



DILLON
CONSULTING

CITY OF YELLOWKNIFE

Trail Enhancement and Connectivity Strategy

November 19th, 2018

City of Yellowknife
4807 52nd Street
Yellowknife, NT
X1A 2N4

Attention: Dave Hurley
Facilities Manager, Community Services Department

RE: Trail Enhancement and Connectivity Strategy

We are pleased to submit this Trail Enhancement and Connectivity Strategy for the City of Yellowknife. This work is the collection of historical reports, current public feedback and best practice standards on trails with specific consideration for Yellowknife.

Dillon has worked in Yellowknife since 1975 and continues to value the relationship established with the City and this region. This report serves to verify the importance of trails to the residents of Yellowknife, and provide recommendations for how to move forward through continued maintenance, signage and trail expansion.

Sincerely,

DILLON CONSULTING LIMITED



Gary Strong, *P.Eng.*
Partner

Our file: 18-8474

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Acronyms, Abbreviations, Definitions

– A –

Active Transportation, movement by a mode that is human-powered, such as walking, cycling, skateboarding, rollerblading, or similar forms of transportation

– B –

Bike Route, road identified with signs as a shared route for bikes and cars

Bike Lane, portion of roadway demarcated with a painted strip for bike use only

Bike Path, separate paved pathway for bike use

– G –

GNWT, Government of the Northwest Territories (various departments including Lands, Industry Tourism and Investment, and Municipal And Community Affairs)

– M –

Multi-use Path, separate paved pathway for multiple active transportation activities

Executive Summary

The Trail Enhancement and Connectivity Strategy Report was initiated by the City of Yellowknife to gather past report learnings, confirm ideas with current public engagement, and prepare a plan for how trails and trail infrastructure should be supported in moving forward. This process has been undertaken before in Yellowknife, and will continue to be necessary in the future. Involving the public in the creation of their infrastructure and supporting their interests, clubs and activities is the mandate of staff and council, creating an inclusive City, where residents have an opportunity to take part in a variety of pursuits. Supporting outdoor active lifestyles provides social, environmental, economic, and cultural benefits for residents that all cities should strive to provide.

The City of Yellowknife is fortunate in the trail network that it already provides its residents, and respondents to surveys and through open house discussions were aware of the great resources they already enjoy. However, opportunities and ideas for improvement were enthusiastically shared through public engagement processes, with maps redrawn to dream of the possibilities that remain unwalked. This strategy looks to past reports, and blends historical ideas with current interest to demonstrate what is most important to residents. Defining elements for how a trails system should be supported.

These elements of the Trails Enhancement and Connectivity Strategy provide the general themes under which the City of Yellowknife should proceed with trail development. The elements are then built upon to provide direct actionable projects that form priorities for the next years of municipal trail development.

The City is currently considering a significant cost commitment within the 2019 Budget, related to the McMahon-Frame Lake Trail. This request is about seeking a commitment from council to complete the foundational piece of the commuting, tourism and active recreational trail system in the City. This commitment acknowledges that there are land use partners who have interests in the area, primarily the Arctic Indigenous Wellness Foundation (AIWF) which must take precedence over any trail work. The commitment however will allow City staff to continue to work with these partners, in exploring all options for trail completion and re-routing to preserve time and space for the AIWF, while seeking to serve the residents of the Borden and Range Lake neighbourhoods, and businesses along Old Airport Road. This commitment to active transportation and not a specific route allows for outside funding to be obtained, while allowing for the AIWF to engage with the City once they are prepared to move forward in a timeline and location that suits their project needs.

Trail infrastructure does not typically require grand budget decisions, and can be incrementally improved through trailhead signage and wayfinding markers, more frequent by-law enforcement patrols, and improved maintenance of trails and bike lanes. Coordinating these smaller actions should be a trails representative within the City, with a dedicated budget toward the maintenance and incremental improvements necessary to enhance the existing trail network.

Introduction

The Trail Enhancement and Connectivity Strategy is another phase in the planning process for active transportation infrastructure and programs. In 2005, the City of Yellowknife supported the completion of an Integrated Parks, Trails and Open Space Development Study, and 13 years later we continue this work. Components of this past vision remain unaddressed, and the City still has a great deal of work to undertake in realizing the 2005 mission statement.

To create an environmentally friendly park system that beautifies our City, meets the needs of residents, visitors and tourists and encourages people to be active in the outdoors year round.

Dillon Consulting Limited was retained in August of 2018, to undertake a review of the City's existing trail network, engage with residents and prepare a Trail Strategy that would inform the budget process and new City Council.

The City of Yellowknife is fortunate in its geography, density, climate and past infrastructure investments which have provided for a trail network that allows for a great number of residents to consider Active Transportation, human-powered travel in their daily activities.

This Trail Enhancement and Connectivity Strategy centres around the concept of Active Transportation, most commonly represented with walking and cycling but could also include the use of a wheelchair, skiing or canoeing. Active Transportation is used interchangeably with trail use, however this report recognizes that additional motorized uses form part of the trail network user group and social fabric. The City of Yellowknife, through the delivery of trails, parks and open spaces seeks to encourage residents to pursue active, healthy lifestyles, and these include a wide variety of transportation options on trails, roads, and waterways.

This report involves three distinct components in the preparation of a Trail Strategy. Each component serves to further gather information, inform the process and establish final priorities for action.

The first component involves review of past reports, current and planned city infrastructure, and an assessment of each trail based upon this existing knowledge and current public interests. This component summarized the findings of 7 past reports, and compared these with the results of public engagement occurring through two public open houses and an online survey. Each trail is then assessed based upon past recommendations for action, and current public use and interest.

The second component of this report includes an identification of the elements of a Trails Strategy with the McMahon-Frame Lake Trail highlighted as a foundational feature where action is called for by the public, however consideration of additional land uses must be included.

The final component directs action on how the priorities and identified trail elements will be achieved, prioritizing individual components based upon the past reports, public feedback and best practices. Additionally, a monitoring plan is included at the end of this report, which follows best practices where monitoring and evaluation should be completed in all projects to ensure the actions remains on schedule and aligned with public interests.

2.0 Purpose

The Trail Enhancement and Connectivity Strategy was initiated by the City as part of creating an inclusive community, where all residents have the opportunity to take part in the social, economic and cultural life of Yellowknife. It is understood that trails offer mobility options for residents, providing a choice and allowing for greater resident participation in community events and activities.

This Trail Strategy provides a snapshot of the current trail system within Yellowknife, and guides how and why the City should move forward with infrastructure investment and a staff commitment to further this transportation option. The prioritization of action is developed from resident ideas and feedback, confirming the recommendations of past reports and best practices. Community ideas have been summarized which will allow council and city staff to prioritize their actions now and in the future.



Trail systems around the world are recognized for their benefits to social equality, health, economy and the environment (CAPE, 2017; Transport Canada, 2011). Further, users should not be regarded as an isolated or fringe community, and instead recognized for their numbers and importance within Yellowknife. Representing a quarter of daily commutes, active transportation users already make use of the current trail system, road network and informal connections. Serving this sizable portion of the community through a coordinated and connected trail network will serve to improve upon the benefits to current and future residents and the growing tourism industry.

3.0

Where are we now? - Trails Audit

What does active transportation look like in Yellowknife?

Trails are municipal infrastructure, maintained by the Community Services Department, with support from other City staff and departments. It is recognized however that there are a number of informal trails throughout the City that originate through the interest of private individuals and organizations. Trails serve both a similar function to roadways: connecting families, neighbourhoods, and the needs of residents; in addition to linear parks, creating playgrounds for all residents. For this trails audit, a systematic review of the current network has been undertaken, summarizing past reports on Yellowknife's trails, and walking, biking and using trails, while engaging with trail users.

3.1

Review of Past Reports

The City of Yellowknife has commissioned and received a number of reports relating to trails and active transportation in recent years. Further, Council has endorsed the use of Smart Growth Principles in development, and follows trails specific principles of:

- **Community Collaboration** – Require effective community involvement and openness to development opportunities in the ongoing long-range planning and development of the city to find unique solutions that fit with the community's vision of how and where it wants to grow.
- **Placemaking** – Create lively, safe and attractive urban live/work/play neighbourhood environments with adequate amenities that respect the existing community character, landscape, and cultural heritage.
- **Open space and natural areas** – Improve quality of life by protecting natural features, minimizing environmental impacts and making natural areas easily accessible.
- **Transportation** – Increase active transportation options to private automobiles by providing infrastructure for walking, bicycling, carpooling, car sharing, and public transit to help to improve air quality and reduce vehicle related land use.
- **Promote clean energy** – Reduce greenhouse gases and consumption of fossil fuels by maximizing energy efficiency through conservation, local renewable energy opportunities, green building design and innovative industries.
- **Regional Awareness** – Support local and regional community-based planning and land-use decisions through communication and capacity building and communication that fosters cooperation on matters relating to the environment, infrastructure and the economy.

(Adapted from Smart Growth Development Plan, 2010)

These Smart Growth principles commit the City of Yellowknife to a set of actions on Trails and Active Transportation, and are reaffirmed through the 2011 General Plan. By following the above principles, Council and staff should be placing a greater emphasis on transportation alternatives and creating a

linear public parks system that connects to the regional area. These principles established in 2009-2010 build off of a variety of reports undertaken on transportation in Yellowknife.

- Dillon Consulting Limited – Integrated Parks, Trails and Open Space Development Study (2006)
- Ecology North – Way to Go, Yellowknife Bike Routes (2007)
- FSC Architects and Engineers – Bicycle Routing for the City of Yellowknife (2008)
- Ecology North – Yellowknife Bike Route (2009)
- HDR/iTrans - Smart Growth Development Plan Transportation Improvement Study (2010)
- Ipsos Reid – Parking Improvement Study (2012)
- IBI Group – Downtown Yellowknife Parking Assessment (2013)
- City of Yellowknife – Franklin Avenue Bike Consultation (2016)

The recommendations of the above reports were supported by extensive community engagement, seeking to improve upon trails and active transportation infrastructure in Yellowknife. Consistent and unresolved priority action items from these reports are identified as:

1. Trail use and active transportation can be increased through **creating and maintaining a trail network accessible to all residents**.
 - The existing system is noted as having gaps which should be addressed to improve safety and use. These **gaps** were repeatedly noted as being:
 - Co-op connection to **Frame Lake trail** behind Stanton Hospital
 - **Kam Lake** and **Grace Lake** connections
 - Access **across Highway 3** and along Highway 4
 - Cycling improvements along **Franklin and Old Airport Roads**
 - Safety review of the intersection of Franklin and Old Airport with improved **access to the Multiplex and Field House**
2. Create simplified and consistent **signage** for active transportation routes and remove historical signs which can create confusion.
3. Establish a protocol for **trail maintenance** which allows for year-round use of primary routes which may include additional sidewalk or partial road clearing.
4. Provide **authority and responsibility** for active transportation to one individual or department which can coordinate city-wide efforts on improving trail use and experiences.
5. Create an asset management database or improve the tools within the existing CityExplorer **mapping** program to allow for individual trails to be highlighted, bike parking, public washrooms and informal items including skiing trails, and winter crossings to be included.

These recommendations are part of broader discussions on the topic of trails and this report does not intend to replace or gloss over the merits of each individual report. It is important that the future work on trails in Yellowknife make use of past reports and continue to reference the ideas and recommendations they offer the City.

3.2

Current City Infrastructure

The City of Yellowknife maintains an extensive and varied network of interconnected active transportation routes. These routes incorporate passive walking and biking, intensive hiking and mountain or seasonal ‘fat’ biking, and seasonal cross-country skiing and snowshoeing. From these trails which the City maintains, extend informal trails which meet the varied interests and needs of resident groups. These informal networks are not recorded or maintained due to a variety of reasons, however rely upon and are built from the City’s public trail network.

Current trail data is available through the [CityExplorer](#) on-line mapping tool where residents can learn of what resources are found throughout the City. This infrastructure is reported as:

- 25 km of City maintained trails
 - 3 km of bike lanes (separate and raised or painted bike infrastructure)
 - 9 km of accessible trails (McMahon-Frame Lake, Niven Lake, part of Range Lake)
- 85 bike racks
- 139 benches
- 8 designated public washrooms

The City of Yellowknife maintains this infrastructure through a portion of the annual Community Services Department budget, and further spends portions of allocated budgets from the Public Works and Engineering Department or other capital amounts on the creation of new trails and related infrastructure, generally through road construction and reconstruction projects.



Figure 1: City of Yellowknife Cycling Guide; City of Yellowknife

This infrastructure is supported by City policies which define best practices and use requirements including the City of Yellowknife Cycling Guide (Figure 1), in addition to use by-laws. These include the Highway Traffic By-law (4063) which direct where bicycles and pedestrian traffic may move, and the Helmet By-law (4795) which requires youth to wear helmets on roads.

Confusion over these by-laws results in bicycles riding on sidewalks, and pedestrians crossing streets inappropriately, which can result in conflicts and injuries. Limited signage and a lack of education programs may be contributing to these infractions and increasing user conflicts.

3.3

Planned Infrastructure

The long-term planning for trail and active transportation infrastructure is determined through actions within individual departments. The Public Works and Engineering Services Department in the past has prepared a five-year bike lane development schedule (Figure 2). This infrastructure is planned for as part of other road network upgrades being undertaken, with the most recent schedule planning for the years 2014 through 2019.

Recent upgrades have occurred to Franklin Avenue, extending the 3m wide multi-use roadside paths from Tommy Forrest Ball Park and 57th Street to the intersection with Old Airport Road. Improvements to the McMahon-Frame Lake Trail also occurred recently with the repaving of this multi-purpose trail.

Annual upgrades to trails, as part of the implementation of roadway standards will continue to occur and should reference the interests of local residents toward fulfilling a comprehensive and cohesive trail system. The Trail Enhancement and Connectivity Strategy recognizes the importance of this future planning and by considering the trail network gaps provides a path forward for trail network build-out. This planned repaving work must make use of road and trail standards being developed in concert with the City Community Services Department. These trail standards currently being developed should follow best practice standards from other jurisdictions with knowledge of the unique ‘winter city’ circumstances of Yellowknife. Future paving schedules should be further discussed with trail groups including Ecology North’s TIC prior to final road design.

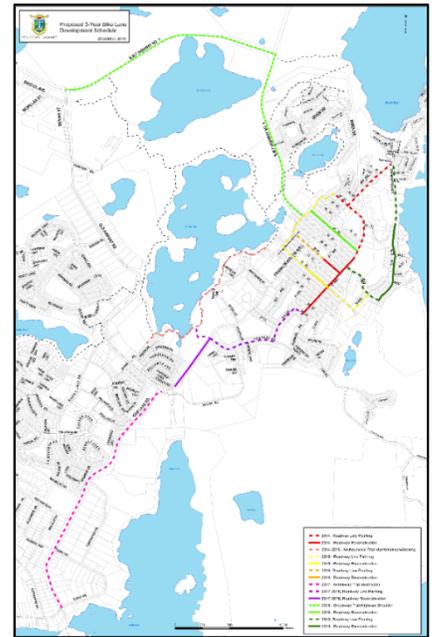


Figure 2: Yellowknife Bike Lane Development Schedule (2013)

3.4 Trails Assessment – Review of what is known

An audit of the City of Yellowknife's trail system requires analysis of what has been learned through past reports, whether these issues remain relevant in current community engagement and that these ideas be compared to national and international best practices.

The project team has assessed each of the trails maintained by the City based upon the above knowledge and support against best practice criteria that results in additional use and improved user experiences. These criteria include:

- Connectivity
- Consistency
- Safety
- Land ownership/availability
- Potential costs

A review of these factors for each trail is completed below in Table 1.



Table 1: Analysis of Existing Trails within the City of Yellowknife

	Identified in Past Reports	Identified in Current Feedback			Connectivity	Consistency (signage/trail type)	Safety	Land Ownership/ Availability	Potential Costs
		Stakeholders	Public Consultation	Survey					
<i>McMahon-Frame Lake Trails (south side)</i>	Hospital extension identified as a significant gap in multiple reports. Improved maintenance and snow clearing needed	Extension supported, with interest in leaving existing trail intact for Mtn Bike use. Painted strip may address user conflicts	Strong support for extension, with limited blasting, painted strip may reduce conflicts, work with hospital and Staples plaza to improve Borden traffic	100% use Strong support for extension, with notes that the rough trail can remain. Need to consider connections to Borden Dr. and Byrne Rd.	The 'backbone' of Yellowknife's trail network, connections to this system could be improved.	Signage present, some requires replacement and additional information signs could support tourism and use	Frequently used, however safety is commonly highlighted as a problem	Commissioner's and Municipal Land	Budget consideration of \$450,000 for co-op extension Signage improvements, painting
<i>Niven Lake</i>	Niven Crossing hotspot has been addressed, trail connections good and well used.	48 th St Crossing remains dangerous, used considerably by commuters	Excellent trail, safety issues with limited lighting, residents still use 48 th St	83.1% use Loose gravel sidewalks around Nova limit bike use	Strong connections to surrounding community and trails	Limited to no signage present, consistent trail type	Frequently used, however safety is occasionally highlighted as a problem	Commissioner's Land	Road crossing has been addressed, other traffic calming at crossing to be discussed with GNWT - Unknown
<i>Deh Cho Boulevard</i>	Support connecting residents with business	Orphan section of trail	Traffic limited, however widened shoulders may improve safety	32.5% use	Not connected to other trails apart from road network and will require further work	Well marked lanes, abrupt start and end	Appropriate dedicated space, however little use	Municipal Road Allowance	Will require expensive road widening, painting costs minimal High to Low
<i>Franklin Avenue</i>	Intersection with Old Airport Rd. remains a problem, traffic and space within Downtown should factor in cyclists.	Bike lanes from Old Town appropriate, need painted area through downtown, multiuse trail an improvement	New multi-use trails a good route, although they dead end at park, traffic in downtown a deterrent to use	42.9% use	Three components, with no smooth transitions. Need to consider how this route can become continuous	Lane painting on hill, nothing through downtown, multi-use trail unfinished.	High traffic safety issues for on road portions. Continuing fear for children on this route –need barrier	Municipal Road Allowance Private Ownership	Low cost to paint connections, create transition zones between trail types
<i>52nd Avenue</i>	Led to unsafe interactions between cars and cyclists, the city should learn from this work	An inappropriate blend of trail and road. Should not be repeated and should be removed in future roadwork	Unsafe for users, should not be repeated	36.4% use	Painted bike lane at start and end, good connections, dead ends at 56 th St and discontinuous with puddle before Franklin Ave.	Well painted and marked variety of trail types creates confusion	User safety issues on veering bike paths	Municipal Road Allowance	Additional low costs to continue painted bike lanes to Forrest Dr. and Franklin Ave.
<i>Grace Lake Trail</i>	Need for connections to all areas of the City, prior to development	Connect with other portions of City	Need connections to this area, not yet known	15.6% use	Not connected to other trails apart from road network	No signage present, some faded paint and flagging tape	New trail, limited use	Commissioner's Land	Paint and bike route signage with low costs

	Identified in Past Reports	Identified in Current Feedback			Connectivity	Consistency (signage/trail type)	Safety	Land Ownership/ Availability	Potential Costs
		Stakeholders	Public Consultation	Survey					
<i>McMahon-Frame Lake (north side)</i>	Support a variety of trail types and protected spaces	Remain recreational trail, improved signage, bike access	Remain recreational trail	67.5% use	Strong connections to a variety of locations and informal trails	Limited and inconsistent signage and markers	Frequently used, safety highlighted as a problem	Commissioner's Land	Improved signage, upgrades to stairs for bikes Low to High
<i>Range Lake Trail</i>	Need for connections between all areas of the city	Improved signage needed	One way trail, would be much more valuable with connections to Borden or Dehcho Blvd.	33.8% use Interest in connecting with Rivett Cr.	Connected to Parker Park and Range Lake. Does not connect neighbourhood or residents to broader area	Lack of signage on Range Lake Rd., other entrances limits awareness and use	Safety not highlighted as an issue, vegetation clearing may improve safety	Commissioner's Land	Connect recreational trail to Borden subdivision and Dehcho Low to High
<i>Tin Can Hill Trails</i>	Should be protected from Twin Pine development, part of waterfront trail	Allow for continued mtn bike trail use, protect from other development	Boardwalk along Rat Lake, restrict development and motorized traffic, improve connectivity to Con Mine area	70.1% use	Informal connections to neighbouring streets and neighbourhoods	No signage present, recreational trail	Considerable human and animal activity, some safety concerns noted	Commissioner's and Municipal Land	Signage and improvements to connections Low
<i>Twin Pine Hill Trails</i>	Connect to broader system and allow public access to remain prior to development, new trails have supported this	Waste of money, should have remained a recreational trail	New trail, limited awareness	31.2% use	Odd staircases and trail connections to neighbouring roads and residents	No signage, flagging tape inconsistent	Some safety concerns noted	Municipal Land	Continued clearing of route, and improved signage Low
<i>Rotary Waterfront Boardwalk</i>	Should create a Mine (Giant) to Mine (Negus) waterfront trail system	N/A	N/A	7.3% use	An isolated boardwalk servicing houseboats, would benefit from connection to Lundquist or Brock	Boardwalk, no signage or map available	Frequently used and open, reflectors should be maintained for snowmobile traffic	Commissioner's Land	Support Rotary Group in connection to neighbouring community Low to High

Additional trails were noted within the survey as being present within the City of Yellowknife municipal boundary, however are either not maintained by City staff (Territorial ownership and maintenance or informal trails managed by individuals or private organizations) or were not consider for this review as an established trail system (Taylor Road, School Draw Avenue).

4.0

Where do we want to go?

What matters most?

The Trail Enhancement and Connectivity Strategy involves considering the work and knowledge gained through past reports, corroborated with current public engagement, best practices and consideration of feasibility to provide direction on moving forward with active transportation. The second component of this report draws from the preceding Trails Analysis and public engagement to create an image of what a trail system should appear as in the City of Yellowknife.

4.1 Preparing the Strategy

A Trail's Strategy should not have a pre-existing agenda, should look at broad best approaches for connecting a variety of residents and user groups, and should consider what approach(s) are the most beneficial toward realizing the goal of greater active transportation options and use.

In preparation of this process it was found that the City of Yellowknife had already undertaken some Strategic Planning for what elements such a process would include. These basic factors (Figure 3) are supported by the historical reports reviewed, current public feedback and best practices as found in active transportation strategies across Canada and the north.

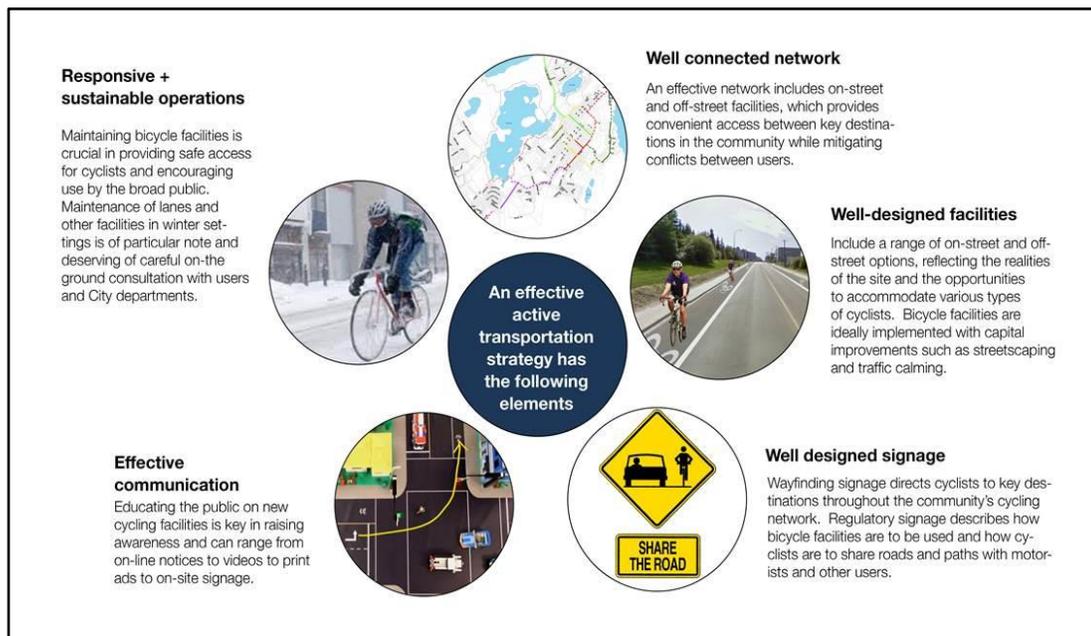


Figure 4: Elements of an Active Transportation Study; City of Yellowknife

Well Connected and Designed Network

A Well Connected Network includes a variety of choices, which make use of local circumstances, neighbourhoods and geography to provide an efficient alternative to automobile use. This network will require thoughtful consideration for how individual components can be integrated within a broader system. Seamless transitions between varying trail types, and consideration for destinations and parking are all part of Well-designed Facilities. This element includes designing routes with the users in mind, making them feel safe and motivated to make use of alternative transportation options. This design will take into consideration the City of Yellowknife Accessibility Audit review which occurred in 2017, and other best practice examples for design standards.

Responsive and Sustainable Operations

Responsive and Sustainable Operations are important factors to consider within a Winter City, improving existing maintenance programs and re-approaching how roadways are cleared, to encourage active transportation. Census data on commuter use of active transportation shows declining interest in walking and biking to work. In order to reverse this trend, the trail network must provide an improved user experience, if it intends to increase active transportation mode share.

Effective Signage and Communication

Well Designed Signage is recognized as the most cost effective approach to improving user experience, and can result in a unified and seamless trail network with greater use, efficiency and motivation to consider alternative modes of travel. Signage serves as the most Effective Communication tool to inform direct users and encourage additional users to consider trail options.

The City of Yellowknife's Trails Strategy will go beyond these factors however to include other strategic elements as identified through the public consultation process. Defining what must be undertaken to meet the vision for an alternative transportation network.

Other Elements considered through this process include:

Coordinated and Accountable

Coordinated and Accountable action are elements of what residents are seeking from their civic employees. Feedback from a resident in the public engagement session stated that they know multi-jurisdictional issues create barriers and delays in action, but they did not care, they expected the City to find a way to get problems fixed. It is also clear, that while multiple reports have been prepared on the trail network system, only some issues have been addressed while new problems have emerged. Monitoring these reports and coordinating City staff to address these trail issues will be an important component of building out the trail system.

Youth Focused

Youth Focused actions are recognized as instilling life-long interest and skills which build into future generations. Physical activity is noted as being a pillar upon which active transportation should be established, addressing the chronic problems of low child and youth and later adult daily physical activity. By establishing skills and interest at a young age the City will create new and continuing users and advocates for active transportation.

Holistic Approach

A Holistic Approach to Civic Building is what must be undertaken when integrating trails within existing road corridors, right of ways, and public or private lands. Trails are one component of the transportation options available to Yellowknife residents, representing approximately a quarter of all daily commuting (Census, 2016).

Recognizing the limits and importance of active transportation to limiting traffic congestion, providing continued independence to growing numbers of seniors, and providing action on Greenhouse Gas Emissions, demonstrates how Trails are part of much larger issues Yellowknife is facing.

4.2 Strategy Highlight: Looking specifically at the McMahon-Frame Trail

The McMahon-Frame Lake Trail surrounds Frame Lake and connects a variety of features throughout Yellowknife. The trail provides the primary connection between Old Airport Road and the downtown area. The southern and eastern portions are a paved 3 metre wide, lit and accessible recreational trail, while the northern and western portion is a rough recreational hiking trail.

The Arctic Indigenous Wellness Foundation (AIWF), a traditional, land based healing initiative has been proceeding toward the construction of a wellness centre along Frame Lake in the area of the proposed trail. In consultation with the AIWF, it is the recommendation of this report that the City of Yellowknife in following its past adoption of parts of the Truth and Reconciliation Report, and in supporting the invaluable work of the AIWF await their direction and completion of the wellness centre project prior to proceeding with trail design and completion.

4.2.1 Why focus on McMahon-Frame Lake?

As a key connecting feature of the Yellowknife trail system, the McMahon-Frame Lake Trail serves the entire community, connecting major employers, businesses and many residential neighbourhoods. Survey respondents reported extensive and frequent use of this system between the new Stanton Hospital and Samba K'e Park. The trail beyond the hospital is present, however for a 500 metre stretch is a recreational trail over rough rocky terrain. It then becomes a gravel 3 metre wide (although overgrown) section that passes an underpass to the Coop Grocery Store before ending after 100 metres at a public parking area. From this point onward, the bike lanes continue on Old Airport Road, or the trail becomes a rough recreational route around the northwest side of Frame Lake, until reaching the Territorial Legislative Building.

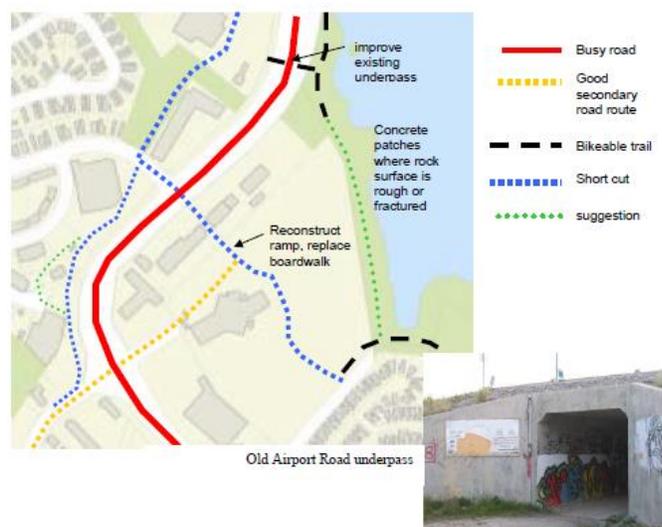


Figure 5: Ecology North - Way to Go Bike Routes Report, 2007 (Hot Spot A)

The portion of the trail behind the Stanton Hospital has been identified in past reports as a ‘hot spot’ requiring action to grow the Yellowknife trails network (FSC 2008; Ecology North, 2007). These reports highlighted five (5) ‘hot spots’ where priority action was needed. One of the ‘hot spot’ issues was generally addressed with the installation of a crosswalk from the Niven subdivision, others include intersection improvements at Old Airport Road and Franklin Avenue, and 43rd Street and 51st Avenue in uptown. Two of the remaining concerns relate to the Coop grocery store corner. These concerns involve integrating the residential areas of Borden and Range Lake into the Frame Lake trail system in a safe and convenient manner. This integration was reported as relying on the completion of the McMahon-Frame Lake Trail in a continuous condition, separate from confusion of the hospital and Old Airport Road.

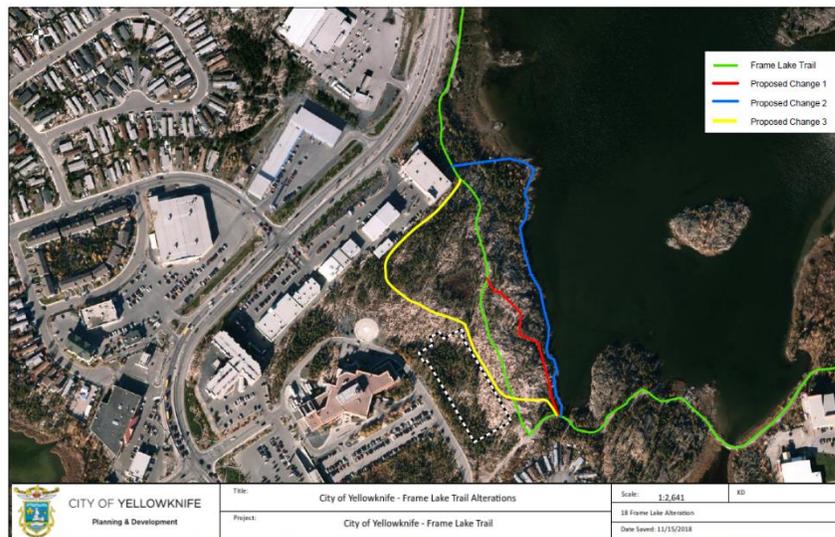


Figure 6: City of Yellowknife Conceptual McMahon-Frame Lake Trail Changes

The City of Yellowknife proposed action on the completion of the trail segment within the 2018 Capital Budget, however a decision was deferred to the 2019 Budget process. Through this deliberation in 2018, wide ranging support was provided by a number of community groups and businesses.

Once again, strong support has been received for the improvement of the McMahon-Frame Lake Trail to the Coop Corner in survey and public engagement in 2019. All parties agree that there are clear benefits and it is in the general interests of all to complete a trail through this area. However at this time, the City should await direction from the AIWF prior to proceeding with any design or on-the-ground trail work.

4.2.2 How should it be built?

As noted above, it is not the recommendation of this report to proceed with any trail design prior to receiving direction from the AIWF, and allowing for their centre to be established. In moving forward in a future period however it is recommended that some consideration be provided for accessibility as defined in the City’s accessibility standards reports of 2017 (Dillon Consulting, 2017), and continuing the trail characteristics of the existing south Frame Lake route.

Applying the concept of universal design to trails considers that:

- Trails can be created to be enjoyed by a broad spectrum of people;
- All users have different abilities which should be accommodated for in a variety of trail types, however not all trail users should be accommodated for in each trail;
- Universal design strives to minimize as much as possible the barriers to users accessing trails.

Adapted from City of Yellowknife Outdoor Recreation Facilities Accessibility Audit

The findings of the audit report encouraged:

- Establishing multiple trailheads with parking
- Improving signage to identify trail conditions, length, and amenities (benches, washrooms)
- Lighting, particularly in winter conditions

Through the potential completion of the McMahon-Frame Lake Trail, the network will be better connected to accessible public parking, have more direct access to public washrooms at the Coop Grocer, and follow the example of the existing trail network with lighting and benches which extend the accessible trail to additional retail locations and residential areas of the city. Consideration for emergency call boxes, towers, or stations was suggested as part of improving the security and sense of safety on the trail.



4.2.3 Additional funding opportunities

As in all City infrastructure projects, municipal staff are encouraged to engage with community groups and organizations as part of developing a fundraising program to offset the capital costs of trail development. Such visible and regularly used features are ideal opportunities to involve community groups as part of upfront cost savings and long-term community interest and maintenance. In the past community groups have supported the city in the creation of public boardwalks and trails and outreach to all community groups should once again be undertaken.

Formal funding may also be sought through the:

- NWTRPA for work on and an extension to The Great Trail (formerly Trans-Canada Trail)
- Federation of Canadian Municipalities (FCM) Green Municipal Fund - Transportation and Fuel Efficiency Funding
- Government of the Northwest Territories – Recreation and Sport Contributions, and Community Tourism Infrastructure Contribution Program

The City has identified that outreach to the above funding programs has already been initiated, and will be continued as part of off-setting municipal costs.

5.0

How can we get there?

How should we organize and prioritize active transportation options and actions to integrate and coordinate with other Yellowknife planning projects?

This section defines clear recommendations and timelines for each of the previously identified elements of a Yellowknife Trails Strategy. The recommendations make use of past reports, current resident feedback and best practices to direct action on the trails network.

“Picking the low hanging fruit”

Strategic planning and city building can take time. In order to initiate momentum and maintain interest through bigger changes, the City of Yellowknife should get visible results by finding the ‘low hanging fruit’; projects that are easy and quick, often because they are also simple to implement and cost-effective actions. Examples of this may be cutting curbs at trail intersections with roads to make for smoother routes, fixing potholes or replacing boards on segments of stairs or boardwalks, or replacing or installing better signage.

Adapted from Active Transportation in Canada: a resource and planning guide, 2011

5.1 City of Yellowknife Trail Elements

Well Connected and Designed Network

Implementing Past Recommendations

Adapting Existing Trails

Review and work toward Implementing Past Recommendations including addressing ‘hot spots’ and integrating Smart Growth principles.

Review existing trails based upon resident feedback, addressing dead ends, stops and starts, and improving signage to Adapt Existing Trails to improve user comfort and interest.

Responsive and Sustainable Operations

Review Maintenance Approach

Improve User Experience

Safety from weather and other trail users are two factors commonly cited by the public, which can be addressed through surface maintenance, vegetation clearing, and improved lighting. Following the Crime Prevention Through Environmental Design (CPTED) best practices.

User Experiences are affected by commonly minor issues which detract from smooth and clear pathways. Curb cuts, routes around stairs for bikers and simple signage allow for users to enjoy their commute or recreational pursuit.

Effective Signage and Communication

Welcome mats and wayfinding

An open and welcoming kiosk or other signage at trailheads and intersections establishes rules and informs users of what options are available. Wayfinding or additional route markers along trails and bike routes can motivate and inform users of directions, distances, changing conditions and features or amenities.

Coordinated and Accountable

City trails representative

Formalizing a City trails representative to serve as the primary contact for the public and to coordinate the various departments involved was a consistent issue for stakeholders. This additional responsibility will be formalized within an existing position ensuring that projects are tracked and public concerns addressed. This role may also assist in organizing local associations to coordinate volunteer activities, events and fundraising. The Community Services Department currently takes on the role of trail maintenance, however does not have a defined city-wide authority or capacity to address broad issues affecting trails.

Youth Focused

Make trail connections to schools a priority

Provide education programs through school boards

Priorities for future trail development should focus first on improving routes to schools, involving school boards to increase options for student commuting and use of trail systems.

Education on safe biking practices, and the alternatives to vehicle use should start with youth, instilling ideas in future generations who also share with their families and the broader community.

Developing programming around trails through the library, and recreation programs building upon Pumpkin Lane and Easter Storey-telling programs

Holistic Approach

Involve trails in all City discussions

With general City development, trails should be incorporated into planning and design in the same way that roads and other infrastructure are required. When constructing new roads, or permitting development, there should be provisions for trail development, bicycle parking, and smooth and signed connections to existing trail routes

The City is currently developing transportation (road and trail) standards which will incorporate trails into all future planning. This is supported by the results of the strategy.

When considering the above elements of a trail strategy it is important that the city establish timelines for each element, in order to ensure actions occur in the appropriate sequence and to provide transparency to municipal staff and the public.

5.2 **Timeline Considerations**

The City previously considered the McMahan-Frame Lake Trail Extension within its 2018 budget and deferred action to 2019. This trail as previously identified is the foundation of the City’s broader trail network and requires action to better realize its potential role. It is not recommended that action occur until the AIWF has been established, however a commitment by the City is required in order to leverage funding and support a future trail that works with the AIWF project.

Further action for 2019 includes the integration of trail priorities within the Community Plan Update and working with schools. Integrating the role of a trail representative within the Community Services Department will support improved signage efforts, maintenance and address simple user experience concerns.

Moving forward over the next five years these immediate actions will continue, along with more supportive school and maintenance programs.

Cost Assumptions:

- McMahan-Frame Lake Trail potential costs were developed with City staff.
- Trailhead and signage costs were determined based upon the 2017 Accessibility Audit Report.
- Asphalt and paving costs based upon past budgets and industry estimates.

Table 2: Implementation Plan - Time and Cost

Action	2019	2020	2021	2022	2023	Potential Costs
Well Connected and Designed Network						
McMahan-Frame Lake Trail – Yellowknife’s Trail <ul style="list-style-type: none"> • Work with land use partners to complete a strong trail connection to the Coop Corner. 						Potential Cost: \$450,000 Require commitment
Evaluation: continuously review and consider options for priority areas, consulting with user groups						On-going process
Responsive and Sustainable Operations						
Improve maintenance programs and activity (safety) along Frame Lake Trail and along primary road corridors <ul style="list-style-type: none"> ▪ To be incorporated within existing budgets and through coordination with other City departments (Public Works and Engineering, Public Safety and Policy, Communications and Economic Development) ▪ Clearing and sanding the paved Frame Lk trail, clearing snow (winter) and gravel (spring) from bike lanes 						Allocated from existing budgets
Address ‘low hanging fruit’ user experience issues, including curb cuts and asphalt cracking/repair and boardwalk and stair repairs (to be contracted out) <ul style="list-style-type: none"> • Curb cut on McMahan-Frame Lake Trail at Byrne Rd • Curb cuts along Old Airport Rd at Canadian Tire, RTL, Cemetery Rd, and at end of trail across from Bristol Ave • Curb cut at end of multi-use trail along Kam Lk Rd – Asphalt repair along Taylor Road – Asphalt filling or drainage improvements with ponding water at 52nd St and Franklin ▪ Repair and cut vegetation along Range Lk boardwalks, Jackfish and Frame Lk stairs 						Curb cuts: \$10,000 Asphalt Repair: \$15,000 Boardwalk and stair repair: \$5,000 Total Cost: \$30,000
Effective Signage and Communication						
Improve signage and wayfinding in the existing network <ul style="list-style-type: none"> ▪ Install trailhead signage at Range, Frame, Jackfish, Niven, Grace, and Rat Lakes, Backbay, Rotary Park, and Tin Can Hill ▪ Update and replace trail wayfinding along Frame, Jackfish, Range, Grace Lakes, and Tin Can Hill ▪ Install painted lines on McMahan-Frame Lake Trail to avoid confrontation ▪ Paint bike lanes along Kam Lk to Dehcho Blvd and to Grace Lk, and along Old Airport Rd and Bristol Ave to the airport 						Trailhead Signage: \$15,000 Wayfinding sign/footprints: \$7,500 Painted Bike Lanes: \$2,500 Total Cost: \$25,000
Coordinated and Accountable						
Formalize a trail representative/contact role within the City (part-time allocation)						Existing Budget
Dedicate annual funding for trail maintenance and expansion (for signage and general upkeep)						Existing Budget
Youth Focused						
Prioritize school zones for trail development in Community Plan updates and road construction plans						Existing Budget
Work with schools to create education and outreach events with municipal by-law, library and recreation staff						
Work with schools to create walking and biking programs						Coordinated through trail representative
Holistic Approach						
Update the Yellowknife Community Plan and By-laws to reference active transportation and support trails						Occurring and funded
Grow the network to serve increasing trail users and to provide additional trail opportunities <ul style="list-style-type: none"> ▪ Expansion as funding and community support is available, connecting Grace Lk with Dehcho Blvd, Range Lk to Borden, Frame, Niven, and Jackfish with the Ski Club and Back Bay, circling Kam Lk, Rat Lk boardwalk 						Unknown, to be determined with future funding or support

6.0 Is the Strategy being implemented?

How should we monitor and evaluate our active transportation actions?

The implementation of any strategy requires participants to revisit initial goals and targets on an annual or regular basis, in order to ensure efforts remain appropriate and effective. This evaluation is not intended to be a burden on the delivery of programs, and does not assign blame or fault, however is a proactive management tool for the delivery of an improved trail system.

6.1 Monitoring Plan

The City of Yellowknife has in the past undertaken trail projects that residents have not supported in design, use or maintenance. The Trail Enhancement and Connectivity Strategy seeks to ensure that current and new trails, and their users are monitored and evaluated to ensure goals for improved trail connectivity and enhanced user experiences are being met. These evaluation processes are continuous and supportive, creating baseline information on current users and their experiences on trail networks.

Municipal staff can initiate a monitoring and evaluation process through regular communication with outside partners including the Ecology North Transportation Issues Committee, Mountain Bike Club, Territorial Department of Lands, Ski Club, YK Multi-Sport, Great Slave Snowmobile Club and the YKDFN. Further, businesses in the community which make use of the trails network for recreational pursuits or tourism should also be regularly engaged.

Indicators will also be necessary to show continued improvement or changes in the trail system. Examples of such indicators are provided in Table 3. Collection of public input on trail use, may follow the process undertaken within this report (Appendix A, and B), or any number of simple surveying tools. Trail systems within Yellowknife are highly valued for their commuting and recreational opportunities, and strong interest and support from the community was noted throughout the strategy’s survey process. Seeking resident responses to supplement stakeholder group opinions on an annual or biannual basis would not be overly burdensome for City staff.

Such information connects Council decisions and City actions to the resident users, fulfilling mandates for improved transparency and accountability. The result is a system of infrastructure that resident’s desire, businesses can make use of and the broader City benefits from.

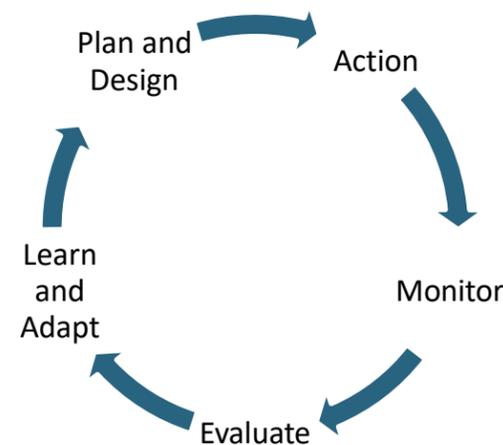


Table 3: Potential Trail Monitoring Indicators

INDICATOR	METRIC	TIME FRAME	BASELINE	TARGET (2023)
KM OF CITY TRAILS	Total km of trails	Annual	2018 CityExplorer (25km)	27.5km (10% growth in 5 years)
INFRASTRUCTURE			2018 CityExplorer	
- BIKE RACKS	Total # of bike racks	Annual	(85)	
- BENCHES	Total # of benches		(139)	
- PUBLIC WASHROOMS	Total # of public washrooms			
MODE SHARE	% who use AT to commute	Every 5 Years	Canada Census 2016 (22%)	An increase (25%)
BIKE FRIENDLY TRANSIT	Bicycles permitted on buses	Annual until instituted	Not currently used	Unknown

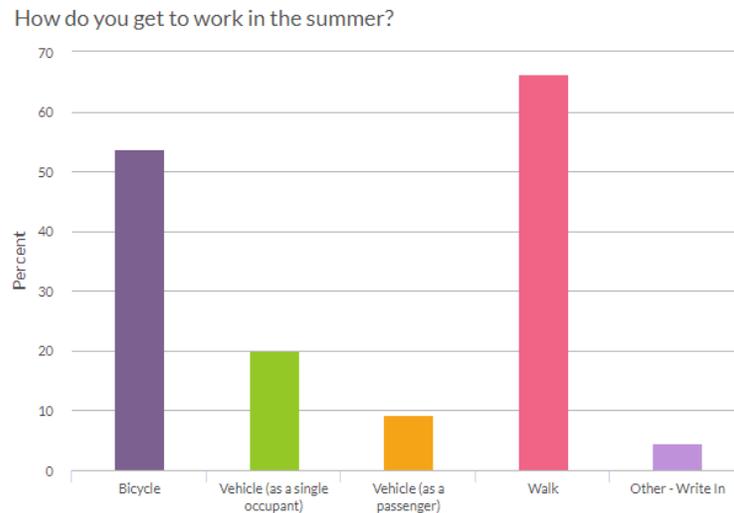
Appendix A

Summary Report from Yellowknife Trail Enhancement and Connectivity Strategy Survey

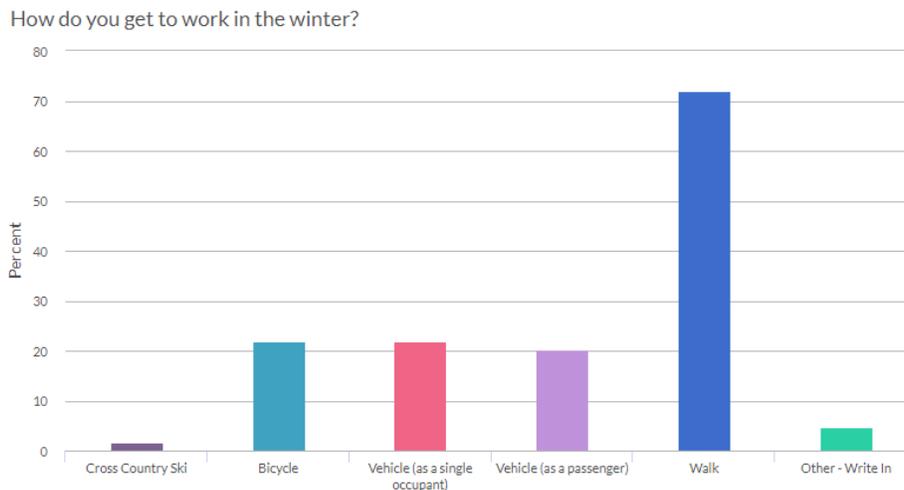
Summary Report from Yellowknife Trail Enhancement and Connectivity Strategy Survey

Part 1

A public survey was prepared in conjunction with open house consultation amongst Yellowknife residents, seeking feedback on use and priorities for improving the City's trails system. 101 responses were received over 11 days from October 11th through 21st, 2018. The responses received are noted below:

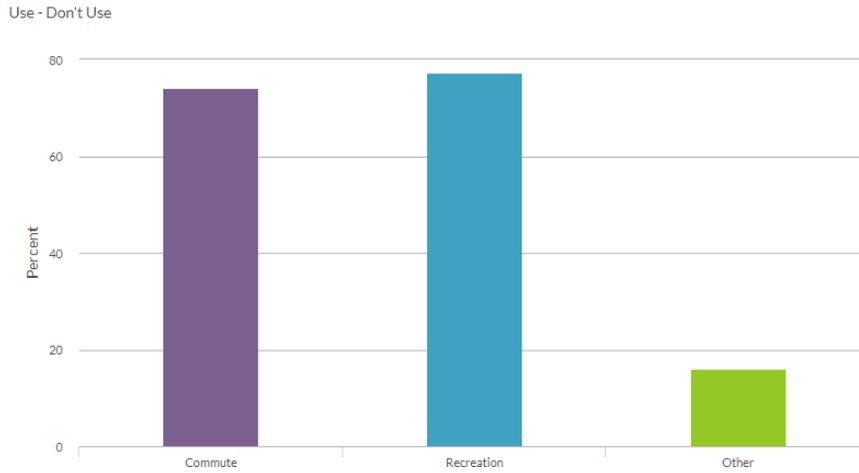


Responses are supportive of active transportation options with 66.2 and 53.8% of 100 noting active transportation rates of commuting to work by walking and bicycle respectively. These rates of response, demonstrate that active transportation modes of travel were over-represented in the survey, in comparison to 2016 census data which reported nearly 23% of residents walking or biking to work.



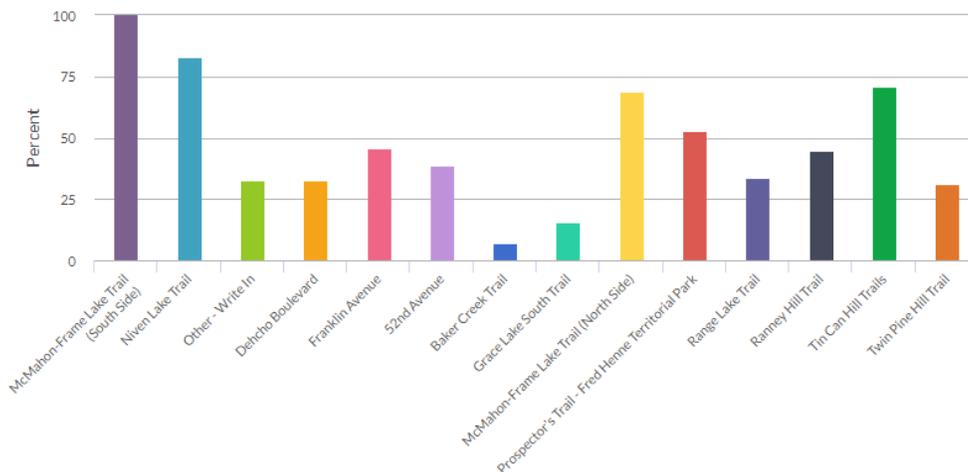
Seasonal variation in commuting options is expected for Yellowknife, given extreme variation in climate and light. Once again results demonstrate that active transportation is over-reported in comparison to the community average with responses suggesting walking rates of 72% and biking or any other vehicle commuting averaging 20 to 22% in the survey responses received. While no Statistics Canada Census information is provided on seasonal variation in commuting, it is expected that modes of commuting would not vary significantly from census reports which suggest active transportation rates of approximately 23% walking and biking combined.

How do you use Yellowknife's trails, bike routes, and multi-use paths?



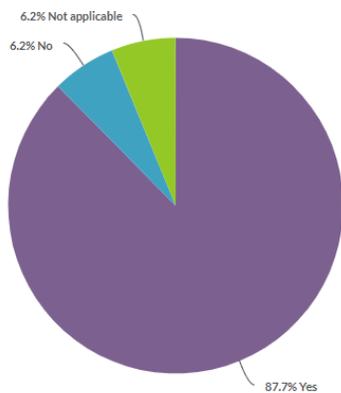
Respondents generally reported that trails were used for slightly more recreational reasons (77.4%) than simply commuting (74.2%), and other social uses, clubs or private organization use was limited (16.1%).

Which trails in and around Yellowknife have you used?

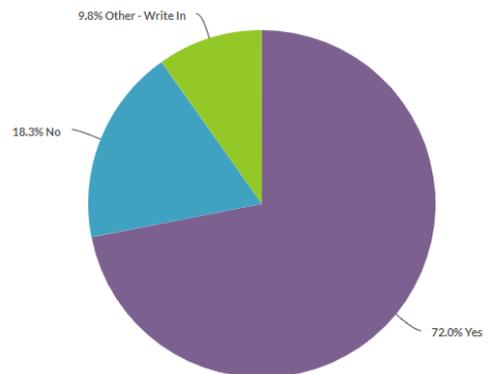


Respondents reported a range of trails used, with additional trails outside of the scope of this review also reporting use. The most frequently used trails are McMahon-Frame Lake Trail (100%), Niven Lake Trail (83.1%), Tin Can Hill Trails (71.1%).

Are you able to get to work without a car?

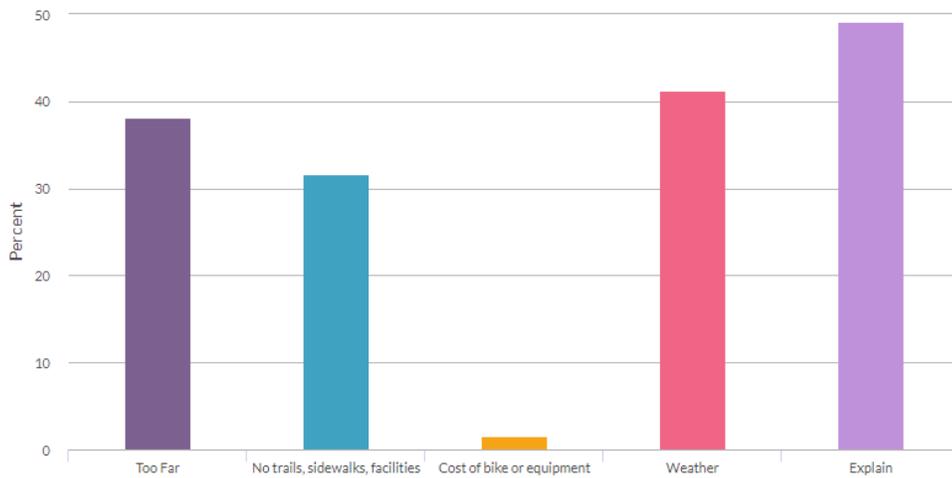


Are you able to get to shopping or other services without a car?



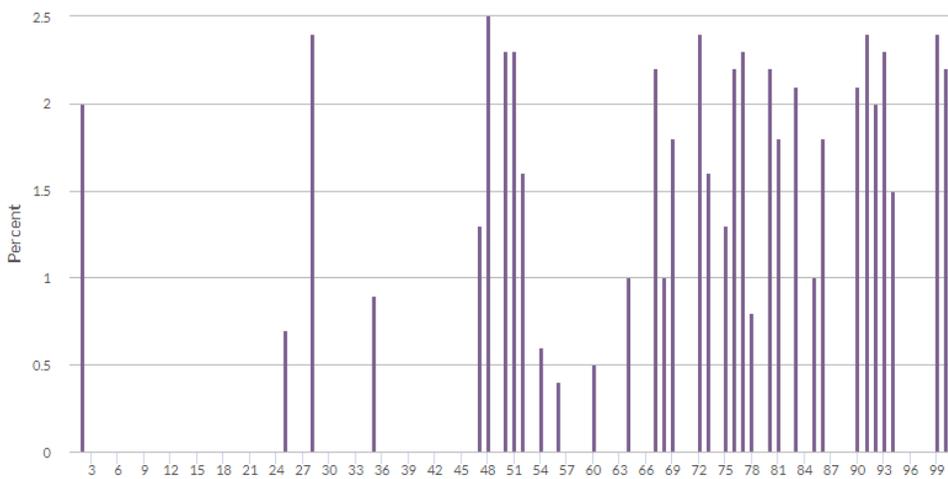
Respondents generally reported very high accessibility to work and shopping through active transportation, although as noted in earlier questions, respondents do not represent the census area averages as reported in the 2016 census.

Why are you not able to get to work, shopping or other services through active transportation?



Reasons for why active transportation could not be used for commuting to work, shopping or other services are a collection of varying responses. Answers vary due to the personal circumstances (children, distance, time available) and infrastructure (no trails, no lighting, too dangerous), along with respondents residential location. It is of note that equipment availability and presence of trails are the least frequently noted concerns and limitation on active transportation use.

What needs to change for you to make more frequent use of Active Transportation? (Drag the slider toward what must change)

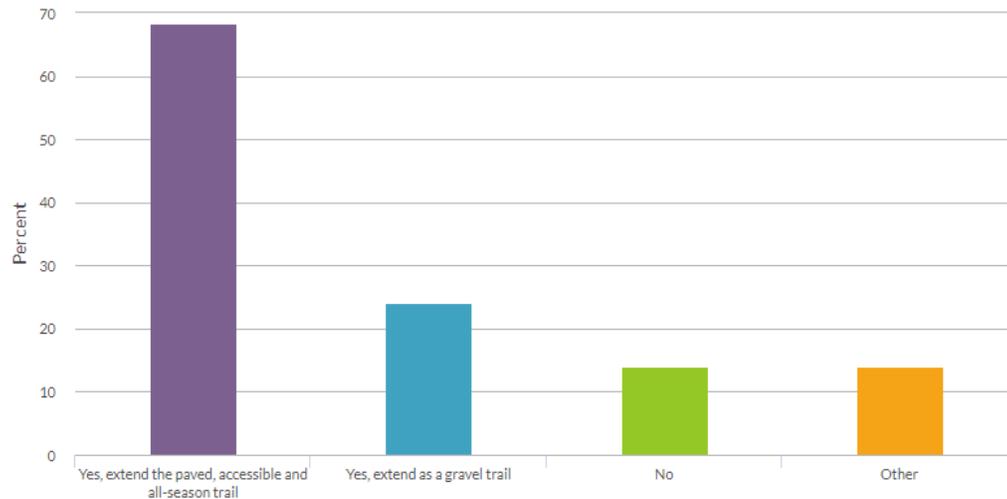


Responses to this qualitative survey question noted that perceived limitations to trail use in Yellowknife are more a function of City infrastructure limitations (100) than personal limitations (0). The survey respondent demographic is more likely to already be using the trail network, than the broader average and these rates may therefore be affected by existing interest.

Part 2

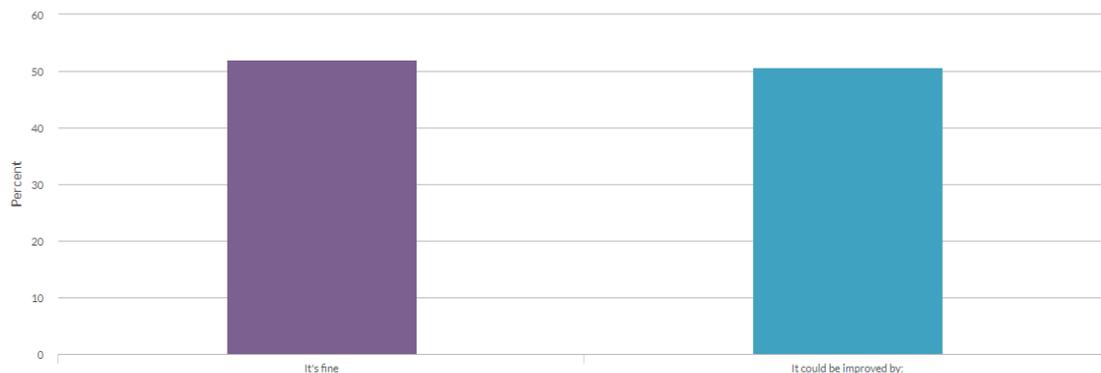
Subsequent questions relate to specific infrastructure gaps that are noted in Yellowknife. These include the completion of the McMahon-Frame Lake Trail and connections through the intersection of Old Airport Road, Franklin Avenue, Kam Lake Road and Taylor Road.

Would you like to see the McMahon-Frame Lake Trail extended to the Co-op Corner, behind the new hospital as part of the existing accessible and all-season trail system?



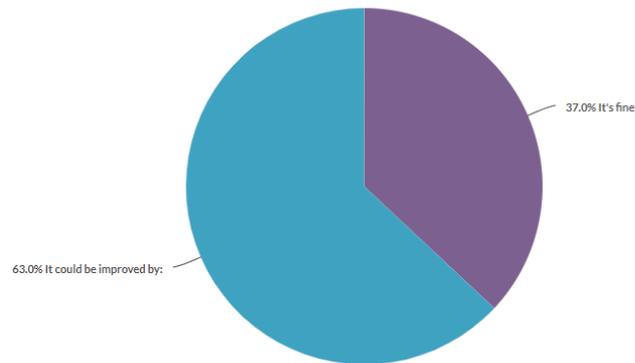
Respondents were very supportive of the completion of the McMahon-Frame Lake Trail between the new Stanton Hospital and the Coop Corner. Providing paving and lighting to the same standard as the existing trail were the most common responses (68.4%) with options for a gravel extension (24.1%) and opposition (13.9%) being considerably less. Comments to this question note an interest in allowing for the existing recreational trail to remain (4), that the cost of improvements is too high and the trail should remain as is (3), and the importance of improving connections to Borden Drive and Byrne Road (2).

What other changes would you like to see to the McMahon-Frame Lake Trail?



Approximately half of respondents (52.1%) noted that no other changes are necessary on the McMahon-Frame Lake Trail, while the other half of respondents noted that signage (10), safety/lighting/bylaw enforcement (8), improved maintenance (9), and general route improvements are needed to make the system easier to navigate.

What changes would you like to see (if any) to the Old Airport Road and Franklin Avenue Intersection for walkers and bikers?

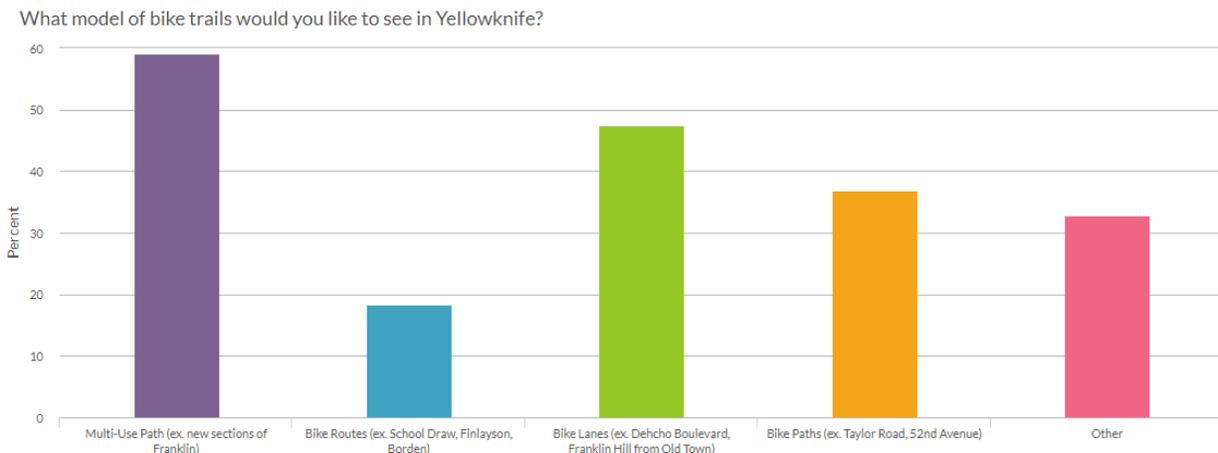


Responses to the question of how the Old Airport Road, Taylor Road, Kam Lake Road and Franklin Avenue intersection could be improved were extremely varied, however it was noted that there is a high interest in making changes to this intersection, as noted by 63% of respondents.

Individual suggestions included the installation of a round-about (3), tunnels or overpasses for bikes and pedestrians (5), improved bike lanes, paint markings through the intersection (14), improved pedestrian lighting, scramble crossings and alternative routes to the multiplex and fieldhouse (12). Some respondents (5) noted that with recent construction on the intersection in the summer of 2018, further improvements are unnecessary and will need to wait until future construction occurs.

Part 3

The remaining 3 questions relate to the general trail network and offer an opportunity for residents to provide general feedback on what trail system they would like to see in Yellowknife.



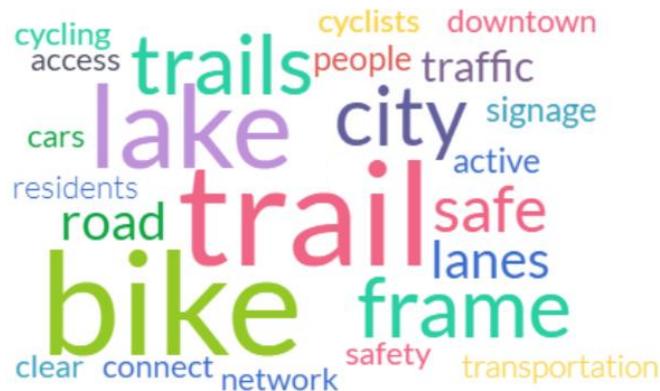
Responses noted that Multi-use pathways (3m wide paved routes) are the preferred model of bike trails and bike lanes (painted on road routes) also receiving higher support. Additional comments were varied but noted that recreational trails (ex. Tin Can Hill) are cheaper and beneficial than expensive options, and that bicycles should be better integrated with vehicles in a safe and visible way, allowing pedestrians to use the other trails.

What other trail improvements or changes would you like to see around your City?



This general question sought answers on how residents would like to improve the Yellowknife trail network. Responses varied from specific requests for ice skating on Frame Lake, trail connections from Parker Park to Lovell Court to more general ideas of recognizing Yellowknife as a Winter City, extending ski trails to the ski club, supporting snowmobile commuting and providing improved trail connections to the airport and Fred Henne Park.

What should be the priority for Active Transportation improvements?



The final question requested identification of trail priorities. Responses were very general and varied slightly from the responses to previous questions:

- Safety
- Safe intersections and bike lanes
- Supporting bike rental programs
- Driver education
- Safe access to schools
- Waterfront trail extensions
- Trail connectivity and signage
- Access around the Hospital

Appendix B

Summary Report from Yellowknife Trail Enhancement and Connectivity Strategy Public Consultation

Materials provided in Open House Sessions One and Two, directed participants to consider the current trails, and propose amendments to this system, identifying gaps and opportunities throughout the city. Further, the McMahon-Frame Lake Trail was showcased as a priority route that requires attention where specific feedback on a new potential accessible trail route was sought. Participants were encouraged to mark-up a provided trail network map, with ideas and dreams for the cities trail system. Additional post-it notes were provided for participants to explain ideas and speak to specific concerns.

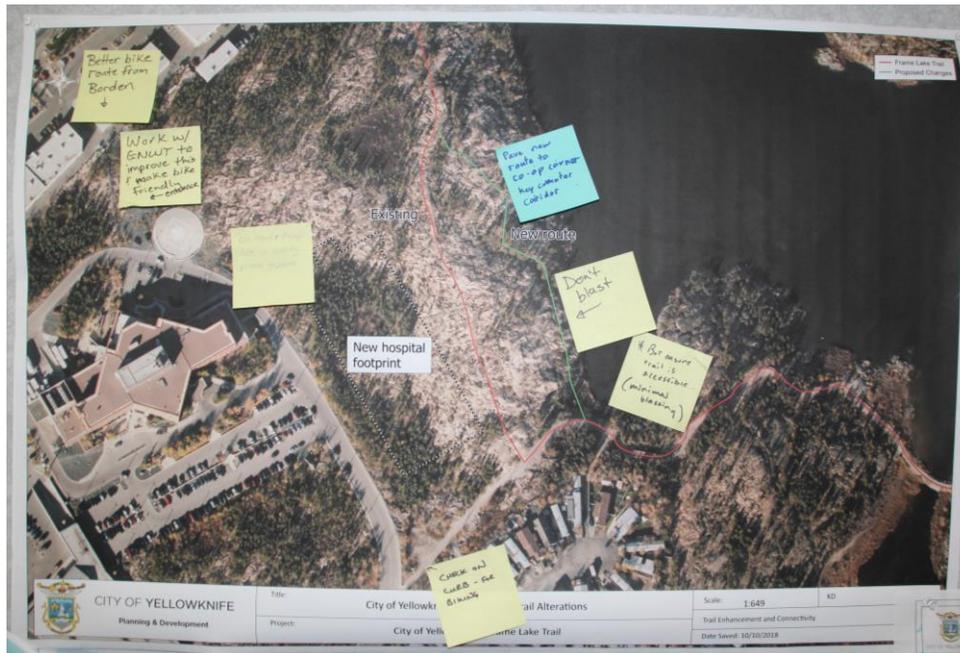


Figure 3: Proposed McMahon-Frame Lake Trail Extension Public Comments

Attendance in the Open House Session's was approximately 10 and 20 at the Council Chambers and Multiplex respectively. Residents were noted as being vocal and engaged in the topic, taking time to review material and think through their use of the existing trail network. Average times for participants engaging with the consultation team was approximately 20 minutes, with significant and informed discussions.

Comments provided in the Amended Trail Network Image (Fig. 2) include:

- Signage needed on Jackfish Lake Trails
- Wayfinding signage needed around Frame Lake Trail
- Kam Lake Road Multi-use Path signage needed acknowledging that this is a shared bike and pedestrian route
- Better skiing (trail) connections are needed on Tin Can Hill to access Con Mine and Great Slave Lake
- Need a boardwalk along Rate Lake (3)
- Restrict motorized access to Tin Can Hill
- Restrict development at Tin Can Hill (no Twin Pine development)
- Improve connections through Con Mine

- The bike path on 52nd Street is dangerous and a waste of money – a painted line would have been fine
- Install proper trails on both sides of Franklin between School Draw Avenue and William McDonald High School.
- Franklin/Old Airport Road intersection is hard to get across for kids, consider a crossing that makes it easier for kids to cross to the multiplex
- Need dirt bike trails
- Need winter trails, skiing, fat biking, skateways
- Groomed ski trails on Frame Lake open to skiing to all neighbourhoods, keep it up!
- Groom the Fred Henne Campground for skiing (would be dog friendly)
- Niven Lake Townhomes require trail improvements to Back Bay
- Fairly impassable trail on north side of Frame Lake
- Make trails more mountain bike friendly (with ramps)
- Improve access to Range Lake Trail – it's beautiful but no one knows about it
- More trails on Grace Lake
- Construct new recreational trail around Kam Lake
- Connect Taylor Road to Frame Lake Trail (wider sidewalk/cycling lanes along Forrest Drive)
- Narrow the crossing and install traffic calming at Niven Crossing
- Install traffic calming and street-scaping of 50A Avenue to support biking
- Freshen up signs and trail around Back Bay Cemetary
- Could install signposts and improve trail between Dehcho Boulevard, Parker Park and North Borden subdivision with signage needed.
- Connect Fred Henne with Jackfish Lake trails
- Connect and encircle the Ski Club with summer/winter trails
- Fix Old Airport/Franklin Intersection

Additional comments specific to the McMahon-Frame Lake Trail extension were generally supportive and understanding of the need for accessibility considerations. Environmental Impacts were encouraged to be minimized and other connections (to Borden and Byrne) were encouraged to occur at the same time.

- Better bike route from Borden
- Work with GNWT to improve the wooden boardwalk between the hospital and Staples
- Check curbs for bike access (create smooth curb ramps at the end of Byrne Road)
- Pave the route to coop corner as it is a key commuter route
 - Don't blast
 - But ensure trail is accessible... (minimal blasting)

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