TRAFFIC ASSESSMENT REPORT

Ontario Northland

Northlander Passenger Rail

Timmins-Porcupine Station Transit and Rail Project Assessment Process

December 13, 2024

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Rev 2	December 13, 2024	Final revised report.	

This submission was completed and reviewed in accordance with the Quality Assurance Process for this project.

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EXECUTIVE SUMMARY

Introduction

The Ontario Northland Transportation Commission (Ontario Northland) is an agency of the Province of Ontario responsible for providing efficient, safe, and reliable transportation services in Northern Ontario. Based on the Updated Initial Business Case, Ontario Northland is now reinstating the passenger rail service between Toronto (Union Station) and Timmins (including a rail connection to Cochrane) Northeastern Ontario via the Northlander Passenger Rail (NPR) Project. Currently, Ontario Northland is undertaking planning, engineering design and environmental studies as part of the Project.

Key Findings

Study Area

The Timmins-Porcupine Station is located between Matheson Station and Cochrane Station within Timmins. It is surrounded by Falcon Street to the north, King Street (Highway 101) to the south, and a currently unused rail line to the east. See **Figure ES-1** that depicts the Study Area.

Existing Conditions

The proposed site is primarily residential, with nearby recreational facilities and minor road traffic.

Traffic Impact Assessment Results

Traffic models predict excellent Levels of Service (LOS) "A" or “B” for all intersections in both 2026 and 2046 horizon years and in both train timing scenarios (i.e., UIBC and Worst-case scenario); This rating reflects minimal delays and superior traffic flow characteristics, meeting or exceeding the desired standards for roadway efficiency and user satisfaction. Mitigation Measures: No infrastructure improvements are required to accommodate the proposed station's traffic. However, continuous monitoring of traffic levels and coordination with the City of Timmins for potential future adjustments is recommended.

Active Transportation

The station will enhance access to long-distance rail travel, potentially integrating with municipal pedestrian and cycling infrastructure in the future.

Conclusion

The Traffic Assessment confirms that the proposed Timmins-Porcupine Station will have a negligible impact on the existing road network. All traffic operations around the station are expected to function efficiently without the need for significant road improvements.

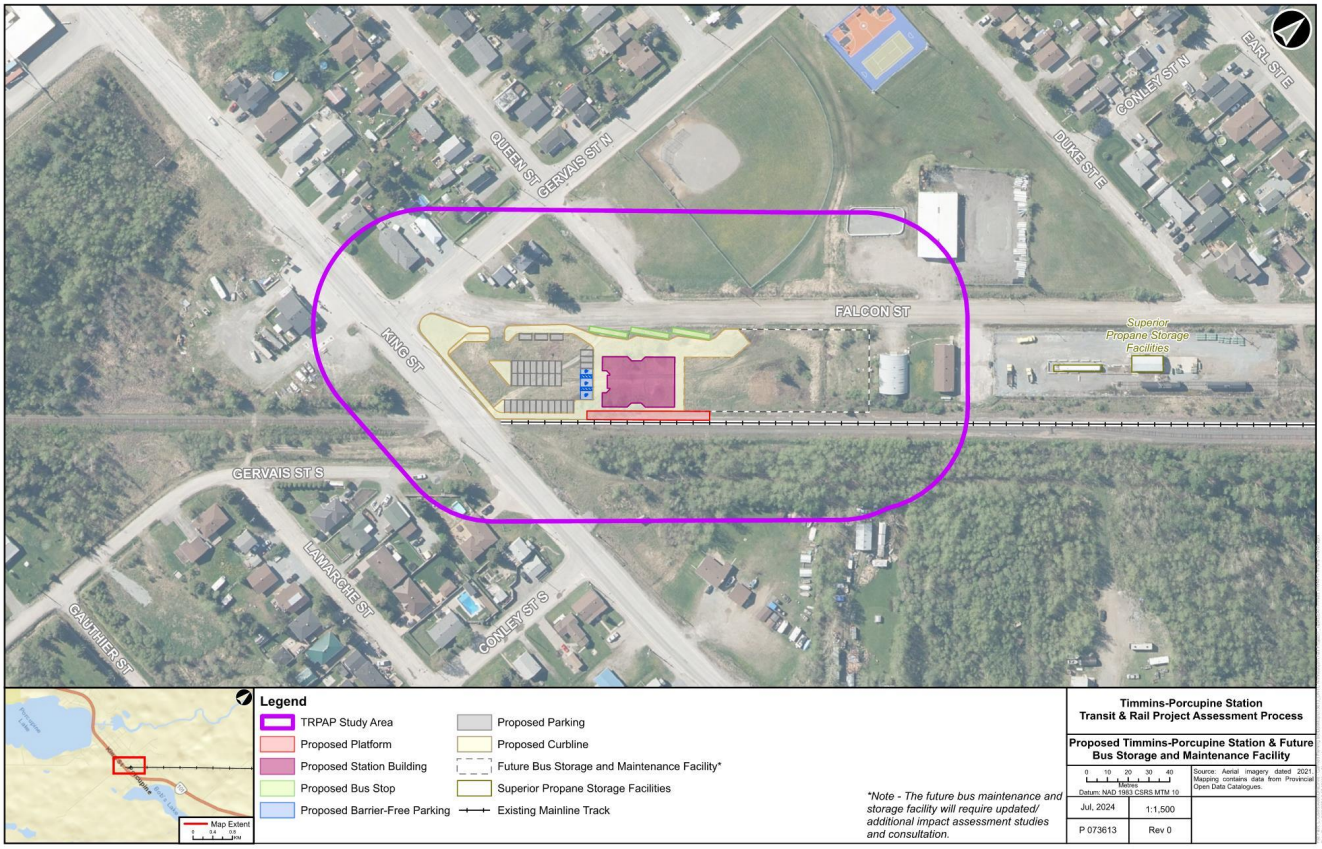


Figure ES-1: TRPAP Study Area

1.0 INTRODUCTION

The Ontario Northland Transportation Commission (Ontario Northland) is an agency of the Province of Ontario responsible for providing efficient, safe, and reliable transportation services in Northern Ontario. Current services include inter-community bus passenger and bus parcel delivery services, freight rail services that connect Northeastern Ontario to other markets across Canada and around the world, and passenger rail service on the Polar Bear Express. The Polar Bear Express provides rail service connecting Cochrane to Moosonee and the Communities of the James Bay Coast since 1932. Previously, Ontario Northland operated the Northlander passenger rail service between Toronto and Cochrane, however, this service was discontinued in 2012.

The Government of Ontario has issued direction to Ontario Northland to reinstate passenger rail service between Toronto (Union Station) and Timmins (including a rail connection to Cochrane) via the Northlander Passenger Rail Project (NPR) (see **Figure 1**).

1.1 Existing Service

The rail corridor between Toronto and Timmins (with a connection to Cochrane) is approximately 460 miles (740 km) long and consists of five (5) main railway subdivisions owned by Metrolinx, Ontario Northland, and Canadian National Railway (CN). CN operates freight rail services that connect to Class 1 railways and shortlines to ship goods across North America. Passenger rail operators include GO Transit, which operates the Richmond Hill commuter rail service. Ontario Northland operates passenger rail service as well as freight service between Cochrane and Moosonee.

Inter-community passenger transportation service in Northeastern Ontario is mainly provided by rail and bus routes operated by Ontario Northland. Passenger rail service currently consists of the Polar Bear Express between Moosonee and Cochrane, as well as operation of the Cochrane Station Inn at the departure point for the Polar Bear Express. Bus service consists of a network of bus routes serving major communities in Northern Ontario. This includes four (4) daily bus trips in each direction between Toronto and North Bay, serving local communities along the way. Ontario Northland also provides Bus Parcel Express service where customers can drop off their parcels at an Ontario Northland agency or station, and an agent will ensure the parcel is placed on the next available bus. When the parcel arrives at its destination, an agent will contact the receiver to arrange pick up.

1.2 Ontario Regulation 231/08

The proposed Timmins-Porcupine Station is subject to Ontario Regulation 231/08: Transit and Rail Projects Assessment Process (TRPAP) (February 16, 2024); as such, ONTC Is carrying out a TRPAP to examine the potential environmental impacts of the project.

Figure 1: Northlander Passenger Rail Key Map

2.0 PROJECT DESCRIPTION

2.1 TRPAP Scope

The scope of the TRPAP examines the potential environmental effects associated with the new Timmins-Porcupine Station. In addition, the environmental impact assessment studies also consider the area of land adjacent to the proposed station where a future bus maintenance and storage facility may be built. At the time of preparing this report as part of the TRPAP, the decision to build the bus facility was not yet definitive, and therefore an engineering design was not completed. Should the bus facility go forward in the future, the environmental impact assessment studies undertaken as part of this Timmins-Porcupine Station TRPAP will need to be revisited and updated, as required, to address the potential operations and construction phase impacts associated with the bus facility. These updated/additional impact assessment studies will be carried out as part of completing an EPR Addendum process (as per O. Reg. 231/08), which would also entail Ontario Northland carrying out public, stakeholder, and Indigenous Communities consultation. Refer to **Table 1** for a summary of the project components.

Table 1: Project Components

Project Component	Approximate Location	Description
Train Station Platform	The train platform is to be located on the east side of the station building.	Train platform material will consist of concrete. Platform features will include tactile warning strips, platform edge, and areas for Accessibility Vehicles to park at the north and south ends of the platform.
Station Building	The station building is surrounded by various station elements, and includes access to Ontario Northland bus bays, the train platform, and the parking lot.	Features in the station building may include: • Wicket for Travel Tickets and information; • Wicket for parcel drop-off/pick-up; • Station waiting area; • Station washroom; • Breakroom for crews and station staff; and, • Staff washroom and utility spaces.
Station Parking Facilities	Parking facilities will be located on lands adjacent to the proposed Timmins-Porcupine Station. Station building, bus stops, and train platform are in proximity to the parking spaces.	Parking facilities at the station will contain a variety of features designated to accommodate accessibility, taxi stalls, drop off /pick up, general parking, employee parking, etc.
Station Pedestrian Walkway	The station pedestrian walkway is proposed on all sides of the station building. There is access to areas for accessibility, bus stops, and train platform.	Pedestrian walkway is to be built around the station building, providing access to various station elements.
Track Works	Minimal track work to occur near the train station platform. New bumping post will be located east of King Street on the existing tracks.	Minimal track work will be required to allow the passenger train to safely approach the station and for passengers to safely enter/exit the train from the station platform. Ontario Northland will install new a bumping post at the end of the alignment.

Project Component	Approximate Location	Description
Ontario Northland Bus Bays	Bus bays will be situated adjacent to the station building with accessible walkway from station building/platform.	Bus bays to be provided for a seamless connection to Ontario Northland motor coach services.
Bus Storage & Maintenance Facility	A potential Bus Storage & Maintenance Facility would be located east of the station building and platform. The precise location and configuration of facility components will be subject to an engineering design process in the future, if applicable.	The TRPAP has considered the approximate area of land that may be required for the potential future construction of a Bus Storage & Maintenance Facility as part of the technical studies undertaken. Additional impact assessment studies and consultation will be carried out by ONTC in the future and an EPR Addendum prepared, should the facility move forward.

2.2 Timmins Station Overview

The new Timmins-Porcupine Station is situated on a rail spur along the NPR corridor between Matheson Station and Cochrane Station, within the geographic Township of Whitney, now known as the City of Timmins. The site is approximately one (1) hectare and is located just west of Bob's Lake. Falcon Street abuts the site to the north and west, King Street (Highway 101) to the south and an existing rail (currently not in use) to the east. The Whitney Multipurpose Court and a baseball diamond are located west of the site, with residential neighborhoods extending further east and west.

2.3 TRPAP Study Area

The Study Area for the TRPAP is generally defined as the area where the station components are proposed to be constructed plus a conservative 50m buffer area for completing technical and environmental studies. Refer to **Figure 2.**

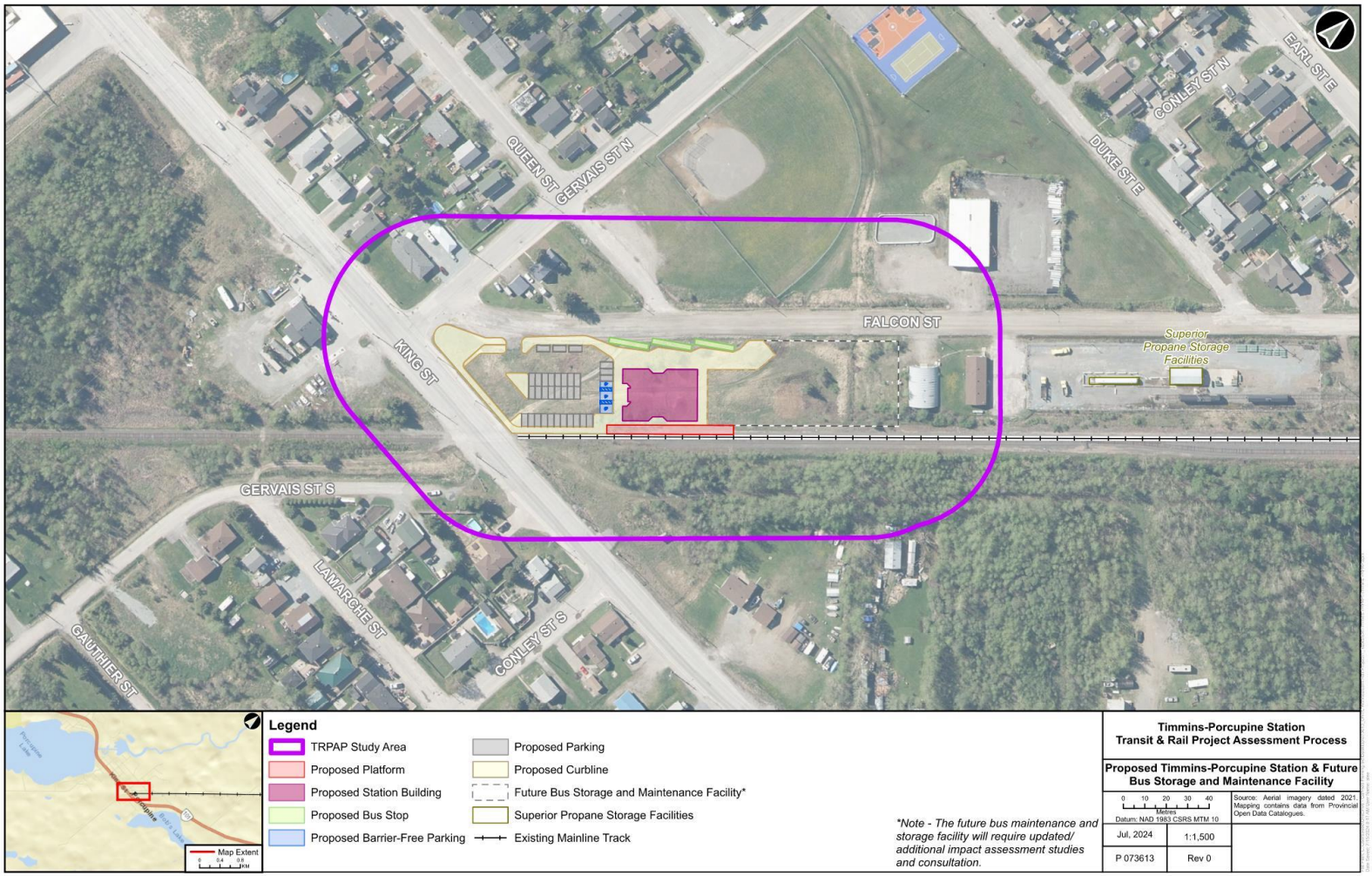


Figure 2: Timmins-Porcupine Station TRPAP Study Area

2.4 Report Purpose

This report was prepared to support the TRPAP and provides a summary of existing traffic conditions (within and surrounding the study area), and assesses the potential impacts to traffic conditions associated with the project,

2.5 Overview of Traffic Assessment

2.5.1 Goals of the Transportation Analysis

The Timmins-Porcupine Station adheres to the local traffic regulations as stipulated in the City of Timmins' "Manual of Engineering and Development Standards, April 2015." This document sets forth the essential criteria for conducting Traffic Impact Studies. The analysis meets these requirements but also aims to achieve the following objectives:

- Identification of traffic impacts. The primary purpose of this analysis is to assess the traffic impact that the proposed Timmins-Porcupine station will have on the transportation network and facilities in the area. This goal is accomplished by studying the horizon year operations of the surrounding transportation system and assessing the potential requirement for infrastructure improvements such as additional turning lanes, signal control implementation and road widenings.
- The interplay between the proposed site access driveway and any nearby intersections is also to be examined, to ensure continued and unhindered operability of the station access. In addition, the analysis shall cover inter-modal connectivity of the rail services with active transportation and transit services, and any issues regarding rail preemption for signal control.
- Identification of how impacts may be mitigated by infrastructure improvements. The low frequency of the proposed rail service (1 train per day, per direction), combined with the relatively low capacity of each train utilizing the Timmins-Porcupine station suggests a relatively low number of site-specific trips arising from the regular station operations. However, it is still necessary to examine capacity and operability aspects for critical elements such as the station access driveway, internal site circulation, nearby roadway intersections and public transit connection platforms. Therefore, the analysis will include an objective review of these elements, relying on the applicable analysis guidelines to identify any required infrastructure improvements.

2.5.2 Methodology & Approach

The following provides a high-level description of the methodology used to complete the study:

- Review of the basic site layout configuration (accesses, parking capacity, etc.).
- Establish the trip generation numbers (i.e. calculate site-specific trips) in the peak hour.
- Define Study Area limits (to inform the limits of the traffic model).
- Gather information about any known road network improvement (e.g. road widenings, signal control implementation, etc.) planned to be in place by the ultimate horizon analysis of 2046.
- Gather intersection traffic counts and signal timing plans for any signalized intersection within the Study Area.
- Document existing traffic conditions in the Study Area and complete peak hour capacity analyses of Existing Conditions for the previously identified Study Area intersections.
- Gather information about any known development nearby that could contribute significant traffic by the ultimate horizon analysis of 2046, conducting a review of those as well as of any planned roadway improvements such as road widenings, new signal control implementation.

- Estimate future background traffic volumes for the boundary roadways at the build-out horizon of 2026, as well as for the ultimate horizon of 2046.
- Generate trips for the proposed Timmins-Porcupine station using trip rates obtained from the widely accepted Institute of Transportation Engineering (ITE) manuals, then distribute and assign those trips to the boundary roadways based on current travel patterns.
- Complete peak hour intersection capacity and queueing analyses for the boundary roadways based on Existing Conditions 2023 traffic volumes, then Opening Year 2026 volumes and finally Future Total 2046 traffic volumes, which combine the Future 2046 Background Traffic volumes and the estimated site traffic volumes by 2046.
- Recommend traffic improvements and / or mitigation measures, as required, to accommodate the additional site traffic on the study area roadway network. Confirm that the proposed station would operate adequately from a traffic perspective.

2.5.3 Assumptions

The following provides a description of the assumptions employed in the analysis. Two scenarios were assessed as part of this Traffic Study as follows:

- The first scenario reflects the UIBC train schedule (i.e., train departs Timmins Station at approximately 2400 (midnight) and arrives at Timmins Station by 0530.
- A second (worst case) scenario was also modeled (for due diligence purposes) which assumed peak hours of 0700-0800 and 1630-1730 for train arrival and train departure time, to match peak hours of the adjacent road network, in order to identify any impacts on the city road network, should the Northlander schedule ever change.
- The station construction is anticipated to be completed by 2026.
- The ultimate future horizon year is assumed to be 2046, which is 20 years from the full build-out of the Timmins-Porcupine train station (in 2026). This is a standard assumption commonly used in traffic impact assessments to ensure long-term planning and sustainability.
- This report uses traffic counts from November 2023 to inform the traffic volumes of the Existing Conditions 2023 scenario.
- For the Opening Year 2026 scenario, the yearly growth rate was applied to reflect 3 years of background growth (from 2023 to 2026) plus the newly inaugurated Timmins-Porcupine station's site-specific traffic volumes.
- For the Future Total 2046 scenario, the volumes are composed by the future background traffic volumes (i.e., the 2023 background volumes grown over 23 years, between 2023 and 2046) plus the Timmins-Porcupine station's site-specific traffic volumes for the year of 2046.

3.0 EXISTING CONDITIONS

3.1 Proposed Timmins-Porcupine Station Site Features

The Timmins-Porcupine station facility will be located between the existing rail corridor and Falcon Street, by the intersection of King Street and Gervais Street N, within the City of Timmins. The station access is on Falcon Street east curbside, on the segment between Gervais Street N and Queen Street. Refer to **Figure 2.**

The site contains a train station platform which includes tactile warning strips, platform edge and areas for accessibility cars to stop by the platform. The station building includes a wicket for travel tickets and information, a wicket for parcel drop-off/pick-up, a waiting area, a washroom, and a breakroom for crews

A surface parking lot will be provided at the station.

- There will be approximately 49 parking spaces that will include: standard parking spaces, employee parking spaces (including designated 'long term parking), accessible parking spaces, and taxi stands for passenger pick-up/drop-off.

The proposed station design includes a pedestrian walkway to be built around the station building, providing convenient access to the various station elements.

There are three (3) Ontario Northland bus bays positioned at the north facade of the station building, providing a seamless connection to Ontario Northland motor coach services.

The area just east of the station building and north of the rail platform is protected for the potential future construction of a Bus Storage & Maintenance Facility.

3.2 Surrounding Roadways and Transportation Facilities

King Street at Gervais Street N is a "T"-shaped intersection with EB, WB, and NB movements. Gervais Street N at Falcon Street is a "T"-shaped intersection with SB, NB, and EB movements. Queen St at Falcon Street is a "T"-shaped intersection with SB, NB, and WB movements.

There is a City of Timmins Transit Terminal located 13 km west of the Timmins-Porcupine station, which operates city-wide bus transit services. Timmins Victor M. Power Airport is located approximately 25.5 km to the north-east of the proposed station facility.

3.3 Roadway Classification

The Timmins-Porcupine train station facility is located at the intersection of Falcon Street and Gervais Steet N. The Roadways that might potentially be impacted by traffic associated with the proposed station are listed in **Table 2** below.

Table 2: Description of Roadways Surrounding Timmins-Porcupine Station Site

Roadway in Relation to the Proposed Site	Description
King Street	4-lane roadway, divided at the median by yellow (double and continuous) pavement marking lines within the Study Area, With no dedicated turning lanes at its intersection with Gervais St N, With an E-W sidewalk on north curb of King Street, 2023 Annual Average Daily Traffic (AADT) = 7020
Gervais Street N	2-lane undivided roadway 2023 AADT = 960

Roadway in Relation to the Proposed Site	Description
Falcon Street	2-lane undivided roadway 2023 AADT = 240 *The station access driveway is located at the Falcon Street frontage.*

3.4 Data Collection

Traffic

City of Timmins staff provided turning movement counts for the two public road intersections included in the city limits, Simulations Model (VISSIM). The counts dates and timings are shown in **Table 3** below, with detailed count sheets included in **Appendix A**.

Table 3: Intersection Turning Movement Count Dates and Hours

Location	Count Date	Count Hours
King Street @ Gervais Street N	**Tuesday, November 29, 2023**	0700-0900 1130-1330 1500-1900
Gervais Street N @ Falcon Street	**Tuesday, November 29, 2023**	0700-0900 1130-1330 1500-1900
Gervais Street N @ Falcon Street	**Thursday, June 06, 2019**	0700-0900 1130-1330 1500-1900

In addition to these 2 intersections, the VISSIM model included the intersection of the site access driveway with Falcon Street.

Bus Routes

The bus routes and corresponding service frequency were identified via the website "*Maps & Schedules - City of Timmins*" from the City of Timmins. Route 901 Timmins/Porcupine Eastbound/Westbound circulates in the vicinity of the study area on intersections such as Queen Street @ Gervais Street N and Queen Street @ Falcon Street. Also refer to **Section 4.5.2** for additional detail.

Land Use Plan

A copy of the land use plan was provided as part of the Official Plan, during the data collection process. As per this land use plan for the Timmins-Porcupine area, there are no major planned developments in the Study Area or in close proximity to it. Therefore, no additional traffic associated with such developments requires consideration in this assessment. A copy of the land use plan has been included in **Appendix A** for reference.

4.0 TRAFFIC IMPACT ASSESSMENT

4.1 Study Area

The Study Area for purposes of the traffic assessment is as depicted below and was defined to include the following roadway intersections:

1. King Street & Gervais Street N
2. Gervais Street N & Falcon Street
3. Falcon Street & site access driveway

These intersections were confirmed with the City of Timmins staff during preliminary meetings/correspondence on January 24, 2024. **Figure 2** (above) graphically illustrates the Study area.

It is worth noting that the intersection of Queen Street and Falcon Street was not included in the study area as initial data collection results (i.e., traffic counts) at Falcon Street shows very minor traffic volumes.

4.2 Traffic Analysis

As the study area includes closely spaced intersections, PTV VISSIM model was selected as the most suitable tool for analyzing the roadside operations under existing and future conditions. The model was developed using PTV VISSIM version 2022 – Service pack 13, to identify the baseline operational performance indicators for the Station site. Under Existing Conditions, all Study Area intersections are stop-controlled. For reference, the level of service criteria for unsignalized (stop-controlled) intersections are shown in **Table 4** below:

Table 4: Level of Service Criteria for Un-Signalized Intersections

Level of Service	Average Control Delay (Sec/Veh)	Description
A	**0-10**	Free Flow
B	**> 10-15**	Stable Flow (slight delays)
C	**> 15-25**	Stable Flow (acceptable delays)
D	**> 25-35**	Approaching Unstable Flow
E	**> 35-50**	Unstable Flow
F	**> 50**	Forced Flow (congested and queues fail to clear)

This study will follow Level of Service (LOS) criteria shown in **Table 4**.

4.3 Modeling Assumptions

The following assumptions were made upon developing the VISSIM model for assessing the conservative approach for the Existing Conditions 2023, Opening Year 2026, and Future Total 2046 scenarios.

- The VISSIM simulation run period is 0-5400 sec, including 1800 sec of warm-up period followed by 3600 sec (1800 – 5400) of analysis period.
- Five (5) simulation runs were performed for each scenario, with a random seed of 42 and a seed increment of 7. An average of the 5 run results was used for establishing the final results.
- A total of three (3) scenarios were developed:
    - Existing Conditions (2023),

- Future Scenario with UIBC Train Schedule
  - Opening Year (2026)
  - Future Total (2046)
- Future Scenario with assumed train schedule to match with adjoining roads peak hours
  - Opening Year (2026)
  - Future Total (2046)

- Two peak hours for each of these 3 scenarios (train arrival & train departure) were modelled.
- The speed limits used for the analysis are based on available satellite imagery. King Street speed limits within the study area are posted as 50 km/h. Gervais Street N and Falcon Street speed limits are assumed to be 40 km/h based on the posted speed on the surrounding street. At the station access driveway, the speed limits for arriving trips are assumed to be 20 km/h and for departing trips 40 km/h. the speed limits at all the turn segments are assumed to be 20 km/h.
- The station facility is served by one municipal bus route, with the corresponding transit stop located on Falcon Street just in front of the station. For the purpose of incorporating the bus service trips into the VISSIM model, the corresponding bus trip is assumed to be generated from the King Street Westbound link end, from where it reaches the bust stop at Falcon Street and then continues towards the Falcon Street link end. The bus route is shown in **Figure 3** below. The frequency for this municipal bus trip is modelled as 1 trip/h based on Timmins Transit Maps & Schedule website with an assumed dwell time of 5 minutes at the Falcon Street transit stop. This assumption helps to standardize the analysis and account for potential variations in bus schedules.

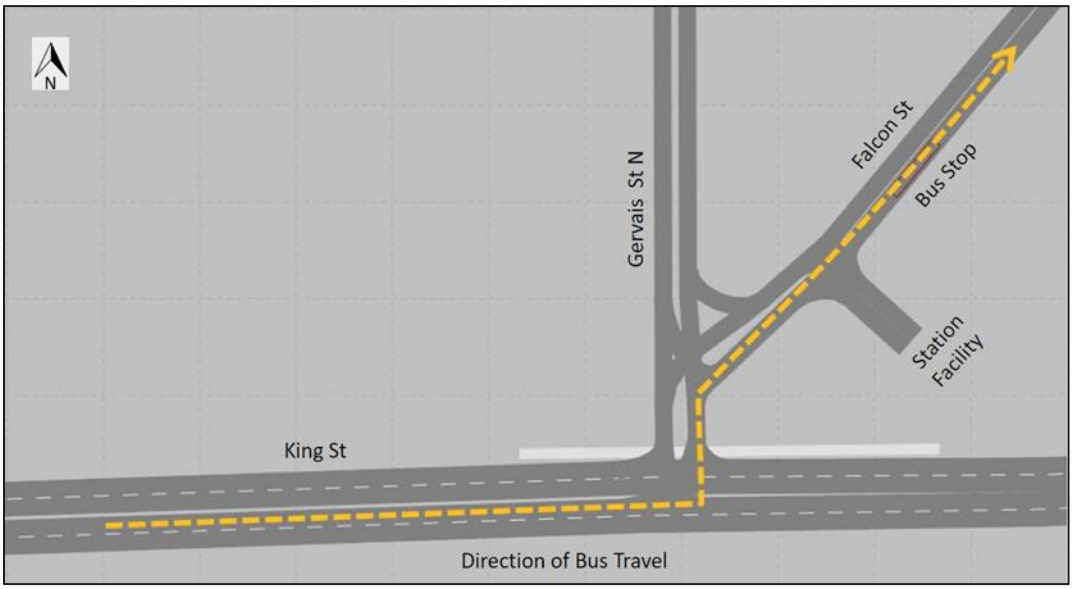


Figure 3: Direction of Municipal Bus Route to Station

4.4 Analysis of Existing Conditions 2023

Under Existing Conditions 2023, the only traffic circulating within the Study Area is the existing/background traffic, because the Timmins-Porcupine station is not built yet.

4.4.1 Traffic Volumes

The available 2023 traffic counts informed the modelling of Existing Conditions 2023. The AM peak and PM peak hours were identified at both the intersections as being 0700 – 0800 and 1630 – 1730, respectively for the AM and PM peak hours. **Figure 4** illustrates the resulting traffic movement diagrams for AM and PM peak hours under Existing Conditions 2023.

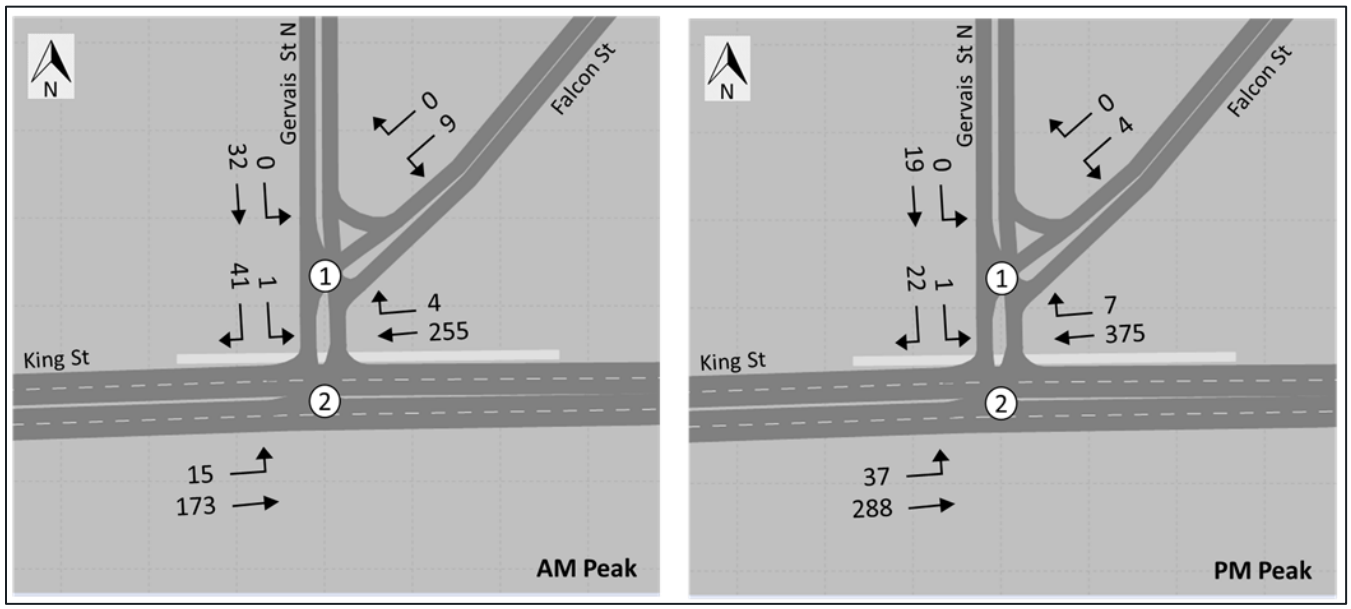


Figure 4: Existing Condition 2023 - Peak Hour Traffic Volumes

Table 5 below illustrates the percentage of heavy vehicles (HV) used in the model. The values are assumed conservatively, based on the traffic counts obtained from the City of Timmins. At the intersection of King Street and Gervais Street N, the peak hour share of Heavy Vehicles was less than 2%, hence 2% has been chosen as a conservative approach of modelling. Since the traffic counts were low on Falcon Street, full day counts were used to determine the % of HV. All the trips associated with the station facility are assumed to be made up of passenger cars (PCU = 1).

Table 5: Percentage of heavy vehicles utilized in the Development of the Model

Street	% HV
King Street	2
Gervais Street N	2
Falcon Street	22.5
Development (To & From Station)	0

4.4.2 Model Validation

Traffic model validation is a crucial step in ensuring the accuracy and reliability of the VISSIM traffic simulation results. It involves comparing simulated traffic volumes generated by the VISSIM model with observed real-world traffic data. Through this process, we assess the model's ability to replicate actual traffic volumes. This validation of the VISSIM model against empirical data collected from field studies or traffic surveys allows the identification and addressing of discrepancies, ultimately increasing reliability in VISSIM's ability to simulate various traffic scenarios. A calibration parameter known as Geoffrey E. Havers (GEH) formula is used to compare modelled traffic volumes

against traffic counts as shown in **Table 6** below. The GEH Statistic is a formula used in traffic engineering, traffic forecasting, and traffic modelling to compare two sets of traffic volumes.

Table 6: Existing Condition 2023 - Model Validation

2023		AM Peak Hour			PM Peak Hour		
Intersection	**Movement**	**Traffic Counts**	**Model Volumes**	**GEH**	**Traffic Counts**	**Model Volumes**	**GEH**
Gervais St N & Falcon St	SBL	0	0	0.00	0	0	0.00
	SBT	31	31	0.00	19	19	0.00
	WBR	0	0	0.00	0	0	0.00
	WBL	9	9	0.00	4	4	0.00
	NBR	14	13	0.27	14	12	0.55
	NBT	6	6	0.00	32	33	0.18
Gervais St N & King St	EBT	166	165	0.08	288	287	0.06
	EBL	16	16	0.00	39	38	0.16
	WBR	4	3	0.53	7	7	0.00
	WBT	244	246	0.13	375	374	0.05
	SBL	1	0	1.41	1	1	0.00
	SBR	39	39	0.00	22	22	0.00

Ideally, GEH readings below 3.0 in at least 85% of the observations demonstrate a good fit of the model. It can be seen from **Table 5** that all the movements at both the intersections show GEH values below 1, which demonstrates that the model simulated existing condition very well.

4.4.3 Analysis Results

Table 7 below shows the Existing Conditions 2023 analysis results, whereas **Figure 5** shows 95th percentile queue lengths at all the approaches of both the study area intersections. The 95th percentile queues are the standard reading relied on to design storage lanes for accommodating vehicular queues.

Table 7: Existing Condition 2023 - Analysis Results

2023		AM Peak Hour			PM Peak Hour		
Intersection	**Movement**	**Delay (s)**	**LOS**	**95th % Queue (m)**	**Delay (s)**	**LOS**	**95th % Queue (m)**
Gervais St N & Falcon St	SBL	0.0	A	0	0.0	A	0
	SBT	1.1	A	0	1.0	A	0
	WBR	0.0	A	0	0.0	A	0
	WBL	7.6	A	0	7.3	A	0
	NBR	0.1	A	0	0.1	A	0
	NBT	0.1	A	0	0.1	A	0
	Overall	**1.8**	**A**		**0.8**	**A**	

2023		AM Peak Hour			PM Peak Hour		
Intersection	**Movement**	**Delay (s)**	**LOS**	**95th % Queue (m)**	**Delay (s)**	**LOS**	**95th % Queue (m)**
Gervais St N & King St	EBT	0.0	A	0	0.0	A	0
	EBL	1.4	A	0	1.9	A	0
	WBR	0.3	A	0	0.5	A	0
	WBT	0.0	A	0	0.0	A	0
	SBL	4.5	A	6	5.0	A	5
	SBR	5.0	A	6	4.8	A	5
	Overall	**0.4**	**A**		**0.3**	**A**	

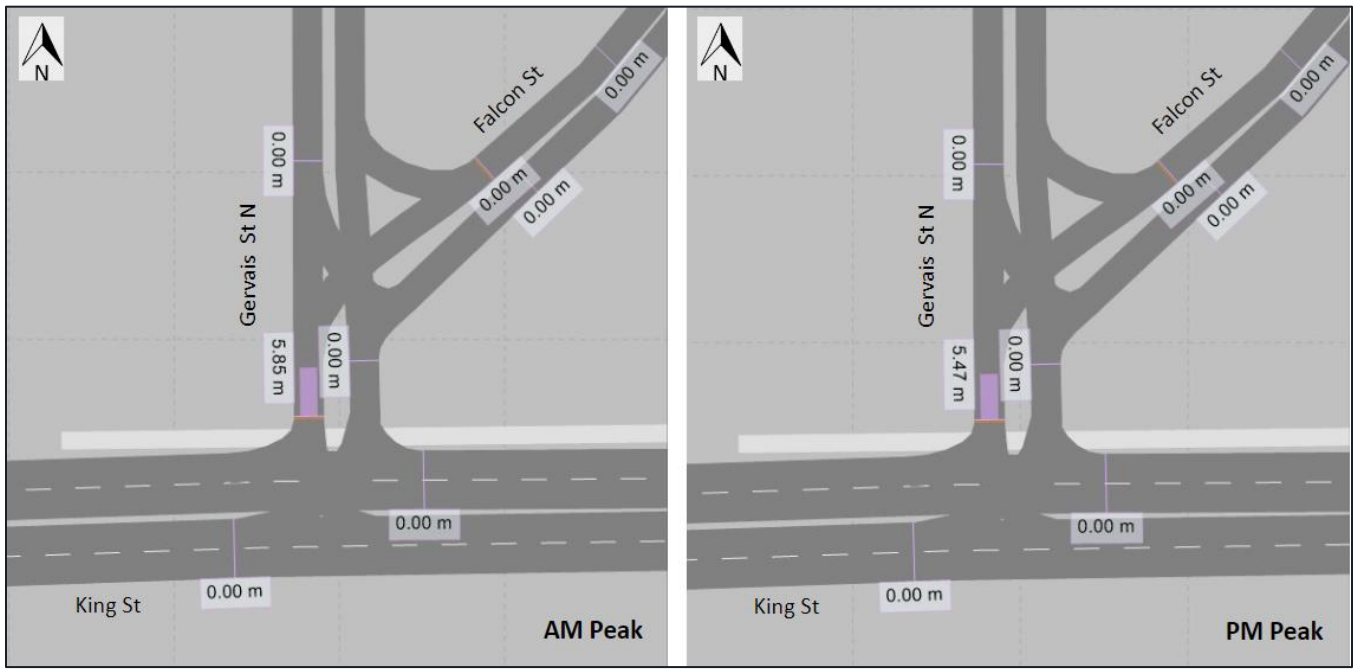


Figure 5: Existing Condition 2023 - 95th Percentile Queue Lengths

The results illustrated in **Table 7** and **Figure 5** indicate that the study area intersections are operating at excellent levels of service (A) under Existing Conditions 2023, with low delays and minimal queues on all intersection approaches.

Volume to Capacity Ratio (VC Ratio)

Synchro model was developed to derive maximum VC ratio for both the study intersections in existing condition. VC ratio results are as summarised in **Table 8** below:

Table 8: VC Ratio Summary – Existing Condition

Intersection	Peak	Maximum VC Ratio
Gervais St. / Falcon St.	AM	0.01
	PM	0.01
King St. / Gervais St.	AM	0.03
	PM	0.03

As per **Table 8**, both the intersections are operating with minimal VC ratio indicating no congestion similar to other analysis parameters.

In addition, left turn storage length warrant was checked using Exhibit-9A-31 of "MTO DESIGN SUPPLEMENT FOR TAC GEOMETRIC DESIGN GUIDE (GDG) FOR CANADIAN ROADS – 2017" June 2023 Edition. Copy of Exhibit-9A-31 is included in Appendix A for reference. Following are parameters used in this warrant check.

- Left turn volume – 37vph (PM Peak)
- Opposing traffic volumes – 375vph (PM Peak)

The threshold for demonstrating compliance with the warrant check is approximately 25 vph for an 375vph Opposing traffic volume. Based on the study conducted and available vehicle counts in the existing condition state, the vehicle count per hour is 37 vph, exceeding the threshold by ~8 vph. This demonstrates that the current condition, prior to Station construction and revenue service, fails to provide the necessary 15m storage length, resulting in a non-compliant existing condition.

4.5 Analysis of Future Conditions (2026 & 2046)

4.5.1 Forecasting of Background Traffic

The study team requested historic traffic counts at the intersection of King Street & Gervais Street N however, those were unavailable. In absence of available historic traffic count references, a compounding annual growth rate of 1.5% was assumed for the refined study area.

The Multiplying (Growth) Factor to determine the 2026 & 2046 traffic is calculated using the following formula:

$$Multiplying\ (Growth)\ Factor\ = \left(\frac{GR\%}{100} + 1\right)^{n}$$

where:

GR% = Compound Annual Growth Rate in %

n = number of years

Hence, resultant growth factor of 1.0457 for year 2026 and 1.4084 for year 2046.

4.5.2 Development Traffic

Trip Generation Estimate for the Proposed Station

The ITE Land Use Code 090 provides trip generation estimate for a Park & Ride lot with Bus or Light Rail Service. As this category best matches Timmins-Porcupine station development – and in absence of other railway station categories within the ITE trip generation manual, this Land Use Code was used to derive trip generation estimates.

The trip generation average rates obtained from the ITE Trip Generation Manual for "Park-and-Ride Lot with Bus or Light Rail Service (090)" for AM and PM peak are 0.42 and 0.43 respectively. These rates yielded approximately 18-22 two-way trips for the station facility during the AM and PM peak hours, respectively. **Table 9** shows the estimated trip generation during both AM and PM peak hours as obtained utilizing this ITE trip generation manual methodology.

Table 9: ITE Trip Generation Estimates for Timmins – Porcupine Station

Peak	Trip Rate	Variable	No. of Parking Spaces Provided	No. of Two-way Trips	Incoming Trips	Outgoing Trips
AM	0.42	No. of Parking	46	19	15	4
PM	0.43	No. of Parking	46	20	5	15

Based on professional opinion, these ITE trip generation rates might underestimate the trip demand. This station is distinct from typical urban transit scenarios covered by the ITE manual, which includes a closely matching trip generation code for Park & Ride with Bus or Light Rail Service (090), generally suitable for urban transits like GO Train. However, Timmins Station serves as a regional rail hub, expected to generate higher traffic due to its role in facilitating long-distance rail travel. This unique function likely results in increased trip generation compared to the typical park-and-ride facilities aimed at local commuting. Therefore, this analysis adopts higher trip volumes derived from a first-principles analysis of the rail ridership data to ensure a more accurate reflection of the station's impact on traffic.

This methodology relies on the available information on rail service frequency and parking lot capacity for the Timmins-Porcupine station. This station provides a total of 49 surface parking spaces, out of which 40 are dedicated to accommodating rail passengers demand. Thus, a conservative approach would have all 40 parking spaces corresponding to rail trip boarding/alighting, such that each of the arriving and departing trip generation volumes associated with UIBC train schedule amounts to 40 vehicle trips arriving/departing from the station's parking lot, all made up of passenger cars (PCU =1).

Moreover, the full complement of 40 vehicles is assumed to arrive at the station, park and board train trips within a period of 30 minutes for train departure scenario. For train arrival scenario, the full complement of 40 vehicles is assumed to depart the station within 15 minutes, rendering this scenario as absolute peak for site-specific trip generation. The hourly trip rates for the resulting train arrival scenario thus amount to 160 trips within the peak hour, which is the number utilized in VISSIM model for both the Opening Year 2026 and Future Total 2046 scenarios.

Some degree of rail trip demand growth is anticipated over the period 2026-2046. For example, the assumed 40 daily rail trips of 2026 (as outlined above) could be expected to grow at the same rate as the background traffic (1.5% annual), such that by 2046 a 30% increase (i.e., 12 additional daily trips) could be expected. Still, it is also reasonable to expect that Timmins policies will incentivize reliance on transit to access the rail services at the station, such that these additional 12 daily rail trips by 2046 can reasonably be expected to materialize as transit trips, leaving the maximum number of private automobile trips at the same number (40) that was assumed for the 2026 Opening Conditions scenario. The modelling of Future Total 2046 mirrors such assumptions.

In addition to car trips, ONTC motor coaches (i.e., buses) are expected to complement train services. 6 anticipated bus trips are expected per day. While these bus trips are not explicitly considered in the same hour to that of train arrival or departure, the conservative assumptions made and the fact that a worst-case scenario was simulated, accounts for any additional cars coming to the station to meet the motor coaches. Moreover, the introduction of buses is typically expected to improve overall traffic performance by reducing the number of car trips, thereby counterbalancing any potential increase in traffic from passengers meeting the motor coaches.

Distribution of the Proposed Station Trips

Trip distribution assumptions for the AM and PM peaks were derived from observation of the Existing Conditions turning patterns, available connections, and engineering judgement, and are illustrated in **Figure 6** below, respectively.

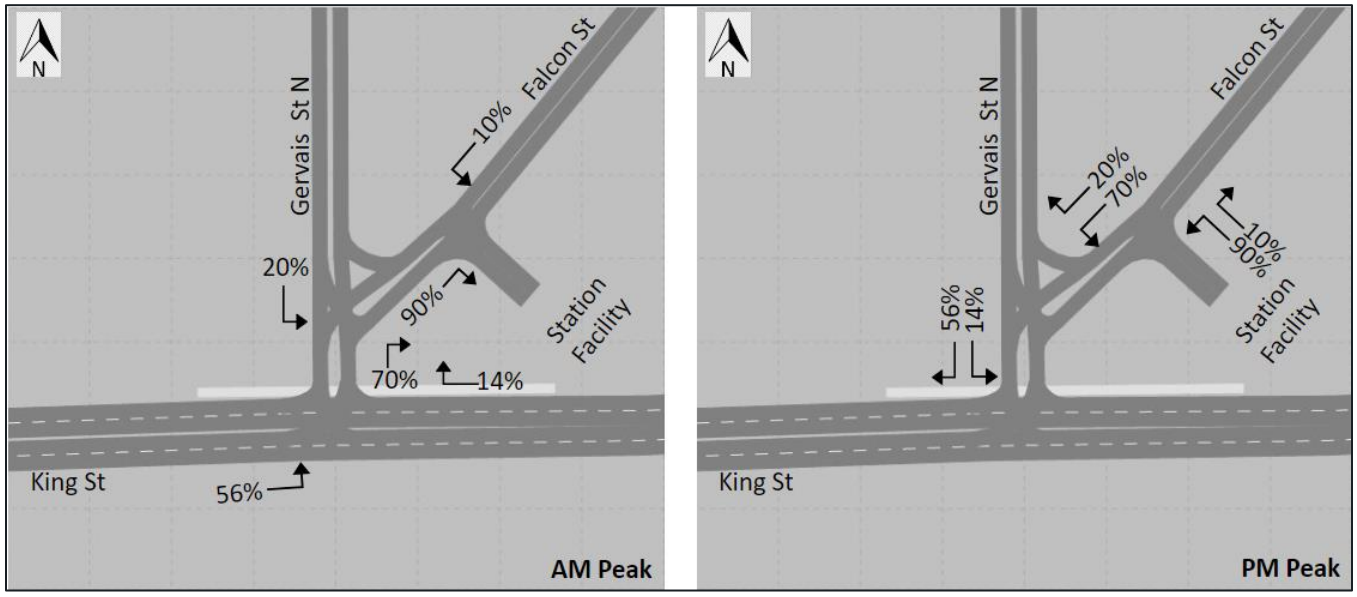


Figure 6: Development Traffic Distribution Assumed Percentages

4.5.3 Traffic Analysis for Future Scenarios with UIBC Train Schedule

As per the UIBC train schedule, the train is expected to depart Timmins station at approximately 12:00am (midnight) and arrives at Timmins by 5.30 AM. Background traffic for the midnight and early morning hours were required in order to model train arrival and departure scenarios in VISSIM. The following steps were undertaken for the purpose of deriving traffic volumes at study area intersections for midnight and early morning hours:

- AADT traffic volumes of King St. (Highway 101) (AADT 7,020 vehicles per day) from nearby locations were used as basis and compared with daytime 12 hour traffic volumes of King St./Gervais St. intersection (4,438 vehicles per day). It is worth to note that seasonal factor of 1.1 was applied to reflect summer traffic volumes when compared to AADT.
- 12-hour nighttime traffic at King St. / Gervais St. intersection was worked out by subtracting daytime 12-hour volumes from AADT traffic volumes (nighttime traffic volumes 2,762 vehicles per day).
- Out of nighttime 12-hour volumes, 5% traffic was assumed for midnight to 1AM (138 vehicles per hour) and 15% assumed for 6AM to 7AM (414 vehicles per hour).

Following industry best practices, VISSIM model runs have been conducted for the worst-case scenario, aligning with the peak hours of the adjoining streets. Given that nighttime traffic volumes on the study area roads are expected to be lower, a detailed analysis for future scenarios during the study area's peak hours has been performed and is included in the following section. .

4.5.4 Traffic Analysis for Future Scenarios

Should the NPR train schedule change in the future, ONTC will update this Traffic Impact Assessment report accordingly to reflect the revised train schedule (as well as any other revised/updated assumptions) to assess/confirm potential traffic impacts. The City of Timmins will be engaged as required.

Traffic Volumes for 2026 and 2046

As explained in previous sections, the traffic volumes were combined and included in both VISSIM models. The road vehicle trips with origin or destination at the station's parking lot, plus the rail passenger trips boarding/alighting the trains are bound to occur within designated time slots, whereas the background traffic (i.e., passing traffic that is simply utilizing the roadways of the Study Area) is expected to arrive evenly throughout the simulation period. **Figure 7** and **Figure 8** shows traffic volumes for horizon years 2026 and 2046 respectively.

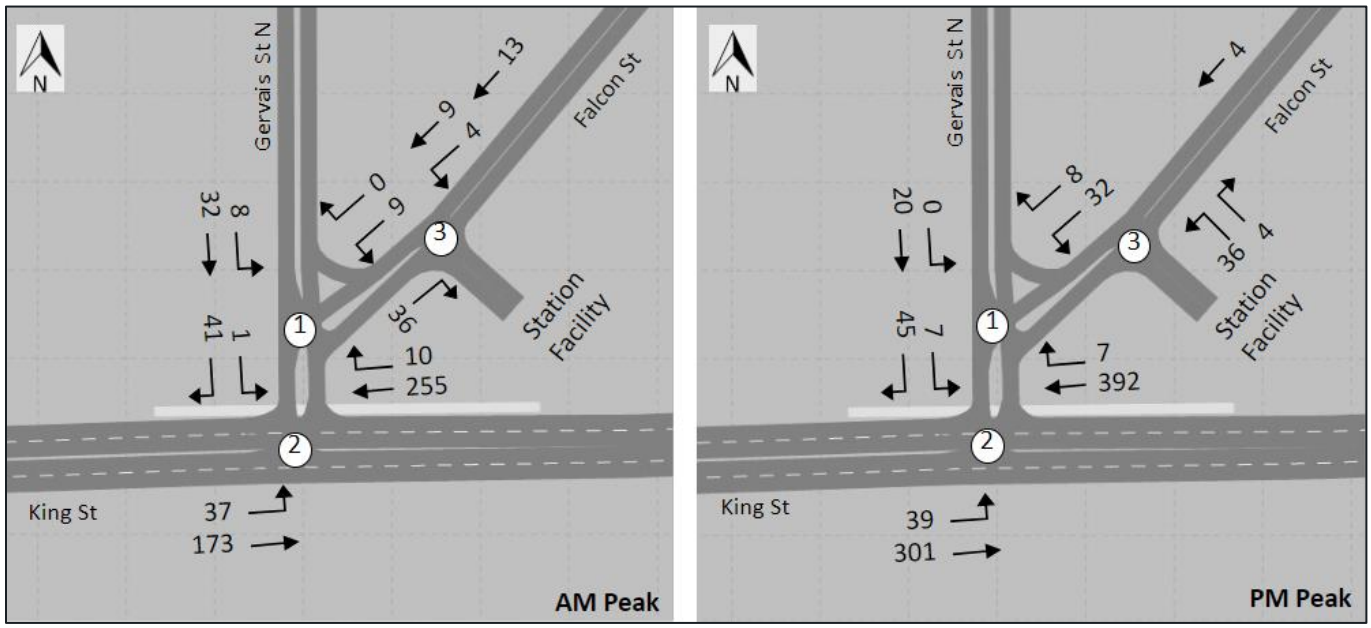


Figure 7: Opening Year 2026 - Peak Hour Traffic Volumes

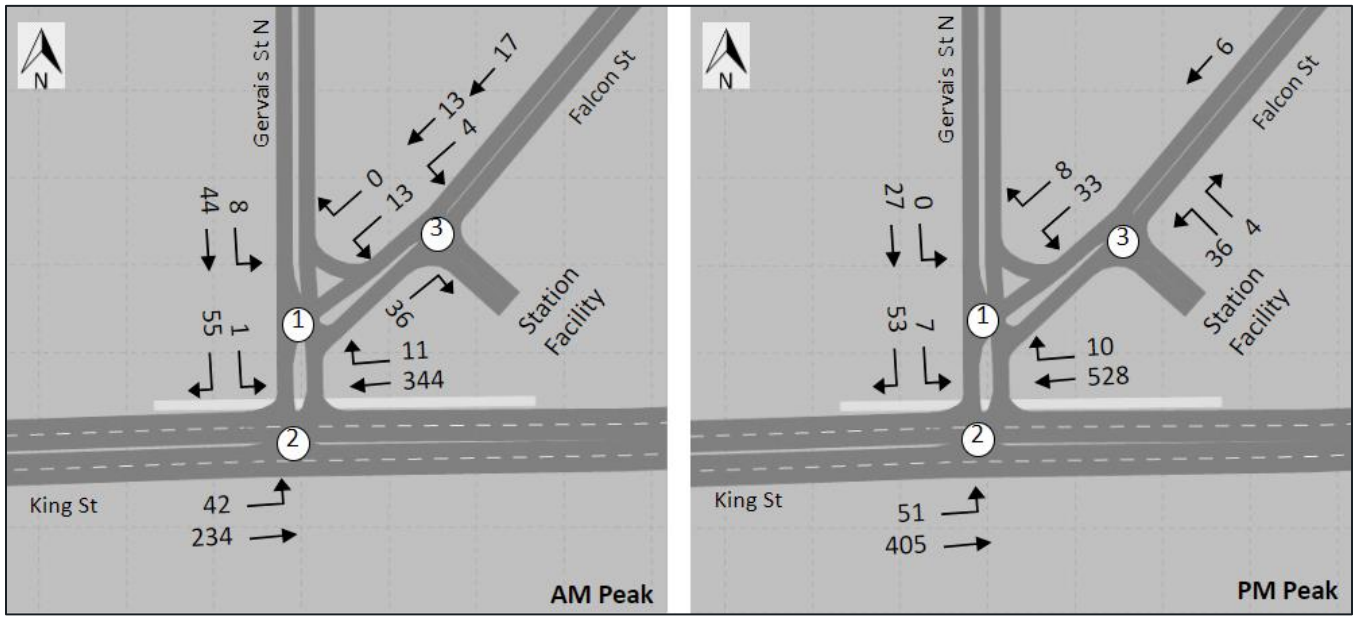


Figure 8: Horizon Year 2046 - Peak Hour Traffic Volumes

Heavy vehicle percentages (%HV) for the 2026 and 2046 models were kept identical to those of the Existing Conditions 2023 model (as shown in **Table 5**) as a conservative approach and in absence of evidence for future condition.

It is worth to note that construction staging before year 2026 will need to be handled in the detailed design phase and would need to follow applicable guidelines (i.e. OTM book 7) and will be aiming to restrict the traffic congestions /impacts during construction.

Model Validation

Model validation was also undertaken for the 2026 and 2046 models, similar to what was done for the Existing Conditions 2023 model, to make sure that the modelled flows are in line with the desired (forecasted + planned) traffic volumes. **Table 10** and **Table 11** shows model validation results for Years 2026 and 2046 respectively.

Table 10: Opening Year 2026 - Model Validation

2026		AM Peak Hour			PM Peak Hour		
Intersection	Movement	Traffic Counts	Model Volumes	GEH	Traffic Counts	Model Volumes	GEH
Gervais St N & Falcon St	SBL	8	8	0.00	0	0	0.00
	SBT	32	35	0.52	20	22	0.44
	WBR	0	0	0.00	8	9	0.34
	WBL	9	8	0.34	32	30	0.36
	NBR	42	43	0.15	14	14	0.00
	NBT	6	6	0.00	33	36	0.51
Gervais St N & King St	EBT	173	179	0.45	301	302	0.06
	EBL	39	39	0.00	41	43	0.31
	WBR	10	10	0.00	7	7	0.00
	WBT	255	254	0.06	392	394	0.10
	SBL	1	0	1.41	7	6	0.39
	SBR	41	42	0.16	45	46	0.15
Falcon St & Station	EBT	15	15	0.00	14	14	0.00
	EBR	36	36	0.00	0	0	0.00
	WBT	9	8	0.34	4	4	0.00
	WBL	4	4	0.00	0	0	0.00
	NBR	0	0	0.00	4	5	0.47
	NBL	0	0	0.00	36	35	0.17

Table 11: Horizon Year 2046 - Model Validation

2046		AM Peak Hour			PM Peak Hour		
Intersection	Movement	Traffic Counts	Model Volumes	GEH	Traffic Counts	Model Volumes	GEH
	SBL	8	8	0.00	0	0	0.00

2046		AM Peak Hour			PM Peak Hour		
Intersection	Movement	Traffic Counts	Model Volumes	GEH	Traffic Counts	Model Volumes	GEH
Gervais St N & Falcon St	SBT	44	46	0.30	27	29	0.38
	WBR	0	0	0.00	8	9	0.34
	WBL	13	12	0.28	33	32	0.18
	NBR	47	48	0.15	19	17	0.47
	NBT	8	10	0.67	45	48	0.44
Gervais St N & King St	EBT	234	238	0.26	405	417	0.54
	EBL	42	44	0.30	51	53	0.27
	WBR	11	12	0.29	10	9	0.32
	WBT	344	342	0.11	528	533	0.22
	SBL	1	1	0.00	7	6	0.39
	SBR	55	58	0.40	53	55	0.27
Falcon St & Station	EBT	19	20	0.23	19	17	0.47
	EBR	36	36	0.00	0	0	0.00
	WBT	13	12	0.28	6	6	0.00
	WBL	4	4	0.00	0	0	0.00
	NBR	0	0	0.00	4	5	0.47
	NBL	0	0	0.00	36	35	0.17

Tables 10 and **Table 11** indicate GEH readings for all turning movements that are well below the acceptable threshold, which confirms a very good fit for the model results.

Analysis Results

The Opening Year 2026 analysis results are listed in **Table 12** and The Future Total 2046 analysis results are listed in **Table 13**.

Table 12: Opening Year 2026 - Analysis Results

2026		AM Peak Hour			PM Peak Hour		
Intersection	Movement	Delay (s)	LOS	95th % Queue (m)	Delay (s)	LOS	95th % Queue (m)
Gervais St N & Falcon St	SBL	0.4	A	0	0.0	A	0
	SBT	1.2	A	0	1.3	A	0
	WBR	0.0	A	0	5.4	A	28
	WBL	5.3	A	0	7.1	A	28
	NBR	0.2	A	0	3.1	A	0
	NBT	0.1	A	0	0.1	A	0
	Overall	**0.9**	**A**		**3.2**	**A**	

2026		AM Peak Hour			PM Peak Hour		
Intersection	**Movement**	**Delay (s)**	**LOS**	**95th % Queue (m)**	**Delay (s)**	**LOS**	**95th % Queue (m)**
Gervais St N & King St	EBT	0.0	A	0	0.0	A	0
	EBL	1.4	A	0	2.1	A	0
	WBR	0.6	A	0	0.6	A	0
	WBT	0.3	A	0	0.1	A	0
	SBL	4.2	A	6	6.7	A	6
	SBR	4.8	A	6	6.0	A	6
	Overall	**0.6**	**A**		**0.6**	**A**	
Falcon St & Station	EBT	0.1	A	0	3.2	A	0
	EBR	0.0	A	0	0.0	A	0
	WBT	1.7	A	0	2.2	A	0
	WBL	0.3	A	0	0.0	A	0
	NBR	0.0	A	0	24.2	C	20
	NBL	0.0	A	0	11.9	B	20
	Overall	**0.3**	**A**		**10.6**	**B**	

Table 12 shows that majority of the movements of both the intersection are expected to operate with LOS B or better except Station exit during PM peak when all the vehicles are assumed to be leaving in 15 minutes, is expected to operate with LOS C. However, overall LOS for both the intersections are expected to be LOS B or better.

Table 13: Horizon Year 2046 - Analysis Results

2046		AM Peak Hour			PM Peak Hour		
Intersection	**Movement**	**Delay (s)**	**LOS**	**95th % Queue (m)**	**Delay (s)**	**LOS**	**95th % Queue (m)**
Gervais St N & Falcon St	SBL	4.0	A	0	0.0	A	0
	SBT	1.3	A	0	1.6	A	0
	WBR	0.0	A	5	5.4	A	11
	WBL	6.1	A	5	7.6	A	11
	NBR	2.5	A	0	0.3	A	0
	NBT	0.1	A	0	0.1	A	0
	Overall	**2.4**	**A**		**2.6**	**A**	
Gervais St N & King St	EBT	0.0	A	0	0.0	A	0
	EBL	1.9	A	0	2.6	A	0
	WBR	0.4	A	0	0.9	A	0
	WBT	0.2	A	0	0.1	A	0
	SBL	7.7	A	11	7.4	A	12
	SBR	5.0	A	11	6.0	A	12

2046		AM Peak Hour			PM Peak Hour		
Intersection	**Movement**	**Delay (s)**	**LOS**	**95th % Queue (m)**	**Delay (s)**	**LOS**	**95th % Queue (m)**
	Overall	**0.6**	**A**		**0.5**	**A**	
Falcon St & Station	EBT	4.4	A	0	5.2	A	0
	EBR	0.1	A	0	0.0	A	0
	WBT	2.1	A	0	1.8	A	0
	WBL	0.3	A	0	0.0	A	0
	NBR	0.0	A	0	25.7	D	20
	NBL	0.0	A	0	10.5	B	20
	Overall	**1.8**	**A**		**9.3**	**A**	

Table 13 shows that majority of the movements of both the intersection are expected to operate with LOS B or better except Station exit during PM peak when all the vehicles are assumed to be leaving in 15 minutes, is expected to operate with LOS D. However, overall LOS for both the intersections are expected to be LOS A.

Figure 9 and **Figure 10** shows 95th percentile queue lengths at all the approaches of both the study area intersections in Year 2026 and 2046 respectively. The 95th percentile queues are the standard reading relied on to design storage lanes for accommodating vehicular queues.

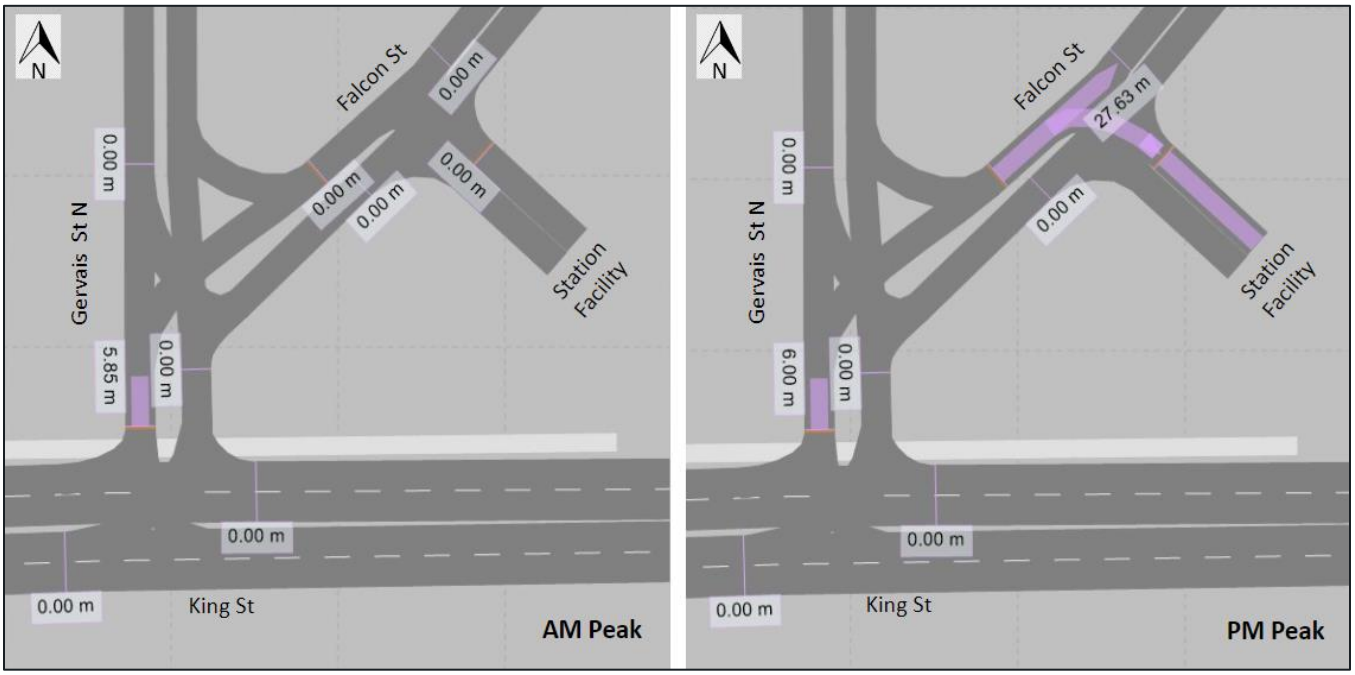


Figure 9: Opening Year 2026 - 95th Percentile Queue Lengths

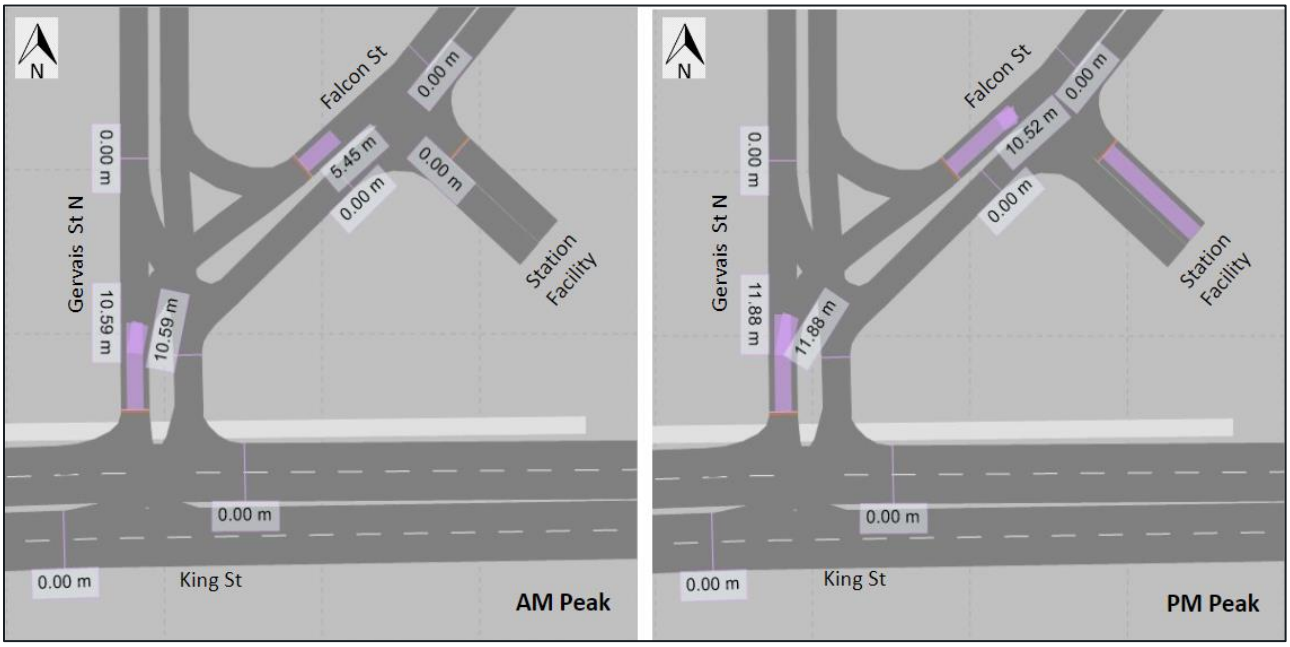


Figure 10: Horizon Year 2046 - 95th Percentile Queue Lengths

Volume to Capacity Ratio (VC Ratio)

Similar to existing condition analysis, Synchro model was developed to derive maximum VC ratio for both the study intersections in horizon years. VC ratio results are as summarised in **Table 14** below:

Table 14: VC Ratio Summary – Existing Condition

Intersection	Peak	Maximum VC Ratio	
		Horizon Year 2026	Horizon Year 2046
Gervais St. / Falcon St.	AM	0.03	0.04
	PM	0.05	0.05
King St. / Gervais St.	AM	0.11	0.15
	PM	0.17	0.23

It can be seen from **Table 14** that both the intersections are operating with minimal VC ratio indicating no congestion similar to other analysis parameters.

Similar to left turn warrant checks for existing condition analysis in Section 4.4, warrants were checked for Horizon year 2046 traffic volumes as per Exhibit 9A-31 of MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads-2017 June 2023 Edition (copy of Exhibit 9A-31 is included in Appendix A). Following traffic volumes were used for this warrant check.

- Left turn traffic volume – 42vph (AM) & 51vph (PM)
- Opposing traffic volume – 344 vph (AM) & 528vph (PM)

As documented in Section 4.1, eastbound left turn lane with 15m of storage length was warranted. Future traffic volume projections indicate that during the AM peak, only 8 vehicles per hour (out of a total of 42 vph) are related

to station traffic making an eastbound left turn at the King St. / Gervais St. intersection. In contrast, no station-related traffic is expected to make an eastbound left turn at this intersection during the PM peak.

Using above traffic volumes of horizon year 2046, 15m of storage length for eastbound left turn will still be required.

5.0 ACTIVE TRANSPORTATION

The Timmins-Porcupine Station will provide access to long-distance rail travel to the entire municipality; therefore, it is anticipated that the Northlander service will eventually become integrated/accessible through municipal active transportation networks (i.e., pedestrian and cycling infrastructure).

Under Existing Conditions, the site of the proposed Timmins-Porcupine Station has limited pedestrian and cycling infrastructure or connections, such as sidewalks or bike lanes on surrounding roadways.

A Site Plan Application (SPA)[1] may include details of pedestrian infrastructure (i.e., sidewalks) upgrades to enhance pedestrian accessibility, such as paved curbs on either side of Falcon Street and integration with the surrounding pedestrian infrastructure. The station site itself might provide clearly demarcated pedestrian pathways connecting transit users to the public transit platforms located on the Falcon Street frontage, providing access to the wider municipality and the City of Timmins Transit Terminal located 13 km west of the station.

A SPA may include details of cycling infrastructure, with bicycle parking racks provided around the main station building. Elements of detailed design should also be further examined at the SPA stage, to confirm geometric design dimensions of elements such as the site access driveway and internal site circulation (AutoTurn footprint review for the design vehicle).

[1] Detailed design is currently underway with site elements being refined.

6.0 SUMMARY OF POTENTIAL IMPACTS, MITIGATION MEASURES AND MONITORING ACTIVITIES

Table 15: Traffic – Potential Impacts, Mitigation and Monitoring Commitments

Project Component	Project Activities	Potential Effect	Mitigation Measures/ Commitments	Monitoring/Future Work Commitments
Proposed Timmins-Porcupine Station	• Operations and Maintenance	• Negligible impact to existing traffic conditions due to operation of Timmins Station.	• No intersection improvements are deemed required to accommodate the proposed station's traffic. No other mitigation measures required.	• If the NPR train schedule changes in the future, the Traffic Impact Report will be updated accordingly to re-examine potential traffic impacts on the surrounding road network. • Ongoing consultation with the City of Timmins regarding traffic conditions, as/if required.
	• Construction	• Restriction of nearby on-street parking along Falcon Street.	• Preliminary assessment of site access and circulation during construction.	• Monitoring and/or future work commitments are not required.
		• Construction may result in the need for temporary road/lane closures, changing access to nearby land uses. • Temporary modifications to traffic signal timing at adjacent intersections may be required.	• Traffic Control and Management Plan(s) will be developed prior to construction. • Access to nearby land uses will be maintained to the extent possible, during construction. • Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules in advance of construction activities occurring. • Temporary traffic signal timing modifications may be assessed/implemented to optimize traffic operations and capacity of affected and adjacent intersections. • Advance notification signage will be placed along the road network in the vicinity upstream of the affected areas to advise motorists of construction and road disruptions. • Paramedic services, City of Timmins Fire Department, Timmins Police Service and Ontario Provincial Police (South Porcupine Detachment) will be given an opportunity to review emergency response plans and access/egress points to construction sites.	• Temporary traffic signal timing should be monitored. • Develop and implement a Complaints and Compliments Protocol to respond to complaints from surrounding residents that may arise during construction.
		• Construction may result in access restrictions to local bus routes, and temporary changes in bus stop shelters/locations.	• Ensure that the public is notified in advance of any potential service disruptions. • Consult with Timmins Transit to establish a suitable mitigation strategy to be implemented.	• Develop and implement a Complaints and Compliments Protocol to respond to complaints from surrounding residents that may arise during construction.
		• Temporary effects on cyclists / pedestrians during construction such as temporary, partial or full sidewalk closures. • Potential increased distance to travel.	• Potential effects to pedestrian and cyclist activities during construction will be mitigated through the installation of appropriate wayfinding, regulatory, and warning signs. Existing sidewalks and crossings will be maintained to the extent possible. • Construction schedules will be shared with the public to encourage adjustments to travel patterns and behaviours accordingly and help reduce traffic impacts during peak hours.	• Temporary access paths, walkways, etc. should be monitored.
Existing conditions	• Not Project induced	• Compliance with the MTO Design Supplement for the TAC Geometric Design Guide (GDG) for Canadian Roads – 2017, June 2023 Edition	• The City of Timmins to consider amending the lane markings on the eastbound approach of King Street and Gervais Street Intersection to designate one left-turn lane and one through lane with additional corresponding signage.	•

7.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The modeling results inform the decision on whether to recommend intersection improvements to mitigate any traffic impacts arising from the station's implementation/operation.

The key conclusions resulting from modelling the two scenarios are outlined below.

A 15m eastbound left turn storage lane is required at the intersection of King Street and Gervais Street under both existing and future conditions, as determined by the warrant analysis based on the MTO Design Supplement for the TAC Geometric Design Guide (GDG) for Canadian Roads – 2017, June 2023 Edition. Future traffic volumes were thoroughly reviewed, and it was determined that during the AM peak, only 8 vehicles per hour (out of a total of 42 vph) are related to station traffic making an eastbound left turn at this intersection. No station-related traffic is expected to make an eastbound left turn during the PM peak.

To address the eastbound left-turn storage lane requirement and considering the lane drop just east of the King Street and Gervais Street intersection, it is recommended that the City of Timmins considers amending the lane markings on the eastbound approach to designate one left-turn lane and one through lane, with additional corresponding signage for clarity.

Scenario 1 – UIBC Train Schedule

- The first scenario reflects the UIBC train schedule (i.e., train departs Timmins Station at approximately 2400 (midnight) and arrives at Timmins Station by 0530.
- All study area intersections are expected to operate with insignificant delays or queues.

Scenario 2 – Train Schedule that matches peak traffic hours of the adjacent road network

- A second (worst case) scenario was modeled (for due diligence purposes) which assumed peak hours of 0700-0800 and 1630-1730 for train arrival and train departure time, to match peak hours of the adjacent road network, in order to identify any impacts on the city road network, should the Northlander schedule ever change.
- All study area intersections are expected to operate with LOS B or better with insignificant delays. Minor queuing is expected for 15 minutes (immediately after train arrival) in PM peak.

The low frequency of the proposed rail service (one train per day, per direction), combined with the relatively low number of passengers who are expected to utilize the Timmins-Porcupine Station suggests an overall low number of site-specific trips arising from regular station operations. The VISSIM results indicate that no intersection improvements are required to accommodate the station's traffic – not even by the Future Total horizon of 2046.

Traffic models predict excellent Levels of Service (LOS) "A" or "B" for all intersections in both 2026 and 2046 horizon years and in ***both*** train timing scenarios (i.e., UIBC and Worst-case scenario); this rating reflects minimal delays and superior traffic flow characteristics, meeting or exceeding the desired standards for roadway efficiency and user satisfaction.

Therefore, no intersection improvements are deemed required to accommodate the proposed station's traffic.

8.0 FUTURE WORK/COMMITMENTS

In terms of roadway capacity, the analysis results indicate that no improvements are required to accommodate the additional traffic demand arising from the station's implementation. The Future 2026 levels of service are all "B" or better, with low delays and negligible queues.

It is acknowledged that the 2046 analysis horizon lies far ahead in the future, such that organic (background) traffic volumes could potentially grow faster than the 1.5% growth rates assumed, or as-yet-unknown nearby developments could reduce capacity in the road network that serves the station. For those reasons, it is recommended that periodic revisiting of this analysis be performed, so as to confirm the conclusions regarding infrastructure improvement requirements.

Should the NPR train schedule change in the future, Ontario Northland will update this Traffic Impact Assessment report accordingly to reflect the revised train schedule (as well as any other revised/updated assumptions) to assess/confirm potential traffic impacts. The City of Timmins will be engaged as required.

9.0 REFERENCES

City of Timmins, 2009. City of Timmins By-law No. 2009-6755. Timmins Official Plan (Updated 06-07-2019). Retrieved from: https://www.timmins.ca/cms/One.aspx?portalId=11976429&pageId=13193511

City of Timmins, 2015. Manual of Engineering and Development Standards. (Traffic Impact Studies). Retrieved from: https://www.timmins.ca/our_services/engineering/engineering_standards/manual_of_engineering_and_development_standards

Ministry of Transport Ontario (MTO). MTO Design Supplement for TAC Geometric Design Guide (GDG) for Canadian Roads June 2023. Retrieved from: https://tcp.mto.gov.on.ca/sites/default/files/2023-06/MTO%20DS%20Draft%20June%206%202023-min.pdf

APPENDIX A

Traffic Counts Data

Land Use Plan

Exhibit 9A-31 of MTO Design Supplement for TAC Geometric Design Guide (GDG) for Canadian Roads – 2017 June 2023 Edition

GANNETT FLEMING

INTERSECTION COUNT - FIELD SHEET

ONLY WHITE CELLS ARE FILLABLE

King @ **Gervais**

Municipality	CITY OF TIMMINS
Major Road	King
Minor Road	Gervais
Major Road Runs	EAST-WEST

WARNING

THERE IS NO WARNING- GO AHEAD

3 - LEG INTERSECTION

PC. Eq 1

Date	29-Nov-23
Weather	-2°C, Light Snow
Person No.1	Justin Rendulic
Person No.2	

NOTE 1: UA= Unassisted Pedestrian, A= Assisted Pedestrian, UAD= Unassisted Pedestrian Delayed more than 30 seconds, AD= Assisted Pedestrian Delayed more that 30 seconds

PERIOD ENDING	King EASTBOUND										Gervais NORTHBOUND										King WESTBOUND										Gervais SOUTHBOUND										VEHICLE SUMMARY	
	CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING					
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	Vehicles	Veh/Ped
7:15	1	36	0	1	9	0															0	57	0	0	12	0					1	0	10	0	0	0					127	127
7:30	6	38	0	1	6	0															0	51	2	0	5	0					0	0	5	0	0	0					114	114
7:45	3	29	0	1	9	0															0	52	0	0	7	1					0	0	11	0	0	3					116	116
8:00	1	31	0	0	8	0															0	57	1	0	3	0					0	0	9	0	0	1					111	111
8:15	10	35	0	0	10	0															0	30	0	0	7	0					0	0	8	0	0	1					101	101
8:30	4	31	0	1	5	0															0	50	1	0	7	0					0	0	12	1	0	0					112	112
8:45	10	42	0	0	10	0															0	32	0	0	1	0					0	0	6	0	0	1					102	102
9:00	4	28	0	0	6	0															0	33	0	0	5	0					0	0	6	0	0	0					82	82
11:45	2	26	0	0	8	0															0	29	1	0	6	0					0	0	4	0	0	0					76	76
12:00	8	29	0	0	8	0															0	40	1	0	17	1					0	0	4	0	0	0					108	108
12:15	6	26	0	0	9	0															0	41	0	0	6	1					1	0	4	1	0	0					95	95
12:30	11	37	0	0	10	0															0	38	0	0	7	0					1	0	7	0	0	1					112	112
12:45	10	24	0	0	11	0															0	35	0	0	10	0					0	0	7	0	0	0					97	97
13:00	7	35	0	0	11	0															0	30	0	0	5	0					0	0	1	0	0	0					89	89
13:15	11	37	0	2	7	0															0	38	1	0	6	0					2	0	5	0	0	1					110	110
13:30	5	20	0	1	6	0															0	33	0	0	8	0					0	0	5	0	0	0					78	78
15:15	15	41	0	0	10	0	2														0	42	1	0	8	0					2	0	12	0	0	0					131	133
15:30	10	60	0	0	5	0															0	55	0	0	6	1					1	0	7	1	0	0					146	146
15:45	18	57	0	0	3	0															0	57	1	0	10	0					0	0	14	0	0	0					160	160
16:00	6	67	0	0	5	0															0	57	0	0	4	0					1	0	6	0	0	0					146	146
16:15	8	63	0	0	3	0	2														0	52	1	0	3	0					3	0	5	0	0	0					138	140
16:30	13	77	0	0	8	0															0	63	1	0	5	0					1	0	5	0	0	0					173	173
16:45	8	80	0	0	3	0															0	87	3	0	7	0					0	0	6	0	0	0					194	194
17:00	10	48	0	0	5	0															0	68	1	0	6	0					0	0	6	0	0	0					144	144
17:15	8	71	0	2	6	0	3														0	100	1	0	7	0					1	0	8	0	0	1					205	208
17:30	9	71	0	0	4	0															0	96	2	0	4	0					0	0	1	0	0	0					187	187
17:45	16	53	0	0	6	0															0	95	1	0	1	0					2	0	4	0	0	0					178	178
18:00	10	48	0	0	4	0															0	58	0	0	5	0					0	0	7	0	0	0					132	132
18:15	15	53	0	0	3	0															0	37	0	0	1	0					2	0	5	0	0	0					116	116
18:30	7	32	0	1	3	0															0	30	2	0	5	0					0	0	4	0	0	0					84	84
18:45	7	28	0	0	4	0															0	24	0	0	2	0					0	0	3	0	0	0					68	68
19:00	12	23	0	0	5	0															0	22	1	0	2	0					0	0	7	0	0	1					73	73
TOTAL	271	1376	0	10	210	0	7	0		0	0	0	0	0	0	0	0	0		0	0	1532	22	0	188	4	0	0		0	18	0	204	3	0	10	0	0		0	**3905**	**3912**

INTERSECTION COUNT - FIELD SHEET

ONLY WHITE CELLS ARE FILLABLE

Falcon @ **Gervais**

Municipality	CITY OF TIMMINS
Major Road	Gervais
Minor Road	Falcon
Major Road Runs	NORTH-SOUTH

WARNING

THERE IS NO WARNING- GO AHEAD

3 - LEG INTERSECTION

PC. Eq 1

Date	29-Nov-23
Weather	-2°C, Light Snow
Person No.1	Justin Rendulic
Person No.2	

NOTE 1: UA= Unassisted Pedestrian, A= Assisted Pedestrian, UAD= Unassisted Pedestrian Delayed more than 30 seconds, AD= Assisted Pedestrian Delayed more that 30 seconds

PERIOD ENDING	Gervais NORTHBOUND										Falcon EASTBOUND										Gervais SOUTHBOUND										Falcon WESTBOUND										VEHICLE SUMMARY	
	CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING					
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	Vehicles	Veh/Ped
7:15		0	1			1																10									1									13	13
7:30		5	3			1																4									1									14	14
7:45		1	2			2																10									1			3						19	19
8:00		0	2																			7									2			1						12	12
8:15		8	2																			7			1						1									19	19
8:30		3	2			1																12												1						19	19
8:45		8	2																			5			1						1									17	17
9:00		3	1																			5									1									10	10
11:45		2	1																			3									1									7	7
12:00		7	2			1																4																		14	14
12:15		4	2			1																4			1						1									13	13
12:30		9	2																			8												1						20	20
12:45		8	2																			7																		17	17
13:00		6	1																			1																		8	8
13:15		10	2		1	1																6			1						1									22	22
13:30		3	2			1																4									1									11	11
15:15		13	3				2															12									2									30	32
15:30		7	3			1																5									3			1						20	20
15:45		16	3																			11									3									33	33
16:00		4	2																			4									3									13	13
16:15		6	3				2															7									1									17	19
16:30		11	3																			6																		20	20
16:45		7	4																			6																		17	17
17:00		8	3																			6																		17	17
17:15		7	2			2	3															7									2			1						21	24
17:30		10	1																			0									1									12	12
17:45		15	2																			5									1									23	23
18:00		9	1																			6									1									17	17
18:15		13	2																			7																		22	22
18:30		7	2			1																3									1									14	14
18:45		6	1																			3																		10	10
19:00		12	1																			6									1			1						21	21
TOTAL	0	228	65	0	1	13	7	0		0	0	0	0	0	0	0	0	0		0	0	181	0	0	4	0	0	0		0	31	0	0	9	0	0	0	0		0	**542**	**549**

INTERSECTION COUNT - FIELD SHEET

ONLY WHITE CELLS ARE FILLABLE

Gervais @ **Falcon**

Municipality	CITY OF TIMMINS
Major Road	Gervais
Minor Road	Falcon
Major Road Runs	NORTH-SOUTH

WARNING

THERE IS NO WARNING- GO AHEAD

3 - LEG INTERSECTION

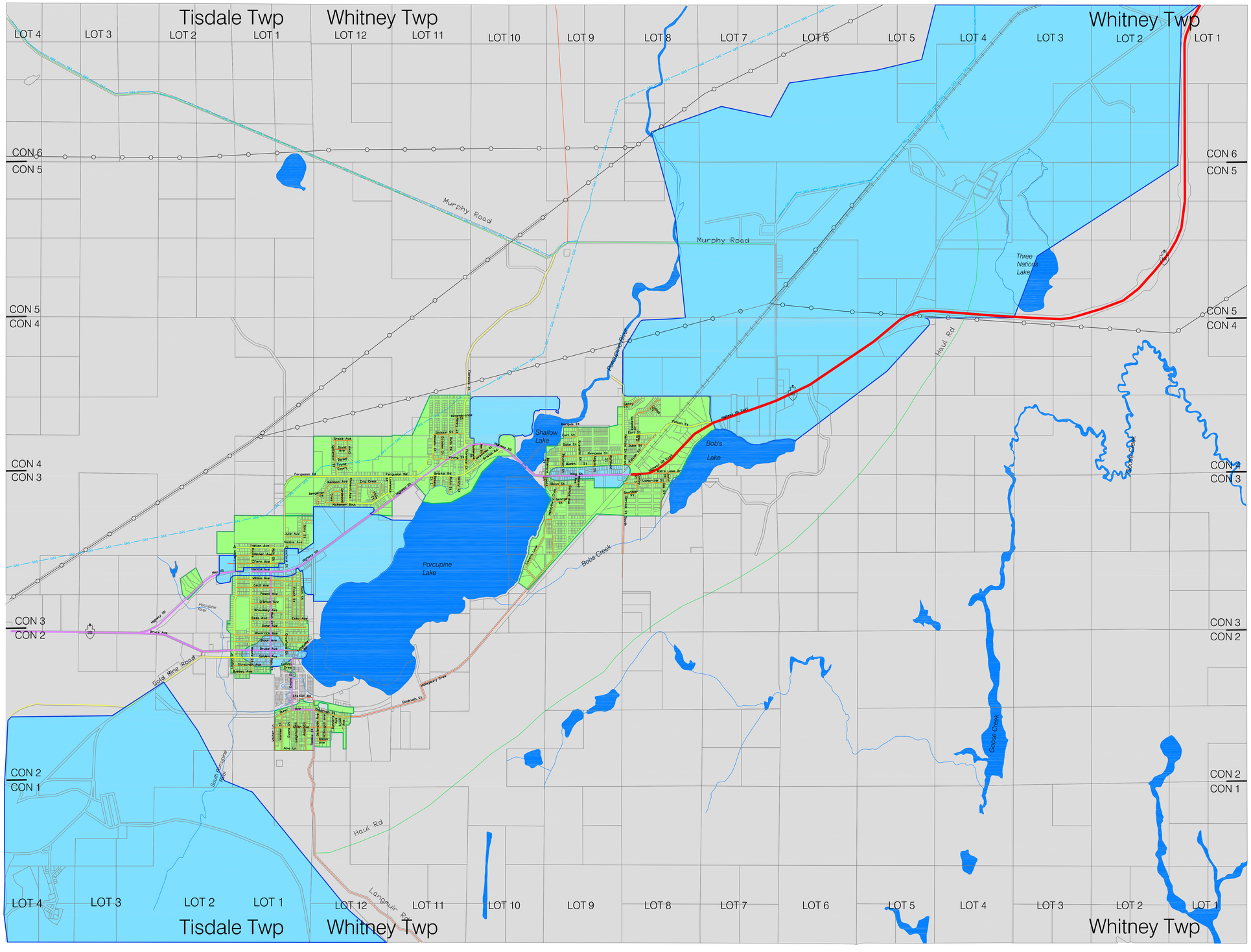
PC. Eq 1

Date	June 6th, 2019
Weather	18°C, Sunny
Person No.1	Darquise Mantha
Person No.2	

NOTE 1: UA= Unassisted Pedestrian, A= Assisted Pedestrian, UAD= Unassisted Pedestrian Delayed more than 30 seconds, AD= Assisted Pedestrian Delayed more that 30 seconds

PERIOD ENDING	Gervais NORTHBOUND										Falcon EASTBOUND										Gervais SOUTHBOUND										Falcon WESTBOUND										VEHICLE SUMMARY	
	CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING				CARS			TRUCKS			PEDESTRIAN CROSSING					
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	UA	A	UAD	AD	Vehicles	Veh/Ped
7:15	0	1	1	0	0	0					0	0	0	0	0	0					0	7	1	0	0	0					1	0	0	0	0	0					11	11
7:30	0	2	0	0	0	0					0	0	0	0	0	0					0	6	2	0	0	0					0	0	0	0	0	0					10	10
7:45	0	5	1	0	0	1					0	0	0	0	0	0					0	9	1	0	1	0					1	0	0	0	0	0					19	19
8:00	0	5	1	0	0	0					0	0	0	0	0	0					0	16	0	0	0	0					0	0	0	1	0	0					23	23
8:15	0	1	0	0	0	0					0	0	0	0	0	0					0	9	1	0	0	0					1	0	0	1	0	0					13	13
8:30	0	7	2	0	0	0					0	0	0	0	0	0					0	6	0	0	0	0					0	0	0	0	0	0					15	15
8:45	0	0	0	0	0	0					0	0	0	0	0	0					0	0	0	0	0	0					0	0	0	0	0	0					0	0
9:00	0	0	0	0	0	0					0	0	0	0	0	0					0	0	0	0	0	0					0	0	0	0	0	0					0	0
11:45	0	5	4	0	0	1					0	0	0	0	0	0					0	7	0	0	0	0					2	0	0	0	0	0					19	19
12:00	0	5	1	0	0	2					0	0	0	0	0	0					0	5	0	0	0	0					0	0	0	0	0	0					13	13
12:15	0	7	3	0	0	0					0	0	0	0	0	0					0	6	0	0	1	0					1	0	0	0	0	0					18	18
12:30	0	8	0	0	0	1					0	0	0	0	0	0					0	4	0	0	0	0					1	0	0	0	0	0					14	14
12:45	0	2	3	0	0	0					0	0	0	0	0	0					0	11	0	0	0	0					1	0	0	0	0	0					17	17
13:00	0	5	2	0	0	1					0	0	0	0	0	0					0	5	0	0	0	0					2	0	0	0	0	0					15	15
13:15	0	6	2	0	0	0					0	0	0	0	0	0					0	7	0	0	0	0					1	0	0	0	0	0					16	16
13:30	0	5	1	0	0	1					0	0	0	0	0	0					0	4	0	0	0	0					1	0	0	0	0	0					12	12
15:15	0	9	0	0	1	0					0	0	0	0	0	0					0	3	0	0	1	0					0	0	0	0	0	0					14	14
15:30	0	11	3	0	0	0					0	0	0	0	0	0					0	4	0	0	2	0					1	0	0	0	0	0					21	21
15:45	0	14	3	0	0	0					0	0	0	0	0	0					0	11	0	0	1	0					7	0	0	0	0	0					36	36
16:00	0	6	3	0	2	1					0	0	0	0	0	0					0	7	0	0	0	0					5	0	0	2	0	0					26	26
16:15	0	16	1	0	2	1					0	0	0	0	0	0					0	11	0	0	0	1					1	0	0	0	0	0					33	33
16:30	0	12	2	0	0	1					0	0	0	0	0	0					0	4	1	0	1	0					0	0	0	0	0	0					21	21
16:45	0	12	1	0	0	0					0	0	0	0	0	0					0	7	0	0	0	0					2	0	0	0	0	0					22	22
17:00	0	4	0	0	0	1					0	0	0	0	0	0					0	7	0	0	0	0					2	0	0	0	0	0					14	14
17:15	0	15	4	0	0	1					0	0	0	0	0	0					0	9	0	0	0	0					2	1	0	0	0	0					32	32
17:30	0	6	1	0	0	1					0	0	0	0	0	0					0	9	0	0	0	0					0	0	0	0	0	0					17	17
17:45	0	13	0	0	0	0					0	0	0	0	0	0					0	12	0	0	0	0					1	0	0	0	0	0					26	26
18:00	0	8	0	0	0	1					0	0	0	0	0	0					0	11	0	0	0	0					0	0	0	0	0	0					20	20
18:15	0	9	0	0	0	0					0	0	0	0	0	0					0	6	0	0	0	0					0	0	0	0	0	0					15	15
18:30	0	11	1	0	0	1					0	0	0	0	0	0					0	8	0	0	0	0					2	0	1	0	0	0					24	24
18:45	0	6	1	0	0	0					0	0	0	0	0	0					0	11	0	0	0	0					0	0	0	0	0	0					18	18
19:00	0	3	1	0	0	1					0	0	0	0	0	0					0	5	0	0	0	0					1	0	0	0	0	0					11	11
TOTAL	0	219	42	0	5	16	0	0		0	0	0	0	0	0	0	0	0		0	0	220	6	0	7	1	0	0		0	36	1	1	4	0	0	0	0		0	**565**	**565**

See Schedule A



See Schedule A1

See Schedule A

See Schedule A

City of Timmins

OFFICIAL PLAN

Schedule A2 - Land Use Plan

Legend

Land Use Designations:

- Neighbourhood Area
- Employment Area
- Goldfields
- Resource Development Area

Transportation Infastructure:

- Provincial Highway
- City:
  - -Arterial
  - -Collector
  - -Local Access Streets
- Resource Access Roads
- Private Roads

- Railway Line
- Union Gas Lines
- Power Transmission Lines
- Infrastructure Service Corridor
- City Boundary
- Township Boundary

Note: The base information on this plan was prepared from a variety of map sources and was used by permission of the City of Timmins. It is not a legal plan of survey. For precise location of plan features recourse should be had to the original source data.

250m 500m 750m 1000m 1250m

Date Created: October, 2006

Date Modified: July 28,2014

Revised: October, 2017

Digital Map Created By:

G:\Revolution\Internal\Image_Library\Tunnock_Consulting\logo.png

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1 Sherbrooke St, Suite 301
Perth, ON K7H 1A1
TEL: 613-267-0027
FAX: 613-326-0030
www.cgis.com

Proposed Timmins-Porcupine Station Conceptual Site Layout

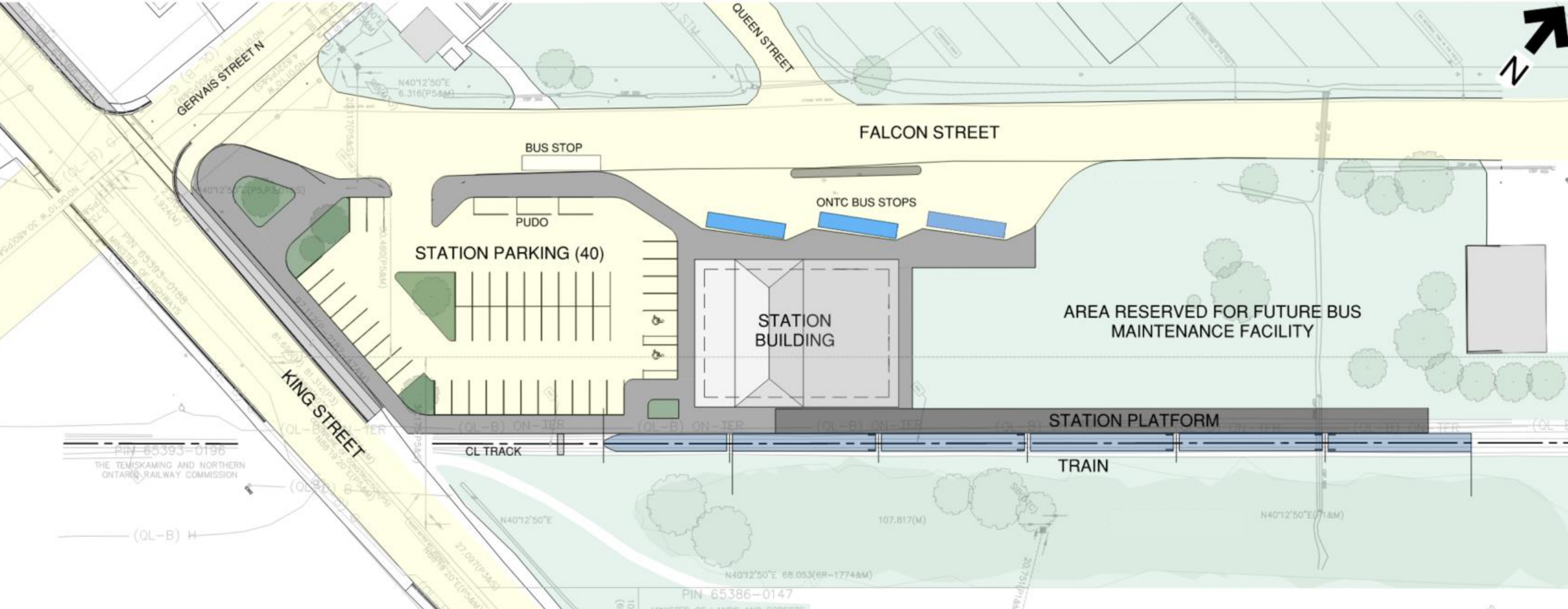

Exhibit-9A-31