EXECUTIVE SUMMARY

Background

In 2006 the City of Guelph initiated a study, and engaged TSH Consulting Engineers, to identify transportation improvements to address the travel needs on York Road between Wyndham Street South and the East City Limits (See Study Area, Exhibit 1).

The need for road improvements on York Road was identified in the Guelph Wellington Transportation Study (GWTS) that was completed in 2005. The GWTS identified capacity deficiencies along various sections of York Road within the 2021 timeframe.

The impetus for these improvements originates to a large part from proposed development of the York District area (i.e. former Ontario Correctional Institute Lands) south of York Road, east of the CP rail line.

The study was subsequently carried out as a Schedule C project.

The Project Team was directed by senior City of Guelph staff with Totten Sims Hubicki Associates and their sub-consultants Natural Resource Solutions Inc., and Parker Archaeological services engaged to complete the Class EA, preliminary design and the technical studies.

Supporting Reports

The Consultants' Team completed a Traffic Study, Natural Environmental Report and Stage 1 Archaeological Assessment, which are included in **Appendix A.**

Public Consultation

In accordance with the Class EA requirements, public notification of the study was undertaken through newspaper and City Web Page advertisements. Individual notices were sent to property owners in the study area, interested stakeholders and external Review Agencies. A Public Information Centre (PIC) was held on June 22, 2006 at which improvements options for York Road were presented for public review and input. About fifty people attended the PIC, with thirteen of them providing written comments. Staff and consultants have also received e-mails and letters from interested residents, businesses and property owners. The general response to the proposed improvements has been extremely positive, although participants used the opportunity to raise concerns about general traffic and transportation issues such as truck traffic on York Road, speeding, need for more transit routes, narrow sidewalks, the Ontario Street intersection, traffic control measures and signage. The public consultation and agency correspondence are contained in Appendices B and C, respectively.

Natural Environmental Features

The primary environmental feature is Clythe Creek, which crosses York Road via a 3m x 2m concrete culvert approximately 200m west of the Watson Parkway, and then flows westerly along the south side of, and in close proximity to York Road before turning southerly to connect to the Eramosa River. Hadati Creek, a tributary, crosses York Road via a 1.5m x 5.5m concrete box culvert just west of Elizabeth Street, to join Clythe Creek. Both creeks are classified as cool water streams and have various fish habitat.

Existing Conditions and Recommended Improvements

York Road is currently a 2-lane roadway, 4.5 km long from the end of Wyndham Street in the west to the east City limits, and is a designated truck route. It is classified as a "Connecting Link" as it is part of Highway 7 from the Hanlon Expressway and extending beyond the east City limits. At about its mid-point York Road is intersected by Victoria Road. The existing conditions along York Road are significantly different east and west of the Victoria Road intersection. The proposed recommendations correspond to these differences. Improvements to the York Road and Victoria Road intersection have been approved as part of the Victoria Road EA and will be implemented along with the reconstruction of Victoria Road south of York Road.

Recommended Improvements

The recommended improvements entail the following:

West of Victoria Road

- Turning radii and minor geometric improvements to construct a more 90° intersection angle, at the Ontario Street intersection;
- Addition of an eastbound left turn lane on York Road at the Stephenson Street/Dodds Road intersection. (See **Figures 5.1 and 5.2**)
- Addition of sidewalk along south side of York Road fronting York Road Park and the church at 115 York Road.

East of Victoria Road

- Widening primarily to the south to provide two traffic lanes , and a 1.5m bicycle lane in each direction, with continuous curb and gutter, and sidewalks on the north side;
- Shoulder (without curb) and 1.5m paved bicycle lane in front of the York District Lands on the south side, with curb and gutter as well as sidewalk along the remaining length. (See **Figures 5.3 to 5.12**)
- Signalization of York Road and Elizabeth Street intersection and geometric improvements including realignment to a 90^{o} angle and addition of southbound left turn lane
- Closure of both openings of Beaumont Crescent onto York Rd (properties along Beaumont Crescent and Cityview Drive would access York Road via Elizabeth Street)

Victoria Road Intersection

Improvements for York Road at Victoria Road have already been designed and are included in the project for the reconstruction/widening of Victoria Road.

Drainage and Watercourse Alterations

The Hadati Culvert is long enough to accommodate the required width for proposed York Road widening without modifications.

The Clythe Creek Culvert will have to be at least extended by approximately 6.5m. A decision whether to replace all or part of the existing culvert will be made during detailed design.

Approximately 135m of the Clythe Creek stream channel, part of which is gabion lined and immediately adjacent to the existing York Road shoulder, will be relocated because of conflict with proposed road works, and to eliminate existing weirs (which are a barrier to fish passage) as compensation.

Riparian plantings are also proposed on the separation between the widened roadway and the Clythe Creek bank as well as the relocated channel to facilitate runoff filtration and fish habitat.

These improvements will constitute a harmful alteration, destruction or disturbance (HADD) of fish habitat, and will require a Grand River Conservation Authority (GRCA) permit and Department of Fisheries and Oceans (DFO) authorization.

Property

The project will require the acquisition for right-of-way widening of approximately 0.7 ha from the provincially owned York District Lands (under management of the Ontario Realty Corporation).

Costs and Implementation

The total estimated cost of these improvements, excluding property acquisitions is $6.0 million. The project is tentatively scheduled for construction in 2011-2013.

The capital forecast provides for an additional $4 million to cover drainage improvements in areas north of York Road, culvert upgrades and property acquisition.

1.0 STUDY BACKGROUND

1.1 Study Purpose

This study was initiated by the City of Guelph (i.e. the City) to identify transportation improvements to accommodate the travel needs on York Road between Wyndham Street South and the East City Limits, and to improve cycling and pedestrian facilities.

This study reviewed alternatives to resolve these needs, determined the environmental effects, evaluated the alternatives, and recommended a preferred alternative, culminating in this Environmental Study Report, which fully documents the process.

When environmental clearance is obtained, the City will be in a position to proceed with detail design, project construction and implementation.

1.2 Study Area

As shown in **Figure 1.1**, the Study Area extends along York Road corridor from Wyndham Street South to the East City Limits.

1.3 Study Background

The need for road improvements on York Road was identified in the Guelph Wellington Transportation Study (GWTS) that was completed in 2005. The GWTS identified capacity deficiencies along various sections of York Road within the 2021 timeframe.

The Ward One Traffic Study completed in 2001 also identified several operational and safety improvements for vehicular traffic and alternative modes along the York Road corridor.

There is also an on-going planning study of the York District area (i.e. the former Ontario Correctional Institute land south of York Road, east of the CP rail line). One land use option identified to date includes employment, institutional, commercial and residential lands. The mix and density of uses on the east side of the Speed River will have the greatest impacts to the York Road corridor and are expected to significantly increase the volume of traffic using York Road.

1.4 Background Studies and Reports

The following relevant documents were reviewed as part of this study:

Guelph Wellington Transportation Study (GWTS), 2005 - documents the need and justification for additional and/or improved transportation infrastructure throughout the City of Guelph and the surrounding County of Wellington road network. The study identified capacity deficiencies along York Road between Wyndham Street and the East City Limits. The GWTS recommended widening York Road from 2 lanes to 3 lanes west of Victoria Road to provide a Two-Way Left Turn Lane (TWLTL). The need for widening from 2 lanes to 4 lanes was identified, east of Victoria Road.

Ward One Community Improvement Plan – Traffic Impact Study, 2001 - was prepared to aid the City of Guelph in budgeting for future capital improvement projects. The York Road study area is situated within the Ward One study area boundary including Wyndham Street between Wellington Street and York Road as well as York Road from Wyndham Street through to the Guelph City Limits.

The following measures were identified as necessary to accommodate the longer term travel demands on York Road.

Intersection of York Road @ Elizabeth Street:

- Recommendations include south and westbound right turn lanes.

Intersection of York Road @ Stevenson Street:

- Recommendations for the inclusion of left turn lanes on York Road at Stevenson Street.

York District Study Phase 2/3 – Ongoing – is being carried out for the study area located south of York Road, east of Victoria Road, which extends to the City's southern boundary and the western edge of the York-Watson Industrial Park. York District is currently designated as Institutional and as a Special Study Area in the City's Official Plan. In 2006 the City initiated a study on future land uses and servicing provisions for the area in order to develop a long-term land use strategy. The Study is being carried out in three phases. Phase 1 and Phase 2 have been completed and Phase 3 is currently on-going. Phase 2 included an assessment of seven land use options. The preferred option includes employment, commercial and mixed use on the west side of the Eramosa River. Employment, institutional, commercial, and the recognition of existing residential lands are proposed on the east side of the Eramosa River. The mix and density of uses on the east side of the River will have the greatest impacts to the York Road corridor.

Guelph Trails Master Plan - Identifies recommended routes within the study area.

1.5 Class Environmental Assessment Planning Process

This Environmental Study Report (ESR) was prepared for a Schedule C project in compliance with the requirements of the *Municipal Class Environmental Assessment for Roads*, completed by the Municipal Engineers Association (MEA) in 2000, which has been accepted and approved under the *Environmental Assessment Act*.

This document sets out the Class EA planning process for municipal roads. The steps of the Class EA process are, in summary:

Phase 1	Identify the problem or deficiency.
Phase 2	Identify alternative solutions to the problem, by taking into consideration the existing environment, and establish the preferred solution taking into account public and agency review and input. At this point, determine the appropriate schedule for the undertaking. For Schedule C projects, proceed through the following phases.
Phase 3	Examine alternative methods of implementing the preferred solution, based upon the existing environment, public and agency input, anticipated environmental effects and methods of minimizing negative effects and maximizing positive effects.
Phase 4	Document, in an ESR, a summary of the rationale and the planning, design and consultation process of the project as established through the above phases. Make such documentation available for scrutiny by review agencies and the public.
Phase 5	Complete contract drawings and documents. Proceed to construction and operation. Monitor construction for adherence to environmental provisions and commitments. Where special conditions dictate, also monitor the operation of the completed facilities.

Figure 1.2 summarizes the study process.

A Part II Order is a provision in Class EA's that allows a member of the public to request that an Individual EA be prepared for a project. It exists so those projects that are classified as Class EA projects can be made subject to the more stringent requirements of an Individual EA. A member of the public may request that the project be issued a Part II Order to an Individual EA, if there are significant environmental effects and public concerns about the project, with which they feel the Class EA process cannot effectively deal. Individual EA's include a more detailed description of the environmental effects, alternatives to the project, alternative ways of carrying out the project, the evaluation criteria and methodology, and mitigation measures.

For Schedule C projects, any member of the public who requests a Part II Order must make a written request to the Minister before the end of the 30-calendar-day review period after the Notice of Completion has been issued.

The Class EA categorizes this project as a Schedule C project because the project includes reconstruction of a road where the reconstructed road is not in the same location (vertically), and the construction cost is expected to be greater than $1.5 million. Section 5 of this document describes the preferred design, which includes reconstruction to 4 lanes with turning lanes, sidewalks, and on road bike routes.

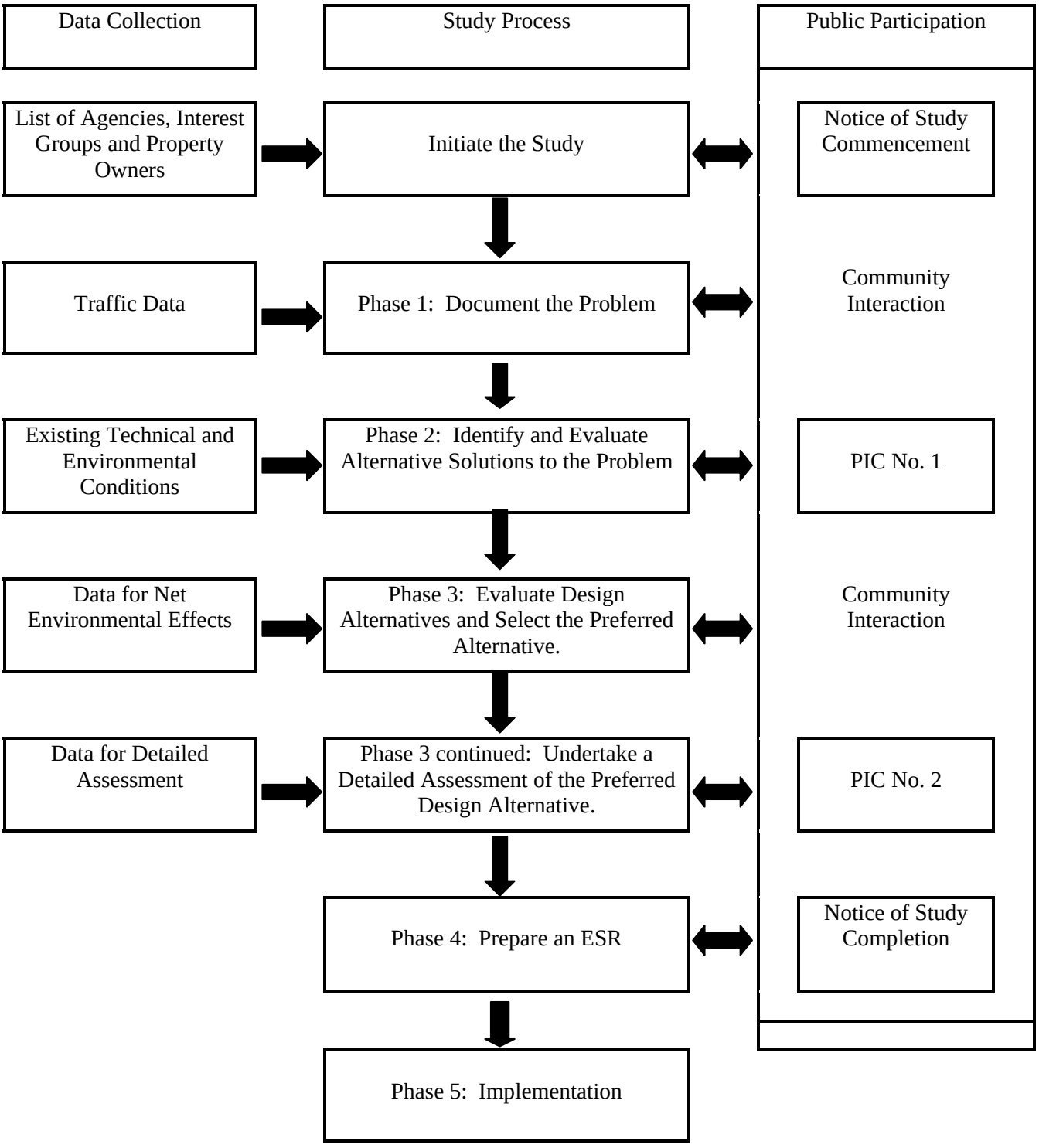

Figure 1.2
Study Process

1.6 Environmental Study Report

This ESR sets out the planning and decision-making process that has been followed to arrive at the preferred design and sets out the mitigating measures proposed to offset environmental impacts. The ESR contains the following chapters and appendices:

Executive Summary
1. Study Background
2. Problem Statement
3. Alternative Solutions
4. Alternative Designs
5. Project Description
6. Construction and Mitigation
7. Monitoring
8. Permits and Approvals

Appendix A - Supporting Reports - Traffic Report
- Natural Environmental Report
- Archaeological Assessment

Appendix B - Public Consultation
Appendix C - Agency Consultation and Correspondence
Appendix D – Meeting Minutes and Correspondence

1.7 Project Team

The Class EA Study was directed by a "Project Team" consisting of various staff from the City. The City retained the firm of Totten Sims Hubicki Associates (TSH) to assist with the undertaking of the EA and completion of preliminary design. TSH provided expertise in the EA process, public consultation, transportation planning and engineering, socio-economic assessment, noise assessment, and stormwater management. Sub-consultants to TSH who provided further specialist expertise include Natural Resource Solutions Inc. (terrestrial, and aquatic biology) and Parker Archaeological Services

1.8 Project Schedule

The Study incorporated the following project phases and milestones:

Table 1.1 – Project Phases

Phase		Period
Phases 1 and 2	Document the problem, identify and evaluate alternative solutions	Spring 2006
Public Consultation	Public Information Centre	June 22, 2006
Phase 3	Review design alternatives and detail the preferred design concept	July/August 2006
Council Approval	Submissions to Planning, Environment and Transportation Committee Council Approval	September/October 2006
Phase 4	Finalize ESR, Notice of Completion	November 2006
Phase 5	Anticipated Implementation	March 2008

2.0 PROBLEM STATEMENT

2.1 Project Purpose

The purpose of the project is to address transportation needs in the York Road corridor from Wyndham Street South to the East City Limits, relating to all modes of travel, in the context of future community growth. York Road within this section, is approximately 6 km in length.

2.2 Existing Road Characteristics

- York Road is under the jurisdiction of the City of Guelph. This roadway extends from Wyndham Street to the East City Limits. York Road has "connecting link" status as it still forms part of the Highway 7 corridor that the Ministry of Transportation Ontario continues to maintain. Within the study area, York Road has the following characteristics:
- A two-lane urban cross-section from Wyndham Street to Victoria Road;
- A two-lane rural cross-section from Victoria Road to the East City Limits;
- A continuous sidewalk on the north side of York Road between Wyndham Street and Victoria Road. On the south side there is existing sidewalk along the majority of the length from Wyndham Street to Victoria Road except along the frontage of York Road Park;
- Seven signalized intersections within the study area; two of which are Pedestrian Priority Signals (PPS) at Toronto Street and opposite Owens Corning near the at-grade Guelph Junction Railway spur line crossing;
- No bike lanes;
- Transit service along York Road from Ontario Street to Watson Road via Route 4 with 30 minute service throughout the weekdays;
- Heavy vehicle through traffic on York Road of between 6.9% and 12.6%; of the overall traffic stream;
- A speed limit of 50 km/h from Wyndham Street to west of Watson Parkway, and from Watson Parkway to the East City Limits a speed limit of 60 km/h.

2.3 Traffic Analysis

As part of the Class EA Study, Totten Sims Hubicki Associates (TSH) initially prepared a detailed traffic report to review the need and justification for roadway improvements. The purpose of this report is to assess existing and future traffic operations, and identify the timing of transportation improvements to accommodate future traffic volumes on York Road (see **Appendix A-1** for complete report).

For the purpose of this analysis, growth in future background traffic was derived by factoring up the 2006 base traffic volumes on York Road by annual growth rates derived from the City of Guelph travel demand forecasting model (TransCad). A review of the model assignment results supports the observations based on existing traffic volumes that the York Road corridor has two distinct road sections located east and west of Victoria Road.

The west section between Wyndham Street and Victoria Road is a mature area and is not expected to experience significant development in the future. Most of the future growth in traffic volumes will be as a result of infill development and continued growth in inter-regional traffic growth. The annual growth rates for future traffic on this section of York Road ranges from 1.5% to 2.7% per annum based on the model assignments. Typical growth rates for a mature area are in the 0.5% to 1% per annum range. The 1.5% to 2.7% growth rates should account for any growth in traffic volumes as a result of infill development.

On the east section from Victoria Road to the East City Limits there is a significant amount of commercial, industrial and institutional (Employment Lands) development anticipated from the York District Lands on the south side of York Road. The York District is expected to host a resident population of 750, and 6,280 employees by 2021 (as compared to 2001 values of 311 residents and 2800 employees). The first phase of development is anticipated to occur east of the Eramosa River in the area of the existing industrial lands. Traffic from this development is expected to use York Road and Stone Road as the primary east/west linkages, with Watson Parkway and Watson Road continuing to provide connections to York Road. Given the amount of development expected through the build-out of the York District lands the annual growth rates expected on York Road east of Victoria Road range from 2.8% to 4.3%.

Table 2.1 provides a comparison of the mid-block road capacity versus the projected traffic volumes for the year 2016.

Table 2.1 - Mid-Block Road Capacity Versus Future 2016 Volumes

Location	Peak Direction Lane Capacity	Peak Direction Volume[1]	Estimated Daily Capacity[2] (two-way)	Daily Traffic (two-way)
Wyndham Street to Stevenson Street	800	684	16,000	13,680
Stevenson Street to Victoria Road	800	713	16,000	14,260
Victoria Road to Elizabeth Street	900	705	18,000	14,100
Elizabeth Street to East City Limits	900	916	18,000	18,320

Notes:
(1) Governing Peak Hour
(2) Calculated based on the peak hour lane capacity representing 10% of the total daily traffic with equal directional split.

2.4 Problem Description

The recommendations contained in the "Traffic Report" to accommodate existing and projected traffic volumes include the following:

Implement the following improvements by the year 2016 to address traffic projections, as outlined in **Table 2.2.**

- Widen York Road from Victoria Road to the east city limits to a 4 lane cross-section; and
- Implement the following **Intersection Improvements** before 2016.

Table 2.2 - Recommended Intersection Improvements 2016 Horizon Year	
Intersection	**Intersection Improvements**
Signalized	
Stevenson Street/Dodds Avenue	Provision of a 15 metre eastbound left turn lane.
Victoria Road	Increase signal timing cycle length to 110 seconds; and Adjust controller to fully-actuated.
Watson Parkway	Addition of an eastbound and westbound through lane.
Watson Road	Addition of a northbound left turn lane with 35 metres of storage.
Unsignalized	
Neeve Street	None
Toronto Street	None
Ontario Street	None
Elizabeth Street	Addition of an east and westbound through lane; and Installation of a traffic signal.

Cycling Facilities

East of Victoria Road
The recommendations call for a 1.5 metre bicycle lane in both directions.

Pedestrian Facilities

West of Victoria Road
- Provide sidewalk along the frontage of York Road Park; and
- Install wheelchair curb cuts and letdowns where required.

East of Victoria Road
- Pavement reconstruction;
- No sidewalks;

2.5 Project Need and Justification

Widening of York Road east of Victoria Road is required because;

a) Turning lanes and additional through lanes are required to facilitate better traffic operations as traffic volumes and congestion increase, and service would otherwise be exacerbated by traffic delays and unsafe driving conditions.
b) The lack of continuous sidewalks and bicycle routes contributes to unsatisfactory conditions for existing and future bicyclists and pedestrians.

3.0 ALTERNATIVE SOLUTIONS

The only improvements requiring physical construction for which need and justification has been established for York Road, west of Victoria Road, are for an eastbound left turn lane at the Stevenson Street/Dodd Road intersection. This improvement can be provided by pavement widening between the existing sidewalks and would impact only the existing sod boulevard, i.e. no trees.

Details in the following section will focus on the section east of Victoria Road where improvement requirements, existing environmental features and potential impacts are more extensive.

3.1 Natural Environment

3.1.1 Introduction

Natural environmental conditions, potential impacts and mitigative measures have been extensively documented in the Natural Environment Report by Natural Resource Solutions Inc., included in **Appendix A-2**.

3.1.2 Watercourses

The predominant watercourse within the study area is Clythe Creek, which originates approximately 5km north of York Road, crosses York Road approximately 200m west of the Watson Parkway through a 2m x 3m concrete box culvert, and then flows westerly in a largely artificial channel parallel to York Road, through a series of riffles and weirs into a wider section of pools and islands, which extend from opposite Cityview Drive to west of Elizabeth Street. The channel varies from 1.8m – 3.5m, with a depth between 8 and 72cm, and is immediately adjacent to existing York Road at a point 200m west of the culvert where a gabion lined wall supports the northerly bank.

One large pond in the south outlets to this system opposite Cityview Drive. The creek then flows westerly and southerly, and eventually outlets into the Eramosa River.

Hadati Creek within the study area flows in a manmade concrete bag lined 2m wide channel, which crosses under York Road just west of Elizabeth Street through a 1.5m x 5.5m concrete box culvert to join Clythe Creek.

Clythe Creek and Hadati Creek are classified as coldwater streams.

Aquatic Habitat
The Clythe Creek channel, north of the York Road crossing is dominated by substrate consisting of coarse gravel/cobble materials with cover for fish, providing riffle habitat. Clythe Creek, immediately south of York Road, provides microhabitats consisting of mostly some occasional pools and few riffles.

Hadati Creek, given its steep and artificial banks between Elizabeth Street and York Road, provides for limited fish habitat.

The ponds provide habitat for a variety of game fish, such as bass and chub and are a popular urban fishery.

Fish Community
There are records of greenside darter, a species of special concern by both the MNR and COSEWIC in the study area. Bait fish were also noted in Hadati Creek.

Although once present, according to the MNR (MNR 2006a) there are currently no brook trout in Clythe Creek. However, the Speed Valley chapter of Trout Unlimited is conducting a monitoring program throughout Clythe Creek watershed to determine the suitability of the habitat for brook trout.

A report by MNR indicates information from anglers that the ponds at the Guelph Correctional Centre "…..contain excellent populations of pike, smallmouth bass, crappie, bullheads and sunfish. Yellow perch and largemouth bass have also been caught in these ponds (MNR 2001)".

A comprehensive listing of fish species known from the Clythe Creek Subwatershed is provided in Table 1 of the Natural Environmental Report in **Appendix A-2.**

3.1.3 Vegetation

A vegetation condition survey completed for the project examined 386 trees within the project limits, including 206 in the York Road corridor east of Victoria Road. Details of the survey are provided in Appendix A2.

A tree conservation plan specifying significant trees, removals and compensation will be required during the detailed design phase.

No significant species of trees were observed in the study area.

3.2 Land Use

Land uses abutting this section of York Road consist primarily of commercial, (i.e. restaurants, car dealerships and stores) on the north side, from the CPR to east of Cityview Drive, (at Grandma's Attic), then residential only from there easterly to the Watson Parkway. From the Watson Parkway to the east city limit, the proximity of the CN rail line results primarily in rail embankment with scrub trees on the north side. On the south side, the primary frontage from CP easterly is the York District land area, which extends to just west of the Watson Parkway, while commercial/industrial uses abut the remainder of the corridor.

3.3 Archaeological/Historical Features

A stage 1 Archaeological Assessment was completed for this project (see **Appendix A-3** for complete report), which concluded and recommended the following:

- That Stage 2 assessments be conducted on those areas identified as having moderate to high archeological potential, namely, a section of frontage of the York District Lands (around the pond complex), and the abutting lands on the north and south sides, between Watson Road and Skyway Drive.

3.4 Utilities and Services

Existing utilities along this section of the York Road corridor include the following:

Guelph Hydro - aerial pole lines on the north side.

Sanitary Sewer - along the south side of the roadway.

Bell - overhead and underground line on the north side.

Gas - line on the north side.

Watermain - on south side.

3.5 Road Allowance

The original road allowance established for York Road was 20m. This has been widened in various sections as a result of dedications, from the (re)development of abutting properties, to 28m - 30m.

3.6 Development of Alternative Design Concepts

The profile of existing York Road was assessed and determined to be fully consistent with current geometric design standards; no reasons were identified for any appreciable adjustment.

The existing steep slope on the north side, and the already steep entrances to the residents there between Grandma's Attic and the Watson Parkway preclude any appreciable widening to the north side, even if retaining walls are incorporated. Clythe Creek acts as a further constraint to widening or shifting the roadway to the south. The encroachment of the proposed roadway embankment to the south would increase even more if the grade is raised above existing.

As a result, the development stage of alternative concepts culminated in a refined and iterated design concept, which resulted in a 'best fit' of the proposed four lane roadway cross section with realignment between the constraints, rather than the development of several distinct design alternatives. Retaining the existing profile was determined to be the most cost effective way of incorporating the existing pavement in the widened pavement structure.

Alternative Design Concepts

Subsequently, only two design alternatives were compared.

Alternative 1 – Do Nothing
The existing road would be resurfaced in the existing configuration.

Alternative 2 – Widening to Four Lanes
York Road would be reconstructed and widened from 2 lanes to 4 lanes along a refined centreline and essentially the existing pavement profile.

3.7 Selection of the Preferred Alternative

The following criteria were used by the Project Team to evaluate the alternatives:

Transportation: How does the alternative serve the expected vehicular, transit, pedestrian and cycling traffic in terms of travel delay, safety and emergency access?

Social Environment: How does the alternative affect the residential and commercial properties abutting the road (driveways/access, parking, aesthetics, noise)?

Natural Environment: How does the alternative affect the environmentally sensitive areas, existing trees, vegetation and air quality?

Cost: What is the total cost of the alternative including the cost for road construction, utility and street-lighting relocations, property acquisitions, traffic signal improvements and landscaping?

An evaluation of the alternatives relative to these criteria is outlined in **Table 3.1.**

Table 3.1 - Alternatives		
Criteria Group	**Alternative 1 – Do Nothing**	**Alternative 2 – Widening to Four Lanes**
Transportation	Poor • Does not provide adequate capacity for traffic resulting in higher levels of congestion and delays. • Does not Satisfy Guelph's plan for cycling lanes. • Does not enhance pedestrian, or transit facilities. 	Good • Provides sufficient capacity for future traffic and transit service. • Satisfies Guelph's plan for cycling lanes. • New sidewalk would better accommodate pedestrians. 
Social Environment	Good • Marginal increase in noise levels. • Requires no property purchase. 	Acceptable • Marginal increase in noise levels. • Requires property acquisitions 
Natural Environment	Acceptable • Least amount of tree removals and impacts to watercourse. • Traffic congestion results in more vehicle emissions. 	Fair • More tree removals and watercourse impacts than Alternate 1. • Better traffic flow reduces vehicle emissions. 
Cost	Good • $475,000 	Acceptable • $5.0 million 
Overall		Preferred 

Evaluation and Selection of a Preferred Alternative

Alternative 1 requires less property, has less watercourse and tree removal impacts and, at $475,000, would cost less than Alternative 2; however, only Alternative 2 effectively addresses current/future traffic congestion and is recommended.

3.8 Public and Agency Consultation

The public consultation process is documented by copies of notices, handouts, and correspondence in **Appendix B**. Agency consultation is documented by copies, contact mailing lists, minutes of meetings and relevant correspondence in **Appendix C.**

3.8.1 Public Information Centre

The notice of Project Commencement was advertised in the Guelph Tribune on Friday, February 17, 2006.

The description of the problem, existing conditions and alternative design concepts were presented to the Public at a Public Information Centre (PIC) on Thursday, June 22, 2006 from 6:00pm to 8:00pm at the Italian/Canadian Club in Guelph. Notices advertising the PIC were mailed or hand delivered to area residents, property owners, businesses, agencies and interest groups, and also appeared in the Guelph Tribune on Friday, June 16, 2006.

The PIC was structured as an initial "walk around/review the plans/ask questions" format, followed by a formal presentation and question and answer session. An information package explaining the purpose, process, need and justification, and alternatives developed as part the study was provided to all those that attended.

Approximately fifty (50) people attended the PIC with forty (40) people signing the attendance register. Thirteen (13) comment sheets were received in addition to a number of emails, letters and facsimiles resulting in approximately twenty (20) comments.

3.8.2 Comments and Responses

Eight (8) of the thirteen (13) comment sheets submitted, indicated the attendees were satisfied with the project alternatives. The main issues and concerns indicated on the comment sheets, and how they were addressed are summarized below.

Excessive Truck Noise and Numbers: Since York Road is a connecting link (and under partial jurisdiction of MTO), it must remain a designated truck route, and the City cannot restrict access further without jeopardizing MTO funding.

Need for Designated Bike Lanes – the preferred improvements will provide for separate, on road bike lanes, where feasible and shared (wider 4.0m) curb lanes east of Victoria Road. Bike lanes along York Road west of Victoria Road are not feasible because the right-of-way width is not uniformly adequate to provide for them. Off-road bike paths that provide the same function as would be provided by designated bike lanes already exist in the area.

Excessive Speeds and Red Light Violations – this is an enforcement issue.

Better Defined Intersection limits at Ontario Street – the intersection layout will be reviewed to better achieve a 90° intersection angle as opposed to the current skewed approach. The current configuration

may visually encourage westbound vehicles on York Road to divert onto Ontario Street. Landscaping and restorative treatments would need to be added to the road allowance remnants on the northeast and northwest corners of the intersection resulting from the intersection realignment.

Additional Pedestrian Crossing Signals East of Wyndham Street – the need for pedestrian crossing signals was also identified in the St. Patrick's Ward Community Improvement Plan. As no roadwork is proposed to be undertaken at this location as a consequence of this EA, the need for pedestrian crossing signals could be reviewed by the Operations Department and recommended if appropriate.

Physical Traffic Controls – some comments suggested pavement width reductions, the construction of speed bumps and other measures to discourage speeding and through traffic on York Road. These are probably not practical to implement and are inconsistent with Guelph's Transportation Study. York Road is an arterial roadway and connecting link under the provincial highway system and is intended to carry through traffic.

Sidewalks – repair and widen sidewalks – '1.2m is too narrow'. Sidewalk repairs are a maintenance issue and outside the scope of this EA. Narrow sidewalks would be widened to City standard during full reconstruction of the roadway.

Traffic Operations – vehicular queues on Victoria Road block sidewalks and impede access from entrances and sideroads. These cannot be addressed without major pavement widening, which would appreciably impact the abutting residences.

Transit – provide more transit routes. Transit routing is an operational issue.

Signage – provide better signage, particularly at Stevenson Street. Signage is an operational and maintenance issue.

Miscellaneous Comments – some property/business owners expressed concerns about how proposed improvements would impact their individual properties. These aspects will be reviewed with owners in more detail, particularly during the detailed design stage.

General – modifications on York Road west of Victoria Road to achieve a uniform pavement width or add bike lanes could be considered in the future as part of pavement reconstruction or redevelopment opportunities. The upgrading of sidewalks and signage improvements can be undertaken under existing City programs.

3.8.3 Agency Contacts

A list of the agencies contacted as part of this study, minutes of meetings, and relevant correspondence are included in **Appendix C** of this report.

4.0 ALTERNATIVE DESIGNS

4.1 Alignments

As discussed previously, the vertical alignment for this section of York Road will be retained. There were no distinct different alternatives to compare.

The horizontal alignment for the widened roadway was optimized to provide a 'best fit' as discussed in Section 3.

4.2 The Preferred Design

West of Victoria Road
The preferred improvements call for the construction of an eastbound left turn lane at the Stevenson Street/Dodds Avenue intersection **(Figure 5.1)**, and turning radius improvements at Ontario Street **(Figure 5.2)**.

At Ontario Street, improvements to turning radii are proposed to achieve a more 90° intersection angle, which would require traffic to and from the east to make a more conscious and deliberate turn. Landscaping and restorative treatments would need to be added to the road allowance remnants on the northeast and northwest corners of the intersection resulting from the intersection realignment.

Modifications to achieve a uniform pavement width or add bike lanes could be considered in the future as part of pavement reconstruction or redevelopment opportunities. The upgrading of sidewalks and signage improvements can be undertaken under existing City programs.

East of Victoria Road
The following sections relate to the more comprehensive improvements east of the CPR crossing. The preferred design alternative, Alternative 2, will provide for a four lane urban or semi-rural roadway, with sidewalks on the north side, and a shoulder in part on the south end. Drainage improvements and the possibility of providing limited off-street parking areas on the south side of York Road along penitentiary lands, to accommodate the adjacent parkland users, will be examined during the detailed design.

Victoria Road Intersection
Improvements for York Road at Victoria Road have already been designed and are included in the project for the reconstruction/widening of Victoria Road.

5.0 PROJECT DESCRIPTION (EAST OF VICTORIA ROAD)

5.1 Roadway Geometrics

The following design criteria, as shown in **Table 5.1,** are proposed and will provide for an operating speed of 60km/h.

Table 5.1 – Design Criteria

Factor		Design Standards	Proposed Standards
Roadway Classification		UAU 80	UAU 80
Minimum Stopping Sight Distance		135m	135m
Equivalent Minimum K Factor		K 40 Crest K 20 Sag	K 40 Crest K 20 Sag
Maximum Grades		5%	2%
Minimum Radius		250m	2,000m
Lane Widths	- Traffic	4 @ 3.5m	2@3.5m / 2@4.0m
	- Bike Lanes	2 @ 1.5m	2 @1.5m
	- Shoulder	2.0m	2.0m

Preliminary details of the preferred designs are indicated on **Figures 5.3** to **5.12.**

5.2 Cross Section

The cross section (see **Figure 5.3**) provides for a four lane urban roadway, with four lanes and 1.5m bicycle lanes (each side), with curbs and sidewalks on both sides between the CPR and Watson Road, except across the York District Lands frontage. For this 1.1km length, a semi-rural section will be provided, with no curbs, a bicycle lane and a sidewalk on the north side only, and a paved bicycle lane with no curb on the south side. Isolated off road parking areas may be provided in 1 or 2 locations.

5.3 Alignment

The proposed horizontal alignment of this section of York Road generally follows the centerline of the existing road allowance and is tangential, except for 500m radii curvature, where the centerline is diverted to the south, to provide for widening to the south only (between Grandma's Attic and the Watson Parkway).

5.4 Intersections

Elizabeth Street will be realigned to intersect York Road at a 90° angle, and signalized. Left and right turn lanes will be provided on the north approach.

5.5 Road Closures

As part of the Elizabeth Street realignment, recommended improvements include the closure of both intersections of York Road and Beaumont Crescent/Cityview Drive, to the west and to the east of the existing Elizabeth Street/York Road intersection. These existing road approaches to York Road intersections are quite skewed, and undesirable from a traffic operations perspective. Alternative access is already available, or will be provided.

5.6 Culverts

The Hadati Creek culvert is in good condition, and has not been identified in its culvert inspection report as in need of rehabilitation or replacement. The culvert is long enough to provide for the proposed road improvements without extension.

The Clythe Creek culvert will require an extension of 16.5m at the very least, to the south, to accommodate the proposed wider road platform. The culvert inspection report has identified the need to replace at least the existing southerly 4m section of this culvert within one year, and assess the replacement of the remainder soon thereafter. The recommended improvements, whether replacement or extension only, will be finalized in detailed design.

5.7 Watercourse Alteration and Plantings

135m of existing Clythe Creek stream channel, part of which (35m) is gabion lined and immediately adjacent to the existing York Road shoulder, will be relocated because of conflicts with proposed road works, and to address compensation/mitigation, since this relocation will remove two weirs which are a barrier to fish passage.

Riparian plantings are also proposed in the separation between the widened roadway and the Clythe Creek bank and along the relocated stream channel.

5.8 Storm Drainage

The storm runoff from the roadway, sidewalk and boulevards of this section of York Road will drain to curb and gutters and storm sewers, primarily along the north side. Along the south side adjacent to the York District Lands runoff from the southerly half of the pavement, will sheet flow (un-concentrated) across the shoulder into Clythe Creek. Any storm sewer outlets to Clythe Creek will be constructed at the same location as the existing cross culverts outletting to the Creek. Storm sewers will outlet to grassed swales and/or oil grit separators before discharging to existing watercourses or waterbodies. The existing storm sewer outlet from the east at the downstream end of the Clythe Creek Culvert will be fully utilized.

The City is planning to accommodate the storm runoff from areas to the north of York Road as part of the roadway drainage. This will be addressed during detailed design.

5.9 Illumination

Illumination will be upgraded at all intersection locations.

5.10 Ontario Realty Corporation (ORC) Lands

Property acquisition for right-of-way widening to provide for recommended improvements will be approximately 0.7 ha in total on the south side, from the York District Lands which are under the jurisdiction of the Ontario Realty Corporation (ORC). The ORC has indicated that any authority intending to purchase their property must complete the ORC's own environmental assessment process first, a process which will take several months.

Detailed design of the section of York Road fronting the ORC lands will consider aesthetic features, recreation uses and heritage in addition to environmental impacts. For example, the existing timber railing and stone piers provide aesthetic benefits but also direct trail users to restricted entry points, helping prevent environmental damage to the creek area.

5.11 Utility Relocations

Several hydro poles will require relocation, particularly at the Elizabeth Street intersection, where, the roadway has been realigned to the west. The aerial plant of other utilities, i.e. Bell and Rogers on these hydro poles will have to be relocated accordingly.

5.12 Trail Access

The proposed improvements to York Road will not negatively affect existing or proposed trails identified in the Guelph Trails Master Plan within the study area. An on-road connection to the Hadati Creek Trail could connect to a future proposed off-road trail on the south side of Clythe Creek by crossing at the York Road and Elizabeth Street signalized intersection.

5.13 Project and Schedule

The City's current schedule calls for construction of this project from 2011 to 2013.

The estimated costs are summarized in **Table 5.2** as follows:

Table 5.2 – Project Cost Estimate	
Roadworks & Drainage	$ 3,200,000
Railway Crossing Improvements	100,000
Concrete Sidewalks	250,000
Illumination and Traffic Signals	200,000
Watercourse Alteration and Plantings	100,000
Sub Total	$ 3,850,000
Engineering	600,000
Sub Total	$ 4,450,000
Utility Relocations	400,000
Landscaping	150,000
Sub Total	$ 5,000,000
Contingencies	$ 1,000,000
TOTAL	$ 6,000,000

6.0 CONSTRUCTION AND MITIGATION

Potential environmental impacts and proposed mitigation are detailed and summarized in **Table 6.1.**

6.1 Tree Removal

This project will require the removal of 44 individual trees, none of which are of a rare or endangered species.

Trees will be replaced on a two for one basis, under the City's Vegetation Replacement Plan. Tree protection will be installed around all significant vegetation to remain. Vegetation to be removed will be salvaged if feasible.

The grading extent or 'footprint' has been minimized by incorporating curb and gutter rather than deep ditches.

6.2 Impacts to Watercourses (Clythe Creek)

In general, proposed grading limits for the widened roadway will not physically encroach on Clythe Creek. Proposed road embankment fill slopes will be steepened if required, to minimize/eliminate encroachment. Midway between the Clythe Creek/York Road crossing and the main driveway to the Guelph Correctional Facility, the channel will need to be relocated to accommodate the widening of York Road. The section that would be impacted lies between chainage 13 +055 and 13 + 135. In order to construct a new section of channel that is stable and kept well away from the road, the channel realignment will affect at a minimum, approximately 90m of existing channel length. This will result in a HADD of fish habitat that will require mitigation and/or compensation. To compensate for the loss of existing habitat, a new channel that retains the same (or greater) channel length and area of habitat should suffice. It is recommended that the proposed channel realignment extend between the rock weirs located upstream and downstream of the area directly impacted by the York Road widening. This would

result in reconstruction of approximately 135m of channel, but would remove two barriers to fish movement and connect a larger section of Clythe Creek with the reaches upstream of York Road. Regardless of the specific design requirements, an authorization under the federal *Fisheries Act* will probably be required.

The York Road culvert will be extended and probably partially or totally replaced, which will result in a HADD of fish habitat, and will probably be subject to approval under the federal *Fisheries Act*. It is possible that operational statements for culvert replacements and extensions prepared by DFO as part of the new risk management framework may allow the work to proceed without a full Authorization, assuming that the criteria provided in the operational statement are met. The existing concrete headwall and stormwater pipe outlet adjacent to the south side of the culvert may also need to be modified in conjunction with the culvert replacement. In addition to direct impacts within the wetted area of the creek, attention must be given to fill placement adjacent to the creek as there are steep slopes in the vicinity of the crossing and a significant amount of fill may be required.

6.3 Storm Drainage

The increased amount of paved area of road may increase the amount of stormwater that runs off the road in the direction of Clythe Creek. This impact should be mitigated on the south side of the road by installing native herbaceous plants, shrubs and trees to create a functional filter or buffer strip between and York Road. A filter strip will enhance the capacity of the land between Clythe Creek and York Road to filter stormwater runoff. This will also serve as mitigation for the loss of adjacent vegetated land, which reduces the ability of the existing vegetation to filter stormwater runoff. This measure is consistent with management strategies 3a, 3c, 3e and 3f of the Grand River Fisheries Management Plan.

To mitigate the increased stormwater runoff from the north side of the road, it is an option to install oil-grit separators to control the quality of the stormwater. The quality of stormwater runoff will be reviewed during detailed design to evaluate the feasibility and effectiveness of options such as the vegetative buffer strip or oil-grit separator mentioned above.

The number of locations of culverts that convey flow from the north side of York Road to the south side will not change. New culverts will replace the existing pipes, and the outlet locations will only change as a result of the required increase length to accommodate the wider road. As a result, no long-term impact is anticipated from changes in flow paths to the creek. In some cases, the replacement or extension of these culverts will increase the sedimentation potential and require active construction within close proximity to Clythe Creek.

6.4 Sediment and Erosion

In order to ensure that runoff from the construction site does not impact the existing watercourse, suitable sediment and erosion control measures will be constructed during construction.

Sediment barriers should be installed around natural areas, which may be impacted during construction.

A sediment and erosion control plan will be developed and reviewed prior to its installation.

In locations of steeper slopes and close proximity of fill placement, stabilization techniques such as erosion matting and seeding should occur immediately after grading is finished. This applies at the following locations:

- On the northeast side of the Clythe Creek crossing (at chainage 13 + 290);
- West of the Clythe Creek crossing from chainage 13 + 260 to 13 + 280;
- From chainage 13 + 010 to 13 + 030;

- From chainage 12 + 940 to 12 + 980, and
- From chainage 12 + 880 to 12 + 900.

6.5 Control Nuisances

The limited residential frontages on this section of York Road are all oriented with the outdoor living space, i.e. backyards, targeted for noise assessment behind, and therefore shielded by, the houses. There are therefore no exposed outdoor areas subject to noise increase and no warrant for noise attenuation.

Construction noise impacts will be mitigated to the extent possible, by construction specifications requiring muffling devices on equipment, compliance with municipal noise bylaws, and restriction on construction operation to daytime hours.

The proposed roadway improvements on York Road will not produce any adverse change to the existing ambient air quality in the vicinity of the study area. Routine maintenance and regular road surface cleaning is recommended to lower the potential for fugitive dust emissions from the new roadway configuration.

6.6 Construction Impacts

Construction impacts will be mitigated through the following:

- Development of a traffic management plan that will provide for two-way traffic flows where feasible, emergency vehicle access, and which will maintain existing intersection movements;
- Maintenance of access to all properties and businesses along the roadway;
- Notification to adjacent property owners, and Guelph Police and emergency services prior to the construction activities;
- Sound level impacts to be minimized during construction in accordance with the applicable MOE guidelines; and
- Inclusion of measures that will mitigate environmental problems during construction, including:
  1) Sediment and erosion control measures should be installed and maintained throughout the construction period. Disturbed soils should be stabilized immediately with suitable plantings/seed/mat.
  2) Stockpile and staging areas should be well removed from the watercourse and contained by appropriate sediment and erosion controls.
  3) Dewatering of any excavations, pits or chambers must be done in a controlled manner so as not to discharge turbid water to watercourses or other aquatic features. Dewatering operations shall be directed to areas above ground and could include containment areas constructed with silt fence/straw-bales and/or filter bag on existing vegetation. Suitable containment areas must be identified prior to any work commencing.
  4) Where waterflow is to be pumped, screening shall be provided so as to prevent entry or damage fish at the intake, and discharge shall be directed so as to avoid erosion of the watercourse bed and banks at the water outlet. Water flow downstream must be maintained with a minimal amount of turbidity both from pumps and from associated construction activities.
  5) For instream works, the area of disturbance within the channel and on the streambanks must be kept to a minimum. Heavy equipment traffic will be restricted to established travel pathways.
  6) All timing restrictions, such as fisheries timing window assigned by the MNR, must be adhered to.
  7) Refuelling activities should be conducted in an environmentally responsible manner. This includes keeping the fuelling operations 30m setback from the waters edge, unless otherwise directed by the Environmental Monitor/Contract Administrator. Spill kits and sorbant material should be available on the fuel or service vehicles.

8) Any spills resulting from refuelling operations, hydraulic leaks, maintenance, etc. must be reported immediately to the Contract Administrator or Environmental Monitor who will then notify the Spills Action Centre if required.
9) Weather conditions should be monitored to adequately prepare the site for rain events.
10) Environmental monitoring must be conducted throughout the construction period. Post-construction monitoring should also be carried out to ensure that plantings become established and soils remain stabilized.

6.7 Utility Relocation and Underground Services

It is expected that the proposed improvements will require relocation of a number of overhead Guelph Hydro and Bell pole lines, along the corridor. The number and location of these relocations will require a detailed inspection of all existing utilities during detailed design. Underground services east of Victoria Road will also have to be assessed for replacement during detailed design.

Table 6.1 - Potential Impacts and Mitigation

Potential Impact/Concern	Agency	Mitigation
1. Impacts on Clythe Creek	GRCA,	• Provision for sheet flow rather than concentrated flow along Clythe Creek frontage • Implementation of a sediment and erosion control plan with silt fences to protect watercourse and wetland areas • Minimize periods that areas are stripped and can be left without ground cover • Restrict equipment refuelling, fuel and oil storage and equipment maintenance to areas away from sensitive watercourse • Restrict the construction of in-stream works to the July 1-Sept 30 period.
2. Vegetation Removal		• Salvage plants where feasible • Replace removed trees on a two for one basis with native vegetation • Delineate trees to be protected with fencing
3. Wildlife Habitat	GRCA, MNR	• Do not remove vegetation during the prime nesting season of May 1-July 31
4. Construction Impacts	Public	• Include conditions in the construction specifications to: - Require noise muffling on equipment and compliance with noise bylaws - Define staging/phasing of construction to minimize impacts on farm operations - Apply dust suppressants - Maintain local access - Implement a traffic management plan

7.0 MONITORING

Monitoring will be carried out during construction for activities including the following:

- On-site inspections to ensure proper installation of sediment and erosion control measures;
- Fuelling of machinery to be done at designated locations away from the wetland and watercourses;
- Storage of machinery and material, fill, etc. to be done in designated areas; and
- Equipment movement through stream areas to be controlled.

8.0 PERMITS AND APPROVALS

In addition to approvals from municipalities, permits required for this project will include the following:

a) Development, Interference with Wetlands and Alteration to Shorelines and Watercourse Permit – Grand River Conservation Authority
b) Certificate of Authorization – Ministry of the Environment
c) DFO Authorization

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THE CITY OF Guelph

YORK ROAD IMPROVEMENTS
WYNDHAM STREET SOUTH TO EAST CITY LIMITS
CLASS ENVIRONMENTAL ASSESSEMENT

ENVIRONMENTAL STUDY REPORT

VOLUME ONE: MAIN REPORT

February 2007

TSH engineers architects planners