RYMAL ROAD PLANNING AREA (ROPA 9)
CLASS ENVIRONMENTAL ASSESSMENT
STUDY REPORT
PHASE 3 AND 4

City of Hamilton

August 2007
Rymal Road Planning Area (ROPA 9)
Class Environmental Assessment Study Report
Phase 3 and 4

City of Hamilton

August 2007

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1. **INTRODUCTION AND BACKGROUND**

1.1 **Introduction and Project Context**

On June 6, 2001, the Ontario Municipal Board issued an interim decision approving Amendment No. 9 to the Region of Hamilton-Wentworth Official Plan (ROPA 9), to redesignate approximately 190 hectares (470 acres) of land from rural to urban, to allow residential and related urban development. On March 20, 2002 the Ontario Municipal Board proceeded to approve Amendment No. 36 to the Former Township of Glanbrook Official Plan, comprised of the Rymal Road Secondary Plan, to set out the detailed policy framework for development of the subject lands for urban purposes.

The Amendment is to allow future development of the Rymal Road Secondary Planning Area for a mix of land uses including approximately 3,590 residential units and 21.4 hectares (53 acres) of land for local, general and neighbourhood commercial uses. The Secondary Plan also designates land for stormwater management facilities and establishes a proposed collector road system. Secondary plan policies require that all municipal services to service the planning area, or specific phases of development, including transportation infrastructure, sanitary sewers, water, and stormwater management facilities, have received all necessary approvals and financial commitment prior to development.

The Secondary Plan has allowed a first phase of residential development and general commercial space prior to the completion of certain condition precedents that are specifically set out in the Secondary Plan. However, no additional residential or general commercial development may occur within the Secondary Plan area until the required environmental assessments and respective capital budgets are finalized, funding mechanisms are approved for cost recoveries, and improvements are included in the capital budget, where required, or until the required specific studies (e.g. individual traffic impact study, etc) have been approved, as per policy B.3.7.2.1 (d) and (e).

The subject lands are located on the south side of Rymal Road East (Highway No. 53), east of Trinity Church Road and north of the hydro corridor, in the former Township of Glanbrook. The study area is illustrated in **Exhibit 1-1 Study Area**.

The Rymal Road Planning Area (ROPA 9) Master Plan Class Environmental Assessment documents Phases 1 and 2 (as per the Municipal Class EA process, June 2000) of the recommended transportation improvements necessary to support the Rymal Road Secondary Plan area and the Special Policy Area ‘C’ planning area. The Class Environmental Assessment process allows the Master Plan approach to be used for a group of related works or undertakings. Council has approved the Master Plan approach for the group of infrastructure improvements, in accordance with Section A.2.7 of the Municipal Engineers Class Environmental Assessment process.
Completion of the Master Plan Class Environmental Assessment is part of the process to enable the City to address both the short-term and long-term infrastructure and service needs for the Rymal Road Planning Area, and for Special Policy Area ‘C’. The Master Plan was approved by the City Council in June 2006.

A number of studies formed part of Phases 1 and 2 of the Master Plan Class EA. The flow chart below provides a summary and the relation of the Rymal Road Planning Area (ROPA 9) study in relation to the Master Plan.

![Flow chart showing the relation of Rymal Road Planning Area (ROPA 9) study in relation to the Master Plan.]

This report documents the Phases 3 and 4 of the Class EA process for transportation improvements for the Rymal Road Planning Area, including the identification and evaluation of design alternatives and the selection of preferred design. This report should be read in conjunction with the Rymal Road Planning Area (ROPA 9) Master Plan (June 2006), which documents Phases 1 and 2 of the Class EA process.
Exhibit 1-1

Study Area

Rymal Road Planning Area (ROPA 9)

Phase 3 and 4

City of Hamilton

August 2007

Note: Under construction
1.2 Study Scope and Objectives

1.2.1 Findings of the ROPA 9 Master Plan Class EA

The preferred planning alternative identified in the ROPA 9 Master Plan includes a combination of the following:
- Travel demand management,
- Transit initiatives,
- New major infrastructure (a new north-south roadway between Rymal Road and Stone Church Road),
- Road widenings, and
- Operational improvements.

The following are the specific recommended transportation solutions identified in the ROPA 9 Master Plan for ROPA 9, in conjunction with the improvements stated above:
- Widen Regional Road 56 south of Rymal Road; and
- Widen Rymal Road from Trinity Church Road to Upper Centennial Parkway / RR 56.

The timing of transportation improvements in support of the Rymal Road Planning Area are recommended as follows:
- The widening of Rymal Road is seen as needed now to accommodate approved development and to facilitate turning movements into the Rymal Road Secondary Plan area through the provision of exclusive turn lanes and a wider pavement surface. The additional capacity on Rymal Road is also seen as desirable to facilitate truck movements in the area as development proceeds.
- The widening and reconstruction of Regional Road 56 (from Rymal Road south to the intersection with the new collector road within ROPA 9) will be required in advance of the provision of the new collector intersection to accommodate development growth, and to minimize traffic impacts of construction.

The proposed future road network in the ROPA 9 Study Area is shown in Exhibit 1-2 Future Road Network – Rymal Road Corridor.

The ROPA 9 Master Plan also recommended that:
- As development proceeds, transit improvements should be considered along Rymal Road and Regional Road 56.
- As development of the ROPA 9 area proceeds, pedestrians and cyclists improvements will be required to serve the community. Sidewalks should be provided on both sides of Rymal Road, with consideration for transit stops. Sidewalks should also be provided within the ROPA 9 lands.
- Rymal Road should be considered for a potential bike route with bicycle racks, since it was identified as a desirable connection in the Rymal Road Planning Area Urban Design Guidelines.
- Sidewalks and bicycle routes should also be considered for Regional Road 56.
Notes:
1. Consideration of southbound dual lefts.
2. Potential future closure of Upper Mount Albion Road north of Rymal Road.
1.3 Project Team

The ROPA 9 Environmental Assessment is being carried out by a consulting team led by iTRANS Consulting Inc., on behalf of the City of Hamilton. The Study team is outlined below:

City of Hamilton:
- Christine Lee-Morrison (City Project Manager) – Environmental Planning
- Mohan Philip – Strategic Planning
- Leanne Ryan – Traffic Engineering & Operations
- Harold Groen – Functional Planning

Consulting Team:
- Ray Bacquie (Consultant Project Manager) – iTRANS Consulting
- Liza Sheppard (Consultant Project Coordinator) – iTRANS Consulting
- Nathalie Baudais (Assistant Project Coordinator) – iTRANS Consulting
- Suzette Shiu (Transportation Planning) – iTRANS Consulting
- Jun Zhu (Transportation Planning) – iTRANS Consulting
- Jerry Tan / Lisa Li (Road Design) – iTRANS Consulting
- Christine Hill (Stormwater Management) – XCG
- Grant Kauffman (Natural Environment) – LGL
- Richard Unterman (Cultural Heritage) – Unterman McPhail Associates
- Robert Pihl (Archaeology) – Archaeological Services Inc.


1.4 **Class Environmental Assessment Process**

This Environmental Assessment (EA) is being undertaken in accordance with the guidelines of the Municipal Engineers Association *Municipal Class Environmental Assessment*, June 2000. The Environmental Assessment is being conducted in compliance with the guidelines for Schedule “A”, “B”, and “C” projects for the transportation infrastructure components. A brief description of each schedule follows:

- **A Schedule “A” project** is limited in scale, has minimal adverse environmental effects, and includes a number of municipal maintenance and operational activities. Schedule “A” projects are pre-approved and the proponent may proceed to implementation without following the full Class EA process.
- **A Schedule “B” project** has the potential for some adverse environmental effects. Schedule “B” projects generally include improvements and minor expansions to existing facilities, and the proponent is required to undertake a screening process.
- **A Schedule “C” project** is one that generally involves the construction of new facilities and major expansions of existing facilities, for a total design and construction cost of greater than $1.5 million for roads. Schedule “C” projects have the potential for significant environmental impact.

The Class EA Master Plan summarized the work completed including: 1) background to the Study; 2) the problem statement 3) alternative solutions; 4) a description of the preferred alternative solutions and the rationale for the identification of the preferred alternative solutions; and 5) the public consultation process. The Class EA Master Plan was endorsed by Hamilton City Council on June 14, 2006.

This Study will complete the third and fourth phases of the five-phase Class Environmental Assessment Process. **Exhibit 1-3** illustrates the sequence of activities within the approved Class Environmental Assessment process leading to project implementation. The encompassing phases for this Study are described below:

- **Phase 3 (Schedule “C” projects)** – Examine alternative methods of implementing the preferred solution, based on the existing environment, public and review agency input, anticipated environmental effects, and methods of minimizing negative effects and maximizing positive effects.
- **Phase 4 (Schedule “C” projects)** – Document in an Environmental Study Report (ESR) a summary of the rationale, and the planning, design, and consultation process of the project.

Phase 5 (Schedule “A”, “B” and “C” projects), which involves detail design, preparation of contract drawings and tender documents, construction, operation, and monitoring, is not part of this Study.
The Schedule “C” projects resulting from the Master Plan Study which will be documented in this Environmental Study Report are shown in Exhibit 1-4. A Notice of Completion will advise the public and other stakeholders of their right to request a Part II Order, and how and when such a request must be submitted. Under the Environmental Assessment Act, if it is felt after consulting with the proponent (the City of Hamilton) that serious environmental concerns remain unresolved, members of the public, interest groups, agencies, and other stakeholders may submit a written request to the Minister of the Environment to require the proponent to comply with Part II of the Environmental Assessment Act before proceeding with the proposed undertaking. Part II of the EA Act addresses Individual Environmental Assessments.

The request for a Part II Order must be copied to the proponent at the same time it is submitted to the Minister. Written requests for a Part II Order must be submitted to the Minister within the 30-calendar day review period, after the proponent has filed the ESR and has issued the Notice of Completion of the Study. The decision to issue a Part II Order rests with the Minister of the Environment. Requests after the minimum 30-calendar day review period will not be considered by the Minister of the Environment.
MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

PHASE 1
- Problem of Opportunity
- Identify alternatives

PHASE 2
- Select alternative
- Evaluate alternatives

PHASE 3
- Alternative Design
- Preferred solution

PHASE 4
- Environmental Study Report

PHASE 5
- Implementation

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

Exhibit 1-3
Class Environmental Assessment Process
Exhibit 1-4
Rymal Road Planning Area
Schedule ‘C’ Projects

Legend
- Existing
  - No. of Lanes
  - Signalized Intersection
  - Right Turn
  - Through
  - Left Turn
  - Stop Control

- Future
  - No. of Lanes
  - Signalized Intersection or Roundabout
  - Right Turn
  - Through
  - Left Turn
  - Stop Control
  - Turning Channel

Not To Scale
August 2007
1.5 Agency / Stakeholder Consultation

A list of agency stakeholders, including federal and provincial ministries, City of Hamilton departments, local groups, conservation authorities, utilities, and developers and their consultants was prepared at the project initiation. The opportunity for these parties to participate in the project was provided through the announcement of the Phase 3 and 4 Public Information Centre (PIC). The following is a summary of the agencies contact list.

**Federal Agencies**
- Canadian Wildlife Services
- Canadian Environmental Assessment Agency
- Department of Fisheries and Oceans
- Environment Canada
- Parks Canada

**Provincial Agencies**
- Ontario Realty Corporation
- Ontario Provincial Police - Burlington Detachment
- Ministry of Agriculture, Food & Rural Affairs
- Ministry of Culture / Ministry of Tourism and Recreation
- Ministry of Community and Social Services
- Heritage and Libraries Branch, Ministry of Culture
- Ministry of Natural Resources
- Ministry of the Environment
- Ministry of Transportation
- Ministry of Health and Long Term Care
- Niagara Escarpment Commission

**First Nations**
- Six Nations Council

**City of Hamilton Departments**
- Corporate Services
- Economic Development
- Hamilton Emergency Services
- Hamilton Police Services
- Mayor's Office / Council
- Planning and Development
- Public Health and Community Services
- Public Works

**Conservation Authorities**
- Hamilton Conservation Authority
- Niagara Peninsula Conservation Authority
1.6 Summary of Public Consultation Process

A comprehensive public consultation program was conducted for the Study, with the following components:

- **Mailing Lists** – A number of mailing lists were established for the Master Plan Study and were maintained for the Phase 3 and 4 Class Environmental Assessment Study. These included an agency mailing list as mentioned above and a mailing list which consisted of all members of the public within and adjacent to the Study Area, in addition
to others who wrote, telephoned, emailed, or filled in comment sheets during the Study. People on the mailing list were sent letters prior to each of the public meetings. Opportunities for public input were provided throughout the process, including public meetings, telephone inquiries, letters, email and faxes.

- **Stakeholder and Technical Committee Meetings** – A Stakeholder and Technical Committee was established as part of the Master Plan Study and was maintained for the Phase 3 and 4 Class Environmental Assessment Study. One meeting was held with this group during the Phase 3 and 4 Study. The meeting was held prior to the Phase 3 and 4 Public Information Centre (PIC). The stakeholders consisted of representatives of local groups and businesses, and developers. City of Hamilton staff and consultants comprised the technical representatives.

- **Developers and their Consultants** – A list of developers and their consultants was prepared at the project initiation. The opportunity for these parties to participate directly in the project was provided through the Stakeholder and Technical Committee Meetings and through announcement of the Phase 3 and 4 Public Information Centre (PIC).

- **Public Information Centre (PIC)** – A formal meeting was held during the Phase 3 and 4 Study. It consisted of a public open house with display panels. Attendees were asked to sign-in when they entered the public open house. A handout consisting of key display panels was made available. Comment forms were available to provide the public another opportunity for input to the Study. Members of the project team were on hand to respond to questions and concerns. Issues raised by the public during and after each meeting were recorded by the consultant team and subsequently addressed.

- **Newspaper advertisements** – At least one and a half weeks prior to the Phase 3 and 4 public meeting, a newspaper advertisement was placed in two separate editions of the *Hamilton Spectator*, in the *At Your Service* section, and in one edition of each of the following Brabant Newspapers: *Mountain News*, *Stoney Creek News* and *Glanbrook Gazette* to announce the date, time, and location of the meeting. The newspaper advertisements invited the public to attend the meeting and to provide input. The advertisements provided information on contact names, telephone numbers, and addresses.

- **Additional notification** – At least one and a half weeks prior to the Phase 3 and 4 public meeting, a notice of the public meeting was mailed out to area residents and businesses on the project mailing lists. Notification letters were also mailed to utility companies and external agencies.

- **Project email address** – Through the newspaper advertisements and comments sheets, the public was invited to send comments by email to both the City and consultant team project managers.
• **Project website** – As part of the Master Plan Study, a project website was launched to provide the public with an additional means to obtain information about the project. The project website was maintained during the Phase 3 and 4 Study and the website was advertised in the PIC display materials.

Further details on the public consultation process are documented in other sections of the report. A summary of the Public Meetings is provided in Appendix A.3.

Major events in the public consultation process are summarized below:

- Meeting with Stakeholder and Technical Committee  October 2, 2006
- Notification letters to utility companies, external agencies, area businesses, residents and other stakeholders for Public Information Centre  September 29, 2006
- Newspaper advertisement of Public Information Centre  September 29, 2006
- **Public Information Centre**  October 12, 2006
- City of Hamilton Council pre-approval report  September 27, 2006
- Notice of Study Completion (Phases 3 and 4) August 31, 2007 and September 7, 2007

### 1.6.1 Master Plan Public Consultation Process

During the Problem Statement and Planning Alternatives phases, the public consultation process for ROPA 9 involved the following activities:

- Study Commencement Notice  March 4, 2005
- First Stakeholder Committee Meeting  September 19, 2005
- Advertisement of First Public Information Centre  September 16 & 23, 2005
- First Public Information Centre  October 3, 2005
- Study Completion Notice  June 16 & 23, 2006

**First Stakeholder Committee Meeting (SC#1)**

Representatives of the City and the consultant team met with the Stakeholder Committee once during this phase of the project. These meetings provided the SC members an opportunity to meet the project team, gain preliminary information on the project, and discuss any issues relating to the project. At the first meeting, 10 members of the SC were present. Many items were discussed, including:

- How the EA process works and the role of the SC, City of Hamilton, and the consultant team in this process;
- SC Terms of Reference;
- Other studies being carried out in the vicinity of the Study Area which may pertain to this Study;
- Problem Statement;
- The preliminary list of evaluation criteria was reviewed. The following criterion was added: Adjacent Local Roads (Potential for Traffic Infiltration)
First Public Information Centre (PIC#1)

The first Public Information Centre (PIC#1) was held on Tuesday, October 3rd, 2005 from 6 p.m. to 9 p.m., at the Salvation Army Church Gym, 300 Winterberry Drive (at Paramount Drive), in the City of Hamilton. The purpose of PIC#1 was to provide information about the Study to the public and at the same time obtain public input. Twenty-four panels were displayed. The information panels included the following:

- Welcome and Study Area
- Description of the Study background, Study goal and scope
- Chart of the EA process and class EA requirements
- Description of the public consultation plan
- Summary of the needs and opportunities for the Study for transportation, water, and wastewater
- Problem statement for transportation, water, and wastewater
- Existing official plan policies and other applicable policies
- Description of existing conditions
- Description of 7 transportation alternative solutions
- Description of 5 water alternative solutions
- Description of 3 wastewater alternative solutions
- Description of alternative solutions assessment criteria
- Evaluation tables of the transportation, water, and wastewater planning alternatives
- Identification and description of the preferred transportation, water, and wastewater planning alternatives
- Future actions
- Contact information

As with all of the public information centres, the public was advised about the meeting through advertisements in the local paper. Advertisements were placed in the Hamilton Spectator on Friday September 16, 2005 and Friday September 23, 2005, and in the Brabant papers (Mountain News, Glanbrook Gazette and Stoney Creek News) on Friday September 16, 2005. Notification letters were also mailed out to property owners within the Study Area, to other individuals who had responded with an interest in the Study since its commencement, to conservation authorities, Federal and Provincial agencies, and utility companies.

The format was an informal drop-in centre from 6:00 to 7:00 PM to meet the project team and to view the display panels and drawings. There was a presentation at 7:00 PM, followed by a question and answer period. The PIC continued until 9:00 PM, which provided participants the opportunity to further discuss the project with the Study team. Attendees were asked to sign-in and were invited to fill-in comment forms at their convenience within a 3-week time frame.
Approximately 122 members of the public attended the PIC. Representatives from the City of Hamilton, iTRANS, and XCG attended the PIC to discuss the details of the project and answer questions of the public.

Key public comments provided on the ROPA 9 needs assessment included the following:

- Comments on the need for improvements (long overdue), the need for widening of Rymal Road to James Street, timing for improvements, concerns regarding geometry of Rymal Road at Trinity Church Road, and increased traffic impact with the development of the ROPA 9 area.
- Comments on operational issues (increased traffic volumes, speeding, safety) on Second Road West, and on Upper Mount Albion Road, suggestions to close these roads.
- Comments suggesting no approval of development before the required road network is in place.

Note that more detailed documentation of the Phase 1 & 2 process is found in the Master Plan.

**1.6.2 Phase 3 and 4 Consultation**

The public consultation process and public reaction during the Design Phase for ROPA 9 are summarized in Section 4.2 of this report. Additional details on the public consultation process are contained in Appendix A.
2. **EXISTING STUDY AREA CONDITIONS**

This section describes the features of the existing transportation infrastructure in the study area. For information on the existing socio-economic environment, natural environment, surface runoff and utilities, please refer to the Master Plan document.

### 2.1 Existing Transportation Facilities

#### 2.1.1 Road Classification

The existing road network and classifications based on the current City’s Official Plan designations are illustrated in **Exhibit 2-1**. The official plan definitions of the road classes and designated right-of-way are noted in **Table 2-1**. For specifics on any road in the City’s road network, refer to the appropriate Official Plan for right-of-way designations. The appropriate volume for the different classes is based on the 1999 *Geometric Design Guide for Canadian Roads* by the Transportation Association of Canada (TAC) and represents the 24-hour two-direction volume thresholds.

**Table 2-1: Official Plan Definitions of the Road Classes**

<table>
<thead>
<tr>
<th>Current Designation</th>
<th>Definition</th>
<th>Designated Right-of-Way</th>
<th>Volume for Class</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arterial</strong></td>
<td>Strategic links in the road network, the main functions of which are to carry relatively high volumes of long distance traffic within, between or through the City and surrounding Area Municipalities and/or to provide access past major geographic barriers and to inter-regional highways.</td>
<td>26 to 36 m</td>
<td>&gt; 5,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; 30,000</td>
</tr>
<tr>
<td><strong>Collector</strong></td>
<td>Function as connecting road links between Arterial and Local Roads. They generally carry lower traffic volumes than Arterial Roads and may provide direct access to abutting properties.</td>
<td>20 to 26 m</td>
<td>&lt;8,000</td>
</tr>
<tr>
<td><strong>Local</strong></td>
<td>Provide direct access to abutting properties and carry traffic predominantly of local nature.</td>
<td>20 m</td>
<td>&lt;1,500</td>
</tr>
</tbody>
</table>

For roads in the City of Hamilton, road right-of-way designations can reach up to 60 m and volumes may exceed 30,000 per day.
Exhibit 2-1

Existing Road Network and Classifications

Legend
- Arterial or Inter-Regional Highway (previous Regional Road)
- Collector Road
- Schematic of Karst Core Boundary
- Posted Speed Limit
- School/Church
- 1500 24-hour Traffic Volumes (2-way)

Note: Under construction

Not to Scale

August 2007
2.1.2 Road Network and Characteristics

The Study Area roads are described below.

**Rymal Road** – Rymal Road is an arterial road, with a two-lane, paved rural cross-section and a posted speed limit of 70 km/h between Trinity Church Road and Whitedeer Road and a posted speed limit of 60 km/h between Whitedeer Road and Upper Centennial Parkway. It intersects with a number of north-south collector and arterial roads. Rymal Road will also provide new collector road connections to the Rymal Road Planning Area. Rymal Road has several residential and commercial accesses. No sidewalks are provided along the roadway.

Parallel east-west roadways north of Rymal Road include Mud Street West and Highland Road West. Golf Club Road parallels Rymal Road to the south of the Study Area.

Exhibit 2-2: Rymal Road Westbound (approaching Fletcher Road)
Exhibit 2-3: Rymal Road Westbound (approaching Swayze Road)

Trinity Church Road – Trinity Church Road is a two-lane north-south arterial south of Rymal Road with a rural cross-section, no shoulders and a posted speed limit of 50 km/h to the Hydro Corridor and a posted speed limit of 60 km/h south of the Hydro Corridor. Trinity Church Road currently terminates at Rymal Road. The vertical geometry of Trinity Church Road is rolling. A future interchange for the Red Hill Valley Parkway is currently aligned with an extension of Trinity Church Road. Trinity Church Road provides north-south access for the lands in Glanbrook to the south of ROPA 9. There are residential driveways along Trinity Church Road. No sidewalks are provided on either side of the roadway. There is a load restriction (5 tonnes per axle) in effect on Trinity Church Road from March 1 to April 30.

Exhibit 2-4: Trinity Church Road Northbound (approaching Rymal Road)
Fletcher Road – Fletcher Road is a north-south collector road connecting Rymal Road to the south. Fletcher Road has a rural cross-section and a posted speed limit of 60 km/h. No sidewalks are provided along Fletcher Road. There is a load restriction (5 tonnes per axle) in effect on Fletcher Road from March 1 to April 30.

Exhibit 2-5: Fletcher Road Southbound (south of Rymal Road)
Regional Road 56 / Upper Centennial Parkway – Regional Road 56 / Upper Centennial Parkway is an arterial road and is currently the primary north-south link in eastern Hamilton that provides a crossing of the Niagara Escarpment and serves the Village of Binbrook to the South. Upper Centennial Parkway will provide one access point to the Rymal Road Planning Area. Upper Centennial Parkway has rural cross-section with gravel shoulders. No sidewalks are provided on either side of the roadway.

Exhibit 2-6: Regional Road 56 northbound (approaching Rymal Road)
**Upper Mount Albion Road** – Upper Mount Albion Road is a local road which extends from the limits of the Lincoln Alexander Parkway to Rymal Road. The road provides direct access to residential properties but provides an arterial road function in the study area road network. It is anticipated that Upper Mount Albion Road will serve more of a local road function (as designated) in the future. Upper Mount Albion Road has a posted speed limit of 60 km/h. The road has a rural cross-section with an average pavement width of approximately 7.5 m and no sidewalks. Upper Mount Albion Road has a rolling terrain. There are several residential accesses and frontages along Upper Mount Albion Road.

Exhibit 2-7: Upper Mount Albion Road Northbound (north of Rymal Road)
Second Road West – Second Road West is a collector road between Rymal Road and Gatestone Drive, and a local road north of Gatestone Drive. Second Road West has an urban cross-section and an average pavement width of approximately 10 m south of Gatestone Drive and 8.5 m north of Gatestone Drive. The posted speed limit is 50 km/h. There are several residential driveways and frontage along Second Road West. A sidewalk is provided on the east side, south of Gatestone Drive, no sidewalk is provided between Gatestone Drive and Fairhaven Drive, and a sidewalk is provided on the west side north of Fairhaven Drive.

Exhibit 2-8: Second Road West Northbound (north of Gatestone Drive)
The **Whitedeer Road** is a collector road connecting Rymal Road and Highbury Drive. Whitedeer Road has an urban cross-section and an average pavement width of approximately 14.5 m. An elementary school (St. Mark’s Elementary School) is located on the southwest corner of the intersection with Highbury Drive. There are several residential accesses and frontage on Whitedeer Road. A sidewalk is provided on the east side of Whitedeer Road, near Rymal Road and on both sides of Whitedeer Road, near Highbury Drive. The posted speed limit is 50 km/h but reduces to 40 km/h near the school.

**Exhibit 2-9: Whitedeer Road Southbound (north of Rymal Road)**

### 2.1.3 Transit Service Accommodation

Currently, transit service is not available on Rymal Road within the Study Area.

### 2.1.4 Pedestrian and Bicycle Network

Within the Study Area, pedestrian and bicycle accommodation is limited. Sidewalks are provided on portions of Whitedeer Road and Second Road West. No sidewalk facilities are provided on the Rymal Road or Regional Road 56 corridors.
3. PREFERRED PLANNING ALTERNATIVE

The Class Environmental Assessment process requires the examination of all reasonable alternatives, including alternatives to the undertaking, referred to as planning alternatives. Through the Master Plan Study, planning alternatives that addressed the problem statement were developed and evaluated and presented to the public. The following transportation improvements were part of the preferred alternatives for ROPA 9, in conjunction with Travel Demand Management initiatives, and a new north-south roadway between Rymal Road and Stone Church Road / Red Hill Valley Parkway (RHVP) ramps:

- Rymal Road widening from Regional Road 56 to west of the new north-south roadway between Rymal Road and Stone Church Road / RHVP ramps; and
- Regional Road 56 widening from Rymal Road to the new collector road.

The ROPA 9 Master Plan (Phase 1 and 2) Study also recommended that:

- Transit service be considered along Rymal Road and Regional Road 56;
- Sidewalks be considered for Rymal Road and Regional Road 56; and
- Bicycle routes be considered for Rymal Road and Regional Road 56.
4. EVALUATION OF DESIGN ALTERNATIVES

The Class Environmental Assessment process requires the examination of alternative methods of implementing the preferred undertaking by considering design alternatives. This section of the report provides a discussion on the development and evaluation of the design alternatives for the ROPA 9 transportation improvements.

4.1 Development and Evaluation of Design Alternatives

The preferred planning alternatives were determined during the Master Plan Study and are summarized in Section 3 of this report. For the recommended planning alternative, there were a number of methods to implement the undertaking. Design alternatives reflect specific design decisions for implementing the preferred planning alternative. The advantages and disadvantages of each design alternative were identified and evaluated to determine the best implementation of the undertaking. This is discussed below.

4.1.1 Development of Design Alternatives

The proposed Rymal Road widening design alternatives include the following:
- Offset to the north,
- Offset to the south, and
- Widen equally on both sides based on the centreline.

The conceptual alignment of the proposed collector road intersection with Regional Road 56 has been approved in the Rymal Road Secondary Plan. Given the potential geometric deficiencies at the location where the collector road would intersect Regional Road 56, the proposed Regional Road 56 design alternatives include the following:
- Do nothing (maintain the existing alignment and roadway geometry),
- A new alignment to flatten the existing horizontal curve, and
- Maintain the existing alignment and widen about the centreline, but reconstruct to lessen the superelevation of the curve.

Additional roadway enhancements / improvements could include:
- Enhanced pedestrian environment
- Improved transit service
- Improved pavement structure
- Streetscaping, where feasible

Other design alternative considerations include the type of cross-section (urban or rural) and the type of traffic controls (signals or roundabout) at existing or future intersections along Rymal Road and Regional Road 56, including:
- Rymal Road / Trinity Church Arterial Corridor,
- Rymal Road / existing Trinity Church Road,
- Rymal Road / Upper Mount Albion / Dakota Boulevard,
- Rymal Road / Fletcher Road,
- Rymal Road / Second Road West, and
- Regional Road 56 / New Collector Road

Each design alternative was developed and assessed in recognition of the criteria outlined below. The criteria were developed as per requirements and guidelines of the Municipal Class EA document. The criteria were also developed to be able to evaluate potential adverse impacts for each identified alternative.

<table>
<thead>
<tr>
<th>Transportation Service</th>
<th>Effect on Natural Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Corridor Capacity and Level of Service</td>
<td>• Vegetation</td>
</tr>
<tr>
<td>• Traffic Safety</td>
<td>• Wildlife</td>
</tr>
<tr>
<td>• Access to/from Rymal Road and to/from Regional Road 56</td>
<td>• Aquatic Habitat</td>
</tr>
<tr>
<td>• Transit Operations</td>
<td>• Eramosa Karst</td>
</tr>
<tr>
<td>• Accommodations for Pedestrians / Cyclists</td>
<td>• Stormwater</td>
</tr>
</tbody>
</table>

### Socio-Economic Environment
- Property Impacts
- Noise
- Residents
- Businesses
- Institutions
- Archaeological/Cultural Heritage Resources
- Visual Effects
- Potential for Contamination

### Cost Effectiveness
- Utility Relocation
- Capital Costs, including Property Acquisition
- Operating Costs

Each design alternative is described and assessed in further detail below.

### 4.1.1.1 Rymal Road Widening Alternatives

The three options identified and assessed all include widening Rymal Road to a 5-lane cross-section between the Trinity Church Corridor and Regional Road 56, and considered widening either to the north, to the south, or about the existing centreline of Rymal Road. A centre turn lane is seen as operationally necessary through the majority of the corridor given the frequency and spacing of driveways. The three options are as follows:

1. **Offset to the North**
   - Includes widening Rymal Road all to the north of the existing centreline to accommodate 4 travel lanes (2 per direction) and a centre left-turn lane.
2. **Offset to the South**
   Includes widening Rymal Road all to the south of the existing centreline to accommodate 4 travel lanes (2 per direction), and a centre left-turn lane.

3. **Widen Equally on Both Sides based on Centreline**
   Includes widening Rymal Road on both the north and south sides of the existing centreline to accommodate 4 travel lanes (2 per direction), and a centre left-turn lane.

The Do Nothing Option has been included to provide a comparison to the base case; however, it does not meet the objectives of the problem statement and as such, was not recommended as part of the ROPA 9 Master Plan solution. For additional details on the Do Nothing Option evaluation, please refer to the ROPA 9 Master Plan.

### 4.1.1.2 Regional Road 56 Widening Alternatives

1. **Do Nothing**
   Includes widening Regional Road 56 on both the east and west sides of the existing centreline to accommodate 4 travel lanes (2 per direction) while maintaining the existing alignment and roadway geometry.

2. **A new alignment to flatten the horizontal curve**
   Includes widening Regional Road 56 on both the east and west sides of the existing centreline to accommodate 4 travel lanes (2 per direction) while modifying the alignment to flatten the horizontal curves.

3. **Maintain the existing alignment and widen about the centre-line with reconstruction**
   Includes widening Regional Road 56 on both the east and west sides of the existing centreline to accommodate 4 travel lanes (2 per direction) but reconstructing the roadway to lessen the embankment of the curve.

### 4.1.1.3 Traffic Control Devices

The traffic control options identified and assessed for the existing and future intersections along the Rymal Road and Regional Road 56 corridors are listed below:

1. **Traffic Signals**
   Includes the provision of traffic signals and exclusive turning lanes.

2. **Roundabouts**
   Includes the provision of a roundabout with pedestrian splitter islands.

### 4.1.1.4 Urban or Rural Drainage Design

The cross-section options identified and assessed for Rymal Road and Regional Road 56 are as follows:

1. **Rural Cross-section**
   Includes the provision of ditches which require storm water outlets and storm water management and treatment facilities.
2. **Urban Cross-section**
   Includes the provision of storm sewers, curb and gutter, outlets and storm water management and treatment facilities.

4.1.2 **Evaluation of Design Alternatives**

4.1.2.1 **Rymal Road Widening**

The evaluation of the design alternatives and recommendations for the Rymal Road widening was based on the criteria outlined in Section 4.1.1 and is shown in Table 4-1.
<table>
<thead>
<tr>
<th>FACTOR</th>
<th>DO NOTHING (Existing 2-lane Cross-Section)</th>
<th>Option 1 OFFSET TO THE NORTH</th>
<th>Option 2 OFFSET TO THE SOUTH</th>
<th>Option 3 WIDEN EQUALLY ON BOTH SIDES BASED ON CENTRELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSPORTATION SERVICE:</td>
<td>Represents continuation of existing conditions and would involve no changes or improvements</td>
<td>Involves widening Rymal Road to the north of the existing centreline to accommodate 4 travel lanes (2 per direction)</td>
<td>Involves widening Rymal Road to the south of the existing centreline to accommodate 4 travel lanes (2 per direction)</td>
<td>Involves widening Rymal Road on both the north and south sides of the existing centreline to accommodate 4 travel lanes (2 per direction)</td>
</tr>
<tr>
<td>Corridor Capacity and Level of Service</td>
<td>No increase to corridor capacity, therefore no improvement to existing levels of service Increase in traffic congestion Potential impact on local roadway network as traffic diverts to less congested routes</td>
<td>Significant increase in capacity due to two additional lanes per direction Separating the left turn movements from the through traffic lanes also increases the capacity of the roadway</td>
<td>Significant increase in capacity due to two additional lanes per direction Separating the left turn movements from the through traffic lanes also increases the capacity of the roadway</td>
<td>Significant increase in capacity due to two additional lanes per direction Separating the left turn movements from the through traffic lanes also increases the capacity of the roadway</td>
</tr>
<tr>
<td>Traffic Safety</td>
<td>No change from existing</td>
<td>Potential improvement in safety performance due to improvements in lane widths, intersection approaches, and sideroad access (traffic signals and/or roundabouts) Additional lanes to cross for pedestrians</td>
<td>Potential improvement in safety performance due to improvements in lane widths, intersection approaches, and sideroad access (traffic signals and/or roundabouts) Additional lanes to cross for pedestrians</td>
<td>Potential improvement in safety performance due to improvements in lane widths, intersection approaches, grades, and sideroad access (traffic signals and/or roundabouts) Additional lanes to cross for pedestrians</td>
</tr>
<tr>
<td>Access to/from Rymal Road and to/from Regional Road 56</td>
<td>No change from existing</td>
<td>Improvement for cross streets accessibility with less traffic congestion; centre left turn lane provided to cross additional lanes when turning</td>
<td>Improvement for cross streets accessibility with less traffic congestion; centre left turn lane provided to cross additional lanes when turning</td>
<td>Improvement for cross streets accessibility with less traffic congestion; centre left turn lane provided to cross additional lanes when turning</td>
</tr>
<tr>
<td>Transit Operations</td>
<td>No current transit operations within the study corridor; potential for transit service in the future could be hampered by traffic congestion.</td>
<td>Potential for transit service within the study corridor; increased capacity will minimize transit delays Future transit service, location and type of transit stops (e.g. bus bays versus curb stop) to be determined</td>
<td>Potential for transit service within the study corridor; increased capacity will minimize transit delays Future transit service, location and type of transit stops (e.g. bus bays versus curb stop) to be determined</td>
<td>Potential for transit service within the study corridor; increased capacity will minimize transit delays Future transit service, location and type of transit stops (e.g. bus bays versus curb stop) to be determined</td>
</tr>
<tr>
<td>Accommodation for Pedestrians and Cyclists</td>
<td>No bicycle routes or sidewalks currently exist within the study corridors. The impact of Do Nothing will be the worsening of conditions for pedestrians and cyclists as a result of the increase in traffic, and no improvements to the pedestrian / cyclist network. Sidewalks will be provided on both sides of Rymal Road to accommodate pedestrians. Cyclists will be accommodated along a parallel route south of Rymal Road within the development area.</td>
<td>Sidewalks will be provided on both sides of Rymal Road to accommodate pedestrians. Cyclists will be accommodated along a parallel route south of Rymal Road within the development area.</td>
<td>Sidewalks will be provided on both sides of Rymal Road to accommodate pedestrians. Cyclists will be accommodated along a parallel route south of Rymal Road within the development area.</td>
<td>Sidewalks will be provided on both sides of Rymal Road to accommodate pedestrians. Cyclists will be accommodated along a parallel route south of Rymal Road within the development area.</td>
</tr>
<tr>
<td>SOCIO-ECONOMIC IMPACTS:</td>
<td>Property Impacts: No property impacts</td>
<td>Approximately 68 partial private property takings. Approximately 9 buildings are impacted and may require full property taking.</td>
<td>Approximately 49 partial private property takings plus impacts on potential future development east of Fletcher. Approximately 7 buildings are impacted and may require full property taking.</td>
<td>Property required to accommodate grading requirements and/or designated right-of-way width of 120 feet. No property required beyond the designated 120 ft.</td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td>Slight increase in noise levels with future traffic growth (&lt;3dba)</td>
<td>Slight increase in noise levels with future traffic growth (&lt;3dba)</td>
<td>Slight increase in noise levels with future traffic growth (&lt;3dba)</td>
</tr>
<tr>
<td></td>
<td>Residents</td>
<td>No direct impact to existing residents. No changes to existing driveways. Access will degrade as congestion increases. Changes to approximately 14 private driveways.</td>
<td>Changes to approximately 14 private driveways.</td>
<td>Changes to approximately 7 private driveways.</td>
</tr>
<tr>
<td></td>
<td>Businesses</td>
<td>No impact to existing businesses. No changes to existing driveways. Access will degrade as congestion increases. Impact to building of two (2) businesses – 2227 &amp; 2237 Rymal. Impact on driveways (may need to be redefined and curbs replaced), and one parking lot.</td>
<td>Impact to building of one (1) business. Moderate impact on driveways, loading, parking and site circulation for one site. Changes to several driveways and parking lots.</td>
<td>No impact to any business buildings. Curbs replacement of approximately ten (10) business driveways.</td>
</tr>
</tbody>
</table>

August 2007
Involves widening Rymal Road on both the north and south sides of the existing centreline to accommodate 4 travel lanes (2 per direction).

**Option 1: Offset to the North**
- Involves widening Rymal Road to the north of the existing centreline to accommodate 4 travel lanes (2 per direction).
- Potential impacts to Trinity United Church parking lot. No anticipated impacts to the Rymal Road Community Church.

**Option 2: Offset to the South**
- Involves widening Rymal Road to the south of the existing centreline to accommodate 4 travel lanes (2 per direction).
- Potential impacts to Trinity United Church parking lot. No anticipated impacts to the Rymal Road Community Church.

**Option 3: Widened Equally on Both Sides Based on Centreline**
- Involves widening Rymal Road on both the north and south sides of the existing centreline to accommodate 4 travel lanes (2 per direction).
- Potential impacts to the Rymal Road Community Church driveway, located at 1957 Rymal Road (opposite Fletcher Road), but no impacts to the building.

**Institutions**
- No impacts to the Trinity United Church and Rymal Road Community Church located within study corridor.
- No anticipated impacts to the Trinity United Church. Impact to driveway and parking lot of the Rymal Road Community Church.
- Potential impacts to Trinity United Church parking lot. No anticipated impacts to the Rymal Road Community Church.
- No impacts to the Trinity United Church; property impact to the Rymal Road Community Church.

**Archaeological/Cultural Heritage Resources**
- No impacts to existing archaeological / cultural heritage resources.
- Potential for impact to archaeological site in the Second Road West area. Impact to Fletcher Road and Rymal Road Community Church, located at 1957 Rymal Road (opposite Fletcher Road).
- Impact on Former Elphida Church, now Zarconos Italian Eatery, located at 2251 Rymal Road (north side east of Swayze Road), and House located at 1865 Rymal Road East, north side east of Upper Mount Albion Road.
- No anticipated impacts on Trinity United Church and Cemetery, located at 10 Trinity Church Road (near intersection with Rymal Road). No anticipated impact on House, located at 4 Trinity Church Road, west side south of Rymal Road and House located at 31 Trinity Church Road, east side south of parking lot for Trinity Church.
- Potential impacts to the Rymal Road Community Church driveway and parking lot, located at 1957 Rymal Road (opposite Fletcher Road), but no impacts to the building.

**Visual effects (Aesthetics)**
- No change to existing aesthetics.
- Increased pavement width may negatively impact aesthetics; however, the project provides an opportunity for streetscaping within the road right-of-way.
- Will reduce setbacks to property abutting Rymal Road on the north side.
- Increased pavement width may negatively impact aesthetics; however, the project provides an opportunity for streetscaping within the road right-of-way. Will reduce setbacks to property abutting Rymal Road on the north side.
- Increased pavement width may negatively impact aesthetics; however, the project provides an opportunity for streetscaping within the road right-of-way. Will reduce setbacks to some properties (particularly on the north side) abutting Rymal Road.

**Potential for Contamination**
- No change.
- Potential to encounter contaminated soils due to commercial uses (e.g. service stations) in the vicinity of Swayze Road. Further investigations may be required.
- Potential to encounter contaminated soils due to commercial uses (e.g. service stations) in the vicinity of Swayze Road. Further investigations may be required.
- Potential to encounter contaminated soils due to commercial uses (e.g. service stations) in the vicinity of Swayze Road. Further investigations may be required.

**Natural Environment Impacts:**

**Vegetation**
- No anticipated impact on vegetation.
- Potential for impact on vegetation / trees along Rymal Road, however, none are of biological significance; potential for planting.
- Potential for impact on Oak-Sugar Maple Forest (south of Gagestone Drive).
- Potential for impact on vegetation / trees along Rymal Road, however, none are of biological significance; potential for planting.
- Potential for impact on vegetation / trees along Rymal Road, however, none are of biological significance; potential for planting.

**Wildlife**
- No anticipated impact on wildlife.
- No anticipated impact on wildlife.
- No anticipated impact on wildlife.

**Aquatic Habitat**
- No anticipated impact on aquatic habitat.
- Potential minimal impact on aquatic habitat with Creek crossings. The watercourse crossings are intermittent and may provide seasonal functionality to receiving systems, however none support fish habitat.
- Potential minimal impact on aquatic habitat with Creek crossings. The watercourse crossings are intermittent and may provide seasonal functionality to receiving systems, however none support fish habitat.
- Potential minimal impact on aquatic habitat with Creek crossings. The watercourse crossings are intermittent and may provide seasonal functionality to receiving systems, however none support fish habitat.

**Eramosa Karst**
- No anticipated impact on Karst features.
- Impact on Karst feeder core. Impact on Karst feeder area is minimized through urban cross-section and drainage design of roadway.
- Impact on Karst feeder area is minimized through urban cross-section and drainage design of roadway.
<table>
<thead>
<tr>
<th>FACTOR</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
</tr>
</thead>
</table>
| **DO NOTHING**  
(Existing 2-lane Cross-Section) | Represents continuation of existing conditions and would involve no changes or improvements | **OFFSET TO THE NORTH**  
Involves widening Rymal Road to the north of the existing centreline to accommodate 4 travel lanes (2 per direction) | **OFFSET TO THE SOUTH**  
Involves widening Rymal Road to the south of the existing centreline to accommodate 4 travel lanes (2 per direction) |
| Stormwater | No change to existing stormwater quantity or quality | Water quantity – no significant impact on water quality  
Water quality – no significant impact on water quality  
Mitigation measures will be provided during detailed design | Water quantity – no significant impact on water quality  
Water quality – no significant impact on water quality  
Mitigation measures will be provided during detailed design |
| **COSTS:** | Utility Relocation | Requires relocation of all utility poles on the north side of Rymal Road with services that include Bell, Hydro, and Cable | Requires relocation of all utility poles on the north side of Rymal Road with services that include Bell, Hydro, and Cable |
| | No impact on utilities | Requires relocation of utility poles on the south side of Rymal Road with services that include Bell, Hydro, and Cable | Requires relocation of some utility poles on the north and south sides of Rymal Road with services that include Bell, Hydro, and Cable. Not as many poles will require relocation compared to Options 2 and 3. |
| Capital Costs, including Property Acquisition | High capital costs for road improvements, including significant property acquisition costs | High capital costs for road improvements, including significant property acquisition costs | Moderate capital costs for road improvements with less utility relocation, and moderate property acquisition costs compared to Options 2 and 3. |
| Operating Costs | Potential for increase in operating cost with higher roadway maintenance costs, due to road surface and road base deterioration | Maintenance costs related to roadway and sidewalks to better respond to the needs of the residents along the corridor | Maintenance costs related to roadway and sidewalks to better respond to the needs of the residents along the corridor |
| **RECOMMENDATION BY CONSULTANTS – For Discussion Purposes Only** | Does not meet the objectives of the Problem Statement. The current study area road network is insufficient to meet the current traffic demands. With future development planned, improvements are required to meet the future demand. | Meets objectives of the Problem Statement since capacity and operations will be significantly improved over existing conditions. However, will require utility relocations, result in significant property impacts and impacts on existing developments, impacts on the Karst, and significantly higher costs than Option 4. | Meets objectives of the Problem Statement since capacity and operations will be significantly improved over existing conditions. Some areas of widening can be accommodated within the existing right-of-way, less impacts on utilities (i.e. less need for relocations), less impacts on properties and existing and future developments, and at a lower cost than Options 2 and 3. |

NOTE: Travel Demand Management initiatives and Operational Improvements are recommended in conjunction with widening.
4.1.2.2 Regional Road 56 Widening

The evaluation of the design alternatives and recommendations for the widening of Regional Road 56 was based on the following criteria:

- Transportation Service
  - geometric standards
  - access to adjacent lands
- Human Factors / Driver Expectations / Safety
- Land Use Planning and Policies
- Socio-Economic Impacts
  - property impacts
  - residential, commercial, institutional impacts
  - noise
- Natural Environment Impacts
  - trees, vegetation, wildlife, aquatic habitat
  - surface drainage
- Costs

The evaluation of the widening of Regional Road 56 is included in Table 4-2.
### Table 4-2: Evaluation of Design Alternatives for the Regional Road 56 widening between Rymal Road and a New Collector Road (Terryberry Road)

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>Option 1: MAINTAIN THE EXISTING ALIGNMENT AND ROAD GEOMETRY (I.E. DO NOTHING)</th>
<th>Option 2: A NEW ALIGNMENT TO FLATTEN THE EXISTING CURVE</th>
<th>Option 3: MAINTAIN THE EXISTING ALIGNMENT WITH CHANGES IN THE ROAD GEOMETRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Service</td>
<td>2 existing curves on RR 56 just south of Rymal Road, with R=400 m, superelevation ~5%</td>
<td>A new alignment would allow for a design that would keep the existing posted speed limit at 80 km/h, and a desirable superelevation (reverse crown ~ 2%) of the curve. A curve radius of at least 900 m would be required.</td>
<td>This option would allow for a design that would keep the existing 400 m radius curves along the existing alignment, but with reconstruction to reduce the existing superelevation from 5% to 2%. This alternative would require a reduction in operation speed approaching the intersection through speed management or calming measures or other mitigating measures to slow traffic must be introduced. Access to adjacent lands will remain within a curved section of the roadway, but with more acceptable roadway geometry.</td>
</tr>
<tr>
<td>• geometric standards</td>
<td>The TAC recommends that if a situation is created where vehicles must stop on a horizontal curve with superelevation, that the superelevation should not exceed 4%. Given the existing geometric features of the curves, this design requirement would not be met. Future access to adjacent lands would connect into a 5% superelevated curve.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• access to adjacent lands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Factors / Driver Expectations / Safety</td>
<td>Potential violation of driver expectation having to stop on a 5% superelevated curve at the new Collector Road. Potential for tipping of vehicles negotiating movements from the new Collector Road to RR 56</td>
<td>No anticipated violation of driver expectation.</td>
<td>If a reduction in the existing posted speed limit is adopted, may require mitigative measures such as pavement markings, and/or signage to allow the driver to perceive and register a change in the roadway environment. Anticipated new roundabout could also provide a mitigative measure.</td>
</tr>
<tr>
<td>Land Use Planning and Policies</td>
<td>Does not directly support land use planning and policies since the proposed access road connection would not be the most appropriate.</td>
<td>Supports land use planning and policies, with access improvements.</td>
<td>Supports land use planning and policies, with access improvements.</td>
</tr>
<tr>
<td>Socio-Economic Impacts</td>
<td>No property impacts</td>
<td>Property requirements of approximately 4.1 ha</td>
<td>No property impacts</td>
</tr>
<tr>
<td>• property impacts</td>
<td>No impacts on existing developments</td>
<td>No impacts on existing developments</td>
<td>No impacts on existing or future developments</td>
</tr>
<tr>
<td>• residential, commercial, institutional impacts</td>
<td>Potential indirect impact on future development with potential for access restrictions, or limitations. No anticipated noise impacts</td>
<td>Reduces area of developable lands on the east side of RR 56. Access to the east side of RR 56 can be provided via a new signalized intersection, or roundabout</td>
<td>Access to the east side of RR 56 can be provided via a new roundabout</td>
</tr>
<tr>
<td>• noise</td>
<td>No anticipated noise impacts</td>
<td>No anticipated noise impacts</td>
<td>No anticipated noise impacts</td>
</tr>
<tr>
<td>Natural Environment Impacts</td>
<td>No anticipated significant impact on vegetation</td>
<td>Impact on a Cattail Mineral Shallow Marsh; however vegetation not biologically significant</td>
<td>No anticipated significant impact on vegetation</td>
</tr>
<tr>
<td>• trees, vegetation, wildlife, aquatic habitat</td>
<td>No anticipated significant impact on wildlife; species tolerant of human presence</td>
<td>No anticipated significant impact on wildlife; species tolerant of human presence</td>
<td>No anticipated significant impact on wildlife; species tolerant of human presence</td>
</tr>
<tr>
<td>• surface drainage</td>
<td>Potential impact on aquatic habitat with extension of a culvert (to accommodate widening) to a tributary of Sinkhole Creek that supports warmwater fish habitat. No anticipated significant impact on surface drainage</td>
<td>Potential significant impact on aquatic habitat through the potential need to realign a tributary of Sinkhole Creek that supports warmwater fish habitat. No anticipated significant impact on surface drainage</td>
<td>Potential impact on aquatic habitat with extension of a culvert (to accommodate widening) to a tributary of Sinkhole Creek that supports warmwater fish habitat. No anticipated significant impact on surface drainage</td>
</tr>
<tr>
<td>Costs</td>
<td>Cost anticipated to be similar to Option 3 since reconstruction would be required to facilitate conversion from a rural to an urban cross-section</td>
<td>Most costly option based on property impacts and construction of new alignment</td>
<td>Cost anticipated to be similar to Option 1 with roadway widening and reconstruction required to accommodate the change in road geometry, and conversion from a rural to an urban cross-section</td>
</tr>
<tr>
<td>SUMMARY</td>
<td>NOT RECOMMENDED</td>
<td>NOT RECOMMENDED</td>
<td>RECOMMENDED</td>
</tr>
<tr>
<td></td>
<td>The existing geometry of this alignment does not allow for the most appropriate location for connection of the approved Collector Road in the Rymal Road Planning Area Secondary Plan, to Regional Road 56. In addition, this alignment would not support good access for future development on the east side of RR 56 south of Rymal Road. This is given the same geometric challenges with the existing alignment and the reduced possibility of connecting any new access to this section of Regional Road 56.</td>
<td>This Option requires significant property and new construction costs, and would also have potential significant impact on a tributary of Sinkhole Creek that supports warmwater fish habitat.</td>
<td>This option is the preferred option. This option mitigates for geometric deficiencies by introducing measures which would naturally calm the approaching traffic speed. This option can only be recommended in conjunction with a recommendation for a roundabout as the preferred traffic control for the intersection with the proposed collector road or other proven speed management measures. This option provides for required TAC geometric requirements at the proposed Collector Road intersection, and eliminates any geometric impacts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FACTOR</td>
<td>Option 1: MAINTAIN THE EXISTING ALIGNMENT AND ROAD GEOMETRY (I.E. DO NOTHING)</td>
<td>Option 2: A NEW ALIGNMENT TO FLATTEN THE EXISTING CURVE</td>
<td>Option 3: MAINTAIN THE EXISTING ALIGNMENT WITH CHANGES IN THE ROAD GEOMETRY</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>deficiencies in providing access to development on both the east and west sides of Regional Road 56. No significant environmental impacts are anticipated.</td>
<td></td>
</tr>
</tbody>
</table>
### 4.1.2.3 Traffic Control Devices

#### 4.1.2.3.1 Rymal Road

An evaluation of the potential traffic controls for Rymal Road was completed for the 2011/2012 time horizon (Trinity Church Arterial Corridor ends at Rymal Road). A two-lane roundabout was assumed at each of the major intersections along the Rymal Road corridor. A summary of the evaluation of the alternatives is provided in the table below.

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRAFFIC SIGNALS</strong></td>
<td></td>
<td><strong>ROUNDABOUTS</strong></td>
</tr>
</tbody>
</table>
| Capacity (LOS for AM and PM peak hour shown) | Level of service (LOS) results for the AM / PM peak hours is shown below.  
- Trinity Church Corridor – LOS C / LOS D  
- Trinity Church Road – LOS B / LOS C  
- Dakota Boulevard – LOS B / LOS B  
- Fletcher Road – LOS B / LOS A  
- Second Road West – LOS B / LOS A | Level of service (LOS) results for the AM / PM peak hours is shown below.  
- Trinity Church Corridor – LOS A / LOS B  
- Trinity Church Road – LOS A / LOS F  
- Dakota Boulevard – LOS A / LOS A  
- Fletcher Road – LOS A / LOS A  
- Second Road West – LOS A / LOS A |
| Human Factors / Driver Expectations / Safety | Lower potential for sideswipe collisions  
Potential for red light crossing at high vehicle speed with potential severe right angle collisions | Lowers operational speeds.  
Provides fewer vehicle-vehicle conflict points  
Severity of any collisions would be reduced and it is anticipated that fewer fatal collisions will occur based on the anticipated lower approach speeds  
Eliminates potential right angle collisions |
| Impacts to Residents, Businesses, Institutions | Trinity Church Corridor – dwellings / businesses on north and south side of Rymal Road  
Trinity Church Road – a potential realignment of a portion of Trinity Church Road would improve the intersection operations and would allow for the inclusion of an exclusive northbound left turn lane, but would impact the Trinity United Church parking lot  
Dakota Boulevard – dwelling in the north-east corner  
Traffic signals will allow residents with driveway access along Rymal Road with sufficient gaps in traffic  
Less property needed | Trinity Church Corridor – dwellings / businesses on north and south side of Rymal Road  
Trinity Church Road – listed building in the southwest corner, Trinity United Church parking lot in southeast corner, two dwellings on the north side  
Dakota Boulevard – dwelling in the north-east corner, new development gateway feature on the south side;  
Fletcher Road – dwelling directly opposite Fletcher Road, dwelling on northwest corner, stormwater management pond in southwest corner and Rymal Road community Church parking lot in the north-east |
<table>
<thead>
<tr>
<th>FACTOR</th>
<th>OPTION 1</th>
<th>OPTION 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TRAFFIC SIGNALS</td>
<td>ROUNDABOUTS</td>
</tr>
<tr>
<td>Vehicular access to adjacent</td>
<td>▪ Vehicular access to adjacent properties will likely be more restricted with signals.</td>
<td>corner</td>
</tr>
<tr>
<td>properties will likely be more</td>
<td></td>
<td>▪ Second Road West – dwelling in the north-east corner</td>
</tr>
<tr>
<td>restricted with signals.</td>
<td></td>
<td>▪ Added benefit of traffic calming</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Added benefit of potential landscaping / streetscaping</td>
</tr>
<tr>
<td>Accommodation of Pedestrians and</td>
<td>▪ Pedestrians will be provided with appropriate cross walks and crossing time with protected right of way at the signalized intersections</td>
<td>▪ Splitter islands are provided in the design to create a midpoint refuge area so that pedestrians are only dealing with crossing one direction (2 lanes) of traffic flow at a time with fewer conflict points. Crossing distance is shorter and vehicle speeds are slower. Additional technologies would be required to accommodate for visually impaired persons crossing roundabouts. Specific training and education would be necessary.</td>
</tr>
<tr>
<td>Cyclists</td>
<td>▪ Cyclists will not be provided with a bike path along Rymal</td>
<td>▪ Cyclists will not be provided with a bike path along Rymal</td>
</tr>
<tr>
<td>Vehicle Emissions</td>
<td>Higher emission due to more vehicle idling time/delay.</td>
<td>Generally reduced vehicle emissions due to less stopping activity, hence more environmentally friendly. Average delay in seconds for the AM / PM peak hours is shown below.</td>
</tr>
<tr>
<td></td>
<td>Average delay in seconds for the AM / PM peak hours is shown below.</td>
<td>▪ Trinity Church Corridor – 4 / 11</td>
</tr>
<tr>
<td></td>
<td>▪ Trinity Church Corridor – 21 / 35</td>
<td>▪ Trinity Church Road – 5 / 54</td>
</tr>
<tr>
<td></td>
<td>▪ Trinity Church Road – 14 / 29</td>
<td>▪ Dakota Boulevard – 3 / 4</td>
</tr>
<tr>
<td></td>
<td>▪ Dakota Boulevard – 14 / 16</td>
<td>▪ Fletcher Road – 3 / 3</td>
</tr>
<tr>
<td></td>
<td>▪ Fletcher Road – 17 / 9</td>
<td>▪ Second Road West – 3 / 3</td>
</tr>
<tr>
<td></td>
<td>▪ Second Road West – 11 / 8</td>
<td>Less environmental friendly</td>
</tr>
<tr>
<td>Costs</td>
<td>An annual maintenance program for signals and electrical costs that will continue every year</td>
<td>Higher capital costs due to the additional property acquisition required (approximate area of additional property acquisition, subject to detail design, outlined below)</td>
</tr>
<tr>
<td></td>
<td>▪ Higher operating and maintenance cost for signal heads, poles, cable ducts, electronic controller etc.</td>
<td>▪ Trinity Church Corridor – 900 square meters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Trinity Church Road – 1,500 square meters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Dakota Boulevard – 1,000 square meters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Fletcher Road – 1,700 square meters</td>
</tr>
</tbody>
</table>
In consideration of the overall net benefit, the City of Hamilton prefers the roundabout option at the intersection with the Trinity Church Arterial Corridor. A roundabout is also more desirable at this location when considering the road curves and site line requirements.

The roundabout intersection is currently under further detailed assessment/review by Ourston Roundabouts Canada. Should the roundabouts be determined unfeasible prior to detailed design, signalization will be implemented, where warranted.

At the Dakota Boulevard intersection, a traffic signal has been found to be more appropriate since a roundabout would involve an expensive relocation of the recently constructed entry feature to the Summit Park community. As such, signalization will be implemented, when warranted.

In consideration of the impact on properties, residences and adjacent facilities, the traffic signal option is preferred, when warranted, at the intersection with Fletcher Road, Second Road West and existing Trinity Church Road intersection.

### 4.1.2.3.2 Regional Road 56

An evaluation of the potential traffic controls for Regional Road 56 was completed for the 2011/2012 time horizon (Trinity Church Corridor ends at Rymal Road). A two-lane roundabout was assumed at Regional Road 56 and the new collector Road (Terryberry Road). A summary of the evaluation of the alternatives is provided in the table below.

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>OPTION 1 TRAFFIC SIGNALS</th>
<th>OPTION 2 ROUNDBOUTS</th>
</tr>
</thead>
</table>
| **Capacity** (LOS for AM and PM peak hour shown) | Level of service (LOS) results for the AM / PM peak hours is shown below.  
  - Terryberry Road – LOS A / LOS A | Level of service (LOS) results for the AM / PM peak hours is shown below.  
  - Terryberry Road – LOS A / LOS A |
| **Human Factors / Driver Expectations / Safety** | Low potential for sideswipe collisions  
  - Potential for red light crossing at high vehicle speed with potential severe right angle collisions | Lowers operational speeds.  
  - Provides fewer vehicle-vehicle conflict points  
  - Severity of any collisions would be reduced and it is anticipated that fewer fatal collisions will occur based on the anticipated lower approach speeds  
  - Eliminates potential right angle collisions |
<table>
<thead>
<tr>
<th>FACTOR</th>
<th>OPTION 1 TRAFFIC SIGNALS</th>
<th>OPTION 2 ROUNDABOUTS</th>
</tr>
</thead>
</table>
| Impacts to Residents, Businesses, Institutions | ▪ Terryberry Road – no significant impacts anticipated  
▪ Less property needed  
▪ Vehicular access to adjacent properties will likely be more restricted with signals. | ▪ Terryberry Road – no significant impacts anticipated  
▪ Added benefit of traffic calming  
▪ Added benefit of potential landscaping / streetscaping |
| Accommodation of Pedestrians and Cyclists | ▪ Pedestrians will be provided with appropriate cross walks and crossing time with protected right-of-way at the signalized intersections  
▪ Cyclists will not be provided with a bike path along Regional Road 56 | ▪ Splitter islands are provided in the design to create a midpoint refuge area so that pedestrians are only dealing with crossing one direction (2 lanes) of traffic flow at a time with fewer conflict points. Crossing distance is shorter and vehicle speeds are slower. Additional technologies would be required to accommodate for visually impaired persons crossing roundabouts. Specific training and education would be necessary.  
▪ Cyclists will not be provided with a bike path along Regional Road 56 |
| Vehicle Emissions | Higher emission due to more vehicle idling time/delay.  
Average delay in seconds for the AM / PM peak hours is shown below.  
▪ Terryberry Road – 9 / 9  
▪ Less environmental friendly | Generally reduced vehicle emissions due to less stopping activity, hence more environmentally friendly. Average delay in seconds for the AM / PM peak hours is shown below.  
▪ Terryberry Road – 2 / 2 |
| Costs | ▪ An annual maintenance program for signals and electrical costs that will continue every year  
▪ Higher operating and maintenance cost for signal heads, poles, cable ducts, electronic controller etc. | ▪ Marginally higher capital costs due to the additional property acquisition required  
▪ Low maintenance cost, no operating cost, no signal hardware, no energy consumption |

In consideration of the overall net benefit, the City of Hamilton prefers the roundabout option at the intersection with Regional Road 56 / Terryberry Road intersection.

The roundabout intersections are currently under further detailed assessment/review by Ourston Roundabouts Canada. Should the roundabouts be determined unfeasible (or expensive at site specific locations) prior to detailed design, signalization will be implemented, where warranted.
4.1.2.4 Urban or Rural Drainage Design

4.1.2.4.1 Rymal Road
An urban cross-section is the preferred design alternative for Rymal Road. A rural cross-section would reduce the rate of conveyance to the storm water receiver, but would have significant property and grading impacts. An urban cross-section would minimize property and grading impacts. An urban cross-section allows utilities to be properly located, allows watermains, hydrants and leads to hydrants to have proper coverage, allows light standards and boulevards to comply with City standards for utility locations and street plantings. Also, urban cross-sections are typically implemented on all roadways within the urban area.

Centre medians or other type of drainage system may need to be installed in the centre of Rymal Road to properly drain the surface runoff, particularly in the area of existing horizontal curves near Trinity Church Road. Therefore, in areas of superelevation, access to adjacent properties may be restricted in the future to accommodate the appropriate drainage system.

4.1.2.4.2 Regional Road 56
A partial urban cross-section is the preferred design alternative for Regional Road 56. A rural cross-section would reduce the rate of conveyance to the storm water receiver, but would have significant property and grading impacts. An urban cross-section would minimize property and grading impacts. An urban cross-section allows utilities to be properly located, allows watermains, hydrants and leads to hydrants to have proper coverage, allows light standards and boulevards to comply with City standards for utility locations and street plantings. Also, urban cross-sections are typically implemented on all roadways within the urban area. However, due to the lack of development on the east side of Regional Road 56, a rural cross-section will be maintained on the east side of the corridor until development proceeds.

4.1.3 Preliminary Preferred Design
The preliminary preferred design for transportation improvements for ROPA 9 includes:
- Widening Rymal Road about the centreline to accommodate 4 travel lanes (2 per direction) and a centre left turn lane where needed.
- Widening Regional Road 56 while maintaining the existing alignment but reconstruction to allow for changes in the road geometry to lessen the embankment of the curve with the provision of a roundabout at the intersection of Regional Road 56 / New Collector Road (Terryberry Road).
- Provision of traffic signal and exclusive turn lanes at the intersections of Rymal Road / Trinity Church Road, Rymal Road / Fletcher Road, Rymal Road / Upper Mount Albion Road.
- Provision of two-lane roundabout at the intersections of Rymal Road / Trinity Church Arterial Corridor, Rymal Road / Dakota Boulevard, Regional Road 56 / New Collector Road (Terryberry Road).
• Provision of an urban cross-section for Rymal Road and a partial urban cross-section for Regional Road 56.

## 4.2 Phase 3 and 4 Public Consultation

Complete summaries of the public meetings, along with project team responses to questions / issues are provided in Appendix A.3.

During the Phase 3 and 4 process of the ROPA 9 EA, the public consultation process involved the following activities:

- Meeting with Six Nations Council: June 6, 2006
- Stakeholder Committee Meeting: October 2, 2006
- Public Information Centre Notice: September 29 & October 6, 2006
- Public Information Centre: October 12, 2006

### Meeting with Six Nations Council

Representatives of the City and the consultant team met with the Six Nations Council during the ROPA 9 design alternatives phase of the project. This meeting provided the Six Nations Council with an opportunity to discuss the status of the Master Plan project, the Master Plan recommendations and issues of concern for the Six Nations. Two representatives of the Six Nations Council (not including the project team members) were present at the meeting. Many items were discussed, including:

- Project update;
- ROPA 9 Master Plan recommended solutions; and
- Concerns / Issues.

A copy of correspondence with the Six Nations Council, including meeting minutes is included in Appendix A.5.

### Stakeholder Committee Meeting #3 (SC #3)

Representatives of the City and the consultant team met with the Stakeholder Committee during the ROPA 9 design alternatives phase of the project. This meeting provided the SC members an opportunity to discuss the status of the Master Plan project, and the results of the transportation assessment for ROPA 9 design alternatives. Six members of the SC (not including the project team members) were present at the meeting. Many items were discussed, including:

- Project update;
- ROPA 9 design alternatives and recommendations;
- ROPA 9 implementation; and
- ROPA 9 public notification.

A copy of the meeting minutes with the Stakeholder Committee is included in Appendix A.4.
Second Public Information Centre (PIC#2)

The Second Public Information Centre (PIC#2) for the ROPA 9 Environmental Assessment Study, was held on Thursday, October 12th, 2006 from 6:00 to 8:00 PM, at the Salvation Army Church Gym, 300 Winterberry Drive (at Paramount Drive), in the City of Hamilton. The purpose of PIC#2 was to provide information about the Study to the public and at the same time obtain public input. Twenty-two panels were displayed. The information panels included the following information for the Rymal Road Planning Area:

1. Welcome
2. Study Area
3. Study Background
4. Study Purpose
5. Class Environmental Assessment Process
6. Study Public Consultation Plan
7. Problem and Opportunity Statement
8. Description of ROPA 9 Preferred Planning Alternatives
9. Description of ROPA 9 Design Alternatives
10. Description of Design Alternatives Assessment Criteria
11. Rymal Road Widening and Regional Road 56 Widening Design Alternatives Evaluation
12. Description of the Design Criteria for Rymal Road and Regional Road 56
13. Identification and Description of Preferred ROPA 9 Design Alternatives
14. Functional Design Plans and Cross Sections
15. Summary of Impacts and Mitigative Measures
16. Future Actions and Contact Information

The public was advised about the meeting through advertisements in the local paper. Advertisements were placed in the Hamilton Spectator on Friday, September 29, 2006 and Friday, October 6, 2006, and in the Brabant papers (Mountain News, Glanbrook Gazette and Stoney Creek News) on Friday, September, 29, 2006. Notification letters were also mailed out to property owners within the Study Area, to other individuals who had responded with an interest in the Study since its commencement, to conservation authorities, Federal and Provincial agencies, and utility companies. A copy of the advertisement is provided in Appendix A.2.

The format was an informal drop-in centre from 6:00 to 8:00 PM to meet the project team and to view the display panels and drawings. Attendees were asked to sign-in and were invited to fill-in comment forms at their convenience within a 2-week time frame. Attendees were also provided with a summary handout of the display materials.

Approximately 60 members of the public attended the PIC. Representatives from the project team attended the PIC to discuss the details of the project and answer questions of the public. A full summary of the PIC is provided in Appendix A.3. The PIC displays were posted to the Project Website immediately following PIC.
The consultant team compiled comments and questions received from the public via returned comment sheets and e-mail. Key public comments provided during the ROPA 9 design phase included the following:

**Rymal Road**
- Slow Rymal down
- Use signals not roundabouts
- Widening to the south would improve curves at Trinity Church Road

**Regional Road 56**
- Improvement to the grade at the curve would reduce accidents
5. SELECTED DESIGN, ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Inherent in the consideration of potential changes to existing conditions associated with transportation projects, is the significance of any impacts and the extent to which these impacts may be mitigated. Significance is related to importance in a local, regional, provincial or national context, and importance, relative to other identified sensitive areas and issues. This section describes the engineering features, and examines the anticipated environmental effects and mitigation measures for the relevant components of the natural, socio-economic and cultural environments for the preferred design alternative.

5.1 Recommended Alternative

This section describes the engineering features of the recommended transportation alternatives for ROPA 9. The preliminary design plan and typical cross-sections are included in Appendix B.

The technically preferred Design Alternative for the widening of Rymal Road includes:
- Widening from Regional Road 56 to Trinity Church Arterial Corridor to 5 lanes (two through lanes per direction and a centre two-way left-turn lane where needed), transitioning to the existing configuration beyond the intersection with the Trinity Church Arterial Corridor. The widening would occur all about the centre-line of Rymal Road.
- Provision of traffic signals at the intersections with existing Trinity Church Road, Dakota Boulevard, Fletcher Road and Second Road West.
- Provision of a roundabout at the intersection with Trinity Church Arterial Corridor.
- Provision of an urban cross-section where appropriate and possible.

The technically preferred Design Alternative for Regional Road 56 includes:
- Widening from Rymal Road to a new Collector Road (approximately 800 m south of Rymal Road) to 4 lanes (two through lanes per direction), transitioning to the existing configuration beyond the intersection with the new Collector Road.
- Provision of a roundabout at the intersection with the new Collector Road.
- Provision of an urban cross-section (west side to be implemented during this road construction, east side to be implemented as development proceeds).

Details regarding the design of the recommended alternative are contained in the following sections.
5.1.1 Geometric Design

Horizontal Alignment

The horizontal alignment of Rymal Road will generally be consistent with its existing horizontal alignment. The alignment is shown on the design plates provided in Appendix B.1.

The exclusive right-turn lane at Second Road West will be subject to the review for warrants during detailed design.

The horizontal alignment of Regional Road 56 will be consistent with its existing horizontal alignment. The alignment is shown on the design plates provided in Appendix B.1.

Vertical Alignment

The vertical centreline alignment of Rymal Road will generally match that of the existing throughout the corridor. The vertical alignment of Rymal Road may be adjusted during detail design.

The vertical centreline alignment of Regional Road 56 will match that of the existing throughout the corridor. The vertical alignment of Regional Road 56 may be adjusted during detail design.

Typical Cross-Sections

Typical cross-sections were developed to anticipate right-of-way needs for the Rymal Road corridor, and include the following:
- 5-lanes including a two-way centre left turn lane
- Curb and Gutter
- Exclusive turning lanes
- Sidewalks
- Streetscaping, where feasible

Typical cross-sections were developed to meet the existing configuration of Regional Road 56, and include the following:
- 4-lane cross-section
- Curb and Gutter
- Exclusive turning lanes
- Sidewalks
- Streetscaping, where feasible
Accommodation for Transit

The Hamilton Street Railway currently does not operate a bus route in the Rymal Road or Regional Road 56 corridor.

The City of Hamilton’s Promoting Public Transit Policy Paper states that a goal of providing at least 90% of residents and employees within the City with transit service within 400 metres (5 minute walk) should be established. Transit improvements will be required to service the ROPA 9 lands. As development proceeds, the existing transit service should be re-examined along Rymal Road. Additional stops could be provided within the ROPA 9 lands. The opportunity for transit service will need to balance the operational cost-effectiveness, strategic objectives, and providing a service to the community.

Bus stop locations have been identified on the plans included in Appendix B.1.

Some of the general requirements for bus stop locations include:

- Minimum width of sidewalk and concrete boulevard totalling 2.1m. This width should be continuous for a minimum length of 9.0m and be free of obstructions, poles, trees, etc.
- 2.5m width is desirable to accommodate snow storage and a margin of safety for those who are less-adept at manoeuvring personal mobility devices.
- Additional road allowance space for amenities (shelter, bench, pay phone, litter container, shade tree) is desirable.
- For midblock stops, a light standard should be incorporated, where possible.
- All-season walkways should be incorporated to connect the ends of proposed cul-du-sacs to Rymal Road
- All-season walkways on private property and the back side of the road allowance should be constructed in conjunction with the sidewalk works to provide direct pedestrian connections from shopping centres to proposed sidewalks

The provision, location and details concerning bus stops are subject to revisions during the detailed design phase of the project and will be coordinated with Hamilton Street Railway (Transit Division of the City of Hamilton).

Accommodations for Pedestrians and Cyclists

The City of Hamilton’s Walking and Cycling Policy Paper has recommended that the existing network of pedestrian and bicycle infrastructure be improved and expanded. It also recognizes that these uses should be considered in the establishment of the right-of-way and the design of new roads, and the reconstruction of existing roads. As such, the preferred designs for Rymal Road and Regional Road 56 allow for a 2.0 m sidewalk, above the 1.5 m minimum, on both sides of the roadways. The sidewalk design must comply with the City of Hamilton Barrier Free Guidelines. Due to the lack of development on the east side of Regional Road 56, a rural cross-section without sidewalk will be maintained on the east side of the corridor until development proceeds. Due to the provision of bike lanes within the Rymal Road Planning Area, it was determined that bike lanes would not be necessary along
the Rymal Road and Regional Road 56 corridors in the study area and therefore have not been provided in the design.

**Pavement Design**

The recommended pavement design should be consistent with City of Hamilton standards.

**Streetscaping**

Locations where streetscaping can be feasibly accommodated will be determined during detail design and will be consistent with the cross-sections included in Appendix B2.

### 5.1.2 Design Criteria

The preliminary design criteria for the recommended design concepts are summarized below.

#### 5.1.2.1 Rymal Road

An urban cross-section (curb and gutter) with sidewalks was deemed appropriate for Rymal Road given the planned development for the area, and also since urban cross-sections are typically implemented on all roadways within the urban area.

<table>
<thead>
<tr>
<th>Rymal Road: New Classification – Urban Arterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right of Way</td>
</tr>
<tr>
<td>Basic Number of Lanes</td>
</tr>
<tr>
<td>Posted Speed Limit</td>
</tr>
<tr>
<td>Design Speed</td>
</tr>
<tr>
<td>Minimum Radius</td>
</tr>
<tr>
<td>Maximum Grade</td>
</tr>
<tr>
<td>Minimum Grade</td>
</tr>
<tr>
<td>Vertical Curves(^1,2)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Lane Widths(^3)</td>
</tr>
<tr>
<td>• through</td>
</tr>
<tr>
<td>• left turn</td>
</tr>
<tr>
<td>• right turn</td>
</tr>
<tr>
<td>• TWCLTL</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
### Tangent Length for Intersection Approaches

<table>
<thead>
<tr>
<th>Intersection Angle</th>
<th>Median at Intersections</th>
<th>Minimum Stopping Sight Distance$^1$</th>
<th>Intersection radius</th>
<th>Sight Triangles</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 +/- 5 degrees</td>
<td>1.5 m</td>
<td>170 m</td>
<td>15 m at arterials; 12 m at collectors, 9 m at locals</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• arterial to collector: 15 m x 15 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• arterial to arterial: 15 m x 15 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• arterial to local: 15 m x 15 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Max. grade thru intersections: 2% max.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sidewalk width: 2.0 m (above 1.5 m minimum)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

$^1$ The combination of all design elements, including required motorists turning and stopping sightlines at intersections and access points, must be met.

$^2$ Length of vertical curve in m, not to be less than the design speed in km/h

$^3$ Lane widening through horizontal curves should be applied for tractor trailer units

### 5.1.2.2 Regional Road 56

An urban cross-section (curb and gutter) with sidewalks was deemed appropriate for Regional Road 56 given the existing and planned development for the area, and also since urban cross-sections are typically implemented on all roadways within the urban area.

#### Regional Road 56: Classification – Urban Arterial

<table>
<thead>
<tr>
<th>Right of Way</th>
<th>36.58 m (120')</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Number of Lanes</td>
<td>4</td>
</tr>
<tr>
<td>Posted Speed Limit</td>
<td>80 km/h</td>
</tr>
<tr>
<td>Design Speed</td>
<td>80 km/h</td>
</tr>
<tr>
<td>Minimum Radius</td>
<td>400 m (at 2% superelevation)</td>
</tr>
<tr>
<td>Maximum Grade</td>
<td>4.5%</td>
</tr>
<tr>
<td>Minimum Grade</td>
<td>0.75%</td>
</tr>
<tr>
<td>Vertical Curves$^{1,2}$</td>
<td>k = 24-36 crest</td>
</tr>
<tr>
<td></td>
<td>k = 25-32 sag; (headlight control)</td>
</tr>
<tr>
<td>Lane Widths</td>
<td></td>
</tr>
<tr>
<td>through</td>
<td>3.75 m</td>
</tr>
<tr>
<td>left turn</td>
<td>3.3 m (adjacent to median)</td>
</tr>
<tr>
<td>right turn</td>
<td>3.5 m (not adjacent to median)</td>
</tr>
<tr>
<td>Tangent Length for Intersection Approaches</td>
<td>Storage length required + 15 m, or 30 m min</td>
</tr>
<tr>
<td>Tangent Length between Curves</td>
<td>150 m minimum (also need to consider side clearance)</td>
</tr>
<tr>
<td>Intersection Angle</td>
<td>90 +/- 5 degrees</td>
</tr>
<tr>
<td>Median at Intersections</td>
<td>1.5 m</td>
</tr>
<tr>
<td>Minimum Stopping Sight Distance$^1$</td>
<td>140 m</td>
</tr>
</tbody>
</table>
Intersection radius | 15 m at arterials; 12 m at collectors, 9 m at locals
--- | ---
Sight Triangles | ---
• arterial to collector | 15 m x 15 m
• arterial to arterial | 15 m x 15 m
• arterial to local | 15 m x 15 m
Max. grade thru intersections | 2% max.
Sidewalk width | 2.0 m (above 1.5 m minimum)

Note:  
1. The combination of all design elements, including required motorists turning and stopping sightlines at intersections and access points, must be met.  
2. Length of vertical curve in m, not to be less than the design speed in km/h  
3. Lane widening through horizontal curves should be applied for tractor trailer units

5.1.3 Drainage and Stormwater Management

This section provides a summarized discussion of the preliminary drainage and stormwater management associated with the transportation improvements for ROPA 9.

5.1.3.1 Rymal Road

Rymal Road, from Trinity Church Road to Swayze Road, was examined as part of the Rymal Road Planning Area Master Servicing and Drainage Plan and the Red Hill Summit Subdivisions Proposed Stormwater Management Plan. The Rymal Road Planning Area Master Servicing and Drainage Plan identified a number of drainage outlets for the Rymal Road Planning Area. In general, drainage from the Rymal Road Planning Area is conveyed through a series of four culverts that outlet onto the north side of Rymal Road.

Outlet No. 1 is located at Trinity Church Road and received drainage from north of Rymal Road between Fletcher Road and Trinity Church Road. A temporary stormwater management facility is planned for Outlet No. 1 as documented in the Red Hill Summit Estates Stormwater Management Facilities Memorandum (July 30, 2002). Outlet No. 2A discharges to Phoenix Creek on the north side of Rymal Road. A 1,550 x 800mm culvert under Rymal Road is intended to convey road drainage from the south side of Rymal Road, along with the discharge from the planned extended detention wetland to the north side of Rymal Road. The extended detention wetland has been designed to provide quality, quantity and erosion control. Based on a review of the document, it does not appear that the facility has been sized to accommodate road drainage from the southern half at Rymal Road.

Outlet 2B discharges to Stewart Creek on the south side of Rymal Road. An existing 900mm diameter culvert under Rymal Road is intended to convey drainage from Rymal Road along with the discharge from the proposed extended detention wetland facility. The extended detention wetland facility appears to have been sized to accommodate road drainage from southern half of the existing alignment of Rymal Road.

Outlet 3 is located at Swayze Road at Portside Street. An extended detention wetland is proposed to provide water quality, quantity and erosion control for the area tributary to
Outlet 3. Based on a review of the Frisina Lands Preliminary Engineering Report, it appears that stormwater from Rymal Road from Whitedeer Road and Swayze Road was considered in the design of the facility as stormwater is conveyed from the Deerfield Estates on the north side of Rymal Road to the south side of Rymal Road through an existing 450mm diameter culvert. A storm sewer located on the north side of Rymal Road from Deerfield Road to the existing stormwater management facility north of Rymal Road conveys road drainage on Rymal Road to the facility.

Stormwater management requirements were estimated for water quantity, water quality and erosion control based on the 2003 Stormwater Management Planning and Design Manual (MOE, 2003). The following sections present the specific requirements. Where applicable, water quantity, water quality and erosion control requirements were identified.

Outlet No. 2A
Stormwater management requirements for Outlet 2A were estimated for the Rymal Road widening. Based on a review of documents, Rymal Road was not considered in the design of the proposed stormwater management facility at Outlet 2A. A total area of 2.35 ha of road allowance contributes flows to Outlet 2A. To match predevelopment flows for storms up to and including the 100 year storm event, a storage volume of 33 m$^3$ will be required. For Level 2 protection, a storage volume of 267 m$^3$ will be required for water quality control, assuming a wet pond is the preferred technology. Erosion control requirements for this area will require 341 m$^3$ of extended detention storage. Based on a review of the current design drawings for Outlet 2A stormwater management facility, it does not appear that stormwater from Rymal Road can be accommodated within the proposed facility.

Outlet No. 2B
Stormwater management requirements for the portion of Rymal Road that drains to Outlet 2B were estimated. Based on a review of the documents, the southern half of the existing Rymal Road alignment was considered in the design of the Outlet 2B stormwater management facility. A total area of 0.66 ha of road allowance at 50% imperviousness was considered in the design of the proposed facility. To match predevelopment flows for storms up to the 100 year storm event, a storage volume of 175 m$^3$ will be required. For Level 2 protection, a storage volume of 122 m$^3$ will be required for water quality assuming a wet pond is the preferred technology. Erosion control requirements for this area will require 400 m$^3$ of extended detention storage. Based on a review of the current design drawings for the Outlet 2B stormwater management facility, it appears that stormwater from the southern half of Rymal Road can be conveyed towards the proposed facility.

Outlet 3
Stormwater from Rymal Road from Second Road West to Regional Road 56 will drain easterly. Rymal Road stormwater from Deerfield Road to Swayze Road has been accounted for in the design of the Deerfield Estates pond. A total area of 2.57 ha needs to be considered for stormwater management controls. The design of the Deerfield Estates Pond was not reviewed prior to preparation of the stormwater review. Therefore, these results must be confirmed following a review of the design of the Deerfield Estates Pond. To match pre-
development flows for the 100 year storm, a total storage volume of 33 m$^3$ will be required. For Level 2 protection, a storage volume of 293 m$^3$ will be required for water quality control assuming a wet pond is the preferred technology. Erosion control requirements for this area will require 789 m$^3$ of extended detention storage. A further review of documentation associated with the Deerfield Estates stormwater management pond will need to be completed to confirm whether this facility can accommodate stormwater from a widened Rymal Road.

**Rymal Road West of Upper Mount Albion Road**

Rymal Road from Upper Mount Albion Road to the limit of the proposed widening is located within the Red Hill Creek watershed. Stormwater is conveyed through roadside ditches to an existing culvert located west of Glover Road. A total area of 3.76 ha will need to be considered in stormwater management controls. To match pre-development flows for the 100 year storm, a total storage volume 315 m$^3$ will be required. For Level 2 protection, a storage volume of 455 m$^3$ will be required for water quality control assuming a wet pond is the preferred technology. Erosion control requirements will require 590 m$^3$ of extended detention storage. As there are no planned stormwater management facilities located in this area, stormwater management facilities for road drainage will be required. Additional site specific requirements for this area may be necessary to protect the Karst features.

A servicing strategy/study for all the adjacent lands must be undertaken prior to or during detail design.

**5.1.3.2 Regional Road 56**

Regional Road 56 from the Hydro ROW to Rymal Road is located within the Sinkhole Creek Subwatershed in the Twenty Mile Creek watershed. The Niagara Peninsula Conservation Authority (NPCA) and other agencies will require that the widening of Regional Road 56 not impact on existing systems, meet stormwater management quality control requirements, and that no net loss in fish habitat as result of the project in the receiving watercourse occur. As a result, quality, quantity, and erosion control will need to be addressed. There is an existing stormwater management pond constructed on the north side of Regional Road 56. Based on a review of the Rymal Road Planning Area Master Servicing and Drainage Plan (A.J. Clarke, 2002), Regional Road 56 drains towards the stormwater management facility for Gateway Plaza. However, it appears that the existing alignment of Regional Road 56 was considered in the design of this facility. Therefore, widening of Regional Road 56 will require additional storm water management controls. To ensure that post development flows do not exceed pre-development flows, a storage volume of 104 m$^3$ will be required. For Level 2 protection, a storage volume of 347 m$^3$ will be required for water quality control assuming a wet pond is the preferred technology. Erosion control requirements for this area will require 392 m$^3$ of extended detention storage.
5.1.4 Utilities

Several utilities are located within the study area. These include Gas, Hydro, Bell, and Cable. A summary of the potential impact on each utility is provided below.

Hydro

Approximately thirty three streetlighting poles will need to be relocated on the south side of Rymal Road and approximately thirteen streetlighting poles will need to be relocated on the north side of Rymal Road.

Approximately one streetlighting pole will need to be relocated at the roundabout for the intersection of Regional Road 56 and the proposed collector road.

The location and treatment of the utilities will be reviewed during detailed design and the design will follow City’s normal standards and practices.

Gas

An existing buried gas line is located along Rymal Road throughout the study area. The gas line is generally located in the fill areas of the existing road; however, there are several locations where the gas line crosses the road in a north-south direction. No impacts are anticipated to the existing buried gas line within the study area, since no changes are proposed to the Rymal Road vertical alignment. Sufficient cover should be maintained.

The location and treatment of the utilities will be reviewed during detailed design and the design will follow City’s normal standards and practices.

Bell

An existing aerial Bell facility is located on the hydro poles along the Rymal Road corridor. Impacts on overhead facilities are subject to relocation of hydro poles. An existing buried bell conduit is located along Rymal Road through a portion of the study area. No impacts are anticipated to the existing buried bell conduit within the study area, since no changes are proposed to the Rymal Road vertical alignment. Sufficient cover should be maintained.

The location and treatment of the utilities will be reviewed during detailed design and the design will follow City’s normal standards and practices.

Cable

An existing aerial cable line is located on the south side of Rymal Road from west of Trinity Church Arterial Corridor to east of Fletcher Road. The aerial cable line is located on the hydro poles, 7 of which will need to be relocated on the south side of Rymal Road from west
of Trinity Church Arterial Corridor to east of Fletcher Road. Impacts on overhead facilities are subject to relocation of hydro poles.

The location and treatment of the utilities will be reviewed during detailed design and the design will follow City’s normal standards and practices.

**Water**

An existing water line is located in the Rymal Road corridor. Potential impacts are anticipated to the existing buried water line within the study area, since a full reconstruction and widening of Rymal Road could impact the waterline, depending on its current depth. Approximately 29 fire hydrants will need to be relocated.

The location and treatment of the utilities will be reviewed during detailed design and the design will follow City’s normal standards and practices.

**5.1.5 Illumination and Traffic Signals**

The need for and type of illumination within the sections of Rymal Road and Regional Road 56 is to be confirmed at the detailed design stage. Given that the section of Rymal Road from Regional Road 56 to the Trinity Church Arterial Corridor will be widened to a 5-lane cross-section, illumination will be required on both sides of the roadway throughout this section of the corridor. The relocation of existing illumination is to be addressed during detailed design. A few preliminary comments as follows are provided.

- Full conventional illumination to City of Hamilton standards is recommended within the study limits.
- Should any of the existing light standards not be salvageable for reinstallation, new light standards should be installed to City of Hamilton standards.

Traffic signals are recommended at the intersections of Rymal Road / existing Trinity Church Road, Rymal Road / Dakota Boulevard, Rymal Road / Fletcher Road and Rymal Road / Second Road West.

**5.1.6 Property Requirements**

The preliminary design was prepared with the goal of minimizing the need for property within the corridor. Rymal Road and Regional Road 56 have a designated right-of-way width of 36.58 m (120 ft). However, the existing right-of-way varies throughout the corridors and is less than designated in some areas. Property requirements have been identified for this project and the approximate property requirements are illustrated in Appendix B.1.

The preliminary design may affect buildings at the following locations:
- No. 2251 Rymal Road (heritage building, former Elfrida Church, now used as a restaurant). To minimize, reduce and/or avoid impacts to this built heritage feature, cross-sectional elements will be reviewed during detailed design.
- No. 1865 Rymal Road (heritage building). To minimize, reduce and/or avoid impacts to this built heritage feature, cross-sectional elements will be reviewed during detailed design.
- No. 1883 Rymal Road
- No. 1885 Rymal Road
- No. 1953 Rymal Road

The exact property requirements will be determined at detailed design. Overall, more detailed review of property requirements is required in all areas throughout the corridor as part of the detailed design.

5.1.7 Cost Estimate

The preliminary estimated construction cost for the recommended improvements is $17,596,000 for Rymal Road and $3,448,000 for Regional Road 56 including design fees and administrative costs. The fees do not include property acquisition costs which will be confirmed during detail design.

The detailed cost breakdown table is included in Appendix D.

5.2 Environmental Effects and Mitigation Measures

This section examines the anticipated environmental effects and mitigating measures for the relevant components of natural, social, economic and cultural environments.

5.2.1 Natural Environment

5.2.1.1 Fisheries and Aquatic Habitat

There are no anticipated direct impacts to fish habitat within the study area, since the watercourse crossings along the Rymal Road corridor are intermittent and do not support fish habitat, the proposed widening impacts are considered relatively minor.

The Regional Road 56 widening has a potential impact on aquatic habitat to a tributary of Sinkhole Creek that supports warmwater fish habitat. The widening would require extension of a culvert at this tributary crossing. The culvert construction will avoid the appropriate window for fish spawning, subject to conditions and permitting requirements of the Department of Fisheries and Oceans.

Further details can be found in the Natural Environment report, provided in Appendix D.3 of the Master Plan.
5.2.1.2 **Vegetation and Wildlife**

There are no trees or other vegetation growth of biological significance within the study area. The transportation improvements will result in the removal or impact of approximately 80 trees that are ornamental types only.

Within the project limits, the Rymal Road and Regional Road 56 corridors support wildlife species that are tolerant of urban conditions and human disturbance. Impacts to wildlife associated with this undertaking are therefore considered relatively minor.

Further details can be found in the Natural Environment report, provided in Appendix D.3 of the Master Plan.

5.2.1.3 **Contaminated Property Screening**

The potential for impacts to the Rymal Road corridor is considered to be low with the exception of the Rymal Road and Swayze Road area. It is recommended that necessary precautions are taken by City staff and contractors when work occurs in this area. Any soil containing Petroleum Hydrocarbon Compounds removed from the area should be contained, handled, and disposed of in accordance with Ontario Regulation 347 and 558 to ensure that no further environmental impacts occur.

Further details can be found in the Environmental Site Assessment Report, provided in Appendix D.4 of the Master Plan.

5.2.1.4 **Recommended Mitigation**

The following are recommended mitigation measures for the protection of terrestrial and aquatic within the study corridor, during construction.

**Natural Sciences**

1. Tree removal, planting and protection during construction will be as per City of Hamilton Public Tree Removal Policy, and the City’s Tree Preservation and Protective Measures for Trees Affected by Construction Policy.

2. Trees on private property that may be affected as a result of the road widening or during construction will be identified prior to or during detailed design and may require the development of further strategies for mitigating these impacts.

3. In addition, in an effort to compensate for trees and other vegetation removed, and to enhance the aesthetics of the works and reduce any potential visually intrusive effects, streetscaping will be provided throughout the corridors, as appropriate, in accordance
with the City of Hamilton Street Tree Planting Policy – Planning and Design and in accordance with cross sections in Appendix B.2.

4. Provide erosion and sediment control during construction.

5. Any soils that are removed during construction should be tested for contaminants that may have been used or dumped along the corridor limits. If the soils are contaminated, the City of Hamilton Contaminated Sites Management Program for Municipal Works measures will be implemented and will follow appropriate soil management practices including testing and disposing of contaminated soils using licensed haulers and disposal facilities.

6. To minimize reduced air quality due to dust, apply water and calcium chloride during construction.

5.2.2 Social, Economic and Cultural Environment

5.2.2.1 Land Use and Socio-Economic Impacts

The design does not significantly affect any existing accesses to Rymal Road, after construction. The design improves access to existing land uses with a centre left-turn lane that will provide safe refuge for turning vehicles.

The design affects one access to Regional Road 56, after construction. The access to Hamilton Motor Products south of Rymal Road will be restricted to a right-in, right-out access with the extension of the median island to a point south of the Hamilton Motor Products access. The details surrounding this access will be addressed during detailed design.

During detailed design, a traffic management plan will be developed to determine how traffic will be accommodated during construction and how access to properties adjacent to Rymal Road and Regional Road 56 will be maintained.

Widening may temporarily impact access points to existing business, institutions and residences while construction is taking place. Timing of construction activities can be coordinated to mitigate many of these impacts. Construction activities should not have significant impacts on regular institution and residents operations throughout the corridor.

5.2.2.2 Road Construction and Noise

Current noise levels for dwellings either siding or backing onto Rymal Road with no existing sound barriers range from approximately 53 to 61 dBA.

The Ministry of the Environment (MOE) does not have noise guidelines specifically relating to construction or roadway widening. However, the MOE does have a protocol with the Ministry of Transportation (MTO) relating to Provincial Highway Expansions. The protocol
states that the primary objective is to achieve 55 dBA or the preconstruction ambient sound exposure, whichever is higher, at outdoor amenity areas. The MOE/MTO protocol indicates that for sound exposure increases greater than 5 dBA, an investigation into the administrative, economic, and technical feasibility of noise mitigation is required.

Projected noise levels with recommended improvements are anticipated to range from approximately 52 to 62 dBA. The sound exposure change will be less than 5 dBA (2 dBA). Sound levels above the 55 dBA threshold should be verified by field measurements to determine if noise attenuation is required. Any future development will be responsible for any required mitigation for future receptors. Further details are provided in the final Environmental Noise Assessment Report included in Appendix C.1.

5.2.2.3 Archaeology, Heritage and Cultural Resources

Archaeology

There is a potential for the identification of precontact and historic archaeological sites in areas depending on the degree of previous land disturbance. Based on a field review, it has been confirmed that grading associated with landscaping, utility installation, and roadside ditch construction has disturbed most of the study corridor on either side of Rymal Road and Regional Road 56. However, undisturbed soils may still be present, particularly on adjacent agricultural lands.

Prior to any land-disturbing activities within the Rymal Road and Regional Road 56 corridors, a Stage 2 archaeological field survey should be conducted in accordance with Ministry of Culture Stage 1-3 Archaeological Assessment Technical Guidelines to identify any archaeological remains that may be present within undisturbed lands beyond the limits of the existing disturbed ROW (consisting of the traveled lanes and shoulders, and extending to the toe of the fill slope, the top of the cut slope, or the outside edge of the drainage ditch, whichever is furthest from the centerline), that will be impacted, whether temporarily or permanently, by the project. Overall, no significant archaeological site subject to possible impact from the proposed road widening is expected to be encountered. However, in the event that deeply buried archaeological remains are encountered during construction, the Heritage Operations Unit of the Ministry of Culture should be contacted, and standard procedures should be adhered to during construction. In the event that human remains are encountered during construction, the Ministry of Culture and the Registrar of the Cemeteries Regulation Unit of the Ministry of Consumer and Business Services should be contacted. Further details can be found in the Stage 1 Archaeological Assessment report, provided in Appendix D.1 of the Master Plan.

Cultural Heritage

A number of residences classified as built heritage features were identified along Rymal Road East within the Study Area. The intersection of Trinity Church Road was also identified as sensitive to change.
The identified built heritage features and cultural heritage landscapes have been assessed for heritage significance with the City of Hamilton. All identified built heritage features and cultural heritage landscapes have a local interest designation.

The built heritage features and cultural heritage landscapes which may be impacted by the Rymal Road widening are as follows:

- **BHF 1 No. 2251 Rymal Road (former Elfrida Church, now used as a restaurant)** – To minimize, reduce and/or avoid impacts to this built heritage feature, cross-sectional elements will be reviewed during detailed design.
- **BHF 2 No. 2190 Rymal Road (south side at Swayze)** – This built heritage feature has been impacted by the development in the area and is no longer present to be impacted by the widening of Rymal Road.
- **BHF 3 No. 1970 Rymal Road (south side at Fletcher)** – This built heritage feature has been removed by the development in the area and is no longer present to be impacted by the widening of Rymal Road.
- **BHF 4 No. 1865 Rymal Road (east side of Upper Mount Albion, north of Rymal)** – This built heritage feature will likely be impacted by the road widening. To minimize, reduce and/or avoid impacts to this built heritage feature, cross-sectional elements will be reviewed during detailed design. Mitigation measures such as photographic recording, etc. will be identified during detailed design.
- **CHL 2 Fletcher Road roadscape** – This cultural heritage landscape will be impacted near the Rymal Road intersection to accommodate the recommended intersection improvements. The impacts to this cultural heritage landscape will be localized to the intersection and it is not anticipated that mitigation would be required.
- **CHL 5 Trinity Church Road roadscape** – This cultural heritage landscape will be impacted near the Rymal Road intersection to accommodate the recommended intersection improvements. The impacts this cultural heritage landscape will be localized to the intersection and it is not anticipated that mitigation would be required.

Further details on the study area built heritage and cultural landscape can be found in the cultural heritage assessment report, provided in Appendix D.2 of the Master Plan.

### 5.2.3 Comments from Provincial Agencies

**Ministry of Natural Resources:**

The Ministry of Natural Resources provided comments through the public process on October 27, 2006. Their comments related to the Eramosa Karst ANSI. The following comments were provided:

Thank you for providing notice regarding initiation of Phases 3 and 4 of the Municipal Class Environmental Assessment process for the schedule ‘C’ projects identified through the Rymal Road Planning Area Master Plan. The Ministry has reviewed information available
from the City’s website and mapping provided by iTRANS Consulting Inc. and offers the following comments.

Sections of the provincially significant Eramosa Karst ANSI are located within the Rymal Road Planning Area. Some of the projects proposed have the potential to impact the ANSI. The preferred alternative for a new collector road for the Trinity neighbourhood is proposed to pass through the ANSI Feeder Area and Developed Area. The widening of Rymal Road will occur within the ANSI Feeder Area. The Ministry notes that the mapping provided to show the Trinity neighbourhood collector alternatives does not show the full extent of creeks within the ANSI Feeder Area that would potentially be affected. The mapping should be carefully reviewed.

The Earth Science Inventory and Evaluation of the Eramosa Karst ANSI (April 2003) provides detailed information about the significance of the ANSI and includes recommendations for protecting its values. As the report notes, the Feeder Area contains all of the watersheds for streams that sink along the south edge of the Core Area. These streams are believed to contribute flow to the karst system in the Core and Developed Areas, and thus play a critical role in maintaining the provincially significant karst features. The report recommends, that the Feeder Area be afforded a level of protection to ensure that:

1) the flows of the creeks into the Core Area are substantially maintained (i.e. stream discharge including low flow and high flow characteristics, and discharge response to runoff events),

2) water quality is improved (i.e. primarily a reduction in sediment load, since the sediment load is currently quite high as a result of agriculture), and

3) protective measures are employed to reduce the risk of contamination of surface streams by substances that would significantly impact the karst.

It is also recommended that prior to any development in the Feeder Area, development plans be reviewed to ensure that these objectives will be met. As well as expertise in civil engineering, reviewers should have expertise in environmental hydrology and geomorphology. A sound knowledge of karst hydrology and geomorphology would be an asset. There are significant features within the Developed Area, and the report provides recommendations for this area that should also be reviewed.

It is the Ministry’s expectation that the recommendations of this report will be respected, and that the City will consult with reviewers with suitable expertise in the evaluation and selection of design alternatives. This information and assessment should be included in the Environmental Study Report.

In response to the MNR comments, the proposed design for Rymal Road will comply with the MNR requirements and additional studies will be undertaken, as necessary to determine the potential impacts to the Karst.
### 5.2.4 Summary of Identified Concerns and Mitigation Measures

A summary of the potential impacts to the natural, social/economic and cultural environments together with recommended mitigation measures is provided in **Table 5-1**.

**Table 5-1: Anticipated Impacts and Proposed Mitigation Measures**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Anticipated Impact</th>
<th>Proposed Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural Environment:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetation / Trees</td>
<td>▪ Removal of existing trees, and other vegetation</td>
<td>▪ There are no trees or other vegetation growth of biological significance within the study area. The approximate 80 trees that will be removed or impacted are ornamental types only.</td>
</tr>
<tr>
<td></td>
<td>▪ Approximately 72 trees will be removed or potentially impacted along Rymal Road, and approximately 8 trees will be removed or potentially impacted on Regional Road 56. Approximately 30 of the 72 trees referenced on Rymal Road will be on private property.</td>
<td>▪ Tree removal, planting and protection during construction will be as per City of Hamilton Public Tree Removal Policy, and the City’s Tree Preservation and Protective Measures for Trees Affected by Construction Policy. ▪ Trees on private property that may be affected as a result of the road widening or during construction will be identified prior to or during detailed design and may require the development of further strategies for mitigating these impacts. ▪ In addition, in an effort to compensate for trees and other vegetation removed, and to enhance the aesthetics of the works and reduce any potential visually intrusive effects, streetscaping will be provided throughout the corridor, as appropriate, in accordance with the City of Hamilton Street Tree Planting Policy – Planning and Design.</td>
</tr>
<tr>
<td>Wildlife</td>
<td>▪ Impact on wildlife habitat</td>
<td>▪ Within the project limits, the Rymal Road and Regional Road 56 corridors support wildlife species that are tolerant of urban conditions and human disturbance. Impacts to wildlife associated with this undertaking are therefore considered relatively minor.</td>
</tr>
</tbody>
</table>
| Fisheries and Aquatic Habitat | ▪ Impact on fisheries or aquatic habitat                                          | ▪ Since the watercourse crossings along the Rymal Road corridor are intermittent and do not support fish habitat, the proposed widening impacts are considered relatively minor. ▪ The Regional Road 56 widening has a potential impact on aquatic habitat to a tributary of Sinkhole Creek that supports warmwater fish habitat. The widening would require extension of a culvert at this tributary crossing. The culvert construction will avoid...
<table>
<thead>
<tr>
<th>Factor</th>
<th>Anticipated Impact</th>
<th>Proposed Mitigation</th>
</tr>
</thead>
</table>
| Surface Water             | - Increase in the existing pavement area will result in increase in quantity of runoff  
                           | - Potential negative impact to receiving watercourses                                 | - Increases in quantity of runoff will not impact existing conditions.                |
|                           |                                                                                    | - Water quality treatment will meet minimum Ministry of the Environment requirements. | |
|                           |                                                                                    | - Provide erosion and sediment control during construction.                           | |
|                           |                                                                                    | - Additional site specific requirements may be necessary to protect the Karst features. | |
| Soil Removal, and Contaminants | - Potential for removal of contaminated soils                                      | - Any soils that are removed during construction should be tested for contaminants that may have been used or dumped along the corridor limits. If the soils are contaminated, the City of Hamilton Contaminated Sites Management Program for Municipal Works measures will be implemented and will follow appropriate soil management practices including testing and disposing of contaminated soils using licensed haulers and disposal facilities. The results of the Phase 1 and 2 Environmental Site Assessment undertaken for Rymal Road will be used by design staff to develop soil management measures. | |

**Social Environment:**

<table>
<thead>
<tr>
<th>Economic Impact to Businesses</th>
<th>Economic impact to businesses</th>
<th>Maintain access to individual driveways during construction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full movement to existing properties will not be restricted after construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restriction on work hours in the corridors.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Factor</th>
<th>Anticipated Impact</th>
<th>Proposed Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise Levels</td>
<td>■ Increase in existing noise levels.</td>
<td>■ Future conditions expected with this project result in a predicted noise level of 62 dBA at most. The biggest change over the existing noise levels results in an increase of &lt;2 dBA. This noise increase cannot be perceived by human hearing. According to the MOE/MTO protocol, mitigation is required for increases of 5 dBA or more. As such, noise mitigation is not required for the road widening.</td>
</tr>
<tr>
<td>Safety concerns</td>
<td>■ Safety for pedestrian, cyclists, motorists</td>
<td>■ To maintain and encourage pedestrian movements, sidewalks will be constructed on both sides of Rymal Road and on the west side of Regional Road 56 throughout the study limits. A sidewalk on the east side of Regional Road 56 will be constructed as development proceeds. With the additional roadway width, pedestrians will have wider intersections to cross. Should a traffic signal or roundabout be confirmed as the preferred traffic control measure for intersections, traffic signals will be timed to provide adequate crossing time for pedestrians. With roundabouts, splitter islands will be provided to shorten pedestrians crossing distances.</td>
</tr>
<tr>
<td>Property Requirements</td>
<td>■ Requirement for additional property</td>
<td>■ Property will be required from approximately 8 businesses, 1 church, 48 dwellings, and Ontario Realty Corporation lands. Formal definition of property requirements will be determined during detailed design. Additional property may be required should</td>
</tr>
</tbody>
</table>

Safety concerns:

- To maintain and encourage pedestrian movements, sidewalks will be constructed on both sides of Rymal Road and on the west side of Regional Road 56 throughout the study limits. A sidewalk on the east side of Regional Road 56 will be constructed as development proceeds.

- With the additional roadway width, pedestrians will have wider intersections to cross. Should a traffic signal or roundabout be confirmed as the preferred traffic control measure for intersections, traffic signals will be timed to provide adequate crossing time for pedestrians. With roundabouts, splitter islands will be provided to shorten pedestrians crossing distances.

- Cyclists will be accommodated along a parallel route south of Rymal Road within the development area.

- With the additional roadway width, motorists making left turns to or from driveways will have an additional lane to manoeuvre across. A proposed centre left turn lane throughout the Rymal Road corridor will provide refuge, if needed, particularly for vehicles making two-stage left turns.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Anticipated Impact</th>
<th>Proposed Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural</td>
<td>Discovery of archaeological / human remains not anticipated</td>
<td>Roundabouts be confirmed as the preferred traffic control measure for some intersections.</td>
</tr>
<tr>
<td>Streetscaping</td>
<td>Reduced aesthetics</td>
<td>Immediately contact appropriate Ministries, if any deeply buried deposits are found.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To address concerns over the aesthetics of the roadway, streetscaping is to be provided along both sides of Rymal Road and on the west side of Regional Road 56, where feasible. Streetscaping details will be confirmed during detailed design. Preliminary streetscaping plans include planting trees along the corridors.</td>
</tr>
<tr>
<td>Utility</td>
<td>Relocation of existing utilities</td>
<td>Existing utilities will need to be relocated. Formal definition of impacts on utilities, specifically Enbridge Gas, Union Gas, Hamilton Hydro, Bell Canada, Mountain Cable, Cogego Cable, Fiberwired and Source Cable will be determined during detailed design.</td>
</tr>
<tr>
<td>Construction Detours</td>
<td>Inconvenience during construction</td>
<td>Impacts will be temporary in nature. The City will attempt to mitigate impacts as much as possible during detailed design and construction, through construction staging plans and traffic management plans.</td>
</tr>
<tr>
<td>Illumination</td>
<td>Need for additional illumination with a wider road</td>
<td>Illumination to be provided on Rymal Road and on Regional Road 56, as appropriate.</td>
</tr>
</tbody>
</table>
6. SUMMARY

On June 6, 2001, the Ontario Municipal Board issued an interim decision approving Amendment No. 9 to the Region of Hamilton-Wentworth Official Plan (ROPA 9), to redesignate approximately 190 hectares (470 acres) of land from rural to urban, to allow residential and related urban development. On March 20, 2002 the Ontario Municipal Board proceeded to approve Amendment No. 36 to the Former Township of Glanbrook Official Plan, comprised of the Rymal Road Secondary Plan, to set out the detailed policy framework for development of the subject lands for urban purposes.

The Amendment is to allow future development of the Rymal Road Secondary Planning Area for a mix of land uses including approximately 3,590 residential units and 21.4 hectares (53 acres) of land for local, general and neighbourhood commercial uses. The Secondary Plan also designates land for stormwater management facilities and establishes a proposed collector road system. Secondary plan policies require that all municipal services to service the planning area, or specific phases of development, including transportation infrastructure, sanitary sewers, water, and stormwater management facilities, have received all necessary approvals and financial commitment prior to development.

The subject lands are located on the south side of Rymal Road East (Highway No. 53), east of Trinity Church Road and north of the hydro corridor, in the former Township of Glanbrook. The study area is illustrated in Error! Reference source not found..

This report documents the Phases 3 and 4 of the Class EA process for the Rymal Road Planning Area study, including the identification and evaluation of design alternatives and the selection of preferred design. This report should be read in conjunction with the Rymal Road Planning Area (ROPA 9) Master Plan (June 2006), which documents Phases 1 and 2 of the Class EA process.

The Rymal Road Planning Area (ROPA 9) Master Plan Class Environmental Assessment documents Phases 1 and 2 (as per the Municipal Class EA process, June 2000) of the recommended transportation improvements necessary to support the Rymal Road Secondary Plan area and the Special Policy Area ‘C’ planning area. The Class Environmental Assessment process allows the Master Plan approach to be used for a group of related works or undertakings. Council has approved the Master Plan approach for the group of infrastructure improvements, in accordance with Section A.2.7 of the Municipal Engineers Class Environmental Assessment process.

As identified in the Master Plan, the following transportation improvements were part of the preferred alternatives for ROPA 9, in conjunction with Travel Demand Management initiatives, and a new north-south roadway between Rymal Road and Stone Church Road / Red Hill Valley Parkway (RHVP) ramps:
• Rymal Road widening from Regional Road 56 to west of the new north-south roadway between Rymal Road and Stone Church Road / RHVP ramps; and
• Regional Road 56 widening from Rymal Road to the new collector road.

The ROPA 9 Master Plan (Phase 1 and 2) Study also recommended that:

• Transit service be considered along Rymal Road and Regional Road 56;
• Sidewalks be considered for Rymal Road and Regional Road 56; and
• Bicycle routes be considered for Rymal Road and Regional Road 56.

The technically preferred Design Alternative for the widening of Rymal Road includes:

• Widening from Regional Road 56 to Trinity Church Arterial Corridor to 5 lanes (two through lanes per direction and a centre two-way left-turn lane where needed), transitioning to the existing configuration beyond the intersection with the Trinity Church Arterial Corridor. The widening would occur all about the centre-line of Rymal Road.
• Provision of traffic signals at the intersections with existing Trinity Church Road, Dakota Boulevard, Fletcher Road and Second Road West.
• Provision of a roundabout at the intersection with Trinity Church Arterial Corridor.
• Provision of an urban cross-section where appropriate and possible.

The technically preferred Design Alternative for Regional Road 56 includes:

• Widening from Rymal Road to a new Collector Road (approximately 800 m south of Rymal Road) to 4 lanes (two through lanes per direction), transitioning to the existing configuration beyond the intersection with the new Collector Road.
• Provision of a roundabout at the intersection with the new Collector Road.
• Provision of an urban cross-section (west side to be implemented during this road construction, east side to be implemented as development proceeds).

The preliminary design of the technically preferred Design Alternative is outlined in Section 5.1 and Appendix B. The environmental impacts of the preferred Design Alternative are discussed in Section 5.2. To minimize the environmental impacts of the preferred Design Alternative, many mitigation measures will be implemented. These mitigation measures are summarized in Section 5.2.4 and include:

• Tree removal, planting and protection during construction will be as per City of Hamilton Public Tree Removal Policy, and the City’s Tree Preservation and Protective Measures for Trees Affected by Construction Policy.
• Trees on private property that may be affected as a result of the road widening or during construction will be identified prior to or during detailed design and may require the development of further strategies for mitigating these impacts.
• In addition, in an effort to compensate for trees and other vegetation removed, and to enhance the aesthetics of the works and reduce any potential visually intrusive effects, streetscaping will be provided throughout the corridor, as appropriate, in accordance with the City of Hamilton Street Tree Planting Policy and Appendix B.
- Water quality treatment will meet minimum Ministry of the Environment requirements.
- Provide erosion and sediment control during construction.
- To minimize reduced air quality due to dust, apply water and calcium chloride during construction.
- Any soils that are removed during construction should be tested for contaminants that may have been used or dumped along the corridor limits. If the soils are contaminated, the City of Hamilton Contaminated Sites Management Program for Municipal Works measures will be implemented and will follow appropriate soil management practices including testing and disposing of contaminated soils using licensed haulers and disposal facilities.
- Maintain access to individual driveways during construction.
- Full movement to existing properties will not be restricted after construction.
- Restriction on work hours in the corridors.
- Construction activities are to comply with the requirements of the municipal noise by-law 03-020. Any initial complaint from the public will require verification that the general noise control measures agreed to are in effect, any noise concerns will be investigated, and the contractor warned of any problems.
- Immediately contact appropriate Ministries, if any deeply buried deposits are found.
- Existing utilities will need to be relocated. Formal definition of impacts on utilities, specifically Enbridge Gas, Union Gas, Hamilton Hydro, Bell Canada, Mountain Cable, Cogeco Cable, Fiberwired and Source Cable will be determined during detailed design.
- Impacts will be temporary in nature. The City will attempt to mitigate impacts as much as possible during detailed design and construction, through construction staging plans and traffic management plans.
- Illumination to be provided on Rymal Road and Regional Road 56, as appropriate.