City of Iqaluit Transportation Master Plan

Final Report

April 25, 2022

Prepared for:

City of Iqaluit

Prepared by:

Nunami Stantec Limited

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1.0 INTRODUCTION

1.1 ABOUT THE TRANSPORTATION MASTER PLAN

As a result of becoming the newest capital city in Canada, Iqaluit is experiencing a period of rapid development and growth. Between 2006 and 2016, the City added over 1,550 new residents (a 25% increase), accounting for approximately half of all growth within the broader Baffin Region during that same timeframe. According to the City's General Plan it is expected that by the year 2030 the city will be home to an additional 5,300 people, representing a 69% growth in population over existing levels. With the advent of growth, Iqaluit is faced with several transformative challenges that will dictate its continued success in the Arctic. A major challenge manifests itself in the form of accommodating mobility needs in an arctic climate. While snow and ice aren't unfamiliar to most Canadian communities, Iqaluit's geology, terrain, and climate, although breathtaking, present significant challenges to implementing and maintaining road, off-road vehicle, and active transportation infrastructure. Moreover, the rate of automobile ownership is growing at a rate faster than that of population growth, and consequently driving is forming an increasing percentage of the mode share of trips made by Iqalummiut, further exacerbating transportation infrastructure constraints.

The purpose of the Transportation Master Plan (TMP) is to evaluate the city's transportation network and provide strategic recommendations related to roads, snowmobile trails, active transportation, and public transit, aimed at meeting the needs of residents today and into the future. Consideration is given to both the residents with vehicles and those who are physically, economically, and/or socially disadvantaged who cannot use or have access to an automobile. Taken together, the TMP's package of recommendations is intended to be a contemporary, forward-thinking plan that takes a multi-modal approach to transportation planning, considering the interplay between the different modes of transportation and seeking to create a whole that is greater than the sum of the parts. The result is a plan that is designed appropriately for people, for placemaking, and for prosperity.

1.2 ABOUT NUNAMI STANTEC

Established in 2006, Nunami Stantec is a majority Inuit-owned consulting company based in Rankin Inlet, Nunavut. Nunami Stantec is a partnership between the Sakku Investment Corporation, Kitikmeot Corporation and Stantec Consulting Ltd., providing environmental science and engineering services to organizations throughout all three regions of Nunavut. Nunami delivers quality services and solutions to clients while providing employment, training, and financial profits to beneficiaries under the *Nunavut Agreement*. The partners have committed to delivering their services in Nunavut exclusively through Nunami Stantec. Nunami Stantec is registered as an Inuit Owned Firm with Nunavut Tunngavik Incorporated (IFR0744).

Technical consulting services are delivered through the Stantec partner. The Stantec community unites more than 22,000 employees, including over 160 staff across eight offices in the Canadian North and Alaska. Stantec and Nunami Stantec are registered and licensed to practice engineering services by the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists.

Our work—professional consulting in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics—begins at the intersection of community, creativity, and client relationships. With a long-term commitment to the people and places we serve, Stantec has the unique ability to connect to projects on a personal level and advance the quality of life in communities across the globe.

2.0 EXISTING CONDITIONS

2.1 ABOUT IQALUIT

The City of Iqaluit is Canada's northernmost capital. Translated to mean "a place of many fish," Iqaluit has been a traditional fishing location used by Inuit for thousands of years. As a result of becoming the newest capital city in Canada, Iqaluit has been experiencing rapid development and growth. The City of Iqaluit is home to 7,740 residents as of 2016, which represents a population increase of 45% from 2001, just after the creation of Nunavut in 1999[1].

Figure 1 illustrates the various neighbourhoods within the city. The Core Area represents the city centre where greater commercial and institutional uses can be found as well as many key points of interest. Various neighbourhoods exist around the core area with lower-density residential areas and subdivisions including but not limited to the Plateau Subdivision, Lake Subdivision and Road to Nowhere.

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[1] Population numbers were obtained from Statistics Canada census data from the 2001 and 2016 census

Figure 1: City of Iqaluit neighbourhoods

2.1.1 Demographics

The Arctic climate and remoteness brings about unique mobility needs with limited road, rail or ship transportation connections to the rest of Canada for several months of the year presenting significant challenges. To understand the transportation needs and demand, it's important to understand the current and future population demographics, the geography and spatial design of the city, as well as all mobility options available to residents of Iqaluit. Table 1 compares demographic statistics of the city with those of the Baffin Island region, the territory of Nunavut, and Canada, to understand how Iqaluit aligns and differentiates on various scales.

Table 1: Demographic Information

Characteristic	Iqaluit	Baffin Island	Nunavut	Canada
Total population (2016)	7,740	18,988	35,944	35,151,728
Total population (2011)	6,699	16,939	31,906	33,476,688
Population change (2011 - 2016)	15.5%	12.1%	12.7%	5%
	Iqaluit	**Baffin Island**	**Nunavut**	**Canada**

Dwellings	3,419	6,556	11,433	15,412,443
Average household size	2.8	3.4	3.6	2.4
Median household income	136,119	104,896	97,441	70,336
Unemployment rate	9.6%	17.3%	21.5%	7.7%
Labour force	4,635	8,895	16,340	18,672,475
	Iqaluit	**Baffin Island**	**Nunavut**	**Canada**
Recent immigrants	45	45	165	1,212,075
(Visible) Minority groups	7.7%	3.6%	2.5%	22.3%
Inuit / First Nations	59.4%	80.5%	85.5%	6.2%
Characteristic	**Iqaluit**	**Baffin Island**	**Nunavut**	**Canada**
Male	49.7%	51.2%	51.2%	49.1%
Female	49.8%	48.8%	48.8%	50.9%
	Iqaluit	**Baffin Island**	**Nunavut**	**Canada**
14 and younger	24.9%	31.5%	32.5%	16.6%
15-34	33.3%	33.7%	33.9%	25.3%
35-64	38.8%	31.3%	29.8%	41.2%
65 and older	3.0%	3.6%	3.8%	16.9%
Average Age	31	28	27	41
	Iqaluit	**Baffin Island**	**Nunavut**	**Canada**
No degree	28.2%	46.0%	50.7%	18.3%
High school only	18.9%	16.3%	15.1%	26.5%
College degree	20.9%	16.6%	15.0%	19.4%
University degree	23.9%	13.7%	10.6%	23.3%
	Iqaluit	**Baffin Island**	**Nunavut**	**Canada**
Owned	23.5%	19.3%	20.0%	67.8%
Rented	76.5%	80.8%	80.0%	31.8%
Single detached home	25.1%	39.3%	44.3%	53.6%
Semi-detached home	6.5%	9.0%	8.9%	5.0%
Apartment (<5 storeys)	37.8%	19.0%	13.2%	18.1%
Apartment (>5 storeys)	4.0%	2.0%	1.1%	9.9%
% Spending >30% of income on housing	10.0%	7.8%	5.8%	24.1%
	Iqaluit	**Baffin Island**	**Nunavut**	**Canada**
MODE OF COMMUTING				
Car (driver)	45.1%	33.5%	29.0%	74.0%
Car (passenger)	24.1%	19.7%	17.9%	5.5%
Transit	0.2%	0.5%	0.8%	12.4%
Walked	26.2%	38.0%	44.2%	5.5%
Bicycle	0.0%	0.2%	0.2%	1.4%
Other	4.3%	8.1%	8.0%	1.2%

Source: *Statistics Canada, 2016*

The City of Iqaluit has grown over 15% since the 2011 Census which is three times the Canadian average of 5%. The growth levels are similar to those seen across the region and territory (approximately 12%). Furthermore, Iqaluit's unemployment rate is 9.6%, slightly higher than the Canadian average, though significantly below the regional and territorial averages, indicating that Iqaluit serves as an employment centre within the territory. The household median income is $136,119, which is substantially higher than the Canadian average. Notably the territorial average is also higher than the Canadian average which can in part be due to the higher cost of living in the northern territories. Though, despite a high median income, it is important to note that there are many residents on social assistance who are struggling to make ends meet.

In Iqaluit, 60% of the population is Inuit. Many residents speak Inuktitut at home and participate in traditional activities like hunting, fishing, trapping and getting out on the land. The Inuit culture, history and way of life inform all aspects of life in Iqaluit, including how people move through the community.

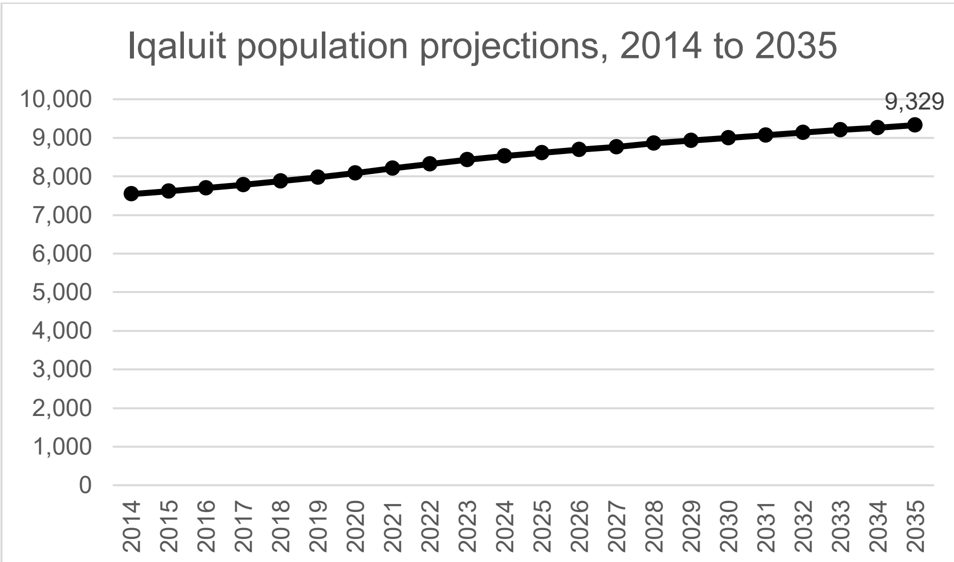
The average age in Iqaluit is 31 years and is ten years below the Canadian average, with the regional and territorial average similar to that of Iqaluit suggesting a younger demographic in the territory. Approximately 24% of residents own property whereas 76% of residents rent property which is similar to what is observed in the region and territory but significantly different to the rest of the country where approximately 68% of residents own property and 32% of residents rent property.

In terms of commuting, residents of Iqaluit appear to be more car-dependent than the rest of the region and territory, which is likely a result of Iqaluit being the capital city with the most developed road infrastructure, and with the greatest quantity of car imports. Compared to the Canadian average, Iqaluit sees a much lower portion of single-occupant drivers with 45% compared to 74%, however there are significantly more residents who report traveling via car passengers, therefore an overall car mode share of 69% exists in Iqaluit. The high passenger car trips suggest that shared rides are common; a trend that is also in alignment with the service delivery model of Caribou Cabs, the local taxi service provider.

The walking mode share is lower in Iqaluit relative to Baffin Island and Nunavut however remains higher than the Canadian average. With nearly 26% of commuting trips in Iqaluit made by walking or biking to work, this suggests that many trips within the City are short-to-medium distance trips. There may be opportunities to leverage transit as a complementary mode for active transportation within the broader multimodal transportation network, and there may be opportunities to utilize transit as a more convenient alternative for short trips made by foot or by bicycle, especially in inclement weather. Additionally, the relatively high walking mode share suggests that pedestrian infrastructure should be prioritized in the TMP. The limitations of transportation networks in the winter months present challenges with the use of active transportation and transit.

2.1.2 Population Projections

Based on the 2011 Census data, population projections were completed by the government of Nunavut across the territory from 2014 to 2035. By 2035 the population in Iqaluit is expected to increase to 9,329, representing a 21% increase from the population of 7,740 reported in 2016. The transportation infrastructure will need to be planned to accommodate this rapid population growth, including proactive strategies to mitigate vehicle congestion as the population increases and the provision of safe and accessible transportation networks.



Source: *Government of Nunavut*

Figure 2: Population projections in Iqaluit, 2014 to 2035

2.1.3 Points of Interest

Figure 3 shows the map of the city and key points of interest, largely located in the core area. With many commercial and institutional buildings located in the Core Area strong pedestrian facilities should be prioritized here. Additionally, given the size of the city, many locations can be reached by walking or cycling when the weather permits. As the city grows and transportation networks become more constrained, the enhancement of active transportation facilities will help to alleviate that congestion.

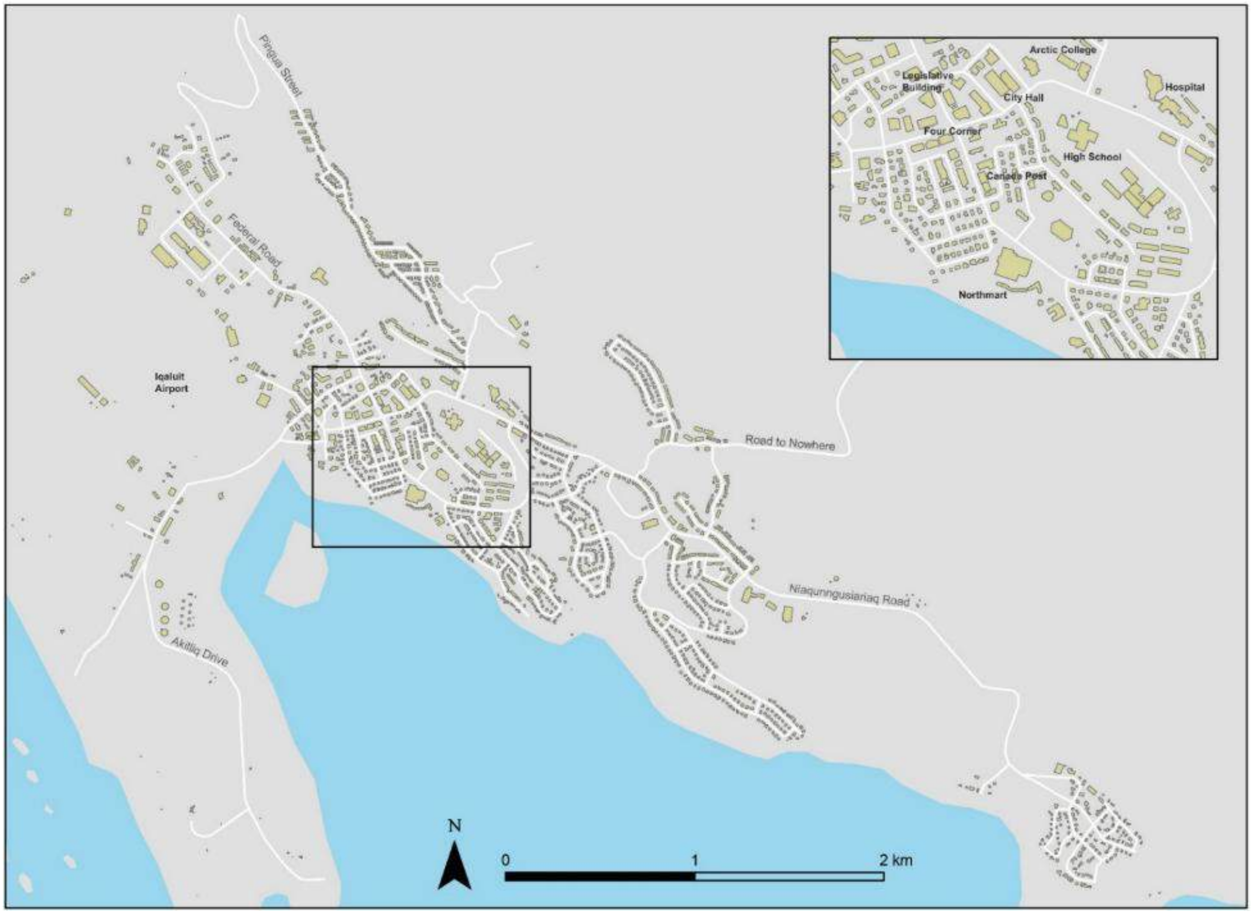


Figure 3: City of Iqaluit road network and key points of interest

2.1.4 Land Use

To provide a greater understanding of the relationship of land use and transportation as well as travel patterns in the city, the land uses within the city have been illustrated in Figure 4. A greater concentration of institutional and commercial buildings can be found in the Core Area with more low-density residential found spanning outside the Core Area and some multi-residential units observed in some of the subdivisions. Additionally, several commercial buildings are located in the northwest end of the city along Federal Road, adjacent to the airport. Given the greater institutional, commercial and employment uses found in the Core Area, and supported by an evaluation of traffic volumes and anecdotal observations, it is noted that many trips are made to and from here during AM and PM peak hours.

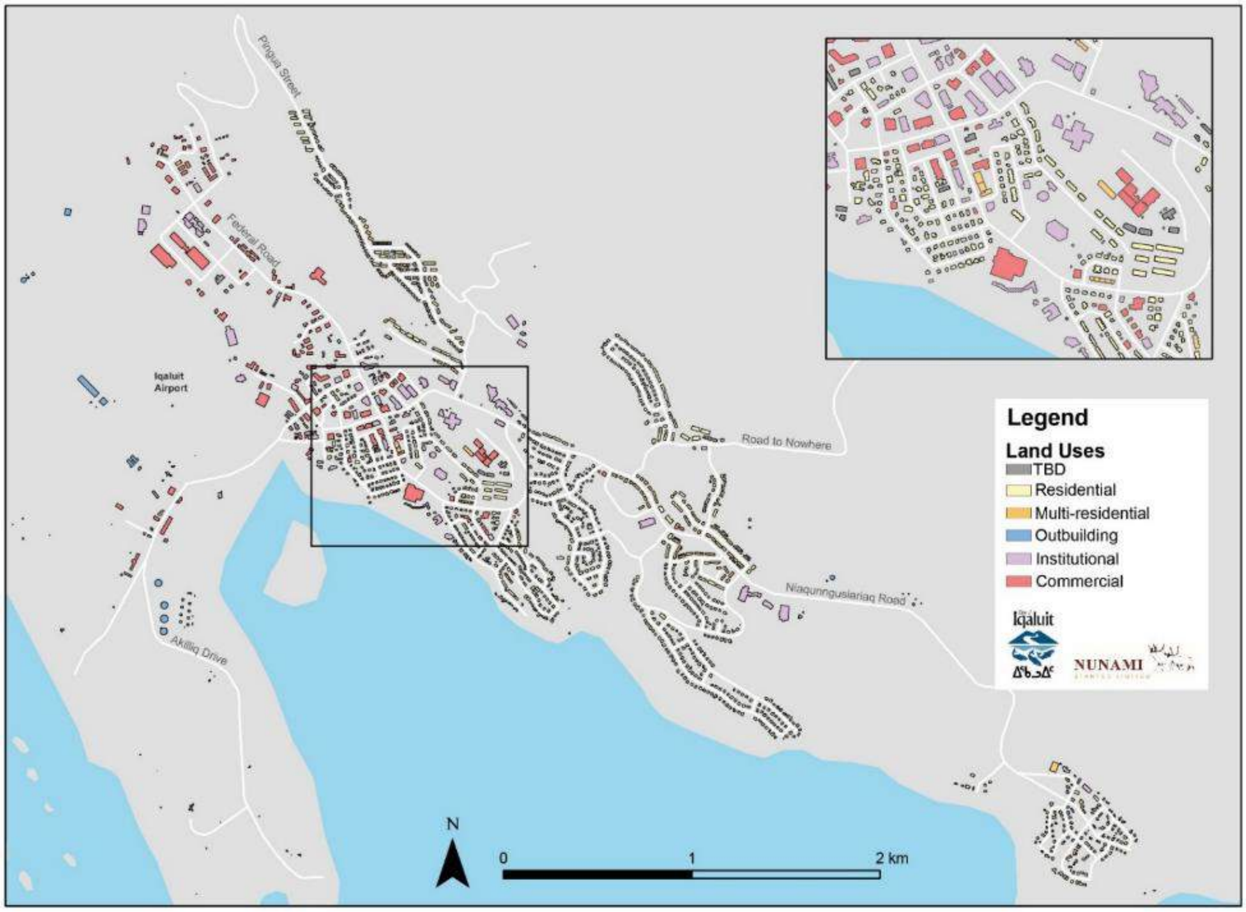


Figure 4: City of Iqaluit land use map

2.2 BACKGROUND DOCUMENT REVIEW

The current planning process relies on an understanding of previous planning efforts, successes, and challenges. This section provides an overview of important planning documents and studies that offer insights on the existing and future transportation networks in Iqaluit.

2.2.1 Iqaluit General Plan (2010)

The Iqaluit General Plan was completed in 2010 and aims to guide the physical development of Iqaluit to the year 2030. In a time of significant growth, the General Plan establishes a policy direction to strengthen land use planning policies and processes. The plan outlines a number of visions with associated actions to achieve these as well as a development strategy for growth. Among other elements related to the development of Iqaluit, mobility is discussed with respect to all transportation modes including pedestrian walkways, trails, cycling routes, snowmobile trails and the road network including various classifications. A Transportation Master Plan (TMP) is identified to be needed to appropriately plan for the growth and resultant mobility needs.

According to the 2006 census, 59% of Iqaluit residents commuted by vehicle, while 32% walked and 8% used other means. While vehicle commuting has increased over the last 10 years, there is still a significant percentage of residents who commute via walking, making good pedestrian infrastructure important. Policies that prioritize pedestrian access, and enhancement of walkways and cycling trails are identified, specifically within the core area. The protection of snowmobile trails and investigation of snowmobile crossings were identified to enhance safety. Additionally, given the utilization of the existing shared taxi service, and related feedback, there is community interest in re-introducing some form of transit service. Lastly, the General Plan outlines the adopted road classification policy that directs future road works including arterial, collector, local, and bypass roads including designated right-of-way. Identifying gaps in the pedestrian and cycling networks in this TMP will aid in planning for future growth.

2.2.2 Former Navigator Inn Traffic Impact Study (2019)

A Traffic Impact Study (TIS) was completed to determine the transportation impacts of a planned mixed-use development at the site of the former Navigator Inn, at the intersection of Mivvik Street and Allanngua Street. The TIS findings concluded that transportation improvements are needed to mitigate the expected future traffic volumes expected due to population growth, but that the development itself would not generate major traffic impacts. The improvements recommended include the signalization of the Mivvik/Allanngua intersection, addition of left-turn lanes at several locations, re-alignment of Alwoodhouse Street to create a two-way access, and improved channelization using physical barriers.

2.2.3 Master Drainage Plan (2019)

Stantec completed Iqaluit's Master Drainage Plan (MDP) in 2019, which has implications on the development of the future transportation network – primarily in influencing flooding patterns which occur due to non-functioning drainage systems. The MDP identified major drainage areas, routes and channels within the City, characterized existing conditions, and assessed the effectiveness of existing drainage infrastructure at conveying drainage and mitigating environmental impacts. The MDP then identified culvert repairs and replacements, municipal design standard updates, and made other strategic recommendations.

2.2.4 Federal Road Development Area Transportation Study (2018)

A Transportation Study was completed for the Federal Road Development Area (FRDA) as a result of a proposed change in land use designation. The study examines existing and future traffic conditions in the study area, including a transportation engineering assessment of the General Plan's By-Pass Road alignments and feasibility. Three By-Pass road alignment road options were assessed based on the developed criteria. Overall, the alignments through Masak Court and via an extension to Ulu Lane were considered feasible and recommended to be protected in the General Plan including considering the appropriate right-of-way with the extension of the hotel access road. The preferred option road network is recommended for adoption and to proceed to detailed design. Connection to the future road network is recommended to be retained through the road network and its construction and future development. The impacts of the By-Pass road alignment are considered within the TMP traffic assessment.

2.2.5 Iqaluit Ports Traffic Study (2018)

A traffic study was completed to assess and mitigate the transportation impacts of the construction of two new ports within Iqaluit, the Deep Sea Port and Small Craft Harbour. The outcome of the analysis determined that no intersection improvements were needed, although parking stall designs for the port sites were recommended to be carried forwards to implement. In addition, due to significant traffic volumes along Akilliq Drive, it was recommended that the roadway be widened to a 7m width, with 1.5m shoulders (subject to further analysis).

2.2.6 Iqaluit International Airport Improvements Traffic Impact Study (2014)

Stantec completed a TIS to quantify impacts to the transportation network due to the expansion of the Iqaluit International Airport. A new planned terminal (built in 2017) will be accessed via Ungalliqpaat Crescent. The TIS findings concluded that while 400 new trips will be generated on opening day due to the airport expansion, the only improvement required is the signalization of the Four Corners intersection by the 5-year horizon (2022).

2.2.7 Traffic Light Signal Controls Final Report (2009)

The Traffic Light Signal Controls Final Report provided a traffic assessment including a warrant analysis, capacity analysis, collision analysis and pedestrian and snowmobile features analysis at key intersections in the core area of the city which includes Niaqunngusiariaq Road from the Four Corners to the Hospital intersection.

The report recommends the following traffic operations improvements:

- Installation of traffic lights and left-turn lanes at all approaches at the Four Corners Intersection (with potential consideration of a roundabout which necessitates higher costs and property acquisition);
- Implement an exclusive right-turn lane at the northbound and southbound approaches of the Hospital intersection;
- Implement an exclusive 15-metre left-turn lane at the High School intersection;
- Develop a standard city-wide crosswalk design based on the Transportation Association of Canada's *Manual of Uniform Traffic Control Devices for Canada* (MUTCDC) standards;
- Develop sign design standards for consistency and increased safety with specific regard to the order of languages on a sign;
- Designate entrance-only and exit-only driveways at the High School intersection to ease circulation and prevent conflicts; and
- Review the illumination of crosswalks for visibility of pedestrians by oncoming road traffic.

2.2.8 Iqaluit Core Area By-Pass Road Preliminary Design Report (2007)

The Iqaluit Core Area By-Pass Road Preliminary Design Report was completed as part of the site analysis phase of the Iqaluit Core Area By-Pass Report project with the goal of providing a detailed assessment of the proposed By-Pass Road alignment as recommended in the Transportation and Urban Design Study (Dec 2005). The issues, options and recommendations of each segment or intersection was completed, beginning at the corner of Queen Elizabeth Drive and Niaqunngusiariaq Road and following the proposed alignment north towards Masak Court and Sikituuq Court.

Construction of the By-Pass Road is recommended to occur in three phases:

- Phase 1: Niaqunngusiariaq Road from Saputi Road to Kangiq & Iniq Drive
- Phase 2: Extension of Kangiq & Iniq Drive north to Masak Court
- Phase 3: Improvement of the Queen Elizabeth Drive and Niaqunngusiariaq Road intersection

It is suggested that the cost analysis of the road past Masak Court (Phase 3) will be high due to the presence of rock to the east and therefore in the immediate future the Core Area By-Pass Road may terminate at Masak Court. The report concludes that the construction of the By-Pass Road is feasible, however the City may consider whether or not it should be built considering impact on adjacent properties, pre-construction and planning works, and whether any required changes to the alignment will impact the benefits of the road. Lastly, in order to see benefits from the By-Pass Road it is noted that it will need to be an arterial road and not a collector or local thoroughfare.

2.2.9 Iqaluit Transportation and Urban Design Study (2005)

The Transportation and Urban Design Study was completed to identify improvements or modifications to increase the functionality of the City's Central Area transportation networks, including the off-road transportation network, with a focus on the plan for a By-Pass Road north of the Four Corners intersection.

The report presents immediate actions (current year) and short-term actions (2 to 5 years). Immediate actions focus on quick opportunities to enhance the pedestrian environment and control traffic demand prior to infrastructure improvements whereas short-term actions include the implementation of the By-Pass Road and other key infrastructure improvements.

The recommendations are as follows:

Immediate Term (Current Year):

- Organize a meeting with major employers, all levels of government and representatives from major institutions in the City to explore opportunities for a Staggered Work Hours Program and a Cooperative Transit Service.

- Meet with the Postal Office Management to recommend a postal sub-station in the south end of the City as a means of managing traffic demand in the Core Area.

- Define which option of the By-Pass Road east of Federal Road is preferred and proceed to detailed design, tendering, and construction stages.

- Develop the Terms of Reference for a city-wide Transportation Master Plan study.

Short-Term (2 to 5 years):

- As part of the first phase of the By-Pass Road (section east of Federal Road) the crosswalk along the By-Pass should be implemented as well.
- Implement the pedestrian access improvements along Niaqunngusiariaq Road and the Four Corners intersection.
- Complete the Transportation Master Plan.

2.2.10 Municipal Design Guidelines (2004)

The Municipal Design Guidelines provide an outline for municipal infrastructure with respect to roadways, walking trails and snow mobile trails design criteria. Trip generation rates, road design classifications with associated cross-sections and design speeds are provided. Various roadway design elements are noted for cul-de-sacs, intersections, walking trails and snowmobile trails, driveways, and signage.

As the TMP provides further insight into strategies and policies related to roadway classification and right-of-way, the design criteria provided in the Municipal Design Guidelines will serve as a starting point to build off of and modify to meet transportation needs into the future.

2.2.11 Design & Development of Trails, Interim Report (2002)

The Design & Development of Trails Report was created in response to public concerns and interests in improving and enhancing the quality of life in the community including the need for improved pedestrian access, parks and open spaces. A series of consultations were conducted to determine the level of interest in the community for walking trails, investing interests in recreation, commuting and tourism activities. Notably, there was interest in utilizing walking trails for both commuting and recreational purposes, though it was expressed that these trails will not completely replace driving trips as weather, schedule variability, and long distances were factors that influenced driving. Key areas within the urban core and towards the edge of the city were identified. The issue of cost and maintenance was raised as a concern. The pedestrian and non-motorized traffic patterns were identified. Based on the analysis and consultation, a proposed trail system was outlined consisting of Primary Trails serving primarily commuters and visitors, Secondary Trails serving joggers and tourists, and Tertiary Trails serving hikers heading out of the community. The plan is proposed to be phased for ease of implementation.

When considering trail and pedestrian facilities and movements in the TMP, consideration for desired trail elements outlined through stakeholder and public consultation will be made. Additionally, key pedestrian travel patterns and connection to key areas of interest will be considered.

2.3 WHAT WE HEARD

To develop a Transportation Master Plan that responds to the specific mobility challenges within the Iqaluit transportation network, it was important to reach out to a wide range of community members and stakeholder groups. To do this we planned and carried out a series of different engagement activities with the goal of:

- Informing stakeholders and the public about:
  - why a Transportation Master Plan is being completed
  - the basics status of Iqaluit's transportation system
  - the opportunities and challenges we see with the existing system and infrastructure
  - trends and northern solutions
  - the types of problems the Transportation Master Plan can solve
- Getting an understanding of:
  - the values and vision of Iqaluit residents as related to the future of their transportation network
  - where people travel, how, and why
  - what the specific challenges are and any potential solutions
- Engaging a wide range of stakeholders and community members
- Building relationships and a future transportation system by using culturally-appropriate engagement techniques

Throughout the engagement process we focused on the following questions:

WHERE are people going? **Identify key destinations** in the community

WHO is going to these places? **Categorize destinations** in the community by user groups

HOW are they getting there? **Identify and categorize routes** for each user group (industrial routes, emergency routes, pedestrian routes, etc.)

Is there a **BETTER WAY**? **Identify missing pieces** (routes, modes of transportation, etc.) that would help people get where they're going more effectively

2.3.1 Engagement Activities and Participation

During this engagement process, different activities were planned in order to reach out to the wide range of people potentially impacted by the outcomes of this project. Separate workshops were held with Mayor and Council and representative from key City of Iqaluit departments. We reached out to stakeholder groups and had one-on-one meetings with those who were interested. We held specific sessions with youth and elders. To reach out to the public, we held pop-up engagement events in public locations people are already visiting (pool and arena), had two community drop-in meetings, and promoted an online survey.

The engagement activities took place in February and March 2020. The workshops and the in-person stakeholder meetings took place during the week February 24 to 28, 2020 when our team was in Iqaluit.

Table 2: List of Public Engagement Events

Tool	Participants
Collaborative workshops	• Workshop with City Staff (representatives from Public Works and Engineering, Municipal Enforcement, Recreation, Community Economic Development, Planning and Development) • Workshop with Mayor and Council
In person stakeholder meetings	• Hunters and Trappers Association • Uquutaq Men's Shelter, Executive Director • Makkuttukkuvik Youth Centre • Baffin Chamber of Commerce, Executive Director • Department of Economic Development and Transportation (Transportation Policy Planning and Nunavut Airports) • Elders meeting at the Qammaq • Travel Nunavut • Iqaluit District of Education, School Bussing Committee • Caribou Cabs • Iqaluit Public Works Department staff • RL Hanson Construction • RCMP – Iqaluit Detachment
Telephone meetings	• Nunastar • Nunavut Sealink and Supply Inc.
Written input received	• Nunatta Sunakkutaangit Museum • Kakivak Association • Qikiqtani General Hospital
Public pop-up planning desk	• Arnaitok Arena (one evening from 5 to 7) • Aquatic Centre (two evenings from 5 to 7) • AWG Arena (one evening from 5 to 7)
Public meetings	• Community drop-in meeting at the Abe Okpik Hall in Apex • Community drop-in meeting at the Elders Qammaq
Online survey	• Open to the public from February 20, 2020 to March 14, 2020

The engagement process was successful in reaching out to a wide range of people and groups in Iqaluit and getting a well-rounded understanding of how the transportation system is working, how vehicles, pedestrians, and goods move, specific challenges, safety concerns, and potential solutions. During the community sessions, we engaged with over 125 people, and received additional feedback through 421 survey responses.

Figure 5: Session with Elders and translator at the Qammaq

Figure 6: Community Drop-in Event in Apex

2.3.2 Online Survey Results

The public online survey was hosted from February 20, 2020 to March 14, 2020 using SurveyMonkey. The survey was provided in both English and Inuktitut and advertised via the City's existing communications methods including the City's website and Facebook page and was promoted at the public events. In total, 421 surveys were completed, all through the English survey.

This survey collected information on:

- Where people live, where they are going and how they are getting there (both in summer and winter)
- If respondents have access to a personal vehicle.
- If respondents would consider using public transit if it was available.
- What factors respondents use to decide which mode of transportation to use.
- Level of satisfaction with the current transportation system.
- Comments about specific concerns that respondents have.

The following are key findings from the public survey.

- 68% of respondents travel to the core area daily for work or school.

- 69% of respondents would consider using public transit.
- Overall people where not satisfied with transportation in Iqaluit and gave it, on average, 2 stars out of 5.
- When deciding how to get around, respondents think that reliability and safety are the most important factors to consider.
- In terms of the comments that people made, significant feedback was received regarding the road network (107 comments), regarding shared transportation including taxis and transit (61 comments), and regarding the pedestrian network (35 comments).

The results of the survey, including the written comments, are considered along with all other inputs received in the analysis of the key engagement themes in the following section.

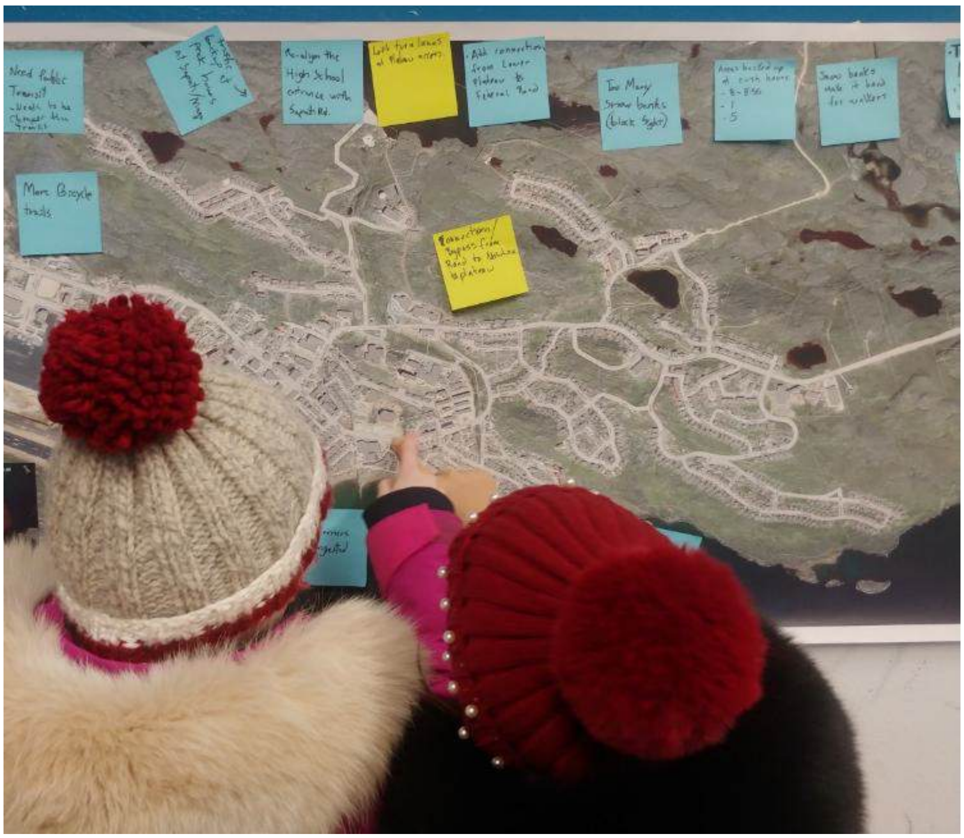


Figure 7: Youth adding comments to the map at the Arnaitok Arena

2.3.3 Key engagement themes

In this section, the input from all sources is considered and summarized by theme. This includes information from the online survey, the stakeholder meetings, sessions with youth and elders, and the community meetings.

How People Get Around

- According to the survey, most people get around by car (56% in summer and 66% in winter), walking (28% in summer and 14% in winter) and taxi (5% in summer and 12% in winter).
- Snowmobiles and ATVs are used to get out of the community and onto the land and are sometimes used to get around the city.
- Personal vehicle ownership has increased, with an estimated 200 to 400 cars arriving on the sea lift every year. There are challenges for people who do not have access to a car, especially youth and elders.
- The community's most vulnerable people walk or use taxis; and taxi fares are expensive for elders, people on social assistance and families. People are given vouchers for medical visits, but struggle to afford trips for other purposes such as accessing services and visiting family.
- Visitors usually talk taxis or walk, and it can be difficult for people with mobility issues. An airport shuttle (could be shared) would be good for visitors. Will need to consider impacts of growing cruise ship industry in the community.
- Children are bussed to and from school; elementary students are also bussed home at lunch. This impacts traffic as parents need to go home to meet children.
- There are several employers that pick employees up for work in a shuttle. This used to be more common but has decreased, as more people own their own vehicle.

Roads, Intersections and Congestion

- Traffic congestion has increased over the last 10 years and many key intersections get backed up during the morning, lunch, and afternoon "rush minutes". The existing network was not designed for the current level of vehicle use.
- In the online survey, over 40% of the suggestions for improvements were related to roads.
- Many of the comments across all engagement methods were related to challenges and congestion at key intersections and along specific roads.
- Intersections that participants flagged for improvement are Federal Road and Mivvik Street (Four Corners), the hospital access on Niaqunngusiariaq (at Queen Elizabeth), the access to Plateau at

Saputi Road, and Queen Elizabeth Way at Kuugalaaq Street near DJ Specialties. Potential solutions suggested by participants were varied and included traffic lights, turning lanes, crossing guards, roundabouts, and re-aligning roads.

Figure 8: The Four Corners intersection

- Many comments suggested adding new road connections to improve traffic flow. This could include a bypass from Federal Road to Niaqunngusiariaq Street, a connection between the Plateau and the Road to Nowhere, and a second access from Lower Plateau (Qulliq Court) to Federal Road.
- Niaqunngusiariaq Road from the hospital to Federal Road has lots of traffic, pedestrians, vehicles making turns, and access to busy destinations. This section was described as needing to be re-designed and improved.
- There is appetite to consider making some streets one way to give more space and improve circulation.

- The new airport has changed the traffic patterns through the core. For all future development, it will be important to consider impacts that these changes will have on the transportation network during the planning and approval stage.
- Better maintenance is needed as potholes, ruts, mud, and dust are a problem. Badly maintained roads are hard on vehicles.
- Consider paving the community's busiest roads. People requested paving specifically for the Niaqunngusiariaq Road to Apex, the Akilliq Drive to the deep sea port, and Ikaluktuutiak Drive.
- Need to consider snowplowing processes and prioritization, taking into consideration the areas where drifting is frequent, in an effort to keep residents safe and traffic flowing.
- Need to consider a change to the system where children get bussed home at lunch time; this leads to lots of extra traffic and the lunch time rush.

Safety

- Many people voiced concerns about safety, especially for pedestrians.
- Participants feel that there are dangerous sections of road and where it is dark and there is no sidewalk or shoulder to separate vehicles from walkers. Improvements for pedestrians are needed in the core area, near the hospital and schools, and at the intersection near DJ Specialties.
- People voiced concerns about speeding and suggested that there could be more enforcement of speed limits. Improved driver education is needed to make sure all drivers are following the rules of the road.
- Better lighting is needed along key pedestrian routes and at busy intersections.
- Some people have concerns about the taxi service, feeling that taxi drivers are not following the traffic rules and are driving aggressively. Others feel that vulnerable people including single women and children may be at risk when travelling alone in taxis.
- Not many people are getting around by bike and there is a feeling that road shoulders are not wide enough to accommodate cyclists safely. Also, cyclists need to better understand the rules of the road.
- During storms it is important to keep plows on the road until the school busses have delivered children and are off the road.
- High access vault at the corner of Ikaluktuutiak Drive and Mivvik Street blocks views and is dangerous. (It is noted that this has been re-installed such that it no longer obstructs the intersection; however, it is included in this list because it was a theme which came up in the engagement process).
- School bus stops need to be improved for safety.

- Allowed speeds are too fast in some areas and some drivers use cell phones while driving. Should provide driver training and public education.
- Unwritten Iqaluit rules of the road mean that drivers will stop to let others in randomly and at mid-block locations. Some people feel that this is dangerous and contributes to congestion.

Pedestrian Routes and Access

- The community is very walkable and improving conditions for pedestrians may help to encourage walking, which will reduce traffic congestion.
- Improvements are needed to make to make the system safer for pedestrians. Adding sidewalks along busy stretches would improve access for pedestrians. Crosswalk signs and lights at busy intersections are also needed.
- With each new building and residential development, it is important to consider how pedestrians will be accommodated. Sidewalks should be required in the core area.
- People prefer to use off-road trails to walk between neighbourhoods; these should be added and formalized where possible. Routes chosen should be short cuts where possible.
- Need to consider how best to separate pedestrian areas from the roadway. There are now some sidewalks and this network should be expanded throughout the core. Some streets have wooden bollards to separate pedestrian area (many of which have since been replaced with flex bollards). This may need to be redesigned and/or replaced. In residential areas, there should be a wide shoulder for walking.
- Snow should be cleared from shoulders, sidewalks, and separated paths. Snowbanks should not be left where they can be a barrier to walkers, especially for elders and those with mobility challenges.
- Better maintenance throughout the year is needed for key pedestrian routes. There should be consideration with respect to how to improve the drainage system and reduce dust.
- Improved signage would be helpful for visitors.

Transit and Taxis

- Taxi company has made some changes which are perceived favourably, and many people are happy with the new mobile app.
- Some people are not satisfied with the taxi service. Concerns include: the price is too high, the vehicles are run down and not clean, the service is not reliable, the cars make too many stops, the cars do not have winter tires, and the drivers do not help elders. Some people also do not feel safe using the taxi service.

- 56% of survey respondents feel that taxi fares are too high. Taxi fares add up quickly for a family, for those who take them daily, or for a trip with multiple stops. Some people believe that the taxis should move to a meter-based system.
- Nearly 70% of survey respondents would consider using transit if it was available. A significant percentage of respondents feel that the fare should be between $2 and $4.
- People feel believe that public transit would help relieve traffic. A previous attempt did not work so a good plan is needed for a system that will work for Iqaluit. A transit system must be efficient and affordable, and complement the taxi service. The transit system could be valuable particularly during peak times.
- A hybrid transit system might be considered with on-call options for off-peak times. Transit service should include stops at key community destinations including stores, recreation facilities, residential areas, hospital and health offices, the city centre, social housing, and the location of important services.
- A hotel shuttle would be helpful for visitors.

Snowmobiles and ATVs

- There is a network of known trails that snowmobiles use. Access to key routes is very important, especially for getting out on the land.
- Motorized use trails need to be formalized, protected, and signed. There are some crossings that are signed, but more signs are needed to keep everyone safe.
- Need to consider the snowmobile routes when plowing snow on the roads, as leaving berms can make it difficult for snowmobiles to access trails.
- Parking lots should include space for ATVs and snowmobiles.
- There could be access to specific funding to improve roads or trails that provide access to the land.
- A formal and current map of snowmobile routes should be developed and kept up to date. Snowmobile drivers also need to do a better job of following the rules - education and enforcement are needed.
- Snowmobile routes should be sensible and safe and should avoid going too close to people's houses.

Parking

- There are problems in parking areas at many key community destinations including Northmart, Arctic Ventures, and the Aquatic Centre.
- Back-in parking in the core area can be dangerous for pedestrians.

- The parking at the airport is not big enough; the stalls are too small and there is limited space. Airport traffic is growing, but there is no space to expand.
- Specific parking areas for snowmobiles and ATVs are needed at stores.
- Plug-in stalls are needed for employees.

Movement of Goods

- Deep sea port will mean that goods will not be arriving in the centre of the city; this may relieve some congestion.
- The new deep sea port will also impact how goods are delivered, as we may be able to move away from the plywood crate system to different containerized system.
- There has been some discussion about using airships for the delivery of goods and to support mining, but this is likely many years away.

3.0 ROADWAY NETWORK

3.1 EXISTING ROADWAY NETWORK

The City of Iqaluit has a local road system that connects to the nearby community of Apex in the east to the Sylvia Grinnell Territorial Park in the west. The road system is local and is not connected to a highway system or any other nearby settlements in the Territory.

Niaqunngusiariaq Road (also knows as the Road to Apex) forms a key east-west spine connecting the City with the nearby community of Apex. Other key roadways include Queen Elizabeth, Mivvik Street, and Federal Road.

All key intersections in the City of Iqaluit currently operate as stop-controlled intersections. There are currently no traffic control signals present in the City.

City of Iqaluit roadways area intersections and existing traffic control are illustrated in Figure 9. Notably, all intersections in the City do not have defined turning lanes at present.

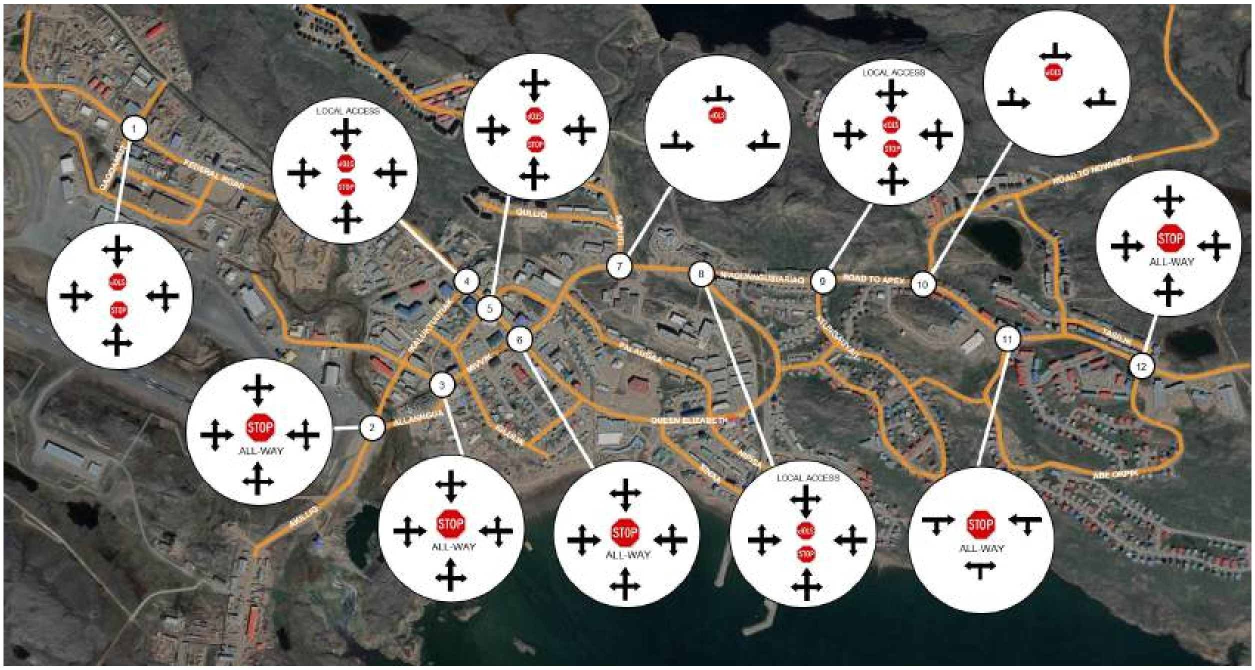


Figure 9: Existing Intersection Lane Geometry and Traffic Control

3.2 TRAFFIC COUNTS

Updated traffic count data was collected at key intersections to evaluate current traffic demands and to help establish a baseline of existing operating conditions. Turning Movement Count (TMC) data was collected in 2021 for the following intersections:

1. Federal Road / Ungalliqpaat-Qaqqamiut
2. Akilliq/Ikaluktuutiak Drive / Allanngua
3. Mivvik Street / Allanngua
4. Federal Road / Ikaluktuutiak Drive
5. Federal Road / Nunavut
6. Federal Road-Queen Elizabeth / Mivvik Street-Niaqunngusiariaq (The Four Corners intersection).
7. Niaqunngusiariaq (Road to Apex) / Saputi Road (The High School Intersection).
8. Niaqunngusiariaq (Road to Apex) / Queen Elizabeth (The Hospital Intersection).
9. Niaqunngusiariaq (Road to Apex) / Atungauyait

10. Niaqunngusiariaq (Road to Apex) / Road to Nowhere
11. Niaqunngusiariaq (Road to Apex) / Abe Okpik
12. Niaqunngusiariaq (Road to Apex) / Tasilik-Abe Okpik

Updated 2021 traffic count data was cross-referenced with historical 2017 counts at one sample intersection. 2017 count data at the intersection of Federal Road-Queen Elizabeth / Mivvik Street-Niaqunngusiariaq (The Four Corners intersection) was extrapolated to 2021 levels through an assumed annual growth rate of 2% per year up to 2021. A comparison of the two data points determined that updated 2021 count data is within 5% of grown historical 2017 counts, indicating that current traffic demands are representative of pre-pandemic activity (i.e. COVID-19).

Existing traffic volumes are summarized in Figure 10.

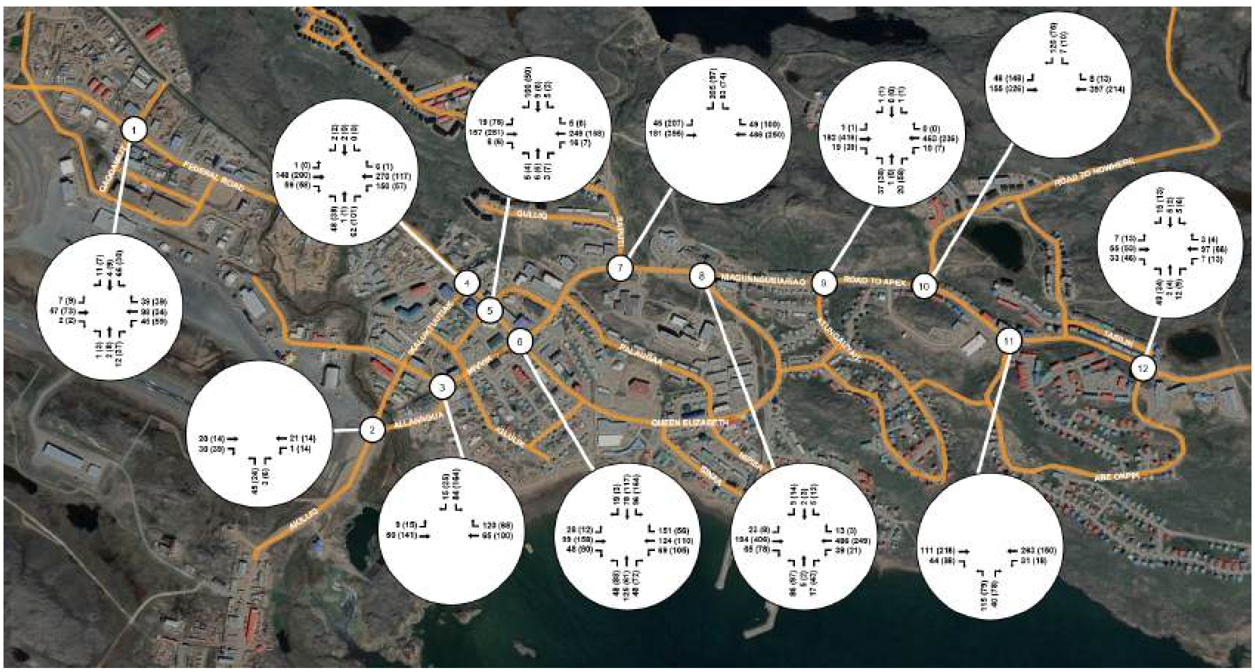


Figure 10: Existing AM Peak Hour (PM Peak Hour) Traffic Volumes

3.3 EXISTING OPERATIONS ANALYSIS

In order to establish a baseline of operating conditions, an assessment of the study area intersections was undertaken to determine the operational characteristics under current conditions. Intersection operational analysis was facilitated with Synchro 10.0™ software package.

The study area intersections were modeled with the existing geometry and traffic control. Capacity analyses are evaluated based on a Level of Service (LOS) rating for “average vehicular delay”. The LOS ratings range from an LOS rating of A (excellent) to and LOS rating of F (poor).

Table 3 outlines the LOS thresholds based on the methodologies of the Highway Capacity Manual (HCM).

Table 3 – Intersection Level of Service Criteria

LOS	Control Delay Per Vehicle (seconds)	
	Signalized Intersection	Stop-Controlled Intersection
A	≤ 10	≤ 10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	> 80	> 50

From a traffic operations perspective, LOS ratings ranging between an LOS of A through to an LOS of D are considered acceptable.

For stop-controlled intersections, the LOS for the approach with the greatest delays was reported. A LOS rating of “D” or better is considered acceptable. Other parameters used to identify critical intersection movements that may require mitigation include:

- Intersection movements operating at traffic volume to roadway capacity (v/c) ratios of 0.90 or higher (LOS E)
- Intersection movements operating with average delays of 35 seconds or more (LOS E) for stop-controlled intersections, and 55 seconds or more (LOS E) for signalized intersections.
- 95th percentile queues that exceed available storage capacity at auxiliary turning lanes.

Based on the updated 2021 turning movement count data, a traffic operational analysis was completed. Under existing conditions, the majority of study area intersections are currently operating with acceptable overall levels of service (LOS) ratings of LOS D or better during the AM and PM peak periods.

Under existing PM peak conditions, the intersection of Niaqunngusiariaq Road (Road to Apex) and Saputi Road is currently operating with a LOS rating of E in the southbound approach. This indicates that this intersection is currently operating near capacity in its current configuration.

Existing intersection level of service ratings are summarized in Figure 11.

Detailed LOS output summaries are included in **Appendix A**.

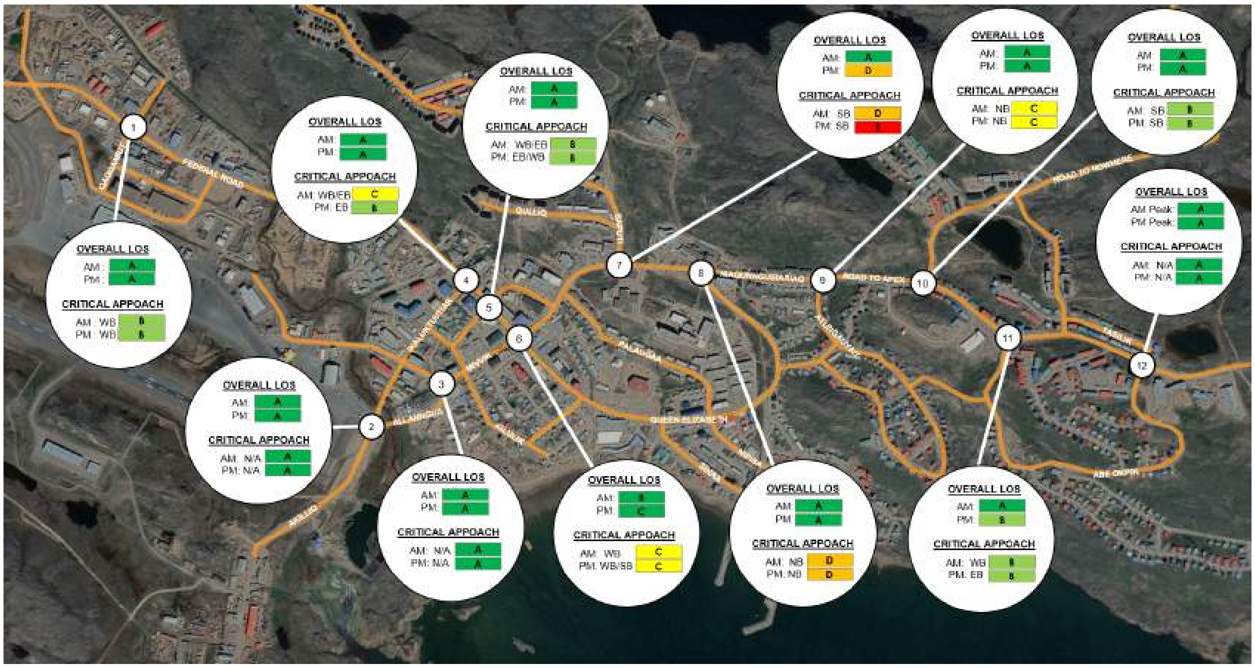


Figure 11: Existing Intersection LOS Summary

Note: WB, EB, NB, and SB refer to the westbound, eastbound, northbound, and southbound approaches respectively.

3.4 FUTURE CONDITIONS

Future transportation demand forecasts in the City of Iqaluit were developed for the 2030 Horizon Year. To inform the future traffic growth forecasts, background transportation studies for planned developments were reviewed and served as a baseline to estimate future traffic growth as well as identify any planned transportation network improvements.

3.4.1 Planned Development Growth and Roadway Improvements

Studies related to future development in the City of Iqaluit were reviewed as part of the development of the TMP. The background studies were incorporated into the development of the future 2031 traffic growth forecasts and were used as a basis to identify anticipated roadway connections and improvements.

Key growth areas in the City of Iqaluit include developments to the north along Federal Road, development growth along Niaqunngusiariaq Road west of Apex, and development in the vicinity of Road to Nowhere near Dead Dog Lake.

A summary of future development incorporated into the planned network is included in **Appendix B**.

Planned roadway connections identified in the City's General Plan were identified and accounted for as part of the future 2030 transportation scenarios. In addition, localized intersection improvements identified in a number of stand-alone studies were also accounted for as part of the future 2030 transportation scenarios. The planned Major Road Network improvements identified in the General Plan are:

- The Four Corners Bypass Road: This road would provide a direct connection between Niaqunngusiariaq (Road to Apex) and Federal Road. The alignment in the eastern portion follows the general alignment of the road between the Aquatic Centre (Building 900) and the Nunavut Justice Centre (Building 510) For the western portion of the road, of the three alignment options discussed in the Federal Road Development Area Transportation Study (Section 2.2.4), it has been determined that the preferred or most likely option for implementation is connecting the bypass road to Ulu Lane.
- Future Development Area B roadway connection to Road to Apex; there is a planned connection between Road to Nowhere and Road to Apex through Future Development Area B.
- Access roadway to Future Development Area A is also anticipated at the newly formed intersection, connecting Future Development Area A to Road to Apex. This may not occur within the 2030 TMP horizon.

Table 4 identifies the localized intersection improvements that were subject to stand-alone studies and were considered for the 2030 planning horizon.

Table 4: Localized Intersection Improvements

	Location	Document	Improvement
1	Queen Elizabeth Way / Road to Apex	Apex Road & Hospital pedestrian crossing RFP 2021	Pedestrian Crosswalk with flashing lights (Type C) and roadway pavement markings on Road to Apex.
2	Four Corners Intersection	Traffic Lights PIC Boards, 2009 FRDA Transportation Study, Sep-5-2018	Traffic Signals in addition to left turn storge lanes in all directions. Identifies signalization by the year 2020.
3	Road to Apex at Saputi Road (referred to as the High School intersection)	Traffic Lights PIC Boards, 2009 FRDA Transportation Study, Sep-5-2018	Addition of an eastbound left turn storage lane. Identifies signalization by the year 2025.
4	Road to Apex at Queen Elizabeth Way (referred to as the Hospital Intersection.	Traffic Lights PIC Boards, 2009	Introduction of a northbound and a southbound left turn storage lane

The Planned Developments and assumed Roadway Network Improvements are illustrated in Figure 12. While Future Development Areas A and B are not anticipated to be completed by 2030, they have been considered nonetheless as we imagine an ‘eventual’ growth scenario for a year to-be-determined. Although the analysis focuses on 2030, these additional developments have been considered to provide further clarity for the City’s longer term transportation needs, and to account for all growth and development possibilities as a contingency, in recognition that conditions often evolve differently from what we anticipate. In general, it is recommended that the City treat the Transportation Master Plan as a ‘living document’. This means that major transportation investments should be implemented as they are required. It is likely that not all long-term recommendations will be necessary to implement by 2030, and conversely, it is possible that some medium or long-term recommendations may need to be accelerated to the short or medium terms accordingly, if future growth is faster than forecasted.

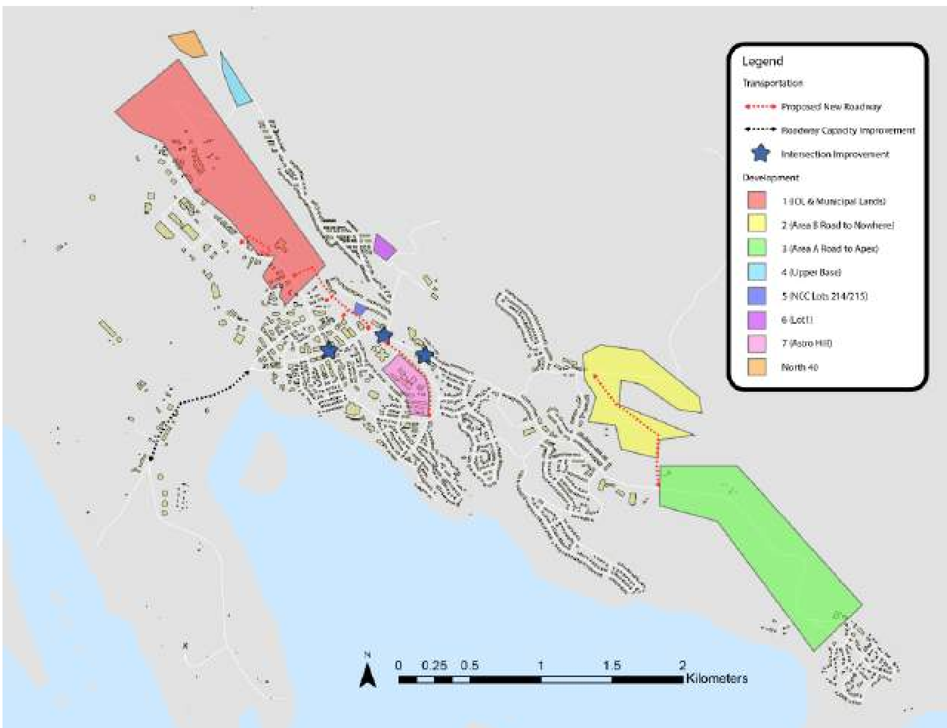


Figure 12: Planned Developments and Roadway Network Improvements

3.4.2 2030 Future Scenarios

Future traffic forecasts were developed for the 2030 horizon year and assessed for the following scenarios:

Scenario 1 (Do Nothing) – assumes future 2030 transportation demands on the existing transportation network.

Figure 13 summarizes the assumed 2030 transportation network under Scenario 1.

Figure 14 summarizes projected 2030 future volumes under Scenario 1.

Scenario 2 (Planned Network Improvements) – assumes future 2030 transportation demands with the planned network improvements to support known development as outlined in Section 3.4.1.

Figure 15 summarizes the assumed 2030 transportation network under Scenario 2.

Figure 16 summarizes projected 2030 future volumes under Scenario 2.

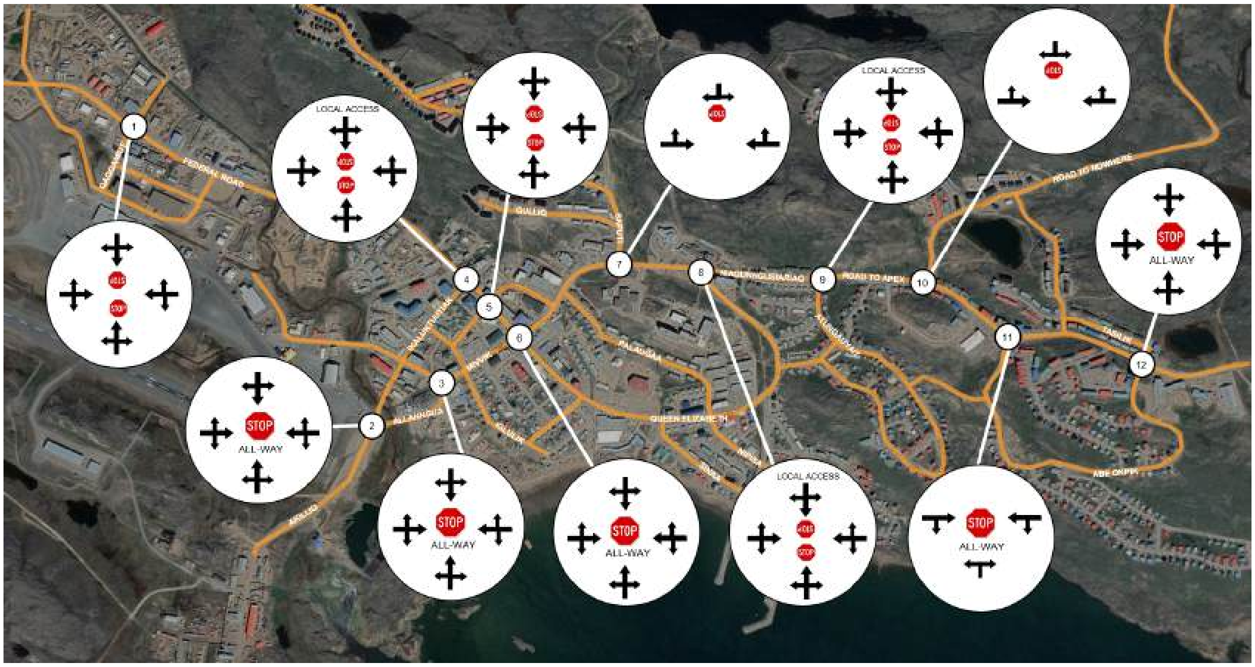


Figure 13: Future 2030 Intersection Lane Geometry and Traffic Control (Scenario 1)

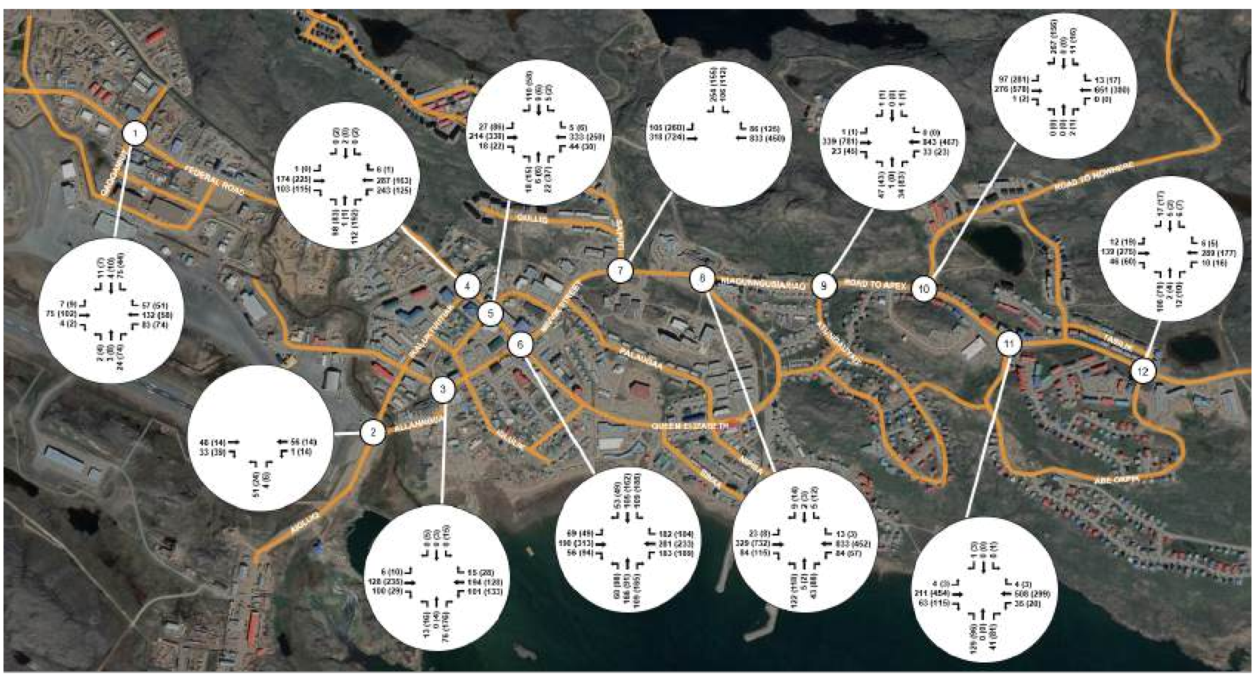


Figure 14: Future 2030 AM Peak Hour (PM Peak Hour) Traffic Volumes for Scenario 1

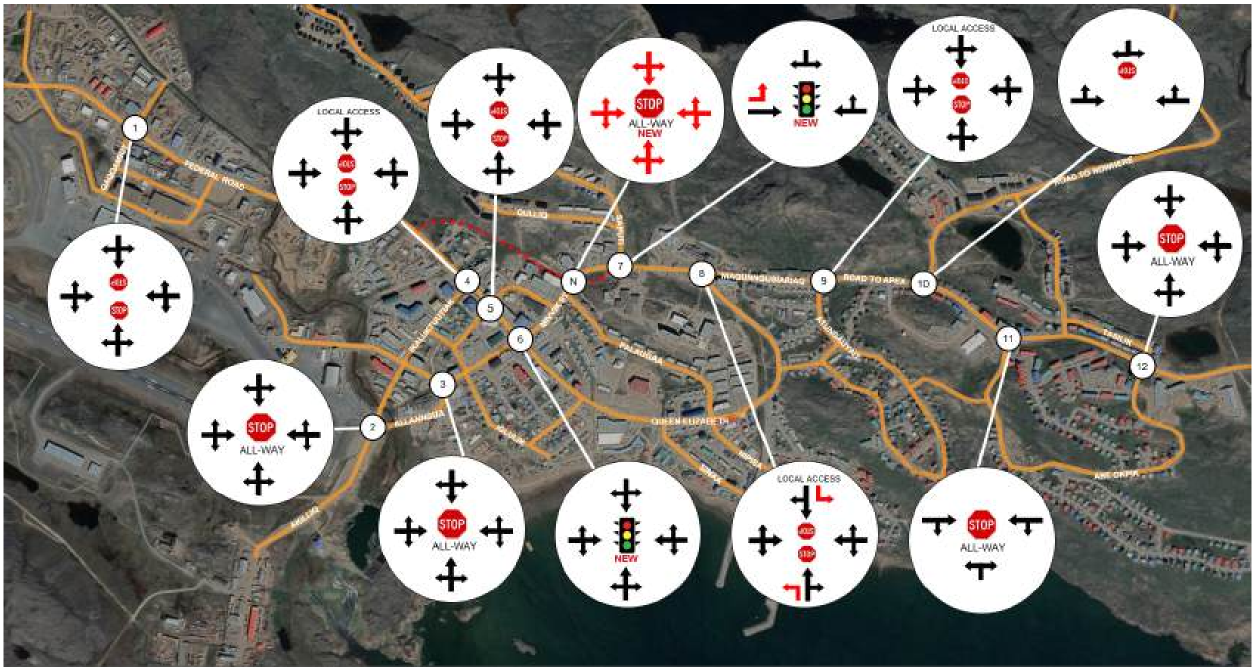


Figure 15: Future 2030 Intersection Lane Geometry and Traffic Control (Scenario 2)

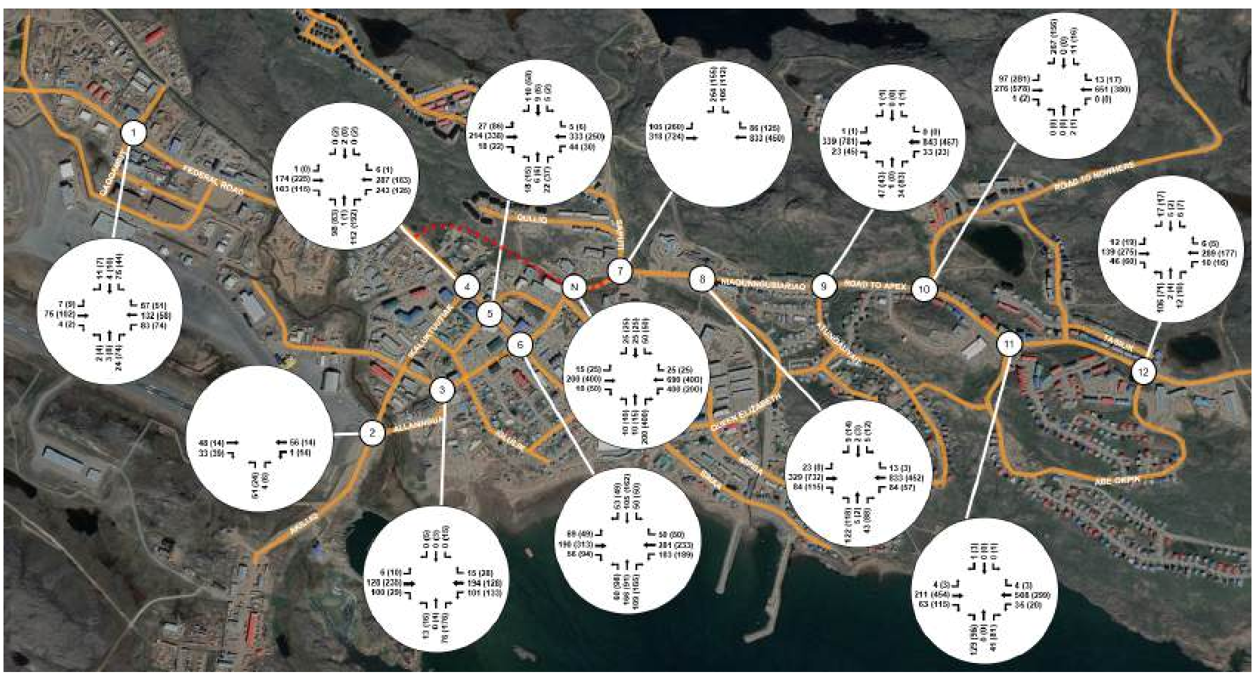


Figure 16: Future 2030 AM Peak Hour (PM Peak Hour) Traffic Volumes for Scenario 2

3.4.3 2030 Future Operational Analysis

Traffic operational analysis was undertaken for various 2030 growth scenarios using the Synchro 10.0™ software package.

***Scenario 1 (Do Nothing)*:**

Under the 'Do Nothing' future 2030 scenario, a number of intersections and corridors within the City of Iqaluit are anticipated to reach and operate at or above capacity. Key intersections that are projected to reach capacity under this scenario include:

1. ***Federal Road / Ikaluktuutiak Drive**:* Under the current two-way stop control configuration, this intersection is projected to operate at or close to capacity with an LOS rating of F on the minor approaches during both the AM and PM peak periods.
2. ***Queen Elizabeth/Federal Rd & Mivvik Street/Niaqunngusiariaq (Four Corners)**:* Under the existing roadway and intersection configuration, this intersection is projected to operate above capacity with all movements operating with an LOS rating of F during the AM and PM peak hours.
3. ***Niaqunngusiariaq / Saputi**:* Under the current two-way stop control configuration, this intersection is projected to operate at capacity with an LOS rating of F on the southbound minor approach during the AM and PM peak periods.
4. ***Queen Elizabeth / Niaqunngusiariaq**:* Under the current two-way stop control configuration, this intersection is projected to fail with an LOS rating of F and excessive delays and queues on the northbound approach during the AM and PM peak periods.
5. ***Atungauyait / Niaqunngusiariaq**:* Under the current two-way stop control configuration, this intersection is projected to operate at or close to capacity with LOS ratings of E and F on the minor approaches during the AM and PM peak periods.
6. ***Niaqunngusiariaq / Road to Nowhere**:* Under the current two-way stop control configuration, this intersection is projected to operate at or close to capacity with an LOS rating of F on the minor southbound approach during the AM peak period.

Intersection level of service (LOS) summary outputs for Scenario 1 (Do Nothing) are included in **Appendix A**.

Future 2030 intersection level of service ratings under Scenario 1 (Do Nothing) are summarized in Figure 17.

Based on the findings above, it is anticipated that the existing road network does not have enough capacity to accommodate projected growth in the City of Iqaluit. Planned road network improvements will be required to be in place by the 2030 horizon to accommodate growth.

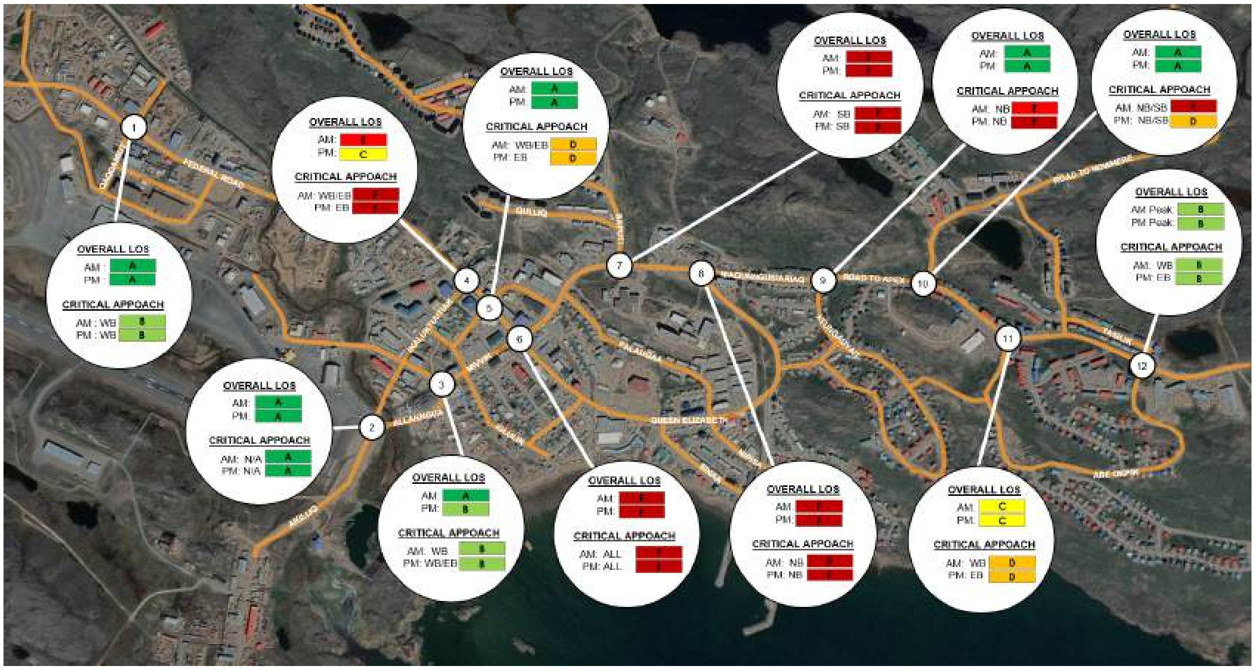


Figure 17: Future 2030 Intersection LOS Summary (Scenario 1 – Do Nothing)

Scenario 2 (Planned Network Improvements):

Under the 'Planned Network Improvements' future 2030 scenario, future traffic growth was assessed with the planned roadway and intersection improvements assumed to be implemented as outlined in Section 3.4.1. Under the 'Planned Network Improvements' future 2030 scenario, the following capacity issues were identified:

1. ***Federal Road / Ikaluktuutiak Drive***: Under the proposed roadway network, this two-way stop-controlled intersection is projected to operate with acceptable overall LOS ratings. However, delays are projected to occur on the westbound approach during the AM peak period. Additional mitigation measures, such as the conversion from a two-way stop to an all-way stop controlled intersection, may be warranted to improve future operations.

2. ***Queen Elizabeth/Federal Rd & Mivvik Street/Niaqunngusiariaq (Four Corners)***: Under the proposed signal operations, this intersection is projected to operate acceptably with an overall LOS rating of C during the AM and PM peak periods. The westbound (WB) approach is projected to operate with a LOS rating of D. The intersection is projected to operate acceptably under this scenario as a significant proportion of future growth traffic is anticipated to utilize the future Bypass Road connection. It is recommended that traffic volumes and operations be monitored at this intersection to ensure adequate operations in the future.

3. ***Niaqunngusiariaq / Saputi**:* The proposed roadway network improvement at this intersection includes the addition of an eastbound left-turn lane with storage and traffic signals. With these improvements, the intersection is projected to have improved operations. However, delays are projected to occur on the southbound approach (i.e. vehicles heading southbound on Saputi Road) during the AM peak period with this approach projected to operate close to its critical threshold. Additional improvements above what was assumed to occur may warranted at this intersection. This could include widening of the southbound approach to allow for separate southbound right and left turn lanes at the intersection.

4. ***Queen Elizabeth / Niaqunngusiariaq**:* The proposed roadway network improvement at this intersection includes the addition of dedicated northbound and southbound left-turn lanes with storage under the existing two-way stop control configuration. Under the current two-way stop control configuration, this intersection is projected to fail with an LOS rating of F and excessive delays and queues on the northbound approach during the AM and PM peak periods. Additional improvements above what was assumed to occur may warranted at this intersection. This could include the installation of traffic control signals.

5. ***Atungauyait / Niaqunngusiariaq**:* No improvements were identified at this intersection as part of the Scenario 2 Network. Under the current two-way stop control configuration, this intersection is projected to operate at or close to capacity with LOS ratings of E and F on the minor northbound approaches during the AM and PM peak periods.

6. ***Niaqunngusiariaq / Road to Nowhere**:* No improvements were identified at this intersection as part of the Scenario 2 Network. Under the current two-way stop control configuration, this intersection is projected to operate at or close to capacity with LOS ratings of D and E on the minor approaches during the AM and PM peak periods.

7. ***Niaqunngusiariaq / Bypass Road Connection at Kangiq & Iniq Road**:* Under the proposed configuration for the new bypass connection, which is assumed to be stop-controlled on all approaches, this intersection is projected to operate at capacity with LOS ratings F during the AM and PM peak periods. This indicates that the future Bypass Road intersection at Niaqunngusiariaq will require traffic control signals under the 2030 (and beyond) full build out scenario.

Intersection level of service (LOS) summary outputs for Scenario 2 (Planned Network Improvements) are included in **Appendix A**.

Future 2030 intersection level of service ratings under Scenario 2 (Planned Network Improvements) are summarized in Figure 18.

Based on the findings above, it is anticipated that the planned road network improvements under Scenario 2, which were identified through background studies, will not have sufficient capacity to accommodate the projected growth in the City of Iqaluit.

It is anticipated that under a full build out scenario by 2030, additional roadway capacity improvements, above what has been identified as required to date, will be required by the 2030 horizon. It is important to note that the projected road network capacity limitations identified are associated with full development build out by the year 2030 and will only be required to accommodate development growth.

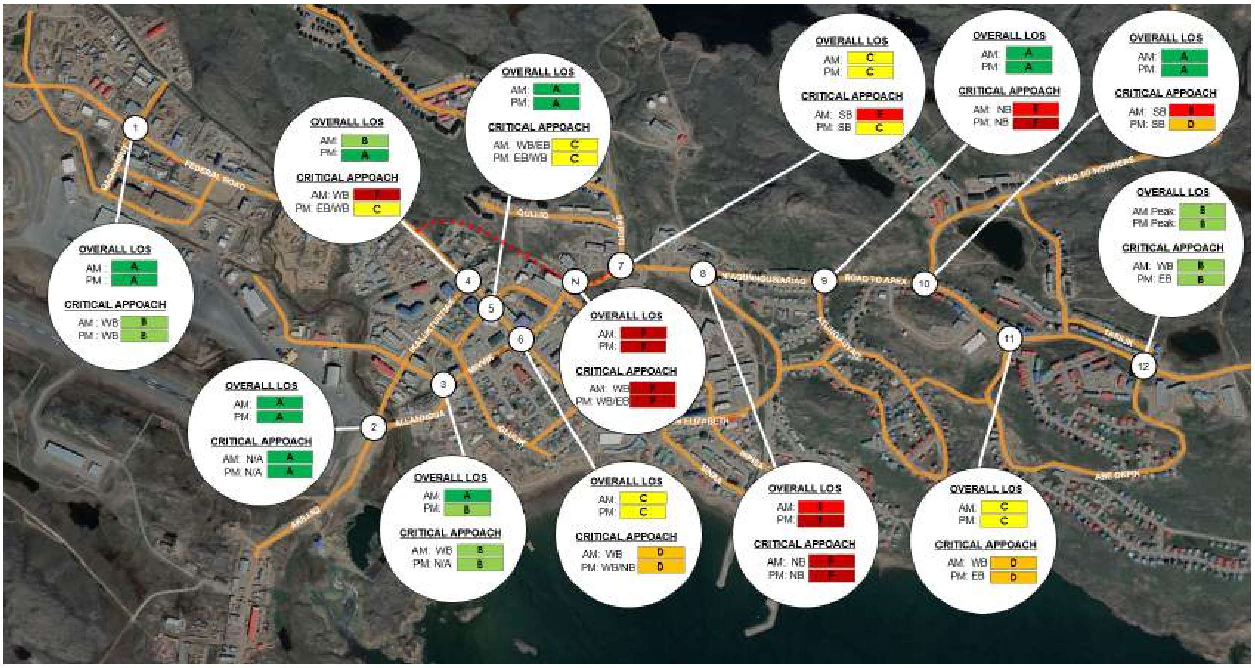


Figure 18: Future 2030 Intersection LOS Summary (Scenario 2 – Planned Network Improvements)

3.4.4 2030 Future Mitigation Measures

To address the projected capacity issues under a 2030 (and beyond) full build out scenario, additional road network mitigation measures were evaluated under a new ***Scenario 3 (Ultimate Road Network)***, which identifies additional transportation network improvements needed to support the assumed full build out growth scenario for the City of Iqaluit for the 2030 (and beyond) horizon year.

In addition to the assumed road network improvements outlined in Scenario 2, the following road network improvements were assumed and evaluated for Scenario 3:

***Scenario 3 (Ultimate Road Network)*:**

1. ***Federal Road / Ikaluktuutiak Drive***: Conversion from a two-way stop to all-way stop controlled intersection to address anticipated capacity issues.

2. ***Niaqunngusiariaq / Saputi**:* In addition to the installation of traffic control signals and the addition of an eastbound left-turn lane with storage, the addition of exclusive southbound left and right turn lanes was assumed.

3. ***Queen Elizabeth / Niaqunngusiariaq**:* In addition to the installation of dedicated northbound and southbound left-turn lanes with storage, the installation of traffic control signals was assumed at this intersection.

4. ***Atungauyait / Niaqunngusiariaq**:* No improvements were identified at this intersection as part of the Scenario 2 Network. Under the Scenario 3 Network, the installation of traffic control signals was assumed. The conversion of the existing two-way stop control configuration to an all-way stop control was reviewed and deemed unfeasible due to the excessive queues and delays anticipated to occur on Niaqunngusiariaq (Road to Apex).

5. ***Niaqunngusiariaq / Road to Nowhere**:* No improvements were identified at this intersection as part of the Scenario 2 Network. Under the Scenario 3 Network, the installation of traffic control signals and an exclusive eastbound left turn lane was assumed. The conversion of the existing two-way stop control configuration to an all-way stop control was reviewed and deemed unfeasible due to the excessive queues and delays anticipated to occur on Niaqunngusiariaq (Road to Apex).

6. ***Niaqunngusiariaq / Bypass Road Connection at Kangiq & Iniq Road**:* Under the Scenario 3 Network, the installation of traffic control signals was assumed at the new Bypass Road intersection with Niaqunngusiariaq (Road to Apex). In addition, a westbound auxiliary turning lane was assumed due to anticipated turning traffic demands.

Figure 19 summarizes the assumed 2030 (and beyond) ultimate road network under Scenario 3.

With the inclusion of the additional capacity improvements outlined under Scenario 3, all key study area intersections are projected to operate acceptably under 2030 (and beyond) future horizon demands.

It is anticipated that development growth in the City of Iqaluit will occur incrementally based on market conditions and may not be fully realized by the 2030 future horizon year. A number of the road network improvements identified are driven by growth and will only be required as the City of Iqaluit reaches the full build out conditions assumed in this TMP. As such, implementation timelines for these improvements are dependent on the timelines of the corresponding developments.

Intersection level of service (LOS) summary outputs for Scenario 3 (Ultimate Road Network) are included in **Appendix A**.

Future 2030 (and beyond) intersection level of service ratings under Scenario 3 (Ultimate Road Network) are summarized in Figure 20.

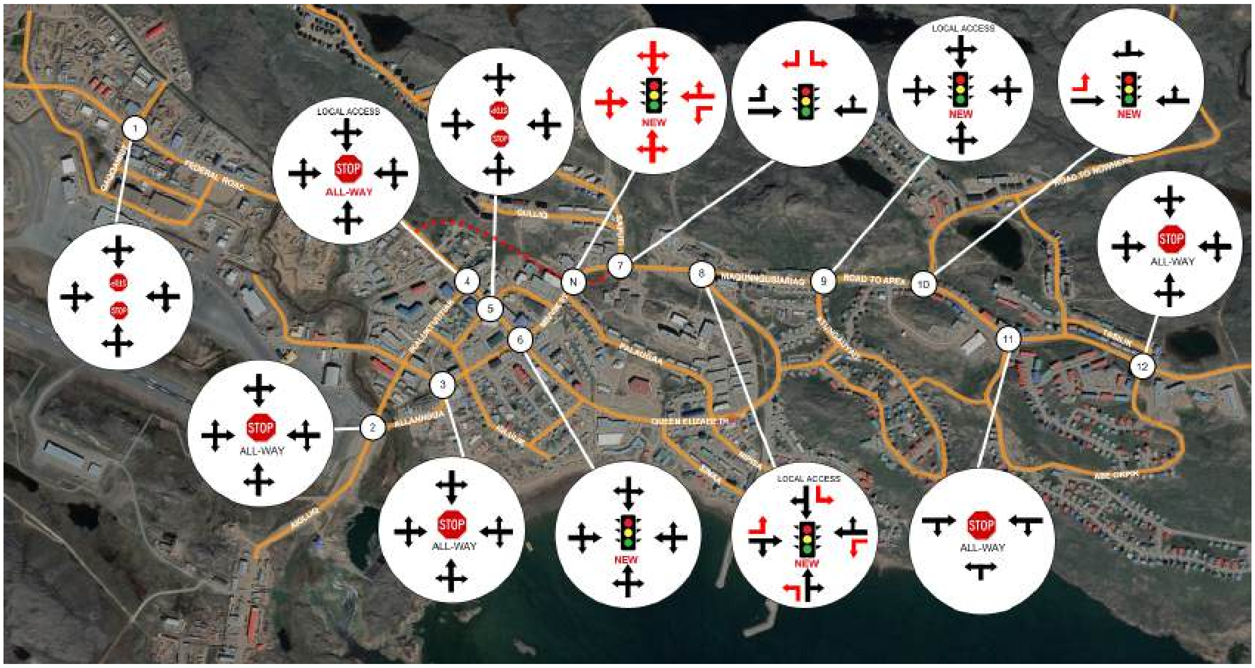


Figure 19: Future 2030 Intersection Lane Geometry and Traffic Control (Scenario 3)

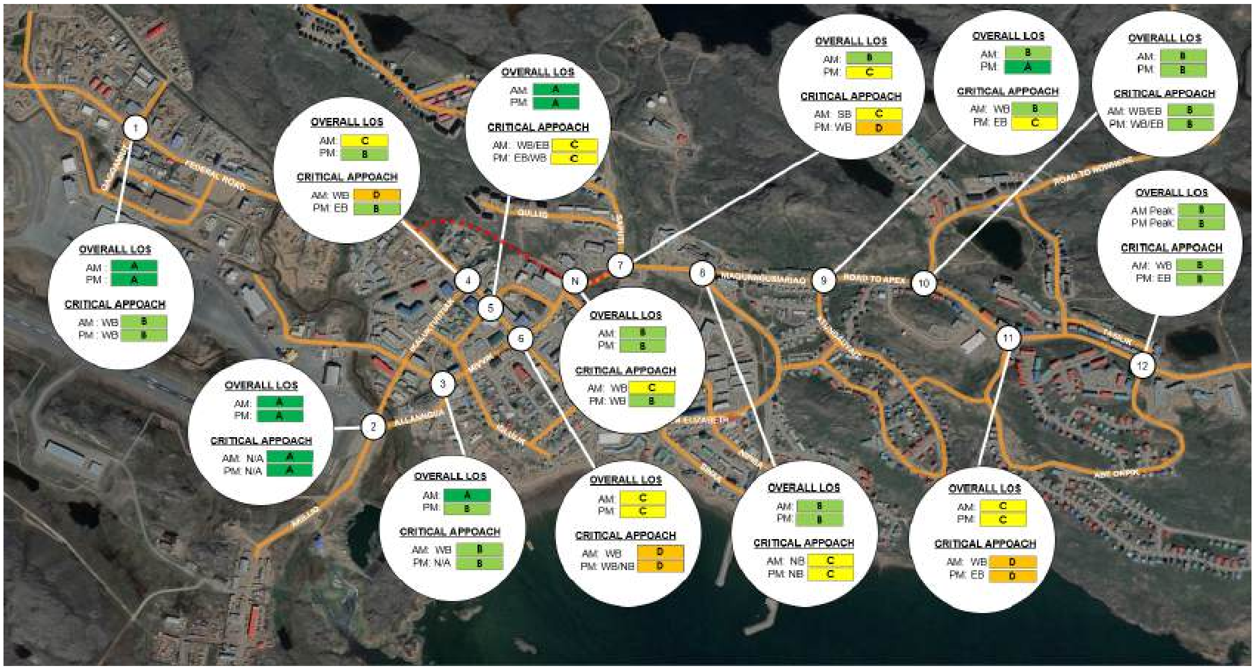


Figure 20: Future 2030 Intersection LOS Summary (Scenario 3 – Ultimate Road Network)

3.5 ROAD NETWORK RECOMMENDATIONS

It is anticipated that development growth in the City of Iqaluit will occur incrementally based on market conditions. As a result, the future land use assumptions adopted as part of the TMP may not be fully realized by the 2030 future horizon year.

The need for the road network improvements identified in this TMP are driven by development growth assumptions, this will require monitoring of proposed development applications and traffic count data in order to confirm the need and timing of road network improvements.

As part of the TMP, the need and timing of road network recommendations have been categorized as immediate, short-term, medium-term, or long-term. These are defined below:

Immediate: Recommended improvements are currently required to address existing capacity constraints.

Short-Term: Recommended improvements are anticipated to be required in the short-term to accommodate anticipated growth, likely within the next 5 years. Regular monitoring of traffic volumes and intersection operations is recommended to confirm timing of need.

Medium-Term: Recommended improvements are anticipated to be required by the 2030 horizon, largely dependent on the planned developments. Monitoring of proposed development applications and traffic volumes is recommended to identify timing.

Long-Term: Recommended improvements are anticipated to be required under the full development build out scenario, including the build out of developments which may not necessarily come to fruition, such as Future Development Areas A & B. This is subject to actual development growth and is envisioned to occur beyond the 2030 time horizon.

A summary of road network improvements and timing is provided in Table 5.

Table 5: Summary of Road Network Improvements

	Location	Improvement	Timing
1	Niaqunngusiariaq / Saputi	Addition of an eastbound left turn storage lane and installation of traffic control signals. Addition of exclusive southbound left and right turn lanes.	**Immediate:** Improvements are currently required to address existing capacity issues. **Medium-Term:** As development growth continues to occur, the installation of southbound left and right turn lanes will be required.
2	Queen Elizabeth / Niaqunngusiariaq	Addition of northbound and southbound left turn storage lanes. Installation of traffic control signals, with eastbound left and westbound left turn storage lanes.	**Short-Term:** The northbound approach is currently operating at the acceptable capacity threshold of LOS D. Short term improvements include the addition of northbound and southbound left turn lanes to provide additional capacity. **Medium-Term:** As development growth continues to occur, the installation of traffic control signals with auxiliary lanes will be required.
3	Queen Elizabeth/Federal & Mivvik / Niaqunngusiariaq (Four Corners)	Installation of traffic control signals. Localized widening to accommodate left turn storage lanes on all approaches.	**Immediate:** Monitoring of intersection operations on a regular basis to assess safety and traffic flow capacity. **Medium-Term:** As development growth continues to occur, the installation of traffic control signals will be required. **Long-Term:** At full 2030 build out, the realignment of Niaqunngusiariaq and construction of the Bypass Road Connection will be required to accommodate future development growth, and help reduce traffic demands at the Four Corners intersection.

	Location	Improvement	Timing
4	Niaqunngusiariaq / Bypass Road Connection at Kangiq & Iniq Road	Construction of a Bypass Road connection between Federal Road and Niaqunngusiariaq. Installation of traffic control signals at the intersection of Niaqunngusiariaq and the Bypass Road connection.	**Long-Term:** At full 2030 build out, the construction of a Bypass Road connection between Federal Road and Niaqunngusiariaq will be required. The timing of this connection is tied to the level of development growth, particularly along Federal Road as part of the IOL and Municipal Lands Development.
5	Federal Road / Ikaluktuutiak Drive	Conversion from two-way stop control to all-way stop control.	**Medium-Term / Long-Term:** As development growth continues to occur, this conversion is recommended. The timing of this conversion is tied to the level of development growth, particularly along Federal Road as part of the IOL and Municipal Lands Development.
6	Atungauyait / Niaqunngusiariaq	Installation of traffic control signals.	**Long-Term:** At full 2030 build out, traffic control signals may be warranted at this intersection. The need for this improvement is tied to development growth, particularly in areas to the east in Area A (Road to Apex) and Area B (Road to Nowhere).
7	Niaqunngusiariaq / Road to Nowhere	Installation of traffic control signals and an eastbound left turn storage lane.	**Long-Term:** At full 2030 build out, traffic control signals and an eastbound left turn lane may be warranted at this intersection. The need for this improvement is tied to development growth, particularly in areas to the east in Area A (Road to Apex) and Area B (Road to Nowhere).

A number of intersections are proposed to feature the addition of auxiliary turning lanes to accommodate traffic growth. It is recommended that the delineation of turning lanes at intersections be defined through the installation of lane control signs in accordance to the Manual of Uniform Traffic Control Devices for Canada (MUTCD).

3.6 TRAFFIC CONTROL WARRANTS POLICY

Using the Ontario Traffic Manual as an appropriate proxy, the all-way stop warrant policy described below describes the conditions under which all-way stop signs may be installed at an intersection. It should be noted that 'vehicles' referenced below includes automobiles, off-road vehicles (ATVs or snowmobiles), and bicycles.

The below all-way stop warrant policy is intended to be a starting point for the City of Iqaluit to build off of. It is recommended that the City use this information to build its own warrants policy, and it is recommended that the policy be reviewed on a regular basis for updates that might be needed.

Volume Warrants

The following warrants must all be met for the road type to proceed with all-way stop signs.

For arterial/collector roads:

- The road volume total for all intersection approaches should exceed 500 vehicles per hour for any eight hours of the day
- The combined total vehicular and pedestrian volume on the minor street should exceed 200 units per hour
- The volume split should not exceed 70/30 (percent), where the 70% represents vehicular volume on the major street and the 30% represents the volume of all vehicles and pedestrians on the minor street. (If the volume split does exceed 70/30 then a two-way stop would likely be more appropriate).

For local roads:

- The road volume total for all intersection approaches should exceed 350 vehicles for the highest hour recorded
- The volume split should not exceed 75/25 for three-way control or 65/35 for all-way control, where volume is defined as vehicles only

Collision Warrants

An accident frequency of four relevant collisions per year, over a three-year period, should be considered the threshold to implement all-way stop signs. Relevant collisions include those which are susceptible to relief through all-way stop sign implementation, such as right-angle or turning-type collisions.

Exceptions

All-way stop signs should not be implemented under the following conditions:

- Solely as a speed control device
- Solely to deter through-traffic in a residential area
- On urban roads which have a speed limit in excess of 60km/h
- Along transit or truck routes, except where two routes cross
- Where traffic would be required to stop on steep grades

3.7 ROADWAY CLASSIFICATIONS

Roads are classified by how they function within a city's transportation system. Functional classifications within the City of Iqaluit are divided into three categories: Arterial, Collector, and Local roadways. All three roadway types provide varying levels of mobility and access.

Arterials typically carry most of the traffic through a city or region. Access is typically restricted or limited to allow for greater mobility, and higher traffic volumes and speeds, and they typically have the greatest right-of-way widths. Arterial roads generally have a more diverse mix of adjacent land uses (commercial, industrial, and sometimes high-density residential) compared to collectors and local roads.

Collectors provide traffic circulation within an area and connect local roadways with arterials. Collectors provide a balance between providing mobility and access within a transportation network.

Local roads include most residential streets – especially in areas of lower density – and access roadways to land uses. The primary objective of local streets is to provide access. Mobility is generally limited as local roads are not designed to accommodate large traffic volumes or high traffic speeds.

Figure 21 illustrates the City of Iqaluit roadway classification, consistent with the General Plan road classification.

Figure 21: Roadway Classification

3.8 PARKING CONSIDERATIONS

Parking management involves the application of various specific strategies in an integrated program. Not every strategy is appropriate in every situation. Actual impacts vary depending on geography, demography, implementation, and other factors.

3.8.1 Context

The City of Iqaluit has seen high growth in automobile ownership rates and therefore is experiencing new strains in demand for parking. Currently, the City does not operate a paid parking program, with all parking spots available at no cost to the driver. Free parking has further increased demand on the parking network, with deficiencies in parking availability noted especially west of Four Corners and at the Iqaluit Airport. As a unique city that sees a variety of transportation modes in use, other vehicle types such as snowmobiles, trailers, and trucks should be considered in determining future parking needs. At the same time, a balance must be maintained between adding new parking spaces and using the land for most productive uses – comments in the public engagement process indicated a desire to promote a high-quality urban realm downtown, which promotes walkability and pedestrian safety.

As seen below in Figure 22, a high percentage of land use in the Four Corners area is dedicated to parking. This is typical of many auto-centric urban centres, and conversely, the relative ease of finding parking makes driving an automobile attractive relative to other transportation modes. As a city develops and land values in the central business district increases, parking lots are often re-developed into residential or employment land uses.

Figure 22: Example of significant percentage of land used for parking in Four Corners

3.8.2 Parking Management Measures

There are several parking measures that could be further explored to manage parking demand in and around Four Corners over time so that the City can fulfill its strategic objectives. Importantly, these parking management measures can also serve to help ensure there is adequate parking supply for workers starting their shifts in the mid-afternoon and during other peak hours. These measures are discussed in the following subsections.

3.8.2.1 Parking Pricing

Currently, lot parking in Iqaluit is privately owned and street parking in Iqaluit is not priced. This has led to unconstrained demand for street parking in the busier areas of the city, such as Four Corners. A central principle of Transportation Demand Management (TDM) is the relationship between supply and demand. Without an increase in supply, parking demand can be reduced by developing a paid parking solution. By placing a price on parking within Iqaluit's prime real estate, automobile trips shift to other transportation modes and parking demand distributes to areas with lesser demand. A parking pricing system could include traditional parking meters or modern smartphone app-based parking systems (or a combination of both). While the City of Iqaluit does not operate any paid off-street public parking lots, pricing could be implemented through the use of on-street parking meters.

Demand Priced Parking

In the medium-to-long-term, assuming that paid street parking has been implemented, a system could be developed whereby the City compares the actual parking occupancy with the desired on/off-street parking occupancy and every few weeks nudges prices up or down accordingly based on demand. Prices can be set by block and time of day to produce one or two open spaces on every block and thus reduce demand and shift motorists to other modes of transportation. This could bring in additional revenue for the City while also helping to reduce parking demand during the peak hours of 1-4pm.

Applying a demand priced parking strategy might mean that at certain times the parking is free while at other times (such as during Saturday afternoons) there is a charge. The expansion of paid parking areas could act as a deterrent for driving and encourage a shift to active modes and (upon implementation) transit. At the same time, the City should consider deploying additional on-street bicycle parking facilities to further encourage a shift to active modes, and in anticipation of additional bicycle imports in the future. Bicycle parking should be able to accommodate regular bicycles as well as fat tire bicycles.

3.8.2.2 Increase capacity and utilization of existing facilities

Existing facilities could be optimized by using spaces that are currently wasted areas such as corners, edges, and undeveloped land to increase the parking supply. This can be particularly appropriate for compact car, snowmobile, and bicycle parking. Another method is to reduce parking stall widths in order to create compact car parking, while acknowledging the unique parking conditions in Iqaluit in terms of allowing for space to plug in vehicles, and considering that vehicles are generally larger on average compared to elsewhere in Canada). It is not recommended to consolidate street parking in a similar fashion as this can add congestion due to the additional challenges of parallel parking.

In addition to increasing the parking supply within existing facilities, there may be opportunity to improve the utilization of existing facilities. Utilization could be increased if there is appetite among businesses to enter agreements with the City whereby unused capacity in privately-owned lots may be used for public parking. Regardless of whether there is an appetite for such agreements, it is recommended to maintain open communication channels with the owners of private lots, to ensure that a paid parking strategy does not create an issue of vehicle users starting to use private lots for the sole purpose of avoiding paid street parking.

Parking Stall Sizing

In accordance with the Nunavut Good Building Practices Guidelines, minimum parking stall dimensions are recommended to be 2.5m x 6m for automobiles and 2m x 2m for off-road vehicles (ORVs), including snowmobiles and ATVs. Where added capacity is needed, parking stall sizing can be investigated to determine if existing stall sizing is above the recommendations in the guidelines, and parking stalls can be re-sized within the limits of the guidelines. Alternatively, dedicated ORV parking stalls can be added in place of existing automobile parking stalls to increase capacity, as three ORV stalls can fit within one automobile parking stall.

Figure 23: Multi-modal parking needs in Iqaluit

3.8.2.3 Parking Space Sales and Leasing

A website which allows residents or workers to look for parking to rent on a daily, weekly, or monthly basis might be created and marketed. Facilities or businesses with excess parking capacity can lease or trade it to others. Residents could also use such a platform to rent their parking spaces to interested parties, for example to seasonal workers, who would like a dedicated parking space but do not want to compete with visitors for parking spots. This prospect may also be attractive to some visitors, depending on where and how long they are staying.

3.8.2.4 Transferable Parking Rights and Developer Agreements

Developers can choose between constructing required parking spaces or transferring parking spaces to another development. This works best in areas where parking maximums limit the amount of parking that can be built. Whitehorse, YT is an example of a city that established maximum parking ratios for new developments in 2011.[2] A transfer program could allow historic properties, low-income housing, and senior housing projects, where parking demand is lower, to transfer parking spaces to another development that would like additional spaces above the maximum allowed.

Developer agreements are a similar parking management strategy that can be successful in encouraging mode shift to alternative forms of transportation (transit and active transportation) if transit planning and land use planning are collaborative. One example is parking offsets, whereby developers provide residents with a transit pass in lieu of a parking space. This strategy, recommended to be studied only after a future transit service is operational and has been deemed sustainable, relies on the presence of effective transit service and prevalent active transportation infrastructure.

3.8.2.5 Unbundled Parking

Parking facilities and infrastructure can be unbundled from the rent or purchase price of residential and commercial units and sold or rented out as a premium add on service. Including the costs of parking in rents or purchases encourages automobile ownership and is a disincentive to active modes. Unbundling also allows a more equitable allocation of costs by allowing tenants and owners to pay only if they use the parking infrastructure. Unused parking spaces could be used for public parking at an hourly rate, in areas of mixed land use, or where residential areas may be adjacent to commercial, recreational, and/or industrial destinations.

Unbundling parking from the rent or purchase price encourages renters to only purchase and use the parking spaces that they need. For example, the Federal and GN Government, major renters in the city, require minimum standards for parking provision for all units they rent, which dictates the amount of parking spaces the City must supply. However, minimum standards can often be higher than the actual observed demand for parking. By unbundling parking from their rental cost and requiring tenants to rent parking spaces separately, tenants are more likely to use fewer spaces, which frees up parking stalls for other uses and brings down the overall need for building more parking spaces across the city.

Given this strategy’s reliance on mixed-use development in Iqaluit’s core, this supports a recommendation for Iqaluit to encourage this type of development in future. Mixed-use development, which is typically a style of property development which can incorporate residential, commercial, retail, institutional, or industrial uses in a single development, creates a more efficient use of the most in-demand urban land. Mixed-use development also has the benefit of providing services for residents who live above which may have required a car trip to previously access, reducing traffic and emissions.

3.8.2.6 Wayfinding and Signage

A comprehensive and uniform wayfinding and signage (parking information) program for the City’s parking system can help guide drivers to parking options and reduce confusion about payment and

[2] https://www.whitehorse.ca/home/showpublisheddocument/12020/636987814676870000

restrictions. Improved signage can alleviate demand by providing directions to nearby destinations and other peripheral lots. Information can also be used to clearly identify lots that are available to the general public and those that are restricted to monthly pass-holders, providing information on fines and discouraging noncompliance. Improved wayfinding is a notable opportunity in Four Corners and the "new downtown" area by encouraging parking in other locations within the core area, at lots which may be underutilized at times relative to street parking directly at the Four Corners and in the "new downtown". Wayfinding and signage is explored further in section 3.9.

3.8.2.7 Streetscaping and Landscaping

Making outer city parking lots more appealing with safe pedestrian routes and promoting cleanliness will encourage people to want to park there and will help people enjoy their walk to work. Improving walkability (the quality of walking conditions) expands the range of parking facilities that serve a destination. It increases the feasibility of sharing parking facilities and the use of remote parking facilities. Improving walkability also increases "park once" trips, that is, parking in one location to access multiple destinations, rather than driving to each destination individually. This reduces vehicle trips and the amount of parking required at each destination.

3.8.2.8 Curbside Demand Management

As the urban areas continue to intensify and grow, notably in the several developments planned throughout the city, the demand on the road network, existing parking facilities, and curbside space will grow considerably. The public curbside —the space along the street between travel lanes and walking paths (or sidewalk)—is precious real estate. Potential users of the curbside include residents, workers, visitors, patrons, deliveries, and travelers of all other modes. The needs and peak demands for curbside use are not uniform and will expectedly vary across the neighbourhoods. It is also noted that heavy snowfall and lack of sidewalk infrastructure can create 'messier' curbsides relative to other cities.

The average dwell time for a vehicle picking up and dropping off a person is dependent on idling policies and the surrounding urban landscape, but can range from 1-3 minutes, meaning a designated pick-up & drop-off space has a theoretical capacity of being able to serve at least 20 vehicles per hour. Commercial vehicle dwell times are closer to 10-15 minutes meaning curbside capacity for deliveries can only serve approximately 4-6 delivery vehicles per hour.

To maintain an equitable balance between competing users, urban jurisdictions need to take steps to shift from curbsides dominated by "on-street parking" to reliable freight loading, public space, and active transportation infrastructure. Figure 24 is more relevant for a larger and more urbanized area than Iqaluit but illustrates in concept some of the features of a managed curbside. Concepts relevant to Iqaluit include:

- Dedicated loading space for taxis and deliveries
- Active transportation infrastructure/protected curbs (bollards)
- Turn pockets

These concepts are likely most relevant to Four Corners and elsewhere in the core area due to the inflows of commuter traffic, commercial activity, and relative high-density characteristics.

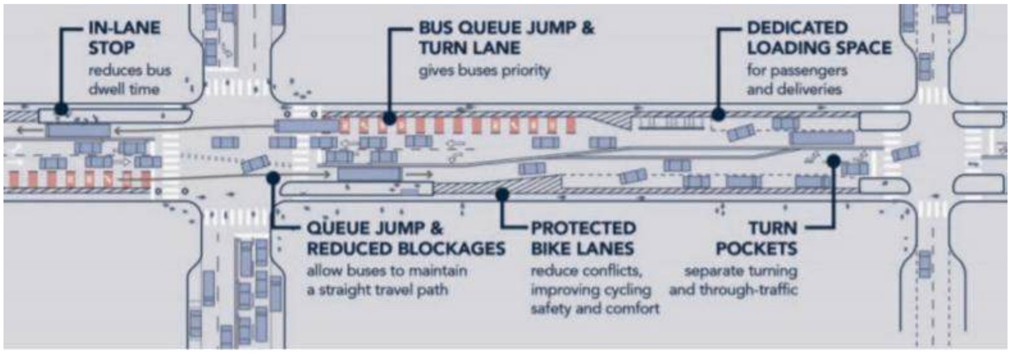


Figure 24: A reference of what a managed curbside looks like

Source: NACTO Curb Appeal, 2017

3.8.3 Downtown Parking Management Recommendations

It is recommended that the City proactively consider the on and off-street parking needs today and into the future, with a more detailed consideration of future curbside demand usage and how parking lots on the periphery of the Four Corners–new downtown area may be better leveraged. As an example, Astro Hill is centrally located and appears to have spare parking capacity. In collaboration with the local businesses that manage these parking lots, there may be opportunity to repurpose some of the parking as public spaces, and develop strategies to encourage drivers to park here rather than at Four Corners or the new downtown. The impacts of active transportation, future transit service, and wayfinding investments should also be considered, as should the potential impacts of emerging technology.

Figure 25: Spare parking capacity in Astro Hill

3.8.3.1 Mivvik Street

As a central road in the Four Corners area, Mivvik Street sees traffic and pedestrian activity and experiences high parking demand. Specific complaints have been raised at the junction of Mivvik, Allanngua, and Al Woodhouse. The poorly delineated accesses, egresses, and parking spaces for the various businesses in the area create unsafe conditions for drivers and pedestrians and contribute to traffic congestion. Mivvik Street will see road construction and residential development in the coming year, so this creates a timely opportunity to implement improvements. The following recommendations are provided to manage parking along this corridor:

- Implement improved signage and wayfinding to indicate parking lot entrance and exit points, and to indicate directional flows into and out of parking lots.
- The City should work with property owners to improve parking space markings and signage on their properties, and implement similar improvements on any City-owned land/parking lots in the area.

- As sidewalks are recommended along this corridor (discussed further in Section 5 of the TMP), it is suggested that the City should consider the installation of these sidewalks in tandem with the currently planned roadway improvements.
- Strategically install flex bollards at locations where parking is not desired, such as areas which may impede traffic flow.
- Revisit parking space sizing to determine if additional parking can be created within the given footprint.

3.9 SIGNAGE AND WAYFINDING CONSIDERATIONS

Safety concerns was a recurring theme that emerged from stakeholder engagement activities in the early stages of the TMP. The general sentiment was less related to notable hazards at specific nodes in Iqaluit's transportation network, and more related to general safety limitations arising from factors such as inadequate lighting, challenging driving conditions, pedestrians and drivers sharing the same road space, and improper driver behaviour. In theory, these challenges can be solved through infrastructure – expanding right-of-ways, adding sidewalks, paving roadways, introducing traffic calming, and improving street lighting – however a large-scale citywide deployment of these strategies would be a massive and costly undertaking that also necessitates significant incremental annual maintenance. As such, these strategies are best reserved for areas of high traffic and pedestrian volume where they are expected to have a favourable business case. A more prudent approach to addressing these concerns at a strategic/citywide level is to bolster wayfinding and signage efforts, which in many cases can prove to be just as effective as costlier infrastructure-based solutions.

Additional signage can be deployed to better delineate between roads, snowmobile trails, multi-use trails, and sidewalks / pedestrian walkways. At present, there are many instances of pedestrians walking along the side of the road in high-traffic areas, and there are many instances of snowmobile trails intersecting with pedestrian walkways and roads without any warning. Figure 26 illustrates one of these instances.

Figure 26: Potential danger as a snowmobile trail and a pedestrian walkway converge without warning near Niaqunngusiariaq / Abe Okpik

A signage strategy should target all transportation network users – alerting pedestrians, snowmobile users, and automobile users of areas of convergence between roads, snowmobile trails, and pedestrian walkways. Potential hazards should be identified by signage at the points of intersection, and also along the roadway to demarcate school zones, areas where children play, and to provide advanced notice of upcoming crosswalks. Signage can also be used to provide gentle reminders such as "share the roadway" or "watch your speed". Such measures can be implemented alongside other traffic calming measures such as posting additional speed limits and narrowing roadway widths where appropriate. Figure 27 illustrates the convergence of roads and snowmobile trails in Apex, but without any signage to alert motorists of this convergence. Figure 27 also illustrates an opportunity to deploy signage that cautions motorists of the narrowing roadway in advance of the bridge. Figure 28 illustrates good signage, though the School Zone sign may be easy to miss since it is smaller than the stop sign and the speed limit sign, and if black text on an orange background is more difficult to read for some people with visual impairments compared to black text on a white background.

Figure 27: Signage opportunity in Apex

Figure 28: Stop sign (foreground), speed limit sign and school zone sign (background)

In addition to safety benefits, opportunities for improving signage across Iqaluit could bring benefits in the following areas:

- **Parking**. As noted above in section 3.8, signage could be useful in providing drivers with clearer direction to parking facilities. In the event of implementing paid parking in the city, the signage could clearly delineate between areas of paid parking and free parking, and encourage drivers to park on the periphery of Four Corners and the "new downtown" where there is a greater supply and lesser demand of parking spaces. At the same time, additional signage can be used to better delineate accesses and egresses to parking facilities, which was noted to be a challenge in particular at the Mivvik/Allanngua intersection.

- **Traffic Flow**. With the additional delineation between automobile, snowmobile, and pedestrian areas throughout Iqaluit (via signage, flex bollards, and/or other infrastructure as appropriate), the City has the opportunity to reduce areas of confusion throughout the city. Specifically, there are many instances throughout the city of significant roadway widths, but unclear direction on how the roadway should be best used, and how the space should be shared between users of different modes of transportation. In tandem with the signage, where there is spare roadway capacity, the City might also consider reallocating some of the right-of-way as additional parking space, particularly where there is opportunity to do so within the Core Area.

Figure 29: There are many examples throughout the city of opportunities to deploy signage to better communicate how transportation corridors should be used

- **Wayfinding**. Many cities across North America are taking advantage of signage as a means of improving wayfinding. This includes not only alerting residents and visitors as to where key destinations are located, but also alerting them on how they should best reach their destinations. Signage illustrating where specifically to turn to enter parking lots, for example, can help avoid confusion. Following the construction of a Four Corners By-Pass, signage can also be deployed in the short-term following implementation to educate drivers as to how utilize the By-Pass. Figure 30 below shows a good example of signage towards parking – something that there is opportunity to do more of across Iqaluit – but it also illustrates a stop sign that is of inconsistent design compared to those elsewhere across the city.

Figure 30: Signage at the Iqaluit International Airport

It is recommended that the City of Iqaluit conduct a full traffic signage review. This would include inventorying existing signs across the city, providing specific recommendations for where and how signage can be bolstered, and then deploying the signage accordingly. All signage should be standardized, having consistent designs across the city (including shape, font, size, height, language, reflectiveness, etc.). Where appropriate, signage, wayfinding, and other elements affecting transportation safety should be accompanied by a marketing and public education campaign to maximize the full value of each investment.

4.0 TRANSIT NETWORK

4.1 TRANSIT IN IQALUIT – AN INTRODUCTION

4.1.1 The Market for Transit

Public transit is a service offered by many cities, towns, and municipalities to foster improved mobility, and by extension an improved quality of life. For a community such as Iqaluit which is rapidly growing, has a harsh climate, and for which the cost of owning a vehicle is very high, public transit can be a lifeline that connects residents to work, school, errands, and recreation/leisure opportunities. Although public transit has been piloted before in Iqaluit, many years have passed since the previous service ceased operation in 2005. Since that time, the city has grown considerably in terms of population, employment, and density, and vehicles imports have grown even faster contributing to congestion, road maintenance, and parking needs at levels not previously experienced by the city. Taxi operations have also consolidated with a single operator, Caribou Cabs, delivering trips at a rate where demand is outpacing supply. With continued growth anticipated in the city, there has never been a more relevant moment to revisit the possibility of transit in Iqaluit and the role it might play in alleviating these constraints and improving mobility, particularly for those without other viable means of transportation.

4.1.2 Considerations from Stakeholder Engagement

Public transit was an important theme explored during the round of public consultation for this TMP. 69% of respondents to our online survey indicated they would consider using public transit if it were available. Many individuals engaged throughout the course of the consultation often brought up the topic of public transit and how beneficial it would be for transportation to and from key destinations such as Northmart, the Four Corners area, the Hospital, and residential areas, and more generally speaking for helping to relieve congestion. While the existing taxi service provides an important mobility service to the community, it is important to recognize that one provider cannot be all things to all people, and several residents cited high taxi fares, service reliability, vehicle cleanliness, and safety as reasons for not using taxis. In addition, it was observed that the demand for public transportation appears to be in excess of what Caribou Cabs is able to supply.

Relatedly, in the survey, respondents indicated reliability and safety as being the two most important factors to consider when deciding how to travel. While findings from stakeholder engagement illustrated support for the development of a public transit service in Iqaluit, it also became apparent that the resulting public transit concept would need to be distinct from the taxi service. The benefit of this would be twofold. First, the transit service would be complementary to Caribou Cabs, rather than competitive; and second, it could better align with the public's expectations for a transit service and streamline public engagement and marketing efforts accordingly. Transit service concepts are discussed further in section 4.4.1.

4.2 VISION, MISSION, AND GOALS

Before exploring transit service concepts further, it is important to first establish a vision for public transit, as well as goals for the prospective transit system. Visioning, mission setting, and goal setting is an important exercise for several reasons:

1. It provides a basis upon which the resulting public transit service may be monitored and evaluated, helping to foster informed decision-making about how the service may be tweaked to better serve the community.
2. It can be motivating and inspirational for staff of all levels involved either directly or indirectly in service delivery, and it helps to instill a culture of accountability between service delivery staff and City stakeholders overseeing the operation, as well as with the general public.
3. It is useful for ensuring that public transit objectives align with broader mobility objectives, and in turn for creating a harmonious multi-modal mobility network.

A suggested vision statement for a prospective Iqaluit Transit system is “a connected, prosperous, and sustainable Iqaluit that is supported by transit as a preferred mode choice”. This provides a long-term and high-reaching goal for the City while acting as a communication tool to riders, staff, and other stakeholders as to what the City is striving for. A statement such as this would also help instill confidence in residents who may be wary about using the service due to concerns about its long-term sustainability, remembering the fate of the former Iqaluit Transit system which ceased operation after two years. Naturally, in support of this vision it will be important for the City to ensure the system has appropriate revenue sources (discussed further in section 4.5.3) to ensure that transit can indeed succeed in the long-term. One important revenue source is fare revenues, the magnitude of which is driven by ridership, which is also a good measure of service quality and effectiveness. The mission and goals help to provide a framework for how transit in Iqaluit can be successful in generating strong ridership.

A suggested mission statement for Iqaluit Transit is “a safe, reliable, and affordable bus system that responds to residents’ needs and enhances the city’s livability”. Unlike the vision statement, which is more abstract in nature, the intent of the mission statement is to communicate more specifically how Iqaluit Transit is envisioned to function. And, while the vision statement should be one that is public, the mission statement is more pertinent to the staff responsible for managing and operating the transit service. Of note, the mission statement touches on the themes of safety, reliability, and affordability, all of which are very important to residents in deciding how to travel, per the feedback received during stakeholder engagement.

After establishing a vision and mission for the transit service, the setting of goals provides a means by which progress towards the vision and mission can be tracked and evaluated. The goals also act as a guideline for day-to-day activities related to transit service operation. For an Iqaluit Transit service, goals might include (but are not limited to) the following:

1. **Build ridership**. Ridership levels are a clear indicator of how valuable the transit service is to the community. The better the service design (coverage, frequency, service span, etc.) can be

tailored to residents' needs, the greater the ridership can be expected. Ridership can be expected to grow over time as residents become increasingly familiar with the service, and benchmarks may be set in terms of a targeted number of boardings per month.

2. **Value customers' time**. This refers to the provision of convenient and reliable service, and is often evaluated in terms of the system's on-time performance (percentage of trips that are in between 0 and X minutes late, where 'X' is a policy decision). The more reliable the transit service is, the less time customers will need to spend waiting for their bus. Strategies such as optimizing route directness and mobile apps that give live updates to customers on when the next bus is expected to arrive also help to value customers' time both on-board and off-board the vehicle. Further, the City might consider surveying both riders and non-riders on their journey times to see how well transit is faring compared to other modes of transportation in terms of providing competitive travel times.

3. **Optimize the return on investment in transit**. Tax dollars will form an important component of funding for Iqaluit Transit, and they need to be used optimally in order for the service to be deemed efficient. This is an important consideration not only for the riders but also for the non-riding taxpayers, and this related to the theme of affordability as referenced in the mission statement. Typical measures can include cost per hour of service, cost per trip, and farebox recovery ratio (% of costs recovered through farebox revenues). Investments in capital assets such as fleet, technologies, and bus stop infrastructure also need to demonstrate value and return on investment in the form of increased ridership.

4. **Minimize safety incidents**. Safety is also a core component of the proposed mission statement and should be considered at all stages of a users' journey from the time they begin their trip to the time they arrive at their destination. Safety can be evaluated in a number of ways, such as the quantity of preventable accidents or road calls per X number of boardings, and the number of incidents per year occurring at a bus stop.

4.3 PEER PUBLIC TRANSIT SYSTEMS

4.3.1 Rankin Inlet, Nunavut

Ranken Inlet Transit was launched in September 2019 to service the hamlet of Ranken Inlet, which contains a population of almost 3,000 over approximately 20 square kilometres. Ranken Inlet Transit was initially launched as a free service to drum up interest, but with a fare structure enforced starting in October 2019. The fare was $10 per trip for an adult, which was more expensive than a taxi, but the service was targeted towards frequent users with significant cost savings for buying a monthly, 6-month, or 12-month pass ($100, $510, and $840 respectively). The service is no longer in operation as of 2021 – it was not subsidized and was therefore totally reliant on passenger fares, and ridership uptake was not significant enough to offset the costs of operation. (By comparison, most small transit operations in Canada recover 20-40% of their operating costs through passenger fares – a statistic that the City of Iqaluit should be cognizant of). Ranken Inlet Transit nevertheless provides a valuable case study for consideration in the Iqaluit TMP.

The service was managed by Rankin Auto Value, which operated a single minibus along a single route from Monday to Sunday, 7am to 7pm. Additional vehicles were kept as spares. Anecdotally, the service was used by different types of users across the community, and was not targeted to any particular subset of the population. Accessible service for persons with disabilities was available provided it was arranged by the user prior to pickup.

Before Rankin Inlet Transit ceased operation, its operating parameters were tweaked in an effort to make the service more sustainable while better adapting it to the community's needs. Specifically, the fare structure and route were updated. Fares became free for all users up to age 17 or over the age of 60, and the original route consisting of 29 stops had been straightened out to include only 22 stops. This allowed Rankin Inlet Transit to operate the route every 30 minutes rather than every 60 minutes, while providing faster (less circuitous) travel for users and still maintaining adequate coverage throughout the hamlet. Destinations along the Rankin Inlet Transit route included the airport, grocery stores, schools, banks, and public centres such as the post office, area, and health centre.

4.3.2 Merritt, British Columbia

Merritt Regional Transit services Merritt, a city of over 7,000 in British Columbia, as well as the adjacent rural community of Lower Nicola. Merritt Regional Transit is managed by BC Transit, the provincial crown corporation that coordinates the operation of public transit across much of the province. Operation of the service is delivered by the Nicola Valley Transportation Society. Fares are $2 per trip, and may be purchased in books of 10 tickets ($18) or as monthly passes ($42). Funding is also provided by the City of Merritt and BC Transit, in partnership with the Thompson Nicola Regional District and the Lower Nicola Indian Band.

Merritt Regional Transit operates four fixed routes which converge at a central transfer location downtown by the city's main intersection. These are supplemented by on-request service which extends service beyond the reach of fixed routes and provides curb-to-curb service on request, if booked over the phone 24 hours in advance. Service operates from approximately 6:45am to 10:15pm on Monday-Saturday, with reduced hours on Sunday, though the routes have different start and end times. Route 1 operates every 30 minutes during peak hours, while routes 2 and 3 operate every 60 minutes. Route 4 which transports users between Merritt and Lower Nicola operates less frequently. The service is interlined, meaning that all four routes are serviced in succession with a single vehicle. Other vehicles are rotated into the fixed route service throughout the day, allowing for efficient scheduling, operator breaks, and the delivery of on-request trips. Three vehicles in total combine to provide service across the four fixed routes as well as the on-request service.

Major stop locations for Merritt Regional Transit include the downtown, schools, grocery stores, Walmart, and other shopping destinations. Merritt Regional Transit is a large operation for a city of its size and delivers approximately 75,000 passenger trips per year, or about 14.7 trips per service hour. Service for persons with disabilities is delivered in tandem with the on-request service, allowing for the vehicles to be used more productively.

4.3.3 Nuuk, Greenland

Nuuk is the capital and largest city of Greenland and is similar to Iqaluit in terms of climate and in terms of demographics, with its population consisting primarily of a mix of Greenlandic Inuit and Danes. It is also spread out in a similar fashion with different subdivisions, including one somewhat isolated from the rest of the community, similar to Apex relative to the rest of the City of Iqaluit. Nuuk is notably larger than Iqaluit though, with a population of a little over 18,000.

The bus system in Nuuk, unlike in Rankin Inlet and Merritt, consists of a large fleet of 18 full length buses with 6 additional smaller vehicles. It operates along 4 routes, with some branches/variants, including peak-hour-only variants. Service frequency during peak hours ranges from every 10 minutes to every 40 minutes depending on the route. Service is provided in between 6:18am and 12:15am by a local bus company, Nuup Bussii A/S. The service was established in 1980, and over 2,000,000 trips are delivered per year.

Nuup Bussii has embraced technology such as smart fare cards, real-time bus tracking, and customer service updates on Facebook. Fares can be loaded onto the smart cards online, at the Nuup Bussii office, or at resellers. There is also an agreement in place with the local school board where passes are provided to every school-age child who can ride the bus for free. It is unclear if this supplementary to, or in lieu of, yellow school bus services.

4.3.4 Takeaways from Peers

In all three of the peer case studies reviewed, fixed-route services were introduced. While other jurisdictions such as Okotoks, AB and Innisfil, ON have rolled out pure on-request service in recent years, the success of fixed route service in other small and northernly jurisdictions suggests that fixed-route service may be appropriate in Iqaluit. In order to ensure success, a transit service in Iqaluit would have to be launched in a way that complements rather than competes with the existing shared taxi model. The Merritt, BC example illustrates that a fixed-route system and on-request service can coexist and create a whole that is greater than the sum of the parts. A similar hybrid fixed-route and on-request system might also be considered for Iqaluit, especially considering there is already a working shared-taxi model in operation today in the form of Caribou Cabs, which might be engaged in the provision of on-request transit services. These concepts are discussed further in section 4.5.4.

The Rankin Inlet example illustrates the importance of appreciating that a transit service cannot be everything to everybody. The originally drawn route was very indirect and therefore required longer travel times and operated less frequently. It also illustrates the importance of the transit service being supported with an operating subsidy, to help ensure service quality and financial sustainability.

For a transit service to work effectively in Iqaluit, journey travel times (including time spent waiting for the bus and/or transferring if applicable) will need to be faster than walking and comparable to other forms of transportation. If multiple fixed routes are proposed, the possibility of interlining them similar to the Merritt example can aid in expediting travel times. The Rankin Inlet example also illustrates the importance of the ongoing review and tweaking (as needed) of transit service to ensure we are best matching supply with demand and delivering a service that people find useful. It is not only the structure of routes that may need tweaking but also the fare structure, customer service policies, and other service delivery strategies.

The Nuuk example takes the concept of matching supply with demand a step further by illustrating the appropriateness of an equitable distribution of service, rather than an equal distribution. That is, downtown aside, some parts of the city may see more travel demand and therefore require more transit service than other parts of the city. Nuuk also demonstrates that the embracing of technology can be used to provide a better service and encourage ridership, and it need not be viewed as something that is only viable in larger cities or in the south.

Overall, the peer case studies illustrate that a transit service can be successful in similar communities if executed effectively and efficiently and these case studies support the business case for launching a transit service in Iqaluit. It will also be important to learn from the shortcomings of the former Iqaluit Transit service which operated from 2003-2005. As was learned during the stakeholder engagement process of this TMP, there was anecdotally not enough service provided for the service to be useful to residents, and accordingly very few riders were attracted to the service despite the competitive fare of $2/trip.

Finally, of note, Cambridge Bay, NU is anticipating to launch a transit service pilotin the fall of 2021. The service is envisioned to consist of one route operated by a single 17-passenger vehicle every half hour from 7:30am to midnight during weekdays (reduced hours on weekends). In addition to public transit, the operator is exploring opportunities for the service to serve dual-purpose and fill school transportation needs, as Cambridge Bay does not currently have school buses operating the way Iqaluit currently does. It is recommended that Iqaluit monitor the developments of transit in Cambridge Bay and keep communication channels open with the hamlet, benefiting from any lessons learned with their transit pilot that Cambridge Bay may be able to share (and in turn, sharing the City’s lessons learned as appropriate).

4.4 DEVELOPING AN IQALUIT TRANSIT PILOT

4.4.1 Transit Service Models

There are a wide variety of transit service models that have proven successful in jurisdictions across North America and may be considered by Iqaluit. They are summarized as follows:

1. **Conventional transit**. This generally refers to the traditional model of a bus operating on a fixed route in accordance with a fixed schedule. There are countless examples of fixed route including the examples described above in Rankin Inlet, NU, Merritt, BC, and Nuuk, Greenland. Fixed route systems generally service fixed bus stops, but in areas of lower density they sometimes

follow a flag stop model where users can board and alight at locations along the route outside of the defined bus stop locations.

2. **Alternative service delivery**. This generally refers to transit services that have variable routing and scheduling. Alternative service delivery strategies have become common over the last decade as scheduling algorithms have become more sophisticated and as the target ridership increasingly have smartphone and internet access, facilitating easy access to information and trip booking, although most agencies also accommodate telephone bookings. Some alternative service delivery strategies employed by transit operators seeking to maximize service quality while minimizing costs include the following:

    a. <u>Home-to-Stop Model</u>: Service is delivered between home locations and designated stop locations, usually (but not always) to stops that are shared with an accompanying fixed-route network. Trips are typically booked via an app or call centre and the intention is to group customers together for shared travel, based on demand. The home-to-stop model is ideal for areas adjacent to a fixed-route service area, and for areas with low density and low forecasted demand but where residents have common destinations.

    b. <u>Stop-to-Stop Model</u>: Service operates between designated stops, usually marked with a stop post. The user may request travel between any two stops via an app or call centre, with the route itself changing based on demand. The main difference between this and the home-to-stop model are that customers are not picked up from their homes. The stop-to-stop model is ideal for larger areas with dispersed destinations and for areas where low-to-moderate demand is forecasted and where resource constraints may limit the feasibility of transporting customers to/from their homes.

    c. <u>Deviated Fixed Route Model</u>: Service operates along a fixed route but deviates from the route as required. Whereas the stop-to-stop model can result in many different permutations of routes with varying termini, this model usually has consistent termini and generally follows the same alignment with more subtle deviations. Deviations are usually with regards to sections of the route alignment that can be skipped to save revenue-hours and kilometres if nobody has booked pick-ups or drop-offs accordingly. This model is also often operated on a pseudo-fixed schedule based on subscription trips, with ad hoc trip requests permitted but referred to the closest available scheduled trip. The deviated fixed route model is ideal for areas that are more “linear” or with challenging road networks, and for areas where low-to-moderate demand is forecasted.

3. **Other**. Other transit service models can include a hybrid of conventional transit and alternative service delivery, for example a fixed-route on-demand system where fixed-route service is delivered to fixed stops only when there is demand (i.e. when a customer requests the service). This strategy has proven successful in jurisdiction such as York Region, ON. Alternatively, transit service models need not involve the deployment of a dedicated service, be it conventional or alternative service delivery. Rather, the transit service model may involve a subsidy towards the cost of a taxi or ridesharing trip as has been deployed in Innisfil, ON.

4.4.2 Defining the Target Audience

Before selecting the appropriate transit service model(s) it is important to define the target audience for Iqaluit Transit. As noted above, for transit to succeed, it is important to appreciate that transit cannot be everything to everybody – this is true regardless of a community's size. At the same time, if transit is to be supported (in part) by tax dollars, the City has a responsibility to ensure it is maximizing value for money by delivering the best service possible for the most number of people, and for the people who need the service the most.

In defining the target audience, transportation needs across the City were evaluated anecdotally, community destinations were reviewed spatially, and the City's subdivisions were reviewed for population and demographics. Observations included the following:

- Important community destinations are located primarily along Iqaluit's Ring Road (Queen Elizabeth, plus Road to Apex from Four Corners to Queen Elizabeth). Such destinations include, but are not limited to, Northmart, Qikiqtani General Hospital, Nunavut Arctic College, the Aquatic Centre, Canada Post, Arctic Ventures, and Inuksuk High School.

- Residences of Iqalummiut with lower levels of car ownership (and therefore higher likelihood of using transit) are also centrally located. Such residences include, but are not limited to, the Tamaativvik Boarding Home, the Sivummut and Uquutaq Shelters, and the Elders Residence.

- Corridors in and around Four Corners, and west to the "New Downtown" in and around Mivvik Street, are the most constrained, have the greatest parking challenges, and generally could benefit the most from alternative forms of transportation (such as transit) to help alleviate the existing constraints.

- Residential density is generally aligned with the subdivisions that contain the greatest numbers of dwelling units. The most populated neighbourhoods (at the time of writing) include:
  - Plateau (520 estimated dwelling units)
  - Core Area (445 estimated dwelling units)
  - Tundra Ridge + Joamie Court (423 estimated dwelling units, combined)
  - Lake Subdivision + Road to Nowhere (377 estimated dwelling units, combined)

- The subdivisions experiencing the highest growth (at the time of writing) include:
  - Core Area (245 dwelling units proposed or under construction)
  - Plateau (80 dwelling units proposed or under construction)
  - Happy Valley (82 dwelling units proposed or under construction)
  - Tundra Ridge + Joamie Court (52 dwelling units proposed or under construction, combined)

4.4.3 Recommended Transit Service Model

To launch an Iqaluit Transit service it is recommended that the City begin with a pilot that focuses on the areas of the city where transit is most likely to succeed based on the factors identified above.

A transit pilot is recommended to consist of the services illustrated in the following figure and described below. Of note, a conventional transit model is recommended for the pilot, with services delivered on 30-minute cycle times, and generally also on 30-minute headways, i.e. the bus arrives every 30 minutes from the users' perspective. The service is proposed to include fixed bus stops, with the option for drop-offs in between stops in the evening hours for women and other vulnerable populations.

Although not recommended for the initial pilot, alternative service delivery options, such as on-demand transit, can also be considered in the future (discussed further in section 4.5.3). On-demand transit may not be distinct enough from the local taxi service, and would require significant investment in communication up-front to ensure that all users, including those without smartphone access, understand how the service works and how to book trips. In the future, however, on-demand transit can be considered for areas where ridership demand doesn't justify fixed-route service, and can be used to augment the fixed-route services which are envisioned to form the backbone for Iqaluit's transit system.

Figure 31: Proposed Iqaluit Transit Network

Core Area Loop (illustrated by the convergence of the red and blue lines in Figure 31 above). This loop is envisioned to be the backbone of transit service in Iqaluit, servicing Queen Elizabeth, the Road to Apex (in between Four Corners and Queen Elizabeth), and the "New Downtown" area. Bus stop locations can be strategically distributed throughout the loop at areas adjacent to key destinations and in locations where the bus can stop safely and without disrupting traffic flow. Northmart can act as a layover point, facilitating good schedule adherence while allowing the operator to take a break at a location that provides food and bathrooms.

Upsides:
- Provides service to (or within acceptable walking distance of) most key destinations within the city, as well as to areas where parking was noted to be a constraint
- Short anticipated route runtime means high service frequencies are more viable, as are opportunities to interline the route with connecting routes (discussed further below)
- Layover point at Northmart provides the opportunity to capture impulse riders, i.e. individuals leaving Northmart that see the bus laying over and opt to take the bus home rather than walk

Downsides:
- One-way loop, meaning that the route can be inconvenient for some users depending on where their destinations are relative to their origins
  - Rationale: service can be delivered bi-directionally, i.e. with one vehicle operating the loop clockwise and another operating it counterclockwise, particularly during peak hours
- Adhering to schedule may be challenging when the roads are congested
  - Rationale: transit can help alleviate congestion along these main corridors and stop locations, and it is important to build buffer / recovery time into schedules to account for schedule adherence challenges

Plateau Route (illustrated by the red line in Figure 31 above). This route is envisioned to service Lower Plateau (at least as far as Building 513 where there appears to be a viable turnaround spot), and Upper Plateau (as far as Nirukittuq Nuna Crescent). For residents living beyond these locations on the Lower and Upper Plateaus, they remain within an acceptable walking distance of the route (within 800 metres). Once the bus arrives at the Saputi/Road to Apex intersection, the route is proposed to turn into the Core Area Loop, connecting residents in the Plateau with a variety of destinations in the Core Area.

Upsides:
- The road network is linear compared to other parts of the city, meaning that it can more effectively be served by transit compared to subdivisions with more circuitous road networks
- The Plateau is the most populated subdivision in the city, with significant development still expected to come
- The Plateau is far enough away from the Core Area that transit can offer considerable travel time savings compared to walking, but it is close enough that operating expenditures are relatively low and operational viability is relatively high

Downsides:

- The Plateau is a newer subdivision with higher-priced accommodations (generally speaking), which may be indicative of higher levels of car ownership and therefore a lesser likelihood of taking transit
    - Rationale: ridership is still anticipated to be high due to the large population of the Plateau; moreover, as new people move into the Plateau, they will be able to use transit as their primary mode of travel before they form other travel habits
- The Plateau Route does not serve mixed land uses – only residential purposes
    - Rationale: by interlining the Plateau Route with the Core Area Loop, residents of the Plateau will have access to destinations without having to alight the bus

Lake Subdivision – Tundra Ridge Route (illustrated by the blue line in Figure 31 above). This route is envisioned to service the Lake Subdivision and the higher density apartments within Tundra Ridge. Residents in Road to Nowhere and along (or nearby) the Road to Apex at the north end of Happy Valley also have the option of using this route with a short walk to their bus stop. Similar to the Plateau Route, once the bus arrives at the Queen Elizabeth/Road to Apex intersection, the route turns into the Core Area Loop, connecting residents in the subdivisions to the east with a variety of destinations in the Core Area.

Upsides:

- Efficient service deployment – parts of multiple subdivisions are all serviced by a single route
- The route's runtime lends itself well to being interlined with the Core Area Loop, effectively providing connectivity between origins and destinations
- The route alignment is productive in that it serves almost exclusively some of Iqaluit's highest-density areas, with no unproductive "gaps" along the way

Downsides:

- Some locations within Road to Nowhere, Happy Valley, and Tundra Ridge are missed
    - Rationale: many of these areas are lower density and remain within a reasonable walk from the proposed route; also further extension of this route is inadvisable as it would add travel time for users and would detract from the viability of operating the route on 30-minute headways (and from on-time performance)
- Contains a one-way loop, meaning that the route can be inconvenient for some users depending on where their destinations are relative to their origins
    - Rationale: due to the challenging road network a one-way loop is unavoidable, however, it has been kept minimal in size to ensure two-way service is provided along the Road to Apex (up to the intersection with Road to Nowhere), and to ensure travel times are not significantly impacted

In terms of scheduling, it is recommended that service be piloted in between 7am and 7pm, Monday through Saturday. Two buses can service the three routes, operating in a fashion such as that described in the table below. This would translate into approximately 24 revenue-hours of service per day.

Table 6: Possible Iqaluit Transit Schedule

Time	Bus #1	Bus #2
7:00-7:30	• Depart Northmart along the Core Area Loop in the counterclockwise direction • At Queen Elizabeth/Road to Apex, operate the Lake Subdivision – Tundra Ridge Route • Upon returning to Queen Elizabeth/Road to Apex, continue along the Core Area Loop in the counterclockwise direction • Arrive Northmart around 7:26am • Layover until 7:30am	• Depart Northmart along the Core Area Loop in the clockwise direction • At Saputi/Road to Apex, operate the Plateau Route • Upon returning to Saputi/Road to Apex, continue along the Core Area Loop in the clockwise direction • Arrive Northmart around 7:26am • Layover until 7:30am
7:30-8:00	• Depart Northmart along the Core Area Loop in the clockwise direction • At Queen Elizabeth/Road to Apex, operate the Lake Subdivision – Tundra Ridge Route • Upon returning to Queen Elizabeth/Road to Apex, continue along the Core Area Loop in the clockwise direction • Arrive Northmart around 7:56am • Layover until 8:00am	• Depart Northmart along the Core Area Loop in the counterclockwise direction • At Saputi/Road to Apex, operate the Plateau Route • Upon returning to Saputi/Road to Apex, continue along the Core Area Loop in the counterclockwise direction • Arrive Northmart around 7:56am • Layover until 8:00am
…	…	…

If 24 hours of revenue-service per day is too significant of a level of service from a budgetary standpoint, there is the option to drop down to one vehicle outside of peak hours. With a single vehicle, the Core Area Loop would continue to be serviced every 30 minutes, but only unidirectionally, and service to the Plateau Route and the Lake Subdivision – Tundra Ridge Route would drop down to every 60 minutes as the vehicle alternates between servicing these two routes. In the single vehicle model, it is recommended that the Core Area Loop be serviced in the counterclockwise direction as this is the likely direction that would result in optimal travel times for off-peak trip purposes.

4.4.4 Other Alternatives

It is noted that the routes described in the previous subsection are only one possible permutation of what a transit pilot may look like in Iqaluit. While these routes are expected to have the highest likelihood of successfully attracting strong ridership, other possible services for consideration in a pilot consist of the following route options. These routes may be tested during the pilot in addition to (or in lieu of) the services described above at the City's discretion, if equal distribution of conventional transit services across the City is of high importance.

Lower Iqaluit – Happy Valley Route. A route that completes the Atungauyait loop in Happy Valley and also completes a loop in Lower Iqaluit consisting of Sinaa and Nipisa.

Upsides:

- The route, as described above, would operate on comparable runtimes to the Plateau Route and the Lake Subdivision – Tundra Ridge Route, making it possible to interline with the Core Area Loop
- Due to the age of these neighbourhoods, their proximity to the Core Area, and their average rent, it is likely that these neighbourhoods have lower levels of car ownership compared to elsewhere in the City, potentially suggesting higher levels of demand
- This route would service mixed land uses, as well as locations such as the Hunters and Trappers Association, the Isaccie Group Home, and the Hillside Housing Co-op

Downsides:

- Large portions of Lower Iqaluit and Happy Valley are within an acceptable walk distance of Queen Elizabeth, which is serviced by the Core Area Loop, so residents may prefer to either walk to the Core Area Loop or just walk to their final destination
- The total populations of Lower Iqaluit and Happy Valley are smaller than the average Iqaluit subdivision's population, meaning the total market of possible transit users is relatively small
- The lack of connectivity between Lower Iqaluit and Happy Valley (by means other than Queen Elizabeth) makes for indirect routing leading to long travel times for riders

Apex – Astro Hill route. A route that runs back and forth along the Road to Apex terminating at Astro Hill in the west and doing a small loop through Apex in the east.

Upsides:

- Apex's distance from the rest of Iqaluit means residents are not likely to walk to their destinations and may find the transit fare to be excellent value for money, likely resulting in higher ridership
- In addition to servicing Apex, this route has the potential to capture residents of the Astro Hill developments, as well as others in the Core Area, provided their destinations are to the east (the Arctic Winter Games Arena, for instance)
- Terminating the route at Astro Hill puts a significant portion of the Core Area within an acceptable walking distance for Apex residents riding until the end of the line

Downsides:

- Apex's distance from the rest of Iqaluit means this route cannot be interlined with the Core Area Loop while keeping the service on 30-minute headways
- Apex has the smallest number of dwelling units out of Iqaluit's subdivisions, and therefore is also a small transit market
- The route's long length means it will be costly to operate, and the Road to Apex has long unproductive stretches where boardings and alightings would not be expected

4.5 IMPLEMENTATION CONSIDERATIONS

4.5.1 Alignment with Other Transportation Providers

It is important that Iqaluit Transit be distinct in its offering and not be viewed as a substitute for other transportation providers across the city, including the following:

- **Caribou Cabs**. Given that Caribou Cabs already operates a shared-ride taxi service, not unlike on-demand transit systems in existence across the transit industry today, the proposed fixed-route model for Iqaluit Transit in itself should be distinct enough to help ensure Caribou Cabs and Iqaluit Transit are not competing for the same customers. Rather, the existence of the two services can help ensure that neither is overburdened and that service quality can remain front of mind. In the medium-to-long term when it becomes prudent to explore on-demand transit in further detail, a partnership with Caribou Cabs to deliver the service might be explored at this time.

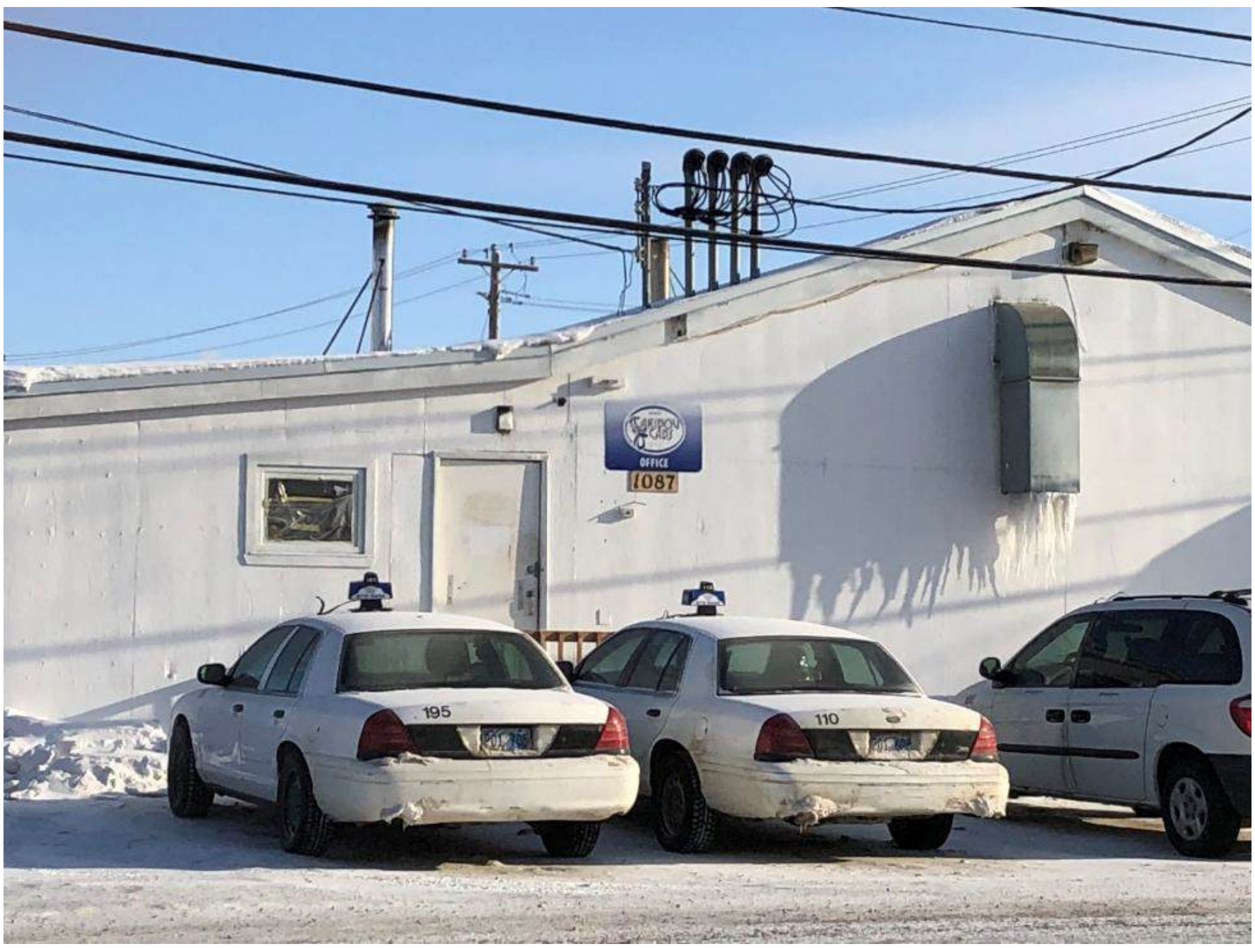


Figure 32: Caribou Cabs taxis

- **Independent Shuttle Services**. Independent shuttle services operate throughout Iqaluit, operated by companies such as Canadian North and Frobisher Inn which provide transportation for their staff. Many of these business are located in areas where transit is not proposed to serve, such as the North 40 and Astro Hill, so Iqaluit Transit is not envisioned to be competing for customers whose needs are already served by independent shuttle services. While the Elders Qammaq provides a bus service for Elders, scheduling is limited to 12:30pm arrivals and 4:30pm departures, so ensuring that Elders have access to transportation at other hours of the day remains an important consideration.

- **RL Hanson Services**. RL Hanson provides school bus and charter bus service throughout Iqaluit, primarily serving K-12 students in the morning and afternoon, and also K-8 students during the lunch hour. These school transportation services are not available for the general public, so the transportation markets are fundamentally different. From the perspective of RL Hanson, transit would be a great asset for the city, particularly if service levels are sufficient along the main corridors in the Core Area.

4.5.2 Service Delivery Options

It is recommended that the City of Iqaluit contract out transit operations to a third-party provider – one with experience in providing transportation services, with in-house maintenance expertise, and where the City can benefit from economies of scale. RL Hanson is a strong candidate to provide the service, although it is recommended that the City put out an RFP for service delivery to ensure it receives high quality bids that are reflective of good value for money.

The contracting out of Iqaluit Transit services also allows the City to pass on various risks (to a certain extent) to the third-party operator such as:

- **Financial risk**, in the cost trending of ongoing operating expenditures such as fuel, and in liabilities.
- **Demand risk**, which refers to the possibility (and eventuality) that transit service levels will need to be adjusted upwards or downwards.
- **Service interruption risk**, which refers to the possibility of a labour union strike, employee turnover, fleet defects, or an important supplier going out of business, as a few examples.
- **Force majeure risk**, which refers to unanticipated acts outside of the control of the City or the contractor, such as fuel shortages or natural disasters.

At the same time, it is important for the City to be cognizant of the downsides of contracting out transit service delivery, most notably the lack of direct control over service quality. These concerns can be minimized by ensuring that the City remain directly responsible for the management and oversight of transit services. In the RFP the City may also specify its expectations of the service delivery contractor with respect to key performance indicators such as on-time performance, operator conduct, and vehicle maintenance. By remaining directly responsible for the management and oversight of transit, the City can also be nimbler in responding to residents' needs and tweaking service parameters accordingly to fulfill those needs; and the City can have an improved ability to lower operating costs by restructuring unproductive services or rationalizing work rules to the local environment to achieve greater productivity.

Although successful in Nuuk, Greenland and other jurisdictions, a traditional full-sized (40-foot) bus is not recommended for Iqaluit Transit for the pilot. A minibus model such as the GMC Crestline or the ARBOC Spirit of Freedom (or a similar model), is anticipated to have sufficient capacity and specifications to suit the City of Iqaluit's present needs. Smaller vehicles are also less costly to procure, easier to maneuver throughout the city, and require less space when dwelling at a bus stop to let passengers board and alight. While it is recommended that the City contract out operations and maintenance as indicated above, the City may consider maintaining ownership of the vehicles in-house if there is opportunity to manage capital costs through a joint procurement with other City department fleet needs. In the event that the pilot illustrates that the selected minibus model is not ideal for Iqaluit Transit operations, the City may also more easily redeploy these vehicles for other purposes, or may consider divesting the vehicles to independent shuttle operators.

These minibus models are also accessible and can double as a "specialized transit" service for the transportation of persons with disabilities. While the Territory of Nunavut (or the Government of Canada) does not have specific legislation mandating the delivery of such a specialized transit service, it is recommended that the City make every effort to accommodate individuals with physical, sensory, and cognitive disabilities such as to ensure an equitable service offering across all populations within the defined Iqaluit Transit service area.

It is also recommended for the City of Iqaluit to generate a General Transit Feed Specification (GTFS) feed to enable Iqaluit Transit to provide real-time updates about service to application developers in an open data format. In turn, third-party application platforms such as the Transit App and Google Maps can use the GTFS feed to provide real-time information to transit users who can access these applications using their mobile phones or computers. The real-time information includes next bus arrival times and estimated travel times, allowing users to make real-time transportation decisions and improve their overall experience with using transit. This is anticipated to be a key success factor for transit during winter months in particular, as users are less likely to wait by a bus stop in extreme temperatures and darkness. Through tools such as Transit App, users will be able to wait indoors and venture outside when the app indicates the bus is approaching, minimizing the time they need to spend waiting outside in the cold. Notably, generating a real-time GTFS feed requires the investment into technologies such as automatic vehicle location (AVL) to provide the requisite data.

4.5.3 Fare Structure and Financial Planning

Setting an appropriate fare is crucial to balancing the objectives of growing ridership and managing operating expenditure funding requirements. It was noted during stakeholder engagement for the TMP that nearly 70% of survey respondents would consider using transit if it were available, and the greatest number of respondents felt that the fare should be between $2 and $4. It is recommended that Iqaluit Transit set its fares, to start, at $3. Round numbers are easier for customers to remember, easier for customers to have the exact change (for those paying cash), and help to minimize the costs of collection. $3 is also noticeably less expensive than the $8 cost for a taxi trip, and is in line with other transit fares in the industry. By comparison, Yellowknife Transit offers a $3 cash fare and Whitehorse Transit offers a $2.50 cash fare. Iqaluit Transit may also consider concession fares (discounts for seniors, elders, students, children, etc.), monthly passes, and/or consider a promotional program where the first month of operation is free, to help encourage ridership. Alternatively, a low-income pass may be considered in lieu of concession fares, for residents deemed eligible based on predetermined annual income threshold(s). It will be important to not create an overly complex fare structure with an excessive quantity of fare categories, as this can be confusing for users and detract from ridership objectives.

The City of Iqaluit will become more familiar with costs of operation upon receipt of bids in response to the RFP for service delivery. The transit pilot described above is envisioned to be the minimum level of service for transit to be successful. In the event that the City's budget for transit is in excess of the costs of operation, the pilot period may be extended for longer, or additional routes may be piloted. Service is typically contracted on a per-revenue-hour basis and is driven by the local costs of labour, fuel, parts, materials, equipment, overheads, and other commodities. Generally in the transit industry, over 50% of operating costs are associated with the wages and fringes paid to bus operators.

4.5.4 Post-Pilot Implementation

It is recommended that the transit pilot described above operate for a minimum of a 12-month period. This will allow sufficient time for Iqalummiut to become acquainted with the service and form new travel routines, and it will also allow the City to evaluate the seasonality in ridership levels. When the pilot is operating, it is important for the City to be actively managing and overseeing the Iqaluit Transit operation as noted above. This includes (among other things) responding to customer queries and complaints, and analyzing any and all transit data. While it is not necessary in the context of the pilot to invest in technologies such as automatic passenger counters to provide sophisticated datasets, the City can request, for example, that the contractor track passenger boardings and alightings manually, on certain dates and during certain time periods, to help broaden the base upon which future service planning decisions may be made. Performance indicators that should be evaluated include, but are not limited to:

- Ridership
- On-time performance
- Missed trips
- Road calls (vehicle issues)
- Preventable accidents
- Customer complaints

While the pilot period is underway, assuming there are no significant concerns that would suggest early on that transit should not be continued past the end of the pilot, it will be important for the City to secure long-term funding to ensure that the transit service is financially sustainable into the future. If early indicators suggest that service levels should be increased, it is recommended that additional funding be secured accordingly. Otherwise, in the short-term, funding should be secured commensurate with the operating costs of the pilot and adjusted for inflation. This is not to suggest that the pilot should necessarily continue exactly as is, rather that the levels of service present in the pilot are appropriate for full implementation. It may be necessary throughout the pilot, and at the pilot's conclusion, to "give and take" – that is, tweak various elements of the service parameters (routes, scheduling, etc.) to better meet the needs of the community.

As additional funding may be secured over time, there are several options for improving service. Additional routes (or services) may be added, the service span may be expanded (to provide service on Sundays, or later into the evening on weekdays and Saturdays, for example), and/or route frequencies may be improved. Depending on how transit is funded, if Iqalummiut living in communities such as Lower Iqaluit, Tundra Valley, and Apex are contributing to the transit subsidy, it will be important in the long-term to ensure the benefits of transit are equitably distributed across the Town's communities. This would include identifying transit solutions for these communities that are not proposed to be served by the initial pilot. As many of these communities are lower in population density and are located farther away from the core, the may be cost-prohibitive to deliver these services by conventional transit (fixed-route) means, and the alternative service delivery concepts summarized above in section 4.4.1 may be considered instead as a means of providing transit service effectively and efficiently.

In addition to securing additional funding, the City may also explore diversifying its portfolio of funding sources. One opportunity could involve partnering with the school board or with local businesses to run service, funded either in full or in part (depending on negotiations) by these third parties. These third parties may find that kicking in funds for Iqaluit Transit to bolster service to/from their important destination(s) are more economical for them than running their own standalone shuttle services in-house.

Over time it will also be important to identify how the City is tracking with respect to the vision, mission, and goals for public transit. As the city continues to evolve, it may also be appropriate to revisit the scope and the target audience of the transit service. While the purpose of the transit pilot is to provide connectivity between neighbourhoods and important destinations in the Core Area, in the longer term it may be prudent to seek to expand transit's reach and provide connectivity beyond the Core Area. For example, connectivity to the airport and the employment lands of the North 40 might be explored, as well as connectivity to destinations such as the Deep Sea Port, Sylvia Grinnell Park, and Nunavut Brewing Company in the West 40.

5.0 ACTIVE TRANSPORTATION NETWORK

The City of Iqaluit currently has a limited disconnected network of active transportation facilities, primarily comprised of informal trails and a small number of relatively new sidewalks. As new developments are constructed, such as at Astro Hill, active transportation infrastructure will assist in reducing traffic congestion and promoting healthier lifestyles of local residents. This TMP provides an opportunity to re-evaluate the strategic goals of the active transportation network and update them to consider new active transportation best practices, research, updated growth trends and travel demand in Iqaluit, as well as integrate them holistically with the broader multi-modal network.

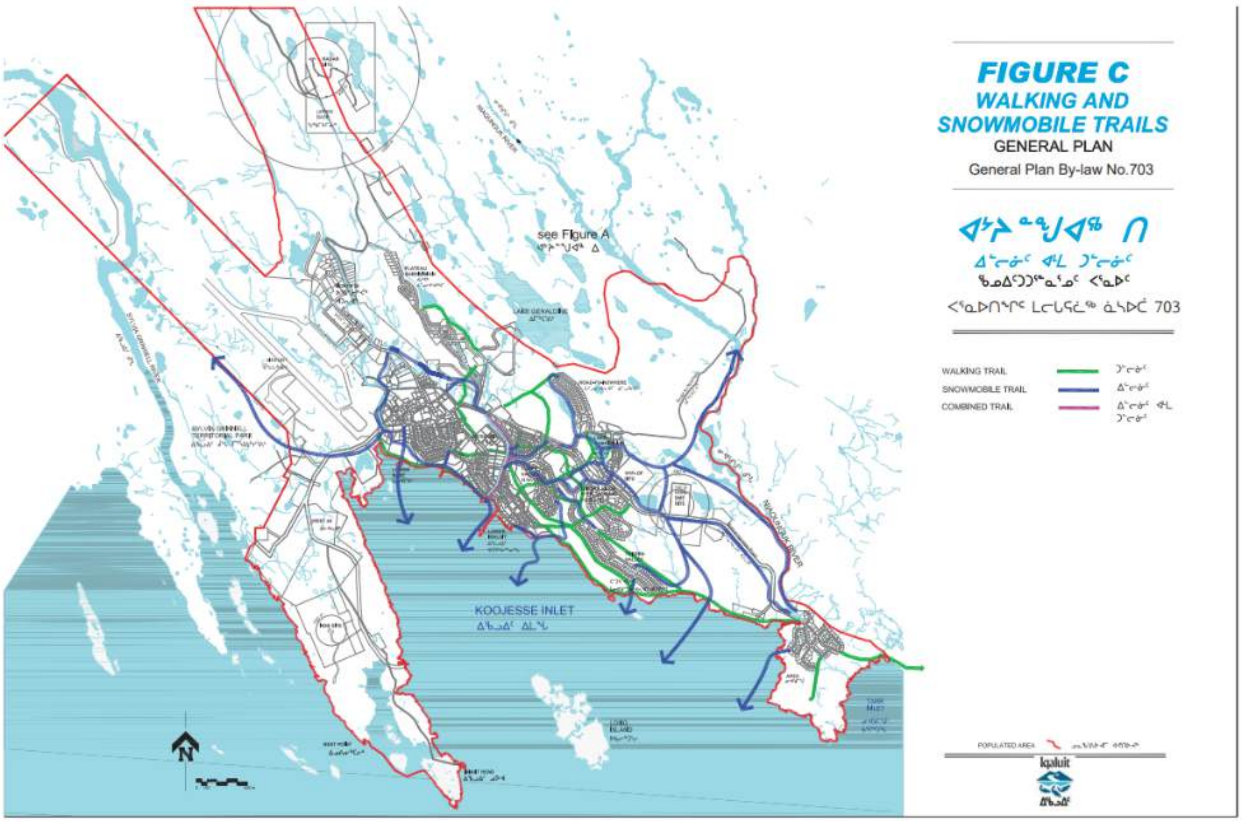


Figure 33: Iqaluit's existing active transportation network

5.1 NETWORK EVALUATION CRITERIA

The evaluation criteria for active transportation improvements are focused around four (4) criteria including:

- Population Density;
- Incline;
- Access to Major Destinations; and
- Network Connectivity

These evaluation criteria and rationale are described below.

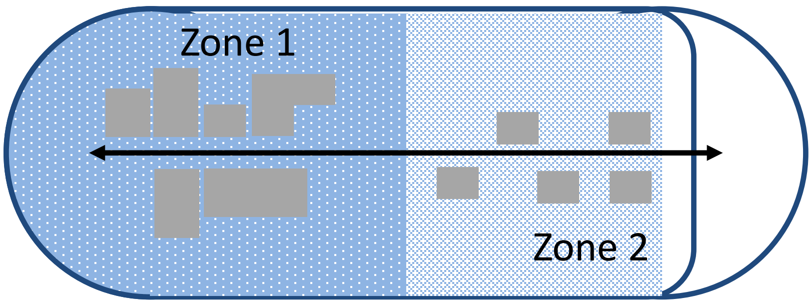
Population Density

Rationale: Active transportation facilities are more likely to be used where they are connected to more people or jobs. The higher the density, the higher the likelihood that active transportation facilities will encourage and shift people to use them.

Analysis Approach: Dwelling unit by neighbourhood and by development municipal data can be used as a proxy for population density.

Evaluation: Qualitative scores can be assigned based on population density thresholds, as summarized in Table 7.

Table 7: Evaluation Criteria for Population Density



Criteria (Average Dwelling Unit Density)
<15 units/km
15 - 50 units/Km
>50 units/Km

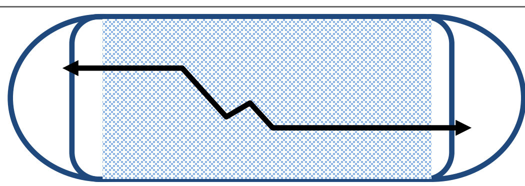
Incline

Rationale: Roadway/path incline can present a significant challenge and deterrent for pedestrians using available facilities, especially in light of high levels of snow and ice buildup. If a route is too challenging, pedestrians will choose to use an alternate route to access their destination. A flat route provides the most comfortable trip, while inclines of 1-3% present a slight impact on effort, but are mostly manageable for casual users. A 4-6% incline presents some challenge over extended lengths for casual users and inclines greater than 7% present a challenge for all users. It should be noted that heavy snowfall experienced in Iqaluit can create seasonal shifts in the perceived difficulty of inclines. Additionally, high inclines may not necessarily disqualify an active transportation route, but identify a need for assistive infrastructure such as stairs or handrail to mitigate the effects of the incline.

Analysis Approach: Incline may be ascertained using GIS data and Google Maps data. In the absence of data, user input can be used to identify road segments with large inclines. The City may consider documenting roadway grades for inclusion within its GIS dataset.

Evaluation: Qualitative scores can be assigned based on incline percentage thresholds are summarized in Table 8.

Table 8: Evaluation Criteria for Incline



Percent Incline	Description
<1%	A flat road
1-3%	Slightly uphill but not particularly challenging
4-6%	A manageable gradient that can

		cause fatigue over long periods
	7-9%	Starting to become uncomfortable for users, and very challenging for casual users
	10%+	Difficult for all users

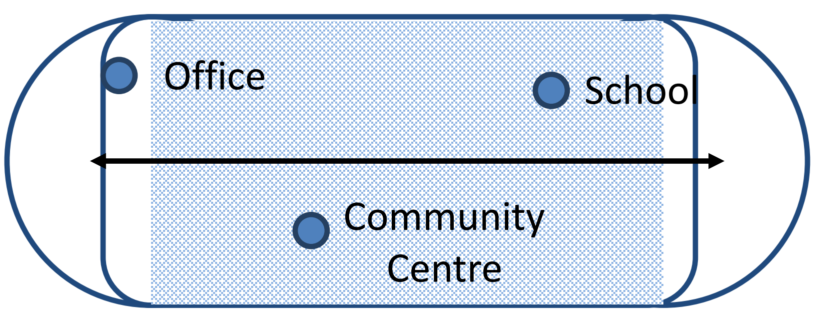
Access to Major Destinations

Rationale: Major destinations such as community centres or the Elders Qammaq, employment centres, schools and parks/trails are all places that people typically travel to. Providing an active transportation network is as much about providing an available, and connected option, as well as creating a network that takes people where they want to go.

Analysis Approach. Community designations were classified as community centres, qammaqs, parks, trails, libraries, hospitals, grocery stores and arenas. Additionally, business parks, commercial core areas and commercial service providers were classified as key commercial destinations. Connections to schools was given a higher weighting as school trips represent a significant opportunity to enhance active transportation given the length, time period and nature of the trips, particularly for older students.

Evaluation: Qualitative scores can be assigned for each major destination type within a candidate route's buffer area are summarized in Table 9.

Table 9: Evaluation Criteria for Major Destinations



	Criteria
	Community Destinations
	Supporting Active School Travel
	Key Commercial Areas

Network Connectivity

Rationale: It is important that active transportation corridors create a connected network that doesn't leave users isolated or stranded. Greater connections improve the usability of active transportation infrastructure, and the likeliness for one to walk to their destination. Across Iqaluit, informal trails created by repeated footfall are already popular to connect destinations which are not easily accessible using existing roadways. This factor evaluates which candidate corridors will provide the best network connections between existing and future corridors.

Analysis Approach: The number of network connections for each candidate corridor can be evaluated based on whether they are existing connections (formal or informal), thus requiring no additional investment and providing an immediate benefit once built or formalized, or whether it would connect to future corridors that would require varying degrees of investment (signage, lighting, bollards, etc.) to make a useful connection. Each of the different connection types were assigned points.

Evaluation: The qualitative scores that were assigned based on network connectivity attributes are summarized in Table 10.

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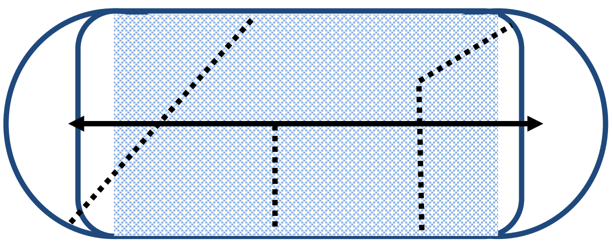
Table 10: Evaluation Criteria for Network Connectivity



Criteria	Description
Existing Facility	Connects to an existing active transportation route.
Minor Additions	A future candidate corridor that would require minor cost/effort to implement.
Rehab Additions	A future candidate corridor that would be able to be implemented as part of a regular rehab or maintenance work, which would typically be more long-term.
Capital Investments	A future candidate corridor that would require specific capital investment to implement, thus potentially being much longer-term.

5.2 NETWORK EVALUATION

The network options were evaluated using the developed criteria in order to identify corridors which would benefit from new or improved pedestrian facilities. Proposed pedestrian facilities are summarized in Table 11 while the proposed active transportation network (including snowmobile trails, to be discussed further in section 6) is shown in Figure 34.

Table 11: Proposed pedestrian facilities

ID	Proposed Network Modifications	Limits	Rationale
1	Walking trail at Frobisher Inn	Between Niaquinngursiariaq and Astro Hill	Formalize existing informal trail
2	Walking trail at Paunna	Between Queen Elizabeth and Palaugaa (Creekside Village)	Formalize existing informal trail
3	Walking trail at Kuugalaaq	Between Queen Elizabeth and Astro Hill (Geraldine Creek)	Formalize existing informal trail
4	Walking trail at Saputi	Between Saputi and Qikiqtani General Hospital	Formalize existing informal trail
5	Walking trail at Pingua	Between Pingua and Qulliq	Formalize existing informal trail
6	Walking trail around Dead Dog Lake	Between Road to Nowhere and Imiqtarviminiq	Formalize existing informal trail
7	Walking trail at Hospital Hill	Between Road to Nowhere and Hospital Hill	Formalize existing informal trail
8	Walking trail at Arnaitok Arena	Between Qulliq and Kangiq & Iniq, between Masak Court and Kangiq & Iniq	Formalize existing informal trail
9	Sidewalk at Inuksuk High School and Qikiqtani General Hospital	Along Niaquinngursiariaq, between Palaugaa and Queen Elizabeth (eastern end)	Formalize existing informal trail, meet demand for pedestrian infrastructure, and improve safety for vulnerable pedestrians (hospital patients and students)
10	Sidewalk at Joamie Ilinniarvik School, Aqsarniit Ilinniarvik School and École des Trois-Soleils	Along Abe Okpik from Ukaliq to Niaqunngusiariaq, along Niaqunngusiariaq from Joamie Ilinniarvik School to Arctic Winter Games Arena	Meet demand for pedestrian infrastructure, improve safety for vulnerable pedestrians (students)
11	Sidewalk at Federal Road/Queen Elizabeth	Between Ikaluktuutiak Drive and Mattaaq	Meet demand for pedestrian infrastructure downtown, improve safety for vulnerable pedestrians (students)
12	Sidewalk at Niaquinngursiariaq/Mivvik Street	Between Palaugaa and Allanngua	Meet demand for pedestrian infrastructure downtown

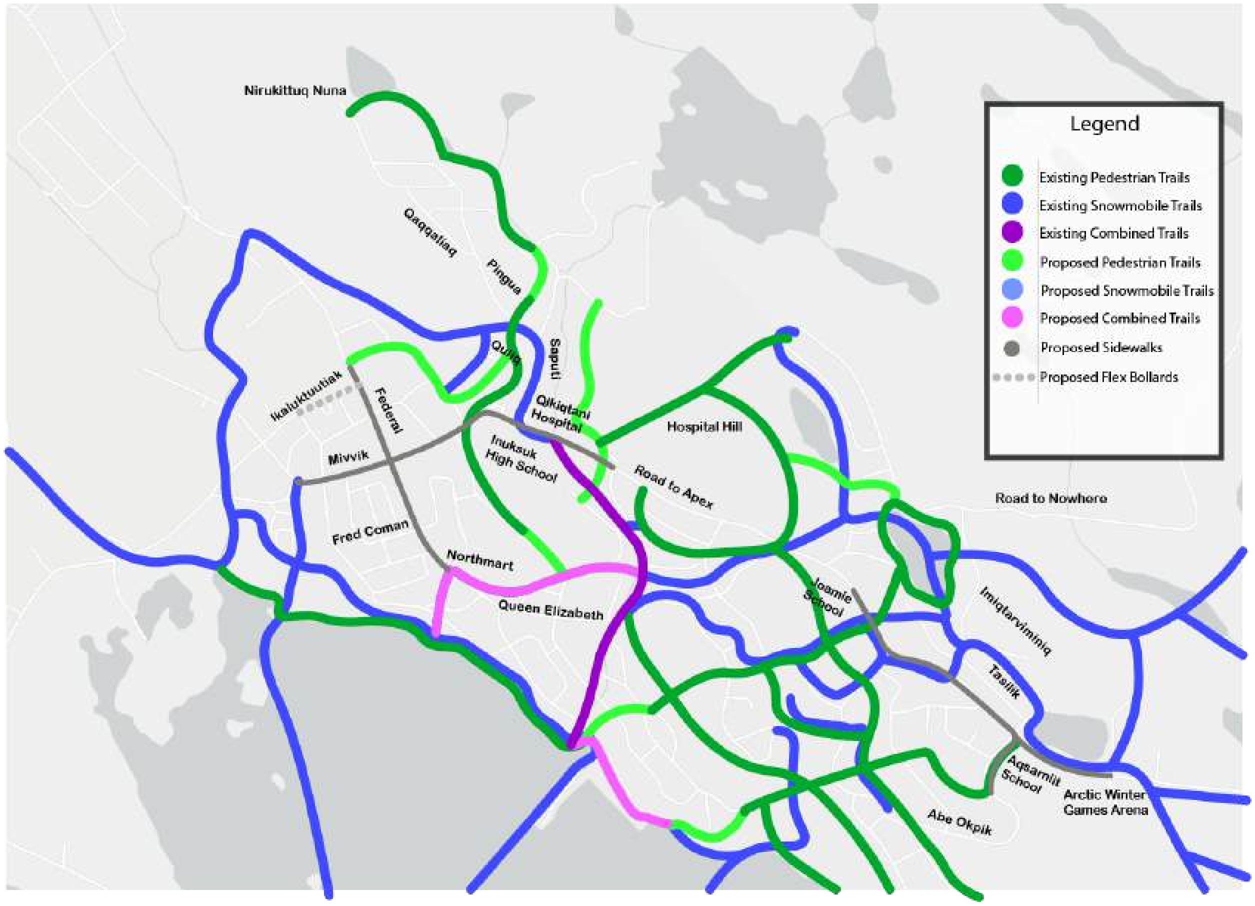


Figure 34: Proposed active transportation network

Pedestrian facilities should be clearly marked and should also clearly communicate who is / is not allowed to use these facilities. Figure 35 below is a good example of clear signage that alerts snowmobile users not to proceed with using a trail that is meant for pedestrians.

Figure 35: The start of the Trail to Apex

5.3 PEDESTRIAN SAFETY AND CROSSWALKS

Pedestrian safety presents challenges for municipal authorities across North America. The challenge is created by the inherent vulnerability of pedestrians in relation to other modes of mobility on the transportation network, particularly where conflicting movements between modes exist. Since pedestrians involved in traffic accidents are much more likely to be injured, safety must be a high priority in analyzing pedestrian facilities.

During public consultation through this TMP, several safety-related comments about improving sidewalks, trails, and pedestrian walkways, as well as comments such as “it’s too dangerous for me to consider walking with my family” point to the need for an improved pedestrian travel experience. This can be accomplished, in part, through additional pedestrian safety and crosswalk infrastructure.

This can also be accomplished through standardization of pedestrian facilities throughout the city. Currently, pedestrian walkways vary in appearance and functionality from corridor to corridor, creating some confusion as to where pedestrians should be walking. Figure 36 below illustrates a series of boulders off to the side of the road near Four Corners, potentially leading pedestrians to question whether they should be walking on the left side or the right side of the boulders. On the left side, there may be some safety implications if pedestrians are too close to traffic, particularly along this busy corridor; but on the right side, the walk appears to be more "challenging", requiring the navigating around some obstacles along the way. It is recommended that the City standardize its pedestrian walkway design with sidewalks (where appropriate), or flex bollards (where they aren't, but where traffic volumes remain significant enough to warrant a delineation of pedestrian walkways).

Figure 36: The approach to Four Corners

When deciding on appropriate pedestrian traffic control, it is important to consider guidelines such as the Transportation Association of Canada (TAC)'s Geometric Design Guide for Canadian Roads, which provides information and guidance to transportation practitioners to promote uniform roadway design, and the Manual of Uniform Traffic Control Devices for Canada (MUTCDC), which consists of traffic control devices and systems.

5.3.1 Pedestrian Crossing Guidelines

In the absence of Nunavut territorial transportation design guidelines, which seek to be consistent with the intent of the relevant laws (i.e., the territorial Traffic Safety Act (TSA)), the Ontario Traffic Manual in Ontario, the Transportation Association of Canada's (TAC) design manuals can be consulted as a reference to industry practices.

The TAC Geometric Design Guide for Canadian Roads provides practical guidance and application information on the planning, design, and operation of pedestrian roadway crossing treatments for transportation practitioners. The TAC manuals are quite comprehensive in describing where, how, and why to provide pedestrian crossing controls, but do not provide guidance on when crossing controls are justified (volume warrants), and do not address when a pedestrian facility is required to address concerns with system connectivity, pedestrian safety, or pedestrian desire lines.

This presents a challenge for local municipalities with lower vehicular volumes to justify pedestrian crossing facilities. For this reason, many smaller municipalities in Canada often implement courtesy crosswalks. However, courtesy crosswalks do not provide any legal protection and right-of-way for pedestrians under the TSA and are often a band-aid solution for a larger safety concern.

Iqaluit has a significant number of courtesy crosswalks, however, significant feedback was received in public engagement that was specific to the safety and effectiveness of the existing crosswalks. Given the broader comments related to the active transportation network, and in the interest of further improving safety, Iqaluit might consider converting some of these courtesy crosswalks into stop-signed or traffic controlled intersections. Alternatively, and perhaps more appropriately such as not to impede traffic along high traffic volume corridors unnecessarily, Iqaluit might consider installing flashing amber lights that can be activated by the push of a button, to improve the visibility of these courtesy crosswalks. Such measures are recommended to be given priority by the City in the short-term.

Figure 37: Despite the visible sign, some pedestrians may not feel comfortable crossing the road here unless additional measures are deployed

5.3.2 Guiding Principles

The following four (4) guiding principles were developed to help with the development and identification of initiatives to enhance pedestrian safety:

Reduce collision risk and severity: This is the key objective in providing pedestrian crossing control and other supporting facilities and devices. It is fundamental that the road system protects pedestrians and other vulnerable road users by achieving a high level of compliance from drivers, pedestrians, and other road users, and by minimizing pedestrian exposure to traffic.

Enhance connectivity: Effective crossing opportunities should be provided to ensure system connectivity for pedestrians while considering driver workload and expectation, proximity to other crossings, and the safety of pedestrians. Facilitating connectivity between crosswalks and sidewalks, and/or trail networks involves understanding and monitoring pedestrian desire lines, which evolve as a function of land use, the location of pedestrian generators and attractors, and proximity to existing crossing facilities. When alternatives to pedestrian desire lines are required due to other factors, these facilities should be simple, convenient, and clearly marked, and should effectively channel pedestrians so that they modify their natural choice with the shortest possible deviation.

Enhance accessibility: The demographics of the pedestrian population, as well as the mix of road users at different time periods, should be considered and crossing treatment systems should be designed accordingly. As the population changes, a "design pedestrian" should be considered to ensure the accessibility of all road users and not only those with good visual, mental, and physical capabilities.

Enhance system maintenance: Ongoing rehabilitation and maintenance of pedestrian infrastructure should be equally as important as its implementation. A safe transportation system must not only be properly planned and designed but should also be properly maintained through an annual maintenance program. Maintenance-related issues such as irregular surfaces, debris on sidewalks, inadequate snow removal, water accumulation due to drainage problems, and others, can pose safety hazards for pedestrians, particularly the elderly and those with disabilities.

5.3.3 Pedestrian Crossing Site Prioritization Methodology

A methodology for evaluating pedestrian crossing implementation sites that do not satisfy minimum traffic/pedestrian volumes was developed with criteria related to pedestrian network connectivity, pedestrian demand, and safety. There is no industry standard methodology to select the criteria to use when evaluating candidate sites. Rather, the criteria and methodology should balance the unique needs of the City and the availability of existing data to quantify criteria.

Three pedestrian prioritization criteria themes were developed including:

- **Connectivity-based criteria**;
- **Demand-based criteria**; and
- **Safety-based criteria**.

Each of these three broad criteria categories have several additional specific criteria, levels and draft scoring, as shown in the bulleted list below, that were developed based on analysis throughout this study. The criteria were also developed based on best practices with the intention of providing a framework that will empower residents, councilors, and City staff to implement additional pedestrian crosswalks in Iqaluit based on the vision and objectives developed within this TMP, which may or may not be shared by territorial standards that take a broader approach to planning. At the same time, it will be important for Iqaluit to have procedures in place to manage the number of prospective crossing sites that are evaluated using these criteria. Depending on the demand for crosswalk review, Iqaluit might consider a minimum threshold of constructive feedback received internally or from the public before a review in the site prioritization methodology is triggered.

Beyond identifying a suitable location for a pedestrian crosswalk, additional consideration should be given for what type of crosswalk is appropriate. Section 5.3.4 below summarizes several different pedestrian crosswalk solutions and their applicability based on where a potential crossing is desired. There is no standard criteria or threshold for most crosswalk facilities, as such recommended solutions often require consulting with the local community to determine which solution would best serve a location.

Although this evaluation methodology is critical for developing objective metrics for assessing potential pedestrian crosswalks, there are other factors that are considered when the feasibility or appropriateness of locations (e.g., coordination with other planned roadway projects, site investigation to select exact crossing location, and site-specific installation costs).

Additionally, it must be recognized that the evaluation might change in between the planning and implementation stages (e.g., implementation of new nearby pedestrian crossovers, new transit routes, changes in roadway characteristics, changes to surrounding built environment). It should be noted that, although this TMP provides broad guidance on specific criteria to consider, these criteria should be refined and formalized such that the total evaluation scores are an optimized reflection of the suitability of a pedestrian crossover at each location. This should be done through additional study and consultation between City staff, councilors, and the local community.

Potential Pedestrian Crossing Criteria and Points for Consideration:

- Proximity to elder facilities and major medical centres
- Proximity to elementary and middle schools
- Proximity to Inuksuk High School or Nunavut Arctic College
- Proximity to another major trip generator
- Connection to multi-use trail or to major trail facility crossing
- Proximity to nearest controlled crossing opportunity
- Community request – have local residents requested a crosswalk in this location?
- Land use – higher score for institutional, employment, and high-density residential land uses; lower score for lower-density residential land uses
- Pedestrian collision history
- Road class – higher score for major roadways with increased traffic and pedestrian volumes; lower scores for minor and local roadways
- Posted speed limit – higher scores for roadways with higher speed limits
- Road maintenance – higher scores for roadways which are maintained to a standard which promotes safe pedestrian crossing and vehicle braking
- Visibility concerns – higher scores for good visibility at target crosswalk location, free of visual obstructions such as buildings or terrain

5.3.4 Types of Pedestrian Crossing Measures

The City can implement a variety of pedestrian crossing measures to improve safety at crossing locations. A traditional measure is improved crosswalk markings, using white paint to indicate the crosswalk on the roadway with a ‘zebra’ or ‘ladder’ pattern. However, it is acknowledged that the weather and environmental conditions in Iqaluit may limit the effectiveness of roadway markings. Therefore, other measures such as signage and lighting may be more impactful to indicate crosswalk locations to drivers.

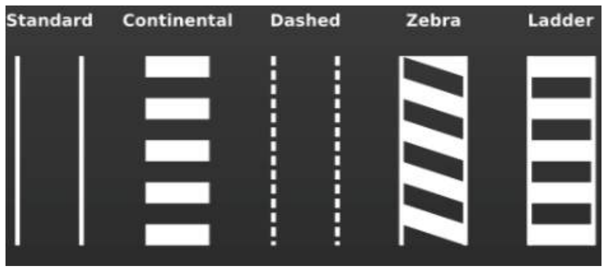


Figure 38: Crosswalk marking types

Signage is an effective measure to indicate the crosswalk location, but can also be hampered by poor visibility in winter weather conditions which are common in Iqaluit. Therefore, the addition of flashing lights activated by the pedestrian would improve the visibility of the crosswalk. A final option is the addition of a signalized intersection if traffic/pedestrian volumes warrant it.

Figure 39: Typical signalized crosswalk design

If crossing distances are long across a roadway or intersection, a ‘bump-out’ can be installed to reduce the crossing distance for the pedestrian. These are extensions of the curb which are either made of concrete, or in lower-cost rapid implementations, using temporary materials such as flexi-post bollards, pylons, or plastic curb dividers.

Figure 40: A low-cost bump-out has been created using flexi-post bollards (Source: Strong Towns)

5.3.5 Traffic Calming

As part of the pedestrian safety initiative, improved active transportation and pedestrian infrastructure addresses one aspect of the problem – the ‘carrot’. However, traffic calming, which seeks to reduce speeding and reduce vehicle traffic, addresses the other aspect, a ‘stick’ to those driving recklessly.

Measures which can be implemented to calm roadway traffic can include:

- Speed limit reductions: NACTO recommends a 30km/h speed limit on local urban roads, and 40km/h for collector urban roads. This includes streets in and around the Four Corners area of Iqaluit, which should have appropriate speed limits to promote the pedestrian experience by lowering vehicle speeds.
- Speed humps: Raised sections of the roadway which are uncomfortable to drive over at high speeds, encouraging drivers to travel at a safe speed. These should be used sparingly (if at all), however, as they can bring downsides such as more challenging access for emergency vehicles.
- Roadway narrowing: Generally, drivers will drive slower when roadways are narrower. Solutions such as medians, on-street parking, cycling lanes, and sidewalks all promote safe driving speeds.
- Signage: Signs reminding drivers to drive slowly, watch for children and elders, and obey the speed limit can all assist with promoting traffic calming principles, although they should not be the only solution.

The installation of crosswalks should be paired with traffic calming solutions to ensure that drivers are moving at a speed which allows them to brake in time to allow pedestrians to cross safely, reducing collisions.

5.3.6 Pedestrian Safety Recommendations

Pedestrian crosswalks and traffic control devices play a vital role in pedestrian safety and must be implemented to ensure that the most troublesome locations receive attention commensurate with the problem. It is essential that pedestrian traffic control issues be continually monitored to ensure that the treatment measures remain effective and the available funds derive the best value.

It is recommended that the City of Iqaluit develop a pedestrian safety program to systematically and proactively address pedestrian safety issues. This is an important undertaking, especially given the population growth projected for the city and the city's focus on promoting active transportation as an encouraged mode of travel. The plan should lay out a vision for improving safety, examining existing conditions, and using a data-driven approach to match safety programs and improvements with demonstrated problems.

In addition, it is recommended that the City include design criteria in the City of Iqaluit Municipal Design Guidelines to improve safety, using the territorial Traffic Safety Act (TSA), the Ontario Traffic Manual in Ontario, the Transportation Association of Canada's (TAC) design manuals and this TMP as guidance. While the specific criteria (including design thresholds) should be established upon completion of a detailed pedestrian safety plan, categories of design criteria under Roadways, Walking Trails, and Snowmobile Trails for the City's consideration include:

- Pedestrian crossings shall be prioritized on major roads with high vehicle and pedestrian volumes and speeds, near major trip generators and community facilities, and/or in locations with a history of collisions involving pedestrians.
- Crosswalks should be enhanced with flashing lights or signalization on major roads (arterial and sometimes connector roads) to improve the visibility of the crosswalk.

Pedestrian crossing types and traffic calming measures such as speed reductions, roadway narrowing, and signage should be studied further during through the pedestrian safety plan and examined using a data-driven approach before including design guidelines for these measures in the Municipal Design Guidelines.

Active Transportation Recommendations:

- Develop a pedestrian safety plan that encompasses an evaluation system for active transportation infrastructure and pedestrian crossings, and a procedure for ensuring that the City is not overwhelmed with unwarranted crosswalk review requests. Using criteria outlined in this section, apply a scoring matrix to perform quantitative assessments.

- Based on the findings from the pedestrian safety plan, revise the City's Municipal Design Guidelines to include guidelines for pedestrian crosswalk design and traffic calming measures.
- Investigate the use of flexi-post bollards for lower-cost and easily implementable pedestrian safety infrastructure, acknowledging visibility obstruction challenges with the existing wooden bollards.
- Seek greater access to crash statistics, including Motor Vehicle Crash Rates (MVCRs), to help justify capital works related to road safety improvements.
- Investigate the feasibility of drainage improvements, such as ditches, in tandem with sidewalk construction.
- No traffic calming measures are recommended for immediate implementation; however, they should be considered in the future as transportation data collection improves (especially with respect to crash rates) and if the initial measures of crosswalks and flexi-post bollards are seen to be insufficient in abating safety concerns.

6.0 SNOWMOBILE NETWORK

As Iqaluit is situated in Northern Canada, the cold temperatures make snowmobiling a popular mobility option for the local community. Several policy recommendations are provided to ensure that snowmobiles can continue to be operated safely, and encourage recreation. Not only are snowmobiles much more affordable relative to automobiles, the lower emissions produced by snowmobiles relative to automobiles make them a potential contributor to the achievement of local climate change objectives. Iqaluit should seek to promote the use of snowmobiles as an efficient transportation solution which co-exists safely with other forms of transportation.

6.1 PARKING

Snowmobiles are often used within the community to run errands, which means that adequate parking facilities should be provided to allow them to access the resources and destinations that their riders need. The Nunavut Good Building Practices Guidelines recommend a minimum parking stall size of 2m x 2m.

It is recommended that future residential and commercial developments provide dedicated parking spaces for snowmobiles. In addition, not all snowmobiles have the ability to drive in reverse, so parking stall design should strategically allow snowmobiles to pull through the stall to exit the parking lot, where possible.

6.2 ROUTE FORMALIZATION

One major request which arose from the public engagement process was the formalization and improvement of snowmobile routes. Other than signage which is in place to designate where snowmobiles should safely cross the roadway, the routes are generally determined by the snowmobile users rather than the City.

In addition, snowmobile routes change in accordance with the weather conditions. For example, a year with significant snowfall could allow for snowmobile users to create new informal routes which were not previously possible. Therefore, it is important to acknowledge that snowmobile routes, even when formalized, may still require the ability to make seasonal modifications. It is recommended that the City publish annual snowmobile route maps, and maintain the indicated routes to a proper standard.

6.2.1 Criteria for candidate routes

It is important that candidate snowmobile routes are assessed based on their safety, usefulness, and impact to surrounding populations. The following criteria were developed to qualitatively assess snowmobile routes:

- **Route curvature/sight lines:** To minimize collisions between snowmobiles and other roadway users, snowmobile routes should be identified with visibility as a central factor. The curvature of the roadway and sight lines should be investigated along candidate routes, ensuring that visibility is maintained along all curves and at all intersections.

- **Proximity to everyday destinations:** While snowmobiling is a popular recreational activity, the official route network should acknowledge that many use snowmobiles as a legitimate form of everyday transportation. This means that official routes should seek to connect key destinations such as employment centres, grocery stores, along with recreational sites. In addition, several comments from the public requested that the routes accommodate for the use of qamutiik during hunting seasons.

- **Proximity to sensitive populations/land uses:** While snowmobile routes should allow for straightforward travel between popular destinations, the specific routing should be developed in a way which minimizes disruption to sensitive populations and land uses. Therefore, routes which pass by medical centres, daycares, schools, and the Elders Residence/Qammaq should ensure that adequate separation is implemented, or the route should detour around these areas where possible.

- **Free of obstructions:** Due to the ad-hoc nature of existing snowmobile routes, safety concerns can arise when a route is established which contains obstructions such as electrical poles, structures, fences or large rocks. Care should be taken to ensure official routes mitigate the danger of potential obstructions.

- **Route incline:** Official routes should be restricted to those which have an incline which is manageable to traverse safely and at a range of snowmobiling skill levels, ensuring the trails are accessible to all.

6.3 ROADWAY CROSSINGS

A key consideration for the operation of snowmobiles is ensuring the ability for them to safely cross roadways. As it currently stands, many crossings are not designed with safe snowmobile operation in mind, and create hazards for snowmobilers. Commonly noted concerns with existing crossings include:

- High snowbanks
- Roadway drainage features (run-off trenches, ditches, etc.)
- Paved roadways completely cleared of snow

At crossings identified as part of a snowmobile route network, these concerns should be alleviated by ensuring that City crews maintain a relatively level surface with adequate snow cover. In addition, consistent, highly visible signage should be used at the crossing, and additional signage upstream of the crossing which prepares the automobile drivers to stop. For crossings along high-traffic roadways, flashing lights or signalized crossings should be implemented.

Figure 41: Example of a snowmobile trail / road intersection which could be better marked

6.3.1 Best Practices

6.3.1.1 Alberta

The Alberta Infrastructure and Transportation provincial department supplies guidelines pertaining to the installation and use of Snowmobile Crossing signs.[3]

In Alberta, snowmobile operators must stop their snowmobile at a designated crossing, dismount passengers, and yield to oncoming traffic prior to crossing the highway. As visibility of these crossings can be impacted by weather and road curvature, Snowmobile Crossing signs are used prior to the crossing (200m-300m) to prepare automobile drivers.

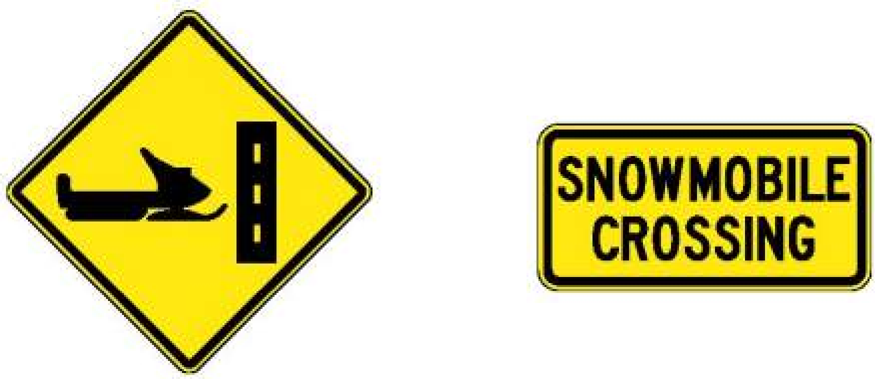


Figure 42: Examples of snowmobile crossing signage

As snowmobile operators must yield to oncoming traffic and wait until it is safe to cross, automobile drivers are technically not required to be notified of snowmobile crossing locations (as they have right of way). However, it has been found to be in the interest of safety if drivers are prepared for the possibility of encountering a snowmobile mid-crossing when driving on a roadway which may present safety concerns, such as poor visibility.

The warrants used to assess if a Snowmobile Crossing sign should be assessed include:

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[3] https://open.alberta.ca/dataset/f38dab02-6a10-453c-8ac5-6eea377e2535/resource/04c0c571-0f8a-4602-9d21-a8d808622419/download/trans-snowmobile-crossing-sign-2008-03.pdf

- If a designated snowmobile trail crosses the roadway
- The frequency of snowmobile crossing maneuvers
- If conditions of the crossing present a ‘unusual degree of hazard’
- Safety concerns at the crossing location, determined by collision history and stakeholder input

Snowmobile Crossing signage is typically requested by the public, through official channels such as a local stakeholder group (snowmobile club). The request is then assessed by Alberta Infrastructure and Transportation for review. Assessment criteria include:

- Location of the crossing (mid-block, intersection)
- Traffic volumes
- Frequency of snowmobile crossing maneuvers
- Operational conditions of the trail approaches and crossing, from the trail and from the roadway
- Safety issues

The department avoids encouraging snowmobile crossings across provincial highways, and instead implements alternatives such as trail re-alignment, use of existing intersection, or crossing re-location to local roads.

6.3.1.2 Minnesota

The US state of Minnesota published an in-depth research study into best practices for at-grade trail crossings.[4] As a northern state, Minnesota can see weather conditions similar to Alberta and other colder Canadian provinces/territories.

[4] https://www.dot.state.mn.us/research/TS/2013/201323.pdf

Figure 43: Minnesota snowmobile crossing signage

The study notes that the relatively high speeds of snowmobile have design implications on trails and crossings, as stopping sight distances are affected. It highlights a unique physics problem, where snowmobiles operating at night at high speeds can “over-run” their stopping sight distance, as the headlights will not illuminate far enough ahead to stop safely.

For snowmobile crossings, it is highlighted that signage may be chosen for areas with narrow shoulders or steep sideslopes to improve awareness and visibility. The study recommends installation of the signage at least 750 feet (228 metres) from the crossing.

7.0 IMPLEMENTATION PLANNING

This TMP’s recommendations have been grouped into categories including road network recommendations, transit recommendations, active transportation recommendations, signage and wayfinding recommendations, parking recommendations, and other recommendations. They have also been phased as immediate term, short-term, medium-term, or long-term recommendations.

As the City of Iqaluit’s transportation network is a complex system involving many different types of transportation modes and infrastructure, it will be important to appreciate throughout the implementation process that the city’s ongoing growth and evolution will bring impacts to the larger transportation network that can be difficult to predict. Particularly in the medium-to-long-term, it will be necessary for the City to revisit some of the findings and assumptions with respect to future conditions made in the TMP for their relevance, and adapt the implementation strategy as appropriate to be responsive to future conditions that may not be captured in the TMP. As acknowledged in section 3.4.1, given that Future Development Areas A and B are not anticipated to be completed by 2030, long-term recommendations can generally be interpreted as ‘2030 and beyond’.

Further, it is important to appreciate that all elements of a transportation system are interrelated, and that improvements to one aspect of transportation infrastructure or transportation policy in Iqaluit will bring implications with respect to other elements of transportation in the city. As such, as the City begins actioning these recommendations, it is important that the City consider not only the individual project in and of itself, but give consideration to secondary impacts across other elements of transportation in Iqaluit. To aid the City in this integrated approach to improving the city's transportation system, all of the above-noted categories have been considered throughout all phases of implementation (immediate, short, medium, and long term).

Implementation planning for each of the above-noted categories are summarized below in Table 12 through Table 17.

Table 12: Phasing of Road Network Recommendations

Immediate Term (current year)	Short Term (1-5 years)	Medium Term (5-8 years)	Long Term (beyond 2030)
Road Network Recommendations			
Niaqunngusiariaq / Saputi Addition of an eastbound left turn storage lane and installation of traffic control signals. General Develop a plan for traffic count data collection on a recurring basis to help inform future decision-making.	Queen Elizabeth / Niaqunngusiariaq Addition of northbound and southbound left turn storage lanes.	Niaqunngusiariaq / Saputi Addition of exclusive southbound left and right turn lanes Queen Elizabeth / Niaqunngusiariaq Installation of traffic control signals, with eastbound left and westbound left turn storage lanes. Four Corners Installation of traffic control signals. Federal Road / Ikaluktuutiak Drive Conversion from two-way stop control to all-way stop control.	Niaqunngusiariaq / Bypass Road Connection at Kangiq & Iniq Construction of a Bypass Road connection between Federal Road and Niaqunngusiariaq; and installation of traffic control signals at the intersection of Niaqunngusiariaq and the Bypass Road connection. Atungauyait / Niaqunngusiariaq Installation of traffic control signals. Niaqunngusiariaq / Road to Nowhere Installation of traffic control signals and an eastbound left turn storage lane.

Table 13: Phasing of Transit Recommendations

Immediate Term (current year)	Short Term (1-5 years)	Medium Term (5-8 years)	Long Term (beyond 2030)
Transit Recommendations			
Further study of the Iqaluit Transit opportunity and implementation strategies, using the TMP's recommendations as a starting point.	Launch of Iqaluit Transit pilot (early in the short-term). Full rollout of Iqaluit Transit (later in the short-term).	Ongoing monitoring of the Iqaluit Transit system's performance. Expand and/or tweak service as needed depending on performance, city growth, evolving travel needs, and available funding.	Ongoing monitoring of the Iqaluit Transit system's performance. Expand and/or tweak service as needed depending on performance, city growth, evolving travel needs, and available funding.

Table 14: Phasing of Active Transportation Recommendations

Immediate Term (current year)	Short Term (1-5 years)	Medium Term (5-8 years)	Long Term (beyond 2030)
Active Transportation Recommendations			
Develop a pedestrian safety plan, in tandem with the signage and wayfinding plan. The plan should lay out a vision for examining existing conditions, improving safety, and using a data-driven approach to match safety programs and improvements with demonstrated problems. Consider flex bollard implementation as an interim solution before sidewalks can be implemented.	Complete pedestrian safety plan and begin standardizing pedestrian facilities across the city in accordance with the plan's recommendations. Consider additional flex bollard implementation and, as funding allows, begin implementation of the sidewalk recommendations summarized in Table 11. Investigate the feasibility of drainage improvements, such as ditches, in tandem with sidewalk construction. Improve existing pedestrian crossings and implement additional pedestrian safety measures as per Sections 5.3.1-5.3.4.	Continued implementation of sidewalk recommendations and of drainage improvements.	Continued implementation of sidewalk recommendations and of drainage improvements (including consideration of additional sidewalks not identified in Table 11).

Immediate Term (current year)	Short Term (1-5 years)	Medium Term (5-8 years)	Long Term (beyond 2030)
	Revise the City's Municipal Design Guidelines to include guidelines for pedestrian crosswalk design and traffic calming measures.		

Table 15: Phasing of Signage and Wayfinding Recommendations

Immediate Term (current year)	Short Term (1-5 years)	Medium Term (5-8 years)	Long Term (beyond 2030)
Signage and Wayfinding Recommendations			
Inventory and review existing transportation signage and wayfinding and develop a signage and wayfinding plan. Identify quick, low-cost interim signage and wayfinding solutions to improve road safety at critical nodes such as the Mivvik/Allanngua junction, in advance of the signage and wayfinding plan's completion.	Complete signage and wayfinding plan and begin implementation of findings.	Continue implementation of findings from the signage and wayfinding plan. Evaluate impact of signage and wayfinding implementations and identify if more significant actions might be needed in the form of infrastructure updates (expanding right-of-ways, additional sidewalks, traffic calming measures, etc.).	Continue evaluating the impact of signage and wayfinding recommendations and considering other actions as needed.

Table 16: Phasing of Parking Recommendations

Immediate Term (current year)	Short Term (1-5 years)	Medium Term (5-8 years)	Long Term (beyond 2030)
Parking Recommendations			
Give further consideration to the appropriateness of parking management measures, using Section 3.8 of the TMP document as a starting point.	Begin implementation of parking management measures as appropriate.	Continue implementation of parking management measures as appropriate.	Ongoing monitoring and evaluation of parking supply versus demand, taking actions to balance supply and demand as appropriate.

Table 17: Phasing of Other Recommendations

Immediate Term (current year)	Short Term (1-5 years)	Medium Term (5-8 years)	Long Term (beyond 2030)
Other Recommendations			
Seek greater access to crash statistics, including Motor Vehicle Crash Rates (MVCRs), to help justify capital works related to road safety improvements, and to help identify additional road safety improvements which may be warranted.	Develop a traffic control warrants policy, using Section 3.6 of the TMP as a starting point. Publish annual snowmobile route maps and ensure the routes are maintained to a proper standard.	Revisit the traffic control warrants policy for any needed updates.	Revisit the traffic control warrants policy for any needed updates. Review roadway classifications for any needed updates.
In consultation with the District Education Authority, propose a change to the system where K-8 children are bussed home at lunch time since this leads to congestion during the midday period.	Seek funding to offer lunch programs at elementary schools to eliminate the need for lunchtime bussing.		

It is further recommended that the City commission an Asset Management Plan and develop an asset management strategy for its infrastructure, including all transportation assets. In the course of the Asset Management Plan's development, it is recommended that the City review and document of the state of repair of all existing transportation assets, evaluate current transportation infrastructure maintenance practices, and develop a plan to ameliorate notable deficiencies, and for ongoing monitoring and evaluation into the future. This will help ensure that the City gets the most out of its transportation assets, and can lead to cost savings through a proactive approach to maintenance (as opposed to a reactive approach), and if major capital expenses can be deferred as a result of maintaining asset quality. Effective asset management can further provide benefits to the quality of life of Iqalummiut. As additional transportation assets and infrastructure are deployed over the short, medium, and long terms, the City should ensure that these assets are included in the City's Asset Management Plan and its ongoing asset management strategies and practices.

8.0 CONCLUSION

The purpose of this Transportation Master Plan (TMP) is to develop a long-term strategic vision for the future of transportation in Iqaluit, evaluating all aspects of the transportation network including but not limited to roads, active transportation, and snowmobile trails. Emphasis was placed on sustainable modes of transportation including active modes and transit, for which a feasibility study for an Iqaluit Transit service was included, with the objective of achieving a mode shift away from single-occupancy vehicles to the extent feasible. Emphasis was also placed on low-hanging fruit items such as signage and wayfinding, as well as improved walkway, lane, and intersection definition, which can bring significant positive impacts to transportation in Iqaluit for minimal costs.

The TMP process began with a round of engagement and a review of current and future transportation conditions in the City. From here, growth forecasts were undertaken, needs and opportunities were evaluated, and multimodal transportation network recommendations were developed. Implementation considerations were then drafted alongside a series of policies and strategies for consideration, intended to support the transportation network recommendations. In the course of this TMP, reference was made to past relevant studies such as the Federal Road Development Area Transportation Study (2018), the Iqaluit General Plan (2010), and the Traffic Light Signal Controls Final Report (2009), and the outcomes of this TMP seek to align and integrate with these studies as appropriate, keeping in mind the local context in 2021 is different from that of years past. Recommendations are also considerate of maximizing the City's value-for-money and getting the most out of its existing transportation assets and infrastructure, although further study is required to flesh out detailed costing of the recommendations.

When moving forward with implementation, it must be appreciated that the suite of recommendations, policies, and strategies presented in this TMP are best treated as pieces of a larger puzzle rather than as standalone action items. That is, all elements of the transportation network are interrelated, and the package of recommendations together is greater than the sum of the parts. Active transportation infrastructure recommendations, for example, have synergies with wayfinding and signage recommendations; and both are influenced by the proposed transit concept in consideration that transit trips always begin and end with a walk to and from the bus stop. With this integrated focus on implementation, and on transportation in Iqaluit more generally speaking, the City will be well-positioned for economic prosperity, for community building, for neighbourhood preservation, and for maintaining and strengthening the quality of life for Iqalummiut into the future.

APPENDICES

APPENDIX A INTERSECTION LEVEL OF SERVICE (LOS) SUMMARY OUTPUTS

(Begins on the following page)

Notes:

EBL = Eastbound approach, left turning traffic

EBT = Eastbound approach, through traffic

EBR = Eastbound approach, right turning traffic

WBL = Westbound approach, left turning traffic

WBT = Westbound approach, through traffic

WBR = Westbound approach, right turning traffic

NBL = Northbound approach, left turning traffic

NBT = Northbound approach, through traffic

NBR = Northbound approach, right turning traffic

SBL = Southbound approach, left turning traffic

SBT = Southbound approach, through traffic

SBR = Southbound approach, right turning traffic

HCM Unsignalized Intersection Capacity Analysis
101: Federal Rd & Qaqqamiut

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	2	12	66	4	11	45	98	39	7	57	2
Future Volume (Veh/h)	1	2	12	66	4	11	45	98	39	7	57	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	2	13	72	4	12	49	107	42	8	62	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	319	326	63	319	306	128	64			149		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	319	326	63	319	306	128	64			149		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	88	99	99	97			99		
cM capacity (veh/h)	605	570	1002	606	585	922	1538			1432		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	88	198	72
Volume Left	1	72	49	8
Volume Right	13	12	42	2
cSH	882	635	1538	1432
Volume to Capacity	0.02	0.14	0.03	0.01
Queue Length 95th (m)	0.4	3.6	0.7	0.1
Control Delay (s)	9.2	11.6	2.0	0.9
Lane LOS	A	B	A	A
Approach Delay (s)	9.2	11.6	2.0	0.9
Approach LOS	A	B		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
102: Allanngua & Akilliq/Ikaluktuutiak Dr

04/25/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	20	30	1	21	45	3
Future Volume (Veh/h)	20	30	1	21	45	3
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	33	1	23	49	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	98	0	144	100	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98	0	144	100	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	97	97	100	97	97	
cM capacity (veh/h)	768	1085	765	767	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	55	24	52
Volume Left	0	1	49
Volume Right	33	0	3
cSH	931	767	1623
Volume to Capacity	0.06	0.03	0.03
Queue Length 95th (m)	1.4	0.7	0.7
Control Delay (s)	9.1	9.8	6.9
Lane LOS	A	A	A
Approach Delay (s)	9.1	9.8	6.9
Approach LOS	A	A	

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
103: Allanngua & Mivvik Street

04/25/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	84	15	65	120	9	50
Future Volume (vph)	84	15	65	120	9	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	91	16	71	130	10	54

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	107	201	64
Volume Left (vph)	0	71	10
Volume Right (vph)	16	0	54
Hadj (s)	-0.06	0.10	-0.44
Departure Headway (s)	4.2	4.3	4.1
Degree Utilization, x	0.12	0.24	0.07
Capacity (veh/h)	836	830	807
Control Delay (s)	7.8	8.6	7.5
Approach Delay (s)	7.8	8.6	7.5
Approach LOS	A	A	A

Intersection Summary			
Delay	8.2		
Level of Service	A		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
104: Federal Rd & Ikaluktuutiak Dr

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1	62	0	2	0	150	270	6	1	148	59
Future Volume (Veh/h)	48	1	62	0	2	0	150	270	6	1	148	59
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	1	67	0	2	0	163	293	7	1	161	64
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	818	821	193	885	850	296	225			300		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	818	821	193	885	850	296	225			300		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	100	92	100	99	100	88			100		
cM capacity (veh/h)	265	272	849	221	261	743	1344			1261		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	120	2	463	226
Volume Left	52	0	163	1
Volume Right	67	0	7	64
cSH	431	261	1344	1261
Volume to Capacity	0.28	0.01	0.12	0.00
Queue Length 95th (m)	8.6	0.2	3.1	0.0
Control Delay (s)	16.5	18.9	3.6	0.0
Lane LOS	C	C	A	A
Approach Delay (s)	16.5	18.9	3.6	0.0
Approach LOS	C	C		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
105: Federal Rd & Nunavut

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	6	3	5	9	100	16	249	5	19	157	8
Future Volume (Veh/h)	5	6	3	5	9	100	16	249	5	19	157	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	7	3	5	10	109	17	271	5	21	171	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	639	528	176	532	530	274	180			276		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	639	528	176	532	530	274	180			276		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	98	100	99	98	86	99			98		
cM capacity (veh/h)	321	443	868	442	442	765	1396			1287		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	124	293	201
Volume Left	5	5	17	21
Volume Right	3	109	5	9
cSH	430	703	1396	1287
Volume to Capacity	0.03	0.18	0.01	0.02
Queue Length 95th (m)	0.8	4.8	0.3	0.4
Control Delay (s)	13.7	11.2	0.5	0.9
Lane LOS	B	B	A	A
Approach Delay (s)	13.7	11.2	0.5	0.9
Approach LOS	B	B		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
106: Queen Elizabeth/Federal Rd & Mivvik Street/Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	28	99	48	69	124	151	48	125	48	96	78	19
Future Volume (vph)	28	99	48	69	124	151	48	125	48	96	78	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	108	52	75	135	164	52	136	52	104	85	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	190	374	240	210
Volume Left (vph)	30	75	52	104
Volume Right (vph)	52	164	52	21
Hadj (s)	-0.10	-0.19	-0.05	0.07
Departure Headway (s)	5.9	5.4	5.9	6.1
Degree Utilization, x	0.31	0.57	0.39	0.35
Capacity (veh/h)	546	622	549	521
Control Delay (s)	11.5	15.3	12.6	12.4
Approach Delay (s)	11.5	15.3	12.6	12.4
Approach LOS	B	C	B	B

Intersection Summary			
Delay	13.3		
Level of Service	B		
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
107: Niaqunngusiariaq & Saputi

04/25/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	181	486	49	83	205
Future Volume (Veh/h)	45	181	486	49	83	205
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	197	528	53	90	223
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	581				850	554
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	581				850	554
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				71	58
cM capacity (veh/h)	993				315	532

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	246	581	313
Volume Left	49	0	90
Volume Right	0	53	223
cSH	993	1700	444
Volume to Capacity	0.05	0.34	0.71
Queue Length 95th (m)	1.2	0.0	41.0
Control Delay (s)	2.1	0.0	30.3
Lane LOS	A		D
Approach Delay (s)	2.1	0.0	30.3
Approach LOS			D

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
108: Queen Elizabeth

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	194	65	39	486	13	86	5	17	5	2	9
Future Volume (Veh/h)	23	194	65	39	486	13	86	5	17	5	2	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	211	71	42	528	14	93	5	18	5	2	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	542			282			926	922	246	936	951	535
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	542			282			926	922	246	936	951	535
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			60	98	98	98	99	98
cM capacity (veh/h)	1027			1280			232	255	792	226	245	545

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	307	584	116	17
Volume Left	25	42	93	5
Volume Right	71	14	18	10
cSH	1027	1280	262	350
Volume to Capacity	0.02	0.03	0.44	0.05
Queue Length 95th (m)	0.6	0.8	16.2	1.2
Control Delay (s)	0.9	0.9	29.2	15.8
Lane LOS	A	A	D	C
Approach Delay (s)	0.9	0.9	29.2	15.8
Approach LOS			D	C

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
109: Atungauyait & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	182	19	10	463	0	37	1	20	1	0	1
Future Volume (Veh/h)	1	182	19	10	463	0	37	1	20	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	198	21	11	503	0	40	1	22	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	503			219			736	736	208	758	746	503
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	503			219			736	736	208	758	746	503
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			88	100	97	100	100	100
cM capacity (veh/h)	1061			1350			332	344	832	312	339	569

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	220	514	63	2
Volume Left	1	11	40	1
Volume Right	21	0	22	1
cSH	1061	1350	420	403
Volume to Capacity	0.00	0.01	0.15	0.00
Queue Length 95th (m)	0.0	0.2	4.0	0.1
Control Delay (s)	0.0	0.3	15.1	14.0
Lane LOS	A	A	C	B
Approach Delay (s)	0.0	0.3	15.1	14.0
Approach LOS			C	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
110: Niaqunngusiariaq & Road to Nowhere

04/25/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	155	397	8	7	120
Future Volume (Veh/h)	48	155	397	8	7	120
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	168	432	9	8	130
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	441				708	436
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	441				708	436
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				98	79
cM capacity (veh/h)	1119				382	620

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	220	441	138
Volume Left	52	0	8
Volume Right	0	9	130
cSH	1119	1700	598
Volume to Capacity	0.05	0.26	0.23
Queue Length 95th (m)	1.1	0.0	6.7
Control Delay (s)	2.3	0.0	12.8
Lane LOS	A		B
Approach Delay (s)	2.3	0.0	12.8
Approach LOS			B

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
111: Abe Okpik & Niaqunngusiariaq

04/25/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	111	44	31	263	115	40
Future Volume (vph)	111	44	31	263	115	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	121	48	34	286	125	43

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	169	320	168
Volume Left (vph)	0	34	125
Volume Right (vph)	48	0	43
Hadj (s)	-0.14	0.06	0.03
Departure Headway (s)	4.6	4.6	5.1
Degree Utilization, x	0.22	0.41	0.24
Capacity (veh/h)	735	749	657
Control Delay (s)	8.9	10.8	9.6
Approach Delay (s)	8.9	10.8	9.6
Approach LOS	A	B	A

Intersection Summary			
Delay	10.0		
Level of Service	A		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
112: Abe Okpik/Tasilik & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	55	33	7	97	3	49	2	12	5	5	15
Future Volume (vph)	7	55	33	7	97	3	49	2	12	5	5	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	60	36	8	105	3	53	2	13	5	5	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	104	116	68	26
Volume Left (vph)	8	8	53	5
Volume Right (vph)	36	3	13	16
Hadj (s)	-0.16	0.03	0.08	-0.30
Departure Headway (s)	4.1	4.3	4.5	4.2
Degree Utilization, x	0.12	0.14	0.08	0.03
Capacity (veh/h)	855	823	759	803
Control Delay (s)	7.6	7.9	7.9	7.3
Approach Delay (s)	7.6	7.9	7.9	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
101: Federal Rd & Qaqqamiut

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	8	37	30	9	7	59	34	39	9	73	2
Future Volume (Veh/h)	3	8	37	30	9	7	59	34	39	9	73	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	9	40	33	10	8	64	37	42	10	79	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	299	307	80	330	287	58	81			79		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	299	307	80	330	287	58	81			79		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	96	94	98	99	96			99		
cM capacity (veh/h)	616	577	980	568	592	1008	1517			1519		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	52	51	143	91
Volume Left	3	33	64	10
Volume Right	40	8	42	2
cSH	849	615	1517	1519
Volume to Capacity	0.06	0.08	0.04	0.01
Queue Length 95th (m)	1.5	2.1	1.0	0.2
Control Delay (s)	9.5	11.4	3.5	0.9
Lane LOS	A	B	A	A
Approach Delay (s)	9.5	11.4	3.5	0.9
Approach LOS	A	B		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
102: Allanngua & Akilliq/Ikaluktuutiak Dr

04/25/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	14	39	14	14	24	6
Future Volume (Veh/h)	14	39	14	14	24	6
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	42	15	15	26	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	59	0	105	56	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	59	0	105	56	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	98	96	98	98	98	
cM capacity (veh/h)	819	1085	819	822	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	57	30	33
Volume Left	0	15	26
Volume Right	42	0	7
cSH	999	821	1623
Volume to Capacity	0.06	0.04	0.02
Queue Length 95th (m)	1.4	0.9	0.4
Control Delay (s)	8.8	9.6	5.7
Lane LOS	A	A	A
Approach Delay (s)	8.8	9.6	5.7
Approach LOS	A	A	

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	18.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
103: Allanngua & Mivvik Street

04/25/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	164	25	100	68	15	141
Future Volume (vph)	164	25	100	68	15	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	178	27	109	74	16	153

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	205	183	169
Volume Left (vph)	0	109	16
Volume Right (vph)	27	0	153
Hadj (s)	-0.05	0.15	-0.49
Departure Headway (s)	4.5	4.7	4.3
Degree Utilization, x	0.25	0.24	0.20
Capacity (veh/h)	773	732	774
Control Delay (s)	9.0	9.1	8.4
Approach Delay (s)	9.0	9.1	8.4
Approach LOS	A	A	A

Intersection Summary			
Delay	8.9		
Level of Service	A		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
104: Federal Rd & Ikaluktuutiak Dr

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1	101	0	0	2	57	117	1	0	200	58
Future Volume (Veh/h)	38	1	101	0	0	2	57	117	1	0	200	58
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	1	110	0	0	2	62	127	1	0	217	63
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	502	500	248	610	532	128	280			128		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	502	500	248	610	532	128	280			128		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	86	100	100	100	95			100		
cM capacity (veh/h)	461	450	790	336	432	923	1283			1458		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	152	2	190	280
Volume Left	41	0	62	0
Volume Right	110	2	1	63
cSH	660	923	1283	1458
Volume to Capacity	0.23	0.00	0.05	0.00
Queue Length 95th (m)	6.7	0.0	1.2	0.0
Control Delay (s)	12.1	8.9	2.9	0.0
Lane LOS	B	A	A	
Approach Delay (s)	12.1	8.9	2.9	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
105: Federal Rd & Nunavut

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	6	7	2	6	50	7	158	6	75	251	6
Future Volume (Veh/h)	4	6	7	2	6	50	7	158	6	75	251	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	7	8	2	7	54	8	172	7	82	273	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	690	636	276	644	636	176	280			179		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	690	636	276	644	636	176	280			179		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	99	99	98	94	99			94		
cM capacity (veh/h)	316	370	762	358	370	868	1283			1397		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	19	63	187	362
Volume Left	4	2	8	82
Volume Right	8	54	7	7
cSH	452	726	1283	1397
Volume to Capacity	0.04	0.09	0.01	0.06
Queue Length 95th (m)	1.0	2.2	0.1	1.4
Control Delay (s)	13.3	10.4	0.4	2.2
Lane LOS	B	B	A	A
Approach Delay (s)	13.3	10.4	0.4	2.2
Approach LOS	B	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
106: Queen Elizabeth/Federal Rd & Mivvik Street/Niaqunngusiariaq

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	158	80	105	110	56	88	61	72	164	117	3
Future Volume (vph)	12	158	80	105	110	56	88	61	72	164	117	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	172	87	114	120	61	96	66	78	178	127	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	272	295	240	308
Volume Left (vph)	13	114	96	178
Volume Right (vph)	87	61	78	3
Hadj (s)	-0.15	-0.01	-0.08	0.14
Departure Headway (s)	6.2	6.3	6.4	6.4
Degree Utilization, x	0.47	0.52	0.42	0.55
Capacity (veh/h)	516	515	501	509
Control Delay (s)	14.6	15.8	14.0	16.9
Approach Delay (s)	14.6	15.8	14.0	16.9
Approach LOS	B	C	B	C

Intersection Summary			
Delay	15.4		
Level of Service	C		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
107: Niaqunngusiariaq & Saputi

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	207	395	250	100	74	97
Future Volume (Veh/h)	207	395	250	100	74	97
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	225	429	272	109	80	105
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	381				1206	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	381				1206	326
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	81				51	85
cM capacity (veh/h)	1177				164	715

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	654	381	185
Volume Left	225	0	80
Volume Right	0	109	105
cSH	1177	1700	292
Volume to Capacity	0.19	0.22	0.63
Queue Length 95th (m)	5.4	0.0	30.4
Control Delay (s)	4.5	0.0	36.5
Lane LOS	A		E
Approach Delay (s)	4.5	0.0	36.5
Approach LOS			E

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
108: Queen Elizabeth

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	406	78	21	249	3	97	2	43	12	3	14
Future Volume (Veh/h)	8	406	78	21	249	3	97	2	43	12	3	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	441	85	23	271	3	105	2	47	13	3	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	274			526			836	822	484	868	862	272
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274			526			836	822	484	868	862	272
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			61	99	92	95	99	98
cM capacity (veh/h)	1289			1041			272	300	583	244	284	766

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	535	297	154	31
Volume Left	9	23	105	13
Volume Right	85	3	47	15
cSH	1289	1041	326	372
Volume to Capacity	0.01	0.02	0.47	0.08
Queue Length 95th (m)	0.2	0.5	18.4	2.1
Control Delay (s)	0.2	0.9	25.6	15.6
Lane LOS	A	A	D	C
Approach Delay (s)	0.2	0.9	25.6	15.6
Approach LOS			D	C

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
109: Atungauyait & Niaqunngusiariaq
04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	416	39	7	236	0	38	0	58	1	0	1
Future Volume (Veh/h)	1	416	39	7	236	0	38	0	58	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	452	42	8	257	0	41	0	63	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	257			494			749	748	473	811	769	257
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	257			494			749	748	473	811	769	257
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			87	100	89	100	100	100
cM capacity (veh/h)	1308			1070			326	338	591	265	329	782

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	495	265	104	2
Volume Left	1	8	41	1
Volume Right	42	0	63	1
cSH	1308	1070	447	395
Volume to Capacity	0.00	0.01	0.23	0.01
Queue Length 95th (m)	0.0	0.2	6.8	0.1
Control Delay (s)	0.0	0.3	15.5	14.2
Lane LOS	A	A	C	B
Approach Delay (s)	0.0	0.3	15.5	14.2
Approach LOS			C	B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
110: Niaqunngusiariaq & Road to Nowhere
04/25/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	148	326	214	13	10	76
Future Volume (Veh/h)	148	326	214	13	10	76
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	161	354	233	14	11	83
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	247				916	240
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	247				916	240
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				96	90
cM capacity (veh/h)	1319				265	799

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	515	247	94
Volume Left	161	0	11
Volume Right	0	14	83
cSH	1319	1700	647
Volume to Capacity	0.12	0.15	0.15
Queue Length 95th (m)	3.2	0.0	3.8
Control Delay (s)	3.4	0.0	11.5
Lane LOS	A		B
Approach Delay (s)	3.4	0.0	11.5
Approach LOS			B

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
111: Abe Okpik & Niaqunngusiariaq
04/25/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	218	98	18	150	79	78
Future Volume (vph)	218	98	18	150	79	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	237	107	20	163	86	85

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	344	183	171
Volume Left (vph)	0	20	86
Volume Right (vph)	107	0	85
Hadj (s)	-0.15	0.06	-0.16
Departure Headway (s)	4.4	4.8	4.9
Degree Utilization, x	0.42	0.24	0.23
Capacity (veh/h)	777	710	670
Control Delay (s)	10.6	9.3	9.5
Approach Delay (s)	10.6	9.3	9.5
Approach LOS	B	A	A

Intersection Summary			
Delay	10.0		
Level of Service	B		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
112: Abe Okpik/Tasilik & Niaqunngusiariaq
04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	53	46	13	66	4	34	4	9	6	2	13
Future Volume (vph)	13	53	46	13	66	4	34	4	9	6	2	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	58	50	14	72	4	37	4	10	7	2	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	122	90	51	23
Volume Left (vph)	14	14	37	7
Volume Right (vph)	50	4	10	14
Hadj (s)	-0.19	0.04	0.06	-0.27
Departure Headway (s)	4.0	4.2	4.4	4.1
Degree Utilization, x	0.13	0.11	0.06	0.03
Capacity (veh/h)	883	830	766	820
Control Delay (s)	7.6	7.7	7.7	7.3
Approach Delay (s)	7.6	7.7	7.7	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
101: Federal Rd & Qaqqamiut

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	2	3	24	75	4	11	83	132	57	7	75	4
Future Volume (Veh/h)	2	3	24	75	4	11	83	132	57	7	75	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	3	26	82	4	12	90	143	62	8	82	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	468	485	84	482	456	174	86			205		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	468	485	84	482	456	174	86			205		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	97	82	99	99	94			99		
cM capacity (veh/h)	470	451	975	456	468	869	1510			1366		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	31	98	295	94
Volume Left	2	82	90	8
Volume Right	26	12	62	4
cSH	825	484	1510	1366
Volume to Capacity	0.04	0.20	0.06	0.01
Queue Length 95th (m)	0.9	5.7	1.4	0.1
Control Delay (s)	9.5	14.3	2.7	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	9.5	14.3	2.7	0.7
Approach LOS	A	B		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
102: Allanngua & Akilliq/Ikaluktuutiak Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	48	33	1	56	0	51	0	4	0	0	0
Future Volume (vph)	0	48	33	1	56	0	51	0	4	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	52	36	1	61	0	55	0	4	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	88	62	59	0
Volume Left (vph)	0	1	55	0
Volume Right (vph)	36	0	4	0
Hadj (s)	-0.21	0.04	0.18	0.00
Departure Headway (s)	3.9	4.2	4.4	4.3
Degree Utilization, x	0.10	0.07	0.07	0.00
Capacity (veh/h)	904	847	785	814
Control Delay (s)	7.3	7.5	7.7	7.3
Approach Delay (s)	7.3	7.5	7.7	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
103: Allanngua/Mivvik Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	128	16	101	194	15	13	0	76	0	0	0
Future Volume (vph)	6	128	16	101	194	15	13	0	76	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	139	17	110	211	16	14	0	83	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	163	337	97	0
Volume Left (vph)	7	110	14	0
Volume Right (vph)	17	16	83	0
Hadj (s)	-0.02	0.07	-0.45	0.00
Departure Headway (s)	4.5	4.4	4.6	5.2
Degree Utilization, x	0.20	0.41	0.12	0.00
Capacity (veh/h)	774	795	713	625
Control Delay (s)	8.6	10.4	8.2	8.2
Approach Delay (s)	8.6	10.4	8.2	0.0
Approach LOS	A	B	A	A

Intersection Summary			
Delay	9.6		
Level of Service	A		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
104: Federal Rd & Ikaluktuutiak Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	98	1	112	0	2	0	243	469	6	1	283	103
Future Volume (Veh/h)	98	1	112	0	2	0	243	469	6	1	283	103
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	1	122	0	2	0	264	510	7	1	308	112
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1408	1411	364	1530	1464	514	420			517		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1408	1411	364	1530	1464	514	420			517		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	99	82	100	98	100	77			100		
cM capacity (veh/h)	94	106	681	64	99	561	1139			1049		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	230	2	781	421
Volume Left	107	0	264	1
Volume Right	122	0	7	112
cSH	173	99	1139	1049
Volume to Capacity	1.33	0.02	0.23	0.00
Queue Length 95th (m)	102.5	0.5	6.8	0.0
Control Delay (s)	232.8	42.3	5.1	0.0
Lane LOS	F	E	A	A
Approach Delay (s)	232.8	42.3	5.1	0.0
Approach LOS	F	E		

Intersection Summary			
Average Delay	40.2		
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	6	22	5	9	110	44	515	5	27	323	18
Future Volume (Veh/h)	18	6	22	5	9	110	44	515	5	27	323	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	7	24	5	10	120	48	560	5	29	351	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1202	1080	361	1105	1088	562	371			565		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1202	1080	361	1105	1088	562	371			565		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	97	96	97	95	77	96			97		
cM capacity (veh/h)	114	203	684	168	201	526	1188			1007		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	135	613	400
Volume Left	20	5	48	29
Volume Right	24	120	5	20
cSH	208	439	1188	1007
Volume to Capacity	0.25	0.31	0.04	0.03
Queue Length 95th (m)	7.1	9.8	1.0	0.7
Control Delay (s)	27.9	16.8	1.1	0.9
Lane LOS	D	C	A	A
Approach Delay (s)	27.9	16.8	1.1	0.9
Approach LOS	D	C		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	69	190	56	183	281	363	60	166	109	218	105	53
Future Volume (vph)	69	190	56	183	281	363	60	166	109	218	105	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	207	61	199	305	395	65	180	118	237	114	58

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	343	899	363	409
Volume Left (vph)	75	199	65	237
Volume Right (vph)	61	395	118	58
Hadj (s)	-0.03	-0.19	-0.13	0.06
Departure Headway (s)	9.3	8.9	9.1	9.2
Degree Utilization, x	0.89	2.22	0.92	1.04
Capacity (veh/h)	375	411	386	391
Control Delay (s)	53.3	578.4	58.7	87.3
Approach Delay (s)	53.3	578.4	58.7	87.3
Approach LOS	F	F	F	F

Intersection Summary			
Delay	295.5		
Level of Service	F		
Intersection Capacity Utilization	124.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	318	833	86	106	254
Future Volume (Veh/h)	105	318	833	86	106	254
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	346	905	93	115	276
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	998				1526	952
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	998				1526	952
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				0	12
cM capacity (veh/h)	693				108	315

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	460	998	391
Volume Left	114	0	115
Volume Right	0	93	276
cSH	693	1700	202
Volume to Capacity	0.16	0.59	1.94
Queue Length 95th (m)	4.4	0.0	218.6
Control Delay (s)	4.5	0.0	479.2
Lane LOS	A		F
Approach Delay (s)	4.5	0.0	479.2
Approach LOS			F

Intersection Summary			
Average Delay	102.5		
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	329	84	84	833	13	122	5	43	5	2	9
Future Volume (Veh/h)	23	329	84	84	833	13	122	5	43	5	2	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	358	91	91	905	14	133	5	47	5	2	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	919			449			1558	1554	404	1597	1593	912
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	919			449			1558	1554	404	1597	1593	912
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			0	95	93	93	98	97
cM capacity (veh/h)	743			1111			80	100	647	70	95	332

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	474	1010	185	17
Volume Left	25	91	133	5
Volume Right	91	14	47	10
cSH	743	1111	103	139
Volume to Capacity	0.03	0.08	1.79	0.12
Queue Length 95th (m)	0.8	2.0	113.1	3.1
Control Delay (s)	1.0	2.2	462.4	34.5
Lane LOS	A	A	F	D
Approach Delay (s)	1.0	2.2	462.4	34.5
Approach LOS			F	D

Intersection Summary			
Average Delay	52.7		
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
109: Atungauyait & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	339	23	33	843	0	47	1	34	1	0	1
Future Volume (Veh/h)	1	339	23	33	843	0	47	1	34	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	368	25	36	916	0	51	1	37	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	916			393			1372	1370	380	1408	1383	916
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	916			393			1372	1370	380	1408	1383	916
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			57	99	94	99	100	100
cM capacity (veh/h)	745			1166			120	141	667	107	139	330

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	394	952	89	2
Volume Left	1	36	51	1
Volume Right	25	0	37	1
cSH	745	1166	182	161
Volume to Capacity	0.00	0.03	0.49	0.01
Queue Length 95th (m)	0.0	0.7	18.1	0.3
Control Delay (s)	0.0	0.8	42.2	27.6
Lane LOS	A	A	E	D
Approach Delay (s)	0.0	0.8	42.2	27.6
Approach LOS			E	D

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
110: Niaqunngusiariaq & Road to Nowhere

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	276	1	0	651	13	2	0	0	11	0	267
Future Volume (Veh/h)	97	276	1	0	651	13	2	0	0	11	0	267
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	300	1	0	708	14	2	0	0	12	0	290
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	722			301			1516	1232	300	1226	1226	715
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	722			301			1516	1232	300	1226	1226	715
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			93	100	100	92	100	33
cM capacity (veh/h)	880			1260			29	156	739	141	157	431

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	406	722	2	302
Volume Left	105	0	2	12
Volume Right	1	14	0	290
cSH	880	1260	29	398
Volume to Capacity	0.12	0.00	0.07	0.76
Queue Length 95th (m)	3.1	0.0	1.6	47.2
Control Delay (s)	3.5	0.0	137.8	37.4
Lane LOS	A		F	E
Approach Delay (s)	3.5	0.0	137.8	37.4
Approach LOS			F	E

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
111: Abe Okpik & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	211	63	35	508	4	129	0	41	0	0	1
Future Volume (vph)	4	211	63	35	508	4	129	0	41	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	229	68	38	552	4	140	0	45	0	0	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	301	594	185	1
Volume Left (vph)	4	38	140	0
Volume Right (vph)	68	4	45	1
Hadj (s)	-0.10	0.04	0.04	-0.57
Departure Headway (s)	5.2	5.0	6.1	6.0
Degree Utilization, x	0.43	0.82	0.31	0.00
Capacity (veh/h)	655	713	549	511
Control Delay (s)	12.1	26.4	11.9	9.1
Approach Delay (s)	12.1	26.4	11.9	9.1
Approach LOS	B	D	B	A

Intersection Summary			
Delay	19.9		
Level of Service	C		
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
112: Abe Okpik/Tasilik & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	139	46	10	289	6	106	2	12	6	5	17
Future Volume (vph)	12	139	46	10	289	6	106	2	12	6	5	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	151	50	11	314	7	115	2	13	7	5	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	214	332	130	30
Volume Left (vph)	13	11	115	7
Volume Right (vph)	50	7	13	18
Hadj (s)	-0.09	0.03	0.15	-0.28
Departure Headway (s)	4.7	4.6	5.4	5.1
Degree Utilization, x	0.28	0.43	0.19	0.04
Capacity (veh/h)	739	746	609	609
Control Delay (s)	9.4	11.0	9.7	8.4
Approach Delay (s)	9.4	11.0	9.7	8.4
Approach LOS	A	B	A	A

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	74	44	10	7	74	58	51	9	101	2
Future Volume (Veh/h)	4	8	74	44	10	7	74	58	51	9	101	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	9	80	48	11	8	80	63	55	10	110	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	395	409	111	466	382	90	112			118		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395	409	111	466	382	90	112			118		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	92	89	98	99	95			99		
cM capacity (veh/h)	526	500	942	436	517	967	1478			1470		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	93	67	198	122
Volume Left	4	48	80	10
Volume Right	80	8	55	2
cSH	841	480	1478	1470
Volume to Capacity	0.11	0.14	0.05	0.01
Queue Length 95th (m)	2.8	3.7	1.3	0.2
Control Delay (s)	9.8	13.7	3.3	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	9.8	13.7	3.3	0.7
Approach LOS	A	B		

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	52	48	14	44	0	27	0	6	0	0	0
Future Volume (vph)	0	52	48	14	44	0	27	0	6	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	52	15	48	0	29	0	7	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	109	63	36	0
Volume Left (vph)	0	15	29	0
Volume Right (vph)	52	0	7	0
Hadj (s)	-0.25	0.08	0.08	0.00
Departure Headway (s)	3.8	4.2	4.3	4.3
Degree Utilization, x	0.11	0.07	0.04	0.00
Capacity (veh/h)	932	849	792	809
Control Delay (s)	7.3	7.5	7.5	7.3
Approach Delay (s)	7.3	7.5	7.5	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	235	29	133	28	128	16	4	176	15	3	5
Future Volume (vph)	10	235	29	133	28	128	16	4	176	15	3	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	255	32	145	30	139	17	4	191	16	3	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	298	314	212	24
Volume Left (vph)	11	145	17	16
Volume Right (vph)	32	139	191	5
Hadj (s)	-0.02	-0.14	-0.49	0.04
Departure Headway (s)	4.9	4.8	4.9	5.8
Degree Utilization, x	0.41	0.42	0.29	0.04
Capacity (veh/h)	692	716	655	523
Control Delay (s)	11.2	11.2	9.9	9.1
Approach Delay (s)	11.2	11.2	9.9	9.1
Approach LOS	B	B	A	A

Intersection Summary			
Delay	10.8		
Level of Service	B		
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	1	192	2	0	2	125	266	1	0	413	115
Future Volume (Veh/h)	83	1	192	2	0	2	125	266	1	0	413	115
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	1	209	2	0	2	136	289	1	0	449	125
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1075	1074	512	1282	1136	290	574			290		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1075	1074	512	1282	1136	290	574			290		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	99	63	97	100	100	86			100		
cM capacity (veh/h)	176	190	562	80	175	750	999			1272		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	300	4	426	574
Volume Left	90	2	136	0
Volume Right	209	2	1	125
cSH	338	144	999	1272
Volume to Capacity	0.89	0.03	0.14	0.00
Queue Length 95th (m)	64.6	0.6	3.6	0.0
Control Delay (s)	60.4	30.7	4.0	0.0
Lane LOS	F	D	A	
Approach Delay (s)	60.4	30.7	4.0	0.0
Approach LOS	F	D		

Intersection Summary			
Average Delay	15.3		
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	6	37	2	6	58	30	353	6	86	526	22
Future Volume (Veh/h)	15	6	37	2	6	58	30	353	6	86	526	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	7	40	2	7	63	33	384	7	93	572	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1290	1227	584	1267	1236	388	596			391		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1290	1227	584	1267	1236	388	596			391		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	96	92	98	96	90	97			92		
cM capacity (veh/h)	112	159	512	119	157	661	980			1168		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	72	424	689
Volume Left	16	2	33	93
Volume Right	40	63	7	24
cSH	238	459	980	1168
Volume to Capacity	0.26	0.16	0.03	0.08
Queue Length 95th (m)	7.8	4.2	0.8	2.0
Control Delay (s)	25.5	14.3	1.0	2.0
Lane LOS	D	B	A	A
Approach Delay (s)	25.5	14.3	1.0	2.0
Approach LOS	D	B		

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	76.6%	ICU Level of Service		D
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	49	313	94	189	233	207	98	91	165	376	162	49
Future Volume (vph)	49	313	94	189	233	207	98	91	165	376	162	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	340	102	205	253	225	107	99	179	409	176	53

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	495	683	385	638
Volume Left (vph)	53	205	107	409
Volume Right (vph)	102	225	179	53
Hadj (s)	-0.07	-0.10	-0.19	0.11
Departure Headway (s)	9.5	9.5	9.4	9.7
Degree Utilization, x	1.31	1.79	1.00	1.71
Capacity (veh/h)	386	385	385	376
Control Delay (s)	182.8	390.4	78.0	356.1
Approach Delay (s)	182.8	390.4	78.0	356.1
Approach LOS	F	F	F	F

Intersection Summary				
Delay	279.2			
Level of Service	F			
Intersection Capacity Utilization	139.5%	ICU Level of Service		H
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	260	724	450	125	112	155
Future Volume (Veh/h)	260	724	450	125	112	155
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	283	787	489	136	122	168
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	625				1910	557
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	625				1910	557
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	70				0	68
cM capacity (veh/h)	956				53	530

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1070	625	290
Volume Left	283	0	122
Volume Right	0	136	168
cSH	956	1700	110
Volume to Capacity	0.30	0.37	2.63
Queue Length 95th (m)	9.4	0.0	201.8
Control Delay (s)	6.9	0.0	820.1
Lane LOS	A		F
Approach Delay (s)	6.9	0.0	820.1
Approach LOS			F

Intersection Summary				
Average Delay	123.5			
Intersection Capacity Utilization	121.2%	ICU Level of Service		H
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	732	115	57	452	3	118	2	88	12	3	14
Future Volume (Veh/h)	8	732	115	57	452	3	118	2	88	12	3	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	796	125	62	491	3	128	2	96	13	3	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	494			921			1510	1494	858	1590	1556	492
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	494			921			1510	1494	858	1590	1556	492
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			92			0	98	73	78	97	97
cM capacity (veh/h)	1070			741			88	112	356	58	103	576

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	930	556	226	31
Volume Left	9	62	128	13
Volume Right	125	3	96	15
cSH	1070	741	129	111
Volume to Capacity	0.01	0.08	1.75	0.28
Queue Length 95th (m)	0.2	2.1	129.7	8.0
Control Delay (s)	0.2	2.2	425.5	49.4
Lane LOS	A	A	F	E
Approach Delay (s)	0.2	2.2	425.5	49.4
Approach LOS			F	E

Intersection Summary				
Average Delay	56.9			
Intersection Capacity Utilization	96.0%	ICU Level of Service		F
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
109: Atungauyait & Niaqunngusiariaq
04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	1	781	45	23	467	0	43	0	83	1	0	1
Future Volume (Veh/h)	1	781	45	23	467	0	43	0	83	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	849	49	25	508	0	47	0	90	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	508			898			1434	1434	874	1524	1458	508
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	508			898			1434	1434	874	1524	1458	508
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			57	100	74	99	100	100
cM capacity (veh/h)	1057			756			108	129	349	70	125	565

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	899	533	137	2
Volume Left	1	25	47	1
Volume Right	49	0	90	1
cSH	1057	756	198	124
Volume to Capacity	0.00	0.03	0.69	0.02
Queue Length 95th (m)	0.0	0.8	32.7	0.4
Control Delay (s)	0.0	0.9	56.0	34.4
Lane LOS	A	A	F	D
Approach Delay (s)	0.0	0.9	56.0	34.4
Approach LOS			F	D

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
110: Niaqunngusiariaq & Road to Nowhere
04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	281	578	2	0	380	17	1	0	0	16	0	156
Future Volume (Veh/h)	281	578	2	0	380	17	1	0	0	16	0	156
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	305	628	2	0	413	18	1	0	0	17	0	170
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	431			630			1831	1670	629	1661	1662	422
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	431			630			1831	1670	629	1661	1662	422
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	73			100			97	100	100	72	100	73
cM capacity (veh/h)	1129			952			34	70	482	61	71	632

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	935	431	1	187
Volume Left	305	0	1	17
Volume Right	2	18	0	170
cSH	1129	952	34	342
Volume to Capacity	0.27	0.00	0.03	0.55
Queue Length 95th (m)	8.4	0.0	0.7	23.7
Control Delay (s)	5.8	0.0	114.1	27.5
Lane LOS	A		F	D
Approach Delay (s)	5.8	0.0	114.1	27.5
Approach LOS			F	D

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
111: Abe Okpik & Niaqunngusiariaq
04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	454	115	20	299	3	96	0	81	1	0	3
Future Volume (vph)	3	454	115	20	299	3	96	0	81	1	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	493	125	22	325	3	104	0	88	1	0	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	621	350	192	4
Volume Left (vph)	3	22	104	1
Volume Right (vph)	125	3	88	3
Hadj (s)	-0.09	0.04	-0.13	-0.37
Departure Headway (s)	5.0	5.4	6.1	6.5
Degree Utilization, x	0.86	0.53	0.33	0.01
Capacity (veh/h)	710	638	552	478
Control Delay (s)	30.1	14.3	12.1	9.6
Approach Delay (s)	30.1	14.3	12.1	9.6
Approach LOS	D	B	B	A

Intersection Summary			
Delay	22.3		
Level of Service	C		
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
112: Abe Okpik/Tasilik & Niaqunngusiariaq
04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	275	60	16	177	5	71	4	10	7	2	17
Future Volume (vph)	19	275	60	16	177	5	71	4	10	7	2	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	299	65	17	192	5	77	4	11	8	2	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	385	214	92	28
Volume Left (vph)	21	17	77	8
Volume Right (vph)	65	5	11	18
Hadj (s)	-0.06	0.04	0.13	-0.29
Departure Headway (s)	4.4	4.7	5.4	5.1
Degree Utilization, x	0.47	0.28	0.14	0.04
Capacity (veh/h)	790	730	595	604
Control Delay (s)	11.4	9.5	9.3	8.4
Approach Delay (s)	11.4	9.5	9.3	8.4
Approach LOS	B	A	A	A

Intersection Summary			
Delay	10.4		
Level of Service	B		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
101: Federal Rd & Qaqqamiut

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	3	24	75	4	11	83	132	57	7	75	4
Future Volume (Veh/h)	2	3	24	75	4	11	83	132	57	7	75	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	3	26	82	4	12	90	143	62	8	82	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	468	485	84	482	456	174	86			205		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	468	485	84	482	456	174	86			205		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	97	82	99	99	94			99		
cM capacity (veh/h)	470	451	975	456	468	869	1510			1366		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	31	98	295	94
Volume Left	2	82	90	8
Volume Right	26	12	62	4
cSH	825	484	1510	1366
Volume to Capacity	0.04	0.20	0.06	0.01
Queue Length 95th (m)	0.9	5.7	1.4	0.1
Control Delay (s)	9.5	14.3	2.7	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	9.5	14.3	2.7	0.7
Approach LOS	A	B		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
102: Allanngua & Akilliq/Ikaluktuutiak Dr

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	48	33	1	56	0	51	0	4	0	0	0
Future Volume (vph)	0	48	33	1	56	0	51	0	4	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	52	36	1	61	0	55	0	4	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	88	62	59	0
Volume Left (vph)	0	1	55	0
Volume Right (vph)	36	0	4	0
Hadj (s)	-0.21	0.04	0.18	0.00
Departure Headway (s)	3.9	4.2	4.4	4.3
Degree Utilization, x	0.10	0.07	0.07	0.00
Capacity (veh/h)	904	847	785	814
Control Delay (s)	7.3	7.5	7.7	7.3
Approach Delay (s)	7.3	7.5	7.7	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
103: Allanngua/Mivvik Street

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	128	16	101	194	15	13	0	76	0	0	0
Future Volume (vph)	6	128	16	101	194	15	13	0	76	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	139	17	110	211	16	14	0	83	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	163	337	97	0
Volume Left (vph)	7	110	14	0
Volume Right (vph)	17	16	83	0
Hadj (s)	-0.02	0.07	-0.45	0.00
Departure Headway (s)	4.5	4.4	4.6	5.2
Degree Utilization, x	0.20	0.41	0.12	0.00
Capacity (veh/h)	774	795	713	625
Control Delay (s)	8.6	10.4	8.2	8.2
Approach Delay (s)	8.6	10.4	8.2	0.0
Approach LOS	A	B	A	A

Intersection Summary			
Delay	9.6		
Level of Service	A		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
104: Federal Rd & Ikaluktuutiak Dr

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1	112	0	2	0	243	287	6	1	174	103
Future Volume (Veh/h)	98	1	112	0	2	0	243	287	6	1	174	103
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	1	122	0	2	0	264	312	7	1	189	112
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								240				
pX, platoon unblocked												
vC, conflicting volume	1092	1094	245	1213	1146	316	301			319		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1092	1094	245	1213	1146	316	301			319		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	33	99	85	100	99	100	79			100		
cM capacity (veh/h)	160	169	794	112	157	725	1260			1241		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	230	2	583	302
Volume Left	107	0	264	1
Volume Right	122	0	7	112
cSH	277	157	1260	1241
Volume to Capacity	0.83	0.01	0.21	0.00
Queue Length 95th (m)	51.7	0.3	6.0	0.0
Control Delay (s)	59.2	28.2	5.1	0.0
Lane LOS	F	D	A	A
Approach Delay (s)	59.2	28.2	5.1	0.0
Approach LOS	F	D		

Intersection Summary			
Average Delay	14.9		
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	6	22	5	9	10	44	333	5	27	214	18
Future Volume (Veh/h)	18	6	22	5	9	10	44	333	5	27	214	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	7	24	5	10	11	48	362	5	29	233	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								155				
pX, platoon unblocked												
vC, conflicting volume	778	764	243	789	772	364	253			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	778	764	243	789	772	364	253			367		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	98	97	98	97	98	96			98		
cM capacity (veh/h)	287	314	796	281	311	680	1312			1192		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	26	415	282
Volume Left	20	5	48	29
Volume Right	24	11	5	20
cSH	418	393	1312	1192
Volume to Capacity	0.12	0.07	0.04	0.02
Queue Length 95th (m)	3.1	1.6	0.9	0.6
Control Delay (s)	14.8	14.8	1.2	1.0
Lane LOS	B	B	A	A
Approach Delay (s)	14.8	14.8	1.2	1.0
Approach LOS	B	B		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	329	84	84	833	13	122	5	43	5	2	9
Future Volume (Veh/h)	23	329	84	84	833	13	122	5	43	5	2	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	358	91	91	905	14	133	5	47	5	2	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		284										
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	
vC, conflicting volume	919			449			1558	1554	404	1597	1593	912
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	919			397			1561	1557	349	1602	1598	912
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			0	95	93	92	98	97
cM capacity (veh/h)	743			1107			76	95	661	66	90	332

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	474	1010	133	52	5	12
Volume Left	25	91	133	0	5	0
Volume Right	91	14	0	47	0	10
cSH	743	1107	76	421	66	229
Volume to Capacity	0.03	0.08	1.76	0.12	0.08	0.05
Queue Length 95th (m)	0.8	2.0	87.5	3.2	1.8	1.3
Control Delay (s)	1.0	2.2	483.1	14.8	63.8	21.6
Lane LOS	A	A	F	B	F	C
Approach Delay (s)	1.0	2.2	351.4		34.0	
Approach LOS			F		D	

Intersection Summary			
Average Delay	40.5		
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	339	23	33	843	0	47	1	34	1	0	1
Future Volume (Veh/h)	1	339	23	33	843	0	47	1	34	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	368	25	36	916	0	51	1	37	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	916			393			1372	1370	380	1408	1383	916
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	916			393			1372	1370	380	1408	1383	916
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			57	99	94	99	100	100
cM capacity (veh/h)	745			1166			120	141	667	107	139	330

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	394	952	89	2
Volume Left	1	36	51	1
Volume Right	25	0	37	1
cSH	745	1166	182	161
Volume to Capacity	0.00	0.03	0.49	0.01
Queue Length 95th (m)	0.0	0.7	18.1	0.3
Control Delay (s)	0.0	0.8	42.2	27.6
Lane LOS	A	A	E	D
Approach Delay (s)	0.0	0.8	42.2	27.6
Approach LOS			E	D

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	276	1	0	651	13	2	0	0	11	0	267
Future Volume (Veh/h)	97	276	1	0	651	13	2	0	0	11	0	267
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	300	1	0	708	14	2	0	0	12	0	290
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	722			301			1516	1232	300	1226	1226	715
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	722			301			1516	1232	300	1226	1226	715
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			93	100	100	92	100	33
cM capacity (veh/h)	880			1260			29	156	739	141	157	431

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	406	722	2	302
Volume Left	105	0	2	12
Volume Right	1	14	0	290
cSH	880	1260	29	398
Volume to Capacity	0.12	0.00	0.07	0.76
Queue Length 95th (m)	3.1	0.0	1.6	47.2
Control Delay (s)	3.5	0.0	137.8	37.4
Lane LOS	A		F	E
Approach Delay (s)	3.5	0.0	137.8	37.4
Approach LOS			F	E

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

111: Abe Okpik & Niaqunngusiariaq

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	211	63	35	508	4	129	0	41	0	0	1
Future Volume (vph)	4	211	63	35	508	4	129	0	41	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	229	68	38	552	4	140	0	45	0	0	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	301	594	185	1
Volume Left (vph)	4	38	140	0
Volume Right (vph)	68	4	45	1
Hadj (s)	-0.10	0.04	0.04	-0.57
Departure Headway (s)	5.2	5.0	6.1	6.0
Degree Utilization, x	0.43	0.82	0.31	0.00
Capacity (veh/h)	655	713	549	511
Control Delay (s)	12.1	26.4	11.9	9.1
Approach Delay (s)	12.1	26.4	11.9	9.1
Approach LOS	B	D	B	A

Intersection Summary			
Delay	19.9		
Level of Service	C		
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

112: Abe Okpik/Tasilik & Niaqunngusiariaq

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	139	46	10	289	6	106	2	12	6	5	17
Future Volume (vph)	12	139	46	10	289	6	106	2	12	6	5	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	151	50	11	314	7	115	2	13	7	5	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	214	332	130	30
Volume Left (vph)	13	11	115	7
Volume Right (vph)	50	7	13	18
Hadj (s)	-0.09	0.03	0.15	-0.28
Departure Headway (s)	4.7	4.6	5.4	5.1
Degree Utilization, x	0.28	0.43	0.19	0.04
Capacity (veh/h)	739	746	609	609
Control Delay (s)	9.4	11.0	9.7	8.4
Approach Delay (s)	9.4	11.0	9.7	8.4
Approach LOS	A	B	A	A

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	190	56	183	281	50	60	166	109	50	105	53
Future Volume (vph)	69	190	56	183	281	50	60	166	109	50	105	53
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			0.96			0.97	
Flt Protected		0.99			0.98			0.99			0.99	
Satd. Flow (prot)		1627			1634			1597			1608	
Flt Permitted		0.81			0.75			0.91			0.84	
Satd. Flow (perm)		1338			1239			1459			1361	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	207	61	199	305	54	65	180	118	54	114	58
RTOR Reduction (vph)	0	11	0	0	6	0	0	20	0	0	15	0
Lane Group Flow (vph)	0	332	0	0	552	0	0	343	0	0	211	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		35.6			35.6			24.4			24.4	
Effective Green, g (s)		35.6			35.6			24.4			24.4	
Actuated g/C Ratio		0.49			0.49			0.34			0.34	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		661			612			494			461	
v/s Ratio Prot												
v/s Ratio Perm		0.25			c0.45			c0.23			0.16	
v/c Ratio		0.50			0.90			0.69			0.46	
Uniform Delay, d1		12.2			16.6			20.6			18.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			16.6			7.8			3.3	
Delay (s)		12.8			33.2			28.4			21.9	
Level of Service		B			C			C			C	
Approach Delay (s)		12.8			33.2			28.4			21.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	105	318	833	86	106	254
Future Volume (vph)	105	318	833	86	106	254
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.99		0.90	
Flt Protected	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1601	1685	1664		1503	
Flt Permitted	0.14	1.00	1.00		0.99	
Satd. Flow (perm)	235	1685	1664		1503	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	346	905	93	115	276
RTOR Reduction (vph)	0	0	4	0	87	0
Lane Group Flow (vph)	114	346	994	0	304	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	66.0	66.0	66.0		21.4	
Effective Green, g (s)	66.0	66.0	66.0		21.4	
Actuated g/C Ratio	0.66	0.66	0.66		0.22	
Clearance Time (s)	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	156	1118	1104		323	
v/s Ratio Prot		0.21	c0.60		c0.20	
v/s Ratio Perm	0.49					
v/c Ratio	0.73	0.31	0.90		0.94	
Uniform Delay, d1	10.9	7.1	14.0		38.4	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	25.8	0.7	11.7		34.8	
Delay (s)	36.7	7.8	25.7		73.1	
Level of Service	D	A	C		E	
Approach Delay (s)		15.0	25.7		73.1	
Approach LOS		B	C		E	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Volume (veh/h)	4	8	74	44	10	7	74	58	51	9	101	2
Future Volume (Veh/h)	4	8	74	44	10	7	74	58	51	9	101	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	9	80	48	11	8	80	63	55	10	110	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	395	409	111	466	382	90	112			118		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395	409	111	466	382	90	112			118		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	92	89	98	99	95			99		
cM capacity (veh/h)	526	500	942	436	517	967	1478			1470		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	93	67	198	122
Volume Left	4	48	80	10
Volume Right	80	8	55	2
cSH	841	480	1478	1470
Volume to Capacity	0.11	0.14	0.05	0.01
Queue Length 95th (m)	2.8	3.7	1.3	0.2
Control Delay (s)	9.8	13.7	3.3	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	9.8	13.7	3.3	0.7
Approach LOS	A	B		

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	52	48	14	44	0	27	0	6	0	0	0
Future Volume (vph)	0	52	48	14	44	0	27	0	6	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	52	15	48	0	29	0	7	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	109	63	36	0
Volume Left (vph)	0	15	29	0
Volume Right (vph)	52	0	7	0
Hadj (s)	-0.25	0.08	0.08	0.00
Departure Headway (s)	3.8	4.2	4.3	4.3
Degree Utilization, x	0.11	0.07	0.04	0.00
Capacity (veh/h)	932	849	792	809
Control Delay (s)	7.3	7.5	7.5	7.3
Approach Delay (s)	7.3	7.5	7.5	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	235	29	133	128	28	16	4	176	15	3	5
Future Volume (vph)	10	235	29	133	128	28	16	4	176	15	3	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	255	32	145	139	30	17	4	191	16	3	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	298	314	212	24
Volume Left (vph)	11	145	17	16
Volume Right (vph)	32	30	191	5
Hadj (s)	-0.02	0.07	-0.49	0.04
Departure Headway (s)	4.9	5.0	5.0	5.9
Degree Utilization, x	0.41	0.44	0.29	0.04
Capacity (veh/h)	689	687	651	519
Control Delay (s)	11.3	11.8	10.0	9.1
Approach Delay (s)	11.3	11.8	10.0	9.1
Approach LOS	B	B	B	A

Intersection Summary			
Delay	11.1		
Level of Service	B		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Volume (veh/h)	83	1	192	2	0	2	125	163	1	0	225	115
Future Volume (Veh/h)	83	1	192	2	0	2	125	163	1	0	225	115
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	1	209	2	0	2	136	177	1	0	245	125
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								240				
pX, platoon unblocked												
vC, conflicting volume	759	758	308	966	820	178	370			178		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	759	758	308	966	820	178	370			178		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	71	99	100	100	89			100		
cM capacity (veh/h)	294	298	732	152	274	866	1189			1398		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	300	4	314	370
Volume Left	90	2	136	0
Volume Right	209	2	1	125
cSH	504	259	1189	1398
Volume to Capacity	0.59	0.02	0.11	0.00
Queue Length 95th (m)	29.1	0.4	2.9	0.0
Control Delay (s)	22.1	19.1	4.3	0.0
Lane LOS	C	C	A	
Approach Delay (s)	22.1	19.1	4.3	0.0
Approach LOS	C	C		

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

105: Federal Rd & Nunavut

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	6	37	2	6	58	30	250	6	86	338	22
Future Volume (Veh/h)	15	6	37	2	6	58	30	250	6	86	338	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	7	40	2	7	63	33	272	7	93	367	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								155				
pX, platoon unblocked												
vC, conflicting volume	973	910	379	950	918	276	391			279		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	973	910	379	950	918	276	391			279		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	97	94	99	97	92	97			93		
cM capacity (veh/h)	192	247	668	204	245	763	1168			1284		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	72	312	484
Volume Left	16	2	33	93
Volume Right	40	63	7	24
cSH	367	595	1168	1284
Volume to Capacity	0.17	0.12	0.03	0.07
Queue Length 95th (m)	4.6	3.1	0.7	1.8
Control Delay (s)	16.8	11.9	1.1	2.2
Lane LOS	C	B	A	A
Approach Delay (s)	16.8	11.9	1.1	2.2
Approach LOS	C	B		

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	61.6%	ICU Level of Service		B
Analysis Period (min)	15			

108: Queen Elizabeth

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	732	115	57	452	3	118	2	88	12	3	14
Future Volume (Veh/h)	8	732	115	57	452	3	118	2	88	12	3	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	796	125	62	491	3	128	2	96	13	3	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		284										
pX, platoon unblocked				0.57			0.57	0.57	0.57	0.57	0.57	
vC, conflicting volume	494			921			1510	1494	858	1590	1556	492
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	494			483			1517	1490	373	1658	1598	492
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			90			0	97	75	56	94	97
cM capacity (veh/h)	1070			615			48	63	383	30	54	576

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	930	556	128	98	13	18
Volume Left	9	62	128	0	13	0
Volume Right	125	3	0	96	0	15
cSH	1070	615	48	347	30	221
Volume to Capacity	0.01	0.10	2.69	0.28	0.44	0.08
Queue Length 95th (m)	0.2	2.5	103.2	8.7	10.6	2.0
Control Delay (s)	0.2	2.7	946.2	19.4	199.3	22.8
Lane LOS	A	A	F	C	F	C
Approach Delay (s)	0.2	2.7	544.3		96.8	
Approach LOS			F		F	

Intersection Summary				
Average Delay	73.3			
Intersection Capacity Utilization	90.1%	ICU Level of Service		E
Analysis Period (min)	15			

109: Atungauyait & Niaqunngusiariaq

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	781	45	23	467	0	43	0	83	1	0	1
Future Volume (Veh/h)	1	781	45	23	467	0	43	0	83	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	849	49	25	508	0	47	0	90	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	508			898			1434	1434	874	1524	1458	508
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	508			898			1434	1434	874	1524	1458	508
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			57	100	74	99	100	100
cM capacity (veh/h)	1057			756			108	129	349	70	125	565

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	899	533	137	2
Volume Left	1	25	47	1
Volume Right	49	0	90	1
cSH	1057	756	198	124
Volume to Capacity	0.00	0.03	0.69	0.02
Queue Length 95th (m)	0.0	0.8	32.7	0.4
Control Delay (s)	0.0	0.9	56.0	34.4
Lane LOS	A	A	F	D
Approach Delay (s)	0.0	0.9	56.0	34.4
Approach LOS			F	D

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	65.4%	ICU Level of Service		C
Analysis Period (min)	15			

110: Niaqunngusiariaq & Road to Nowhere

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	578	2	0	380	17	1	0	0	16	0	156
Future Volume (Veh/h)	281	578	2	0	380	17	1	0	0	16	0	156
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	305	628	2	0	413	18	1	0	0	17	0	170
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	431			630			1831	1670	629	1661	1662	422
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	431			630			1831	1670	629	1661	1662	422
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	73			100			97	100	100	72	100	73
cM capacity (veh/h)	1129			952			34	70	482	61	71	632

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	935	431	1	187
Volume Left	305	0	1	17
Volume Right	2	18	0	170
cSH	1129	952	34	342
Volume to Capacity	0.27	0.00	0.03	0.55
Queue Length 95th (m)	8.4	0.0	0.7	23.7
Control Delay (s)	5.8	0.0	114.1	27.5
Lane LOS	A		F	D
Approach Delay (s)	5.8	0.0	114.1	27.5
Approach LOS			F	D

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	96.3%	ICU Level of Service		F
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	313	94	189	233	50	98	91	165	50	162	49
Future Volume (vph)	49	313	94	189	233	50	98	91	165	50	162	49
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.94			0.97	
Flt Protected		0.99			0.98			0.99			0.99	
Satd. Flow (prot)		1630			1629			1558			1627	
Flt Permitted		0.91			0.63			0.78			0.85	
Satd. Flow (perm)		1484			1050			1234			1404	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	340	102	205	253	54	107	99	179	54	176	53
RTOR Reduction (vph)	0	13	0	0	6	0	0	41	0	0	11	0
Lane Group Flow (vph)	0	482	0	0	506	0	0	344	0	0	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		36.8			36.8			24.1			24.1	
Effective Green, g (s)		36.8			36.8			24.1			24.1	
Actuated g/C Ratio		0.50			0.50			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		749			530			407			464	
v/s Ratio Prot												
v/s Ratio Perm		0.32			c0.48			c0.28			0.19	
v/c Ratio		0.64			0.95			0.85			0.59	
Uniform Delay, d1		13.2			17.3			22.7			20.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.9			27.9			19.0			5.4	
Delay (s)		15.1			45.1			41.7			25.6	
Level of Service		B			D			D			C	
Approach Delay (s)		15.1			45.1			41.7			25.6	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	260	724	450	125	112	155
Future Volume (vph)	260	724	450	125	112	155
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.97		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1601	1685	1636		1521	
Flt Permitted	0.31	1.00	1.00		0.98	
Satd. Flow (perm)	528	1685	1636		1521	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	787	489	136	122	168
RTOR Reduction (vph)	0	0	14	0	51	0
Lane Group Flow (vph)	283	787	611	0	239	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	40.6	40.6	40.6		19.7	
Effective Green, g (s)	40.6	40.6	40.6		19.7	
Actuated g/C Ratio	0.56	0.56	0.56		0.27	
Clearance Time (s)	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	296	946	918		414	
v/s Ratio Prot		0.47	0.37		c0.16	
v/s Ratio Perm	c0.54					
v/c Ratio	0.96	0.83	0.67		0.58	
Uniform Delay, d1	15.0	13.0	11.1		22.7	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	40.2	6.3	1.8		5.8	
Delay (s)	55.2	19.4	12.9		28.5	
Level of Service	E	B	B		C	
Approach Delay (s)		28.8	12.9		28.5	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
101: Federal Rd & Qaqqamiut 04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	3	24	75	4	11	83	132	57	7	75	4
Future Volume (Veh/h)	2	3	24	75	4	11	83	132	57	7	75	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	3	26	82	4	12	90	143	62	8	82	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	468	485	84	482	456	174	86			205		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	468	485	84	482	456	174	86			205		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	97	82	99	99	94			99		
cM capacity (veh/h)	470	451	975	456	468	869	1510			1366		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	31	98	295	94
Volume Left	2	82	90	8
Volume Right	26	12	62	4
cSH	825	484	1510	1366
Volume to Capacity	0.04	0.20	0.06	0.01
Queue Length 95th (m)	0.9	5.7	1.4	0.1
Control Delay (s)	9.5	14.3	2.7	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	9.5	14.3	2.7	0.7
Approach LOS	A	B		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
102: Allanngua & Akilliq/Ikaluktuutiak Dr 04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	48	33	1	56	0	51	0	4	0	0	0
Future Volume (vph)	0	48	33	1	56	0	51	0	4	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	52	36	1	61	0	55	0	4	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	88	62	59	0
Volume Left (vph)	0	1	55	0
Volume Right (vph)	36	0	4	0
Hadj (s)	-0.21	0.04	0.18	0.00
Departure Headway (s)	3.9	4.2	4.4	4.3
Degree Utilization, x	0.10	0.07	0.07	0.00
Capacity (veh/h)	904	847	785	814
Control Delay (s)	7.3	7.5	7.7	7.3
Approach Delay (s)	7.3	7.5	7.7	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
103: Allanngua/Mivvik Street 04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	128	16	101	194	15	13	0	76	0	0	0
Future Volume (vph)	6	128	16	101	194	15	13	0	76	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	139	17	110	211	16	14	0	83	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	163	337	97	0
Volume Left (vph)	7	110	14	0
Volume Right (vph)	17	16	83	0
Hadj (s)	-0.02	0.07	-0.45	0.00
Departure Headway (s)	4.5	4.4	4.6	5.2
Degree Utilization, x	0.20	0.41	0.12	0.00
Capacity (veh/h)	774	795	713	625
Control Delay (s)	8.6	10.4	8.2	8.2
Approach Delay (s)	8.6	10.4	8.2	0.0
Approach LOS	A	B	A	A

Intersection Summary			
Delay	9.6		
Level of Service	A		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
104: Federal Rd & Ikaluktuutiak Dr 04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	98	1	112	0	2	0	243	287	6	1	174	103
Future Volume (vph)	98	1	112	0	2	0	243	287	6	1	174	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	1	122	0	2	0	264	312	7	1	189	112

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	230	2	583	302
Volume Left (vph)	107	0	264	1
Volume Right (vph)	122	0	7	112
Hadj (s)	-0.19	0.03	0.12	-0.19
Departure Headway (s)	5.9	6.8	5.2	5.3
Degree Utilization, x	0.38	0.00	0.84	0.44
Capacity (veh/h)	566	457	682	647
Control Delay (s)	12.5	9.9	29.4	12.4
Approach Delay (s)	12.5	9.9	29.4	12.4
Approach LOS	B	A	D	B

Intersection Summary			
Delay	21.3		
Level of Service	C		
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
105: Federal Rd & Nunavut

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (veh/h)	18	6	22	5	9	110	44	333	5	27	214	18
Future Volume (Veh/h)	18	6	22	5	9	110	44	333	5	27	214	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	7	24	5	10	120	48	362	5	29	233	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								155				
pX, platoon unblocked												
vC, conflicting volume	886	764	243	789	772	364	253			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	886	764	243	789	772	364	253			367		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	98	97	98	97	82	96			98		
cM capacity (veh/h)	203	314	796	281	311	680	1312			1192		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	135	415	282
Volume Left	20	5	48	29
Volume Right	24	120	5	20
cSH	338	596	1312	1192
Volume to Capacity	0.15	0.23	0.04	0.02
Queue Length 95th (m)	4.0	6.6	0.9	0.6
Control Delay (s)	17.5	12.8	1.2	1.0
Lane LOS	C	B	A	A
Approach Delay (s)	17.5	12.8	1.2	1.0
Approach LOS	C	B		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
111: Abe Okpik & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	211	63	35	508	4	129	0	41	0	0	1
Future Volume (vph)	4	211	63	35	508	4	129	0	41	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	229	68	38	552	4	140	0	45	0	0	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	301	594	185	1
Volume Left (vph)	4	38	140	0
Volume Right (vph)	68	4	45	1
Hadj (s)	-0.10	0.04	0.04	-0.57
Departure Headway (s)	5.2	5.0	6.1	6.0
Degree Utilization, x	0.43	0.82	0.31	0.00
Capacity (veh/h)	655	713	549	511
Control Delay (s)	12.1	26.4	11.9	9.1
Approach Delay (s)	12.1	26.4	11.9	9.1
Approach LOS	B	D	B	A

Intersection Summary			
Delay	19.9		
Level of Service	C		
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
112: Abe Okpik/Tasilik & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	139	46	10	289	6	106	2	12	6	5	17
Future Volume (vph)	12	139	46	10	289	6	106	2	12	6	5	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	151	50	11	314	7	115	2	13	7	5	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	214	332	130	30
Volume Left (vph)	13	11	115	7
Volume Right (vph)	50	7	13	18
Hadj (s)	-0.09	0.03	0.15	-0.28
Departure Headway (s)	4.7	4.6	5.4	5.1
Degree Utilization, x	0.28	0.43	0.19	0.04
Capacity (veh/h)	739	746	609	609
Control Delay (s)	9.4	11.0	9.7	8.4
Approach Delay (s)	9.4	11.0	9.7	8.4
Approach LOS	A	B	A	A

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
106: Queen Elizabeth/Federal Rd & Mivvik Street/Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	190	56	183	281	50	60	166	109	50	105	53
Future Volume (vph)	69	190	56	183	281	50	60	166	109	50	105	53
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			0.96			0.97	
Flt Protected		0.99			0.98			0.99			0.99	
Satd. Flow (prot)		1627			1634			1597			1608	
Flt Permitted		0.81			0.74			0.90			0.84	
Satd. Flow (perm)		1334			1233			1457			1370	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	207	61	199	305	54	65	180	118	54	114	58
RTOR Reduction (vph)	0	10	0	0	5	0	0	21	0	0	15	0
Lane Group Flow (vph)	0	333	0	0	553	0	0	342	0	0	211	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		36.5			36.5			26.3			26.3	
Effective Green, g (s)		36.5			36.5			26.3			26.3	
Actuated g/C Ratio		0.49			0.49			0.35			0.35	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		650			601			512			481	
v/s Ratio Prot												
v/s Ratio Perm		0.25			c0.45			c0.23			0.15	
v/c Ratio		0.51			0.92			0.67			0.44	
Uniform Delay, d1		13.1			17.8			20.6			18.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			19.2			6.8			2.9	
Delay (s)		13.8			37.0			27.3			21.5	
Level of Service		B			D			C			C	
Approach Delay (s)		13.8			37.0			27.3			21.5	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Niaqunngusiariaq & Saputi

04/25/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	105	318	833	86	106	254
Future Volume (vph)	105	318	833	86	106	254
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1601	1685	1664		1601	1432
Flt Permitted	0.19	1.00	1.00		0.95	1.00
Satd. Flow (perm)	314	1685	1664		1601	1432
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	346	905	93	115	276
RTOR Reduction (vph)	0	0	3	0	0	154
Lane Group Flow (vph)	114	346	995	0	115	122
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	66.3	66.3	66.3		13.2	13.2
Effective Green, g (s)	66.3	66.3	66.3		13.2	13.2
Actuated g/C Ratio	0.72	0.72	0.72		0.14	0.14
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	227	1220	1205		230	206
v/s Ratio Prot		0.21	c0.60		0.07	
v/s Ratio Perm	0.36					c0.09
v/c Ratio	0.50	0.28	0.83		0.50	0.59
Uniform Delay, d1	5.5	4.4	8.6		36.1	36.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.7	0.6	6.5		1.7	4.5
Delay (s)	13.2	5.0	15.2		37.8	41.1
Level of Service	B	A	B		D	D
Approach Delay (s)		7.0	15.2		40.2	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
108: Queen Elizabeth

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	329	84	84	833	13	122	5	43	5	2	9
Future Volume (vph)	23	329	84	84	833	13	122	5	43	5	2	9
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.86		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1601	1634		1601	1681		1601	1457		1601	1475	
Flt Permitted	0.19	1.00		0.46	1.00		0.75	1.00		0.72	1.00	
Satd. Flow (perm)	323	1634		780	1681		1263	1457		1219	1475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	358	91	91	905	14	133	5	47	5	2	10
RTOR Reduction (vph)	0	10	0	0	1	0	0	37	0	0	8	0
Lane Group Flow (vph)	25	439	0	91	918	0	133	15	0	5	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	61.5	61.5		61.5	61.5		19.5	19.5		19.5	19.5	
Effective Green, g (s)	61.5	61.5		61.5	61.5		19.5	19.5		19.5	19.5	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.22	0.22		0.22	0.22	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	220	1116		533	1148		273	315		264	319	
v/s Ratio Prot		0.27			c0.55			0.01			0.00	
v/s Ratio Perm	0.08			0.12			c0.11			0.00		
v/c Ratio	0.11	0.39		0.17	0.80		0.49	0.05		0.02	0.01	
Uniform Delay, d1	4.9	6.2		5.1	10.0		30.9	27.9		27.7	27.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	1.0		0.7	5.9		6.1	0.3		0.1	0.1	
Delay (s)	5.9	7.2		5.8	15.8		37.0	28.2		27.9	27.8	
Level of Service	A	A		A	B		D	C		C	C	
Approach Delay (s)		7.1			14.9			34.5			27.8	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
109: Atungauyait & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	339	23	33	843	0	47	1	34	1	0	1
Future Volume (vph)	1	339	23	33	843	0	47	1	34	1	0	1
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.94			0.93	
Flt Protected		1.00			1.00			0.97			0.98	
Satd. Flow (prot)		1671			1682			1546			1533	
Flt Permitted		1.00			0.98			0.85			0.94	
Satd. Flow (perm)		1669			1645			1350			1469	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	368	25	36	916	0	51	1	37	1	0	1
RTOR Reduction (vph)	0	3	0	0	0	0	0	28	0	0	2	0
Lane Group Flow (vph)	0	391	0	0	952	0	0	61	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		52.5			52.5			18.5			18.5	
Effective Green, g (s)		52.5			52.5			18.5			18.5	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1095			1079			312			339	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.58			c0.04			0.00	
v/c Ratio		0.36			0.88			0.19			0.00	
Uniform Delay, d1		6.2			11.2			24.7			23.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			10.4			1.4			0.0	
Delay (s)		7.1			21.7			26.1			23.7	
Level of Service		A			C			C			C	
Approach Delay (s)		7.1			21.7			26.1			23.7	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	276	1	0	651	13	0	0	0	11	0	267
Future Volume (vph)	97	276	1	0	651	13	0	0	0	11	0	267
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			1.00						0.87	
Flt Protected	0.95	1.00			1.00						1.00	
Satd. Flow (prot)	1601	1684			1681						1464	
Flt Permitted	0.22	1.00			1.00						0.99	
Satd. Flow (perm)	377	1684			1681						1456	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	300	1	0	708	14	0	0	0	12	0	290
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	136	0
Lane Group Flow (vph)	105	301	0	0	721	0	0	0	0	0	166	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.5	32.5			32.5						18.5	
Effective Green, g (s)	32.5	32.5			32.5						18.5	
Actuated g/C Ratio	0.54	0.54			0.54						0.31	
Clearance Time (s)	4.5	4.5			4.5						4.5	
Lane Grp Cap (vph)	204	912			910						448	
v/s Ratio Prot		0.18			c0.43							
v/s Ratio Perm	0.28										c0.11	
v/c Ratio	0.51	0.33			0.79						0.37	
Uniform Delay, d1	8.7	7.7			11.0						16.2	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	9.0	1.0			7.0						2.3	
Delay (s)	17.7	8.6			18.0						18.5	
Level of Service	B	A			B						B	
Approach Delay (s)		11.0			18.0			0.0			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
101: Federal Rd & Qaqqamiut

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	8	74	44	10	7	74	58	51	9	101	2
Future Volume (Veh/h)	4	8	74	44	10	7	74	58	51	9	101	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	9	80	48	11	8	80	63	55	10	110	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	395	409	111	466	382	90	112			118		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395	409	111	466	382	90	112			118		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	92	89	98	99	95			99		
cM capacity (veh/h)	526	500	942	436	517	967	1478			1470		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	93	67	198	122
Volume Left	4	48	80	10
Volume Right	80	8	55	2
cSH	841	480	1478	1470
Volume to Capacity	0.11	0.14	0.05	0.01
Queue Length 95th (m)	2.8	3.7	1.3	0.2
Control Delay (s)	9.8	13.7	3.3	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	9.8	13.7	3.3	0.7
Approach LOS	A	B		

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
102: Allanngua & Akilliq/Ikaluktuutiak Dr

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	52	48	14	44	0	27	0	6	0	0	0
Future Volume (vph)	0	52	48	14	44	0	27	0	6	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	52	15	48	0	29	0	7	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	109	63	36	0
Volume Left (vph)	0	15	29	0
Volume Right (vph)	52	0	7	0
Hadj (s)	-0.25	0.08	0.08	0.00
Departure Headway (s)	3.8	4.2	4.3	4.3
Degree Utilization, x	0.11	0.07	0.04	0.00
Capacity (veh/h)	932	849	792	809
Control Delay (s)	7.3	7.5	7.5	7.3
Approach Delay (s)	7.3	7.5	7.5	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
103: Allanngua/Mivvik Street

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	235	29	133	128	28	16	4	176	15	3	5
Future Volume (vph)	10	235	29	133	128	28	16	4	176	15	3	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	255	32	145	139	30	17	4	191	16	3	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	298	314	212	24
Volume Left (vph)	11	145	17	16
Volume Right (vph)	32	30	191	5
Hadj (s)	-0.02	0.07	-0.49	0.04
Departure Headway (s)	4.9	5.0	5.0	5.9
Degree Utilization, x	0.41	0.44	0.29	0.04
Capacity (veh/h)	689	687	651	519
Control Delay (s)	11.3	11.8	10.0	9.1
Approach Delay (s)	11.3	11.8	10.0	9.1
Approach LOS	B	B	B	A

Intersection Summary			
Delay	11.1		
Level of Service	B		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
104: Federal Rd & Ikaluktuutiak Dr

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	83	1	192	2	0	2	125	163	1	0	225	115
Future Volume (vph)	83	1	192	2	0	2	125	163	1	0	225	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	1	209	2	0	2	136	177	1	0	245	125

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	300	4	314	370
Volume Left (vph)	90	2	136	0
Volume Right (vph)	209	2	1	125
Hadj (s)	-0.32	-0.17	0.12	-0.17
Departure Headway (s)	5.3	6.2	5.4	5.1
Degree Utilization, x	0.44	0.01	0.47	0.52
Capacity (veh/h)	625	459	623	675
Control Delay (s)	12.5	9.2	13.2	13.5
Approach Delay (s)	12.5	9.2	13.2	13.5
Approach LOS	B	A	B	B

Intersection Summary			
Delay	13.1		
Level of Service	B		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	6	37	2	6	58	30	250	6	86	338	22
Future Volume (Veh/h)	15	6	37	2	6	58	30	250	6	86	338	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	7	40	2	7	63	33	272	7	93	367	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								155				
pX, platoon unblocked												
vC, conflicting volume	973	910	379	950	918	276	391			279		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	973	910	379	950	918	276	391			279		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	97	94	99	97	92	97			93		
cM capacity (veh/h)	192	247	668	204	245	763	1168			1284		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	72	312	484
Volume Left	16	2	33	93
Volume Right	40	63	7	24
cSH	367	595	1168	1284
Volume to Capacity	0.17	0.12	0.03	0.07
Queue Length 95th (m)	4.6	3.1	0.7	1.8
Control Delay (s)	16.8	11.9	1.1	2.2
Lane LOS	C	B	A	A
Approach Delay (s)	16.8	11.9	1.1	2.2
Approach LOS	C	B		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	454	115	20	299	3	96	0	81	1	0	3
Future Volume (vph)	3	454	115	20	299	3	96	0	81	1	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	493	125	22	325	3	104	0	88	1	0	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	621	350	192	4
Volume Left (vph)	3	22	104	1
Volume Right (vph)	125	3	88	3
Hadj (s)	-0.09	0.04	-0.13	-0.37
Departure Headway (s)	5.0	5.4	6.1	6.5
Degree Utilization, x	0.86	0.53	0.33	0.01
Capacity (veh/h)	710	638	552	478
Control Delay (s)	30.1	14.3	12.1	9.6
Approach Delay (s)	30.1	14.3	12.1	9.6
Approach LOS	D	B	B	A

Intersection Summary			
Delay	22.3		
Level of Service	C		
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	275	60	16	177	5	71	4	10	7	2	17
Future Volume (vph)	19	275	60	16	177	5	71	4	10	7	2	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	299	65	17	192	5	77	4	11	8	2	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	385	214	92	28
Volume Left (vph)	21	17	77	8
Volume Right (vph)	65	5	11	18
Hadj (s)	-0.06	0.04	0.13	-0.29
Departure Headway (s)	4.4	4.7	5.4	5.1
Degree Utilization, x	0.47	0.28	0.14	0.04
Capacity (veh/h)	790	730	595	604
Control Delay (s)	11.4	9.5	9.3	8.4
Approach Delay (s)	11.4	9.5	9.3	8.4
Approach LOS	B	A	A	A

Intersection Summary			
Delay	10.4		
Level of Service	B		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
106: Queen Elizabeth/Federal Rd & Mivvik Street/Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	313	94	189	233	50	98	91	165	50	162	49
Future Volume (vph)	49	313	94	189	233	50	98	91	165	50	162	49
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.94			0.97	
Flt Protected		0.99			0.98			0.99			0.99	
Satd. Flow (prot)		1630			1629			1558			1627	
Flt Permitted		0.91			0.63			0.78			0.85	
Satd. Flow (perm)		1484			1050			1234			1404	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	340	102	205	253	54	107	99	179	54	176	53
RTOR Reduction (vph)	0	13	0	0	6	0	0	41	0	0	11	0
Lane Group Flow (vph)	0	482	0	0	506	0	0	344	0	0	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		36.8			36.8			24.1			24.1	
Effective Green, g (s)		36.8			36.8			24.1			24.1	
Actuated g/C Ratio		0.50			0.50			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		749			530			407			464	
v/s Ratio Prot												
v/s Ratio Perm		0.32			c0.48			c0.28			0.19	
v/c Ratio		0.64			0.95			0.85			0.59	
Uniform Delay, d1		13.2			17.3			22.7			20.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.9			27.9			19.0			5.4	
Delay (s)		15.1			45.1			41.7			25.6	
Level of Service		B			D			D			C	
Approach Delay (s)		15.1			45.1			41.7			25.6	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Niaqunngusiariaq & Saputi

04/25/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	260	724	450	125	112	155
Future Volume (vph)	260	724	450	125	112	155
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1601	1685	1636		1601	1432
Flt Permitted	0.17	1.00	1.00		0.95	1.00
Satd. Flow (perm)	293	1685	1636		1601	1432
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	787	489	136	122	168
RTOR Reduction (vph)	0	0	13	0	0	128
Lane Group Flow (vph)	283	787	612	0	122	40
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	49.3	49.3	34.3		19.1	19.1
Effective Green, g (s)	49.3	49.3	34.3		19.1	19.1
Actuated g/C Ratio	0.61	0.61	0.43		0.24	0.24
Clearance Time (s)	4.5	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	350	1033	697		380	340
v/s Ratio Prot	0.11	c0.47	c0.37		c0.08	
v/s Ratio Perm	0.39					0.03
v/c Ratio	0.81	0.76	0.88		0.32	0.12
Uniform Delay, d1	12.7	11.3	21.1		25.3	24.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.9	3.4	12.1		2.2	0.7
Delay (s)	25.6	14.7	33.3		27.5	24.7
Level of Service	C	B	C		C	C
Approach Delay (s)		17.6	33.3		25.9	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
108: Queen Elizabeth

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	732	115	57	452	3	118	2	88	12	3	14
Future Volume (vph)	8	732	115	57	452	3	118	2	88	12	3	14
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.85		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1601	1651		1601	1684		1601	1438		1601	1475	
Flt Permitted	0.43	1.00		0.19	1.00		0.75	1.00		0.69	1.00	
Satd. Flow (perm)	731	1651		321	1684		1257	1438		1169	1475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	796	125	62	491	3	128	2	96	13	3	15
RTOR Reduction (vph)	0	6	0	0	0	0	0	75	0	0	12	0
Lane Group Flow (vph)	9	915	0	62	494	0	128	23	0	13	6	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	61.5	61.5		61.5	61.5		19.5	19.5		19.5	19.5	
Effective Green, g (s)	61.5	61.5		61.5	61.5		19.5	19.5		19.5	19.5	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.22	0.22		0.22	0.22	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)	499	1128		219	1150		272	311		253	319	
v/s Ratio Prot		c0.55			0.29			0.02			0.00	
v/s Ratio Perm	0.01			0.19			c0.10			0.01		
v/c Ratio	0.02	0.81		0.28	0.43		0.47	0.07		0.05	0.02	
Uniform Delay, d1	4.6	10.1		5.6	6.4		30.7	28.1		27.9	27.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	6.4		3.2	1.2		5.7	0.5		0.4	0.1	
Delay (s)	4.6	16.5		8.8	7.6		36.5	28.5		28.3	27.8	
Level of Service	A	B		A	A		D	C		C	C	
Approach Delay (s)		16.4			7.7			33.0			28.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
109: Atungauyait & Niaqunngusiariaq

04/25/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	781	45	23	467	0	43	0	83	1	0	1
Future Volume (vph)	1	781	45	23	467	0	43	0	83	1	0	1
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.91			0.93	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		1673			1681			1510			1533	
Flt Permitted		1.00			0.95			0.91			0.93	
Satd. Flow (perm)		1672			1596			1395			1459	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	849	49	25	508	0	47	0	90	1	0	1
RTOR Reduction (vph)	0	3	0	0	0	0	0	66	0	0	1	0
Lane Group Flow (vph)	0	896	0	0	533	0	0	71	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		42.5			42.5			18.5			18.5	
Effective Green, g (s)		42.5			42.5			18.5			18.5	
Actuated g/C Ratio		0.61			0.61			0.26			0.26	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1015			969			368			385	
v/s Ratio Prot												
v/s Ratio Perm		c0.54			0.33			c0.05			0.00	
v/c Ratio		0.88			0.55			0.19			0.00	
Uniform Delay, d1		11.6			8.1			20.0			19.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		11.0			2.2			1.2			0.0	
Delay (s)		22.7			10.4			21.1			19.0	
Level of Service		C			B			C			B	
Approach Delay (s)		22.7			10.4			21.1			19.0	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	578	2	0	380	17	0	0	0	16	0	156
Future Volume (vph)	281	578	2	0	380	17	0	0	0	16	0	156
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.99						0.88	
Flt Protected	0.95	1.00			1.00						1.00	
Satd. Flow (prot)	1601	1684			1676						1472	
Flt Permitted	0.45	1.00			1.00						0.98	
Satd. Flow (perm)	752	1684			1676						1451	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	305	628	2	0	413	18	0	0	0	17	0	170
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	118	0
Lane Group Flow (vph)	305	630	0	0	428	0	0	0	0	0	69	0
Turn Type	Perm	NA			NA					Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.5	32.5			32.5						18.5	
Effective Green, g (s)	32.5	32.5			32.5						18.5	
Actuated g/C Ratio	0.54	0.54			0.54						0.31	
Clearance Time (s)	4.5	4.5			4.5						4.5	
Lane Grp Cap (vph)	407	912			907						447	
v/s Ratio Prot		0.37			0.26							
v/s Ratio Perm	c0.41										c0.05	
v/c Ratio	0.75	0.69			0.47						0.16	
Uniform Delay, d1	10.6	10.1			8.5						15.1	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	12.0	4.3			1.8						0.7	
Delay (s)	22.6	14.3			10.2						15.8	
Level of Service	C	B			B						B	
Approach Delay (s)		17.0			10.2			0.0			15.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX B PLANNED DEVELOPMENTS SUMMARY

ID	Development	Relevant Documents	Planned units and land uses	TMP Assumptions / Next Steps
1	IOL	• IOL & IOL North, Concept - Option A, Feb-2016 • FRDA QBDC Dvpt Agmt, DP 17-001, FINAL (2019) • FRDA Land Use Recommended (Aug-2017) • FRDA & IOL update Oct 2019 • IOL Parcel E Development Scheme FINAL (2015) • IOL & IOL North, Concept - Option B, Feb-2016	• Mixed use; use the FRDA & IOL update Oct 2019 statistics.	• No TIAs available; traffic will be generated using ITE rates and assigned to the network based on the engagement week survey of origin/destination trip distribution. • Note future roadway (Crescent) in the vicinity of Ulu Lane, north of Federal Road. • Includes Inuit and municipal lands. • Additional information requested: redevelopment GFAs for the municipal lands in addition to existing uses GFAs.
2	Area B	• FDA A & B DASR Report - Aug-29-2013. • FDA B Development Scheme, FINAL, ENG, with schedules (2015).	• Residential, commercial, and institutional	• No TIA available. Road to nowhere extension to be built and connected to Road to Apex. • Generate traffic based on planned development statistics. • Proposed 490 units; however, likely up to 600 units will be included for the purpose of the TMP. • Additional information requested: If available, refined distribution of residential unit types (i.e., single family, townhomes, apartments). In the absence of information that team can scale the anticipated 490 units distribution to 600 units.

3	Area A	• FDA A & B DASR Report - Aug-29-2013	• Residential, commercial, and institutional	• No TIA or later documents. The 2013 preliminary future development area selection report (2013) will be used. It is noted that detailed statistics are not available.
				• The following ranges were extracted:
				  ○ Developable units' range: 460-535 units. 535 residential units were assumed, at the higher range with a blended trip generation rate of single-family homes as a conservative estimate.
				  ○ Based on discussion with the City, it is likely that up to 600 units will be developed and will be considered for the purposes of the TMP.
				• Additional information requested: If available, a distribution of residential unit types (i.e., single family, townhomes, apartments). In the absence of information that team can scale the anticipated Area A units' distribution to 600 units and use it as an approximation for Area B.

4	Upper Base	• Upper Base Industrial Area - May18_2012_B&W. Upper Base Industrial background Aug 2019.	• 9 lots; no additional details available	• Confirm if development plans are anticipated and confirm land uses and site statistics. • Based on discussion with the City, due to servicing constrains, the City will relook at this area. • Additional information requested: For the purposes of the TMP, the team is looking for confirmation on the likely GFAs and land uses and

ID	Development	Relevant Documents	Planned units and land uses	TMP Assumptions / Next Steps
				units. If no development is anticipated prior to the 2030 year, it will be excluded from the TMP.
5	NCC Lots 215/215	• NCC Lots 214 and 215 site plans 2019	• 4-storey mixed-use building with 1,919 sq.m of office space and 22 residential units (apartments). • Email correspondence reflect 4,000 sq.m of commercial and 44 apartment units.	• No TIA is available • Development traffic will be forecasted using ITE rates and assigned to roadway network based on the engagement week's collected origin-destination survey data. • Based on discussion with the City, 4,000 sq.m of commercial and 44 apartment units are anticipated. • Additional information requested: NA.
6	Plateau (Lot 1)	• feasibility_study plateau_subdivision_development_scheme_oct_2004	• Fully buildout with NCC and Lot 1.	• Based on discussion with the City, there is interest in developing the lands north of Saputi Road. • Assume up to 70 residential units for the purposes of the TMP. • Additional information requested: NA.
7	Astro Hill	• Email communication (Feb 2020). 20190617 Astro Hill Parking Management Plan Version 2 (2019). 2018.06.07 AstroHill Draft (reduced, 2018).	• Email communications indicate that in the 10–15-year plan, 344 new residential apartment units and 132 hotel rooms are anticipated. • Ultimate plan indicates mixed use developments but is not assumed to be implemented prior to the 2030 horizon year.	• Traffic generation will be based on the 10-15 year planned developments. • Development traffic will be assigned to roadway network based on the engagement week's collected origin-destination survey data. • Additional information requested: NA.
8	North 40	• Email communication (March 2019). • North 40 Project Presentation (2019). • - Provisional Plan_ West 40 Lands Transfer (2015).	• City plans a new dump site and quarry towards end of upper base. • No additional information on planned activity is available.	• Dump and extraction activities are typically low traffic generators. • Additional information requested: Confirm with the City planned operations (number of trucks daily) and generate to assign traffic accordingly.
9	*Multiple (Not reflected in Figure 12 of the TMP)	• Communication with the City	• Airport expansion to add 408 daily trips between 2017-2022 and to be considered as per the 2014 TIA; The difference between 2017 trips and 2022 trips will be assigned to the network. • Akilliq Road is anticipated to connect to the 10 hectares for an industrial subdivision assumed to be developed prior to the 2030 horizon year. Additional details on the type of development is requested. Relevant documents would be helpful, if available. • Additional developments may be anticipated at the end pf Plateau Phase 3. For the purposes of the TMP 90 residential units will be assumed. • Lower base redevelopment. Densification is likely; confirm with the City potential added GFAs and land uses. • Developments may take place along Queen Elizabeth between Arctic Ventures and Elders Qammaq . confirm timelines and development preliminary statistics • Mivvik St / Queen Elizabeth large density development. Confirm timeline and statistics with the City. • West 40 industrial lands development is likely in the next 30 years. Assumed to be outside the TMPs analyses horizon years.	

APPENDIX C   TMP ONLINE SURVEY RESULTS

(Begins on the following page)

Online Survey Results

City of Iqaluit Transportation Master Plan

March 2020

Prepared for:
City of Iqaluit
Iqaluit, Nunavut

Prepared by:
Nunami Stantec Limited
Iqaluit, Nunavut

Project Number: 144902920

NUNAMI STANTEC

NUNAMI STANTEC

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SURVEY OVERVIEW

To inform the City of Iqaluit Transportation Master Plan, a public online survey was hosted from February 20, 2020 to March 14, 2020 via SurveyMonkey. The survey was provided in both English and Inuktitut and advertised via the City's existing communications methods including the City's website and Facebook page. In total, 421 surveys were completed, all through the English survey.

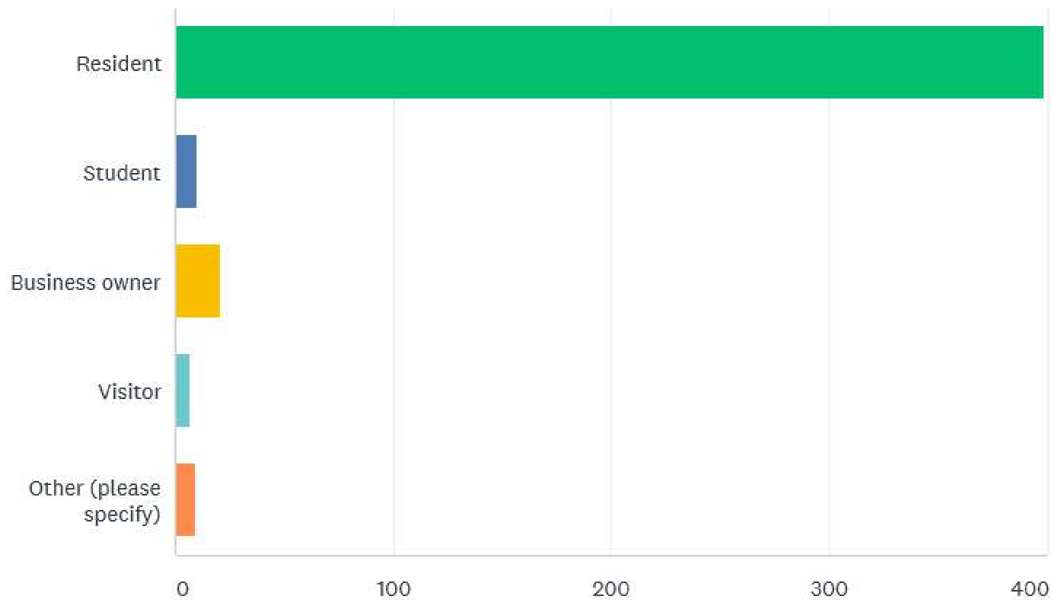
As an incentive to complete the survey, respondents were given the option to enter a draw to win a small prize upon completion.

SUMMARY OF RESPONSES BY QUESTION

Section 1: General

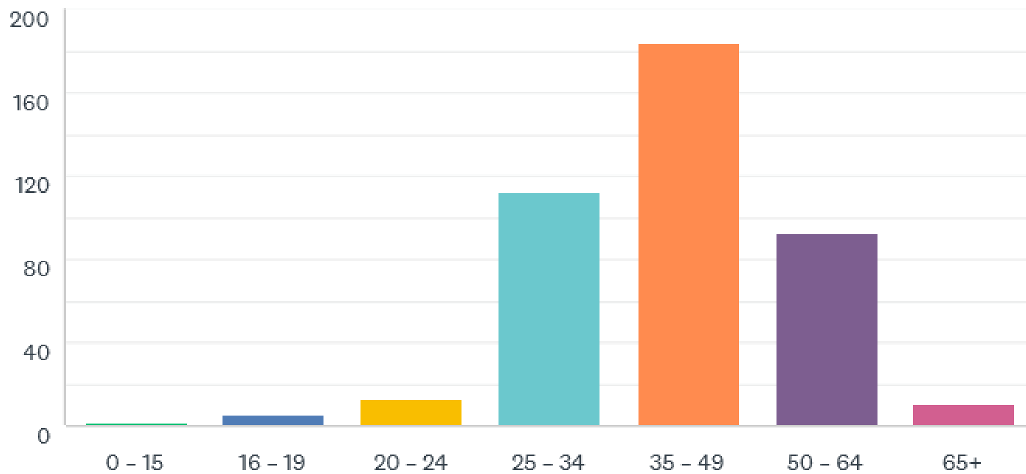
Q1: What is your relationship to Iqaluit? (Select all that apply)

Answered:420 *Skipped: 1*



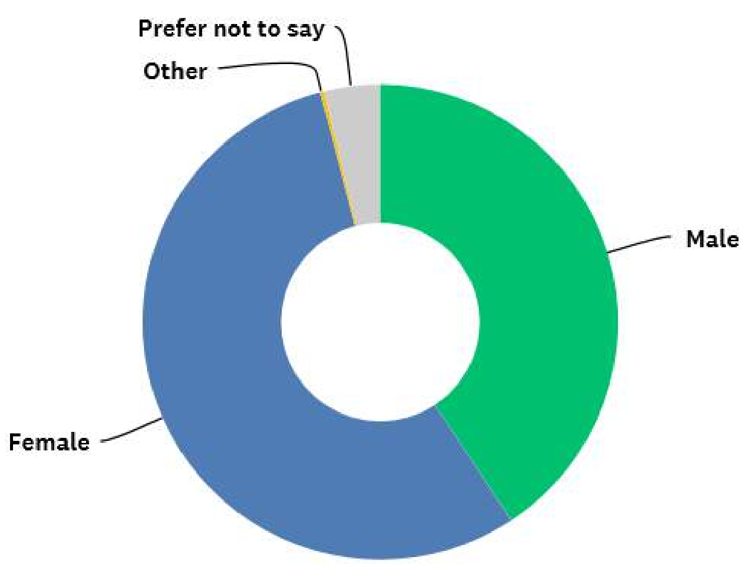
Q2: What is your age?

Answered:420 *Skipped: 1*



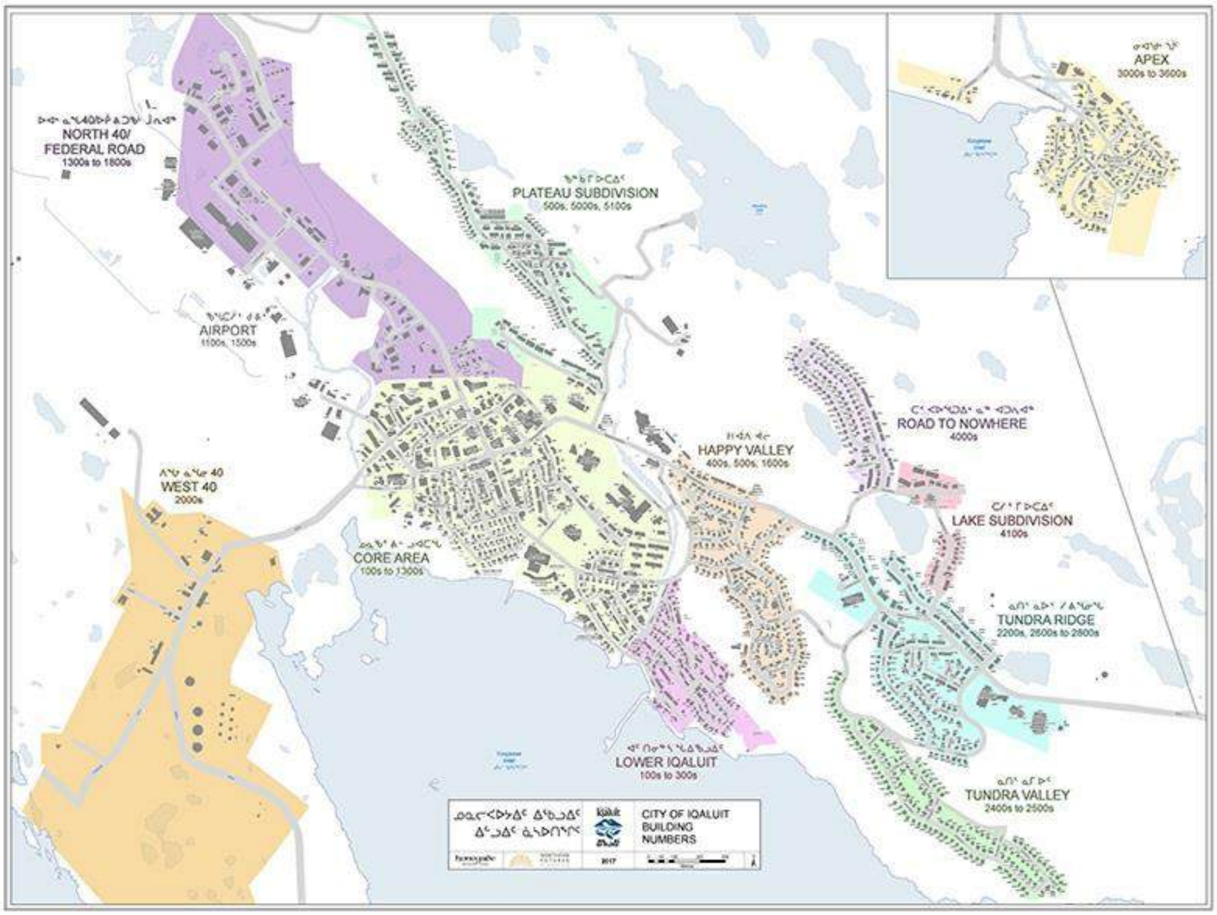
Q3: With which gender do you identify?

Answered:420 *Skipped: 1*



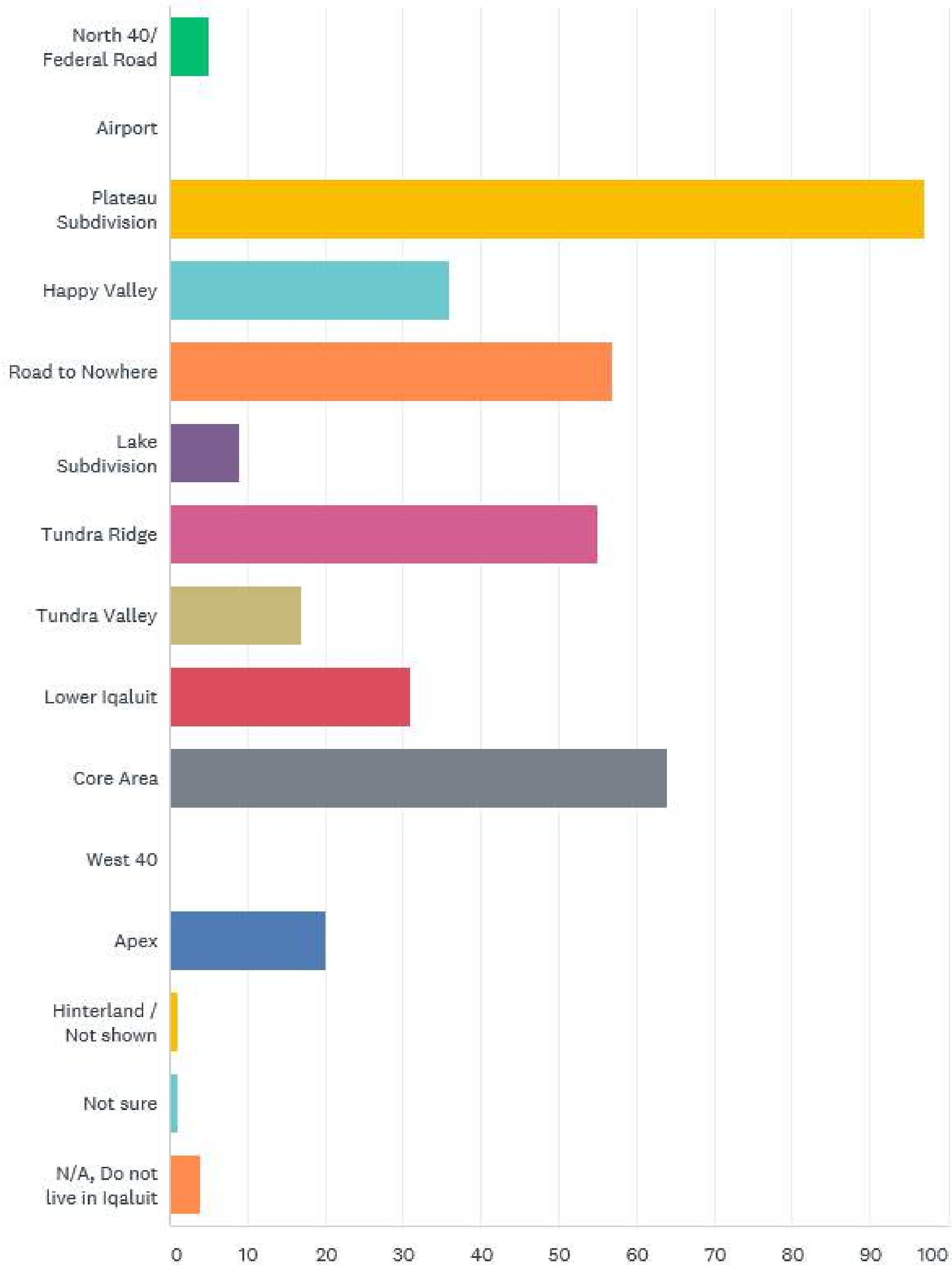
Section 2: Where are you going?

Questions within this theme were asked based on the map shown below.



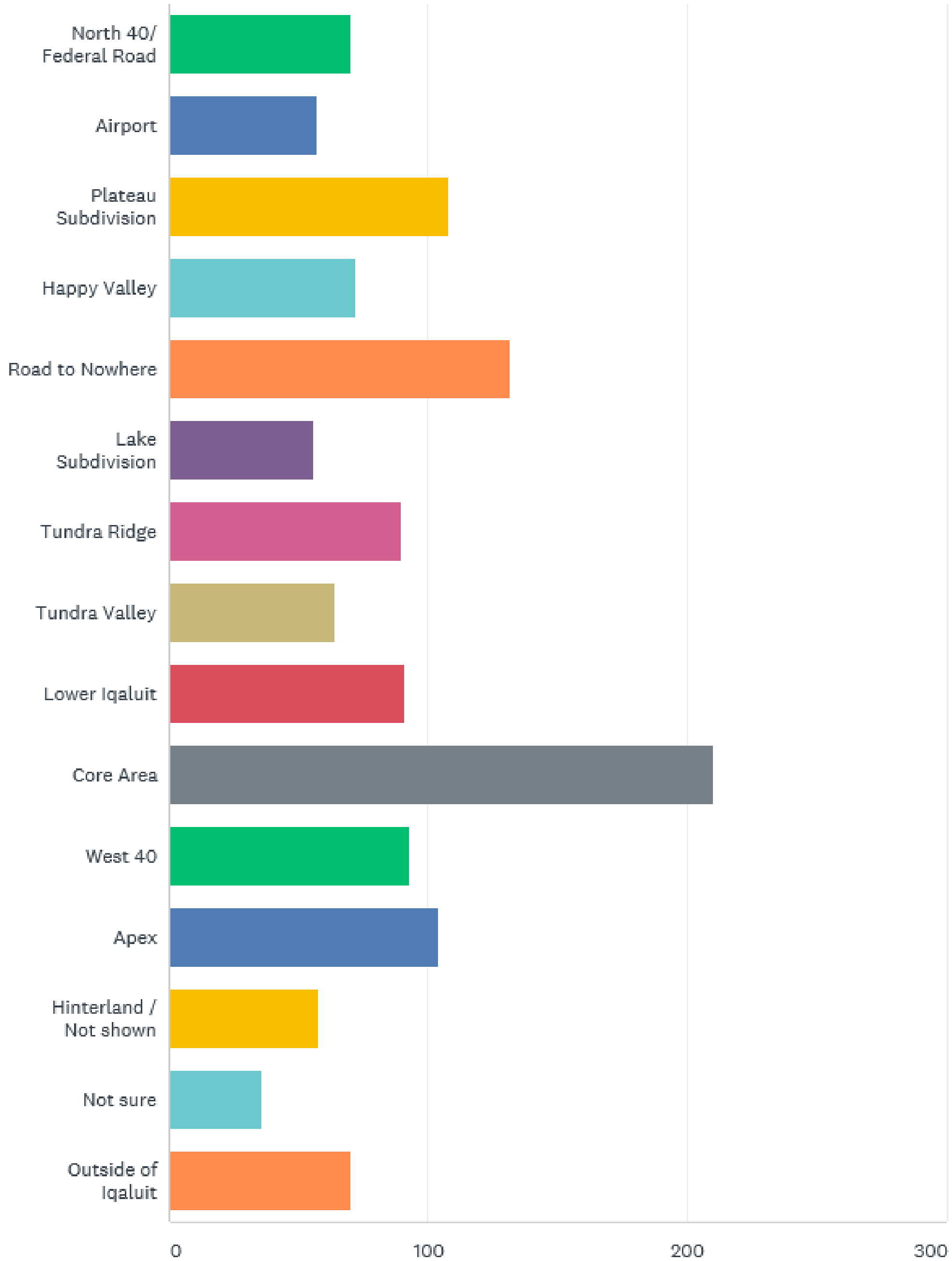
Q4: Based on the map above, which area of Iqaluit do you LIVE in?

Answered:397 *Skipped: 24*



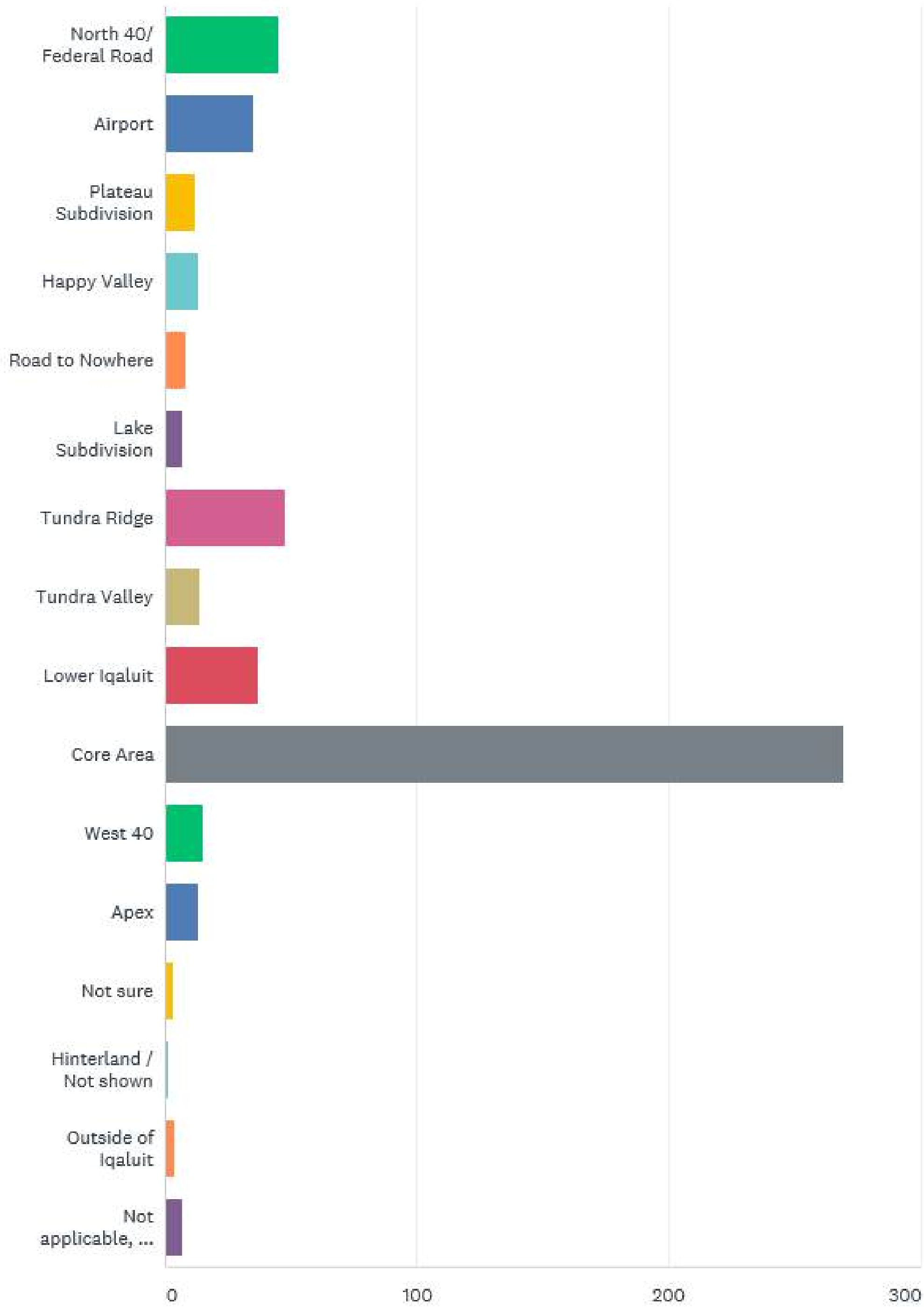
Q5: Based on the map above, which areas of Iqaluit do you PLAY in?

Answered:391 *Skipped: 30*



Q6: Based on the map above, which areas of Iqaluit do you WORK of ATTEND SCHOOL in?

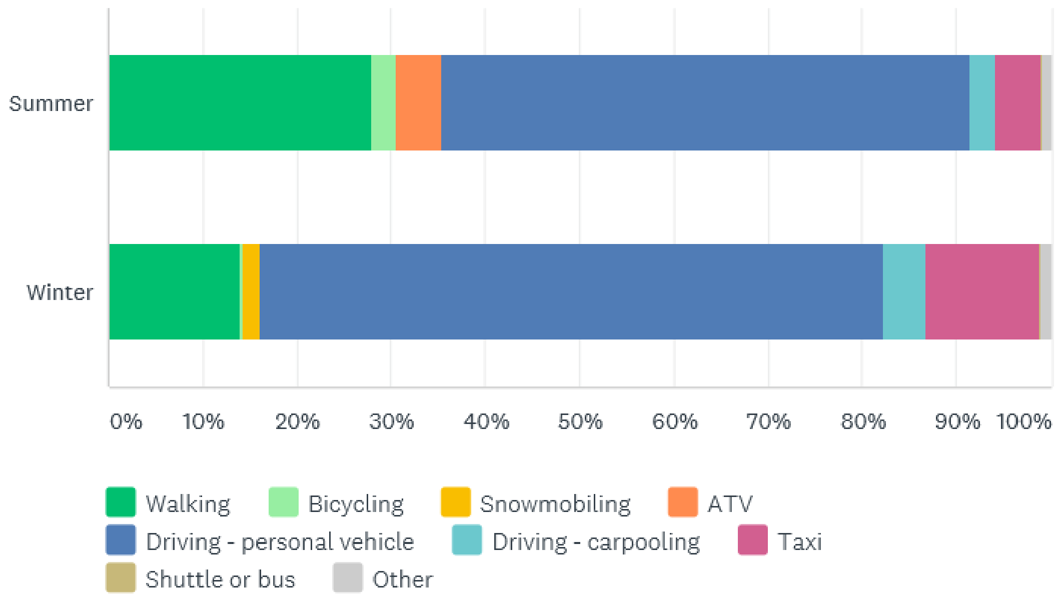
Answered:395 *Skipped: 26*



Section 3: How Do you get there?

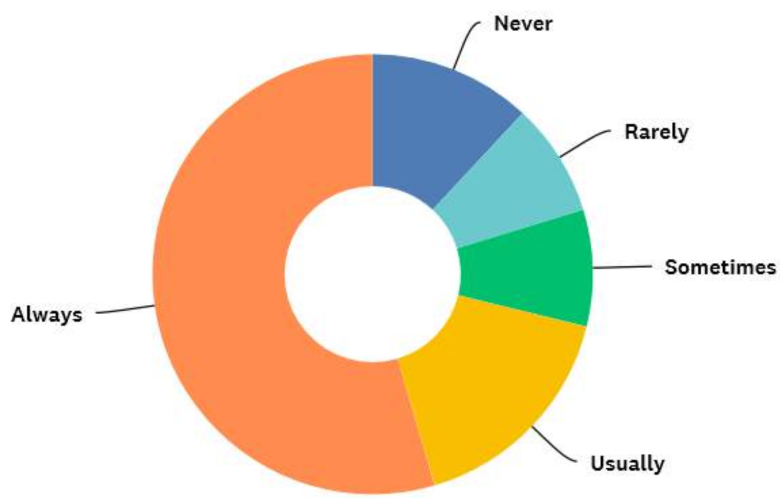
Q7: What is your primary method of getting around town?

Answered:386 *Skipped: 35*



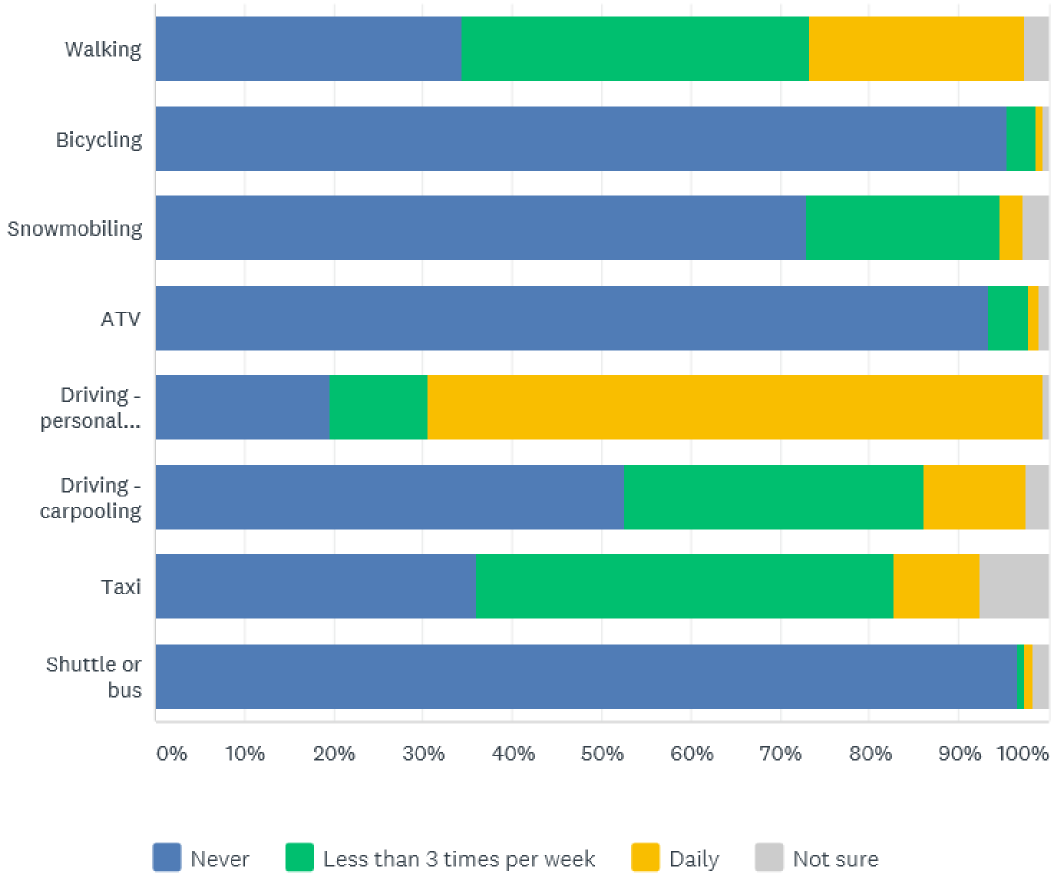
Q8: How often do you have access to a personal vehicle?

Answered:385 *Skipped: 36*



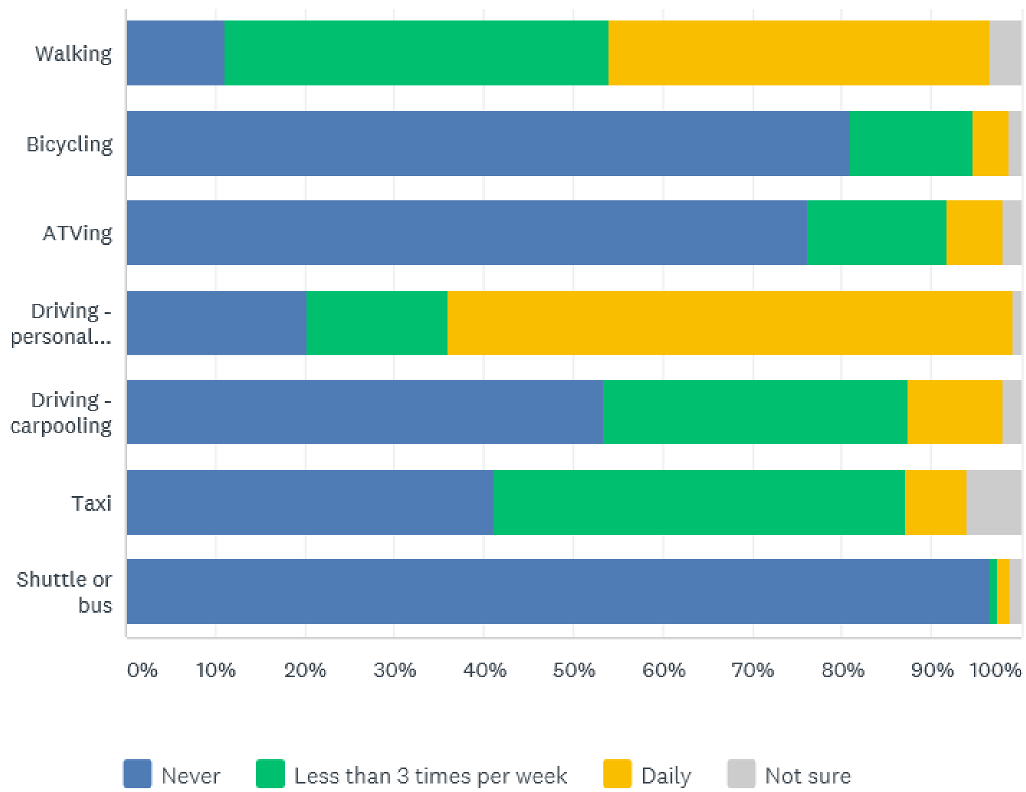
Q9: In the WINTER, how often do you use the following methods to get around town?

Answered:386 *Skipped: 35*



Q10: In the SUMMER, how often do you use the following methods to get around town?

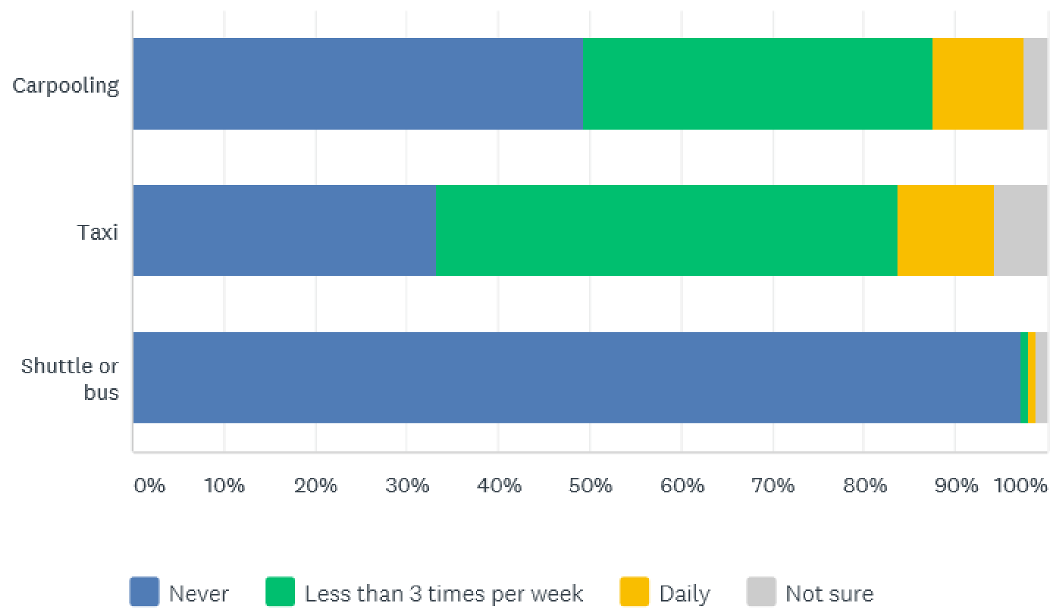
Answered:386   *Skipped: 35*



SHARED TRANSPORTATION

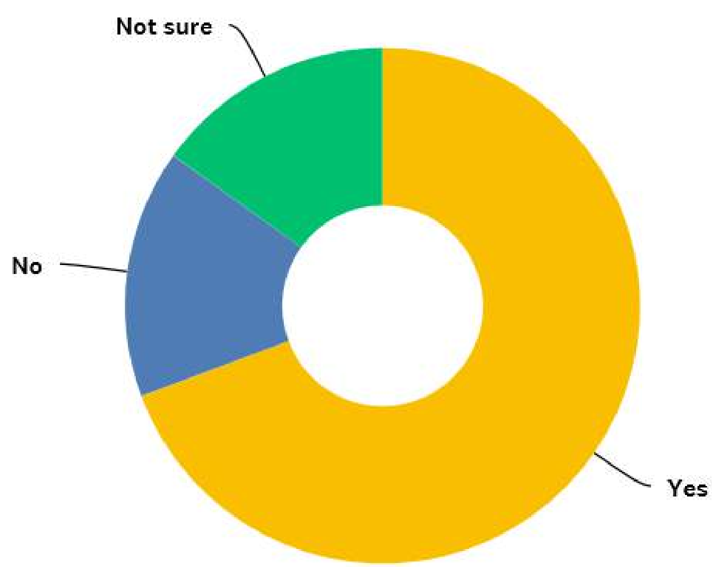
Q11: How often do you use the following shared transportation methods?

Answered:375 *Skipped: 46*



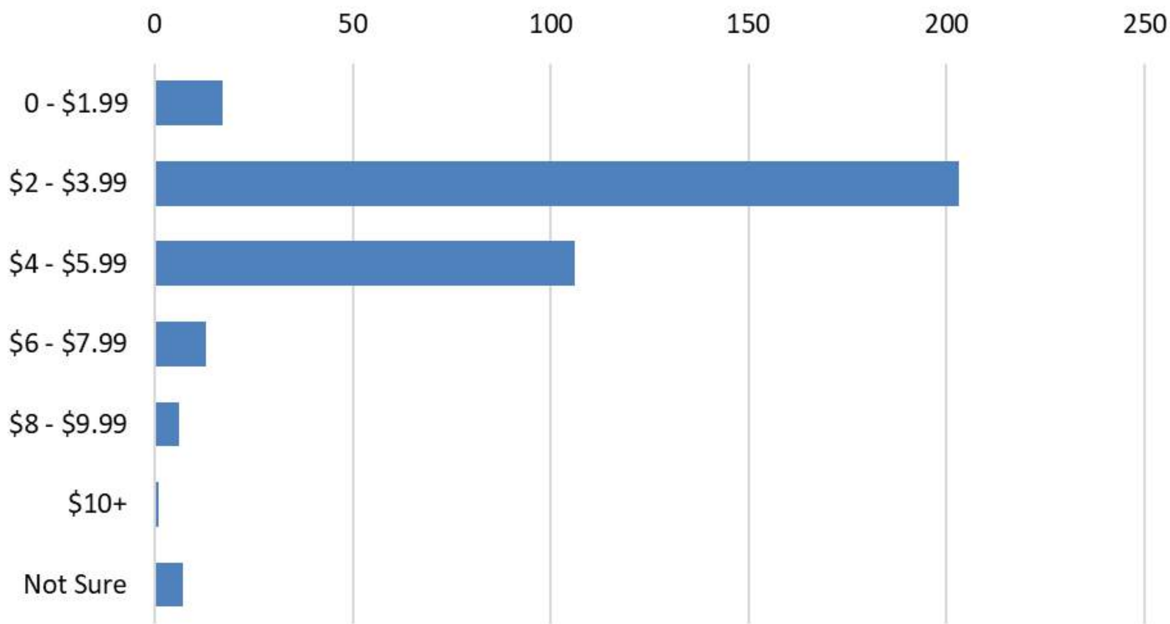
Q12: Would you consider using transit if it were available?

Answered:378 *Skipped: 43*



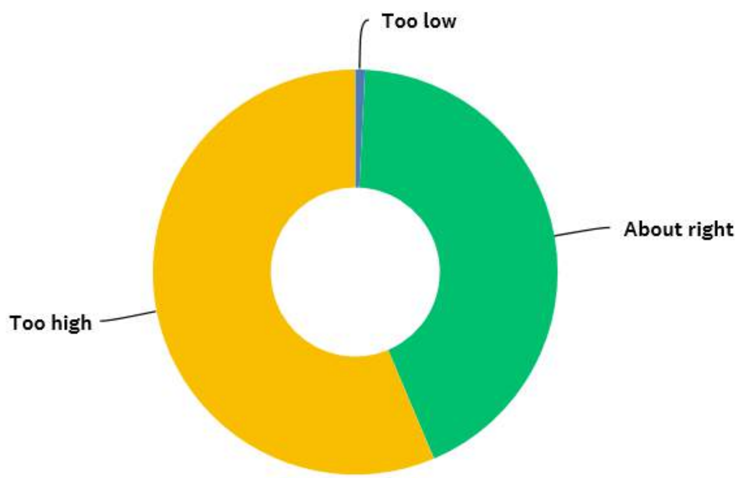
Q13: What do you think would be a fair price for a one-way transit trip in Iqaluit?

Answered:353   *Skipped: 68*



Q14: How do you feel about the current cost of taking a taxi in Iqaluit?

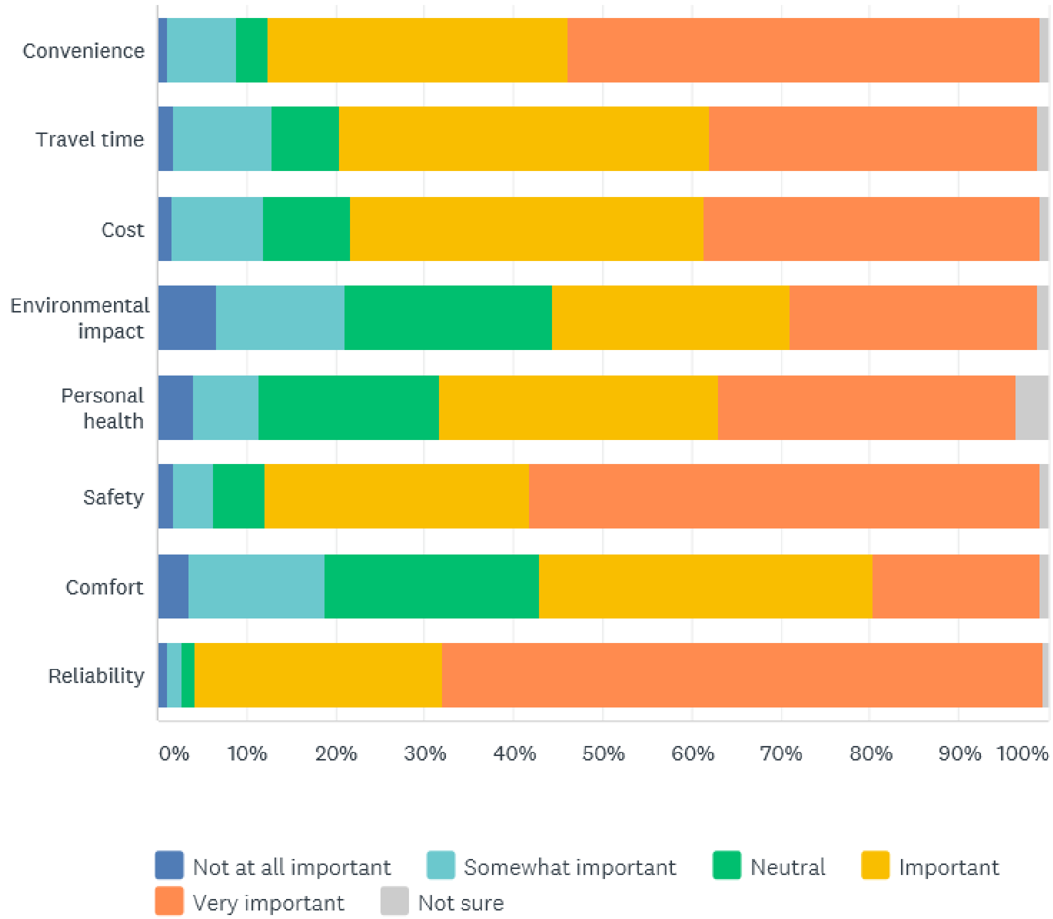
Answered:378   *Skipped: 43*



Section 4: Is there a better way?

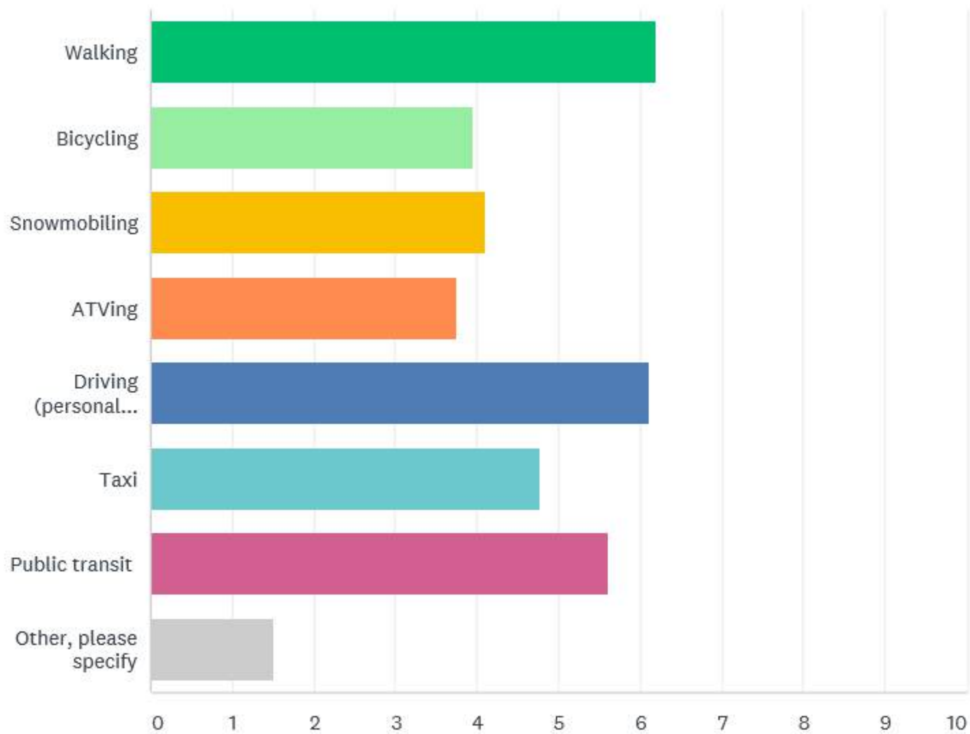
Q15: How important are the following factors when selecting a transportation method?

Answered:352 *Skipped: 69*



Q16: In your opinion, please rank the following land-based modes of transportation from most important to least important.

Answered:345 *Skipped: 76*



Q17: Overall, how satisfied are you with the existing Iqaluit transportation network?

Answered:329 *Skipped: 92*

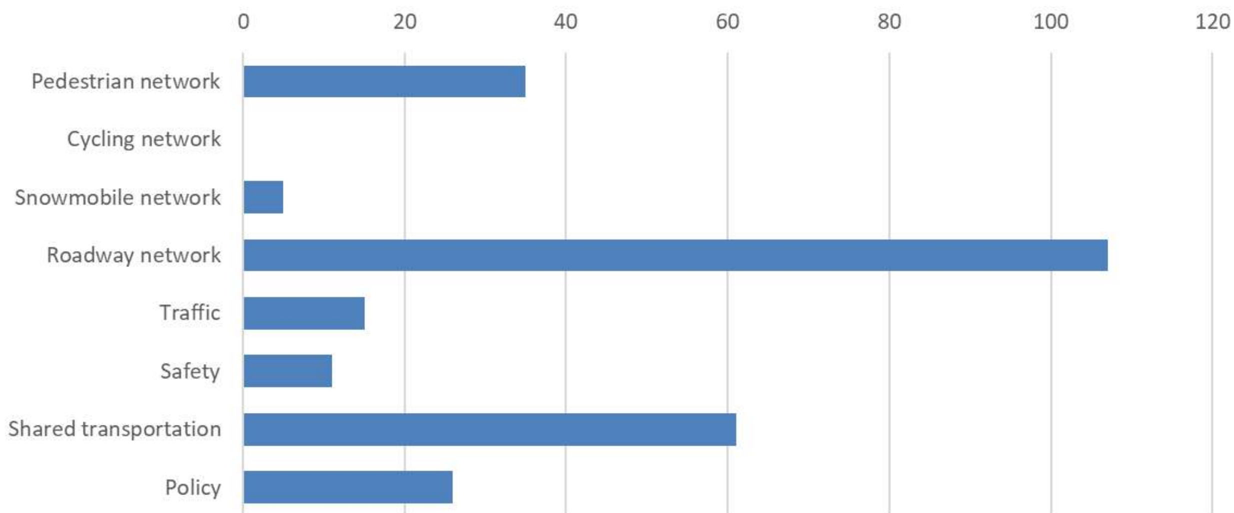
	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	37.39% 123	30.09% 99	26.44% 87	5.17% 17	0.91% 3	329	2.02

Section 5: Final thoughts

Questions in this section were open-ended; as such, what is shown below is a summary. A listing of all comments provided in response to these questions is provided in Appendix A.

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement? –Shown by theme

Answered:266 *Skipped: 155*

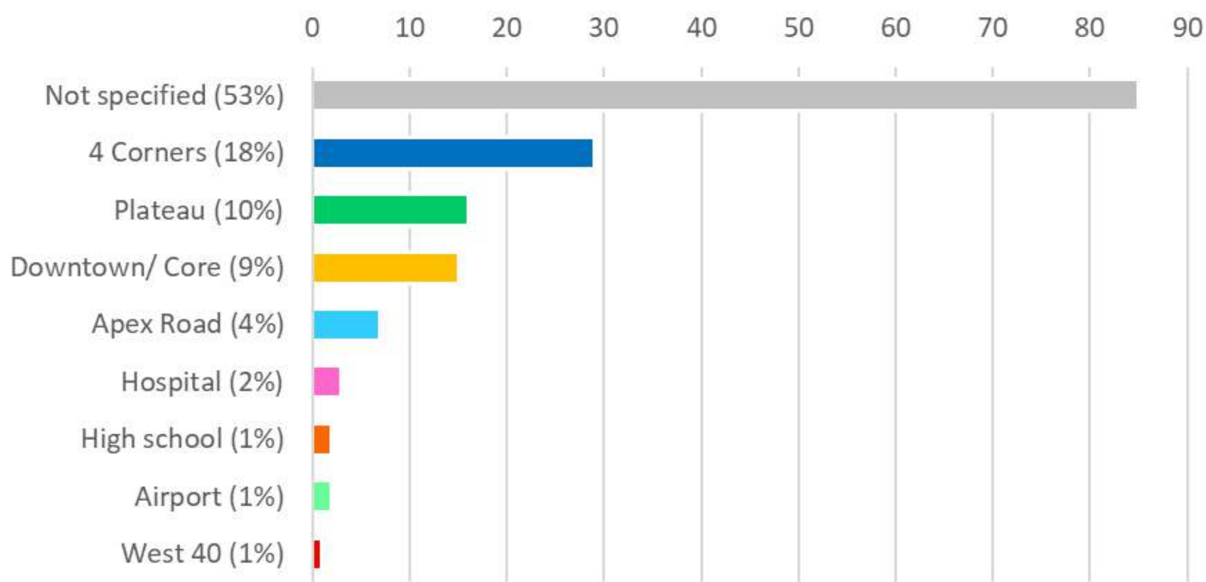


Quantity of comments by themes and sub-themes

Theme/ Sub-Theme	Comments
Pedestrian network	**35**
Trails	9
Sidewalks	11
Crosswalks	3
Other	12
Cycling network	**0**
Snowmobile network	**5**
Roadway network	**107**
Condition	21
Paving	37
Intersection improvement	11
New roads	3
Road design	8
Parking	2
Stormwater management	0
Other	25
Traffic	**15**
Congestion	12
Lunch time school buses	3
Safety	**11**
Drivers/ enforcement	6
Winter tires	3
Other	2
Shared transportation	**61**
Reducing cost of living	59
Carpooling	1
Other	1
Policy	**26**
Reducing cost of living	5
Taxi regulations	19
Accessibility	2
Environmental concern	0
Other	35

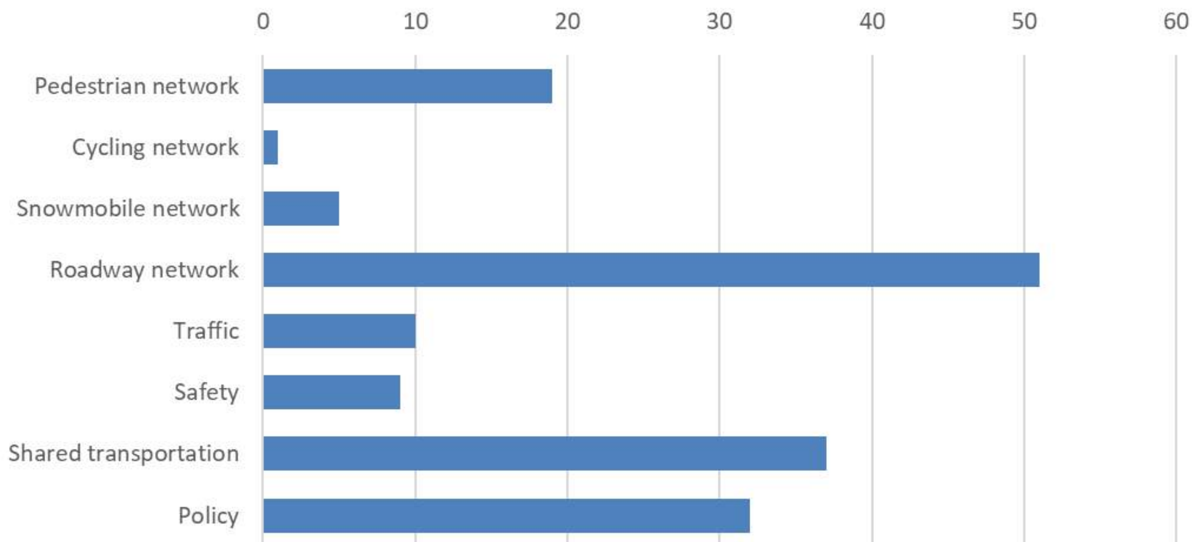
Quantity of comments by location specified, if applicable.

Location-applicable comments:160 *Non-location applicable comments: 114*



Q19: Do you have any other comments that should be considered in the Transportation Master Plan? –Shown by theme

Answered:172 *Skipped: 249*



Quantity of comment themes and sub-themes

Theme/ Sub-Theme	Comments
Pedestrian network	**19**
Trails	6
Sidewalks	8
Crosswalks	1
Other	4
Cycling network	**1**
Snowmobile network	**5**
Roadway network	**51**
Condition	2
Paving	5
Intersection improvement	23
New roads	6
Road design	11
Parking	3
Stormwater management	0
Other	0
Traffic	**10**
Congestion	8
Lunch time school buses	2
Safety	**9**
Drivers/ enforcement	6
Winter tires	0
Other	3
Shared transportation	**37**
Reducing cost of living	35
Carpooling	1
Other	1
Policy	**32**
Reducing cost of living	9
Taxi regulations	9
Accessibility	3
Environmental concern	3
Other	13

APPENDIX A

Section 5 - Final Thoughts

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Listing of comments, sorted by theme and sub-theme

Comment	Theme	Sub-Theme	Specific Location
Pedestrian crosswalks need better lighting Address congestion issues at the following: 4 Corners Intersection Plateau Hill Entrance beside NAC Road to Nowhere Entrance ***especially during peak times***	Pedestrian network	Cross-walks	4 Corners
More designated crosswalks	Pedestrian network	Cross-walks	Not specified
More pedestrian crossings and at least a limited bus service	Pedestrian network	Cross-walks	Not specified
Core.. need sidewalks	Pedestrian network	Sidewalks	Downtown/ Core
sidewalks in the downtown area, wide shoulder for walking on all other streets, designated/maintained off road walking trails between neighbourhoods (e.g. trail along creek from Frobisher to Ventures store area), dedicated bicycle lanes on key roads (ring road, apex road, federal road, hill from happy valley to tundra valley), too few roads access the plateau area, stop lights at key intersections (4 corners, plateau access road)	Pedestrian network	Sidewalks	Downtown/ Core
Signage/Lighting for Pedestrian Crossings Broadening of roads at pinch points for safe transit of walkers. The utilidor access port next to the Pai-Pai office towards Yummy Schwarma dangerously obstructs vision.	Pedestrian network	Sidewalks	Downtown/ Core
Iqaluit suffers from a lack of safe accessible sidewalks and walking trails that separate pedestrians from traffic. Iqaluit needs right and left turn lanes at all major intersections (4 corners, hospital, turn-off to plateau) Iqaluiy needs to consider traffic flow when designing in new subdivisions. Joamie Court will be a nightmare once lot owners start building and traffic will endanger elementary school kids.	Pedestrian network	Sidewalks	Not specified
pedestrian safety, demarcation of sidewalks and trails	Pedestrian network	Sidewalks	Not specified
sidewalks, bike lane, public transit	Pedestrian network	Sidewalks	Not specified
Sidewalks, pavement, lights for congestion	Pedestrian network	Sidewalks	Not specified
walking routes need to be maintained to encourage walking and provide safe walking. drivers routinely drive on shoulder due to lack of traction putting pedestrians at risk. Winter snow build up and spring erosion places barriers to walking. Limited of cross walks puts walkers, snowmobile users and drivers at risk. School bus stops should be better identified to alert drivers of waiting pedestrians/children in the area.	Pedestrian network	Sidewalks	Not specified

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
Walkways in between houses in Plateau that do not impinge on privacy. Safe sidewalks on main arteries without silliness of a few yrs ago about poles that offended some people's sensibilities.	Pedestrian network	Sidewalks	Not specified
Walkways, pedestrian signs etc. People need to learn to look both ways and respect the pedestrian signs around the city. And not walk across the street 20 feet away from the pedestrian sign at a four-way!	Pedestrian network	Sidewalks	Not specified
We need sidewalks. It's too dangerous for me to consider walking with my family.	Pedestrian network	Sidewalks	Not specified
As a person that passes through Iqaluit it would be very useful to have a path that connects the new airport with the old airport road so it is quicker to walk into town when we have a few hour stop over in Iqaluit. Cant always afford both a taxi and to by stuff from the stores in town.	Pedestrian network	Trails	Not specified
For pedestrians: Need more off-road walkways that are maintained year-round. This includes stairways, pathways, and elevated walkways. Need more crosswalks at more intelligent locations to reduce jaywalking (like at high school/Plateau Road). Need a managed walkway from Upper Plateau to Lower Plateau to downtown, including a safe mini-bridge over the swampy area/diesel line near the Court of Justice. Need managed pathway from Plateau to hospital, including a safe crossing over the creek (good bridge over the diesel line though!) Need cleared road shoulders to ensure pedestrian safety. Require pull-off room and shelters for bus transportation in every new subdivision. Start a commuter bus service.	Pedestrian network	Trails	Not specified
I would like to see better cared for walking trails/sidewalks/paths. Iqaluit is not that large, you should be able to walk all around town without impediments. All paths/sidewalks/etc should be plowed, not too slippery and well lit!	Pedestrian network	Trails	Not specified
More walking paths joining different neighbourhoods. The shortest distance between two points is a straight line. There should be no need to walk from BCC down federal road through four corners to get to the plateau, for instance. There are also numerous hiking trails around town. Walking paths leading to these areas would increase Iqaluit's value to tourists and allow Iqalummiut to truly experience this city's natural beauty during their morning commutes. As well, the combination of a lack of sidewalks and slippery roads creates hazardous walking conditions for pedestrians. I often have feared tripping on federal road and being hit by a car while laying on the ground. I would imagine the concerns of an elder would be greater than my own. This places a unnecessary financial burden on people with a fixed income who must take a taxi to travel safely, limits their movement within the city and discourages the most basic form of exercise available, walking.	Pedestrian network	Trails	Not specified
More walking trails (on the tundra and away from dusty roads; look at the existing trails used and marked by regular footprints in the winter), less parking, fewer cars (make it easier for people to walk, atv, and snowmobile) affordable transit, marked skiing trails, (though not transit related, look into building a ski hill made of that dump garbage), carpool app during rush hours and/or carpool facebook group, but most of all: PAVED ROADS and SIDEWALKS. Get	Pedestrian network	Trails	Not specified

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
creative; what about a tabbogan trail down plateau to the core (or a proper trail connecting tundra ridge to tundra valley)? What about a cut through trail connecting road to nowhere to plateau? What about strategically placed warming stations (modified seacan) to enable longer walks/transit stops? REPLACE DOWNTOWN PARKING WITH HIGH DENSITY AFFORDABLE HOUSING with ground level retail/institutional! Build high density hubs in neighborhoods like Apex, area between road to nowhere/tundra ridge (near schools).			
Pedestrian safety paths, taxi safety (most cars are not maintained),	Pedestrian network	Trails	Not specified
Walking /biking paths. Too scary to use current infrastructure while biking.	Pedestrian network	Trails	Not specified
walking infrastructure public transit better signage	Pedestrian network	Trails	Not specified
Walking paths/sidewalks, road maintenance, core traffic volume	Pedestrian network	Trails	Not specified
All sidewalks. No bicycle infrastructure. Apex road will be a future bottle neck from the east side of town to the core	Pedestrian network		Apex Road
- downtown, pedestrians have to walk is the exhaust fumes of parked cars. - too many cars downtown - street crossing during busy time can be somewhat dangerous (road to apex in the core, queen elizabeth, even federal road.)	Pedestrian network		Downtown/ Core
There should be less cars! There is so much air pollution in town, especially at peak time that it is very hard to walk around without getting intoxicated. There city should be more walkers' friendly.	Pedestrian network		N/A
1. There are too may vehicles on Iqaluit's roads. Use of buses could lesson the number of vehicles that are used daily to get to and from work. 2. Several years ago " people" walkways were built through the core of the city . These walkways are no longer tended to, some have been wiped out completely and some have become skidoo trails. Walkways must exist in order to make it safe for pedestrians. 3. Attention needs to be paid to road safety (making it safe for pedestrians) . Right now very few vehicle drivers stop at stop signs or pedestrian crosswalks. Drivers also go above the speed limits. And yet no one at the City seems to care if drivers follow the rules of the road. 4.Attention needs to be paid to cyclists. More and more each year cyclists fill the roads AND the walkways . The City does NOT make cyclists follow any rules, or even advise cyclists what the rules are. Many of the cyclists are children - including very young ones- who do not even know what side of the road you should ride on as a cyclist. It is the City's responsibility to inform cyclists what the rules are and then enforce them. It is perhaps time for the City to initiate bike paths throughout the City. Bike paths and walking paths can co-exist providing the paths are set up so that there is a lane for walkers, and a lane for cyclists. 5. Skidoo trails . The City has a useless map of skidoo trails within	Pedestrian network		Not specified

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
the City. Again, the use of these trails is not enforced and the City has refused to tell people that they must use the trails and stay off people's personal property.			
Better boat launches. Better pedestrian walkways.	Pedestrian network		Not specified
Clearly marked cross walks and larger/better sidewalks for pedestrians. Stop lights at Four Corners.	Pedestrian network		Not specified
I would give zero stars. More walkable, connected trails; public transit; more pedestrian pathways; more pedestrian friendly spaces (lights, crosswalks, maintained paths.)	Pedestrian network		Not specified
More safety for pedestrians. More bike friendly	Pedestrian network		Not specified
The road is the side walk which is not good for pedestrian traffic	Pedestrian network		Not specified
There are too many personal vehicles. People should walk more, for the environment and their own health	Pedestrian network		Not specified
There needs to be serious thought about the existing infrastructure used to support pedestrians and bicyclists. There are so many unconsidered benefits to facilitating and encouraging Iqalummuit to walk or bike. I understand that it is cold in the winter and it may not be used as frequently in the coldest parts of winter but if we were able to help normalize walking or biking, in part by making it more appealing, I think this would be a viable and appealing part of the city's transportation network. I would suggest looking to other northern communities for solutions, including internationally (e.g. Greenland, Norway). In doing so, you would also be doing a service to two important groups - those who do not have the means to acquire personal transportation and tourists who arrive and probably prefer to see the city on foot to the extent they can.	Pedestrian network		Not specified
The road to the plateau ... no shoulder for walkers. People are being hit by care more often in this area. Also road in front of post office has heavy volumes of traffic. Need drivers to slow down. Cannot expect the RCMP to fix everything!	Pedestrian network		Plateau
Elders need a way to get around town. Too many people are throwing away money taking cabs back and forth to work everyday- that's not how it should work	Policy	Accessibility	N/A
The stairs need to be shoveled in the winter. I find it incredible that the city caters like puppy dogs to cars and straight out refuses to make walking an option for 70%of the people. It's actually disgraceful. There is no reason not to have a network of pleasant routes for pedestrians that are not close to the now vicious vehicle traffic. How about spending 20% of the city's transportation expenses on 80% of the population, those that do not have cars. You could transform the city. It always happens.	Policy	Accessibility	N/A
Cabs should be $7 again	Policy	Reducing cost of living	N/A

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
Convenience and cost of taxi fare	Policy	Reducing cost of living	N/A
Cost of taxis	Policy	Reducing cost of living	N/A
Taxis are too expensive and too often unreliable. Public transit is needed, such as public buses. Better walking/ biking paths and sidewalks are also needed.	Policy	Reducing cost of living	N/A
Taxis are too expensive. $8 each way really adds up! I live downtown so I can easily walk to work, but any time I want to go anywhere else, it's really far to go when it's freezing cold out. A reasonably priced alternative would be awesome	Policy	Reducing cost of living	N/A
Safe taxi drivers Road conditions	Policy	Taxi regulations	N/A
Also that people offering transportation services here in town could have more than just a dome light and a car number on their car. They should have a logo of the company that they work for so people who cannot see very well can also see the cars. The walking in town would be much easier for people with disabilities if there were sidewalks. And properly marked crosswalks.	Policy	Taxi regulations	N/A
Cab drivers/ cars need a ton of work	Policy	Taxi regulations	N/A
Taxi is not affordable, and it can be unsafe, so many people (especially single women) do not take them. Walking is fine if it is accessible for you, but not after dark for some. Iqaluit desperately needs a bus system.	Policy	Taxi regulations	N/A
taxi service needs some type of safety training and have experience driving in northern conditions for at least 2 winter seasons before becoming cab drivers. they also need better winter tires!	Policy	Taxi regulations	N/A
Taxi drivers need more restrictions around the maintenance of their vehicles. Bad tires, seats that need repairing, seatbelts that sometimes don't work.	Policy	Taxi regulations	N/A
Taxi service, should be scared to get in an accident while taking taxis	Policy	Taxi regulations	N/A
Taxi Service. I think it should the the taxi companies RESPONSIBILITY to provide SAFE vehicles for their employees to use. I do not feel safe in the taxis that are provided especially the Crown Victoria's that are currently on the road. The taxi drivers have to foot a lot of money themselves: dispatch fees, gas, car rental. Yet, the vehicles they drive are not safe! This should be reviewed by the taxi review committee! But having said that, I feel because they have their own garage, they are just going to say the vehicles are road worthy even though they aren't (in my opinion).	Policy	Taxi regulations	N/A
Taxi's are dirty, unsafe and rude drivers	Policy	Taxi regulations	N/A
Taxis are crap. Broken, poorly maintained, smelly with rude drivers. Unreliable. A bus service would be awesome!!	Policy	Taxi regulations	N/A
Taxis need to be better maintained. I feel unsafe a lot of the time.	Policy	Taxi regulations	N/A

Open-Ended Questions
Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
Taxi drivers are unsafe and inappropriate.Transit NEEDS winter tires!!	Policy	Taxi regulations	N/A
Reliability of taxis. When paying for a cab I don't want to have to pick up others or drop others off during my ride.	Policy	Taxi regulations	N/A
Stop letting taxis pick up more than one fare a trip!	Policy	Taxi regulations	N/A
Taxi fares have been rising while fuel costs have been lowering, I feel if i am paying 8 dollars I should be allowed to have the fair myself and not share it with someone under the influence of alcohol or drugs. Also should be a set fare for the family.	Policy	Taxi regulations	N/A
Taxi sharing is dumb.	Policy	Taxi regulations	N/A
Taxis need to stop picking up so many people and making you late for events	Policy	Taxi regulations	N/A
The cost of taxis has increased from $6 to $8 in the last few years which is too much for the short trips we often make. The drivers are often rude , on their phones, or drenched in cologne that makes me feel sick. There is no alternative though. It makes access to things like medical appointments difficult for anyone on a reduced income. Traffic is bad around the government schedule with only scattered stop signs. In spring, the potholes are brutal.	Policy	Taxi regulations	N/A
The taxi fair are alright, however there should be rules put in place to prevent taxis from acting as car pools. There is no financial benefit to the user if there are multiple occupants in the cab.	Policy	Taxi regulations	N/A
Apex Road is in rough shape, the west 40 area is bad, more public parking is needed. Having a bus system to get people to and from work could help.	Roadway network	Condition	Apex Road
All the dirt roads needs to be paved, the pot holes creates damages to all lot vehicles	Roadway network	Condition	Not specified
Better roads, more access roads. Separate road system for industrial/ heavy equipment vehicles	Roadway network	Condition	Not specified
Definitely the roads that are not paved. For quality of some roads cause a lot of damage which in some cases is not environmentally friendly, especially when people can't afford to fix them	Roadway network	Condition	Not specified
Existing roads are in terrible condition. Asphalt is allowed to collapse on road shoulders. The Plateau subdivision shoulda be paved.	Roadway network	Condition	Not specified
Fix the roads so you can maintain actual public transportation and not have a broken down bus every week.	Roadway network	Condition	Not specified
high-volume graveled roads in spring....	Roadway network	Condition	Not specified
Road conditions	Roadway network	Condition	Not specified
Road conditions and maybe a road connectioning plateau to road to nowhere	Roadway network	Condition	Not specified

Open-Ended Questions
Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
Road conditions, congestion points, need for public transit	Roadway network	Condition	Not specified
Road conditions, crime/safety, loose dogs/packs of dogs, regulation of rush hour "traffic", lowering price of taxis	Roadway network	Condition	Not specified
road maintenance	Roadway network	Condition	Not specified
Road maintenance, Traffic Lights, flow of traffic	Roadway network	Condition	Not specified
Road quality and quantity	Roadway network	Condition	Not specified
Road repairs, public transportation, sidewalks	Roadway network	Condition	Not specified
Roads need improvement	Roadway network	Condition	Not specified
Roads need improvement (potholes!) Public transit would be great, but it needs to be convenient enough to justify over simply walking.	Roadway network	Condition	Not specified
Roads needs to be asphalted and we surely need a traffic light at the 4 corner (rbc bldg). More sidewalks too for pedestrians safety.	Roadway network	Condition	Not specified
Roadways need paved Parking Remove the backwards angle parking	Roadway network	Condition	Not specified
snow removal crews should ensure that snowmobile crossings are not filled in with walls of snow; trenches for spring melt run off do often force snowmobiles to reroute which makes travel (with qamutik) around town quite complicated; road from plateau subdivision to core area easily clocks up because of heavy traffic (relief road, or some sort of traffic control at college, high school, hospital intersection might help); the intersection of road to nowhere and federal road is of concern: no pedestrian space, the first left curve on road to nowhere is very slippery every winter (straighten out the road maybe) and if RtN keeps developing further traffic will start to clock there; leaving parking lot at arctic ventures is very dangerous; the following roads provide especially in wintertime limited space for pedestrians 1 way street, hospital to 4 corners, section from 1 way street to DJ's Federal Road from RCMP to airport.	Roadway network	Condition	Not specified
The roads being maintained and cleared better and more efficiently. Need safe places to walk beside on the roads in some places.	Roadway network	Condition	Not specified
The four corners and the Plateau core area entry/exit are both bottlenecks at crucial times of the day when people are going to and from work. The City should consider roundabouts as these could significantly increase flow and help get people to work on time while decreasing air pollution by having vehicles not run longer than they need to.	Roadway network	Intersection improvements	4 Corners
4 corners intersection near hospital bottom of platueau hill is very difficult to exit or enter morning, noon and evening (end of work day) traffic lights may help at these 3 places	Roadway network	Intersection improvements	4 Corners
4 corners, and the apex or ring road from 4 corners to the middle school. There needs to be turning lanes to avoid congestion and	Roadway network	Intersection improvements	4 Corners

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
more one way streets to slow down the traffic that tries to cut 4 corners by using other roads. I have almost been hit several times walking the streets in the downtown core that are near 4 corners by impatient GN and federal employees trying to get home 2 minutes faster. Its a severe safety risk. The parking lot by 4 corners is also a bad culprit for accidents. People cut through it to avois 4 corners, disregarding pedestrians.			
As difficult as it would be, I think street lights at congested areas i.e the 4 corners would be a start.	Roadway network	Intersection improvements	4 Corners
At peak times the 4corners intersection is too congested.	Roadway network	Intersection improvements	4 Corners
Find ways to avoid the 4 corners intersection	Roadway network	Intersection improvements	4 Corners
For vehicles: Need more alternative routes to take pressure off key intersections (like Four Corners). Need more all-way stop signs and/or combination stop/yield signs at heavily-trafficked intersections (like the bottom of the Plateau road). Need priority access to hospital. Need more right and left turn lanes.	Roadway network	Intersection improvements	4 Corners
The four corners down town need to be reworked or a stop light put in. right now traffic cuts up by the Parks Canada Office and goes between city hall and curling rink, or swimming pool, causes jams and unsafe driving conditions at lunch time and quitting time. This area really needs an over haul, Maybe a 1 way.	Roadway network	Intersection improvements	4 Corners
The 4 corners in the core is a disaster at lunch rush hours...lunch and 5pm not sure if traffic lights would help....	Roadway network	Intersection improvements	4 Corners
The 4 way stop by RBC needs traffic lights to better control the flow of traffic in that area	Roadway network	Intersection improvements	4 Corners
The core 4 way stop needs work and the rush hour on main streets needs work.	Roadway network	Intersection improvements	4 Corners
The four corners need to be converted into a roundabout. People just need to learn a new method, while easing congestion. This is used in other territories. The middle (island) can be as small as a barrel, so no excuse about it not fitting.	Roadway network	Intersection improvements	4 Corners
the roads, or more specifically, the configuration of, start with the 4 coroners, install turning lanes and traffic lights, they dont have to be active all the time, they can flash red and yellow for after hours..but this will certainly make that intersection more effective..not sure what the hold up is on it..but seems to work every where else in the world..	Roadway network	Intersection improvements	4 Corners
Traffic congestion is terrible at the 4 way, plateau area	Roadway network	Intersection improvements	4 Corners
Traffic jam at 4 corners, and the turn off to federal road	Roadway network	Intersection improvements	4 Corners
Traffic light at 4 corners during peak hours. Turning lanes.	Roadway network	Intersection improvements	4 Corners
Traffic lights at Mivvik and Queen Elizabeth would alleviate traffic back-up. Toughwr testing protocols would improve the general driving capabilities of the people using our streets.	Roadway network	Intersection improvements	Airport

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
More right hand turn lanes. Street lights on the road to Apex from AWG arena to Angel Street	Roadway network	Intersection improvements	Apex Road
Turning lane near the high school/plateau. Three lanes, two for the lanes required based on rush hour direction (like the Gatineau bridge)	Roadway network	Intersection improvements	High school
Traffic from hospital road all the way down to the 4 way stop by RBC needs major work	Roadway network	Intersection improvements	Hospital
All intersections.	Roadway network	Intersection improvements	Not specified
Intersections. Enforcement of the law; specifically, Right of Way.	Roadway network	Intersection improvements	Not specified
Major intersections	Roadway network	Intersection improvements	Not specified
Need stop lights at major intersections and turning lanes on main road to plateau, hospital, and Road to Nowhere and 4 corners	Roadway network	Intersection improvements	Not specified
Right hand turns, alternate routes at main intersections, modify new roads for existing volumes (not volumes of 20 years ago), parking, traffic light at 4 corners	Roadway network	Intersection improvements	Not specified
the Roads to get around town and the addition of stop signs on ring road.	Roadway network	Intersection improvements	Not specified
traffic lights	Roadway network	Intersection improvements	Not specified
Traffic lights, 4 way stops, turn lanes, paving, roundabout	Roadway network	Intersection improvements	Not specified
turning lanes should be instituted at the corner to the plateau and the hospital to ring road.	Roadway network	Intersection improvements	Plateau
The access road to get to plateau needs a turning lane. More enforcement for dangerous drivers. (People who stop on the road with no stop sign)	Roadway network	Intersection improvements	Plateau
The bottom of the plateau intersection entering the core area needs more lanes.	Roadway network	Intersection improvements	Plateau
The bottom of the plateau should have 2 lanes. One for turning right	Roadway network	Intersection improvements	Plateau
We need a round about at the bottom of plateau by the college and high school would help with the downtown congestion during rush hours	Roadway network	Intersection improvements	Plateau
Yes. Coming off the plateau needs a right turning lane.	Roadway network	Intersection improvements	Plateau
Better traffic control in some areas of downtown core could be improved during busy times - turn from Frob and road to plateau but NAC to Niaqunngusiariaq, four corners, turn near DJs onto Queen Elizabeth Way	Roadway network	Intersection improvements	Plateau
Need turning lanes, another main road connecting plateau to the core, traffic lights would at least create space for side street traffic to get on the main road instead of relying on kind drivers letting people in which will lead to accidents. Completely totally inadequate	Roadway network	Intersection improvements	Plateau

Open-Ended Questions
Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
parking through the entire city. Simply no excuse for this when we have plenty of space.			
Need turning lanes, Plateau is a nightmare during high traffic times and causes congestion. Pedestrians Have the right of way..... but sometimes traffic does not move because there are so many pedestrians crossing a 4 corners. One crosses and before they are done another one starts ect.....	Roadway network	Intersection improvements	Plateau
Bottleneck issues are bad at certain times and I think a bypass road would help.	Roadway network	New roads	Not specified
infrastructure beyond iqaluit area	Roadway network	New roads	Not specified
More roads	Roadway network	New roads	Not specified
More roads and right or left turn lanes.	Roadway network	New roads	Not specified
Need more outside roads	Roadway network	New roads	Not specified
Needs additional avenues to relieve pressure at high traffic times. Possibly adding turning lanes at bottom of plateau, other areas to speed traffic along and diminish some backlogs	Roadway network	New roads	Not specified
Need a second road from Plateau to downtown. Need public transportation options.	Roadway network	New roads	Plateau
Need a second road from Plateau to downtown. Stop allowing new building constructions on already congested roads (like Lower Plateau road) without consulting the public on traffic flow first. Lower Plateau road is dangerous -- the road is too narrow already, there are always cars parked on the side of the road, and there are two day cares and kids playing on that road. Ask anyone on that road and they'll tell you it's only a matter of time when someone gets seriously hurt -- and we are all frightened that it's going to be a little kid. And yet the city allows the developers to increase the size of their buildings, and allows them to have a parking lot directly onto the road, or creates little dead-end parking areas instead of a cul-de-sac that allows people to turn around safely. The proposednewbuilding is no different. They are getting a parking lot right off the street, instead of being below the building than what was in their original development plan! How many more cars are going to be on that already narrow street now? What happened to having a road at the end of that street that connected to Federal Road? A new building was put there instead. Really shortsighted city planning. And this is not the only area in town where they are more concerned about putting up buildings than thinking of how people are going to safely access them.	Roadway network	New roads	Plateau
Need another route down from the Plateau.	Roadway network	New roads	Plateau
Residential centres (plateau, road to nowhere, etc) with only one road connecting to main arteries leading to long backups during rush hour. Drivers rely on each other to allow cars through, rather than proper road rules.	Roadway network	New roads	Plateau

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
More road connections to increase network redundancy: Connect Anuri Street with Saputi Road by the QEC power plant; Connect Federal Road with the Plateau neighbourhood through IOL; Connect Masak court with Kangiq&Iniq Drive; Connect Mivvik with Ukkivik Lane/ new airport terminal area.	Roadway network	New roads	
Do not increase parking downtown, and enforce traffic fines for illegally parked cars. Reduce number of car on the roads by making it uncomfortable for vehicle owners. Subsidize taxi fares to keep them as an affordable alternative, and reinforce the safety requirement of taxi vehicles (they are offputtingly and scarily dangerous).	Roadway network	Parking	Downtown/ Core
What happened to the back in parking in the core area (Post office and Iqlauit House) is this actually part of the zoning by law? it is not being followed anymore, and more and more people just pull in and back out to the main street...this is a traffic issue especially for those backing across the road.	Roadway network	Parking	Downtown/ Core
breakwaters, boating access with parking. Parking in general.	Roadway network	Parking	Not specified
The road to Apex needs to be paved. Cars often drive on wrong side of road to avoid bad sections of road. This is safety hazard for oncoming vehicles.	Roadway network	Paving	Apex Road
Pave more roads, do them properly (drainage) make sidewalks or walk ways for pedestrians. Pave Apex, Pave west 40. Stop having HD equipment during sealift driving on these roads or have a better plan for them.	Roadway network	Paving	Apex Road
LESS dusty roads!!! How bad the roads are. Signalization. public transit.	Roadway network	Paving	Not specified
Mud roads are to be paved	Roadway network	Paving	Not specified
Pave the road to the causeway, driving our boat and trailer there we lost a wheel bearing and it cost us a fortune to get it faxed. Need speed bumps in the plateau, too many people drive crazy up there and there are kids everywhere playing, plus unmarked skidoo crossing paths	Roadway network	Paving	Not specified
Paved roads is needed in at least half the town. More ways to drive through town which cause more traffic plus year over year vehicle sealift is the main reason why. Add roads below lower plateau and college and new hotel on federal road.	Roadway network	Paving	Not specified
We need paved roads, public transit, designated and maintained walking trails and snowmobile crossings.	Roadway network	Paving	Not specified
PAVE Ikaluktuuliak! Put strong street lights at ALL intersections and cross walks...and maybe flashing cross walk lights. Either install smart traffic lights at four corners (i.e. are simply flashing most of the time, but become typical red/yellow/green during high traffic times OR have bylaw direct traffic during heavy traffic time.	Roadway network	Paving	
Airport road should be reverted back to 50km...from the RCMP to the end of the industrial area.	Roadway network	Roadway design	Airport
to reduce congestion, roads starting from Niaqunngusiariaq travelling through Nunavut or Kangisiniq to Federal Road should be	Roadway network	Roadway design	

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Comment	Theme	Sub-Theme	Specific Location
turned in to a one way street. Intersection of Federal Road and Nunavut should then become a four way stop. Intersection of Ikaluktuutiaq Drive and Federal Road should become a four way stop. Intersection of Ikaluktuutiaq Drive and Mivvik Road should become a four way stop. Potential accident area because of the utilidor system is too high off the ground. Intersection of Niaqunngusiariaq and Saputi should become a three lane road. With the middle lane close to Saputi be a left turning lane only. Install a cross walk either from Road to Nowhere and Niaqunngusiariaq or Naiqunngusiariaq and Paunna. Lots of pedestrians on that area. The closest cross walk is either by Joamie School or by the Hospital. Install a crosswalk or Bus stop close to the water booster station on Niaqunngusiariaq. Lots of children are forced to cross Niaqunngusiariaq to catch the bus on Atungauyait. Turn the Queen Elizabeth way and Sinaa intersection to a three way stop			
4 corners Bottom of Plateau Road to the brown across from the hospital	Roadway network		4 Corners
4 corners, near clinics	Roadway network		4 Corners
4 corners. plateau hill @ main road. hospital entrance @ boarding home	Roadway network		4 Corners
driving: 4 corners, near the discovery lodge-miviik street, walking: AWG to downtown	Roadway network		4 Corners
Four corners and intersection at bottom of Plateau	Roadway network		4 Corners
Four Corners Intersection, Apex Road, West 40 Road, Federal road	Roadway network		4 Corners
four corners, intersection Federal & Ikaluktuulak,	Roadway network		4 Corners
Four Corners, turning on to or off of Queen Elizabeth Way wherever there isn't a four way stop (intersections at Plateau entrance, High School, Arctic College, Hospital, Boarding Home, Women's Shelter-400)	Roadway network		4 Corners
The four corners, through to the hospital intersection.	Roadway network		4 Corners
Apex	Roadway network		Apex Road
Core area	Roadway network		Downtown/ Core
Core traffic	Roadway network		Downtown/ Core
Down town core	Roadway network		Downtown/ Core
Downtown	Roadway network		Downtown/ Core
Downtown	Roadway network		Downtown/ Core

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
Downtown core	Roadway network		Downtown/ Core
Downtown Core	Roadway network		Downtown/ Core
High school should switch their entry and exits. Completely dangerous And slows traffic.	Roadway network		High school
At the cross road	Roadway network		Not specified
Drainage system	Roadway network		Not specified
More lanes Public bus	Roadway network		Not specified
Roads	Roadway network		Not specified
Roads and sidewalks	Roadway network		Not specified
The roads	Roadway network		Not specified
Better lighting/signage, better access to Plateau and RTN. Taxis MUST have winter tires at a minimum, and should be 4x4. So many drivers cut corners, I'm not sure if road lines would help with that at all.	Roadway network		Plateau
Traffic flow and driver education - stop trying to be nice by stopping to let someone go. Accidents will happen! Also crosswalks are in dangerous areas. OHHHH and the high school entrance is a complete cluster fuck with people turning up to plateau too... It takes like 4 vehicles and that road is blocked solid...	Safety	Drivers/ enforcement	Hospital
More enforcement against poor driving.	Safety	Drivers/ enforcement	N/A
-Something has to be done about the "unwritten rules of the road" in Iqaluit. People yield and stop when there's no stop sign (Plateau intersection and Boarding Home intersection) which causes too much confusion. If people are going to stop there anyway, put up some stop signs or something. Even RCMP vehicles do this (which is ridiculous). You can stop to let someone in within reason, but it should be the exception and not the rule. People coming down from the Plateau at rush minute think you're a jerk if you don't let them in. -Cell phone use is rampant among drivers--mainly cab drivers, people driving company trucks, and young drivers. Someone is going get into a serious accident. -Cabs and Snack drivers are extremely aggressive on the road and their vehicles can't handle icy roads. -Speed bumps should continue to be added, there are too many fast drivers. People use the Lake Subdivision to go cruising at high speeds and children play on that road and there's a blind turn. Taxis make u-turns all the time on that road. -People from smaller communities (usually at the boarding home) don't seem to understand how pedestrian crosswalks work. They either rush across not knowing they have the right of way, or they cross a little	Safety	Drivers/ enforcement	N/A

Open-Ended Questions
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Comment	Theme	Sub-Theme	Specific Location
further down the road where there's no crosswalk. It would be good to have some signs at the boarding home to explain how they work. -Apologies for all the complaints, but I think the city has grown too fast and there are too many vehicles in town. I'm happy to hear that you're moving ahead with a transportation plan. Kudos to you and your staff.			
Set up stop sign cameras, so many people roll thru especially at the cross road on Happy Vally thru the coop housing, at the bottom of the Tundra Valley hill to Happy valley as well, at the bottom of the one way street…	Safety	Drivers/ enforcement	N/A
Slow traffic down overall and make it safer. Bylaw is non existent in areas where kids are biking and playing. But they can be found ticketing on Federal road. More speed bumps. MORE EFORCEMENT!!	Safety	Drivers/ enforcement	N/A
Need to do inspection every year for the private cars make it as a law. Some cars no lights some cars with spare tires. Some cars no signals There's no safety at all	Safety	Drivers/ enforcement	N/A
More driver training and mandatory 'ice tires' on taxis... beyond tired of fish tailed drives ... a stop sign at the hospital and a study / implementation of continuous trafic flow to reduce congestion there and at four corners ie round about or similar as traffic lights are too expensive to install and maintain.	Safety	Winter tires	N/A
Taxis should be mandated to upgrade from this white cars to reliable vehicles and actual winter tires. Maybe a transit system might work...??	Safety	Winter tires	N/A
Taxis should be required to have winter tires	Safety	Winter tires	N/A
Costumer attitude	Safety		N/A
Is there really a network? A network would mean there's a plan and ways to move people around safely, doesn't it? Seems like we have a road system but not a network--every person for himself/herself.	Safety		N/A
there needs to be promotion of car pooling along with available public transportation	Shared transportation	Carpooling	N/A
Unlicensed transportation is needed	Shared transportation	Transit	N/A
Any options for public transportation would be an improvement. Relying on taxis as a stand in for a city bus is inefficient and costly to individuals. Pedestrian safety is also a major issue that needs to be addressed. Walking from some areas of town is difficult/unsafe due to lack of a shoulder/sidewalk or adequate street lighting.	Shared transportation	Transit	N/A
As a growing capital city, we really need to invest in public transit. Be more pedestrian-friendly (sidewalks for safety). Promote maps of snow-mobile and walking trails. Limit the number of cars being brought into the city until we have sufficient parking and more efficient roadways.	Shared transportation	Transit	N/A
bus	Shared transportation	Transit	N/A
Bus in the city of growing Iqaluit is needed	Shared transportation	Transit	N/A

Open-Ended Questions

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Comment	Theme	Sub-Theme	Specific Location
Bus needed, taxis are so expensive. People who can't afford cars must pay out $100's a pay period. Add kids to that.	Shared transportation	Transit	N/A
Bus service would be great	Shared transportation	Transit	N/A
Bus system	Shared transportation	Transit	N/A
Free public transport	Shared transportation	Transit	N/A
Get a bus!	Shared transportation	Transit	N/A
Having a bus system, would increase the overall health of the community. There are numerous days were walking is not ideal. Some residents do not have a car, or do not have the money for taxis during these times. An affordable public transport would be highly favorable for these situations.	Shared transportation	Transit	N/A
Having accessible affordable public transportation	Shared transportation	Transit	N/A
I think the 1st step is to offert public transit will be during rush hours. That is the main need. Use the same school bus line and time (add busses or go around on those same line) and that will allow people from plateau, road to nowhere and apex to go downtown on sharing transportation.	Shared transportation	Transit	N/A
I would take a bus or shuttle if it was available	Shared transportation	Transit	N/A
In every way, need public transportation, proper sidewalks for walking, bi-cycle paths. Respect skidoo pathways, stop piling snow over key paths	Shared transportation	Transit	N/A
Iqaluit needs a bus route like yesterday!!!	Shared transportation	Transit	N/A
Iqaluit needs its own transit system , public taxis , public bus or shuttle ... monopoly established by the current system is not productive.	Shared transportation	Transit	N/A
It would be ideal to have access to a public transit system, that runs a few times a day in which people can have the option to pay a flat/lower rate say to go from Apex to town (Northmart as an example) and return. We live in times where the majority of the people who need access to transportation are those on limited to no income. We need start taking steps to help our people get back on their feet and if that means saving them 3 bucks a ride, that is 3 more dollars that they can use towards paying for food and provide clothing for their family.	Shared transportation	Transit	N/A
it would be nice if there was a better bus system. I would prefer to take the bus over the cab if the price is right. Also bus should be free for kids and youth	Shared transportation	Transit	N/A
Just lower the cost of taxi, we do not need a bus!	Shared transportation	Transit	N/A
Low cost consistent transport for College, women's shelter, downtown core and airport	Shared transportation	Transit	N/A

Open-Ended Questions
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Comment	Theme	Sub-Theme	Specific Location
Need a bus	Shared transportation	Transit	N/A
Need a looping public bus route that runs through major areas.	Shared transportation	Transit	N/A
Need public transit	Shared transportation	Transit	N/A
Need public transit, particularly to get people to/from work during the morning and evening rush.	Shared transportation	Transit	N/A
No access to public transit	Shared transportation	Transit	N/A
No bus. Time to try again!!! :)	Shared transportation	Transit	N/A
No existing public transportation - Iqaluit is large enough that we should have something that is also wheelchair accessible. Safer and larger sidewalks. Taxis need to be more accountable - they're the most irresponsible drivers in town.	Shared transportation	Transit	N/A
Public trans	Shared transportation	Transit	N/A
Public transit	Shared transportation	Transit	N/A
Public transit	Shared transportation	Transit	N/A
Public transit	Shared transportation	Transit	N/A
Public transit	Shared transportation	Transit	N/A
Public Transit Snowmobile paths and routes	Shared transportation	Transit	N/A
Public transit (bus service) could help ease congestion, particularly in the city core. Sidewalks are desirable to better separate pedestrians from vehicles. Bicycle paths would be helpful to give children in particular a safe place to ride free to vehicles.	Shared transportation	Transit	N/A
Public transit along ring road, to Apex and back, and along Fed road, would be nice.	Shared transportation	Transit	N/A
Public transit could help reduce vehicles on the road and reduce reliance on taxi companies . Also, traffic lights need to be considered for the core area.	Shared transportation	Transit	N/A
Public transit needs to become a priority. Families drain their monthly funds on taxis. The city is getting bigger and bigger and flat rate taxis work, but there needs to be a municipal option.	Shared transportation	Transit	N/A
Public transit service should be established. Space for walking and cycling incorporated on roadways. Buildings need secure bike parking spaces.	Shared transportation	Transit	N/A
Public transit should be considered an essential service.	Shared transportation	Transit	N/A

Open-Ended Questions

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
Public transportation	Shared transportation	Transit	N/A
Public transportation	Shared transportation	Transit	N/A
Public transportation such as a bus or shuttle	Shared transportation	Transit	N/A
Public transpotation	Shared transportation	Transit	N/A
Regular affordable Public transit	Shared transportation	Transit	N/A
There is no public transit. Buses would be great. Or taxibus (they have this system in Montreal, reserve and pay ahead)	Shared transportation	Transit	N/A
There needs to be a dedicated bus service during rush hours morning starting at 7am till 6pm. More runs during rush hours and every hour during the day.	Shared transportation	Transit	N/A
There should be more affordable and reliable transportation available to people who do not own their own vehicles. A bus that makes rounds every hour around town would be a huge improvement. Make it accessible, convenient and affordable and people will use it.	Shared transportation	Transit	N/A
There's no reliable and cost efficient public transportation system. People that can't afford a cab or vehicle relies on others or walk in really cold weather sometimes at their own risk if they can't afford warm attire.	Shared transportation	Transit	N/A
Transit Organised Trail system Road conditions	Shared transportation	Transit	N/A
Transportation sucks, public transportation and walking paths are needed	Shared transportation	Transit	N/A
We need a public transit bus	Shared transportation	Transit	N/A
WE need public transit. i think a mix of buses and taxis in rush hour used for transit could work	Shared transportation	Transit	N/A
We need public transport of some type here in the city. And it needs to be separate from the students school bus system.	Shared transportation	Transit	N/A
We need public transportation. Cabs are not a luxury, they're a necessity for many	Shared transportation	Transit	N/A
A bus service, even if it is only day time hours	Shared transportation	Transit	N/A
a bus that services main areas would be very nice	Shared transportation	Transit	N/A
access to public transit	Shared transportation	Transit	N/A
Affordable public transit	Shared transportation	Transit	N/A

Open-Ended Questions
Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
Taxi competition, bus, late night bar shuttle, more turning lanes on the roads	Shared transportation		N/A
Official snow machine trails through town. Parking for snow machines. And better bike / walking trails through town. Bike racks for locking bikes	Snowmobile network		Not specified
Prominent skidoo cross-ways across roads are often blocked by plowing, which makes it really hard to get around on snowmachine.	Snowmobile network		Not specified
road clearing needs to be aware of skidoo trails and clear the roads strategically. The Cost of a taxi is too high, but the drivers need to be able to afford a living as well. taxi radio and car rental rates need regulation.	Snowmobile network		Not specified
snowmobile trails, snow clearing along trails, gravel along crossings, steep snow banks. The road to the causeway for boating needs work. This is a vital part of the transportation infrastructure in town.	Snowmobile network		Not specified
Routes for snow machines to out of town areas (sea ice or land) that do not impinge on people's home privacy and noise at night. Route for snow machines that is sensible and avoids Lake Geraldine.	Snowmobile network		Not specified
Bottle-necking at the 4 corners, traffic congestion on main roads heading to the core during rush hour times. Sidewalks would keep pedestrians safer and off the side of the road.	Traffic	Congestion	4 Corners
Congestion from main 4 way needs to be controlled.	Traffic	Congestion	4 Corners
the core is too condense, the 4 corners by 922, in front of NorthMart, by the hospital and boarding home	Traffic	Congestion	4 Corners
The Apex road is too congested during rush hours. Traffic needs other routes to flow. Access to Inuksugait plaza is terrible - on foot or vehicle. Wasn't NCC supposed to build a sidewalk?	Traffic	Congestion	Apex Road
Downtown core at rush hour/lunch	Traffic	Congestion	Downtown/ Core
Congestion from Uptown to Downtown at peak times during the workday.	Traffic	Congestion	Downtown/ Core
they should direct traffic for 20 minutes at key times to alleviate the traffic jams on hospital hill, four corners, the one-way, etc.	Traffic	Congestion	Hospital
High time traffic	Traffic	Congestion	N/A
Too many vehicles in town - will the number of vehicles be regulated? We need a public transit system that is well planned, well thought out and well advertised and promoted.	Traffic	Congestion	N/A
Congestion and bottle neck at rush times	Traffic	Congestion	Not specified
Rush hour	Traffic	Congestion	Not specified
Main roads are becoming quite congested during peak times. It some areas it seems that too much traffic is funneled through choke points (i.e. Plateau)	Traffic	Congestion	Plateau
Children should stay at school over lunch, reducing the amount t of vehicles on the road. Affordable, reliable public transit that is frequent and centralizes in a depot in the core area should be a	Traffic	Lunch time school buses	N/A

Q18: Are there any specific areas in Iqaluit's transportation network that need improvement?

Comment	Theme	Sub-Theme	Specific Location
priority - served by a fleet of small buses per neighbourhood to downtown.			
Negotiate with schools to stop lunchtime bus service, with a school lunch program as an alternative. Encourage lunch businesses downtown for office clientele. Get the cars off the road at lunchtime.	Traffic	Lunch time school buses	N/A
Stop bussing students home at lunch. Reduce lunch hour traffic. Have public transportation or Uber.	Traffic	Lunch time school buses	N/A
Don't know			N/A
Everything is fine			N/A
I didn't even know Iqaluit has one.			N/A
No			N/A
The city doesn't provide much of a network.			N/A
The city planners must smoke a shit ton of crack			N/A
There isn't a transportation network besides taxi..			N/A
To be cost effective.			N/A
we have a transportation network??			N/A
We need a good way to get to and from work, for one, and to get to grocery stores as well as picking up parcels at the post office. Picking up and dropping off kids at daycare is also important, as are similar logistics with school-age kids, including lunch.			N/A
What is your definition of Iqaluits transportation network?			N/A
all			Not specified
All of them			Not specified
every area in Iqaluit transportation needs to be improved			Not specified
Every where			Not specified
everywhere			Not specified
West 40			West 40

Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Listing of comments, sorted by theme and sub-theme

Comment	Theme	Sub-Theme
I wouldn't mind the extra time to bike to work considering a safe path without any motorized traffic. Could be shared with walkers. Especially from awg to ball diamond through downtown.	Cycling network	
Crosswalks need lights. I have seen numerous pedestrians that are barely visible in blowing snow and darkness nearly get hit. If they could activate a button at a crosswalk vehicles would know someone is there in poor conditions.	Pedestrian network	Cross-walks
I know that there are other priorities such as the water situation but the roads do need to be addressed not just for their condition but for the safety of all the vehicles and people on them. Sidewalks should be a future consideration to keep pedestrians safe from unruly drivers and slipping accidents.	Pedestrian network	Sidewalks
Improved and clearly sidewalks. Cars currently use the space for walking to gain traction. Not safe for pedestrians. There is no bicycle infrastructure. And see above	Pedestrian network	Sidewalks
Iqaluit needs proper sidewalks, bicycle paths and public transportation for safer and more environmentally friendly solutions	Pedestrian network	Sidewalks
More sidewalks, clear pedestrian crossings with lights, stagger work/lunch times to reduce traffic congestion	Pedestrian network	Sidewalks
New communities (like Joamie Court) should have shoulders for walking built in to the design.	Pedestrian network	Sidewalks
-Pedestrians need more space to walk. There's going to be a bad accident one day. -More stop signs where people are self-directing traffic. Ideal would be traffic lights or a roundabout, but these would cost a lot of money. It would be better to try stop signs first. Maybe turn-off ramps.	Pedestrian network	Sidewalks
Sidewalks sidewalks sidewalks	Pedestrian network	Sidewalks
You should study what happens when a city installs pedestrian networks based on the routes already used. People use them. Public transportation consisting of maybe 5 routes with Frequent 7 passenger vehicles is a great idea. Starting with one route federal road to apex goïng by the grocery stores is perfect. One staff should be able to handle the entire project. More and the cost of operating it gets out of hand.	Pedestrian network	Sidewalks
more pedestrian trails and better snow clearing of walkways along streets	Pedestrian network	Trails
There should be walking trails outside the main streets system to avoid air pollution and be safer. These trails could be marked. It would invite more people to walk. Big work. Better get to it sooner than latter. Try to get people walking. Fight the car system!	Pedestrian network	Trails
Walking/cycling paths would be helpful for safety.	Pedestrian network	Trails
We need provision for more walking trails to connect neighbourhoods. Given that we've decided to use a windy suburban street layout in more recent subdivisions, we need to accommodate walkers who want to take	Pedestrian network	Trails

Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
more direct routes. However, currently this entails walking through back yards, etc.		
we should really try to limit the number of personal vehicules in the street and promote alternative ways : walking, ciclyng, dogsledding :)	Pedestrian network	Trails
Your questions about areas we use refer to outside Iqa. For me that meant outside of the zones you coloured, I.e. on the land and sea ice, where I ski, hike, snowmachine, although some of these areas ares within iqaluit limits. Question was not clear and could mean other communities or south. Other things needed: Walkways in between houses in Plateau that do not impinge on privacy. Safe sidewalks on main arteries without silliness of a few yrs ago about poles that offended some people's sensibilities. Routes for snow machines to out of town areas (sea ice or land) that do not impinge on people's home privacy and noise at night. Route for snow machines that is sensible and avoids Lake Geraldine.	Pedestrian network	Trails
Consider the future growth of the city and the number of cars that are continually being brought in each year. Planning for alternate modes of transportation such as a bus and better walking routes would be helpful.	Pedestrian network	
Considering most Iqaluit residents walk, bike, or taxi the focus of the transportation plan should be on encouraging safe, active, affordable (or free) modes of transit. I walk every day up and down the hill to Plateau (-60, blizzard, with groceries - doesn't matter because I always have the appropriate gear). Unless disabled anyone can walk if they have easy access to warm winter gear. The City could have an active living/walking campaign where walking is promoted and awarded (post #walking picture and a random/frequent post could get a free month gym pass). Warm gear should be donated to shelters, and schools; City could organize! Short and long hikes could be organized by the Aquatic centre (IQ walks, berry picking, etc). Likewise the aquatic centre could start a bike club/paid outdoor bike class during the warmer months. Bars should be required to give out taxi vouchers to anyone that they have to kick out. Roads should be paved so pedestrians dont have to inhale dust and particulates. Roads should have bike lanes. RESIST the 'need' for more downtown parking. Iqaluit is a small town. Most people could walk to work within the time span of 10 to 40 mins and they'd live longer with less of a carbon footprint. Build HIGH density (8 story) housing with mixed use ground level retail where there is existing wasted space in the Downtown, currently reserved for rushhour parking. Examples: sivammuit parking, Inuksagiat plaza parking, aquatic centre's second parking lot (that's always empty). Could have streetside parking instead, along federal, etc.	Pedestrian network	
Discourage extensive car use, come up with paid parking	Pedestrian network	
Walking is healthy and leads to better outcomes for your citizens. In the winter is can be nearly impossible to walk particularly if you have a disability. Take for example the route between 630 and Northern and imaging you have an issue with walking strength and balance. This needs to be prioritized.	Pedestrian network	
I think that the city should be following up with ndms to incorporate all aspects of disabilities and what people need.	Policy	Accessibility
If we were to have bus system, could you please consider accessible vehicles that kneel for seniors and parents with strollers, others who have trouble with steps or other issues with getting on and off buses. When using the taxi vans and having to climb into the back or get out of the back it's very challenging as we age. Thank you!	Policy	Accessibility

Open-Ended Questions
Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
We need a way for children and elders get home safely	Policy	Accessibility
If we expect the world to care about Arctic climate change, we need to act like we care, too. High taxes on imported cars and good public transit are essential.	Policy	Environmental concern
Innovative technologies from up and coming environmentally friendly movements. Taking time to research a northern specific plan that focuses on environmental stewardship rather than spending hundreds of thousands of dollars on consulting companies. Stand your ground on what is right and the upmost best solution for generations to come.	Policy	Environmental concern
There is TONS of federal funding for public transit initiatives in response to climate change efforts. Feel free to contact the GN's Climate Change Secretariat for more info!	Policy	Environmental concern
For public transport have a subsidized monthly pass for low income	Policy	Reducing cost of living
I walk every day 20min minimum to go to work because I cannot afford taxi and rent per month. Leaving in a Capital we should have access to public transportation.	Policy	Reducing cost of living
Regulate properly the cost of taxi fare. Assuming you are riding a taxi daily at the cost of $8 per ride multiply by 2x daily multiply by 5 days X 29 days X 12 mos. the sum would total to more than enough monthly premium for a personal car loan. But if everyone avails for a loan traffic will be disruptive. Population in Iqaluit is getting bigger, and it’s time to rethink a public transport that would ease everyone’s burden. The government will profit from it and is convenient for riding public.	Policy	Reducing cost of living
Sustainable financially. Remember nobody used the bus because it was not good. Two buses, use one and keep the other as spare and have a bus app so that you know at all times where is the bus in case there is a traffic jam. You cannot rely on bus schedule. One full-time driver and a dozen relief on-call drivers to run the bus from 6 am to 6 pm Monday to Sunday leaving city hall on the hour every hour. How much does Nunavut Arctic College spend on bus budget every year? This is an indication how much our bus service would cost. This will remove quite a few cars from the road. You cannot charge money because people have too many cars. In Brisbane Australia inner city there are two free shuttle bus routes.	Policy	Reducing cost of living
Taxi service is not an affordable accessible form of transportation. A bus system would mean less taxis on the road improving traffic flow and also allowing taxi drivers to have a sustainable living wage. People should be provided incentives for walking, biking, and carpooling with work colleagues. Like reduced price at the pool or for the gym or perhaps grocery vouchers. For eco friendly transportation that reduces traffic flow.	Policy	Reducing cost of living
thanks for the survey. looking forward to seeing affordable public transportation someday soon.	Policy	Reducing cost of living
The most important things are for transportation to be affordable, reliable and accessible to everyone.	Policy	Reducing cost of living
Unfortunately I don’t think it financially feasible to have a bus service. I think for the locals with no car etc and who need financial assistance the taxi service could be subsidized 50%.	Policy	Reducing cost of living
What do people really want, AFFORDABLE TRANSPORT (subsidize) or RELIABLE TRANSPORT (paid for service)?	Policy	Reducing cost of living

Open-Ended Questions
Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
get the taxis off the roads	Policy	Taxi regulations
I feel unsafe in most taxis here. Many drivers do not drive appropriately for the conditions or are distracted when driving - this can be terrifying when you are unable to use the seat belt. I do everything I can to avoid taking a taxi.	Policy	Taxi regulations
It should be mandatory that all taxi's require 4x4 S am option. Either AWD or 4x4 selectable option for every taxi permitted to operate. Public transit should be a high priority for the city. But some sort of system should be required to ensure all riders are paying for each trip or be required to obtain some sort of pass that allows them to board to avoid fre riders occupying seats all the time	Policy	Taxi regulations
Stop letting taxis pick up more than one fare a trip!	Policy	Taxi regulations
TAXi are still driving people around the whole town before getting to a destination. They need culture training very racist towards Inuit. They are still bootlegging as well.	Policy	Taxi regulations
Taxi company should not be allowed to eat up all of the fare increases...	Policy	Taxi regulations
Taxis are terrible because of forced sharing and stopping to pick up multiple customers. Can't believe this is allowed. It's ridiculous. I never use taxi but my dies and my 9 year old son has been with her when the cab stops to pick up drunks. I don't appreciate my family being put in that situation. Luckily we have our own vehicle and seldom have to use a taxi service. Would love to see driverless public transport you can order and pay for from your cell phone. Change the taxi bylaw to prevent multiple pickups. One client per cab please. City seems to do well in maintaining, clearing, sanding etc streets.	Policy	Taxi regulations
The local taxi service is an economic based company and such act that way. Which I don't disagree with but at times it takes sometimes 40mins from the time you call for one to the time you reach your final destination because of the amount of time it takes to round up the passengers, deal with traffic congestion and dropping off passengers to various locations. There needs to be an alternative method of transportation for those who don't own a personal vehicle.	Policy	Taxi regulations
Transportation is currently monopolized by [redacted], which is the worst possible reality. [redacted]'s attention to customer needs is pathetic, while his greed is enormous. Transportation needs to be ENTIRELY handled by the government. There NEED to be rules that are not only in place but also followed. Cab drivers are under paid and under appreciated and as a result they are careless and dangerous drivers. If the government were to pay drivers a salary rather than a fare based wage they may be more inclined to present themselves as respectable. As transportation is such an important part of northern communities it should be taken seriously, and with private business owners taking advantage that will never happen. Please fix this issue, as it has been out of control for far too long and it is only getting worse.	Policy	Taxi regulations
DP process should be realistic and establish higher percentages for large developers when high density buildings are being approved. present rates for offsite infrastructure improvements are less than 10% of the developers construction cost on average.	Policy	

Open-Ended Questions
Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
I have been twice asked to leave areas designated "No Parking" when I was in my vehicle with the engine running. As I understood this - this is not "parking" but, rather "standing." Can we have appropriate signs in areas if "standing" is not permitted?	Policy	
I would like the Mayor, Councillors, and authors of Master Plan to take seriously the role that beautification takes when considering transportation in the city. For example, when a new road is built, tundra or other natural plans are removed. This seems especially shameful not only because tundra is so beautiful but because of the hundreds of years it takes to grow. In the south, I have often scene that when developers are building new subdivisions or new buildings there is special consideration for green space and re-planting. I think the same should occur in Iqaluit. This will also have a direct impact on transportation in any case, because vegetation plays an essential road in flooding (i.e. in spring and pothole season) and in summer when there is an enormous amount of dust in the air. Considering beautification in relation to your transportation plan I would imagine is relatively inexpensive, particularly if the plan is to build new roads (all you would have to do is ensure the plants being dug up in construction of the road are preserved and then replanted). In relation to this point, it might be a consideration of the city, to consider a policy or by-law that requires that with any construction in Iqaluit, builders are required to preserve and replant at least 50% of the tundra they excavate in the process of building. Beautification touches on the general well-being of the community who are intended to enjoy the city and also the impression on tourists and visitors who come and see the city. I think its important.	Policy	
It needs to be sustainable and have room for growth. Too much here is reactionary. Iqaluit is growing, and the plan needs to include room for that.	Policy	
It's great to see that you have taken the steps to study this, businesses and organizations love to talk but rarely get to action the idea. Let's see this one through!	Policy	
plan should discourage using vehicles on a daily basis to get to downtown offices for work by making it safer and more enjoyable to walk and bicycle	Policy	
Survey in french please (as an official language of Canada.) . Thanks for doing this!	Policy	
The prioritization of personal cars in this city's transportation system is a problem that should be solved. People would rather purchase cars at great expense than walk more than 15 minutes to work. In order to purchase a new or used car from a dealer, one must ship them up here on a sealift. This creates a barrier to owning a car. Yet despite this, many people do buy cars in a city that is too small to require them. This may be because of the cold but it may also be because this city's transportation system currently functions only to serve people driving their own personal cars, the most inefficient form of transportation available, over pedestrians. While there are no car dealerships in Iqaluit, there are places to buy ATVs and snowmobiles. Creating a transportation system that favours these vehicles instead has the potential to inject more money into the local economy. These vehicles are cheaper than cars and therefore better for Iqaluit residents. They're more efficient and use less fuel. They're also the only vehicles capable of allowing people to explore Iqaluit's natural beauty beyond city limits. To build a city like this with the idea that cars will be the primary mode of transportation is a southern solution to a Northern problem. We should find made-in-Nunavut solutions and follow through on them.	Policy	

Open-Ended Questions

Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
Fix the roads. Public transit will come after that. Or do public transit first and keep incurring costs because of repair.	Roadway network	Condition
Graders should scarify the compacted snow before sanding the roads. That way the sand sticks to the snow.	Roadway network	Condition
A light at the hospital, four corners and northmart which only works during rush hour. And blinking red all other hours (blinking red means it's just like any other stop sign)	Roadway network	Intersection improvements
Add turning lanes at busy intersections.	Roadway network	Intersection improvements
Aside from roundabouts, there really needs to be a transit system. Not a big bus, but multiple smaller buses. The addition of bus stops with non slip surfaces is vital.	Roadway network	Intersection improvements
Establish turning lanes	Roadway network	Intersection improvements
Explore opportunity for a roundabout at both intersections	Roadway network	Intersection improvements
I'd like to see a roudabout maybe in the central area of town and one at the bottom of plateau. They are 30% faster and safer when drivers are used to using them. I would actually like to see this properly surveryed out to see if it is possible to be done i believe it could work. if the statue would need to be moved it could center the roundabout as well.	Roadway network	Intersection improvements
In addition to exploring public transit and roundabouts, the City should seriously consider using a Complete Streets policy to also make safe and efficient walking and biking paths that would benefit both residents and tourists: https://www.completestreetsforcanada.ca/. Thank you for this opportunity! :)	Roadway network	Intersection improvements
install traffic control lights so to be used during the busiest hours on both four corners. During off hours, turn them in to a four way stop.	Roadway network	Intersection improvements
People's ignorance of how to use modern infrastructure technology is not a good reason to avoid installing it. Teaching people to understand a traffic light is better than leaving 150 cars at a time idling downtown. The smog around my home in the winter is worse every year.	Roadway network	Intersection improvements
Same as above, if we can’t have stop lights let’s use some roundabouts!	Roadway network	Intersection improvements
Stop lights at 4 corners	Roadway network	Intersection improvements
Street lights instead of the ridiculous 4 way and individuals trying to get off the plateau. Prior to transit street lights are a vital aspect in progression and moving forward.	Roadway network	Intersection improvements
Street lights or traffic officers at busy intersections	Roadway network	Intersection improvements
streetlights or roundabouts, or both are now needed	Roadway network	Intersection improvements
there should be a roundabout at the 4 corners	Roadway network	Intersection improvements
there should be some consideration for traffic lights at difficult areas	Roadway network	Intersection improvements

Open-Ended Questions

Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
Think about round abouts instead of 4 way stops. Dont put in streetlights! Too much maintenance. Roundabouts work and they can be quite attractive is done well. Roundabouts support safe walking if built properly.	Roadway network	Intersection improvements
Traffic circles work well to alleviate congestion	Roadway network	Intersection improvements
Traffic control at major intersections	Roadway network	Intersection improvements
Traffic lights at four corners, old hospital T-intersection, blinking light at DJ's corner. Turning lane at the bottom of plateau road to ring road. Tear down and rebuild Apex Road. Paid crossing guards at school crossings.	Roadway network	Intersection improvements
Traffic Lights during rush hours at 4 corners Lighted crosswalks	Roadway network	Intersection improvements
traffic lights or one of those ppl that stand outside and direct traffic or a round about, need public transit, lights for the road behind the Joamie School.	Roadway network	Intersection improvements
We probably need a few more stop signs or lights but I don't drive in those areas so I can't comment. I do understand though there are very long cues to get up and down the new plateau subdivision and the T stop at hospital/boarding home needs to be addressed, could be a 3 way stop.	Roadway network	Intersection improvements
I really feel the city needs to look at how terrible it is to get into the core area of town. We need more backroads that allow transport around the outskirts to better bypass the core area. Also think it would make sense to have the high schools driveway access looked at since it holds up traffic excessively during peak hours. Possibly look at more stop signs on ring road to better help traffic on plateau road and hospital area. The accidents and near misses caused by people speeding and no one letting people into the main road is terrible.	Roadway network	New roads
Needs extra roads built.	Roadway network	New roads
Please, please, please create alternative feeder roads to the airport, to the new Federal Road development, and around Four Corners. Please, please, please create efficient alternative walking pathways to encourage walking. Ideally create off-road pathways that are safe, quick, and maintained year-round. Re-consider roundabouts, yielding traffic patterns, and more 3-way and 4-way stops.	Roadway network	New roads
Road connecting lower plateau to Federal road. Public lessons on 4 way stops :)	Roadway network	New roads
There are only 2 ways to access the core of Iqaluit from tundra valley. There needs to be more access points. People coming to town turning left at hospital hold up traffic, people who are nervous to turn left at house 400 also back up traffic pretty bad. Something needs to be done to help traffic flow. Turning lanes.	Roadway network	New roads
would be nice to be able to drive personal vehicle to recreational/cabin/hunting/siteseeing like the rest of Canada	Roadway network	New roads
Focus on vehicular travel while making pedestrians safe. Car/trucks will always rule Iqaluit streets. Don't pretend otherwise. Provide adequate parking.	Roadway network	Parking
Parking space is critical Remove ALL the rocks	Roadway network	Parking

Open-Ended Questions
Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
Proper parking	Roadway network	Parking
All roads should be paved	Roadway network	Paving
Definitely the roads, which will also eliminate a lot of unhealthy dust that people are breathing into their lungs.	Roadway network	Paving
Pave all roads	Roadway network	Paving
Pave all roads and have side walks.	Roadway network	Paving
Paved roads and sidewalks	Roadway network	Paving
Consider a third lane for ring road, apex road till middle school, Mivvik street, and federal road.	Roadway network	Roadway design
Design roads with ice slippage/ black ice in mind especially on the plateau. Road surface needs to be rethought for that area... I've slid to the T junction in the past as well as on coronation street and the street at 5151... scary!	Roadway network	Roadway design
I think there needs to be something done about the wooden posts in the downtown area. Driver's hit them all the time and then the posts become an eyesore. It has also been a safety issue during the "rush hour" when an emergency vehicle tries to go through the traffic and driver's can't pull over because of the post's.	Roadway network	Roadway design
Improve drainage to avoid water build up, blocked culverts/drains, and potholes, especially before paving unlike previous paving projects. Look at less expensive, but proven asphalt alternatives for Arctic environments. Improve pedestrian safety.	Roadway network	Roadway design
It would be great if we didn't plan to direct all traffic to the core area. It makes sense to be able to drive from Plateau to lower Plateau, or from plateau down to core, via the IOL parcel on federal road. And please - enforce the turning lanes near the new daycare!	Roadway network	Roadway design
Large signage	Roadway network	Roadway design
Make the streets going into the town hall and the courthouse one way!!	Roadway network	Roadway design
More one way streets, speed deterents such as more bylaw catching speeders. And a change so that there are fines that are followed up on to tickets issued. Right now there are no penalties if you do not pay an outstanding traffic ticket.	Roadway network	Roadway design
More signs, better lit areas including signs that have lights eg. crosswalk lights	Roadway network	Roadway design
-Proper street lighting at smaller intervals for enhanced visibility especially during the dark season -Properly signalled pedestrian crosswalks with good lighting	Roadway network	Roadway design
The road by the court house and the Old Arena should be one way to stop people from stopping traffic on the main road to give breaks to the cars coming from those roads.	Roadway network	Roadway design

Open-Ended Questions
Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
Iqaluit needs proper storm water drainage to protect pavement and road beds	Roadway network	Stormwater management
Many vehicles drive with no insurance. This is a major concern. Perhaps another viable option may curb this habit and cut down # of cars on the road.	Safety	Drivers/ enforcement
Maybe not the right place but there are an awful lot of people texting and driving. I drive a lot and see at least 10 people a day texting and driving.	Safety	Drivers/ enforcement
More by law enforcement of speed limits.	Safety	Drivers/ enforcement
The issue of cars stopping anywhere to allow pedestrians to cross anywhere or to allow other cars into the flow of traffic is dangerous as you cannot anticipate when the cars in front will do this. Education campaign for road safety is important.	Safety	Drivers/ enforcement
Train all taxi drivers the rules of the road. We drive on the right side of the road! And we stop at stop signs.	Safety	Drivers/ enforcement
Yes Can you please Do inspection on the private cars. And also add more stop signs.	Safety	Drivers/ enforcement
Municipal enforcement of burnt out headlights, taillights, and turn signals.	Safety	Vehicle condition (taxis)
Safety for pedestrians	Safety	
Safety is key. I do not feel safe at all to walk around town due to the high number of loose dogs and the safety risks due to public drunkeness, drug induced intoxication, physical fights and overall crime rates in town. Very sad and unfortunate but true.	Safety	
Carpooling organization would be helpful	Shared transportation	Carpooling
Code of conduct for taxi drivers when taking taxi's. More consideration for those getting to and from apex.	Shared transportation	Taxi
A Bus service never worked before. Its been tried twice before, a losing proposition. City is always trying to reinvent the wheel. stop flogging a dead horse.	Shared transportation	Transit
A bus service put in place	Shared transportation	Transit
A public transportation system would be awesome! What about the traffic issue in Iqaluit? It's not good.	Shared transportation	Transit
-Access to public transit -streetlights that dim or turn off in low density areas -higher tax on larger vehicles like trucks -roads and walkways developed for pedestrian, skidoo, ski, and bicycle use -use of roundabouts and traffic slow down measures like vancouver -mandatory sidewalk construction alongside new road construction -incentives for employees who walk to work (longer break times)	Shared transportation	Transit
Affordable, reliable, accessable, timely, clean, plenty of options for pick up/stops has enough seats for enough people	Shared transportation	Transit
Bring back short buses for transportation. Cab drivers don't like to pick up people who are in apex.	Shared transportation	Transit

Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
Bus routes should include Apex.	Shared transportation	Transit
Bus service may be helpful, however I'm sure the taxi service will complain....Taxi fare is reasonable however many taxis are unfit for the road and not clean ..perhaps if the taxis were better maintained and clean and the drivers maintained a higher level of personal hygiene more of us would take taxis	Shared transportation	Transit
Busses!	Shared transportation	Transit
City bus should be considered	Shared transportation	Transit
City really needs to look at a busing program and eliminate the need for so many taxis...	Shared transportation	Transit
Consider bus service?	Shared transportation	Transit
For cost reasons a bus to and from work areas weekdays only mornings and after work	Shared transportation	Transit
I think a bus, or mini van, or shuttle service should be established. Mainly for short trips around the community, and up and down the hills to the neighborhoods to the downtown core where people work. I feel that there are too many vehicles used for commuting short distances with only the driver. The air quality suffers	Shared transportation	Transit
I would absolutely love to see a city bus service. I would use it in my everyday commuting. I would much rather pay a bus service than take a taxi. $8 per ride adds up really quick. I would suggest bus stops be at the airport, northmart, AWG and apex for very basic stops.	Shared transportation	Transit
Introducing a public transit Bus could be beneficial and save cost on taxi's for families (good for environment too). Summertime, a bus schedule for the parks would be beneficial so, citizens can go for picnics/fishing and, have it run into the evenings to get back to town.	Shared transportation	Transit
It's time for a bus system	Shared transportation	Transit
Maybe it doesn’t have to be a specific “route” but there should be at least one bus stop in each neighbourhood so you could get on/off and walk to your actual location from there	Shared transportation	Transit
Need wheelchair accessible public transportation	Shared transportation	Transit
please consider shuttles from various neighbourhoods to downtown, reliable schedule is very important. A shuttle from the downtown to outdoor recreational areas ie. summer months from the hotels to Sylvia Grinnel park, downtown to causeway, Sylvia Grinnel park and Apex In the winter there could be a shuttle from neighbourhoods to the park for cross country skiing Make sure new roads are wider to allow for pedestrians and cyclists Consider urban ski trails to and from recreation centres and through town Improve and define skidoo trails in town and leading out of town, make sure there are skidoo trails to the gas stations	Shared transportation	Transit
Please have public transit system such as city bus.	Shared transportation	Transit

Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
Please implement a public bus system, that's inexpensive, covers all of Iqaluit, invest in the future. One cab company is not sustainable and puts customers at the mercy of this one contractor. As a driver I would love to see the roads paved without potholes and properly ploughed and sanded when it's icy. I live up on the plateau in the west 40 area and that road is extremely dangerous and slippery during spring and warmer conditions thawing the snow.	Shared transportation	Transit
Please put bus public transport	Shared transportation	Transit
Please re-introduce a bus I think Iqaluit is ready for it. Taxi's are awfully disgusting and gross especially in the evenings when they are picking up drunks. Not safe at all for young teenagers who like to go to the youth center or who babysit It scares me having to think the drivers will pick up drunks with my 16 year old daughter in the car. She doesn't see it at home, she shouldn't have to be exposed to it just to go to the youth center for activities	Shared transportation	Transit
Public bus systems would fail miserably and would cost the city a lot of money	Shared transportation	Transit
Public Transit Snowmobile paths and routes	Shared transportation	Transit
Public transit or a City-led initiative for carpooling would greatly reduce traffic at the start, mid and end of the workday. An airport shuttle would be an awesome public transit route feature.	Shared transportation	Transit
Public transit should be considered; build and maintain year round walkable trails to encourage reduction in car use, and increase in safe walking spaces.	Shared transportation	Transit
Public transit. Airport shuttle	Shared transportation	Transit
Public Transport, like buses, is a very reasonable expectation for a town with our size and spread.	Shared transportation	Transit
Public transportation	Shared transportation	Transit
Public transportation like city buses would be fantastic! I would use it and leave my car at home.	Shared transportation	Transit
Rankin has one and is way smaller than Iqaluit!	Shared transportation	Transit
Try buses again. The city is big enough for it now. And not just ring road. I would be a user. For sure.	Shared transportation	Transit
We desperately need a public transportation system. Consider atypical changes to the existing plan. Consider alternatives to the norm, especially given the environment. How about a toll road? A roundabout at congestion points? Instituting a convenience tax on households with more than one (1) vehicle? Look farther afield than Canada for choices, i.e., what is done in Nuuk or Reykjavik, and other cities which are remote.	Shared transportation	Transit
I would appreciate more consideration be given to snowmobile with qamutik (hunters) traffic through town, especially better solutions for spring time when snow free paved road, high snow banks and/ or run off trenches make navigation very difficult and wear out gear fast. more pedestrian safety and encouraging walking over driving would be great, also setting up public	Snowmobile network	

Open-Ended Questions
Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
garbage containers that will be emptied regularly throughout town might help with a cleaner city,		
Iqaluit should strengthen its identity as a northern city by prioritizing convenient snowmobile trails to get around instead of always focusing on cars.	Snowmobile network	
Official snow machine trails through town. Parking for snow machines. And better bike / walking trails through town. Bike racks for locking bikes	Snowmobile network	
Some of the snow mobile trails around town are a bit tricky, like crossing Road to Nowhere, but I'm not sure how that could be improved.	Snowmobile network	
standards for snowmobile trails and address multi-use trails	Snowmobile network	
1sp step is to focus on Monday to Friday, am, lunch and pm, to stop having so many people coming downtown with a personnal vehicule when everyone can share. I hope that buses will be accessible to young/student. For exemple, now, the rate for swimming is way too much for teens. It should be at least 1/2 price to encourage them to using those facilities/services and build good habit for life. Thank a lot for everything.	Traffic	Congestion
Actually, I think a component of this plan would be to encourage government and businesses to operate offset hours, which would smooth out the 5-minute rush at the times work starts and stops.	Traffic	Congestion
Any way to make congestion charges practical is so small a city?	Traffic	Congestion
City crews do a good job of keeping roads cleared and maintained in the winter (thank you!). Traffic can be bad during morning, lunch, and right at 5pm but it does clear in 15 minutes. Cost of new road connections could be offset by new lots for development.	Traffic	Congestion
Don’t get a bus for the city, it’ll attract others from out of Nunavut and Iqaluit is already over crowded as is	Traffic	Congestion
Having different dinner time for the Gouvernement employees to avoid congestion at the rush hour	Traffic	Congestion
if this goes through there should be enough buss to cut down wait times during rash hour.	Traffic	Congestion
Staggered work dismissals and start times. Not everyone needs to be on the road at the same time. Students stay in school all day like everywhere else in Canada. We don't need all those school buses on the roads at noon and at 1:00 pm everyday.	Traffic	Congestion
Giving the students at schools the option of remaining at school for the lunch hour would definitely help during the lunch hour.	Traffic	Lunch time school buses
Reduce school Bus traffic.	Traffic	Lunch time school buses
Cost versus true need , get it right or dont do it		
Ferry and air transportation are required		
Let's do this right so it doesn't fail! Federal Govt. should support the development of public transit in Iqaluit, capital city of Nunavut.		
maintenance and long term planning		
Make it so that it works for people. Especially people in need		
No		

Open-Ended Questions

Q19: Do you have any other comments that should be considered in the Transportation Master Plan?

Comment	Theme	Sub-Theme
No		
No		