.
- Have little to no impact on natural watercourses and their floodplains.
- Require property acquisition of privately owned lands for the new road right of way.
- Have negligible traffic benefits.

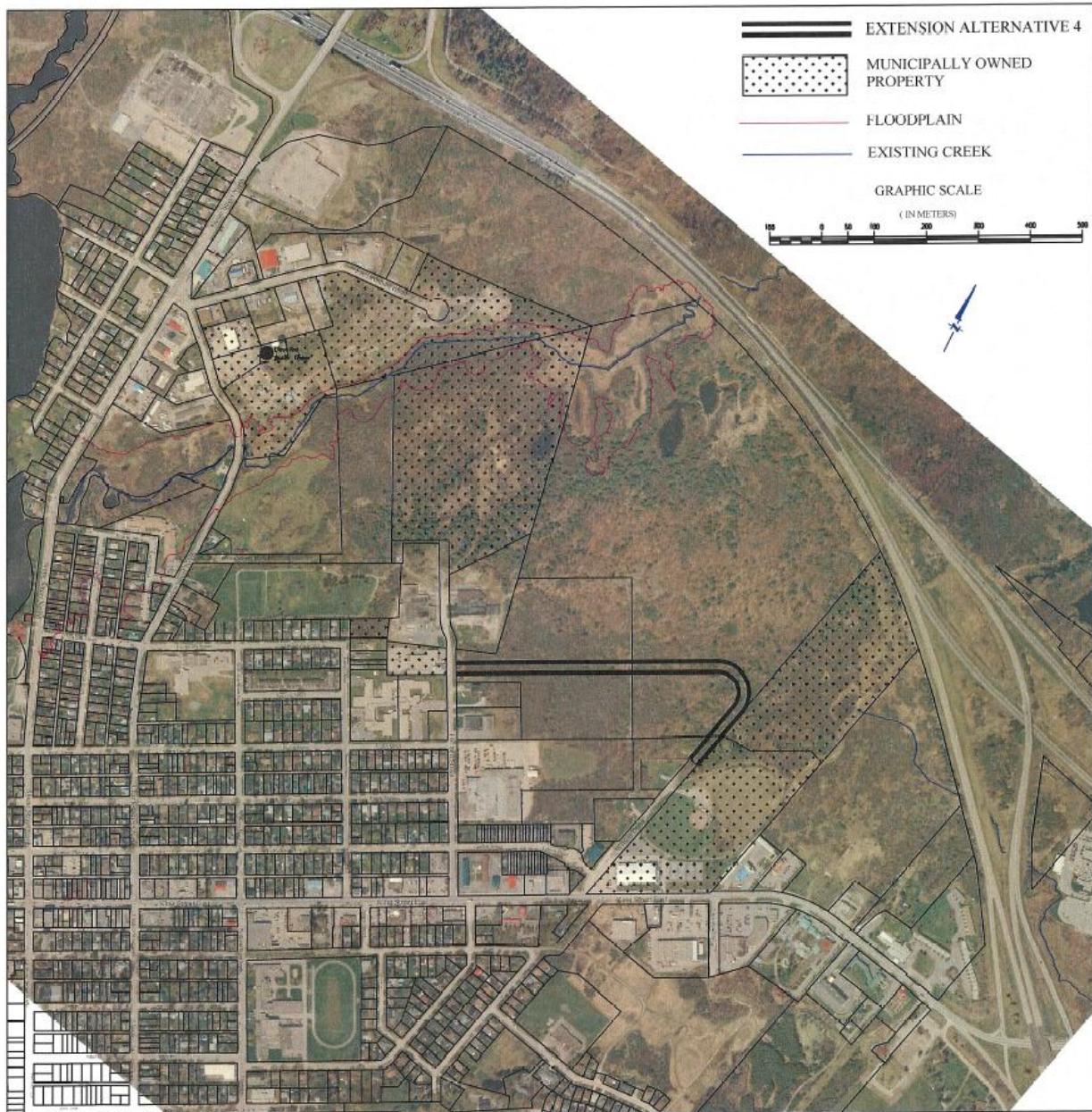


Figure 12: Alternative #4

3.6 #5 Herbert Street Dead End and New King Street Connection

The extension of Herbert Street to a dead end turn-a-round with a new easterly connection to King Street would:

- Provide access to additional municipally owned industrial lands.
- Potentially impact the floodplain of an unnamed creek at the east limits of the study area.
- Require property acquisition of privately owned lands for the new road right of way.
- Provide an opportunity to phase the dead end extension and Charles Street connection separately to accommodate cost concerns and municipal priorities.



Figure 13: Alternative #5

4 CRITERIA FOR EVALUATION OF ALTERNATIVE SOLUTIONS

There are many criteria on which the subject of an Environmental Assessment can be evaluated, be it impact on the natural, social, cultural, recreational, archeological, financial, planning, or other situation specific environments.

The criteria on which the alternatives will be evaluated have been selected in consideration of:

1. The original Request for Proposal (RFP) document from the Town identified improved access to Highway 401 (*Transportation*) and the development of industrial lands (*Property Access*) as priorities.
2. The alternatives under consideration would include developing currently natural lands which would impact water bodies, floodplains and the *natural environment*.
3. Each alternative is significant in scope and therefore the cost implications to the Town are also critical.

The criteria felt to be significant to this particular assessment are described below. This is not an exhaustive list of all areas that may be impacted by any particular alternative, rather these are felt to be those most critical to the selection of a preferred alternative.

4.1 Transportation

The Town of Gananoque has 2 interchanges to Highway 401. To the north is the Stone Street / County Road 32 interchange. To the east is the King Street / Highway 2 interchange.

Stone Street and King Street represent the most significant north/south and east/west roads respectively, both of which intersect in the Town's downtown core. Significant effort has been made to maximize the efficiency by which traffic can pass through the downtown area however the physical restrictions presented by this original downtown area are significant. The desire for the downtown area to serve as a commercial and tourism focal point is in conflict with its function – through a lack of alternatives – as a primary traffic corridor. Currently the only means by which the downtown can be bypassed is via the many local residential side streets.

Town industrial lands are accessed by Herbert Street and James A. Brennan Road, both dead end streets.

Improving access to Highway 401, specifically for westbound traffic from Herbert Street or the east side of Gananoque may improve conditions in the downtown area (if not a reduction in volume a reduction in large vehicle traffic), it may also improve the operation of existing industrial development while making lands available for development more appealing.

* The alternatives considered will be evaluated based on their ability to improve access to the Stone Street Highway 401 interchange (and by extension benefit the downtown area).

Detailed traffic data and calculations are available in Appendix H.

4.2 Property Access

A key component of this study is to improve access from the industrial area on Herbert Street to Highway 401. As a by-product of the study alternatives, currently undeveloped lands in the study area will become prime development opportunities.

By applying the current zoning regulations to newly accessed properties the potential for development is determined for each alternative.

While zoning changes, servicing issues and market conditions will dictate the amount, type and timing of development, the potential exists for development of lands for industrial and residential properties.

* The alternatives considered will be evaluated based on their ability to access existing (developable) municipally owned industrial lands.

Information for each parcel is available in Appendix I.

Municipal Lands

There are two main parcels of land that would be accessed by a Herbert Street extension.

Parcel A – North end of Herbert Street

- 20 acres (8.094 ha) – M1-h1 and HAZ zoning,
- North end of parcel is subject to flood plan restrictions,
- Some servicing issues (sanitary sewer) north end of parcel due to low elevation,
- Reasonable lot yield (10-20 lots) depending on type of use,

Parcel B – East end of James Brennan

- 19 acres (7.689 ha) – Mixed zoning,
- Old Landfill Site with numerous predevelopment issues,
- Limited or no development potential,

Private Lands

The extension of Herbert Street will increase the potential for development of several privately owned parcels in the study area. The increased prospect for development will depend on the current market conditions, interest from buyers and the ability of private owners to undertake projects of this nature. Appendix I outlines some of the likely development prospects for each parcel, including potential yield. The development of these lands is strictly dependent on the owner and their business plan for their property and therefore recommendations for individual properties are not included in this report.

Future Development Considerations

Any development alternative if acted upon will require some future consideration of the optimal lot layout. It is recommended that as part of that process the future development of adjacent lands be taken into consideration through the inclusion of (unopened) road allowances / right of ways to adjacent properties.

4.3 Natural Environment

As with any development that encroaches into undeveloped or natural lands there will be some impact on the natural environment. Within the subject area there 3 areas of particular concern – Stocking Hill Creek and the associated flood plain, the possible presence of species (plant/animal/insect) of interest and a former municipal landfill site.

As noted previously the species of interest are located only in general terms and the anticipated impact to one alternative versus another cannot be evaluated, therefore the impact on the Stocking Hill Creek flood plain and the landfill site will be the primary basis of comparison.

* The alternatives considered will be evaluated based on their ability to mitigate negative impact to, sustain or improve existing natural conditions within the study area.

4.4 Economic

For each alternative a cost estimate has been generated, they include line items for:

- a) Construction activities associated with typical road construction reflective of the anticipated length of road – site preparation, road base, asphalt driving surface, concrete curb/gutter, water/sanitary/storm municipal services, etc.
- b) Alternative specific allowances to capture unique costs – landfill remediation, water course crossings, etc.

It should be noted that the costs assigned to each alternative are based on previously available and preliminary design information which may significantly change both in content and amount in response to future investigations and design decisions. These costs do however provide a reasonable point of comparison in weighing the merits of one alternative against another – which is necessary for the selection of a ‘preferred alternative’.

A summary of cost estimates are provided in Appendix J.

* The alternatives considered will be evaluated based on their ability to reduce existing municipal operational expenditures, minimize future expenditures (capital or otherwise) necessary to construct and operate the works.

(The financial implications of each alternative as it relates to the creation of jobs, expanded municipal tax base, etc. that would be associated with the development of newly accessed lands are included in the property access criteria.)

4.5 Municipal Services

The alternatives being considered will have a direct impact on existing and future municipal services across the Town of Gananoque. By providing municipal services to these newly accessible lands additional demand will be placed on existing infrastructure which is likely to result in necessary capital upgrades to both collection/distributions systems and treatment plants.

The existing water distribution and treatment infrastructure appears capable of accommodating additional flow without significant upgrades to the existing system. Water servicing for these lands would provide a similar level of service to that found at the existing system dead ends. Though located near the water tower – typically areas of lower pressure due to the associated higher elevations – no servicing concerns have been raised to date.

New stormwater infrastructure can be constructed independent of the existing systems. This new system would outlet to Stocking Hill Creek and would be subject to typical “pre equals post” criteria for both water quantity and quality requirements.

Of particular interest are the existing sanitary sewer capacities. The following steps have been followed to assess the ability of the immediately adjacent infrastructure to accept the anticipated flows:

1. Estimate the demands of the development lands using the Ministry of the Environment Design Guideline for Sewage Works.
 - Low Density Industrial Land – 35,000 l/ha/day
 - Low Density Residential Land – 450 l/capita/day
2. Determine where connection may be made to the existing system.
3. Evaluate the ability of the existing system to accommodate these new flows.

Generally this assessment does not include pipes after the first downstream junction.

* The alternatives considered will be evaluated based on their ability to be completed without requiring significant capital improvements to existing infrastructure and/or their ability to improve existing operations.

5 EVALUATION OF ALTERNATIVE SOLUTIONS

The evaluation of alternatives is described below and is assigned a numerical rating out of a maximum of 10 points.

A summary matrix of the alternatives and the evaluation criteria is provided at the conclusion of the written descriptions.

5.1 Do Nothing

Transportation

The existing traffic conditions would remain unaddressed.

Vehicle traffic (both in overall volume as well as large truck traffic) through the downtown would remain high.

Traffic attempting to bypass the downtown core would continue to use various local residential side streets not intended for through traffic in an attempt to avoid delays.

Score: 0/10

Property Access

No additional property – municipally or privately owned – access provided.

Score: 0/10

Natural Environment

No new development, therefore existing natural conditions and environments remain unaffected.

Score: 10/10

Economic

No new construction/development cost burdens would be incurred by the Town, therefore the economic impact is negligible.

Score: 10/10

Municipal Servicing

No additional demands are placed on existing infrastructure however the existing operational issues associated with dead-ended water distribution services remain.

Score: 7/10

5.2 #1 Connect Herbert Street and James A. Brennan Road

Transportation

The connection of Herbert Street to James A. Brennan Road represents the most attractive alternative as it relates to traffic operation.

By providing this connection, the two primary industrial areas for the Town would be connected providing a single path of travel for traffic associated with this land-use.

Access to the Stone Street Highway 401 interchange would be improved from Herbert Street.

Both employment and large truck traffic (associated with industrial operations) in the area of Hebert Street would have a viable alternative to traveling through the downtown area and/or other residential areas.

This would effectively address two of the primary goals of this undertaking – to provide improved access to industrial lands, and to provide a direct and effective alternative for a portion of the traffic currently in the downtown core and local residential streets.

The increased development would result in substantially more traffic on the town road network, however the expectation would be that a significant amount of that traffic would be specific to the industrial lands and thus not significantly affect overall volumes on the surrounding streets.

The impact of the increased traffic volume on the James A. Brennan, Charles Street, Stone Street intersections would warrant investigation as to whether their current location relative to one another would allow for effective operation once full build out conditions were achieved. For the purpose of the ESR it is assumed appropriate geometric and operational provisions could be made.

Score: 10/10

Property Access

The connection of Herbert Street to James A. Brennan Road would provide access to two significant municipally owned parcels of land.

The first being the 20 acre parcel located at the north end of Herbert Street. This parcel is easily accessed from Herbert Street and would provide a high quality opportunity for development. Its development may be impacted by the possible encroachment of the Stocking Hill Creek flood plain at its northern limits. Further investigation into the extents of this encroachment would be recommended prior to development.

The second being the 19 acre parcel located at the east end of James A. Brennan Road. This parcel also is easily accessed, however its developability is questionable because of the old municipal landfill and its unknown limits and content. For the purpose of this document no allowance is provided for the development of this parcel.

Score: 10/10

Natural Environment

The connection of Herbert Street to James A. Brennan Road would be intended to facilitate the development of the newly accessed property through the construction of a new road spanning the Stocking Hill Creek flood plain and adjacent to (or directly over) the old municipal landfill at the end of James A. Brennan Road.

The limits of the floodplain are not specifically known, however a crossing – similar to that of Charles Street – would present an additional strain on that system. Unlike the Charles Street crossing where there was an opportunity to provide a gradual grade transition from the floodplain to the top of the ridge to the north, the transition between grade would either be made through a significant rock cut (through the ridge) or filling in the floodplain which would further impact the floodplain.

Construction in or near the former municipal landfill raises the possibility of disturbing material that is likely to test above today's tolerance levels, which could open the possibility of having to do some environmental clean-up within the new right-of-way. The risks associated with work in this area potentially could be managed through geotechnical investigation (to adjust alignment and design to avoid problem areas), construction techniques (no excavation – build the road entirely as a fill section) or otherwise. However, the risk would remain that contaminated soil and/or groundwater could be found which once disturbed could result in migration of contaminants or other detrimental effects.

Score: 0/10

Economic

Though one of the shorter alternatives being considered the connection of Hebert Street and James A. Brennan Road presents a number of site specific costs not encountered in the other alternatives. They include:

- Potentially full excavation a portion of the new road right of way (including clay barriers and disposal of contaminated soils at an approved facility) to facilitate construction through the former municipal landfill.
- Construction of a water crossing over Stocking Hill Creek – a concrete box culvert structure similar to that on Charles Street would be appropriate however the location of the creek relative to the north ridge present grade

challenges which are likely to result in costly rock cuts through the ridge or fill into the floodplain.

- Unpredictable soil conditions in the floodplain may make construction of a stable road base difficult and costly.

The cost for this alternative is estimated to be approximately \$4,250,000.

Score: 2.5/10

Municipal Servicing

Water and stormwater servicing may be addressed as noted in previous sections.

One benefit of this option to the existing water distribution system would be an operational improvement through the removal of the two existing dead end mains. This would remove any circulation issues and resulting challenges related to maintaining sufficient chlorine residuals.

Sanitary demands of the resulting new development of these industrial lots have been estimated to be 26.4 l/s. A pump station and forcemain would be required to outlet these flows to either James A. Brennan Road or Herbert Street. The critical pipe sections on James A. Brennan and Hebert Street have a calculated capacity of 30.9 l/s and 13.5 l/s.

Without considering existing development – the James A. Brennan Road pipe would be at 85% capacity and the Herbert Street pipe would be well over capacity. This would indicate a need to significantly improve downstream municipal services to accommodate the new demand.

Score: 5/10

5.3 #2 Herbert Street Dead End and New Charles Street Connection

Transportation

The connection of Herbert Street to Charles Street presents similar benefits to that of the James A. Brennan connection in alternative 1. Though not as direct a route to the north Highway 401 interchange to provides the potential to improve traffic flow on Charles Street through the construction of a new intersection.

Visibility and traffic speed are among the concerns that have been raised for this section of Charles Street. Some consideration could be given to making the south Charles Street approach the minor approach (stop controlled) and the new Herbert Street extension act as the major road (uncontrolled/through traffic). By doing this traffic would tend to travel through the new Herbert Street connection rather than the residential school zone and downtown at the south end of Charles Street.

Score: 9/10

Property Access

The connection of Herbert Street to Charles Street would provide access to a 20 acre municipally owned parcel of land located at the north end of Herbert Street. Access would be provided through an extension of Herbert Street and the provision of a dead end turn-a-round appropriate to an industrial area.

This parcel would have the benefit of improved access to Highway 401 through a new Charles Street connection and would provide a high quality opportunity for development. Its development may be impacted by the possible encroachment of the Stocking Hill Creek flood plain at its northern limits. Further investigation into the extents of this encroachment would be recommended prior to development.

Score: 8/10

Natural Environment

The connection of Herbert Street to Charles Street would be intended to facilitate the development of the newly accessed property through an extension of Herbert Street as well as a new connection to Charles Street.

Both of these new roads would provide an opportunity to develop lands that may encroach into the Stocking Hill Creek floodplain.

The rear of the lots created along the north boundary of both parcels (municipal and privately owned) are likely to encroach into the floodplain.

The new intersection with Charles Street would present a greater risk to the floodplain as the creek is closest what would be the road right of way.

Though the potential to adversely affect the floodplain exists in this alternative there are mechanisms in place to ensure that development is limited or impacts appropriately mitigated through the various approval processes in place both provincially and municipally.

Score: 7/10

Economic

Though slightly longer than alternative 1, this would present a more traditional – simpler route to construct.

This alternative provides the flexibility to be completed in multiple phases. This would allow costs to be spread out and more pressing needs addressed first – be they property, traffic or otherwise.

The cost for this alternative is estimated to be approximately \$2,800,000.

Score: 5.1/10

Municipal Servicing

Water and stormwater servicing may be addressed as noted in previous sections.

Sanitary demands of the resulting new development of the industrial parcel at the north end of Herbert Street and privately owned residentially zoned lands to the west have been estimated to be 29.5 l/s.

A pump station and forcemain would be required to outlet these flows to either Charles Street or Herbert Street. The critical pipe sections on Charles Street and Hebert Street have a calculated capacity of 41.2 l/s and 13.5 l/s.

Without considering existing development – the Charles Street pipe would be at 72% capacity and the Herbert Street pipe would be well over capacity. This would indicate a need to significantly improve downstream municipal services to accommodate the new demand.

Score: 3/10

5.4 #3 Herbert Street Dead End with and Charles Street Connection via Cemetary Road

Transportation

The connection of Herbert Street to Charles Street via Cemetary Road presents similar benefits to those noted in alternatives 1 and 2.

Existing property development at the intersection of Charles Street and Cemetary Road limit the geometric flexibility for intersection construction found in alternative 2, however the intersection would be located south of the Charles Street section noted as a concern by the public which may provide some safety advantages.

Score: 8/10

Property Access

The connection of Herbert Street to Charles Street would provide access to a 20 acre municipally owned parcel of land located at the north end of Herbert Street. Access would be provided through an extension of Herbert Street and the provision of a dead end turn-a-round appropriate to an industrial area.

This parcel would have the benefit of improved access to Highway 401 through a new Charles Street connection and would provide a high quality opportunity for development. Its development may be impacted by the possible encroachment of the Stocking Hill Creek flood

plain at its northern limits. Further investigation into the extents of this encroachment would be recommended prior to development.

Score: 8/10

Natural Environment

The connection of Herbert Street to Charles Street would be intended to facilitate the development of the newly accessed property through an extension of Herbert Street as well as a new connection to Charles Street on the existing Cemetary Road right of way.

Both of these new roads would provide an opportunity to develop lands that may encroach into the Stocking Hill Creek floodplain.

The rear of the lots created along the north boundary of the municipal property at the north end of Herbert Street are likely to encroach into the floodplain.

In this case the connection to Charles Street would be located as far south as is possible, minimizing the potential impact to the adjacent floodplain.

Though the potential to adversely affect the floodplain exists in this alternative there are mechanisms in place to ensure that development is limited or impacts appropriately mitigated through the various approval processes in place both provincially and municipally.

Score: 8/10

Economic

Though slightly longer than alternative 1, this would present a more traditional – simpler route to construct.

This alternative provides the flexibility to be completed in multiple phases. This would allow costs to be spread out and more pressing needs addressed first – be they property, traffic or otherwise.

The cost for this alternative is estimated to be approximately \$2,800,000.

Score: 5.1/10

Municipal Servicing

Similar to alternative 2:

Water and stormwater servicing may be addressed as noted in previous sections.

Sanitary demands of the resulting new development of the industrial parcel at the north end of Herbert Street and privately owned residentially zoned lands to the west have been estimated to be 29.5 l/s.

A pump station and forcemain would be required to outlet these flows to either Charles Street or Herbert Street. The critical pipe sections on Charles Street and Hebert Street have a calculated capacity of 41.2 l/s and 13.5 l/s.

Without considering existing development – the Charles Street pipe would be at 72% capacity and the Herbert Street pipe would be well over capacity. This would indicate a need to significantly improve downstream municipal services to accommodate the new demand.

Score: 3/10

5.5 #4 Connect Herbert Street and Wilson Drive

Transportation

The connection of Herbert Street to Wilson Drive provides no improvement to Highway 401 access – either to the Stone Street interchange or the King Street interchange – nor does it provide any relief to traffic in the downtown area.

Score: 1/10

Property Access

An easterly connection from Herbert Street to Wilson Drive would provide access to a 13 acre municipally owned parcel of land located northeast of the arena. To access this property (from Herbert Street) significant construction would be necessary on privately owned property with only marginal opportunity to develop a small portion of this lot.

Score: 1/10

Natural Environment

As with the other alternatives considered the extension of Herbert Street to Wilson Drive would result in new road construction and lot development on currently undeveloped lands.

There are no site specific impacts beyond that generally associated with similar new development.

Score: 10/10

Economic

Though slightly longer than alternative 1, this would present a more traditional – simpler route to construct.

The cost for this alternative is estimated to be approximately \$3,250,000.

Score: 4.3/10

Municipal Servicing

Water and stormwater servicing may be addressed as noted in previous sections.

Sanitary demands of the resulting new development of these largely privately owned industrial zoned lands have been estimated to be 28.1 l/s.

A pump station and forcemain are likely to be required to outlet these flows to either King Street or Herbert Street. The critical pipe sections on King Street and Hebert Street have a calculated capacity of 36.6 l/s and 13.5 l/s.

Without considering existing development – the King Street pipe would be at 77% capacity and the Herbert Street pipe would be well over capacity. This would indicate a need to significantly improve downstream municipal services to accommodate the new demand.

Score: 3/10

5.6 #5 Herbert Street Dead End and New King Street Connection

Transportation

The connection of Herbert Street to King Street provides no significant improvement to Highway 401 access – either to the Stone Street interchange or the King Street interchange – nor does it provide any relief to traffic in the downtown area.

If eastbound traffic on King Street were to develop into a future concern this would provide an alternative to eastbound traffic, however for existing conditions this has not been raised as a concern.

Score: 2/10

Property Access

An easterly connection from Herbert Street to King Street would provide access to both the 20 acre municipally owned parcel of land located at the north end of Herbert Street but also the 13 acre municipally owned parcel of land located northeast of the arena.

In this alternative the development of the parcel at the north end of Herbert Street would be similar to in the previous alternatives however it would not have the benefit of improved access to Highway 401.

To access the eastern property (via Herbert Street) significant construction would be necessary across private property. If this parcel were to be developed for municipal purposes a much more appropriate access point would be through the extension of Wilson Drive which is not under consideration in this study.

Score: 3/10

Natural Environment

The connection of Herbert Street to King Street would be intended to facilitate the development of the newly accessed property through its connection to King Street as well as a dead end extension of Herbert Street.

The rear of the lots created along the north boundary of the municipal property at the north end of Herbert Street are likely to encroach into the Stocking Hill Creek floodplain.

Though the potential to adversely affect the floodplain exists in this alternative there are mechanisms in place to ensure that development is limited or impacts appropriately mitigated through the various approval processes in place both provincially and municipally.

Score: 7/10

Economic

This alternative is by far the longest most expensive.

The cost for this alternative is estimated to be approximately \$5,600,000.

Score: 0/10

Municipal Servicing

Water and stormwater servicing may be addressed as noted in previous sections.

Sanitary demands of the resulting new development of these largely privately owned industrial zoned lands have been estimated to be 88.0 l/s.

These flows would either be combined at the east end pump station or through an additional pump station and forcemain to outlet these flows to King Street or Herbert Street (or a combination thereof). The critical pipe sections on King Street and Hebert Street have a calculated capacity of 82.0 l/s and 13.5 l/s.

Without considering existing development – both the King Street pipe and the Herbert Street pipe would be well over capacity. This would indicate a need to significantly improve downstream municipal services to accommodate the new demand.

Score: 3/10

6 PREFERRED ALTERNATIVE

As described in the Evaluation of Alternatives section each of the alternatives have been evaluated based on the 5 selected criteria and their ability to satisfy the stated criteria and goals of the Hebert Street and Industrial lands extension. The results are summarized in the following matrix:

Alternatives	Alternatives Description	Transportation Impact	Property Access Impact	Natural Environment Impact	Economic Impact	Municipal Services Impact	
Weighting		20%	20%	20%	20%	20%	100%
Perfect Score		10	10	10	10	10	10
-	Do Nothing	0	0	10	10	7	5.4
1	Extension of Herbert St. to J.A.Brennan Rd.	10	8	0	3	5	5.2
2	Extension of Herbert St. (Dead End) & New Road West to Charles St.	9	8	7	5	3	6.4
3	Extension of Herbert St. (Dead End) & Cemetary Rd. Connection to Charles St.	8	8	8	5	3	6.4
4	New Road East to Wilson Dr.	1	1	10	4	3	3.9
5	Extension of Herbert St. (Dead End) & New Road East to King St.	2	3	7	0	3	3.0

Rating System: 0-10, 0 being poor, 10 being excellent

Based on the findings of this report – including all public, agency and municipal input – the preferred alternative is *either* Alternative 2 or 3 at a score of 6.4/10. Both include an extension of Hebert Street to a dead end to access the municipally owned industrial lands and a westerly connection to Charles Street to improve traffic flow and provide an alternative east-west route for traffic.

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