



# Highway 11 and Highway 652, Cochrane

Transportation Needs Assessment and  
By-Pass Feasibility Study Report  
July 2016

Agreement 5014-E-0037

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# TRANSPORTATION NEEDS ASSESSMENT AND BY-PASS FEASIBILITY STUDY REPORT



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Agreement 5014-E-0037

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July 2016





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## Executive Summary

The purpose of this Transportation Needs Assessment and By-Pass Feasibility Study was to review and analyze the existing transportation conditions and deficiencies related to Highway 11 and Highway 652; and to confirm the need and justification for improvements to the provincial transportation network in the Cochrane area. The study considered the results of previous studies completed by the Town of Cochrane, including the Cochrane Truck By-Pass Study (1980) and the Business Plan for a Proposed Truck By-Pass (2006).

### CONSULTATION

This study included targeted consultation with Cochrane, external agencies, and stakeholders. The consultation program aimed to notify all interested parties of the study; to provide an opportunity for input to the study; and to provide relevant information. Targeted meetings were held with the Town of Cochrane, Ministry of Natural Resources and Forestry (MNRF), Ontario Northland Transportation Commission, Abitibi River Forest Management Inc., Detour Gold, and the Taykwa Tagamou Nation.

Stakeholders provided information regarding existing and future transportation needs, and commented on the possible corridor alternatives. In general, there was support for a possible future by-pass to provide an alternative route to Railway Street / 3rd Street, which is the existing connection between Highway 11 and Highway 652.

### EXISTING ENVIRONMENTAL CONDITIONS

This study included a review of available secondary source and background materials to confirm existing natural, social, cultural, and transportation conditions in the study area. The following key environmental features were noted for consideration during future studies:

- The Nahma Bog and Poor Fens Conservation Reserve is located south of the ONR and is a candidate Provincially Significant Wetland – several rare species have been previously reported in this area
- Lake Commando is a local recreation area that is also a drinking water source
- Key industries in the area include forestry, recreation, and mining
- During the study, Cochrane noted that agriculture is an emerging industry in the area
- There is a network of snowmobile routes, including a route along the abandoned Canadian National Railway (CNR) corridor
- The Cochrane Polar Bear Habitat is located south of the railway and is the only captive bear facility in the world dedicated to polar bears

### EXISTING TRANSPORTATION CONDITIONS

The study area includes three provincial highways, Highway 11, Highway 652, and Highway 579. Railway Street / 3rd Street serves as the primary truck route through Cochrane, connecting Highway 11 to

Highway 652. Wilson Road was recently constructed to provide additional access to the Ontario Northland Railway (ONR) property.

The characteristics of the existing truck route do not match the typical characteristics of a roadway connecting two provincial highways.

This study included a traffic study to gain a better understanding of the existing traffic patterns and conditions; and the possible traffic benefits associated with a by-pass of the existing route. The traffic study included data collection and analysis of the data that was collected, including data from the MTO 2012 Commercial Vehicle Survey, MNR Wood Flow data, and online surveys completed as part of this study.

The average annual daily traffic volume in 2015 on Railway Street is approximately 3,450 vehicles per day, of which approximately 550 are trucks.

## TRANSPORTATION PROBLEM AND OPPORTUNITY

The provincial highway network plays a key role in linking communities and supporting economic prosperity across Ontario. As discussed in this report, over the last several decades Cochrane has identified safety, maintenance, and operational concerns with the use of Railway Street / 3rd Avenue as the primary connection between Highway 11 and Highway 652.

The transportation problem is that there are concerns with the current commercial vehicle volumes on the existing route through Cochrane via Railway Street / 3rd Street, including ongoing roadway maintenance, safety, risk of spills to Commando Lake; and that there is no current provincial transportation network connection between Highway 11 and Highway 652.

The transportation opportunity is to review alternatives that could improve safety and operations for goods movement and the travelling public through Cochrane.

## ALTERNATIVES TO THE UNDERTAKING

Following a screening of Alternatives to the Undertaking, five Alternative Solutions were identified and assessed, along with the 'Do Nothing' alternative, to identify the most reasonable approach to address the identified problems or opportunities. The Alternative Solutions included:

- Alternative A – Do Nothing / Maintain Status Quo
- Alternative B – Upgrade existing municipal road network to the north of Cochrane (North Road – Genier Road – Concession 2-3 – Western Avenue (2006 Business Plan, Alternative 1; 1980 Study, Route 5)
- Alternative C – New route south of Cochrane, connecting to Highway 652 in the vicinity of Wilson Road and to Highway 11 in the north of Menard Lake Road (Based on 2006 Business Plan, Alternatives 4B, 4C; 1980 Study, Routes 2A, 2B)
- Alternative D – New route south of Cochrane, connecting to Highway 652 in the vicinity of Wilson Road and Highway 11 in the vicinity of Menard Lake Road (Based on 2006 Business Plan, Alternatives 2B; 1980 Study, Routes 1A, 1B)



- Alternative E – New route / upgrade existing roads south of Cochrane to connect to Highway 652 in the vicinity of Searles Road, and Highway 11 in the vicinity of Nahma Road (2006 Business Plan, Alternative 3)
- Alternative F – New route / upgrade existing roads south of Cochrane to connect to Highway 652 in the vicinity of Cornel Road and Highway 11 in the vicinity of Hanna Road

An overview of the screening of alternative solutions is provided in Table 1 and an overview of the Corridor Alternatives is provided in Exhibit 1.

**Table 1: Screening of Alternatives**

Corridor	Description	Addresses Problem	Comments
A	Do Nothing / Maintain Existing Route	Maintains existing condition	Planned improvements may improve traffic operations
B	New Route to North	Provides an alternative route	Will not likely attract a significant volume of commercial traffic
C, D	New Route to South	Provides a suitable alternative route	May attract up to 30% of commercial vehicles Impacts Nahma Bog
E, F	New Route to South	Provides an alternative route	Will not likely attract a significant volume of commercial traffic

An evaluation of each possible corridor alternative was completed to identify advantages and disadvantages of each corridor alternative, including the potential for each alternative to attract vehicles, and particularly, truck traffic. The evaluation recommended that Alternatives C and D be carried forward for future study. The proposed future study area is provided in

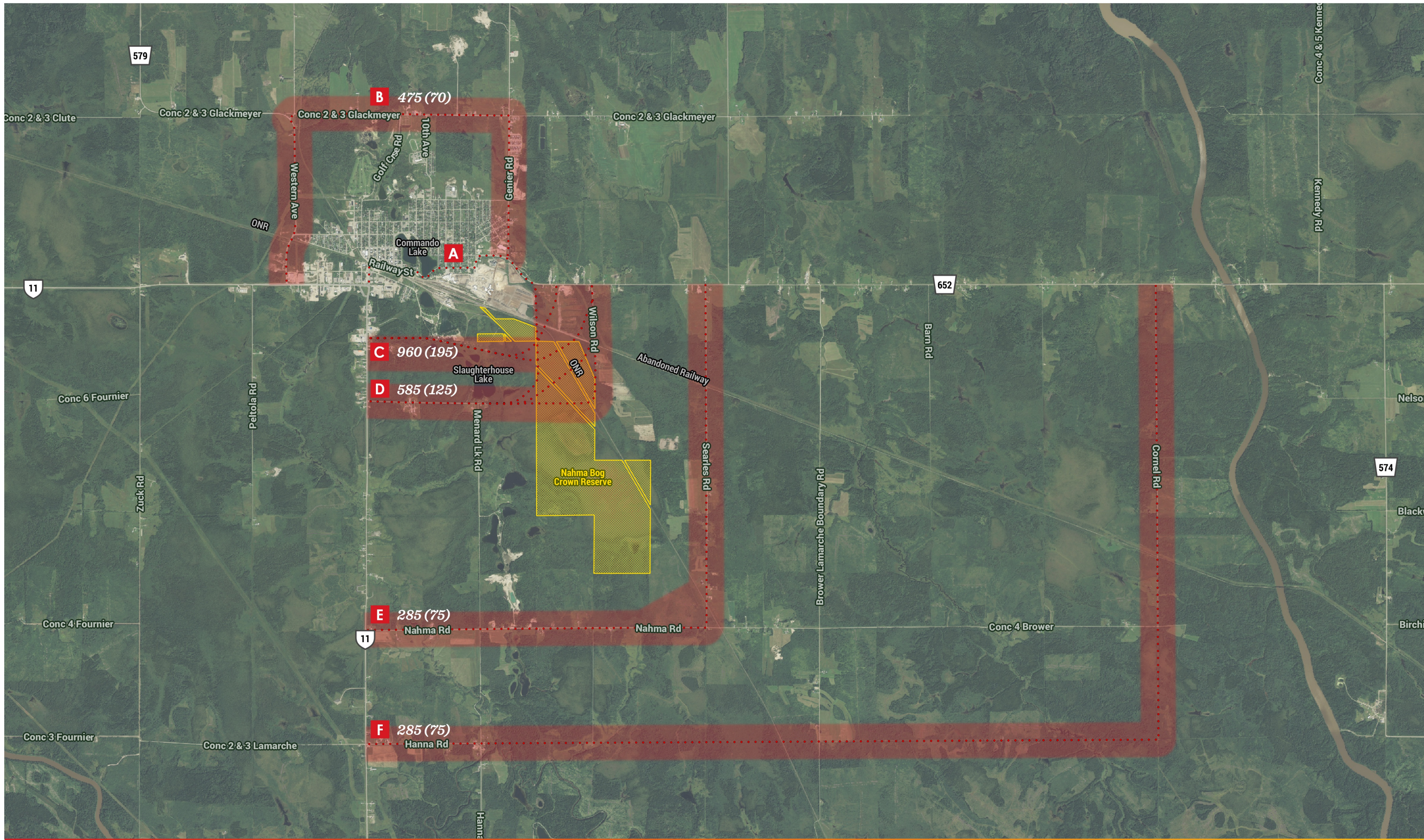
## CONCLUSIONS

Alternatives C and D, a new corridor to the south of Cochrane, both have the potential to address the transportation problems that were identified by Cochrane and stakeholders as part of this study and have the potential to attract commercial vehicles and minimize impacts through the Town of Cochrane. During the study the commercial stakeholders, including the forestry and mining industries, indicated that a by-pass with a convenient connection to ONR and the existing forest product processing facilities would likely attract the most commercial traffic. Alternatives C and D could additionally accommodate a future alternate connection from the east to Rockshield, Tembec, and ONR, which could eliminate the existing challenging entrance to Rockshield and Tembec on Railway Street / 3rd Avenue. A route within the proposed study area has the potential to attract up to 960 vehicles and 195 trucks per day. This represents approximately 30 % of commercial vehicles that will not be required to travel through Cochrane.

A Planning, Preliminary Design, and Environmental Assessment Study, following the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* process, would be required to confirm the location of a potential by-pass of Cochrane.

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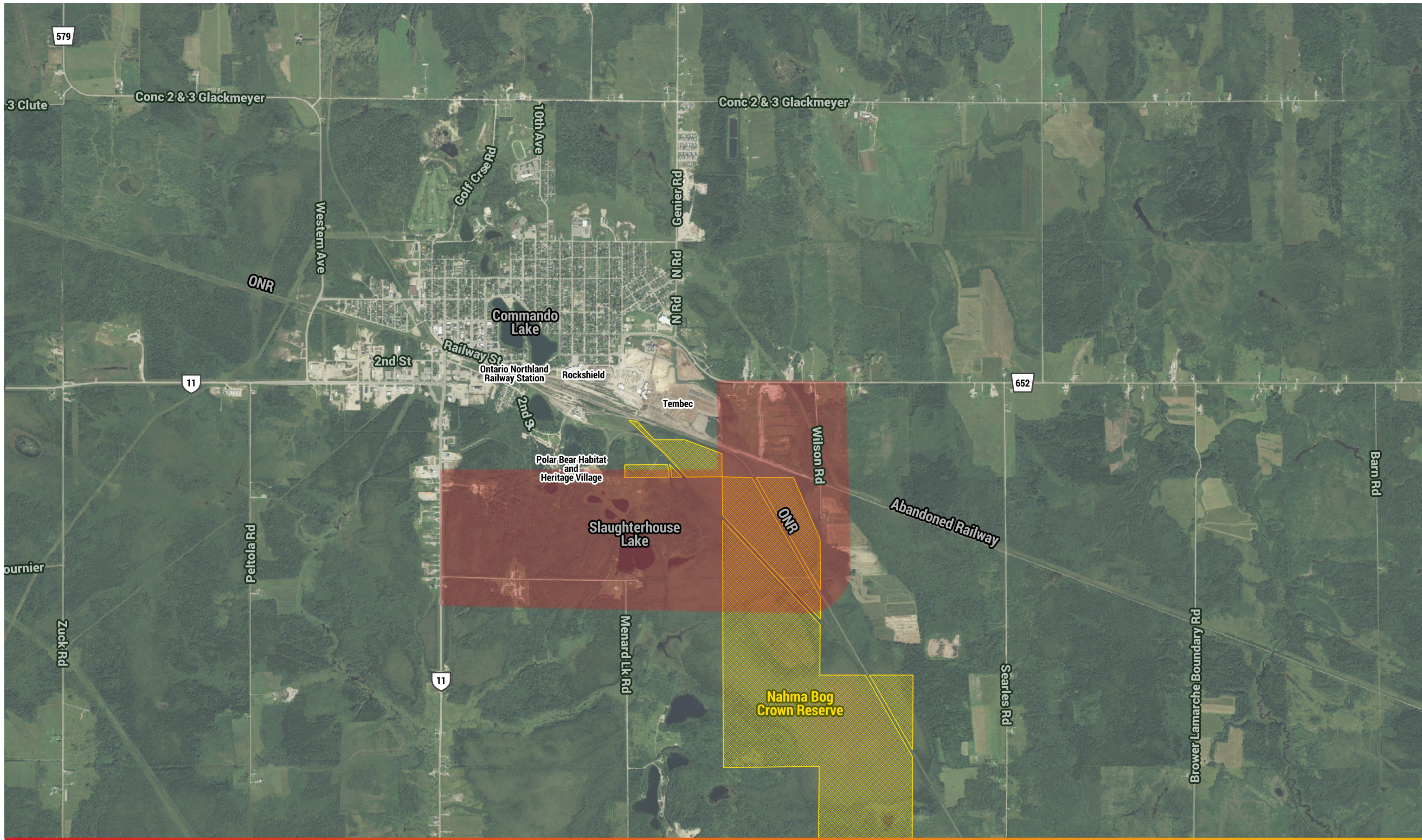
















## 1.0 Introduction

Highway 11 is a well-travelled highway that forms a strategic link in the Trans-Canada Highway system, and connects southern Ontario to North Bay and other northern communities, including the Town of Cochrane (Cochrane). Cochrane is a gateway to mining and forestry activity in Northeastern Ontario and is the junction of Secondary Highways 574, 579, and 652. There is no provincial highway connection through Cochrane; and currently vehicles must travel on the municipal road network (Railway Street) to travel between the provincial highways.

Cochrane has expressed concerns regarding the impact of provincial commercial traffic on the municipal road network related to industrial truck traffic in residential and commercial areas; and the risk of potential spills into Commando Lake, which is connected to the groundwater aquifer that supplies Cochrane's municipal water supply wells. Since the 1980's Cochrane has been requesting that a by-pass be considered to provide an alternative route to access the provincial highway network that avoids the municipal road network.

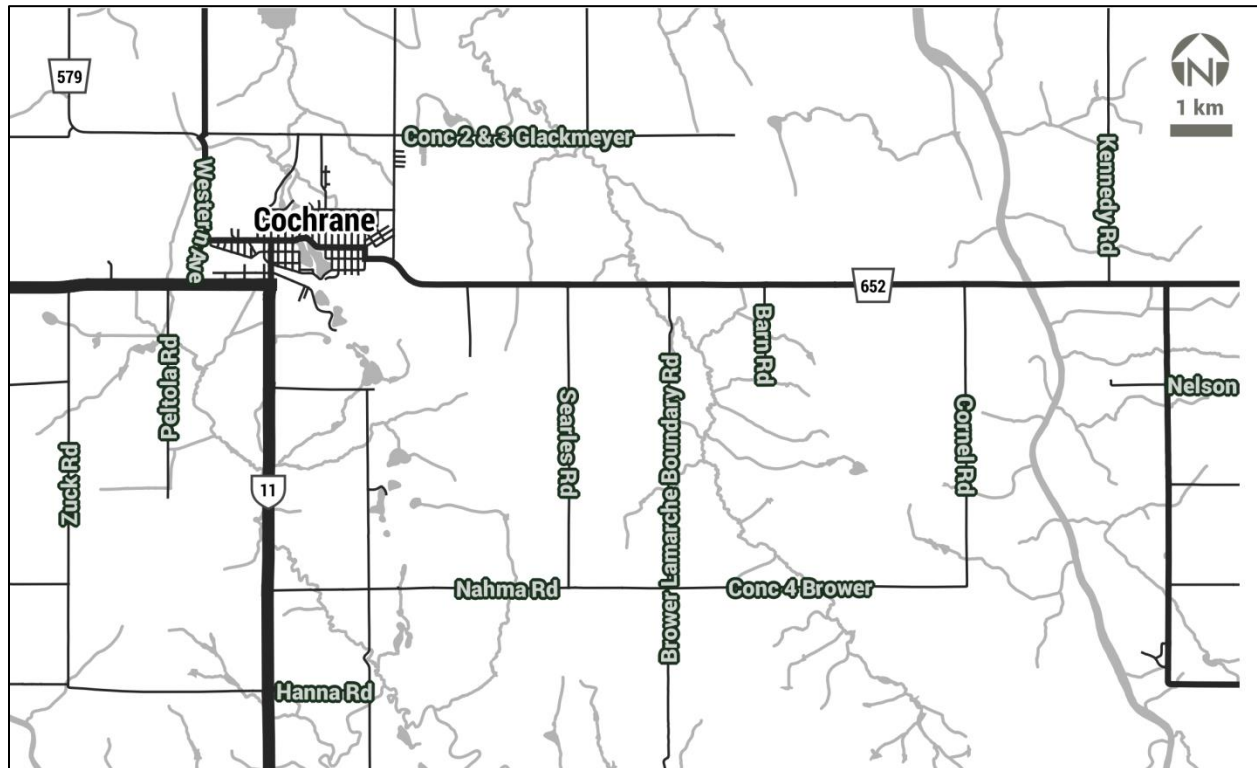
This study was initiated in 2015 to review and analyze the existing transportation conditions and deficiencies related to Highway 11 and Highway 652; and to confirm the need and justification for improvements to the provincial transportation network in the Cochrane area.

This *Transportation Needs Assessment and By-Pass Feasibility Study* is a pre-Environmental Assessment stage that included traffic data collection, a review of existing routes, limited agency and stakeholder consultation, and the development of a range of alternatives to assess the feasibility of a by-pass. The results of the study will assist the Ministry of Transportation and other stakeholders with prioritizing future transportation improvements in the Cochrane area.

For the purposes of this study, the study area is bounded by Concession 2/3 to the north, Western Avenue to the west, Hannah Road to the South, and the Abitibi River to the east.

The general study area is provided in Exhibit 3.

Exhibit 3: Study Area



## 1.1 STUDY BACKGROUND AND PURPOSE

The Town of Cochrane has been petitioning the Ministry to initiate a by-pass study since 1980. At that time a Feasibility Study for a Truck By-Pass was prepared by the Town. However, MTO determined that there was not sufficient commercial traffic to warrant a by-pass at that time.

A second Business Plan for a Proposed Truck By-Pass was prepared by the Town in 2006, and presented to the Ministry of Transportation (MTO) at the Rural Ontario Municipal Association (ROMA) conference. Although MTO considered a joint study following the conference, the study was not initiated.

In the summer of 2014, Cochrane appeared as a delegation to MTO at the ROMA conference, following a truck rollover north of Cochrane, which led to the initiation of this study. A summary of the previous and current studies related to this Transportation Needs Assessment study are provided below.

### 1.1.1 Previous and Current Studies

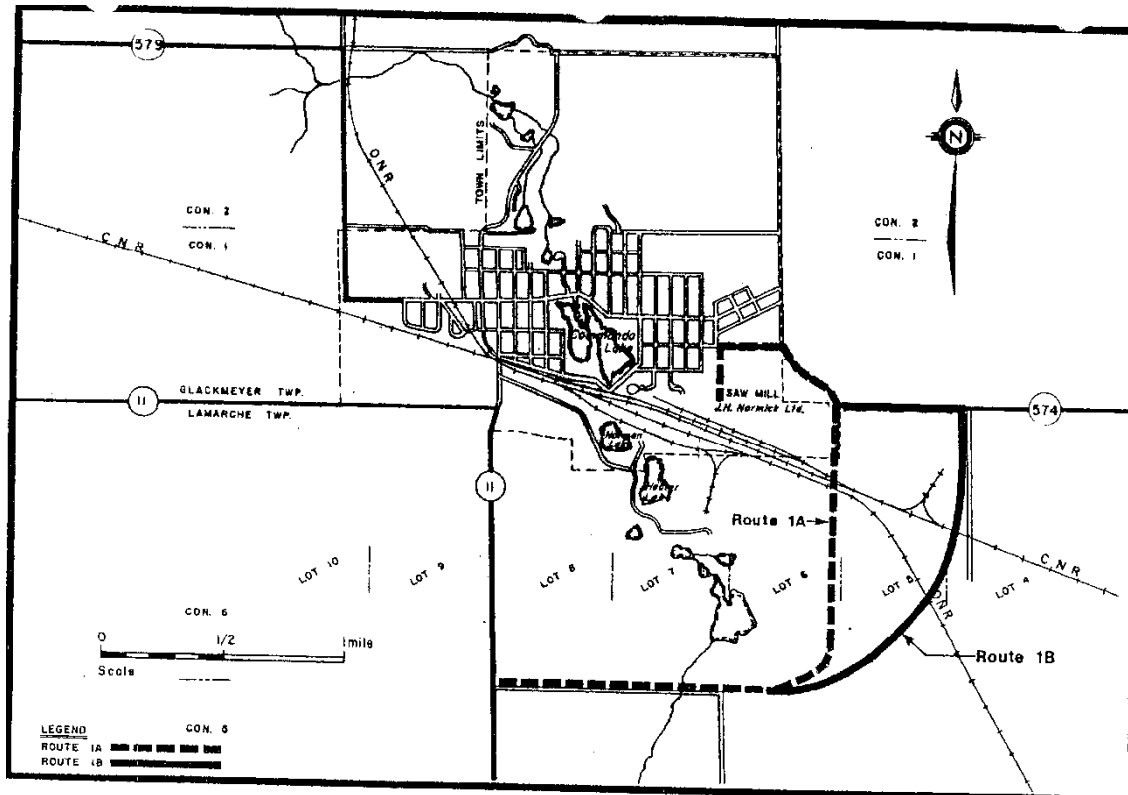
#### 1.1.1.1 Cochrane Truck By-Pass Study (1980)

In 1980, Cochrane completed the *Cochrane Truck By-Pass Study*. The study analyzed traffic through Cochrane, including traffic destined for the local saw mill, and traffic with a destination in Cochrane. Alternative by-pass routes were developed and evaluated, including a by-pass to the south, and upgrades

to the existing municipal road network. Cochrane identified concerns that traffic in the community would increase and commented that traffic was a hazard to school children and pedestrians. At the time, the Ministry of Northern Affairs and Ministry of Transportation and Communications Ontario determined that there was not sufficient commercial traffic to warrant a by-pass.

The preferred route selected at the time is provided in Exhibit 4.

**Exhibit 4: Route 1A, Cochrane Truck By-Pass Study (1980)**



### 1.1.1.2 Business Plan for a Proposed Truck By-Pass (2006)

In 2006, Cochrane prepared a second study: *A Business Plan for a Proposed Truck By-pass within Cochrane*. The study was initiated based on an increase in truck volumes through Cochrane, and identified the following primary issues:

- Risk of contamination of Commando Lake from a truck accident
- Risk to health and safety of residents living along existing routes
- Traffic congestion caused by truck traffic in the commercial core
- Financial burden on Cochrane from the operation and maintenance of routes through Town for truck traffic that serve an interprovincial purpose





### 1.1.1.3 Wilson Road Extension

In 2003, the Town of Cochrane and Detour Gold requested funding from the Ministry of Northern Development and Mines to construct an industrial road on an unused rail bed from the Ontario Northland Transportation Commission (ONTC) rail yard in Cochrane to Wilson Road; and to upgrade Wilson Road to Highway 652. The improvements were to support the increase in the movement of heavy equipment and dangerous goods being transported by rail to support the mining industry, and allowed materials arriving by rail to by-pass the residential area of Cochrane minimize the potential for impacts to the municipal drinking water supply. The project was completed in February 2013.

### 1.1.1.4 Railway Street Reconstruction

In 2015, Cochrane initiated a Municipal Class Environmental Assessment (MCEA) study for the reconstruction of Railway Street / 3rd Avenue, including stormwater management and cycling lanes. The study included evaluating alternatives to improve the curve at Commando Lake, minimize salt runoff to the lake, and the potential for a roundabout at Railway Street / 3rd Avenue. Details of the recommended improvements are provided in Section 4.3. At the time of writing of this report, construction was scheduled to start in 2016.

### 1.1.1.5 Multi-Modal Facilities

Multi-modal facilities provide infrastructure and equipment to load and off-load materials to and from truck and rail. These facilities can support reducing truck traffic on the roadway network by providing alternative shipping methods. The Town of Cochrane has been working with the Ontario Northland Railway Commission (ONTC) and local industry, including Detour Gold, to identify a site and secure funding for a multi-modal yard featuring infrastructure and equipment to load/off-load to/from truck and rail for mining goods and materials.

The current proposal is to provide the infrastructure to allow for the delivery of bulk fuel and grinding media by rail. However, Cochrane has identified the future potential for additional sites to support forestry, agriculture, and additional commercial industries. The potential sites are provided in Appendix A.

## 1.1.2 Policy Context

### 1.1.2.1 Provincial Transportation Framework

The Ministry of Transportation strives to be a world leader in moving people and goods safely, efficiently and sustainably to support a globally competitive economy and a high quality of life. The Ministry's current priorities include:

- Building the next generation of Transit and Transportation Infrastructure, including collaborating with partner ministries, municipalities, local governments, transit agencies, citizens and experts to build a seamless, province wide transportation network

- Developing a Transportation Policy Framework, including continuing to work with the Minister of Northern Development and Mines to implement the Growth Plan for Northern Ontario — including the development of the Northern Ontario Multimodal Transportation Strategy
- Strengthening Road Safety, including maintaining Ontario’s safe roads by continuing to address areas of concern, such as pedestrian, cycling and truck safety, driver distraction and impaired driving

The Ministry of Transportation’s actions are also guided by the transportation policies related to both Transportation Systems and Transportation and Infrastructure Corridors that are part of the *Provincial Policy Statement* (PPS). These policies include, but are not limited to:

- Providing transportation systems that are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs
- Making efficient use of existing and planned infrastructure
- Integrating transportation and use considerations
- Planning for and protecting corridors and rights-of-way for transportation, transit, and infrastructure facilities to meet current and projected needs

### 1.1.2.2 Provincial Policy Statement (2014)

The *Provincial Policy Statement* (PPS) is issued under the *Planning Act* and was most recently updated in 2014. The PPS provides policy direction for matters of provincial interest related to land use planning and development, but does not directly regulate planning policy for municipalities. Policies within the PPS that relate directly to this study include:

*Policy 1.6.3*

*Prioritizes investment in current infrastructure, stating that “the use of existing infrastructure and public service facilities should be optimized” before consideration is given to developing new infrastructure.*

*Policy 1.6.7.3*

*As part of a multimodal transportation system, connectivity within and among transportation systems and modes should be maintained and, where possible, improved.*

*Policy 1.6.8.2*

*Major goods movement facilities and corridors shall be protected for the long term.*

### 1.1.2.3 Growth Plan for Northern Ontario (2011)

The *Growth Plan for Northern Ontario* was prepared and approved under the *Places to Grow Act* (2005), and took effect on March 3, 2011. The Growth Plan indicates that: ‘the transportation system within Northern Ontario will be planned and managed with an emphasis on opportunities to...link major markets, resource development areas, and economic and service hubs...[and to]create or strengthen linkages between economic and service hubs and rural and remote communities...’. Cochrane is within the boundaries of the Growth Plan.

The Growth Plan was designed as a strategic framework to guide decision-making and investment planning over the next 25 years, and aims to achieve the goals set out in the *Places to Grow Act*, which defines how communities in Ontario should grow and develop. Transportation policies within the growth plan include planning and managing the transportation system to:

- Optimize the capacity, efficiency, and safety of the existing transportation system
- Link major markets, resource development areas, and economic and service hubs
- Meet the needs of the existing and emerging priority economic sectors and help implement regional economic plans
- Enhance connectivity among transportation modes including rail, road, marine and air
- Create or strengthen linkages between economic and service hubs and rural and remote communities
- Reduce emissions and other environmental impacts associated with transportation

#### 1.1.2.4 Northern Ontario Multimodal Transportation Strategy

The *Northern Ontario Multimodal Transportation Strategy* (NOMTS) was initiated in 2015 by the Ministry of Transportation and the Ministry of Northern Development and Mines (MNDM). This study is a key initiative to support the implementation of transportation directions as a part of the *Growth Plan for Northern Ontario*. Highway, marine, air, rail, and other modes of transportation are being considered as the strategy is taking an integrated multimodal transportation approach. Ultimately, the strategy will recommend transportation improvements through to 2041 to meet a variety of transportation planning objectives.

A number of background studies have been initiated to support the multimodal transportation strategy. Reports applicable to this study, including relevant data from these studies relevant to the Cochrane area, where applicable, are listed below:

- *Draft Socio-Economic Context Working Paper* (IBI, February 2016) —describes existing and future potential population characteristics as well as existing and future potential economic sector performance
- *Draft Climate Change Context Working Paper* (IBI, January 2016) —describes how a changing climate affects the current northern transportation system today and in the future
- *Draft Geographic and Policy Context Working Paper* (IBI, December 2015) —describes the physical geography characteristics of Northern Ontario and how these have shaped the transportation system and the settlement patterns in the North today

*Mining activity in Northern Ontario is currently focused on the Sudbury and Cochrane areas. Mined aggregates, logging and agriculture rely almost exclusively on large trucks to move goods, making the provincial highway system an essential connection...Rail is also used to move higher valued outputs from sawmills, pulp and paper facilities, large manufacturers, and base metal mines but the majority of rail movements in the region are through trips between Southern Ontario and Western Canada.*

*Many towns have developed along major highways. As natural resource industries have grown, the truck traffic has become incompatible with urban street traffic.*

*Some municipalities have highlighted potential by-pass routes in order to better accommodate heavy trucks passing through communities by routing them around urbanized areas... Cochrane has also identified the issue of re-routing heavy truck traffic around downtown to reduce potential conflicts. Section 10.5 of Cochrane's Official Plan recognizes the role of the provincial highways as through routes for truck traffic (Town of Cochrane, 2014). To maintain the commercial traffic flow and reduce the need to travel through residential areas, Cochrane is examining the feasibility of a by-pass road to re-route through traffic around Cochrane.*

- Transportation Requirements for Economic Development Sectors in Northern Ontario (2013)—provided a complete year 2011 supply chain picture of commodity flows for each sector and forecast future commodity flows based on current flows and industry forecasts
- Commercial Vehicle and Passenger Surveys and Reports—a summary of origin-destination surveys were undertaken at 37 commercial vehicles sites and 10 passenger vehicle sites

The above studies contributed to the development of Phase 1 of the Strategy. The purpose of Phase 1 was to identify the Study Framework and Regional Assessment. This phase was documented in *The Draft Northern Ontario Context: Implications and Consideration for Strategy Development* (IBI, May 2016).

The report summaries consultation with the public, First Nation Métis peoples and communities, and stakeholder and identifies seven planning objectives that will ultimately help to guide the NOMTS.

The planning objectives include the following:

- Enhancing Mobility and Connections for Northern Communities
- Improving Access for Remote Communities
- More Efficiently Moving People and Goods between Northern and Southern Ontario
- Enhancing Interprovincial Links and Border Crossings
- Identifying and Integrating New Infrastructure to Support Major New Economic Development
- Supporting Northern Ontario Tourism through Transportation Improvements
- Enhancing Connectivity and Access for Northern Industries

#### 1.1.2.5 Official Plan for the Cochrane and Suburban Planning Area (2014)

The purpose of the *Official Plan* (OP) is to guide future physical development in the Cochrane and Suburban Planning Area, through the establishment of practical objectives and policies that consider relevant social, economic, and environmental aspects.

The OP recognizes the importance of Highway 11 as a major highway in the Cochrane area and identifies Highway 11's contribution to the economic vitality of Cochrane, and the highway's utility as a corridor to transport goods and people to and from the community.

Section 10.5 of the OP identifies that Council will examine the feasibility of constructing a by-pass road as an alternate truck route connecting Highway 11 (south of Cochrane) to Highway 652 (east of Cochrane). Cochrane has been pursuing this goal through ongoing meetings with the Ministry of Transportation.

## 1.2 STUDY OVERVIEW AND APPROACH

The Transportation Needs Assessment (TNA) process is part of the ongoing management and administration of the transportation system by the Province and others. Assessment of needs can result in a number of recommendations, including initiating a study, initiating major and minor improvements, initiating routine maintenance, monitoring a situation, or ‘doing nothing’. Because of the range of potential outcomes, the transportation needs assessment process includes the following key steps:

1. Identifying transportation problems and opportunities
2. Evaluating and selecting reasonable alternatives, including ‘do nothing’
3. Developing potential transportation study objectives
4. Initiating the study process

This study includes steps 1 to 3 listed above, and the Transportation Needs Assessment Report is the conclusion of this study. Step 4 would require the initiation of a Class Environmental Assessment (EA) study under the Ministry of Transportation’s (MTO) *Class EA for Provincial Transportation Facilities* (2000).



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## 2.0 Consultation

This section of the report provides an overview of the consultation approach and agency and stakeholder consultation conducted for this study.

### 2.1 CONSULTATION APPROACH

This study included targeted consultation with the Town of Cochrane, relevant Indigenous Peoples, external agencies, and stakeholders as described in the sections below. The consultation program aimed to notify all interested parties of the study; to provide an opportunity for input to the study; and to provide relevant information.

#### 2.1.1 Contact List

Early in the study, a contact mailing list was developed. The list included relevant stakeholders identified by Cochrane, from previous studies, the Northern Ontario Growth Plan, and the Cochrane Board of Trade. The following Ministries, agencies, and stakeholders were contacted during the study.

**Table 2: Project Contact List**

<b>Indigenous People</b>		
Taykwa Tagamou Nation	Flying Post First Nation	Moose Cree First Nation
Wahgoshig First Nation	Matachewan First Nation	Fort Albany First Nation
<b>Provincial</b>		
Ministry of Agriculture, Food and Rural Affairs	Ministry of Northern Development and Mines	Ontario Provincial Police MP, Timmins – James Bay
Ministry of Municipal Affairs and Housing	Ministry of the Environment and Climate Change	MPP, Timiskaming – Cochrane
Ministry of Natural Resources and Forestry	Ministry of Tourism, Culture, and Sport	
<b>Municipal</b>		
Town of Cochrane	Conseil Scolaire Public du Nord-Est de l'Ontario	Cochrane Board of Trade
District School Board Ontario North East	North East Tri-Board Student Transportation	Polar Bear Habitat and Heritage Village
Northeastern Catholic District School Board	Emergency Services	Northern Ontario Regional Tourism Organization

### Stakeholder

Ontario Northland	Bison Transport	McKevitt Trucking
Abitibi River Forest Management Inc.	Blue Shark Transport Inc.	Miller Cement
Gordon Cousins Forest	Cam-Scott Transport Ltd.	NATT Enterprises Ltd.
Pineland Forest	Canxpress Ltd.	Ottawa Motor Express
Manitoulin Group of Companies	Carquest Auto Parts	Penner International Inc.
GP Northwoods	Celadon Canada Inc.	Quesnel Industrial Transportation
3 Nations Logging	Challenger Motor Freight Inc.	Quik X Transportation
Tembec Industries (Cochrane Sawmill)	Day & Ross General Freight	Roadfast
C. Villeneuve Construction Co. Ltd.	Deshaises (Laurent J Deshaies Inc. Trucking)	Rosedale Group
InnLink Concrete Ltd.	Fortier Transport Inc.	SCI White Glove
Ontario Power Generation	Gardewine North	SCL Freight
Wahgoshig Resources Inc.	Gold Freight	SLH Transport Company Canada
Moose Cree Group of Companies	H & R Transport Ltd.	Sysco
First Nation Timber Ltd.	Highland Transport	Titanium Transportation Group
Island Falls Forestry	Highlight Motor Freight	Tobler & Sons Inc.
DeBeers Canada	Jagger Canada/Jagger Freightways	Transport A. Beaumont Inc.
Detour Gold Corporation	Kingsway Transport	Trans-Provincial Freight Carriers Ltd.
Cochrane Board of Trade	Laidlaw Carriers Van	TransX Group of Companies
Cochrane and District Agricultural Society	Laidlaw Carriers Tank	TST Overland Express
Dunlogan Farms	Laidlaw Carriers Bulk LP	Versacold Logistics Services
Genier Bros. Trucking	Laidlaw Carriers - Contrans	Vitesse Transport Corporation
Gaetan Verrault Fuels	Flatbed Group	World Wide Carriers Ltd.
NPI Solar Cochrane	Levski Logistics Inc.	Yanke – A division of Celadon Canada Inc.
P & J Norris Trucking	Mackie Group	Bergeron Maybois
Rockshield Engineered Wood Products	Mammoet Transportation Inc.	Maxim Truck & Trailer
	Manitoulin Transport	

### 2.1.2 Notice of Study

This study did not include a formal notice of study commencement. However, a letter and comment sheet was mailed to agencies and stakeholders on the project mailing list on January 12, 2016. The comment sheet provided an opportunity to comment on existing transportation conditions through Cochrane, to provide background information, and to confirm their interest in the study. The comments received are summarized in Table 3. Copies of correspondence sent and received during the study is in Appendix A.

**Table 3: External Agency Comments Received**

Agency	Comments
Ministry of Northern Development and Mines	<ul style="list-style-type: none"> <li>The following economic factors should be considered for a possible truck route:                             <ul style="list-style-type: none"> <li>Safety (fewer collisions and lower chance of water contamination)</li> <li>Long term maintenance and repairs on existing route due to heavy trucks</li> <li>Improved traffic flow</li> </ul> </li> </ul>
Ministry of Natural Resources and Forestry	<ul style="list-style-type: none"> <li>Will be able to provide natural environment and limited cultural information</li> </ul>
Town of Cochrane Director of Protective Services / Fire Chief	<ul style="list-style-type: none"> <li>There is a lot of heavy traffic with dangerous goods going through the urban area going from Highway 11 to Highway 652</li> </ul>
North East Tri-Board Student Transportation	<ul style="list-style-type: none"> <li>Please notify of road closures or traffic delays</li> </ul>
District School Board Ontario North East	<ul style="list-style-type: none"> <li>Please keep informed</li> </ul>

### 2.1.3 Taykwa Tagamou Nation

Members of the Project Team and Ministry of Transportation met with members of the Taykwa Tagamou Nation on March 31, 2016. The purpose of the meeting was to provide an overview of the study and discuss possible interest in the study and subsequent project phases. During the meeting, the possible corridor alternatives were discussed. The Taykwa Tagamou Nation is in the process of mapping their historic trails, although no specific information is currently available for the area affected by the Corridor Alternatives. Meeting notes from the meeting are available in Appendix A.

### 2.1.4 Stakeholder Meetings

A series of meetings were held with key agencies and stakeholders as part of the study. An overview of the discussion with each stakeholder is provided below.

#### 2.1.4.1 Town of Cochrane

Members of the Project Team and the Ministry of Transportation met with staff from Cochrane on three occasions during the study to provide study updates, exchange information, and to obtain Cochrane’s comments as the study progressed. The meeting notes are provided in Appendix A.

Generally, Cochrane identified a significant interest in a potential by-pass of Cochrane, and provided information relating to the reconstruction of Railway Street. The following key comments were noted at the meetings:

- This study will consider alternatives that could impact the Nahma Bog, and will consult with the Ministry of Natural Resources and Forestry to confirm additional studies that would have to be initiated as part of a subsequent environmental assessment study

- Concession 2/3 is currently being used as a temporary truck by-pass in the winter, and Railway Street is being used in the summer months. There are local concerns with the use of Concession 2/3 including speed, dust, social impacts to the trailer park (noise, dust), and that the route encourages trucks to by-pass the Ministry of Transportation weigh scales located in the southwest quadrant of the intersection of Highway 11 and 3<sup>rd</sup> Avenue
- Cochrane is actively participating in a study to confirm the need for an improved multi-modal yard in Cochrane that would service current and future needs and has an interest in the development of multi-modal transfer facilities for a variety of industries
- Cochrane has met with Detour Gold and others to encourage the use of rail, where possible

#### 2.1.4.2 Ministry of Natural Resources and Forestry

Members of the Project Team and Ministry of Transportation met with the Ministry of Natural Resources and Forestry (MNRF) staff on two occasions during the study to provide study updates, exchange information, and to obtain comments as the study progressed. Meeting notes from the meetings are provided in Appendix A.

During the meetings, MNRF staff indicated that detailed assessments of the Nahma Bog are not available and subsequent environmental and hydrological investigations would be required during future study stages to confirm sensitive species and their habitat, and hydraulic function.

#### 2.1.4.3 Ontario Northland Transportation Commission

Members of the Project Team and Ministry of Transportation met with the Ontario Northland Transportation Commission (ONTC) on one occasion during the study to provide a study update, exchange information, and to obtain comments. Meeting notes from the meeting are provided in Appendix A.

During the meeting, ONTC provided information about the proposal for a multi modal facility, the potential for additional goods movement by rail, and the existing ONTC facility in Cochrane. ONTC indicated that they would support minimizing truck traffic through Cochrane.

#### 2.1.4.4 Forestry Industry

Members of the Project Team and Ministry of Transportation met with the members of the Abitibi River Forest Management Inc. (ARFMI) on two occasions during the study to provide study updates, exchange information, and to obtain comments as the study progressed. ARFMI is an alliance of forest-based companies that have an interest in harvesting or processing forest resources, primarily accessed from Highway 652 and the associated forest access roads. Much of the product is sent to Cochrane processing facilities, Rockshield Engineered Wood Products, and Tembec. These facilities also participated in the meetings. Meeting notes from the meetings are provided in Appendix A.

The following key comments were noted at the meetings:

- The forest industry is not expecting significant changes in rail / truck volumes – harvesting volumes are set by Ministry of Natural Resources and Forestry

- December to March is the peak harvest and truck movement season – wood can be harvested and stockpiled for processing over the year
- There would be an interest in a new route south of the existing railway, with minimal out of way travel

#### 2.1.4.5 Detour Gold

Members of the Project Team and Ministry of Transportation met with Detour Gold on two occasions during the study to provide study updates, exchange information, and to obtain comments as the study progressed. Meeting notes from the meetings are provided in Appendix A.

During the study, Detour Gold provided details of current and proposed future goods movement to and from the mine. The following key comments were noted at the meetings:

- The primary concern with the existing route is the risk of a potential spill or truck collision through Cochrane
- Cochrane has identified Concession 2/3 as the preferred route for hazardous materials; however, the condition of this route is not ideal for commercial vehicles, and a local citizens group was formed to oppose the route
- When Detour was initially reviewing transportation routes to and from the mine, an alternative route to by-pass the community was considered via Hanna Road; however, there were concerns about safety due to a lack of cellular coverage in the area, and the route would by-pass the weigh scales
- Convenience is a major factor when selecting a route

#### 2.1.5 Stakeholder Survey

A survey was circulated to stakeholders via a project website ([www.cochranehighwaysurvey.ca](http://www.cochranehighwaysurvey.ca)) intended to supplement the traffic data collection for the Transportation Needs Assessment Study. The goal of the survey was to gather specific Cochrane area goods movement data from local and regional industries.

A link to an electronic questionnaire was distributed via email and by mail on January 14, 2016. Both the email and the letter included a link to [www.cochranehighwaysurvey.ca](http://www.cochranehighwaysurvey.ca), where a link to the Survey Monkey survey was available. Responses were requested to be submitted by February 5, 2016. A follow up email was sent to those who had not yet responded on February 4, 2016.

A list of the businesses and stakeholders that received the survey is provided in Appendix B. The results of this survey are provided in Section 4.6.2.3.

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## 3.0 Existing Environmental Conditions

This study included a review of available secondary source and background materials to confirm existing natural, social, cultural, and transportation conditions in the study area as described in the following sections. An overview of existing conditions in the study area is provided in Exhibit 6.

### 3.1 NATURAL ENVIRONMENT

#### 3.1.1 Soil and Surficial Geology

The study area is within the geological area known as the Canadian Shield. The typical surficial geology of the study area includes:

- Overburden materials consisting of primarily silty-clay in a glaciolacustrine plain deposit and to the northeast, clayey till in a ground moraine deposit
- A sand and gravel esker, oriented in a north-south direction, bisecting the urban area of Cochrane and the glaciolacustrine plain and ground moraine deposits in the north part of the study area
- The esker within the study area encompasses a series of lakes and surface water features extending from Lillabelle Lake in the north to Slaughter House Lake in the south
- Peaty organic deposits are interspersed within the glaciolacustrine plain deposit, becoming a predominant feature in the southeasterly portion of the study area and from the northerly extent of the Nahma Bog

#### 3.1.2 Groundwater and Sourcewater Protection

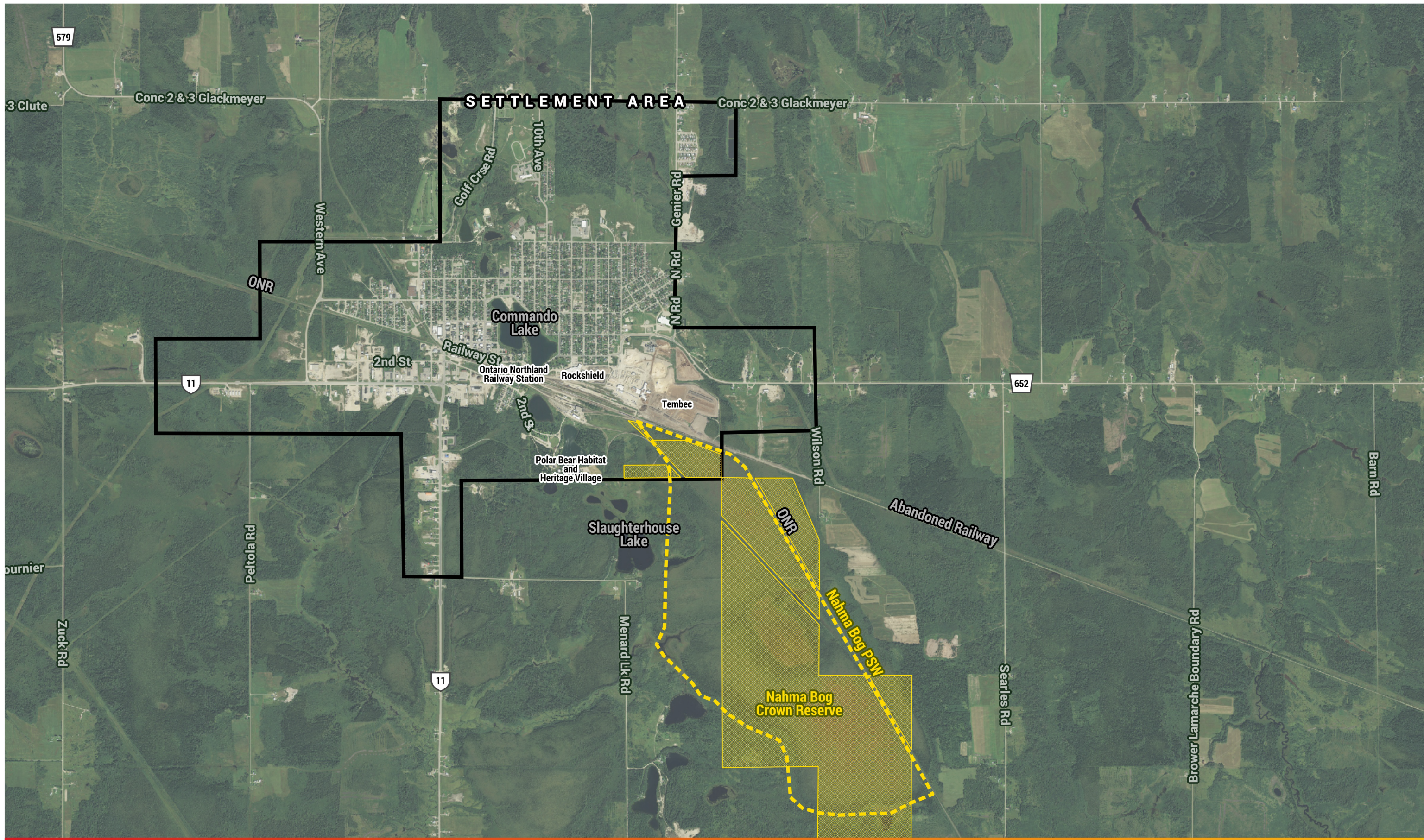
Cochrane provides municipal water services within the urban boundary. The municipal water supply includes three groundwater wells, including a source located in Commando Lake.

A review of the Ministry of the Environment and Climate Change (MOECC) Well Water Information System indicates that there are several water wells located primarily along the rural roads within the study area, including Highway 11 and Highway 652.

The study area is not located within a Sourcewater Protection Region or Area.

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### 3.1.3 Fisheries and Aquatic Resources

Lakes, rivers, streams, ponds, and many wetlands provide fish habitat. Intermittent and seasonally flooded areas can also provide important habitat for some fish species at certain times of the year. In addition, in-water structures such as logs, stumps, and other woody debris, pools, and riffle areas, riparian and aquatic vegetation and groundwater recharge/discharge areas also provide fish habitat. Fish habitat includes the watercourses that act as corridors that allow fish to move from one area to another.

The study area is located within the jurisdiction of the Northeast Region/Cochrane District of the MNRF, and resides in Fisheries Management Zone 8 (FMZ8). The study area is not located within the jurisdiction of a Conservation Authority.

Fisheries resources in the study area were identified through data provided by the MNRF. The drainage area of FMZ8 is characterized by a variety of aquatic habitats, including larger river systems that drain into the Arctic watershed, small, relatively shallow lakes, and wetlands. Watercourses in the study area support habitat for many coldwater and coolwater fish species, including sportfish. No DFO 'Distribution of Species at Risk' mapping is available for the study area; however, a review of the MNRF's Natural Heritage Information Centre (NHIC) Biodiversity Explorer, did not identify the presence of any aquatic Species-at-Risk in the study area. Schedule C of the Official Plan for the Cochrane and Surrounding Planning Area (April, 2014) indicates that there are no fish spawning areas within the study area.

### 3.1.4 Terrestrial Ecosystems

The terrestrial ecosystem is defined as the interaction of land, water, and biotic components functioning as an ecological unit over space and time, and includes vegetation, wetlands, wildlife, and wildlife habitat. Primary terrestrial concerns related to transportation projects include loss of habitat or habitat function, and habitat fragmentation.

The background research conducted for terrestrial ecosystems included:

- Identifying significant natural areas within the study area, and whether or not they have potential for rare species or Species at Risk (SAR) to occur
- Identifying if there are SAR within the study area via MNRF's NHIC
- Identifying typical vegetation communities within the study area
- Identifying potential wildlife based on the study area's Ecoregion

#### 3.1.4.1 Vegetation

The study area is located within the Abitibi River Forest Management Unit and Lake Abitibi Ecoregion. Ecoregion 3E falls within Rowe's (1972) Boreal Forest Region. The vegetation communities within the study area are therefore typical of the Lake Abitibi Ecoregion and include boreal, with black spruce, white spruce, balsam fir, jack pine, tamarack, white birch, trembling aspen, and balsam poplar. All of the identified vegetation communities and botanical species are considered to be provincially common.

### 3.1.4.2 Wetlands

Wetlands are an important natural resource since they maintain and improve water quality, help control flooding, provide habitat for fish and wildlife, provide conditions for a wide variety of vegetation, and contribute to the substantial social and economic benefits of hunting, fishing, wildlife viewing, and appreciation of nature in general. The study area includes non-Provincially Significant Wetlands, forests, meadows, thickets, and other partially vegetated areas influenced by human interference and disturbance. Wetlands are sensitive to drainage alterations that can be caused by highway development.

The Nahma Bog and Poor Fens Conservation Reserve is located south of the ONR and is a Provincially Significant Wetland. The Bog consists of two blocks. The north block is located within the study area and is known as the Nahma Bog. This block contains two rare plant species and one rare animal species. It is also a candidate Area of Natural and Scientific Interest (ANSI) and was designated as a significant site under the International Biological Programme (IBP).

### 3.1.4.3 Rare Vegetation and Animals

Two rare plant species and one rare animal species have been previously identified within the Nahma Bog and Poor Fens Conservation Reserve as part of the IBP checksheet: *Sphagnum pulchra* and *Sphagnum linbergi*. The IBP operated from 1964 to 1974, and it is unknown as to whether these two plants are still present in the bog. The rare animal species identified was the bog lemming, a provincially rare mammal. A great grey owl, a species of Special Concern on Ontario's SAR list, was observed on site in 1991.

### 3.1.4.4 Wildlife and Wildlife Habitat

The provision of wildlife habitat is one of the primary ecological functions of natural heritage features and areas. The protection and management of wildlife habitat is fundamental to the maintenance of self-sustaining populations of wildlife and biodiversity. The species present are expected to be dominated by provincially common and widespread species, provincially uncommon, and few rare species. A review of the MNR's NHIC indicated that there are no SAR within the vicinity of the study area.

Terrestrial wildlife typical of the region containing the study area includes those found in Table 4.

The Cochrane Polar Bear Habitat is located adjacent to the south shore of Hector Lake. The focus of the facility is to provide the best alternative environment for polar bears by mimicking the natural life cycles that occur in the wild. The facility also creates research opportunities, encourages education, and allows the public to observe bears in a natural, non-invasive setting (Cochrane Polar Bear Habitat, 2013). The facility is an initiative of the Cochrane and Area Community Development Corporation (Town of Cochrane, 2006).



**Table 4: Terrestrial Species**

Type	Species
Mammals	Moose, grey wolf, American marten, Canada lynx, snowshoe hare, red squirrel, beaver, and eastern red-backed vole
Birds	Common loon, great blue heron, bald eagle, osprey, spruce grouse, gray jay, common raven, Philadelphia vireo, Tennessee warbler, palm warbler, yellow-rumped warbler, Lincoln's sparrow, white-throated sparrow, purple finch, and pine siskin
Reptiles and Amphibians	Spotted salamander, boreal chorus frog, wood frog, mink frog, midland painted turtle, and eastern garter snake

### 3.1.4.5 Significant Wildlife Habitat

Significant wildlife habitat is defined as habitat that is ecologically important in terms of features, functions, representation or amount and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System, and is protected under the *Provincial Policy Statement*.

Significant wildlife habitat includes habitats that fall within any of the following four categories:

- Seasonal concentration areas: such as moose aquatic feeding and wintering areas, deer winter yards, colonial bird nesting sites, reptile hibernacula, and heronries
- Rare vegetation communities and specialized habitats for wildlife: such as old-growth forest, areas known to support an unusually high diversity of species or vegetation communities, raptor nesting habitat, areas with concentrations of cavity trees and moose or bear forging areas
- Habitats for species of conservation concern, excluding the habitats of endangered and threatened species: such as special concern species or species ranked provincially S1-S3, excluding the habitats of endangered or threatened species
- Animal movement corridors

The following significant wildlife habitat has been identified within the study area:

- Nesting area (Town of Cochrane OP)
- Nahma Bog and Poor Fens Conservation Area

The potential for specialized wildlife habitat for additional species, such as bat hibernacula, deer, and moose movement corridors, denning sites for mink, otter, marten, fisher, and eastern wolf, and specialized wildlife habitat for birds, such as raptor wintering areas, may occur in the study area. However, no records pertaining to these habitats were provided by the MNRF.

### 3.1.4.6 Potential Contamination

There are no landfills located within the study area and no known contaminated sites based on the information provided in the Cochrane *Official Plan*. However, there is the potential for potentially contaminated sites based on past activities (i.e., industrial, commercial, institutional) and land use.

## 3.2 SOCIO-ECONOMIC CONDITIONS

### 3.2.1 Land Use

*The Official Plan for the Cochrane and Suburban Planning Area (2014)* provides guidance for land use and development within the study area. Outside of Cochrane's urban area, the study area is identified primarily as Agricultural and Rural Areas. Cochrane has traditionally been associated with the railway, and it was historically a major railway centre for both freight and passenger services. Residential properties are generally located within the settlement boundary. However, there are also rural homes/businesses along municipal roads, including Glackmeyer Concession Road 2/3, Glackmeyer Concession 1/Highway 652, Nahma Road, Peltola Road, and Highway 11.

Railway Street / Third Street provides the primary route through Cochrane, connecting Highway 11 and Highway 652. Land use along this corridor includes a combination of commercial properties (e.g., hotels), industrial properties (e.g., Rockshield and Tembec), and residential properties. The corridor also includes Commando Lake, which is used locally as a recreation area. There are no schools on Railway Street / Third Street.

Cochrane is the owner of the Polar Bear Habitat, located south of the ONTC railway.

Cochrane's primary economic activities include forestry, logging, mining, tourism, and a small recreational industry.

### 3.2.2 Student Transportation

North East Tri-Board Student Transportation provides student transportation for all students of District School Board Ontario North East, which includes those in Cochrane.

### 3.2.3 Emergency Services

In Cochrane, fire and ambulance services are provided by the Cochrane Fire Department, and the Cochrane District Social Services Administration Board (CDSSAB), respectively. Police service in the study area is provided by the Ontario Provincial Police.

The Fire Hall is located within the study area at 23 5<sup>th</sup> Street.

There is one hospital within the study area. The Lady Minto Hospital is an acute care facility located at the intersection of 9<sup>th</sup> Avenue/8<sup>th</sup> Street, Cochrane (CDSSAB, 2015).

There is an Ontario Provincial Police station (Cochrane Detachment) located at 64 3<sup>rd</sup> Avenue, Cochrane.

### 3.2.4 Aggregates

A review of Schedule B of Cochrane's Official Plan indicated that there are no active or surrendered aggregate removal areas in the vicinity of the study area.

There are numerous aggregate deposits to the east and north of the Town of Cochrane, and as of the time of writing of this report, there are 10 current aggregate license holders that utilize Highway 652 to access

their licenced areas. Generally, aggregate materials are transported by truck on Highway 652 to Highway 11 south and west.

### 3.2.5 Mining

There are no operating mines within the study area.

The Detour Lake Gold Mine is located 185 km northeast of the study area. The mine's only access is via Highway 652, with all mine traffic currently directed through Cochrane. Detour also has facilities located in Cochrane, including an office, storage, and staff parking facility.

Detour Gold has been in discussions with Cochrane and the Ontario Northland Railway to develop a multi-modal facility that would allow for the movement of some of their materials by rail. During the study, Detour Gold provided specific details regarding the facility's goods movement. This information was incorporated into the traffic assessment.

### 3.2.6 Forestry

Forestry is a key industry in the study area. Forest resources in Ontario are managed by MNRF, through licensed areas adjacent to Cochrane: the Abitibi River and Gordon Cousins Forests. Cochrane also includes two major wood product processing facilities, Rockshield Engineered Wood Products, and Tembec. Both facilities use a combination of rail and road to move goods to and from the processing facilities. Access to these facilities is via 3<sup>rd</sup> Street, with the entrances located near the 3<sup>rd</sup> Street / 2<sup>nd</sup> Street intersection.

There have been recent changes to the local forestry industry, due to the closure of the processing facility in Iroquois Falls, and subsequent closure of the Industrial Road Abitibi River Bridge, which led to the loss of a key route that connected Highway 652 to Iroquois Falls.

### 3.2.7 Recreation and Tourism

The Official Plan for the Cochrane and Suburban Planning Area identifies a desire to expand resource-based recreation and tourism to encourage economic growth and development. This includes providing for and protecting recreational features in the municipality, including green spaces, trails, and parks.

Lake Commando is a well-used recreation resource in Cochrane, with fishing, a beach along the north shore, docks, and a pathway around the lake. Cochrane is planning to enhance the recreation in this area and has launched the Commando Lake Development project with the goal to establish a long-term vision for the area.

The Cochrane Polar Bear Habitat (CPBH) is the only captive bear facility in the world dedicated solely to polar bears. This research and tourism development also includes a Heritage Village focusing on the rail's impact to Cochrane, and an Antique Snowmobile Museum.

### 3.2.8 Agriculture

The Cochrane area includes soils that have the potential to support an agricultural industry, and the Town of Cochrane's *Strategic Plan* (2003) has identified this sector as important for economic growth. During

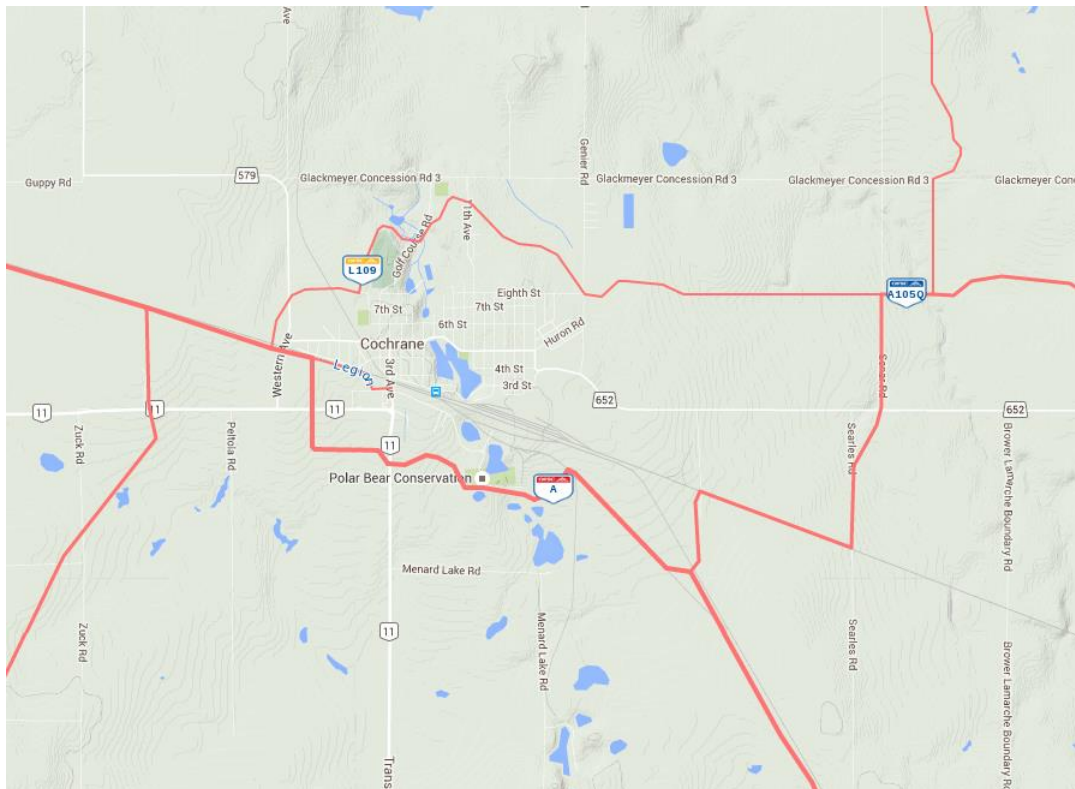
the study, the Town indicated that there are several new producers in this industry, and noted that transportation of agricultural goods should also be considered.

### 3.2.9 Snowmobile Trails

The study area is located within District 15 of the Ontario Federation of Snowmobile Clubs (OFSC), and the Polar Bear Riders Snowmobile Club maintains the snowmobile trails within the study area. There are three trails as described below and depicted in Exhibit 7:

- ‘Trunk Trail A’ that runs southeasterly from Cochrane to Iroquois Falls. A portion of the trail runs through the north block of the Nahma Bog and Poor Fens Conservation Reserve. Most of the trail runs adjacent to the Ontario Northland Railway right of way
- ‘Feeder Trail A105Q’ that runs northerly along Searles Road and Sonar Road, then easterly along Glackmeyer Concession Road 3
- ‘Club Trail L109’ that runs from Trunk Trail A to Feeder Trail A105Q through Cochrane including the Lee Golf Club

Exhibit 7: Snowmobile Trails



### 3.3 CULTURAL ENVIRONMENT

A review of the Aboriginal Affairs and Northern Development Canada (AANDC) Aboriginal and Treaty Rights Information System (ATRIS) indicates that there are no reserves within the study area. New Post No. 69A (Taykwa Tagamou Nation) is located approximately 20 km southeast of the study area. The study area is located within the Wabun First Nations' Traditional Territory (AANDC, 2015).

Cochrane has not identified any archaeological or heritage sites within the study area.

#### 3.3.1 Built Heritage and Cultural Landscape

The Official Plan for the Cochrane and Suburban Planning Area (Section 6.2) did not designate any Cultural Heritage sites within Cochrane.

Adjacent to the Cochrane Polar Bear Habitat is the Heritage Village. The village is comprised of a train station, antique snowmobile museum, homestead, blacksmith shop, and trapper's cabin. These buildings contain artifacts dating back to the early 1900s (CPBH, 2015).

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## 4.0 Existing Transportation Conditions

### 4.1 PROVINCIAL HIGHWAYS

There are three provincial highways within the study limits. Highway 11 is a critical transportation facility in this part of the province and is classified as a north-south highway that generally heads north-south in the study area but changes to east-west at the Highway 11 / 3<sup>rd</sup> Avenue intersection. Highway 11 is a major trucking and access route in Northern Ontario, and serves as the major local road providing access to businesses and the community of Cochrane. The posted speed limit on this section of Highway 11 varies between 70 and 90 km/h.

Highway 652 and Highway 579 are secondary provincial highways. Highway 652 is used primarily to access the Detour Lake Gold Mine, provides access to forestry and aggregate resources, and provides access for small communities northeast of Cochrane, making it an important economic route in the north. Highway 652 is generally east-west within the study area and begins east of the Genier Road / 3<sup>rd</sup> Street intersection. The highway's eastern terminus is at the Kattawagami River.

Highway 579 is generally north-south and provides access through the Town of Clute to the Abitibi River, where there is a ferry to cross the river to Gardiner.

The posted speed limit on Highway 652 is 60 km/h west of Genier Road, and 90 km/h east of Genier Road; and the posted speed limit on Highway 579 ranges from 80 km/h to 90 km/h.

There are no provincial highway connections linking these highways in the study area.

### 4.2 MUNICIPAL ROADWAYS

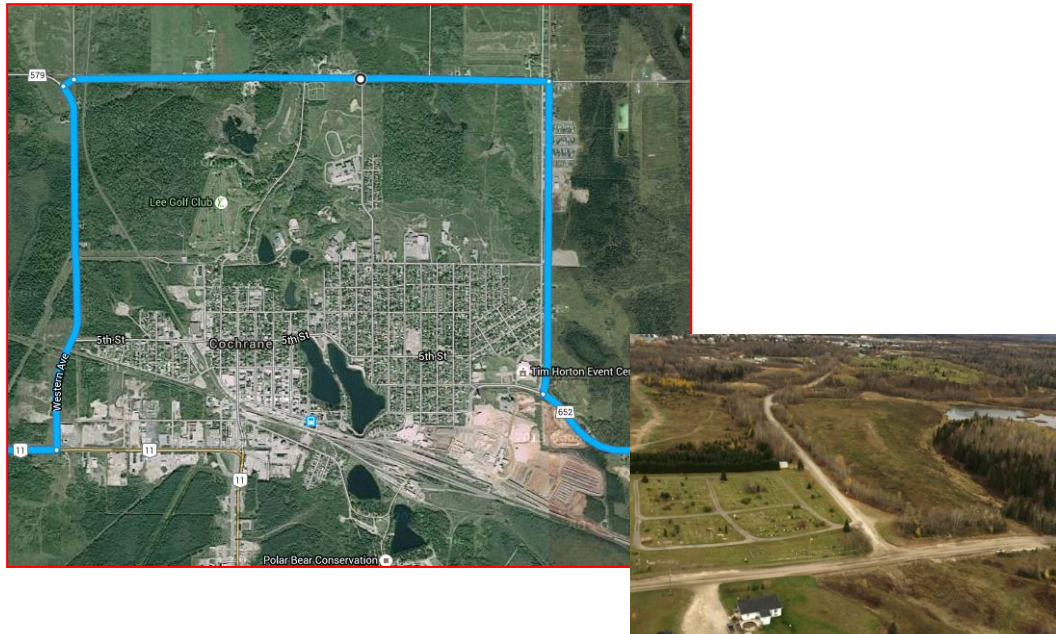
There is a well-established network of rural municipal roads within the study area.

Railway Street / 3<sup>rd</sup> Street serves as the primary route through Cochrane, connecting Highway 11 to Highway 652. Wilson Road was recently constructed to provide additional access to the Ontario Northland Railway (ONR) property.

Cochrane has identified Concession 2/3 as the preferred route for hazardous materials. However, this route is seasonal and the condition of the road is not always suitable for commercial vehicles. This route is depicted in Exhibit 8.



Exhibit 8: Town of Cochrane Seasonal Hazardous Materials Route



#### 4.3 EXISTING TRUCK ROUTE

The existing truck route through Cochrane is identified in Exhibit 9 and includes 3rd Avenue, Railway Street, and 3rd Street East, which provides a connection between Highway 11 to the south and west, and Highway 652 to the east.

The existing route includes the following roadway characteristics:

- An at-grade railway crossing on 3rd Avenue, between Highway 11 and Railway Street
- A 72 degree turn at the intersection of 3rd Avenue and Railway Street
- Sixteen at-grade intersections and several commercial entrances between and including the intersections of Highway 11 and 3rd Avenue, and Genier Road and Highway 652
- An urban cross-section on Railway Street, with sections of sidewalk and on-street parking
- A tight horizontal curve (R-35 m) around the south end of Commando Lake, where trucks typically cross the centreline of the roadway when traveling through the curve
- Steep grades on Railway Street in the vicinity of Commando Lake, which are sometimes difficult for trucks to navigate in winter conditions
- 3rd Street has an urban cross-section with residential entrances
- A tight horizontal curve (R-30 m) on 3rd Street, opposite the Tembec weigh scales, where trucks often park on the roadway while waiting to access the scales

Exhibit 9: Existing Truck Route



In 2015, Cochrane initiated a Municipal Class Environmental Assessment (MCEA) study for the reconstruction of Railway Street / 3rd Avenue, including stormwater management and cycling lanes. The study included evaluating alternatives to improve the curve at Commando Lake, minimize salt runoff to the lake, and the potential for a roundabout at Railway Street / 3rd Avenue.

The Recommended Plan for the proposed improvements includes:

- The reconstruction of Railway Street from 3rd Avenue to approximately 80 m east of Lakefront Avenue (i.e., no improvements to the curve on 3rd Avenue around Commando Lake)
- A roundabout at Railway Street and 3rd Avenue, which also includes intersecting legs from 2nd Avenue, and 3rd Street (5 legs total)
- Railway Street from 3rd Avenue to Lakefront Avenue will have an urban cross-section with 12.5 m of pavement (permitting on-street parking)
- Railway Street will have 2.0 m wide sidewalks on both sides of the road from 3rd Avenue to 5th Avenue
- Railway Street from 5th Avenue to Lakefront Avenue will have a 2.0 m wide sidewalk on the north side and a 2.4 m wide bike lane behind the curb on the south side
- Railway Street reconstruction will also include the removal and replacement of the existing watermain and storm sewer

#### 4.4 ADDITIONAL ROADWAYS

There is a network of forest access and private roads that provide access to resources and recreation. Industrial Road provided access between Highway 652 and Iroquois Falls. However, the bridge over the Abitibi River requires replacement and was closed to traffic by the private owner in 2015.

The Land Use Permits (LUPs) that provided co-funded maintenance on key forestry routes expired in December 2015, including the connection between Cochrane and Iroquois Falls; and the Trans Limit Road from Quebec. Anecdotally, the local forestry industry indicated that the lost access to Industrial Road (with the failure of the bridge) has led to approximately \$400,000 in increased transportation cost.

#### 4.5 RAILWAYS

The Ontario Northland Transportation Commission (ONTC) mainline runs through Cochrane, south of Railway Street. Cochrane was the northernmost station stop for the discontinued Northlander trains and is the southernmost stop for Polar Bear Express that provides service between Cochrane and Moosonee. Next to the station is Cochrane Yard, a small train yard used to store rail cars. During the study, the ONTC advised that there are over 20 lines in the Cochrane Yard, which are used frequently for switching and train storage/ loading / unloading.

The rail bed of the former CNR mainline that runs east-west from Cochrane to Quebec is used as a recreational trail on a year round basis.

#### 4.6 TRAFFIC STUDY

The purpose of the traffic study was to utilize current traffic data and local knowledge to gain a better understanding of the existing traffic patterns and conditions; and the possible traffic benefits associated with a by-pass of the existing route. The traffic study included data collection and analysis of the data that was collected. The traffic study is available in Appendix C.

##### 4.6.1 Existing Traffic Volumes

Existing traffic volumes in the study area were confirmed by completing on site traffic counts over seven days in the fall of 2015; and comparing the data to traffic volumes collected by the Ministry of Transportation in 2014 and 2015. The on-site traffic counts were taken at the following eleven locations recording volume, speed and classification:

1. Highway 579, 1.5 km north of Highway 11
2. Highway 579, 18.2 km north of Highway 11, ICS 579-115
3. Glackmeyer Road, Con. 2/3, 700 m east of Highway 579
4. Genier Road, 100 m north of Highway 652
5. Highway 652, 200 m west of Genier Road
6. Highway 652, 1.7 km east of Genier Road

7. Highway 652, 800 m east of Highway 574
8. Nahma Road, 300 m east of Highway 11
9. Highway 11, 410 m west of Highway 579
10. Highway 11, 5.1 km south of Cochrane, ICS 11-553
11. Railway Street, between Lakefront and 12th Avenue

A 7-day volume and classification count was also conducted using video on 3<sup>rd</sup> Avenue between Highway 11 and the rail crossing in the Town of Cochrane (Location 12). Turning movement counts for an 8-hour period were also conducted at the intersections of Highway 11 at 3<sup>rd</sup> Avenue (Location 13) and at 3<sup>rd</sup> Street at the Tembec Access (Location 14). The traffic count locations are provided in Exhibit 10.

The traffic data collected in 2015 was compared to the traffic volumes collected by the Ministry in 2014, as well as historical volume summaries provided from the Ministry for the years 2009-2013. Based on the results of the traffic data collection, annual average daily traffic (AADT) volumes were confirmed and are provided in Exhibit 11. Local industry and the Town of Cochrane identified an increase in traffic volumes in the winter since this is the peak season for the movement of forestry related truck activity. The 2040 projected future volumes during this winter peak season are also provided in Exhibit 9.

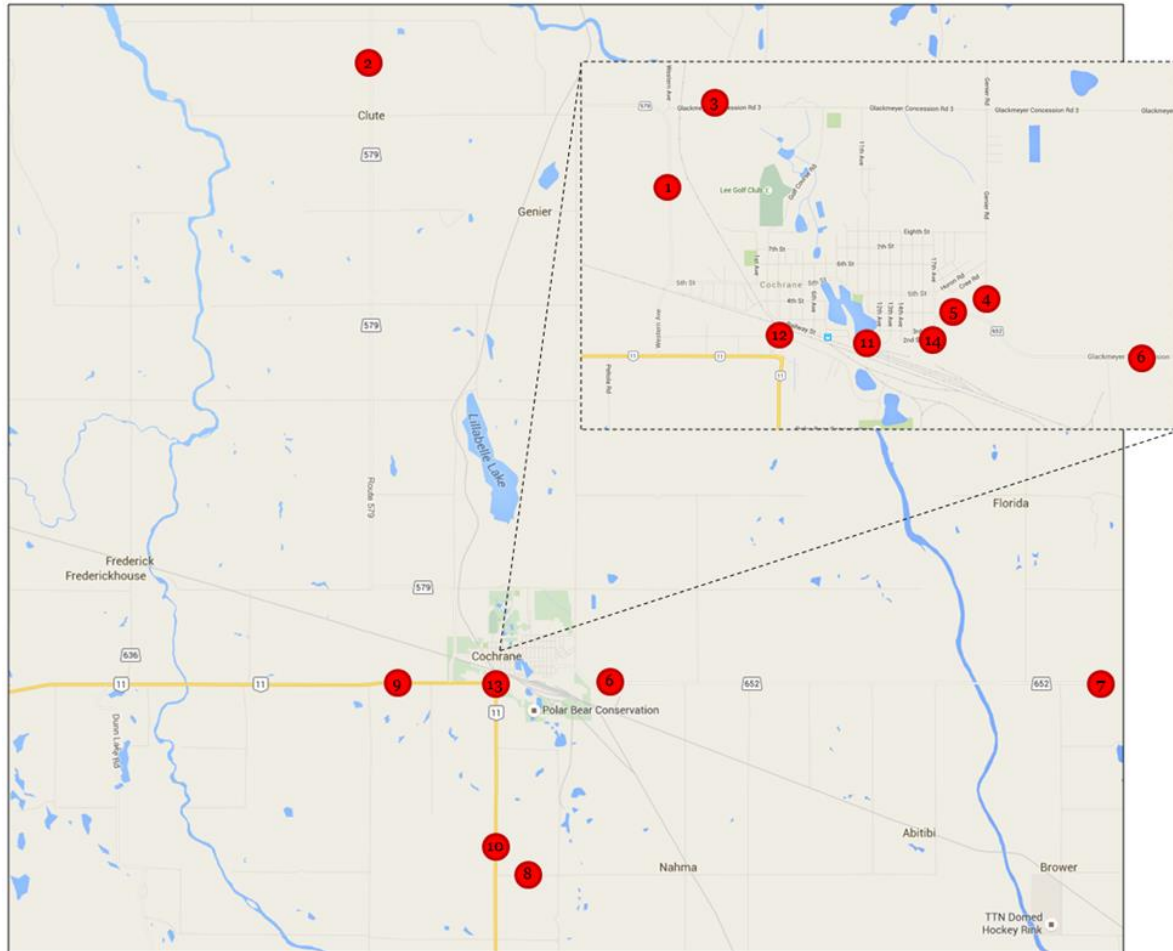
#### 4.6.2 Collisions

Collision information along the existing truck route through Cochrane is limited and a full set of data could not be obtained from the Ontario Provincial Police (OPP). The traffic study included a review of limited collision data provided by the Ministry of Transportation for the 25-year period from 1989 to 2013 from approximately the Tembec weigh scale entrance easterly. A review of those collisions yielded the following results:

- A total of seven collisions over the most recent 5-year period (collision rate of 0.7 acc/Mvkm)
- A total of four collisions involving trucks over the entire 25 year period, all of which were classified as property damage only, and occurred near the intersection of Genier Road



Exhibit 10: Traffic Count Locations



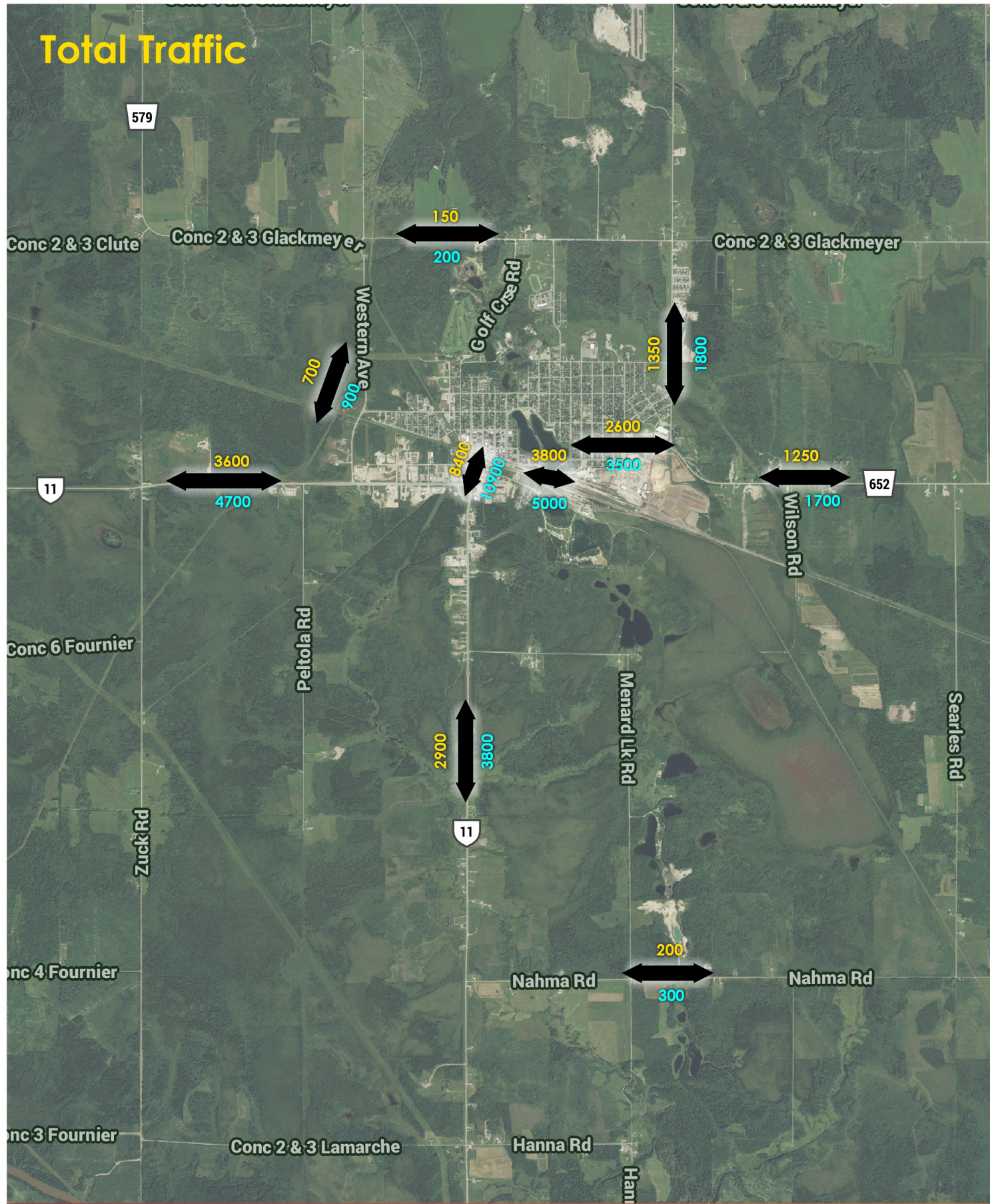
#### 4.6.2.1 Vehicle Classification

As part of the traffic data collection process, vehicles were classified into five categories based on wheelbase length as follows:

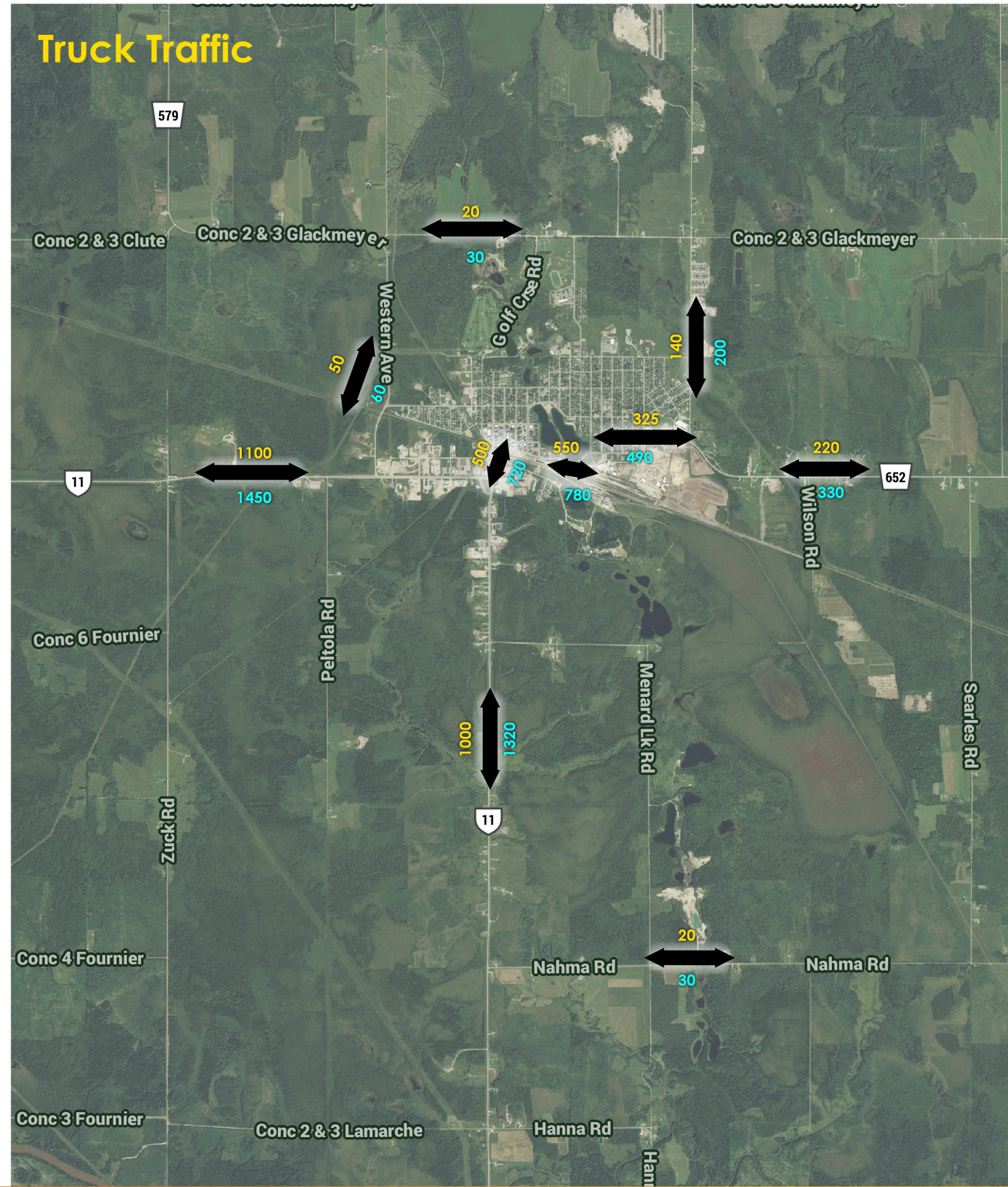
1. 0 – 659 cm long – motorcycles, passenger cars including pick-ups and vans
2. 650 – 1249 cm long – single-unit trucks including buses
3. 1250 – 2109 cm long – multi-unit trucks including single trailer 5-axle trucks
4. 2110 – 2300 cm long – multi-trailer trucks
5. >2301 cm long – oversize trucks



# Total Traffic



# Truck Traffic



20 2015 Count Volumes (Summer)  
 20 2040 Projected Volumes (Winter)





All trucks (Categories 2 – 5) were combined to calculate the percentage of total traffic as summarized in Table 5.

**Table 5: Truck Volume Comparison and Percent of Total Traffic**

Location	AADT			
	2014	2015	Change in Volume	Change in Percentage
1. Highway 579 1.5 km N of Highway 11, ICS 579-110	141 (15.1%)	52 (7.4%)	-89	-63%
2. Highway 579 18.2 km N of Highway 11, ICS 579-115	18 (10.5%)	24 (12.7%)	+6	+33%
3. Glackmeyer Road Con 3 700 m E of Highway 579	84 (21.0%)	18 (11.2%)	-66	-78%
4. Genier Rd 100 m N of Highway 652	150 (9.2%)	142 (10.5%)	-8	-5%
5. Highway 652 200 m W of Genier Road	341 (11.0%)	326 (12.2%)	-15	-4%
6. Highway 652 1.7 km E of Genier Road	172 (14.6%)	222 (17.9%)	+50	+29%
7. Highway 652 800 m E of Highway 574, ICS 652-110	125 (35.6%)	144 (41.0%)	+19	+15%
8. Nahma Road 300 m E of Highway 11	23 (9.8%)	20 (9.9%)	-3	-13%
9. Highway 11 410 m W of Highway 579	1,043 (29.5%)	1,082 (30.2%)	+39	+3%
10. Highway 11 5.1 km S of Cochrane, ICS 11-553	1,354 (41.0%)	1,032 (35.7%)	-322	-24%
11. Railway Street, btwn Lakefront and 12 <sup>th</sup> Avenue	-	548 (14.6%)	-	
12. 3 <sup>rd</sup> Avenue btwn Highway 11 and Rail Crossing	-	504 (6.0%)	-	

The result of the analysis indicated that truck volumes have decreased at Locations 1 and 3 (Highway 579 and Glackmeyer Road Concession 2/3), although there is no corresponding decrease at Location 4 (Genier Road) which suggests that these trucks may be using an alternate route to Genier Road. Similarly, there is a decrease of over 300 trucks at Location 10 (south of Cochrane), but a decrease in truck volumes of this magnitude is not apparent at any other location.

#### 4.6.2.2 Historical Traffic Growth

Historical Annual Average Daily Traffic (AADT) traffic volumes along Highway 11 and Highway 652 were reviewed from 1988 to 2015. Based on the review, traffic growth along Highway 11 was low at 0.1% per year; and traffic growth along Highway 652 was 1.0% per year. Based on this historic data, to estimate future (2040) traffic volumes, 1.0% per year growth rate was applied to all of the 2015 traffic volumes.

### 4.6.2.3 Additional Traffic Data

A number of additional data sources were reviewed in addition to the historical traffic data provided by the MTO and the data collected as part of this study. The following sections provide a summary of the additional data that was collected.

#### MTO 2012 Commercial Vehicle Survey

The Ministry undertakes a Commercial Vehicle Survey (CVS) every five years, across all days of the week, at over 100 sites across Ontario. This is a voluntary survey that collects information about trip characteristics, vehicle classification, weights and dimensions, commodity details, border crossings, routes and trip origin, and destination through a roadside interview.

The Ministry provided information for the Town of Cochrane and the Cochrane Census Division from the 2012 CVS for which survey data was collected between 2010 and 2014. Key points of information from the CVS include:

- On a typical day, the Cochrane Census Division generates or attracts over 1,500 commercial trips with a commodity value of over \$21 million, commodity weight of 15 million kg, and an average goods value on each commercial vehicle of \$14,000
- 44% of the commercial vehicle activity can be attributed to the Towns of Cochrane and Iroquois Falls
- On a typical day, 518 commercial vehicle trips passed through the Cochrane Census District with a trip origin or destination in the Town of Cochrane with a commodity value of \$4.1 million, commodity weight of 4.7 million kg, and an average goods value on each commercial vehicle of \$8,000
- The average trip length of a commercial vehicle trip with an origin or destination in the Town of Cochrane is 133 km, with 97% of the kilometres of travel occurring in Ontario
- Of the typical 518 commercial vehicle trips with a trip origin or destination in the Town of Cochrane, the three largest commodity groups were forestry (100 daily trips, 19%), consumer goods (38 trips, 7%) and fuel related vehicles (27 daily trips, 5%). Over 25% of the trips (i.e., 138 of the 518 trips) had no commodity group identified

#### MNRF Forestry Management Unit Information

As the forestry industry represents a major commercial stakeholder, information was requested from the Ministry of Natural Resources and Forestry (MNRF) for available commercial vehicle information. MNRF provided commercial vehicle trips of roundwood from Crown lands by forestry management unit (FMU). Truck volumes associated with wood obtained from private lands and finished products being shipped out to destinations was not included in this information. From the information provided, it was observed that there is a great deal of variability in commercial vehicle traffic given the prevailing economic conditions, license terms, and other factors. For example, in reviewing FMU information at Tembec, the volume of annual roundwood deliveries averaged approximately 400,000 m<sup>3</sup> from 2004 to 2014, but was as low as 103,000 m<sup>3</sup> and as high as 608,000 m<sup>3</sup>. Furthermore, this information indicated changes in forestry commercial vehicle travel patterns as the volume of shipments decreased in some FMUs and increased in



others over the years. Approximately 50% of the total volume of roundwood over the past 5 years originated from the Abitibi River FMU to the north of Town.

### Goods Movement Survey

A questionnaire was distributed to key stakeholders in the study area to supplement the traffic data collection for the study. The goal of the survey was to gather specific Cochrane Area goods movement data from local and regional industries.

A link to an electronic questionnaire was distributed via email and by mail on January 14, 2016. Both the email and the letter included a link to [www.cochranehighwaysurvey.ca](http://www.cochranehighwaysurvey.ca), where a link to the survey was available. Responses were requested to be submitted by February 5, 2016. A follow up email was sent to those who had not yet responded on February 4, 2016.

In total, 15 stakeholders completed the survey. Generally the respondents included businesses that represented a large volume of the commercial traffic currently travelling through Cochrane. The following is a summary of the survey results:

- The majority of goods are transported via truck
- The number of hauling trips varied widely between respondents, with a range from 2 – 6 trips per week to 80 trips per day
- The number of trips was found to change over the course of the year for 88.9% of respondents. The survey showed that four of nine respondents conduct more trips in winter months (December-March), with those stakeholders indicating that they conduct 40 – 75% of their trips in the winter. This data is consistent with information received from the forestry industry
- When asked to project conditions over the next 15 years, seven of ten respondents indicated that their number of trips would increase. Additionally, five of eight question respondents indicated that their business had plans for expansion, and that this expansion would subsequently lead to additional traffic
- Approximately half of the respondents indicated that the existing route does not meet their transportation needs
- The Wahgoshig First Nation, responded with comments indicated that they travel through town more frequently now, due to the closure of the Industrial road trestle bridge crossing the Abitibi River
- Most respondents would welcome a new route that by-passes Cochrane – but not many identified a major issue/concern with the existing route

General comments included the following:

- Benefits of a truck route could include safety, reduced maintenance requirements on existing route, improved traffic flow
- A by-pass route should still require easy access to Town
- Concerns with safety / risk and moving dangerous goods / heavy truck traffic
- Character of current route

A copy of all supplementary traffic data, surveys, comment sheets received, and a summary of survey responses is provided in Appendix B.

A summary of the trip information obtained as part of the survey is provided in Table 6. The trips noted in the table represent total commercial vehicle trips for each entity, and do not necessarily reflect the volume of vehicles using the existing truck route on Railway Street.

**Table 6: Commercial Vehicle Trip Information from Survey**

Company	Peak Daily Commercial Vehicle Trips (Two-Way)	Peak Season	Trip Origin/Destination within Town Boundaries?
Detour Gold Corp	44 trips	Spring (40% of annual trips)	Partial (4 per day with a destination at ONR Yard)
Genier Bros Trucking	154 trips	Winter (40% of annual trips)	Partial
Laidlaw Carriers Tank LP	6 trips	None	No
Moose Cree Group of Companies LP	50 trips	Winter (60% of annual trips)	Yes (Tembec, Rockshield)
Tembec Woodlands	240 trips	Winter (75% of annual trips)	Yes (Tembec)
Rockshield Engineered Wood Products ULC	Info not provided	Winter (50% of annual trips)	Yes (Rockshield)

The majority of the commercial vehicle trips identified as part of the survey have an origin or destination in Cochrane. Although the data obtained does not provide a complete picture of commercial traffic in Cochrane, and some data may also be double counted due to trips reported by a commercial vehicle carrier (e.g., Genier Bros) and by a destination such as Tembec, the data was still considered to be valuable to supplement the data collection for this study.

Based on the commercial vehicle information from the survey, the highest levels of forestry related truck activity occurs during the winter, when passenger vehicle traffic is also typically lower when compared to other seasons.

#### 4.6.2.4 Trip Types

Exhibit 12 shows the definitions used as part of this study to define trip types. The following three trip types have been used for the purposes of analysis:

- **Internal Trip:** A trip with both an origin and a destination in Cochrane (i.e., never leaves the Town)
- **Local Trip:** A trip with either its origin or destination in Cochrane
- **Provincial Trip:** A trip with neither its origin nor destination in Cochrane (i.e., simply driving through Cochrane)

**Exhibit 12: Trip Types**



**4.6.2.5 Existing Travel Patterns**

The additional data collection and data collected for this study provided insight to the way that cars and trucks move through the study area. However, there are still information gaps, particularly with regards to passenger car travel patterns and specific route choices. Based on the limited information available, a trip matrix of trip origins and destinations through the Study Area was estimated with the initial assumption that approximately 50% of trips were local (i.e., with an origin or destination in the Town of Cochrane) and then adjusted to fit with the other information available. However, when considering the existing turning movement count at Highway 11 S at Highway 11 W/3rd Avenue, it appears this value is closer to 60% or 70%. The 50% value was carried forward as a conservative estimate.

The trip matrix was limited to trips between major directions. In general, trips between Highway 11 W/Highway 11 S and Highway 652/Genier Road were assumed to use Railway Street/3rd Street. Information on internal trips (i.e., with both an origin and destination in the Town of Cochrane) was not available and as a result, the matrix does not account for all internal trips. The trip matrix for all vehicle types is shown below in Table 7.

**Table 7: Daily Trip Matrix for all Vehicles**

Origin/Destination	West	South	North	East	Cochrane	Total
West	-	650	235	235	1,230	2,350
South	650	-	190	190	870	1,900
North	235	190	-	100	375	900
East	235	190	100	-	325	850
Cochrane	1,230	870	375	325	Undetermined	2,800
Total	2,350	1,900	900	850	2,800	8,800

The trip matrix for trucks is shown below in Table 8.

**Table 8: Daily Trip Matrix for Trucks**

Origin/Destination	West	South	North	East	Cochrane	Total
West	-	375	25	35	290	725
South	375	-	13	50	222	660
North	25	13	-	5	57	100
East	35	50	5	-	75	165
Cochrane	290	222	57	75	Undetermined	644
Total	725	660	100	165	644	2,294

#### 4.6.2.6 Provincial Traffic on Railway Street

The average annual daily traffic volume in 2015 on Railway Street is approximately 3,450 vehicles per day (vpd). Applying a conservation growth rate of 1.0% per annum yields a projected 2040 annual average daily traffic volume of approximately 4,425 vpd. Truck volumes on Railway Street in 2040 are estimated to be approximately 700 vpd (assuming the same growth as total traffic, and no major changes to economic traffic generators).

The information provided in Table 7 and Table 8 shows provincial traffic volumes (i.e., traffic with no destination or origin in Cochrane) for major movements around the Town. Movements between the following origins and destinations are assumed to use Railway Street:

- To/from West and North (470 total and 50 truck trips)
- To/from West and East (470 total and 70 truck trips)
- To/from South and North (380 total and 25 truck trips)
- To/from South and East (380 total and 100 truck trips)

The above movements account for approximately 1,700 vehicles per day and 245 trucks per day, and represent the maximum volume of potential provincial divertible traffic from Railway Street to a by-pass. The difference between the total traffic volumes and the potentially divertible traffic volumes represents the local or internal component of traffic (i.e., with an origin and destination in Cochrane) currently using Railway Street. Based on the forecasts for the year 2040, it is assumed that approximately 2,725 vehicles per day and 455 trucks per day using Railways Street are local (approximately 60-65% of the total volume). The results of the traffic volumes are summarized in Table 9.

**Table 9: Daily Traffic on Railway Street (without by-pass)**

Vehicle Type	Existing (2015)			Forecasted (2040)		
	Existing Volume	Provincial Traffic Volume	Forecasted Local and Internal Traffic Volume	Forecasted Volume	Forecasted Provincial Traffic Volume	Forecasted Local and Internal Volume
Total Vehicles	3,450	1,325	2,125	4,425	1,700	2,725
Trucks	550	190	360	700	245	455



## 5.0 Transportation Problem and Opportunity

The provincial highway network plays a key role in linking communities and supporting economic prosperity across Ontario. As discussed in this report, over the last several decades Cochrane has identified safety, maintenance, and operational concerns with the use of Railway Street / 3<sup>rd</sup> Avenue as the primary connection between Highway 11 and Highway 652.

### 5.1 PROBLEM

The transportation problem is related to existing conditions, safety, and provincial transportation network connectivity as discussed in this report and summarized below:

- There is no provincial highway connection between Highway 11 and Highway 652, which is having an impact on the existing municipal road network
- There is a potential for significant traffic delays if the existing route (Railway Street) is closed
- The character of the existing truck route (Railway Street) is not desirable for heavy industrial truck traffic
- The existing roadway alignment in the vicinity of Commando Lake is challenging for heavy industrial trucks
- There is potential for a spill of dangerous good into Commando Lake (drinking water source)

### 5.2 OPPORTUNITY

The Ministry of Transportation has policies and strategies in place that seek to make sure that the Provincial transportation system is connected, optimized, efficient, and safe. Currently, a municipal road, Railway Street / 3<sup>rd</sup> Avenue, is providing the key connection for the movement of people and goods between Highway 11 and Highway 652; and between Highway 11 and key commercial traffic generators including Tembec, Rockshield, and the ONR rail yards.

The transportation opportunity is to review alternatives that could improve safety and operations for goods movement and the travelling public through Cochrane by:

- Providing a provincial roadway connection between Highway 11 and Highway 652
- Providing an alternate route for provincial traffic and trucks, which could improve safety on the local road network
- Providing an alternate route for the transportation of dangerous goods, , which could reduce the risk of a spill into Commando Lake
- Separating local and provincial traffic, which could improve the character of 3<sup>rd</sup> Avenue, Railway Street, and 3<sup>rd</sup> Street East, and would minimize the long-term maintenance requirements on the local road network

To address the identified opportunity, a range of possible by-pass alternatives were developed as part of this study to determine their feasibility.

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## 6.0 Alternatives to the Undertaking

The Environmental Assessment Act requires that ‘reasonable alternatives’ be considered in addressing the identified problem. This involves two levels of analysis. The Alternatives to the Undertaking considers a broad range of alternatives that could address the project needs. Once the best alternative is selected, the Alternative Methods of Carrying out the Undertaking is studied.

### 6.1 PRELIMINARY SCREENING OF ALTERNATIVES TO THE UNDERTAKING

Alternatives to the Undertaking were identified and assessed to identify the most reasonable approach to address the identified problems or opportunities. A screening process was developed to evaluate these options and select only the most reasonable alternatives for more detailed study. This process allows unreasonable alternatives or alternatives that do not meet provincial policy requirements to be eliminated from consideration in advance of detailed development and evaluation stage.

The screening of the conceptual alternatives uses two screening criteria. They are:

- Does the alternative realistically address all of the problem/opportunity statements?
- Does the alternative, when used in combination with other alternatives, make a significant contribution towards realistically addressing all of the problem/opportunity statements?

Only those alternatives that satisfy at least one of the above criteria are carried forward. Generally, the preliminary screening of the Alternatives to the Undertaking indicates that most of the options should be eliminated from further consideration. The remainder of this section provides an overview of the Alternatives to the Undertaking and the results of the screening for each alternative.

An overview of the screening is provided in Table 10.

**Table 10: Screening of Alternatives to the Undertaking**

Description	Addresses Problem	Comments
Do Nothing / Improve existing facility	Maintains existing condition	Planned improvements may improve traffic operations
Expand Roadway Network	Provides an alternative route	Has the potential to attract a significant volume of commercial traffic Potential for environmental impacts
Transportation Demand Management (i.e., restrict access to municipal road network or modify peak travel times)	Restricting access to the existing route without providing an alternate route does not support economic growth in the region	Eliminate from further consideration

Description	Addresses Problem	Comments
Expand use of existing railway	Has the potential to minimize truck use but would not likely change a significant volume of commercial traffic through Cochrane	Goods would still be required to travel to and from the existing railway / multi modal facility Does not currently have the potential to reduce commercial traffic volumes significantly through Cochrane

## 6.2 ALTERNATIVE SOLUTIONS

Following the preliminary screening of alternatives, the ‘Do Nothing’ and Expand Roadway Network were carried forward for additional study since they have the ability to best address the identified problems. To further assess the potential to expand the roadway network, conceptual corridor alternatives for a possible by-pass of Cochrane were developed by considering significant factors within the study area, including topography, environmental constraints, land use constraints, the current municipal and provincial transportation networks, previous studies, and secondary source information. An overview of the corridor alternatives is provided in The Alternative Solutions are provided in Table 11 and in Exhibit 14 to Exhibit 19.

**Table 11: Alternative Solutions**

Alternative	Description	Comments
<b>A</b>	Do Nothing / Maintain Existing Route	Planned improvements may improve traffic operations
<b>B</b>	New Route to North	Will not likely attract a significant volume of commercial traffic
<b>C, D</b>	New Route to South	May attract up to 30% of commercial vehicles Impacts Nahma Bog
<b>E, F</b>	New Route to South	Will not likely attract a significant volume of commercial traffic

The alternatives that were carried forward for further study are discussed below.

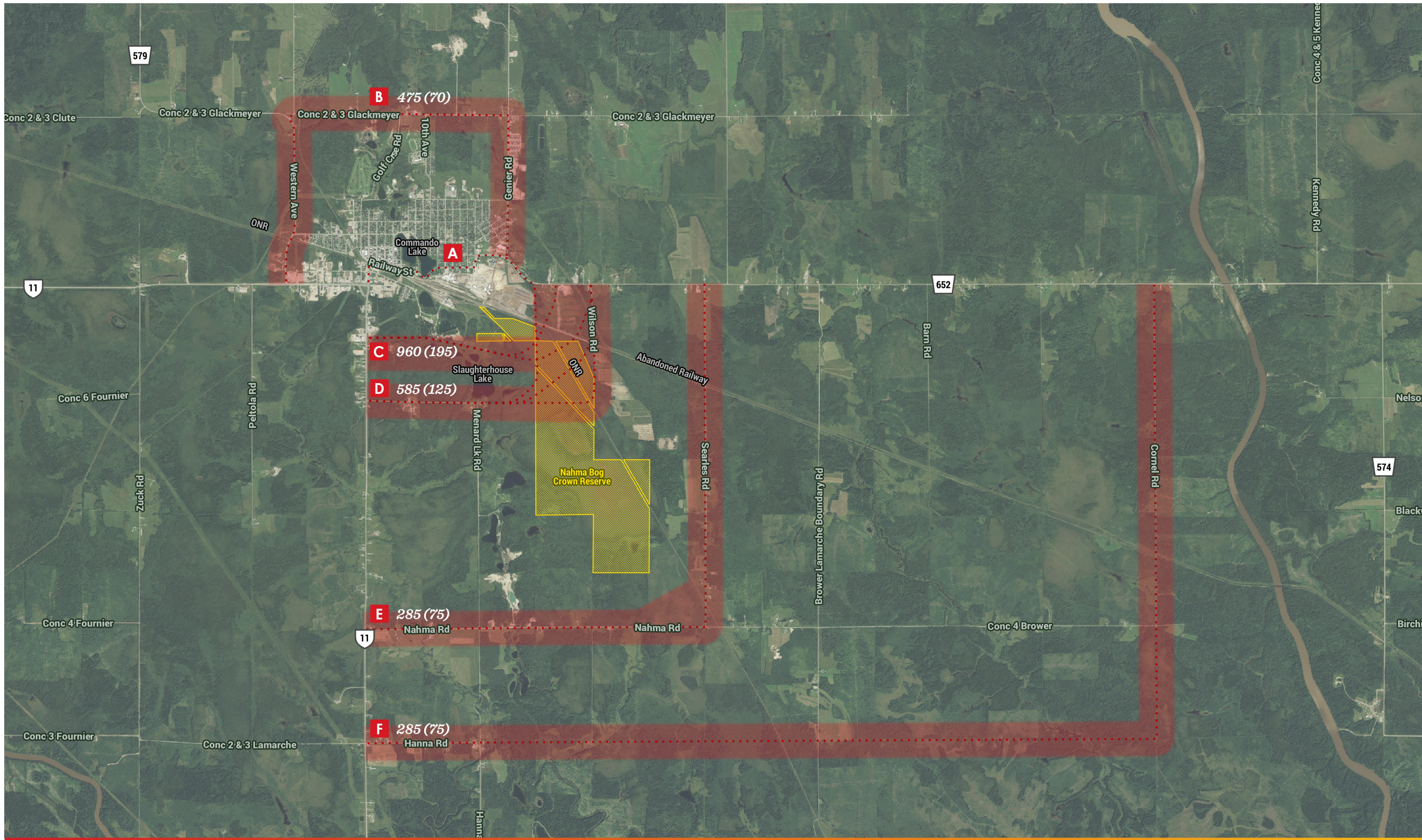
### 6.2.1 Do Nothing

Alternative A is the ‘Do Nothing’ alternative. However, it takes into consideration the current Town of Cochrane project that includes reconstructing Railway Street / 3<sup>rd</sup> Street from and improvements to the Railway Street / 3<sup>rd</sup> Avenue intersection as outlined in Section 4.3. Construction is expected to start in 2016.

This alternative maintains the existing condition and has the potential for minor operational improvements but does not address:

- Commercial and industrial vehicle traffic on the municipal road network – Railway Street provides both a local and a provincial function and does not adequately accommodate pedestrians and cyclists





**B** 475 (70)

**C** 960 (195)

**D** 585 (125)

**E** 285 (75)

**F** 285 (75)

Nahma Bog  
Crown Reserve



Ontario  
 Transportation Needs Assessment  
 Highway 11 and Highway 652, Cochrane  
 Assignment 5014-E-0037

- Corridor alternatives
- Possible routes
- 585 (195)  
all trucks
- Potential traffic diversion (vpd)





- Operational issues in the vicinity of Commando Lake – there are challenging geometrics based on the location of the road between the lake and the ONTC rail yard, which can cause trucks to travel in the opposing lane around the curve
- Cochrane’s concerns regarding ongoing maintenance requirements on Railway Street as a result of heavy traffic
- Movement of dangerous goods through Cochrane
- The risk of spills in the vicinity of Commando Lake, a local drinking water source

### 6.2.2 New Route to North

Alternative B is a new route to the north that could include improvements to the existing municipal road network (Genier Road, Concession 2 & 3, Western Avenue), along the existing seasonal hazardous materials route, local by-passes of the existing roads, or a new route parallel to the existing municipal roads. During the study, industry stakeholders identified concerns with a northern route, and noted that the out-of-way travel would limit the use of this route. This alternative addresses the operational issues in the vicinity of Commando Lake, but has the potential to transfer the concerns regarding commercial and industrial vehicle traffic on the municipal road network, and it does not address municipal maintenance requirements as a result of heavy traffic or provide a provincial connection between the existing highways.

### 6.2.3 New Route to South

In previous studies, Cochrane identified a preference for a new route to the south. Alternatives C, D, E and F, provide various possible routes south of Cochrane. Alternative C and Alternative D generally connect to Highway 11 in the vicinity of Menard Lake Road and to Highway 652 in the vicinity of Wilson Road. Alternative E connects to Highway 11 in the vicinity of Nahma Road, and to Highway 652 in the vicinity of Searles Road. Alternative F connects to Highway 11 in the vicinity of Hanna Road, and to Highway 652 in the vicinity of Cornel Road.

Alternative C would require a new roadway, while Alternatives D, E, and F could include improvements to the existing municipal road network, local by-passes of the existing roads, or a new route parallel to the existing municipal roads.

## 6.3 POTENTIAL TRAFFIC DIVERSION

To confirm that the proposed Corridor Alternatives would address the identified transportation problems, a traffic study was completed to determine if the proposed alternatives would address the transportation need and to identify the benefits of a range of conceptual alternatives.

Traffic forecasting for the 2040 horizon year was completed for each of the five corridor alternatives (i.e., Corridors B through F) by estimating a diversion percentage from the trip matrices prepared as part of the traffic study. These diversion percentages for external trips were estimated based on the change in travel distance as well as turning movements required. It should be noted that there are other ‘soft’ factors that are difficult to rationalize when drivers select their routes, particularly when it comes to using a by-pass. These include factors such as the availability of amenities to their relative location in the trip, proximity to

other amenities, and how visually interesting the route is, particularly after long stretches of highway through undeveloped areas.

A diversion percentage was also estimated for trips into/out of Cochrane to/from the external zones primarily to reflect the potential impact on truck volumes to/from Tembec and Rockshield which are both origins/destinations within the Town of Cochrane. A summary of the results are described for each of the corridor sections below. Detailed matrices are provided in Appendix C.

Corridor A is the ‘Do Nothing’ alternative and as such, traffic volumes would remain consistent with existing conditions.

### Corridor B

With the improvements to the existing municipal roads, this route could become more attractive, but the relatively large increase in travel time and distance, particularly for trucks to/from the west, would offset the ability to avoid Railway Street around Commando Lake. This corridor alternative would not provide a benefit to trucks travelling to/from the Detour Gold mine (e.g. between Highway 11 and Highway 652). While the easterly end of the corridor is in proximity to Tembec and Rockshield, because of the relatively large increase in travel time and distance, it is unlikely that a large number of forestry-related trucks would divert.

For Corridor B, the potential diversion rates are provided in the following table:

O/D	Potential Diversion (%)				
	West	South	North	East	Cochrane
West	-	0%	50%	25%	5%
South	0%	-	0%	0%	0%
North	50%	0%	-	0%	0%
East	25%	0%	0%	-	0%
Cochrane	5%	0%	0%	0%	-

Based on the assumed diversion rates, it is estimated that 475 total vehicles, including 70 trucks, could potentially be diverted to Corridor B each day.

### Corridor C

Corridor C is located south of Cochrane, and is expected to attract the most traffic since it minimizes out-of-way travel to / from the existing provincial highways. This corridor represents the shortest additional distance and travel time in comparison to Railway Street. For vehicles and trucks such as those to / from the Detour Gold mine travelling between Highway 11 S and Highway 652, this route would be very attractive. It could also potentially draw trips from Highway 11 S to/from Genier Road and from Genier Road and Highway 652 to/from Highway 11 W, including trucks to/from Tembec and Rockshield. The slightly longer travel distance would likely be offset by higher travel speeds and fewer conflicts with local traffic.



For Corridor C, the potential diversion rates are provided in the following table:

O/D	Potential Diversion (%)				
	West	South	North	East	Cochrane
West	-	0%	10%	40%	10%
South	0%	-	30%	95%	0%
North	10%	30%	-	0%	0%
East	40%	95%	0%	-	0%
Cochrane	10%	0%	0%	0%	-

Based on the assumed diversion rates, it is estimated that 960 total vehicles, including 195 trucks, could potentially be diverted to Corridor C each day.

### Corridor D

Corridor D connects to Highway 11 slightly farther to the south and to Highway 652, slightly farther to the east, when compared to Corridor C. It is still expected that most of the traffic from Highway 652 to/from Highway 11 S such as those to/from the Detour Gold mine would divert to this alternative. However, trips from Genier Road to/from Highway 11 W and Highway 11 S would likely not use this by-pass due to the additional out-of-way travel. Some traffic to/from Highway 11 W including trucks to/from Tembec and Rockshield might consider this as an alternative route to Railway Street, but it would likely be less attractive than Corridor C.

For Corridor D, the potential diversion rates shown in the following table were assumed:

O/D	Potential Diversion (%)				
	West	South	North	East	Cochrane
West	-	0%	0%	10%	3%
South	0%	-	30%	95%	0%
North	0%	30%	-	0%	0%
East	10%	95%	0%	-	0%
Cochrane	3%	0%	0%	0%	-

Based on the assumed diversion rates, it is estimated that 585 total vehicles, including 125 trucks, could potentially be diverted to Corridor D each day.

### Corridor E/F

While Corridor E and Corridor F differ in alignment, from a traffic forecasting perspective, the diverted volumes would effectively be equal. Due to the distance from Cochrane, it is expected that no internal trips to Cochrane such as those to Tembec and Rockshield would use this corridor, and there would be no attraction for any trips with a stop closer to Cochrane. For those vehicles travelling between Highway 11 S and Highway 652, it is unlikely that all vehicles would divert to the by-pass due to a range of factors such as access to amenities.

For Corridors E/F, the potential diversion rates are provided in the following table:

O/D	Potential Diversion (%)				
	West	South	North	East	Cochrane
West	-	0%	0%	0%	0%
South	0%	-	0%	75%	0%
North	0%	0%	-	0%	0%
East	0%	75%	0%	-	0%
Cochrane	0%	0%	0%	0%	-

Based on the assumed diversion rates, it is estimated that 285 total vehicles, including 75 trucks, could potentially be diverted to Corridors E/F each day.

### 6.3.2 Summary of Potential Traffic Diversions

Table 12 provides a summary of the potential traffic diversion volumes for each alternative.

**Table 12: Summary of Potential Traffic Diversion Volumes**

Corridor	Total Daily Traffic (vpd)	Total Daily Trucks (vpd)
Corridor B	475	70
Corridor C	960	195
Corridor D	585	125
Corridors E/F	285	75

\*vehicles per day (vpd)

As shown in Table 12, Corridors C and D provide the most traffic benefit. In addition to attracting the highest volumes of traffic, they have the potential to move the largest number of high risk types of vehicles (i.e., mining and forestry related) away from the existing truck route through Cochrane.

## 6.4 ADVANTAGES AND DISADVANTAGES OF CORRIDOR ALTERNATIVES

Advantages and disadvantages of the Corridor Alternatives are provided in Table 13. Additional details of the out-of-way travel and cost calculations are provided in Appendix D.

Table 13: Advantages and Disadvantages

Evaluation Factors	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<b>Highway Engineering</b>	<ul style="list-style-type: none"> <li>+ Does not result in out-of-way travel</li> <li>- Maintains existing truck traffic through Cochrane</li> <li>- Maintains commercial traffic through undesirable roadway geometrics in the vicinity of Commando Lake</li> </ul>	<ul style="list-style-type: none"> <li>• Requires a total of 1 km of out-of-way travel to access the Tembec weigh scales from the new route</li> <li>+ Has the potential to attract approximately 475 vehicles and 70 trucks / day. This represents 10% of commercial vehicles that will not be required to travel through Cochrane</li> <li>+ Has an estimated cost of \$3.04M</li> <li>• Would require the reconstruction of approximately 7.6 km of North Road, Genier Road, Concession 2-3, and Western Avenue</li> <li>• 6.2 km of out-of-way travel to and from Highway 11 N-S and Highway 652</li> <li>• 3.9 km of out-of-way travel to and from Highway 11 E-W and Highway 652</li> </ul>	<ul style="list-style-type: none"> <li>• Requires a total of 4 km of out-of-way travel to access the Tembec weigh scales from the new route</li> <li>+ Provides a shorter route to and from Highway 11 N-S and Highway 652 (-1.3 km)</li> <li>• Requires additional travel to and from Highway 11 E-W and Highway 652 (0.4 km)</li> <li>+ Has the potential to connect to a future entrance to the ONR Multi-Modal Facility</li> <li>+ Has the potential to attract approximately 960 vehicles and 195 trucks / day. This represents 28 % of commercial vehicles that will not be required to travel through Cochrane.</li> <li>- Requires a new at-grade railway crossing</li> <li>• Has an estimated cost of \$6.12 to \$6.78 M</li> <li>• Requires up to 3.7 km of new road and 0.3 km of road reconstruction</li> </ul>	<ul style="list-style-type: none"> <li>• Requires a total of 4 km of out-of-way travel to access the Tembec weigh scales from the new route</li> <li>+ Provides a shorter route to and from Highway 11 N-S and Highway 652 (-1.3 km)</li> <li>+ Has the potential to connect to a future entrance to the ONR Multi-Modal Facility</li> <li>+ Has the potential to attract approximately 585 vehicles and 125 trucks / day. This represents 18 % of commercial vehicles that will not be required to travel through Cochrane.</li> <li>- Requires a new at-grade railway crossing</li> <li>• Has an estimated cost of \$4.78M to 8.82M</li> <li>• Requires additional travel to and from Highway 11 E-W and Highway 652 (2.7 km)</li> <li>• Requires reconstruction of Wilson Road and Menard Lake Road or construction of new parallel route (4.9 km)</li> </ul>	<ul style="list-style-type: none"> <li>- Requires a total of 7 km of out-of-way travel to access the Tembec weigh scales from the new route</li> <li>+ Provides a shorter route to and from Highway 11 N-S and Highway 652 (-1.1 km)</li> <li>• Has the potential to attract approximately 285 vehicles and 75 trucks / day. This represents 10% of commercial vehicles that will not be required to travel through Cochrane.</li> <li>- Would either require the reconstruction of Nahma Road and Searles Road and / or the construction of a new parallel route (approximately 9.5 km)</li> <li>- Requires a new at-grade railway crossing</li> <li>• Has an estimated cost of \$5.40M</li> <li>- Requires 8.8 km of out-of-way travel to and from Highway 11 E-W and Highway 652</li> </ul>	<ul style="list-style-type: none"> <li>- Requires a total of 13.6 km of out-of-way travel to access the Tembec weigh scales from the new route</li> <li>+ Provides a shorter route to and from Highway 11 N-S and Highway 652 (-0.7 km)</li> <li>- Has the least potential to attract vehicles currently travelling through Cochrane. Utilized by approximately 285 vehicles and 75 trucks / day. This represents 10% of commercial vehicles that will not be required to travel through Cochrane.</li> <li>- Would require approximately 6.6 km of reconstruction to Hanna Road and Cornel Road and / or parallel routes to these roads; and construction of a new route to connect the municipal roads</li> <li>- Requires the most out-of-way travel to and from Highway 11 E-W and Highway 652 (12.4 km)</li> <li>- Requires a new at-grade railway crossing</li> <li>- Has an estimated cost of \$22.62M</li> </ul>
<b>Social &amp; Cultural Environment</b>	<ul style="list-style-type: none"> <li>+ Avoids impact to private property</li> <li>- Maintains existing travel patterns through an urbanized and residential area of Cochrane</li> <li>- Does not address risk of potential spills / emissions to Commando Lake</li> </ul>	<ul style="list-style-type: none"> <li>+ Does not directly impact private property</li> <li>- Directs additional traffic through planned and existing development on North Road, Genier Road, and Concession 2&amp;3 (75 residential, 3 commercial)</li> </ul>	<ul style="list-style-type: none"> <li>+ Attracts the most commercial traffic and has the greatest potential to minimize the risk of potential spills / emissions to Commando Lake</li> <li>- Potentially impacts up to 8 properties along the conceptual corridor</li> </ul>	<ul style="list-style-type: none"> <li>+ Attracts commercial traffic and has the potential to minimize the risk of potential spills / emissions to Commando Lake</li> <li>- Potentially impacts up to 13 residential properties along the conceptual corridor</li> </ul>	<ul style="list-style-type: none"> <li>+ Attracts commercial traffic and has the potential to minimize the risk of potential spills / emissions to Commando Lake</li> <li>- Potentially impacts up to 14 residential properties along the conceptual corridor</li> </ul>	<ul style="list-style-type: none"> <li>+ Attracts commercial traffic and has the potential to minimize the risk of potential spills / emissions to Commando Lake</li> <li>• Has the least potential impacts to properties along the conceptual corridor (6 residential)</li> </ul>

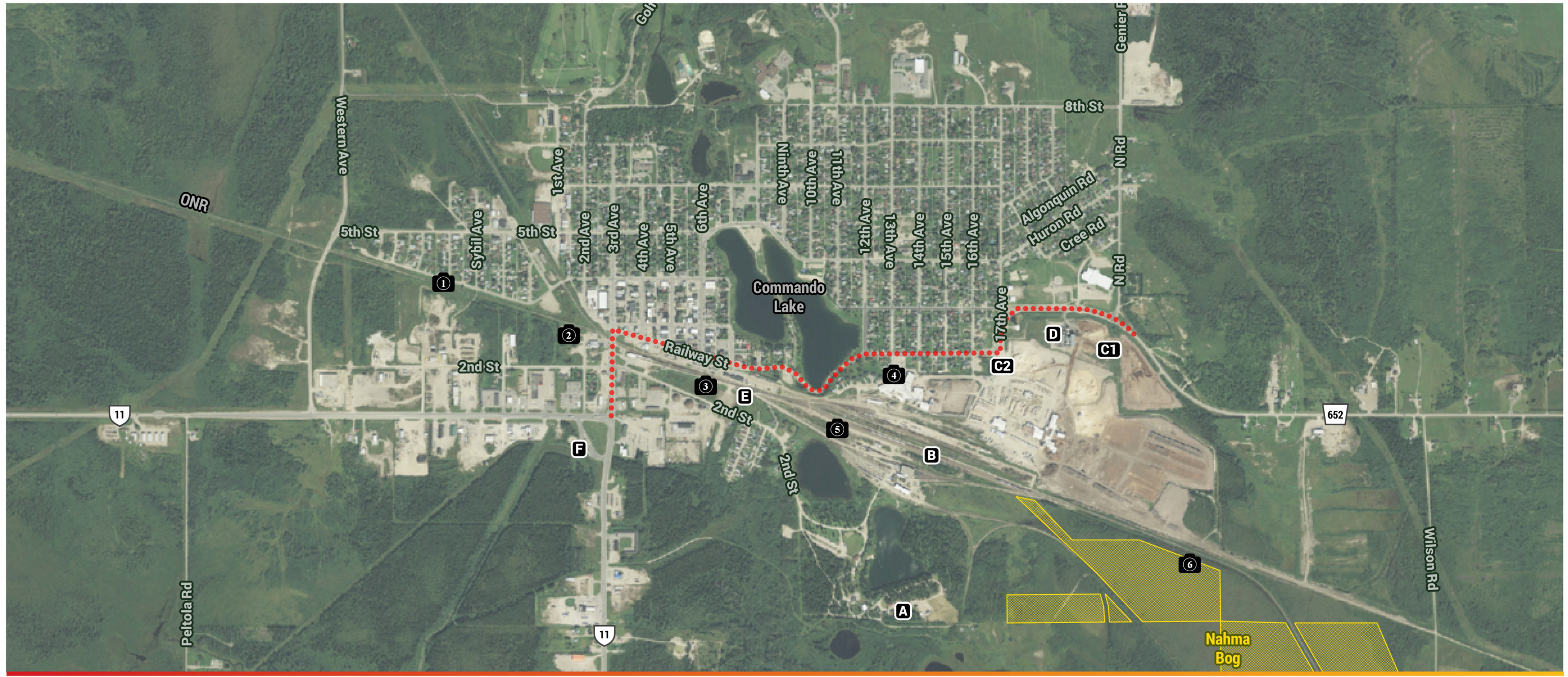
Evaluation Factors	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Natural Environment	<ul style="list-style-type: none"> <li>+ Minimizes environmental impacts and avoids impacts to Nahma Bog</li> </ul>	<ul style="list-style-type: none"> <li>+ Minimizes environmental impacts since it utilizes an existing roadway from Highway 652 to Highway 11</li> <li>+ Avoids impacts to Nahma Bog</li> </ul>	<ul style="list-style-type: none"> <li>• The new route is located relatively close to the existing highway, which minimizes the potential fragmentation of wildlife habitat</li> <li>- Has the potential to impact the Cochrane Polar Bear Habitat</li> <li>- Requires construction through Nahma Bog</li> </ul>	<ul style="list-style-type: none"> <li>- Requires construction through Nahma Bog</li> <li>- Requires a new crossing of Brule Creek</li> <li>- A new route has the potential to fragment existing wildlife habitat</li> </ul>	<ul style="list-style-type: none"> <li>+ Avoids impacts to Nahma Bog</li> <li>- Requires a new crossing of Brule Creek</li> <li>- A new route has the potential to fragment existing wildlife habitat</li> </ul>	<ul style="list-style-type: none"> <li>+ Avoids impacts to Nahma Bog</li> <li>- Requires a new crossing of Brule Creek</li> <li>- A new route has the potential to fragment existing wildlife habitat</li> </ul>
Legend:	+ Advantage	• Neutral	- Disadvantage			





**Points of Interest**

Label	Description
A	Cochrane Polar Bear Habitat
B	ONR Multi-modal Facility
C1	Tembec
C2	Tembec Weigh Scales
D	Rockshield
E	Cochrane Station
F	MTO Truck Inspection Station





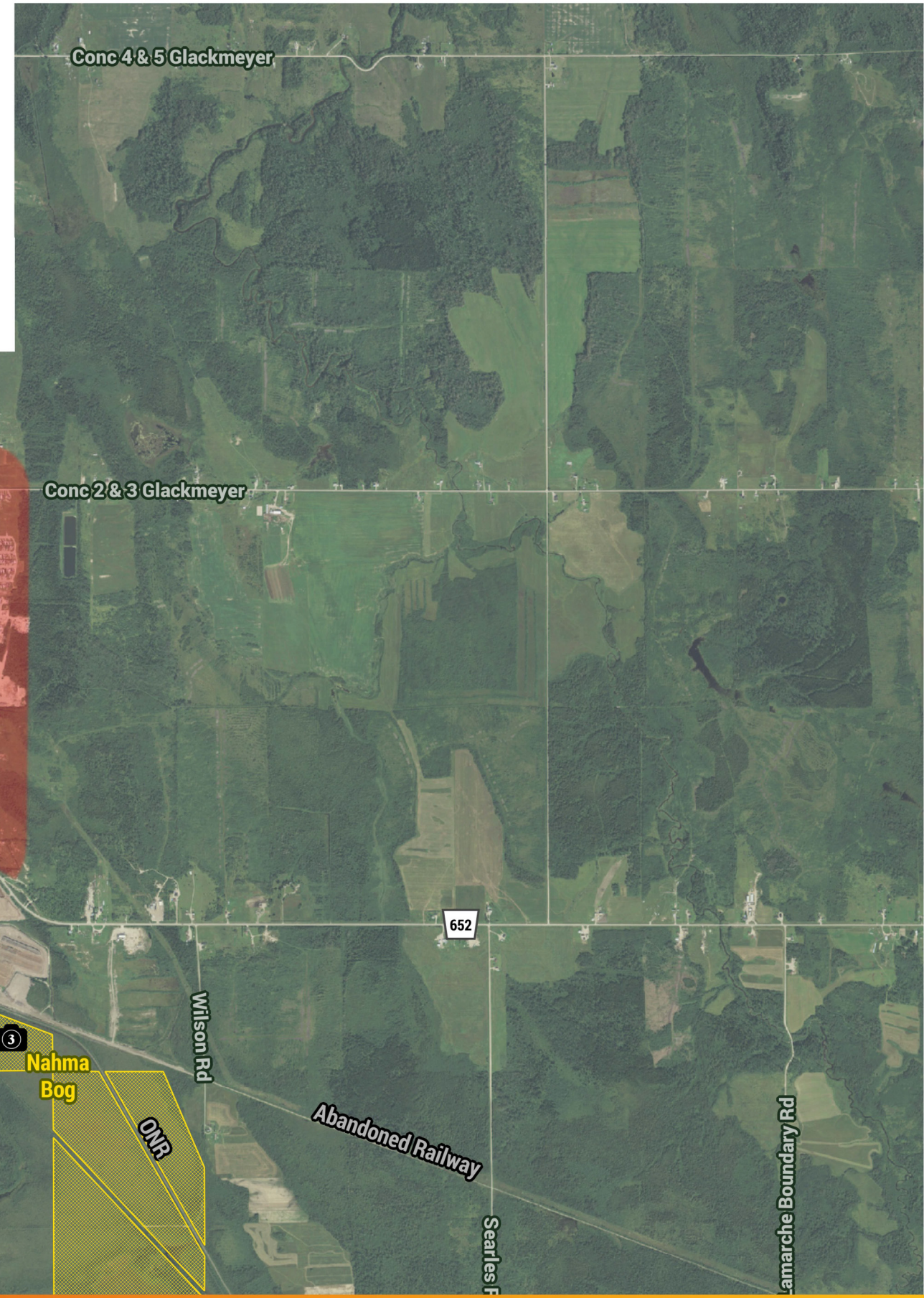






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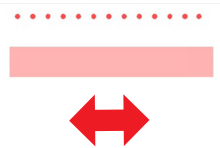
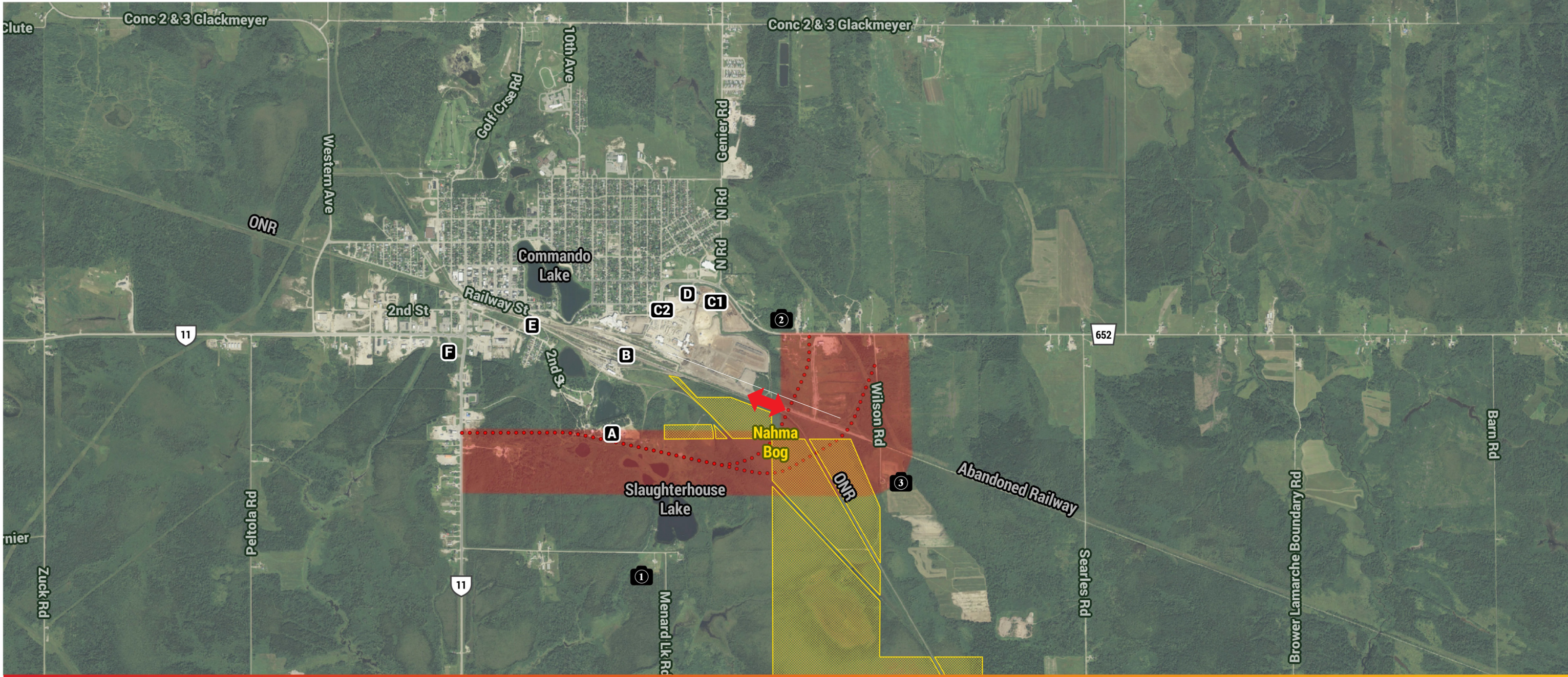






**Points of Interest**

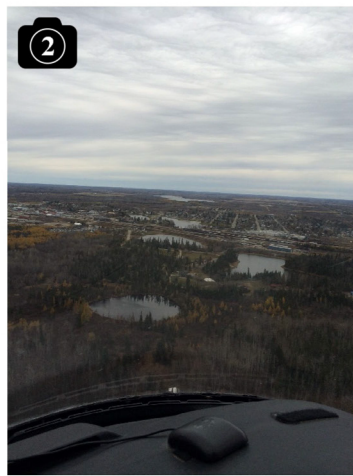
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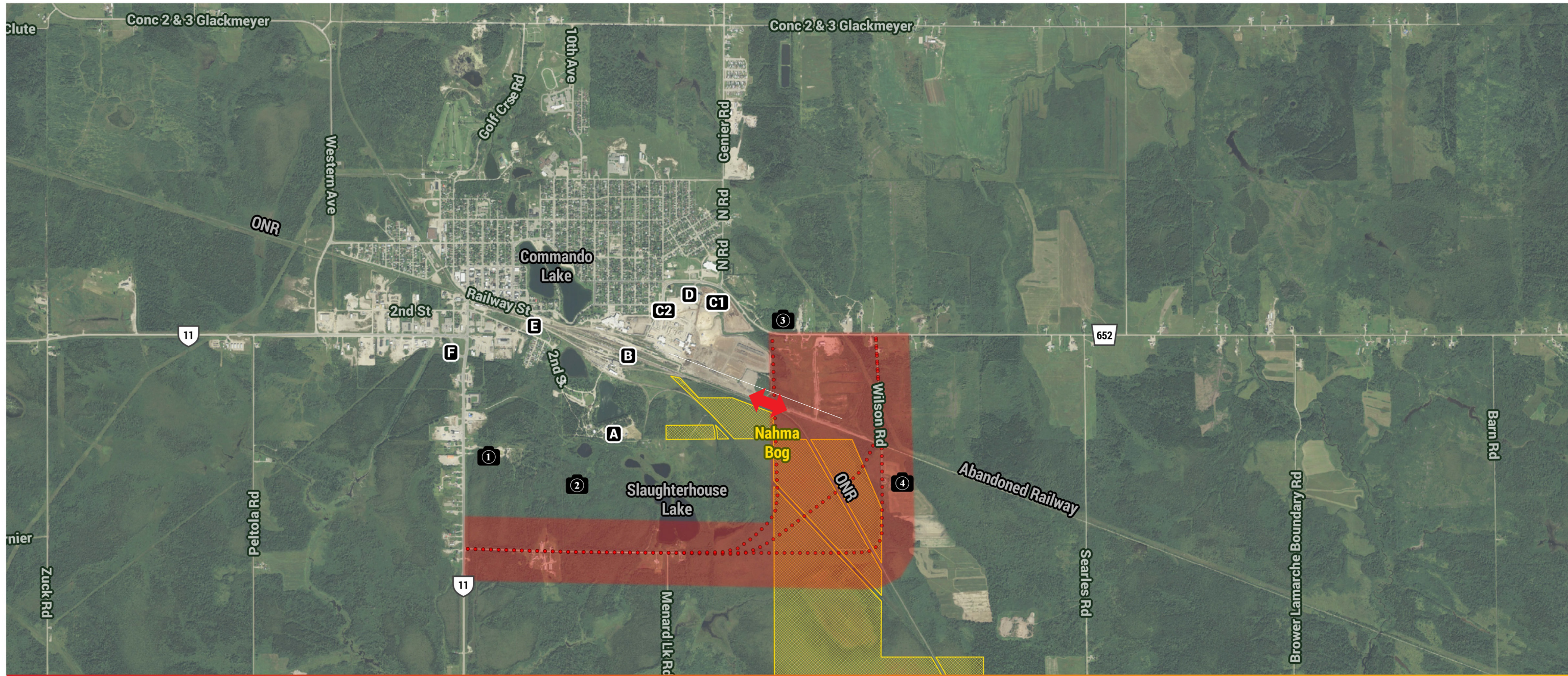






**Points of Interest**

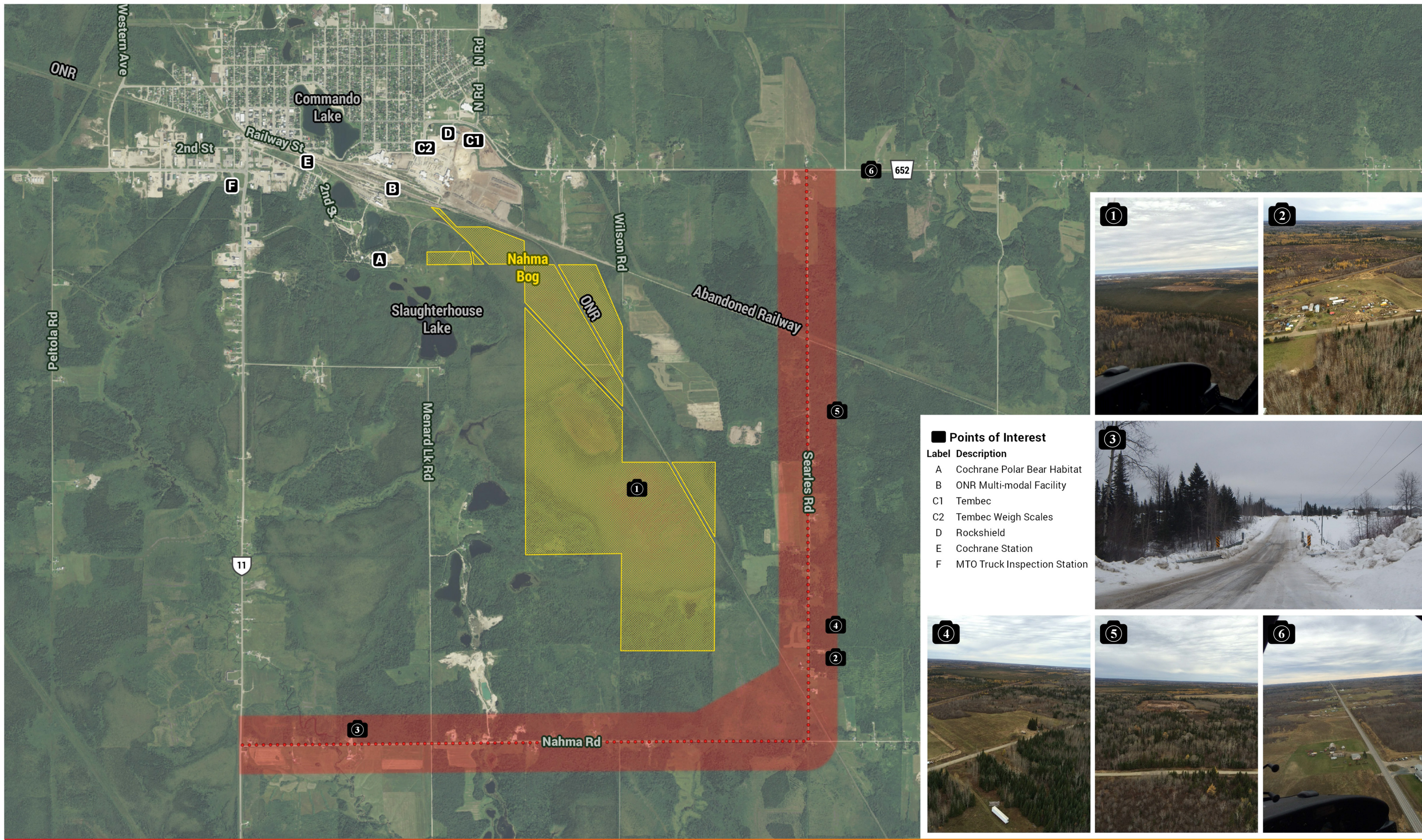
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**Points of Interest**

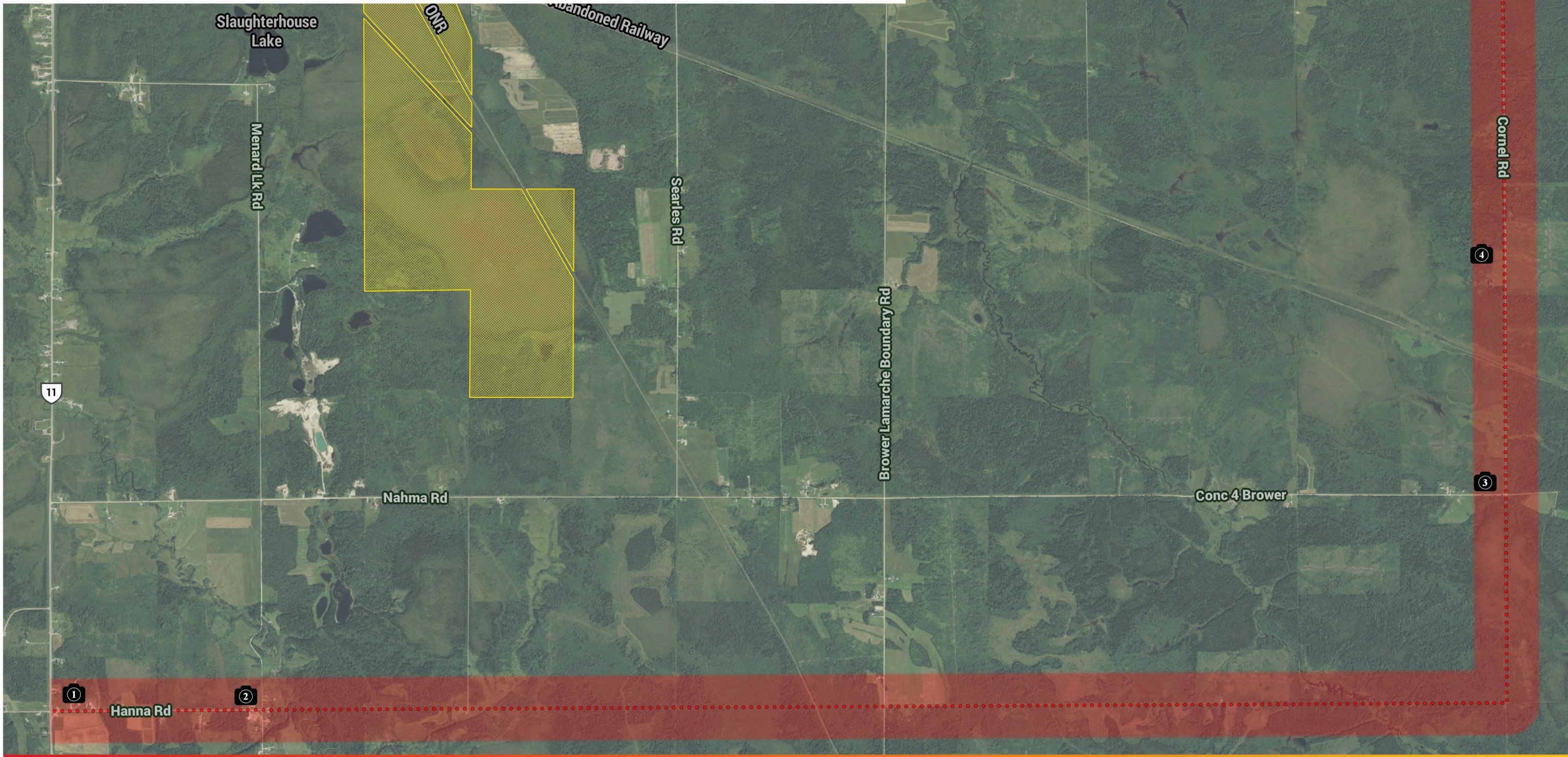
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E	Cochrane Station
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..... Existing route  
 Corridor













## 7.0 Conclusions

This Transportation Needs Assessment Study confirmed that there are existing transportation problems through the Town of Cochrane that are having an impact on the existing municipal road network, including:

- There is no provincial highway connection between Highway 11 and Highway 652, which is having an impact on the existing municipal road network
- There is a potential for significant traffic delays if the existing route (Railway Street) is closed
- The character of the existing truck route (Railway Street) is not desirable for heavy industrial truck traffic
- The existing roadway alignment in the vicinity of Commando Lake is challenging for heavy industrial trucks
- There is potential for a spill of dangerous good into Commando Lake (drinking water source)

The study identified an opportunity to improve safety and operations for goods movement through Cochrane to address the identified problems, and ultimately developed and evaluated five Corridor Alternatives, along with a 'Do Nothing' alternative that considered existing planned improvements (improvements to Railway Street / 3<sup>rd</sup> Avenue and a potential multi-modal facility).

### 7.1 SUMMARY OF EVALUATION OF ALTERNATIVE SOLUTIONS

The evaluation of the corridor alternatives considered a range of highway, social and cultural, and environmental factors, including the potential to attract commercial traffic, out-of-way travel, the potential to minimize the risk of spills and improve the character of the municipal road network, impacts to private property, and impacts to the Nahma Bog. Following the evaluation of alternatives, the following alternatives were recommended to be removed from further consideration:

- Alternative A: Although the planned minor operational improvements to Railway Street could improve operations, this alternative does not address the operational and maintenance issues on the existing route
- Alternative B: The route to the north would not address the problem since it would not attract sufficient commercial vehicles from the existing route
- Alternatives E and F: Although a route located further to the south (e.g., Alternative E and Alternative F) have the potential to address some of the identified problems, including reducing the risk of a spill and improving safety in the vicinity of Commando Lake, they would not attract sufficient truck traffic to provide an overall benefit

Alternatives C and D, a new corridor to the south of Cochrane, both have the potential to address the transportation problems that were identified by Cochrane and stakeholders as part of this study and have the potential to attract commercial vehicles and minimize impacts through the Town of Cochrane. During the study the commercial stakeholders, including the forestry and mining industries, indicated that a by-



pass with a convenient connection to ONR and the existing forest product processing facilities would likely attract the most commercial traffic. Alternatives C and D could additionally accommodate a future alternate connection from the east to Rockshield, Tembec, and ONR, which could eliminate the existing challenging entrance to Rockshield and Tembec on Railway Street / 3<sup>rd</sup> Avenue.

## 7.2 RECOMMENDED FUTURE STUDY AREA

The recommended area for future study is a corridor that includes Alternatives C and D, as shown in Exhibit 20. A new provincial highway located within this corridor could provide the following benefits:

- Could attract approximately 960 vehicles and 195 trucks per day, away from the existing route (3<sup>rd</sup> Avenue and Railway Street), including the high risk types of vehicles (i.e., fuel, chemical, forestry related) that are not suitable for local roads. This represents 28 % of commercial vehicles that will not be required to travel through Cochrane, including the majority of industrial goods and dangerous materials.
- Provides a provincial highway connection between Highway 11 and Highway 652 and can accommodate a future alternate entrance to the Rockshield, Tembec, and ONR facilities. Providing this connection supports the policies identified as part of the *Provincial Policy Statement, Growth Plan for Northern Ontario*, and the *Northern Ontario Multi Modal Transportation Strategy*.
- Provides an alternate route through Cochrane, which reduces the potential for significant traffic delays if the existing route (3<sup>rd</sup> Avenue and Railway Street) is closed. An alternate route supports regional economic development by minimizing delays and potential risks associated with the existing route in the vicinity of Commando Lake.
- Improves the character of the existing route (3<sup>rd</sup> Avenue and Railway Street) by diverting heavy industrial truck traffic to a by-pass. The existing route includes a combination of residential and commercial development, including pedestrian and cyclist traffic that does not match the typical character of a truck route.
- Provides suitable highway geometrics for heavy industrial trucks. An alternate route provides a route that avoids challenging geometrics in the vicinity of Commando Lake and significantly reduces the potential for a spill of dangerous good into Commando Lake (drinking water source) by diverting heavy industrial trucks to a by-pass.

## 7.3 COST

The opinion of probable cost is approximately \$4.4 to \$6.8 Million. A summary of the parametric cost estimate prepared for each alternative is provided in Appendix D.

## 7.4 RECOMMENDED FUTURE STUDIES

This pre-planning study was completed to assist the Ministry, municipalities, commercial businesses, and private land owners with future planning and development within the study area. Subsequent study phases are not currently funded, and both the timing of future studies and construction timing would be dependent on regional and provincial priorities and available funding. The possible future study area

currently has no status in terms of property protection. Once the preliminary design and environmental assessment study is complete, it would be possible to protect land required for future roadway improvements.

### 7.4.1 Future Studies

The next phase in this study would be to initiate a Planning, Preliminary Design, and Environmental Assessment Study, following the following the Ministry of Transportation’s *Class Environmental Assessment for Provincial Transportation Facilities (2000)* process, to confirm the location of a potential by-pass of Cochrane. Detail Design and construction would then follow, dependant on regional and provincial priorities, and funding. A summary of the subsequent study stages that would be required, and their approximate durations, are summarized in Table 14.

**Table 14: Engineering and Environmental Studies**

Project Phase	Approximate Time to Complete	Agency and Stakeholder Consultation
Planning, Preliminary Design, and Environmental Assessment	1-3 Years	Ongoing
Detail Design	2 Years	
Construction	2 Years	

### 7.4.2 Future Commitments

Future consultation will be required to address outstanding issues, including consultation with the public and property owners, permits/approvals from external agencies, preliminary and detailed environmental investigations regarding impacts and mitigation and engineering investigations to confirm the final design. A summary of proposed future consultation is in Table 15.

**Table 15: Proposed Future Consultation**

Agency	Subject of Consultation
Department of Fisheries and Oceans	Requirements of current MTO/DFO/MNR Fisheries Protocol Confirm fisheries impacts, culvert, and bridge recommendations
Transport Canada	<i>Railway Safety Act</i> approvals, if required
Infrastructure Ontario	Confirm Crown resources and land required for the Recommended Plan Verify, in writing, that the MTO Class EA process will fulfill the requirements of the <i>Ministry of Energy and Infrastructure (MEI) Class EA for Realty Activities Other Than Electricity Projects (2008)</i>
Ministry of Natural Resources	Confirm studies required for the Nahma Bog, including the need for a wetland evaluation Confirm potential for Species-at-Risk or their habitat Confirm fisheries and terrestrial resources, including the need to address wildlife crossing opportunities Confirm fisheries impacts, and final culvert and bridge recommendations



Agency	Subject of Consultation
Ministry of Tourism, Culture, and Sport	Stage 1 and 2 Archaeological Assessment
Ministry of Northern Development and Mines	Notify of start of Environmental Assessment study Participate in future studies
Town of Cochrane	Participate or be the proponent for future studies Confirm location of multi-modal facilities
Railways / ONTC	Confirm location and future access to multi-modal facilities and access to ONTC property Confirm details and approvals for railway crossings
Tembec / Rockshield	Participate in future studies Confirm future access to property
Snowmobile Clubs	Confirm TOPS trail crossings and trail relocations, including use of the abandoned CNR railway
Aggregate License / Permit Holders / Sustainable Forest License holders / Mining Industry	Participate in future studies
Emergency service agencies (i.e., OPP, Fire, ambulance, etc.)	Participate in future studies
Taykwa Tagamou Nation	Participate in future studies Confirm local trails and pathways

In addition to detailed environmental and engineering studies, the planning and preliminary design study should also include a detailed assessment of the Nahma Bog in the future study corridor, to confirm the presence of potential rare species and their habitat and wetland function. Future work will also include:

- Public and agency / stakeholder consultation
- Geotechnical investigations within and surrounding the Nahma Bog to confirm the suitability of the soils in the area



