



HIGHWAY 69 FOUR-LANING
From North of Nobel to Highway 522
(from North of Harris Lake Road to North of Highway 522, 26.7 km)

G.W.P. 5377-02-00
(North Section)
February 2008

Northeastern Region
Planning & Environmental Section
Ministry of Transportation

Route Planning and Environmental
Assessment Report
Part 1 – Main Report

**Highway 69 Four-Laning
From North of Nobel to Highway 522
(from North of Harris Lake Road to North of Highway 522)**

G.W.P. 5377-02-00

(North Section)

February 2008

Prepared for the Ministry of Transportation by:

McCormick Rankin Corporation / Ecoplans Limited

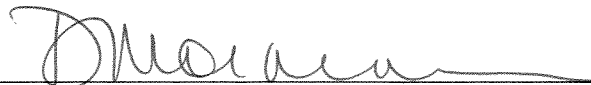
Prepared by:



Neil Ahmed, P. Eng.
Project Manager
McCormick Rankin Corporation



J.A. (Sandy) Naim, MCIP, RPP
Environmental Planner
Ecoplans Limited

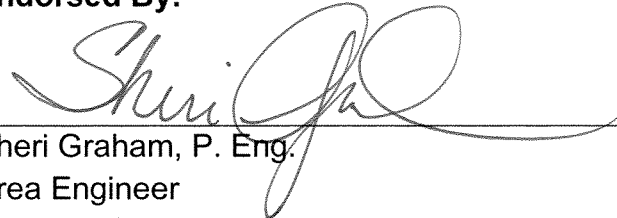


Denise Morneau, P. Eng.
Deputy Project Manager
McCormick Rankin Corporation



François Doyon, P. Eng.
Deputy Project Manager
McCormick Rankin Corporation

Endorsed By:



Sheri Graham, P. Eng.
Area Engineer
Ministry of Transportation



Robert Bird
Environmental Planner
Ministry of Transportation

Accepted By:



Marlo Johnson
Head, Planning and Environmental
Ministry of Transportation



Paul Lecoarer, P. Eng.
Manager, Engineering
Ministry of Transportation

THE PUBLIC RECORD

Copies of this document have been submitted to the following offices of the Ministry of the Environment to be placed in the Public Record:

<p>Northern Region Office Environment Assessment Coordinator Suite 1201 199 Larch Street Sudbury, Ontario P3E 5P9</p> <p>Hours: 8:30 a.m.-5:00 p.m. Monday – Friday</p> <p>Toll free from area codes 705/807: 1-800-890-8516</p> <p>Tel: (705) 564-3237</p>	<p>Environmental Assessment and Approval Branch 2 St. Clair Avenue West Floor 12 A Toronto, Ontario M4V 1L5</p> <p>Hours: 8:30 a.m.-5:00 p.m. Monday – Friday</p> <p>Toll-Free: 1-800-461-6290</p> <p>Tel: (416) 314-8001</p>
---	---

Part 1 of this Route Planning and Environmental Assessment Report is available at www.highway69.ca

This Route Planning and Environmental Assessment Report is also available for review at the following locations.

<p>Ministry of Transportation Ontario Government Building 301-447 McKeown Avenue 4th Floor North Bay, Ontario P1B 9S9</p> <p>Hours: 8:30 a.m.-5:00 p.m. Monday – Friday Tel: 1-800-461-9547 (Ext. 5464) (toll-free)</p>	<p>McCormick Rankin Corporation 2655 North Sheridan Way, Suite 300 Mississauga, Ontario L5K 2P8</p> <p>Hours: 8:30 a.m.-5:00 p.m. Monday – Friday Tel: 1-877-562-7947 (toll-free)</p>	<p>Municipality of Killarney Municipal Office 32 Commissioner Street Killarney, Ontario POM 2A0</p> <p>Hours: 9:00a.m.-12:00p.m. 1:00p.m.-4:30p.m. Monday – Friday Tel: 705) 287-2424</p>
<p>Britt Public Library 841 Riverside Drive Britt, Ontario POG 1A0</p> <p>Hours: 9:00a.m.-3:30p.m. Monday – Friday 7:00p.m.-8:30p.m. Thursday Tel: (705) 383-2292</p>	<p>Magnetawan First Nation Administration Office Britt, Ontario POG 1A0</p>	<p>Henvey Inlet First Nation Administration Office Pickerel River Road Pickerel, Ontario POG 1J0</p>

Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 411/97, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, veuillez communiquer avec le ministère des Transports, Bureau des services en français au: 905-704-2045 ou 905-704-2046.

TABLE OF CONTENTS

THE PUBLIC RECORD III

GLOSSARY IX

EXECUTIVE SUMMARY X

1.0 INTRODUCTION 1-1

1.1 General Description of the Undertaking 1-1

1.2 Purpose of the Undertaking 1-1

1.2.1 Problems and Opportunities 1-1

1.2.2 Study Purpose and Objectives 1-2

1.2.3 Definition of the Study Area 1-3

1.3 Strategic Highway Planning Direction 1-3

1.3.1 Highway 69 Four-Laning Program 1-3

1.3.2 Northern Ontario Strategic Transportation Directions and Smart Growth 1-3

1.3.3 Highway 69 Action Plan 1-4

1.4 Environmental Assessment Process 1-4

1.4.1 Ontario Environmental Assessment Act 1-4

1.4.2 Canadian Environmental Assessment Act 1-5

1.4.3 Other Approval Requirements 1-5

1.4.4 Purpose of the Route Planning and Environmental Assessment Report 1-5

1.5 Study Approach 1-6

1.6 Study Process 1-6

1.7 Project Team 1-8

1.8 Consultation Process 1-9

1.8.1 Formal Points of Notification 1-9

1.8.2 Government Ministry/Agency Liaison 1-9

1.8.3 First Nations Liaison 1-10

1.8.4 Public Contact 1-10

1.8.5 Project Website 1-10

1.8.6 Future Consultation 1-10

1.9 Ecological and Watershed Management Planning 1-10

1.10 Proposed Phasing 1-12

2.0 EXISTING ENVIRONMENT 2-1

2.1 Natural Environment 2-1

2.1.1 Ecological Planning 2-3

2.1.2 Topography 2-3

2.1.3 Geology and Groundwater 2-3

2.1.4 Fisheries Resources 2-3

2.1.4.1 Larger watercourses/waterbodies 2-4

2.1.4.2 Minor Drainages 2-4

2.1.5 Terrestrial Resources 2-5

2.1.6 Vegetation 2-5

2.1.7 Wildlife 2-6

2.1.7.1 Species Diversity 2-6

2.1.7.2 Species at Risk 2-6

2.1.7.3 Significant Wildlife Habitat 2-6

2.1.8 Wetlands 2-6

2.2 Social/Economic Environment 2-7

2.2.1 Land Use 2-7

2.2.2 Economic Overview 2-7

2.2.3 Tourism & Recreation 2-8

2.2.4 Businesses 2-8

2.2.5 Social Overview 2-8

2.2.6 First Nations 2-8

2.2.7 Magnetawan First Nation 2-8

2.2.8 Henvey Inlet First Nation 2-9

2.2.9 Still River 2-9

2.2.10 Forest Management 2-9

2.2.11 Noise 2-10

2.2.12 Air Quality 2-10

2.2.13 Vistas and Aesthetics 2-10

2.2.13.1 Receptor Point 1: Magnetawan River 2-11

2.2.13.2 Receptor Point 2: Stillness Farm 2-11

2.2.13.3 Receptor Point 3: Still River Community 2-12

2.2.13.4 Receptor Point 4: Straight Lake 2-12

2.2.13.5 Receptor Point 5: Key River 2-13

2.2.13.6 Receptor Point 6: Clear Lake 2-13

2.2.14 Contaminated Property 2-14

2.3 Cultural Environment 2-14

2.3.1 Archaeology 2-14

2.3.2 Built and Cultural Heritage 2-14

2.4 Transportation 2-16

2.4.1 Existing Highway 69 2-16

2.4.2 Horizontal Alignment 2-16

2.4.3 Vertical Alignment 2-16

2.4.4 Cross-Section 2-18

2.4.5 Traffic Operations 2-19

Table of Contents

2.4.6	Structures.....	2-19	4.3	Evaluation of Corridor Alternatives.....	4-16
2.4.7	Utilities.....	2-19	4.3.1	Corridor Evaluation Criteria.....	4-16
2.4.8	Other Provincial and Local Roads.....	2-20	4.3.2	Analysis and Evaluation of Corridor Alternatives.....	4-18
2.4.9	Railways.....	2-21	4.3.2.1	Step 1 (South of Harris Lake Road to Britt North).....	4-19
2.4.10	Recreational Trails.....	2-21	4.3.2.2	Step 2 (south of Harris Lake Road to Britt South).....	4-19
2.4.11	Construction History.....	2-21	4.3.2.3	Step 3 (Magnetawan River to Still River West).....	4-25
			4.3.2.4	Step 4 (Still River to Henvey Inlet West).....	4-25
			4.3.2.5	Step 5 (Still River West to Henvey Inlet East).....	4-31
			4.3.2.6	Step 6 (Henvey Inlet West to North Study Limit).....	4-31
			4.3.2.7	Step 7 (Henvey Inlet East to North Study Limit).....	4-37
			4.3.2.8	Step 8 (Still River East to Henvey Inlet East).....	4-37
			4.3.2.9	Step 9 (South of Still River to Henvey Inlet East).....	4-38
			4.3.2.10	Summary of the Preferred Corridor.....	4-44
3.0	TRANSPORTATION NEEDS ASSESSMENT.....	3-1	4.4	Consultation on Corridor Alternatives.....	4-44
3.1	Assessment of Existing and Future Travel Needs.....	3-1	4.4.1	Public Information Centres #1 & #2 (October 2003 & April 2004).....	4-44
3.1.1	Historical and Current Traffic Conditions.....	3-1	4.4.2	External Agency Input.....	4-47
3.1.2	Highway 69 Mainline.....	3-1	4.4.3	Municipal Input.....	4-48
3.1.3	Intersections.....	3-1	4.4.4	First Nation Input.....	4-48
3.1.4	Forecast Future Conditions.....	3-2	4.4.5	Refinements Following Consultation.....	4-48
3.2	Collision Analysis.....	3-3			
3.2.1	Historical Collision Rates.....	3-3	5.0	ROUTE & INTERCHANGE ALTERNATIVES.....	5-1
3.2.2	Recent Collision History.....	3-3	5.1	Overview of Evaluation Process.....	5-1
3.2.3	Collision Prone Locations.....	3-3	5.2	Determination of Interchange Study Areas.....	5-1
3.2.4	Vehicles.....	3-3	5.3	Development and Screening of Route and Interchange Alternatives.....	5-5
3.2.5	Wildlife.....	3-4	5.3.1	Development of Route and Interchange Alternatives.....	5-5
3.2.6	Fatalities.....	3-4	5.3.2	Screening of Route and Interchange Alternatives.....	5-5
3.3	Summary of Transportation Needs and Opportunities.....	3-4	5.4	Evaluation of Route and Interchange Alternatives.....	5-5
3.4	Alternatives to the Undertaking (Alternative Solutions).....	3-5	5.4.1	Evaluation Criteria.....	5-8
3.4.1	Do Nothing.....	3-5	5.4.2	Analysis and Evaluation of Interchange Alternatives.....	5-11
3.4.2	Transportation Demand Management.....	3-6	5.4.2.1	Magnetawan-Britt Area (Step 1).....	5-11
3.4.3	Non-Roadway Solutions – Improve Existing or Introduce New Facilities.....	3-6	5.4.2.2	Still River-Grundy Lake Area (Step 2).....	5-16
3.4.4	Roadway Improvements (Existing Transportation Facilities) – Excluding Highway 69.....	3-7	5.4.3	Analysis and Evaluation of Route Alternatives.....	5-21
3.4.4.1	Local Infrastructure Improvements.....	3-7	5.4.3.1	Magnetawan-Britt Area (Step 1).....	5-21
3.4.4.2	Improvements to Provincial Highways.....	3-7	5.4.3.2	Still River-Grundy Lake Area (Step 2).....	5-24
3.4.5	Localized Roadway Improvements – Highway 69 Corridor.....	3-7	5.4.3.3	Britt-Grundy Lake Area (Step 3).....	5-27
3.4.6	Highway 69 Corridor Improvements.....	3-8	5.4.3.4	Clear Lake Area (Step 4).....	5-30
3.4.7	Summary of Assessment of Alternatives to the Undertaking.....	3-8	5.4.4	Summary of Preferred Route and Interchanges.....	5-33
3.5	Consultation on Needs Assessment.....	3-8	5.4.4.1	Harris Lake Road Area (Section 4).....	5-33
3.5.1	Public Information Centre #1 – October 2003.....	3-8	5.5	Consultation on Interchange and Route Alternatives.....	5-36
3.5.2	External Agency Input.....	3-9	5.5.1	Public Information Centres #3 (September 2004).....	5-36
3.5.3	Municipal Input.....	3-9	5.5.2	External Agency Input.....	5-36
3.5.4	First Nation Input.....	3-9	5.5.3	Municipal Input.....	5-36
			5.5.4	First Nation Input.....	5-37
4.0	CORRIDOR ALTERNATIVES.....	4-1	5.6	Refinements Following Consultation.....	5-37
4.1	Overview of Evaluation Process.....	4-1	5.6.1	Route Refinements – 2004.....	5-37
4.2	Development of Corridor Alternatives.....	4-1			
4.2.1	Development of the Initial Plan of Corridor Alternatives.....	4-1			
4.2.2	Screening of Corridor Alternatives.....	4-8			

Table of Contents

5.6.2	CNR Crossing Alternatives	5-44	6.6.2	Side Roads	6-14
5.6.3	Additional Corridor Options – Magnetawan River to Highway 522	5-44	6.6.2.1	Bekanon Road	6-14
5.6.4	Route Re-evaluation – 2005.....	5-49	6.6.3	Local Access Roads.....	6-14
5.6.5	Stakeholder Consultation	5-53	6.6.3.1	Realigned Spirit Road	6-14
5.6.5.1	Magnetawan River Interchange and Location Alternatives.....	5-53	6.6.3.2	Forest Access Road north of Highway 522.....	6-14
5.6.5.2	Consultation with the Henvey Inlet First Nation (HIFN)	5-59	6.7	Entrances	6-15
5.6.6	Re-Evaluation Process (August 2006)	5-59	6.8	Median Crossovers	6-18
5.6.6.1	Selection Process	5-60	6.9	Property	6-18
5.6.6.2	Evaluation Decision	5-60	6.10	Construction Staging and Traffic Management	6-18
5.6.7	Alternative Routes at Key River Crossing.....	5-65	6.11	Utilities and Rail Relocation	6-22
			6.11.1	Utilities.....	6-22
			6.11.2	Rail.....	6-22
6.0	RECOMMENDED PLAN	6-1	6.12	Drainage and Hydrology	6-22
6.1	Horizontal Alignment.....	6-1	6.12.1	Study Area Characteristics	6-22
6.1.1	Magnetawan First Nation/Wallbridge Township	6-1	6.12.2	Policy Framework and Design Criteria	6-23
6.1.2	Henvey Township/Henvey Inlet First Nation.....	6-1	6.12.3	Existing Highway Drainage.....	6-23
6.1.3	Mowat Township.....	6-1	6.12.4	Hydrologic Modeling.....	6-23
6.1.4	Summary of Horizontal Alignment	6-3	6.12.5	Existing Conditions Hydrologic Assessment	6-23
6.2	Vertical Alignment	6-3	6.12.6	Future Conditions Hydrologic Assessment.....	6-24
6.3	Cross-Section	6-4	6.12.7	Highway 69 Bridge Assessment	6-24
6.4	Interchanges	6-6	6.13	Geotechnical and Foundations.....	6-24
6.4.1	Magnetawan River Interchange	6-7	6.13.1	Alternative Route Assessment.....	6-24
6.4.2	Bekanon Road Interchange	6-7	6.13.2	Preliminary Foundation Investigation and Design for Swamp Crossings	6-24
6.4.3	Highway 522 Interchange.....	6-8	6.13.3	Preliminary Foundation Investigations and Design for Structures.....	6-24
6.5	Structures	6-8	6.13.4	Preliminary Pavement Design.....	6-24
6.5.1	Existing Structures.....	6-8	6.13.5	Future Geotechnical and Foundation Work	6-24
6.5.1.1	Magnetawan River Bridge.....	6-8	6.14	Roadside Safety	6-25
6.5.1.2	Still River Bridge	6-8	6.14.1	Clear Zone.....	6-25
6.5.1.3	Key River Bridge.....	6-8	6.14.2	Rock Cuts	6-25
6.5.1.4	C.N.R. Overhead at Cranberry Lake Bridge	6-9	6.14.3	Guiderail	6-25
6.5.2	New Major Structures.....	6-9	6.15	Road Closings and Transfers	6-25
6.5.2.1	Highway 69 - Magnetawan River Interchange	6-10	6.15.1	Road Closings	6-25
6.5.2.2	Highway 69 - Magnetawan River Crossing (NBL & SBL Bridges)	6-11	6.15.2	Road Transfers.....	6-25
6.5.2.3	Highway 69 - Still River Crossing (NBL & SBL Bridges).....	6-11	6.16	Surveying and Plan Preparation	6-25
6.5.2.4	Highway 69 - Bekanon Road Interchange (NBL & SBL Bridges)	6-11	6.16.1	Base Information	6-25
6.5.2.5	Highway 69 - CPR Crossing (NBL & SBL Bridges).....	6-11	6.16.2	Plans and Profiles for the Recommended Plan.....	6-26
6.5.2.6	Highway 69 - Straight Lake Crossing (NBL and SBL Bridges)	6-11	6.16.3	Horizontal and Vertical Control	6-26
6.5.2.7	Highway 69 - Key River Crossing (NBL and SBL Bridges)	6-12	6.16.4	Alignment	6-26
6.5.2.8	Highway 69 – Realigned CNR Crossing (NBL and SBL Bridges)	6-12	6.16.5	Detail.....	6-26
6.5.2.9	West Service Road – Realigned CNR Crossing.....	6-12	6.17	Miscellaneous.....	6-26
6.5.2.10	Highway 69 - Highway 522 Interchange.....	6-12	6.17.1	Illumination.....	6-26
6.5.3	Snowmobile Structure	6-12	6.17.2	Traffic Signals	6-26
6.5.4	Ecopassages.....	6-13	6.17.3	Signing and Pavement Markings.....	6-26
6.6	Other Road Infrastructure	6-13	6.17.4	Intelligent Transportation Systems (ITS)	6-26
6.6.1	Service Roads	6-14	6.17.4.1	Changeable Message Signs (CMS).....	6-26
6.6.1.1	Magnetawan River Interchange to Highway 522 Interchange.....	6-14			

Table of Contents

6.17.4.2	Fog Monitoring.....	6-26	7.3.2	Built and Cultural Heritage	7-18
6.17.4.3	Data Counting Stations	6-26	7.4	External Agency and Public Input on Recommended Plan	7-18
6.17.4.4	Weather Sensing.....	6-27	7.4.1	Public Information Centre #4 – June 2007.....	7-18
6.17.4.5	Accident Locating.....	6-27	7.4.2	External Agency Input.....	7-19
6.17.4.6	Snow Plow Tracking.....	6-27	7.4.3	Municipal Input.....	7-19
6.17.4.7	Wildlife Tracking.....	6-27	7.4.4	First Nation Input.....	7-19
6.17.4.8	Construction.....	6-28			
6.18	Permanent Traffic Counter Loops	6-28	8.0	SUMMARY OF IDENTIFIED CONCERNS, MITIGATING MEASURES AND	
6.19	Value Engineering.....	6-28		FUTURE COMMITMENTS.....	8-1
6.20	Preliminary Cost Estimate.....	6-30	8.1	Summary of Identified Concerns and Future Commitments	8-1
			8.2	Future Consultation.....	8-7
7.0	ENVIRONMENTAL EFFECTS AND MITIGATION	7-1	9.0	MONITORING	9-1
7.1	Natural Environment	7-1	9.1	Changes during Detail Design	9-1
7.1.1	Ecology and Watershed	7-1	9.2	Monitoring During Construction	9-1
7.1.2	Topography	7-1			
7.1.3	Groundwater	7-1			
7.1.4	Fisheries and Aquatic Habitat	7-2			
7.1.4.1	Direct Environmental Effects	7-3			
7.1.4.2	Potential Indirect/Construction-related Impacts.....	7-4			
7.1.4.3	Mitigation Measures	7-4			
7.1.5	Vegetation and Wetlands.....	7-6			
7.1.5.1	Direct Environmental Effects	7-7			
7.1.5.2	Indirect Environmental Effects (all community types).....	7-8			
7.1.6	Wildlife and Significant Wildlife Habitat	7-9			
7.1.7	Surface Water.....	7-11			
7.1.8	Erosion and Sediment Control	7-12			
7.1.9	Aggregates.....	7-12			
7.1.10	Management of Excess Materials.....	7-12			
7.1.11	Potential Contamination.....	7-13			
7.2	Social / Economic Environment	7-13			
7.2.1	Land Use	7-13			
7.2.2	Community Structure – Residential.....	7-13			
7.2.3	Businesses	7-13			
7.2.4	Forest Management	7-14			
7.2.5	Recreational	7-15			
7.2.6	Industry.....	7-15			
7.2.7	Noise.....	7-15			
7.2.8	Air Quality.....	7-15			
7.2.9	Vistas and Aesthetics	7-16			
7.2.10	Landscape	7-17			
7.2.11	Traffic Interruptions and Delay During Construction	7-17			
7.2.12	Construction Dust and Noise.....	7-17			
7.3	Cultural Environment	7-18			
7.3.1	Archaeology.....	7-18			

LIST OF EXHIBITS

EXECUTIVE SUMMARY

- Exhibit E-1: Study Area
- Exhibit E-2: Recommended Plan
- Exhibit E-3: Summary of Environmental Concerns and Commitments

SECTION 1.0: Introduction

- Exhibit 1-1: Study Area
- Exhibit 1-2: Environmental Study Process
- Exhibit 1-3: Project Team

SECTION 2.0: Existing Environment

- Exhibit 2-1: Existing Environment
- Exhibit 2-2: Magnetawan River
- Exhibit 2-3: Magnetawan River Looking Northeast from the Existing Structure
- Exhibit 2-4: Stillness Farm Looking East from West of the CPR Tracks
- Exhibit 2-5: Motel in Still River West of the Existing Highway
- Exhibit 2-6: Proposed Bridge Crossing, South Side of Straight Lake
- Exhibit 2-7: Key River Looking East from Key Marina
- Exhibit 2-8: Existing Water Crossing Over Clear Lake
- Exhibit 2-9: Cultural Heritage Landscape Units
- Exhibit 2-10: Built Heritage Features
- Exhibit 2-11: Horizontal Alignment – Existing Highway 69
- Exhibit 2-12: Vertical Alignment – Existing Highway 69
- Exhibit 2-13: Intersection/Entrance Sight Line Deficiencies for 110 Km/h Design Speed
- Exhibit 2-14: Existing Passing Lanes and Recommended Improvements from the Passing Lane Study Report
- Exhibit 2-15: Existing Utilities along the existing Highway 69 Right-of-Way
- Exhibit 2-16: Existing Left Turn Lanes
- Exhibit 2-17: Existing Right Turn Lanes

SECTION 3.0: Transportation Needs Assessment

- Exhibit 3-1: Existing (Year 2000) Traffic Data
- Exhibit 3-2: Existing (Year 2000) Mainline Level of Service
- Exhibit 3-3: Existing (Year 2000) Intersection Level of Service
- Exhibit 3-4: Highway 69 Mainline Future Traffic Forecasts
- Exhibit 3-5: Highway 69 Level of Service Forecasts
- Exhibit 3-6: Alternatives to the Undertaking

SECTION 4.0: Corridor Alternatives

- Exhibit 4-1: Process of Developing and Evaluating Alternative Corridors
- Exhibit 4-2: Corridor Selection and Screening Criteria
- Exhibit 4-3: “Long-List” of Corridor Alternatives
- Exhibit 4-4: Refinement of Corridor Alternatives
- Exhibit 4-5: Rationale for Screening of Corridor Alternatives
- Exhibit 4-6: Results of Screening and “Short-List” of Corridor Alternatives
- Exhibit 4-7: Evaluation Criteria for Corridor Alternatives
- Exhibit 4-8A: Summary of Evaluation for Section 1 (North of Harris Lake Road to North of Britt)
- Exhibit 4-8B: Summary of Evaluation for Section 1 (North of Harris Lake Road to North of Britt)
- Exhibit 4-9A: Summary of Evaluation for Section 2 (North of Harris Lake Road to Britt South)
- Exhibit 4-9B: Summary of Evaluation for Section 2 (North of Harris Lake Road to Britt South)
- Exhibit 4-10A: Summary of Evaluation for Section 3 (Magnetawan River to Still River West)
- Exhibit 4-10B: Summary of Evaluation for Section 3 (Magnetawan River to Still River West)
- Exhibit 4-11A: Summary of Evaluation for Section 4 (Still River West to Henvey Inlet West)
- Exhibit 4-11B: Summary of Evaluation for Section 4 (Still River West to Henvey Inlet West)
- Exhibit 4-12A: Summary of Evaluation for Section 5 (Still River West to Henvey Inlet East)
- Exhibit 4-12B: Summary of Evaluation for Section 5 (Still River West to Henvey Inlet East)
- Exhibit 4-13A: Summary of Evaluation for Section 6 (Henvey Inlet West to North Study Limit)
- Exhibit 4-13B: Summary of Evaluation for Section 6 (Henvey Inlet West to North Study Limit)
- Exhibit 4-14A: Summary of Evaluation for Section 7 (Henvey Inlet East to North Study Limit)
- Exhibit 4-14B: Summary of Evaluation for Section 7 (Henvey Inlet East to North Study Limit)
- Exhibit 4-15A: Summary of Evaluation for Section 8 (Still River East to Henvey Inlet East)
- Exhibit 4-15B: Summary of Evaluation for Section 8 (Still River East to Henvey Inlet East)
- Exhibit 4-16: Summary of Evaluation for Section 9 (South of Still River to Henvey Inlet East)
- Exhibit 4-17: Preferred Corridor Alternative

SECTION 5.0: Route & Interchange Alternatives

- Exhibit 5-1: Process of Developing and Evaluating Alternatives Routes and Interchanges
- Exhibit 5-2: Potential Interchange Study Areas
- Exhibit 5-3: Summary of Analysis of Potential Interchange Study Areas
- Exhibit 5-4: Results of Screening - Step 1
- Exhibit 5-5: Results of Screening - Step 2
- Exhibit 5-6: Evaluation Criteria for Route and Interchange Alternatives
- Exhibit 5-7: Interchange Alternatives – Step 1
- Exhibit 5-8: Summary of Evaluation of Interchange Alternatives – Route 1 in Step 1
- Exhibit 5-9: Detailed Evaluation of Interchange Alternatives – Route 1 in Section 1
- Exhibit 5-10: Summary of Evaluation of Interchange Alternatives – Route 2 in Step 1
- Exhibit 5-11: Detailed Evaluation of Interchange Alternatives – Route 2 in Step 1
- Exhibit 5-12: Summary of Evaluation of Interchange Alternatives – Route 6 in Step 1
- Exhibit 5-13: Detailed Evaluation of Interchange Alternatives – Route 6 in Step 1

LIST OF EXHIBITS (Con't)

- Exhibit 5-14: Interchange Alternatives – Step 2
- Exhibit 5-15: Summary of Evaluation of Interchange Alternatives – Route 1 in Step 2
- Exhibit 5-16: Detailed Evaluation of Interchange Alternatives – Route 1 in Step 2
- Exhibit 5-17: Summary of Evaluation of Interchange Alternatives – Route 3 in Step 2
- Exhibit 5-18: Detailed Evaluation of Interchange Alternatives – Route 3 in Section 2
- Exhibit 5-19: Summary of Evaluation of Interchange Alternatives – Route 5 in Step 2
- Exhibit 5-20: Detailed Evaluation of Interchange Alternatives – Route 5 in Section 2
- Exhibit 5-21: Route Evaluation – Step 1
- Exhibit 5-22: Summary of Evaluation of Route Alternatives – Step 1
- Exhibit 5-23: Detailed Evaluation of Route Alternatives – Step 1
- Exhibit 5-24: Route Evaluation – Step 2
- Exhibit 5-25: Summary of Evaluation of Route Alternatives – Step 2
- Exhibit 5-26: Detailed Evaluation of Route Alternatives – Step 2
- Exhibit 5-27: Route Evaluation – Step 3
- Exhibit 5-28: Summary of Evaluation of Route Alternatives – Step 3
- Exhibit 5-29: Detailed Evaluation of Route Alternatives – Step 3
- Exhibit 5-30: Route Evaluation – Step 4
- Exhibit 5-31: Summary of Evaluation of Route Alternatives – Step 4
- Exhibit 5-32: Detailed Evaluation of Route Alternatives – Step 4
- Exhibit 5-33: Preferred Route and Interchanges at PIC#3
- Exhibit 5-34: Refinement at Henvey Township (3A-REV)
- Exhibit 5-35: Analysis of Refinement Alternatives – South of Beganon Road to North of Key River
- Exhibit 5-35a: CNR Crossing Alternatives
- Exhibit 5-36: Additional Corridor Options from Magnetawan River to Highway 522 (Segments 1 to 5)
- Exhibit 5-37: Analysis of Additional Corridor Options – Magnetawan River to Highway 522
- Exhibit 5-38: Re-Evaluation September 2005 (I1–PIC#3 –X3)
- Exhibit 5-39: Re-Evaluation November 2005 (K2-REV, K2-A, I1-K2, I1-K2A, I1-PIC#3-X1)
- Exhibit 5-40: Summary of Key Features for Alternative Routes (November 2005) Magnetawan River to Key River
- Exhibit 5-41: Highway 526 Interchange Alternatives (Options 1, 2, 3)
- Exhibit 5-42: Highway 526 Interchange Alternatives (Options 4a, 4b, 5)
- Exhibit 5-43: Magnetawan River Interchange Comparison
- Exhibit 5-44: Route Comparison Table (PIC#3 REV, K2A)
- Exhibit 5-45: Re-Evaluation – August 2006 (PIC#3 Revised, I1-K2/K2A, K2A, K2 Revised)
- Exhibit 5-46: Summary of Route Re-Evaluation (August 2006)
- Exhibit 5-47: Summary Evaluation for Key River Crossing
- Exhibit 5-48: Alternative Routes at Key River Crossing (Central, East)
- Exhibit 5-49: Alternative Routes at Key River Crossing (West)
- Exhibit 5-50: Evaluation of Alternative Routes at Key River (August 2007)

SECTION 6.0: Recommended Plan

- Exhibit 6-1: Recommended Plan
- Exhibit 6-2: Summary of Highway (Horizontal Curves and Spirals)
- Exhibit 6-3: Summary of Highway 69 Vertical Curves
- Exhibit 6-4: Typical Cross Section – Highway 69 Four-Laning
- Exhibit 6-5: Summary of Highway 69 Cross-Section Requirements
- Exhibit 6-6: Interchange Spacing
- Exhibit 6-7: Typical Interchange Ramp Sections
- Exhibit 6-8: Summary of Interchange Ramp Cross-Section Grading Requirements (Earth Fill)
- Exhibit 6-9: Stopping/Decision Sight Distance for Interchange
- Exhibit 6-12: Summary of Major Structures
- Exhibit 6-13: Structures Crossing Navigable Waters
- Exhibit 6-16: Summary of Snowmobile Crossings
- Exhibit 6-17: Typical Side Road Cross-Sections
- Exhibit 6-18: Proposed Highway 69 from South of Pointe au Baril Station
- Exhibit 6-19: Existing Highway 69 Entrances and Impacts
- Exhibit 6-20: Recommended Contract Limits
- Exhibit 6-21: Preliminary Construction Staging
- Exhibit 6-22: Utility Relocations
- Exhibit 6-23: Summary of Road Closings
- Exhibit 6-24: Preliminary Construction Quantities Estimate (m³)
- Exhibit 6-25: Unit Costs
- Exhibit 6-25: Preliminary Construction Cost Estimate

SECTION 8.0: Summary of Identified Concerns, Mitigating Measures and Future Commitments

- Exhibit 8-1: Summary of Environmental Concerns and Commitments

PART 2 - PRELIMINARY DESIGN PLATES

PART 3 - APPENDICES

Book 1

- A Preliminary Design Criteria
- B Study Design
- C Newspaper Notices and Notification Materials
- D Project Newsletters
- E Highway 69 Project Website
- F Public Information Centre Summary Reports
- G Consultation with External Stakeholders
- H Natural Environment Reports

Book 2

- I Groundwater Study
- J Socio-Economic and Land Use Report
- K Noise Report
- L Air Quality Report
- M Site Contamination Study
- N Cultural Heritage Resource Assessment Report
- O Archaeological Assessment Reports
- P Landscape Composition Technical Report
- Q Traffic Operations and Collision Analysis Report
- R Drainage & Hydrology Report
- S Alternative Route Geotechnical Assessment Report

Book 3

- T Foundation Reports
 - Route Planning Study Final Report (Golder, 2004)
 - Preliminary Foundation Investigation and Design Reports (Trow, 2005)
 - Preliminary Foundation Investigation and Design Reports (Amec, 2006)
- U Preliminary Structural General Arrangement Drawings
- V CEEA Scoping Document
- W Draft Value Engineering Report

Executive Summary

GLOSSARY

AADT	Average Annual Daily Traffic	MCL	Ministry of Culture
AAQCs	Ambient Air Quality Criteria	MFN	Magnetawan First Nation
ACPF	Atlantic Coastal Plain Flora	MNDM	Ministry of Northern Development and Mines
ANSI	Area of Natural or Scientific Interest	MNR	Ministry of Natural Resources
AR	Accident Rate	MOE	Ministry of the Environment
ATK	Aboriginal Traditional Knowledge	MRC	McCormick Rankin Corporation
BGL	Britt-Grundy Lake	MTO	Ministry of Transportation
BHF	Built Heritage Features	NAAQOs	National Ambient Air Quality Objectives
CAH	Controlled Access Highway	NBL	Northbound Lane
CCME	Canadian Council of Ministers of the Environment	NHIC	Natural Heritage Information Centre
CEAA	Canadian Environmental Assessment Act	NO2	Nitrogen Dioxide
CEA Agency	Canadian Environmental Assessment Agency	NRVIS	Natural Resources Value Information System
CEPA	Canadian Environmental Protection Act	NSA	Noise Sensitive Area
CIS	Community Information Session	OHA	Ontario Heritage Trust
CLI	Canadian Land Inventory	OMB	Ontario Municipal Board
CLU	Cultural Heritage Landscape Units	OPP	Ontario Provincial Police
CMS	Changeable Message Signs	OPSS	Ontario Provincial Standard Specification
CNR	Canadian National Railways	OWRA	Ontario Water Resources Act
CO	Carbon Monoxide	PHV	Peak Hourly Volume
%COMM	Percentage Commercial Vehicle	PIC	Public Information Centre
CPCI	Canadian Precast/Prestressed Concrete Institute	PM2.5	Particulate Matter (< 2.5 microns in diameter)
CPL	Collision Prone Locations	PTTW	Permit to Take Water
CPR	Canadian Pacific Railways	RAU	Rural Arterial Undivided
CWS	Canada Wide Standard	RFD	Rural Freeway Divided
DCR	Design and Construction Report	ROW	Right-of-Way
DFO	Department of Fisheries and Oceans	RWDI	Rowen Williams Davies & Irwin Inc.
DHV	Design Hourly Volume	SADT	Summer Average Daily Traffic
DSD	Decision Sight Distance	SARA	Species at Risk Act
DTM	Digital Terrain Model	SAWDT	Summer Average Weekday Daily Traffic
EA	Environmental Assessment	SBL	Southbound Lane
EAA	Environmental Assessment Act	SC	Special Concern
ELC	Ecological Land Classification	SCS	Soil Conservation Service
EMA	Enhanced Management Area	SPCC	Spill Prevention, Control and Countermeasures
EMR	Eastern Massasauga Rattlesnake	SSD	Stopping Sight Distance
END	Endangered	SWH	Significant Wildlife Habitat
ESP	Environmental Standards Project	SWMHYMO	Storm Water Management Hydrologic Model
ETR	Engineering Title Records	THR	Threatened
FN	First Nation	TOP	Trans Ontario Provincial
GDSOH	Ministry's Geometric Design Standards	TSD	Turning Sight Distance
GMP	Groundwater Monitoring Program	V/C	Volume/Capacity Ratio
HADD	Harmful Alteration, Disruption or Destruction of Fish Habitat	VE	Value Engineering
HIFN	Henvey Inlet First Nation	WADT	Winter Average Daily Traffic
ITS	Intelligent Transportation Systems		
LOS	Level of Service		
LRT	Light Rail Transit		

