

Master Trails Plan

District of Fort St. James

File No. 2341-01859-0

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EXECUTIVE SUMMARY

The community of Fort St. James enjoys a close proximity to a large network of regional trails, and natural features such as Mount Pope and Stuart Lake. Within the town and the adjacent Nak'azdli community are a number of trails, sidewalks and lanes which facilitate walking and cycling trips to local destinations. To encourage residents to use sustainable transportation modes, and to promote Fort St. James as a destination for outdoor tourist recreation, the District commissioned the development of a Master Trails Plan. The objectives of the Plan were to identify and map local and regional trails, develop a prioritized list of trail improvements, and identify the policies necessary to manage the trail system.

Local issues, concerns and priorities were determined from a review of existing planning documents, three site visits, and comprehensive public and stakeholder consultation. From these, the popular trail modes and trip purposes were identified, the trail system was mapped, and the main trip destinations were confirmed.

A review of the last ten years of ICBC claims data in Fort St. James revealed no cycle-related collisions, but a number of pedestrian collisions. The most severe of these involved pedestrians on Highway 27 through the Nak'azdli area, which supported local concerns about the safety of pedestrians on the highway. There were also a number of unrelated minor collisions involving pedestrians on residential streets.

For the planning and development of the trail system, a series of general guidelines were recommended, including:

- Planning guidelines, for the development and classification of the trail network;
- Design guidelines, for general criteria for trail surfacing and alignments; and
- Safety guidelines, for incorporating security measures into the trail system, such as the principles of Crime Prevention Through Environmental Design.

Five specific trail types and their associated design standards were proposed for the Fort St. James trail system, as follows:

1. Sidewalks, which provide a protected area for pedestrians abutting roadways;
2. Shared Bike Lanes, which legitimizes cycle passage on roads with insufficient width for formal bike lanes;
3. Multi-Use Trails – Non Motorized, which provide a high quality, accessible trail experience for active transportation users on key trail links;
4. Multi-Use Trails – Motorized, which provide a suitable trail experience for those on dirt bikes, ATVs and Snowmobiles;
5. Rustic Trails, which are typically rough and narrow trails with relatively little maintenance required.

Additional design guidelines and considerations were presented for crosswalks, stairways, and bridge crossings.

To tie together the trail network and amenities as one system, a branding concept was developed based on the theme: *“Fort St. James, a historic place with a resourceful future.”* The materials for trail markers and amenities would include rough wood to reflect the surrounding forests, steel highlights to reflect local history/industry, and animal print designs to reflect the natural environment.

A comprehensive review of the existing trail system and the main destinations identified a number of recommended improvements, as outlined in Table ES-1. Within Fort St. James, the recommended priorities are:

- The extension of the sidewalk across Douglas Avenue Bridge, as a key pedestrian link between the residential area and the school and recreational areas south;
- Waterfront Pathway Extension to Spirit Square, which would connect the National Historic Site to the town, and be a tourist attraction;
- Ash Street connection to Highway 27, as a popular route between the residential area and the Downtown; and
- Trail through Cottonwood Park, to provide a safe route for pedestrians and cyclists along the highway, between Birch and Elm Streets.

A few minor trail improvements were also recommended in the Nak’azdli community to improve safety, and to facilitate a formal connection between Fort St. James and the Sowchea Road area. The key recommended link is the development of a trail crossing of the Stuart River on the existing concrete piers east of the highway bridge.

A number of policies, procedures and programs were recommended to manage, promote and maintain the trail system. These include:

- the development of municipal standards and policies to guide local infrastructure development;
- education initiatives to teach trail users about trail safety and etiquette;
- marketing initiatives to promote the trail amenities both locally and regionally;
- maintenance alternatives to cost-effectively keep the trails at a safe and accessible level of service; and
- inter-agency coordination, which will facilitate the coordination of trail solutions across multiple jurisdictions.

Trail improvement funding may be available through a number of grants and sponsorships, including provincial programs for tourism, cycle networks, healthy communities, and wildfire fuel management; road safety funding through ICBC; and partnerships with local businesses and developers.

Table ES-1: Summary of Recommended Improvements

Area	Report Section	Recommended Improvement	Order of Magnitude Estimate	Potential Stakeholders	Considerations and Potential Funding Sources
Short Term Recommended Improvements (0 to 5 Years)					
Fort St. James	10.1(1)	Sidewalk Across Douglas Avenue Bridge	\$ 150k	DFO, MoE, SD91	Strong candidate for ICBC RIP funding.
	10.1(2)	Waterfront Pathway Extension to Spirit Square	\$ 50k	DFO, MoE, National Historic Site, hotel	Candidate for tourist funding, and partnership with adjacent hotel. Stabilization issues.
	10.1(3)	Ash Street Connection to Highway 27	\$ 20k	MoTI, DFO, MoE Overwaitea	Potential for corporate sponsorship.
	10.1(4)	Trail through Cottonwood Park	\$ 20k	MoTI	Candidate for ICBC, CIPP, and tourism funding.
	10.1(5)	North Road Trail Connection across Stones Bay Road	\$ 5k	MoTI	Completes connection to intersection and trails beyond.
Nak'azdli	10.2(1)	Connection from Carrier Frontage Road to Kwah Road	\$ 2k	Nak'azdli	Needed for accessibility.
	10.2(2)	Connection to Necoslie River Bridge – South End	\$ 2k	MoTI Nak'azdli	Candidate for ICBC funding.
Region	10.3(1)	New Stuart River Crossing and Connection to Sowchea Road	\$ 1,000k	MoTI, DFO, MoE & Navigable Waters	Expensive project; can use existing piers. Candidate for ICBC and CIPP funding.
Medium Term Recommended Improvements (5 to 15 Years)					
Fort St. James	10.1(6)	Crosswalk on Stones Bay Road at Resort Hill Road	\$ 1k		Trail on north side of Stones Bay Rd is on private land.
	10.1(7)	Sidewalk on Douglas Avenue	\$ 120k	SD91	Challenging to retrofit sidewalk, but route to school.
	10.1(8)	Sidewalk on Elm Street	\$ 250k		Challenging to retrofit sidewalk, but completes loop.
Nak'azdli	10.2(3)	Connection to Necoslie River Bridge – North End	\$ 10k	MoTI Nak'azdli	Provides better access to Nak'azdli neighbourhood trails
Region	10.3(2)	Trail Improvements on Sowchea Road	as required	MoTI SD91	Candidate for ICBC and CIPP funding.
Long Term Recommended Improvements (15 Years or more)					
Fort St. James	10.1(9)	Crosswalk on Highway 27 at Elm Street	\$ 5k	MoTI	When warranted by crossing volumes. Heavy truck traffic.
	10.1(10)	Underpass on Highway 27 at Old Railway Trail	\$ 500k	MoTI	When warranted by crossing volumes, safety and/or trail network connectivity.
	10.1(11)	Junker Street Connection to Stuart Drive East	\$ 15k	Heliport, Property owners	Completes PNG- Mt Dickenson Trail loop.
Nak'azdli	10.2(4)	South Extension of Carrier Frontage Road Trail	\$ 10k	MoTI Nak'azdli	Candidate for ICBC funding.
Region	10.3(3)	Grade Improvements to Mt Dickenson Trail	as required		Candidate for Strategic Wildfire Prevention funding

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1 INTRODUCTION

1.1 BACKGROUND

Fort St James is situated on the picturesque shores of Stuart Lake in northern British Columbia. The population within the municipal limits is 1,700, with an additional 2,800 in the immediate area surrounding the District. The community is large enough to enjoy a vibrant industrial economy and a rich historical and cultural heritage, yet small enough to facilitate walking and cycling within the town. Furthermore, the proximity of the wilderness offers convenient access to a diverse array of outdoor recreation.

Fundamental to all non-vehicular trips (both recreational and utilitarian) are the pathways connecting the origins and destinations in the area. Within the urban centre of Fort St. James is a dense network of sidewalks, trails, and alleys in various states of accessibility. Outside the town, a greater network of regional trails is available for both motorized and non-motorized recreational activities.

The District of Fort St. James recognized that the trail system is an important community asset. Specifically, the local benefits of an attractive, accessible and integrated trail system include:

1. Facilitating sustainable transportation: Although it can be challenging to justify investments in trail infrastructure in light of more immediate community priorities, these investments have long-term benefits in promoting sustainable development and community/economic growth. Specifically, a strong network of trails can reduce reliance on the automobile, which ultimately lessens the demands for new road infrastructure, traffic control, parking space, etc.
2. Improving the quality of life for residents: As a smaller-sized town, Fort St James has the advantage of providing a number of amenities and attractions within close proximity. This creates tremendous opportunities to generate walking and cycling trips if the infrastructure was in place to support those trips. Specifically, by strategically establishing trail connections to key education, employment and retail destinations, trails can serve commuter and shopping trips. And by establishing connections to recreational facilities and attractions, trails can serve recreational trips. All of the above would help improve the livability of the community, and provide residents with positive incentives to adopt healthy lifestyles. Trail improvements may also be planned to have a traffic calming effect on the road network, depending on how they are implemented. This also improves quality of life through traffic safety.
3. Reducing community Greenhouse Gas (GHG) emissions. Although climate change concerns are global, the solutions remain local. While some trips must necessarily be by automobile due to distance traveled and/or volume hauled, a large percentage of vehicular traffic is comprised of short distance commutes. However, a meaningful shift to active transportation modes depends on road users recognizing safe and convenient alternatives to driving. As trail routes are built, maintained, and promoted

in the community, this shift can occur. And as traffic and trail user volumes are tracked, the District can estimate actual reductions in Greenhouse Gas emissions in the community.

4. Creating opportunities for outdoor recreation-based tourism: The trails infrastructure itself can promote economic growth in the tourist sectors, especially as they connect to regional recreational trail networks (e.g. bike parks, motorsport trails, cross country ski trails, etc) and local attractions (e.g. the Fort St James National Historic Site, Ripples of the Past Interpretive Trail, etc).

Figure 1: Stuart Lake, Fort St. James



The Fort St. James Transportation Committee envisioned a Master Trails Plan for Fort St. James and the surrounding area. The Plan would include the inventory and mapping of all local and regional pathways in the region; identify opportunities for improvements to improve safety, accessibility, and connectivity of the trail system; and develop the necessary standards, guidelines, policies, and programs to promote and administer trail use. In 2013 this project was initiated with funding from the Northern Health Authority, the Omineca Beetle Action Coalition (tourism funding), and the Northern Development Initiative Trust

This report summarizes the development and delivery of the Master Trails Plan for Fort St. James.

1.2 OBJECTIVES

The objectives of the Master Trails Plan are:

1. To identify existing and planned trail links, both within and outside the District boundary;
2. To create a GIS-based map showing all trails, which may be used by residents and tourists;
3. To develop a prioritized list of trail improvements which may be the subject of future grant applications; and
4. To identify the policies necessary to manage the trail system

1.3 SCOPE

Within the District boundary, the scope of the Plan will be a comprehensive study of all existing and potential future trail links to develop an integrated network with a focus on non-motorized trail users. These may include existing trails, footpaths, and alleyways. This will help the District's efforts in supporting sustainable transportation modes, improving community health, facilitating local recreational activities, and reducing Greenhouse Gas emissions.

Outside the District boundary, the Plan will show trail connections to other communities (esp. Nak'azdli) and the regional trail networks. The trails will include long distance hiking trails as well as those used for motorsports (i.e. snowmobiles, dirt bikes, all-terrain vehicles, etc). However, the scope of the analysis for the regional trail system will be limited to mapping known trails and summarizing improvement initiatives identified by others. This will help the District's efforts in supporting local recreation and tourism.

Figure 2: Stuart River Bridge



2 LITERATURE REVIEW

A number of key documents were used to guide the development of the Master Trails Plan. These are summarized below.

2.1 FORT ST. JAMES OFFICIAL COMMUNITY PLAN

The relevant community goals listed in Section 3.1 of the Fort St. James Official Community Plan (Bylaw No. 872, 2010) are as follows:

- (1) Downtown and community revitalization project, including signage, appearance beautification, and developing the lakeshore/bringing the lake into the forefront.
- (3) Development of trails: walking trails, historic information, boardwalk at Sowchea Swamp, recreational trails for hikers and bikers, self-guided walking path, etc.
- (4) Development of a Community Plan, which would include branding, themes, lakeshore development, business plans, economic diversification, etc;
- (5) Market Fort St. James to the outside world;
- (10) Eco-tourism/tourism promotion in general.

The relevant Guiding Principles listed in Section 3.2 include:

- Increasing economic opportunities for residents.
- Enhancing the quality of life for residents
- Working with the neighbouring Nak'azdli Band community south of the District.

The relevant Quality of Life Objectives listed in Section 3.4 include:

- To seek to enhance viewsapes and open space;
- To retain the local population by providing more opportunities for young people and more reasons for seniors to remain living in the community;
- To provide a safe place for residents to live and visitors to experience.

The Transportation Section mentions that the objective and policies “...are intended to encourage the use of alternative modes of transportation, such as walking and cycling.” The relevant objectives are:

- To encourage accessibility and inclusion for all residents to places in the District, such as commercial stores and recreation spaces;
- To promote a healthy community by providing infrastructure for walking and cycling; and
- To undertake a review of the existing sidewalk network and develop priorities for installation and replacement of necessary sidewalk links.

The relevant transportation policies are:

- To recognize the significance of bicycle and pedestrian traffic, and to plan for the future development of bicycle and pedestrian paths;
- To ensure sidewalks are provided for all new urban residential development.

2.2 SUBDIVISION SERVICING BYLAW

The existing Subdivision Servicing Bylaw No. 599 (1995) does not include provisions for trail or sidewalk standards. Similarly, road cross sections do not provide for active transportation facilities within the identified right-of-way.

2.3 TRANSPORTATION COMMITTEE

In response to local concerns with traffic safety, a Transportation Committee was struck to combine concerns and seek solutions. The committee is comprised of representatives from the Municipality, RCMP, Chamber of Commerce, Regional District of Bulkley-Nechako, and Nak'azdli First Nation. In its support of active transportation modes, the committee identified the following locations with safety concerns for pedestrians and cyclists:

- Crossings on Highway 27 at Kwah Road and Greenview Drive. The latter has since been upgraded to a pedestrian signal by the Ministry;
- Highway 27 through Nak'azdli neighbourhood;
- Crossing the Stuart River Bridge on Highway 27.
- North Road (especially One Mile Hill) due to speeding traffic and heavy trucks;
- Sowchea Road due to narrow road;
- Crossings on Stuart Drive West (Highway 27) through Downtown, and at Cottonwood Park, especially with limited sight lines and heavy truck traffic;
- Corner of Manson and Stuart Drive West (Highway 27)
- Crossing at Stuart Drive (Highway 27) and Douglas Avenue

2.4 CORRESPONDENCE

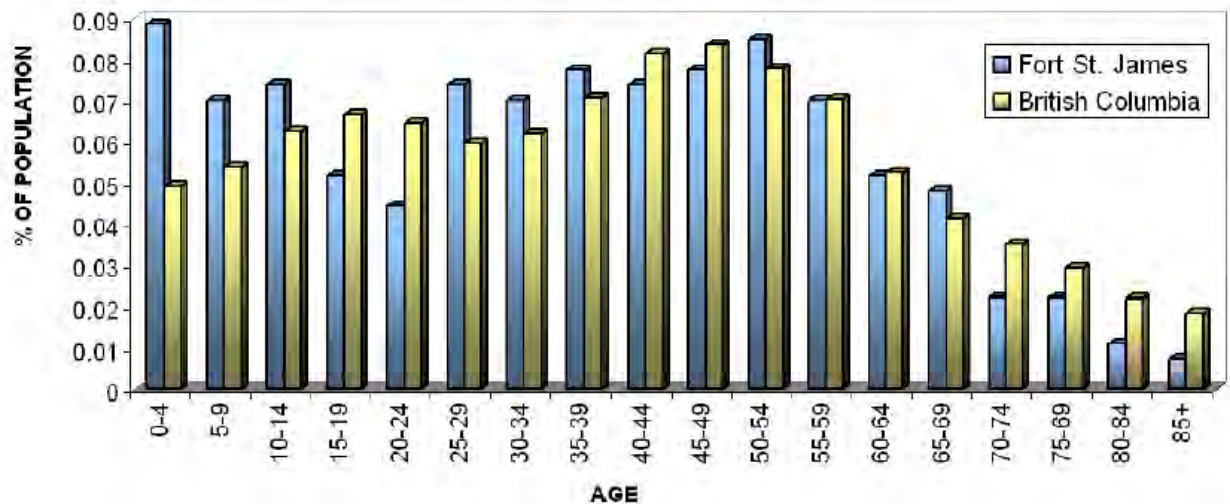
A number of letters, emails, and other documents from the District and other stakeholders were of relevance to the Fort St James Master Trails Plan. These were:

1. From a recent application to the Northern Development Initiative Trust for a Marketing Initiative Grant, Fort St. James calculated that an increase of 500 visitors to the area could generate as much as \$100,000 in local economic benefits.
2. From an email from Andrew Chewter concerning mountain bike trails in the area, the two primary trail systems are Mount Pope Park and the KDL Bike Park.
3. From a Briefing Note by Angel Ransom, Nak'azdli Band Council CCP Coordinator, the Nak'azdli First Nation is concerned about residents walking along Highway 27. In particular, safe links to the Necoslie River Bridge and to the Fort St. James urban centre were of particular concern.
4. From a letter from the Luck Bay Community Association to the Ministry of Transportation and Infrastructure, the community cites the amount of trail use accessed from Sowchea Bay Road. The narrow road and the volume of school children are concerns for traffic safety.

3 COMMUNITY PROFILE

In comparison to British Columbia demographics, Fort St. James has a much higher number of children, and a lower number of seniors. But like many other North American communities, the population is aging with a projected boom in the senior population. To keep seniors in the community, a strong local pathway system is needed to allow those seniors safe and convenient access to local services and recreation.

Figure 3: Population Age of Fort St. James vs. BC



Source: Fort St. James Official Community Plan

The City has a higher degree of automobile dependence than the B.C. average. This may be due to a combination of the winter climate, the abundance of free parking in the community, and the lack of public transit service. However, according to Statistics Canada, there is a significantly greater number of residents who walk or cycle to work compared to the rest of the province. This is likely due to the close proximity of residents to their employment (e.g. downtown, local industry, etc). This trend could be increased further with improvements to the trail system.

Table 1: Transportation Mode Choices in Fort St. James vs BC

Transportation Mode	Fort St. James	B.C. Average
Car, Truck or Van as Driver	78%	72%
Car, Truck or Van as Passenger	9%	8%
Public Transit	0%	10%
Walk/Bicycle	12%	9%
Other	1%	1%

Source: Statistics Canada, 2006 Census

4 PUBLIC AND STAKEHOLDER CONSULTATION

To ensure the study addressed concerns and opportunities identified by local residents, a comprehensive public and stakeholder consultation process was completed. The results are discussed below.

4.1 STAKEHOLDER CONSULTATION

On July 17, 2013, the project team met with a number of key stakeholders in the Master Trails Plan. These included representatives from the Seniors Association, the Snowmobile/ATV Club, Nak'azdli First Nation, and the Stuart Lake Nordic Club. The group discussed the following issues:

1. As with other northern communities, Fort St James would like to foster and promote snowmobile and ATV recreational tourism.
2. The Snowmobile/ATV Club is applying for grants for a snow groomer and trail signage. Trail brochures are currently being funded, and will be developed in Autumn; these should be coordinated with the mapping produced by the Trails Master Plan.
3. In the winter months, snowmobilers can use the frozen lake to access trails. In the summer months, trail access is more limited. This should be improved, especially to the north side of the lake.
4. Cross country ski trails are generally separate from the motorized sport trails.
5. There is an idea for a ski loop around the Mission Lands, but these will have to be sensitive to First Nations interests and will have to be protected from motorized sport vehicles.
6. The old railway line may be a strong candidate for a trail link if the property issues can be resolved. The link connects the town to the mill in the northeast section of the town, which would allow employees to walk, cycle, or ski to work.
7. There is a strong demand for the waterfront walk, but there are problems with private property easements.
8. The local Rotary Club is planning to construct a foot bridge on the old piers immediately downstream of the Stuart River Bridge on Highway 27. Currently, pedestrians and cyclists use the highway bridge.
9. The Nyan Wheti and Dog Creek Trails should be shown on the trail mapping.
10. There are many alleys available for walking/cycling trips. These are not typically paved, but are ploughed in winter.
11. The elderly residents need to walk. This can be facilitated in the Plan by designing shorter links to key destinations for which automobiles are not required.
12. Connections to the Nak'azdli community should be formalized so that the trail systems work together as one.
13. In general, the trail system needs a theme ("branding") to tie everything together.

The complete minutes from the Stakeholders Meeting are provided in Appendix A.

4.2 PUBLIC SURVEY

Between August 27 and September 12, 2013, residents of Fort St. James were invited to complete a survey providing information on their use of town pathways and regional trails, and inviting their ideas for trail improvements. The survey was available in both hardcopy version (delivered to approximately 1,000 mailboxes at the local post office) and online (via the District website).

In total, 65 responses were received. There was a strong diversity in the ages of respondents (Figure 4). However, the number of male respondents was relatively low (Figure 5). It is unclear how this may have affected the results.

Figure 4: Ages of Survey Respondents

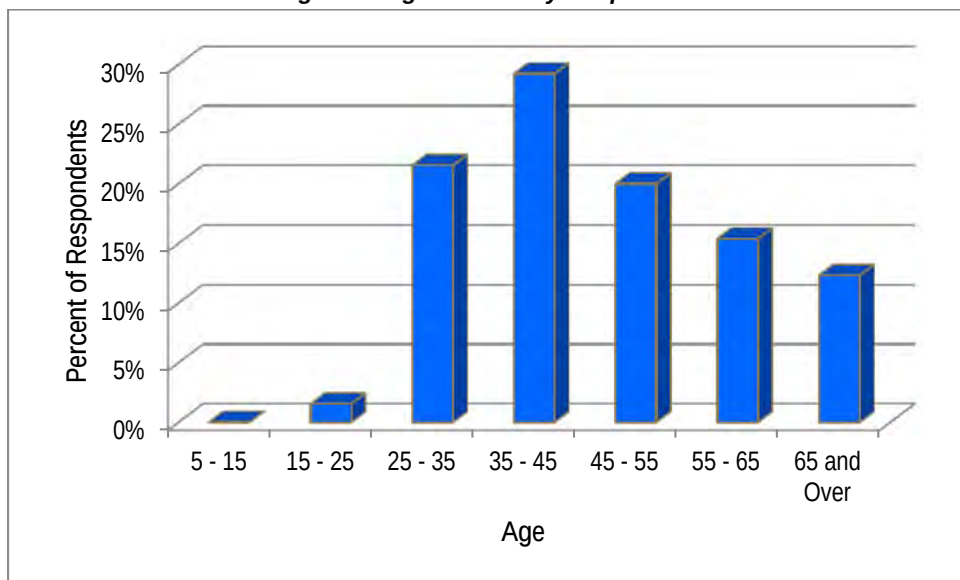
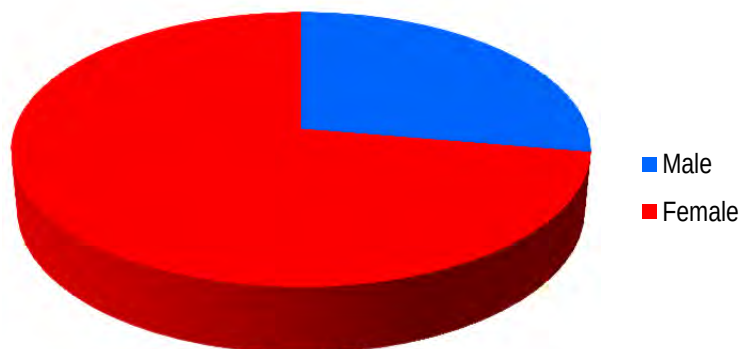


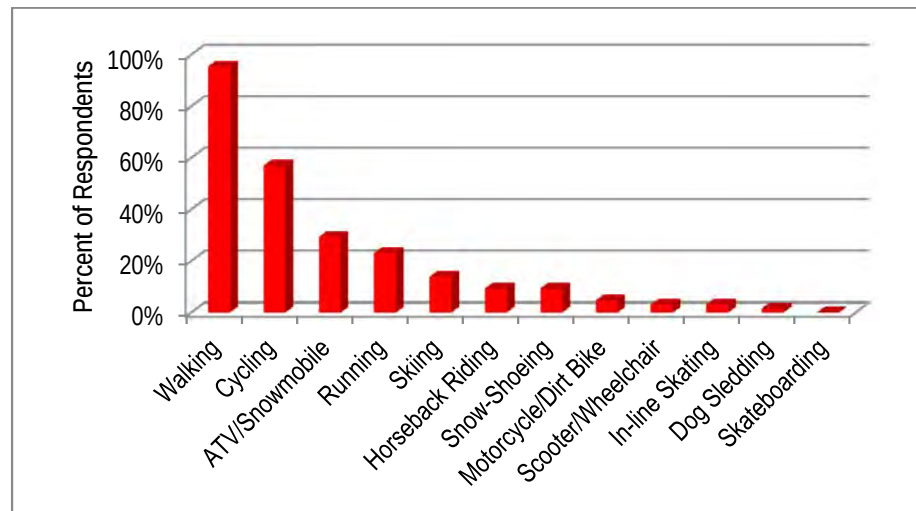
Figure 5: Gender of Survey Respondents



Within the community, the most popular activity on the trail system is walking, followed by cycling (Figure 6). The close proximity of destinations within the town centre and the density of existing trails facilitate these trips.

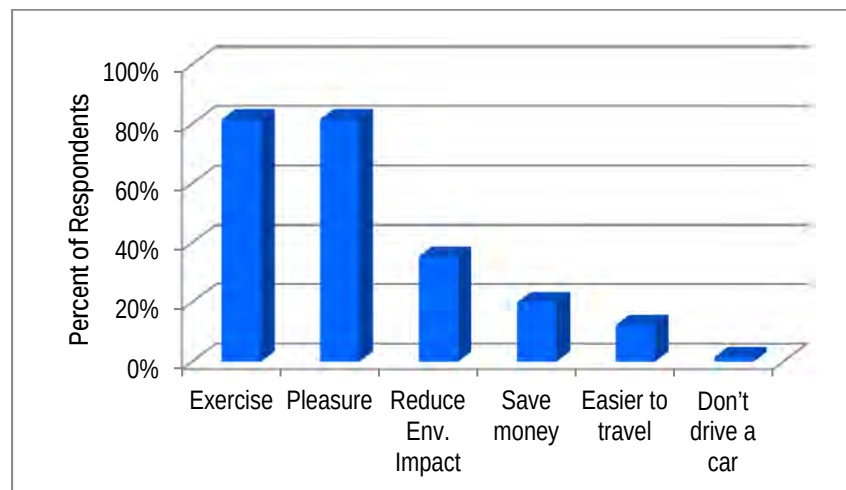
Although motorsports were identified third, these vehicles must be properly licensed and insured before they may be legally used on the public roads and trails within the District.

Figure 6: Trail Use by Mode in Town



The primary reasons identified for using the trail system in town was largely for exercise and pleasure. This underscores the importance of keeping the trail system convenient, comfortable, and aesthetic. Some respondents recognized the environmental benefits and cost savings of active transportation, but these were not typically the primary reasons for trail use.

Figure 7: Primary Reasons for Trail Use within Town



The survey respondents were generally interested in more trails around the town, and suggested the following improvements to the local trail system within the community. The number following each suggestion identifies how many respondents mentioned each improvement.

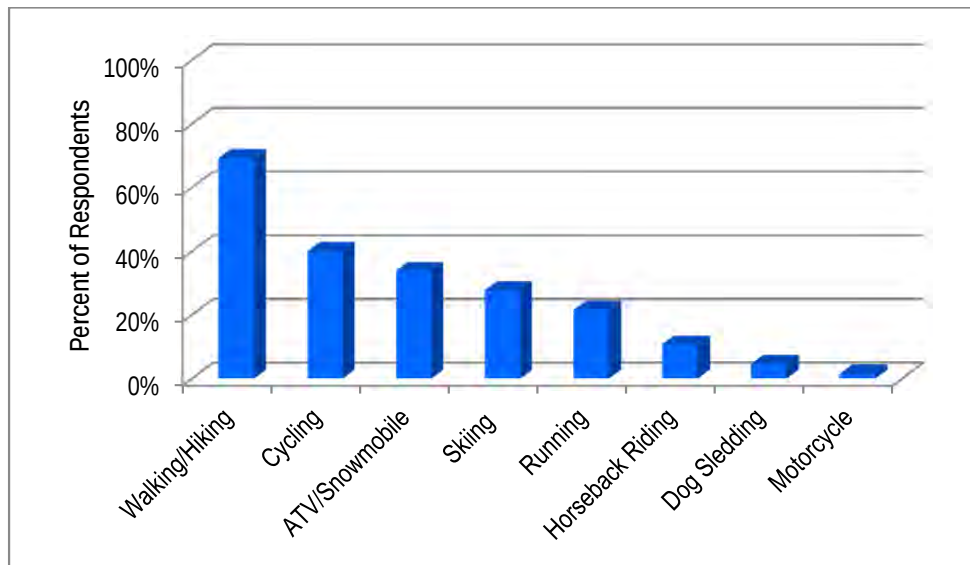
- Trail along the lake through town connecting to the park (4)
- Highway 27 at grocery store to Ash Street (3)
- Mountain bike/hiking trails near the cemetery (3)
- Trail from Tourist Info Centre to the Sowchea Road intersection (2)
- Pipeline trail from Hoy Subdivision to Douglas Street (2)
- Sidewalks on Elm Street and Douglas Street (2)
- Old rail grade as trail
- Crosswalk on Highway 27 at intersections of Ash, Birch, Elm and Heathmont
- North extension of downtown sidewalk on west side of Highway 27
- Cross country ski loop (assumed to be in Mission lands)
- Perimeter trail around the town.
- Expanded "Loop" from Stanley Park at the end of Douglas Street up to Hwy 27 and back down One Mile Hill along Hwy 27
- Complete loop for the Mt Dickenson trail.
- Trail to Apollo to eliminate need to ride on road
- Formalizing alleys as trails
- One Mile Hill trail into town along North Road (Highway 27)
- Bike lanes on roadways.
- Additional sidewalks near Cottonwood Park.
- More trails around town.

Figure 8: Pipeline Trail at Douglas Street



Activities in the regional trail system follow a similar pattern to those within the town. Walking and hiking are the most popular activities, followed by cycling, motorsports and skiing. The regional trail system encompasses facilities specifically dedicated to each of these activities. There are hiking trails on Mount Pope and Mount Dickenson, cycling trails on Mount Pope and the KDL bike park, motorsport trails south of town via Sowchea Road, and cross country ski trails around Murray Ridge.

Figure 9: Regional Trail Use by Mode



The survey respondents suggested the following improvements to the regional trail system:

- Improved and marked trails along Sowchea Road (5).
- Second bridge across Stuart River for non-vehicular use (2)
- Bike trails that could be used for regional and provincial meets
- Trail connections to other towns
- More loops to avoid doubling back
- Trail to Murray Ridge

For both town and regional trails, common suggestions were identified for trail maintenance, standards, and amenities. These were as follows:

- Map of trail system (5)
- Signage/information on trails (4)
- Grooming of ski trails (4)
- Wider trails with easier grades and improved surfacing (3)
- Grooming of regional trails (e.g. Nyan Wheti, Shas Mtn, etc)
- Illumination of well-used trails (esp. trail from Ash St to grocery store) (2)
- Litter removal

For pedestrians and cyclists using the roadways, additional suggestions were submitted concerning improving drainage, road sweeping operations, and rehabilitation of sidewalks.

The preferred trail (local and regional) destinations are discussed in Section 5. The complete survey results are provided in Appendix B.

Figure 10: Trail on Old Railway Grade



5 TRAIL TRIP DESTINATIONS

To evaluate the effectiveness of the existing trail network, it must be studied in the context of the origins and destinations of the trail trips. People will likely be more inclined to walk or cycle to their destinations if there are safe and convenient pathway links provided.

The primary origins and destinations for trail trips in Fort St. James were collected from the literature review, the public/stakeholder comments, and site visits. The locations are listed in the sections below.

5.1 TOWN CENTRE DESTINATIONS

Local destinations within the Town Centre which may be conducive to walking or cycling trips are shown in Table 2, and illustrated in Figures 13 and 14.

Table 2: Town Centre Destinations

Type	Location
Shopping / Business	Downtown (post office, municipal hall, library, grocery store, shops)
	Farmers Market (Spirit Square)
	Greyhound Station
Institution	Fort St. James Secondary
	David Hoy Elementary
	College of New Caledonia
	Stuart Lake Hospital
	Health Unit
Recreation	KDL Bike Park
	Curling Club/Fort Forum Arena
	Sonny Hamper Ball Park
	Seniors Centre
Nature / Park	Waterfront Walkway
	Stuart Lake
	Cottonwood Park/Campground
	Stones Bay Loop
	Goodwin Park
	Cemetery
	Rotary Kiddies Park
	Mount Dickenson
Tourism	Fort St. James National Historic Site
	Tourist Information Office
	Spirit Square
	Russ Baker Memorial
	W34 Junkers Airplane Replica

Figure 11: Local Destinations



5.2 NAK'AZDLI COMMUNITY DESTINATIONS

The key destinations within the Nak'azdli community are listed in Table 3, and shown in Figure 15.

Table 3: Nak'azdli Community Destinations

Type	Location
Shopping / Business	Nak'azdli Band Office
	Nak'azdli Treaty Office
	Gas Station
Institution	Nak'azdli Health Unit
	Our Lady of Good Hope Church
	Nak'albun Elementary School
Recreation	Outdoor Ice Rink
	Gymnasium
	Youth Centre
	Carrier Ball Park

Figure 12: Nak'azdli Band Office



5.3 REGIONAL DESTINATIONS

There are a number of key trail destinations outside the limits of Fort St. James, as listed in Tables 4 and 5, and shown in Figures 17 and 18.

Table 4: Regional Destinations North of Fort St. James

Type	Location
Tourist/Recreational	Murray Ridge Ski Hill and trails
	Mount Pope
	First Nations Pictographs
	Pinchi Lake

Table 5: Regional Destinations South of Fort St. James

Type	Location
Tourist/Recreational	Spencer's Ridge
	Sowchea Bay Provincial Park
	Paarens Beach Provincial Park
	Snowmobile Trails
Institutional	Sowchea Elementary School

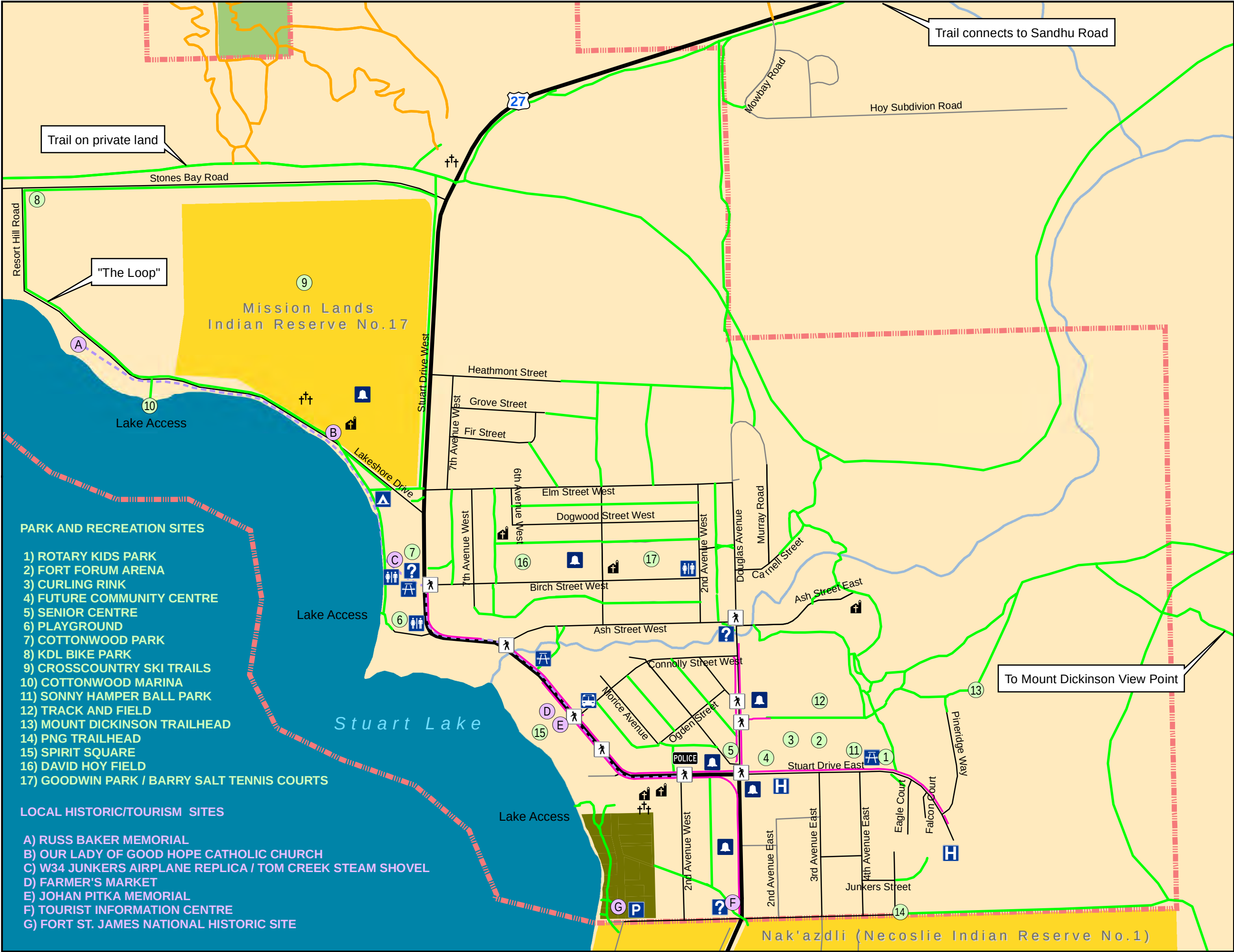
6 EXISTING TRAIL NETWORK

6.1 FORT ST. JAMES TRAILS

The existing system of trails and alleys in Fort St. James provides a strong network between residential neighbourhoods, local services and attractions, and recreational opportunities. The connections are generally wide, and spaced close enough to facilitate access to the system from all areas of the community. However, there are three issues to be addressed before the trail system can realize its full potential. These are:

1. Many existing trail links have issues with alignment, width, and surfacing. In addition, some trail sections (e.g. on the Loop) have drainage problems. These issues can limit the accessibility of the trail to users of different abilities. The trails should be brought to defined standards. These are proposed in Section 8.
2. The trails lack a common theme or brand to help residents and tourists identify and recognize the system as a whole. This is discussed in Section 9.
3. There are a number of discontinuities in the trail system. These impact the comfort and convenience of the trail system, and can lead trail users to busy roadways, steep terrain, or impassable watercourses. The public and stakeholder consultation identified a number of these discontinuities. A number of specific network improvements are discussed in Section 10.

The existing trail system within the District limits is shown in Figure 13. A closer view of the inner downtown core is shown in Figure 14.



Legend

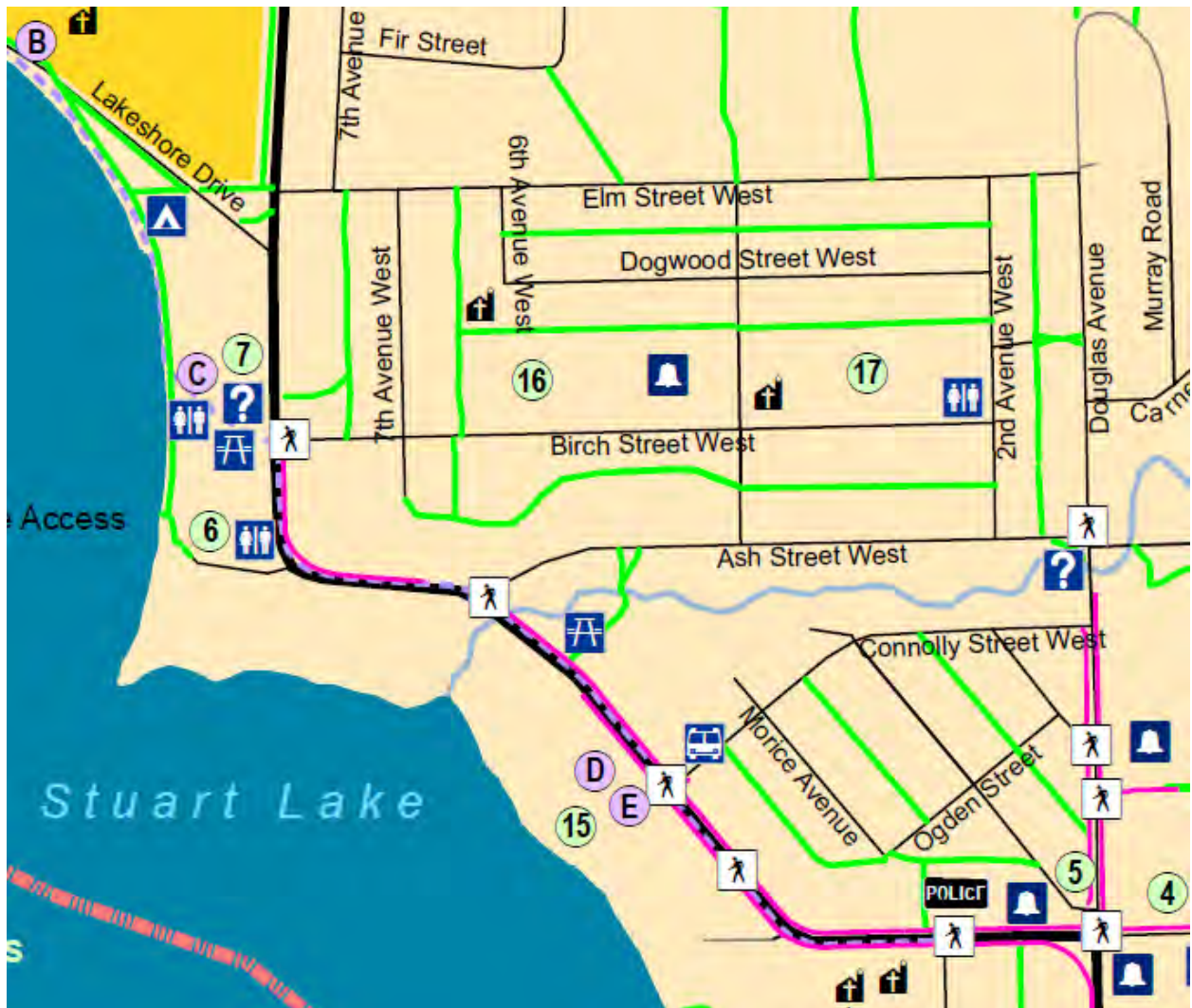
- Park/Recreation Site
- Local Historic/Tourism Site
- Crosswalk
- Cemetery
- Church
- RCMP
- Bus Station
- Health Service
- School/College
- Picnic Area
- Information
- Camping
- Parking
- Public Washroom
- Sidewalk
- Trail or Alley
- Bike Trails
- Ripples of the Past Tour
- Provincial Highway
- Unpaved Road
- Paved Road
- Municipal Boundary
- Fort St James National Historic Site
- Provincial Park
- Reserve Land

**FIGURE 13:
EXISTING FORT ST JAMES
TRAIL NETWORK**

0 50100 200 300 400 Metres

FORT ST JAMES DISTRICT

Figure 14: Downtown Fort St. James Trails



6.2 NAK'AZDLI COMMUNITY TRAILS

The existing trails through the Nak'azdli community form a well-spaced grid system with a number of existing gravel roadways. The system connects to the District of Fort St. James to the north at three (3) key locations:

1. Lower Road at Kwah Road, connecting to the waterfront trail at the National Historic Site.
2. Carrier Frontage Road at Kwah Road, connecting to the Tourist Information Centre and the Highway 27 sidewalk system. However, this is not a smooth connection at the north end of the frontage road.
3. Greenview Drive at Kwah Road, connecting to Third Avenue East and the recreational activities on Stuart Road East.

There is also a pedestrian signal on Highway 27 at the Greenview Drive intersection, as well as a second well-signed crosswalk at the intersection of Middle Road. These connections help tie the community together by facilitating highway crossings.

The main concern with the existing trail system through the Nak'azdli community is the safety of pedestrians on the highway shoulder. Traffic speeds are typically high through this area, and the paved shoulders do not provide sufficient separation from this traffic. A safer solution is to develop the trail system parallel to the highway. This will require eliminating discontinuities in the existing network, as discussed in Section 10.

The existing trails through the Nak'azdli community are shown in Figure 15.

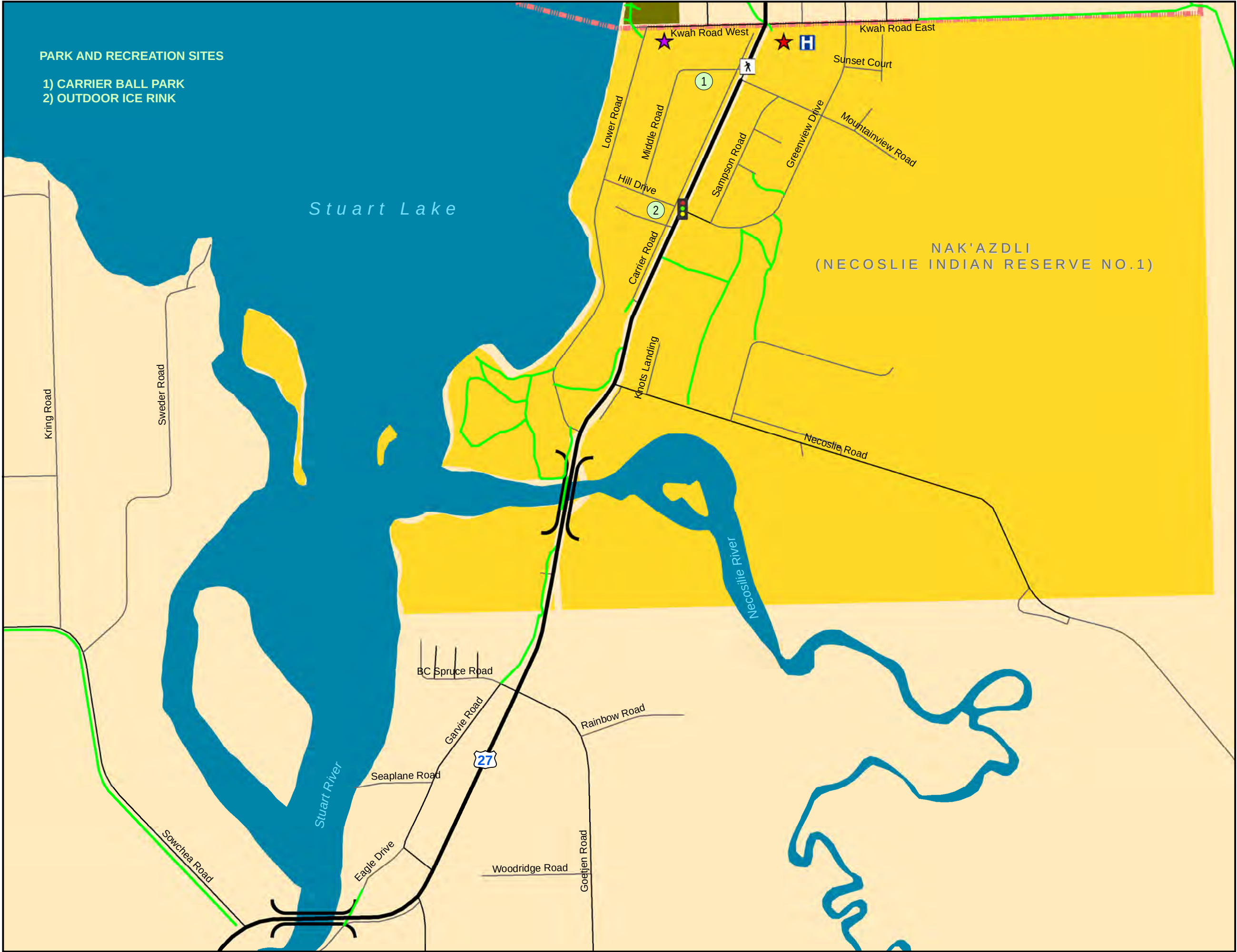


**FIGURE 15:
EXISTING NAK'AZDLI
TRAIL NETWORK**

6.3 REGIONAL TRAILS

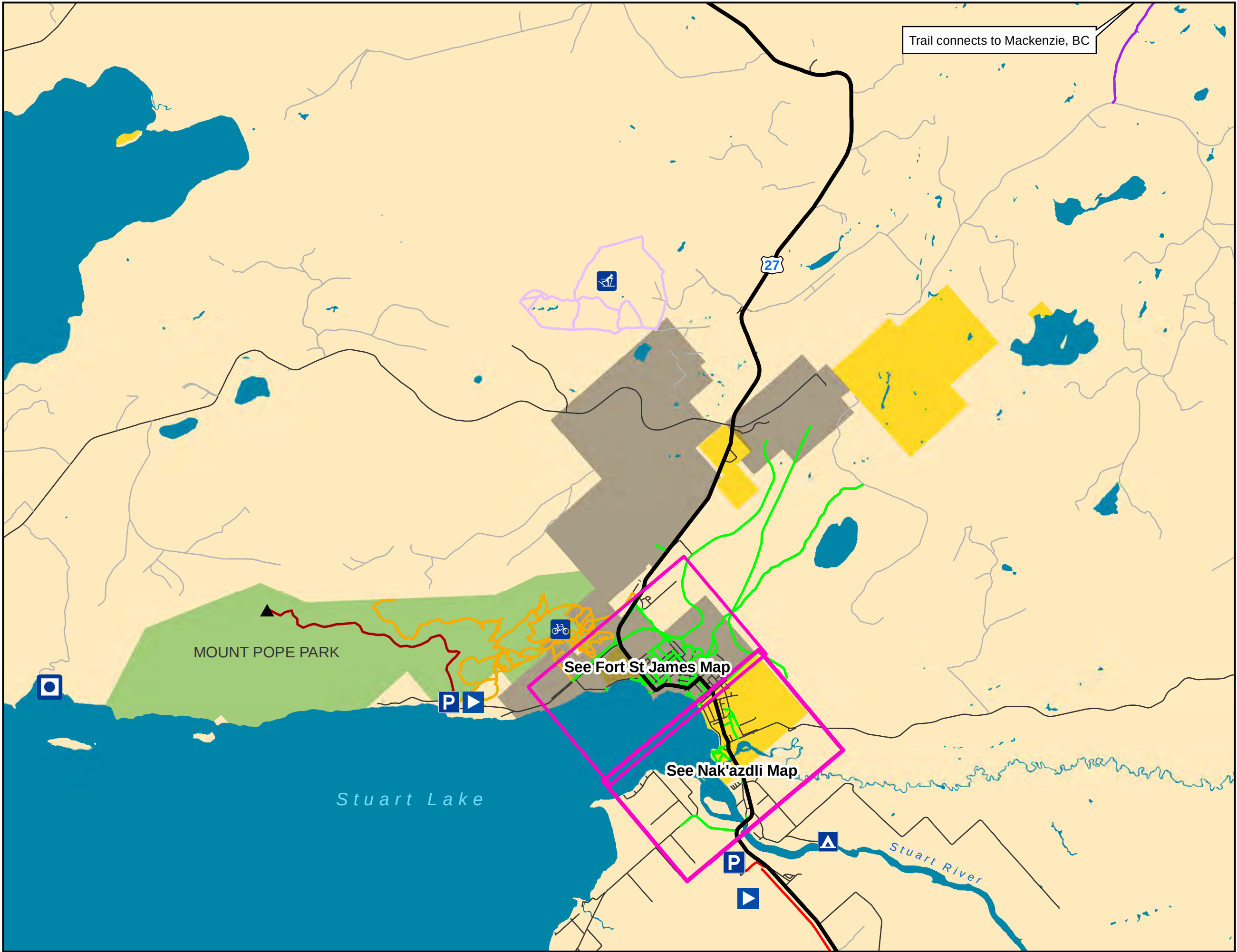
Fort St. James is the hub in a vast network of regional trails designed for motorized and non-motorized users. In the north, there are hiking trails on Mount Pope, bike trails north of Stones Bay Road, and cross country ski trails around Murray Ridge. In the south, there are trails specifically designed and managed for motorsports (e.g. snowmobiling, ATVs, etc.). There are also bike trails in the Sowchea Park area, although these were reported as overgrown, and GIS mapping was unavailable. The regional trails are shown in Figure 17 and 18.

Beyond these trails, there are long distance trails connecting to the communities of Fraser Lake, Vanderhoof, and Mackenzie. These trails have both historic and cultural significance, and are shown in Figure 19.

The regional trails themselves are typically well-developed facilities. However, the main concern from users is the challenge in accessing these trails from Fort St. James. These issues are discussed in Section 10.

Figure 16: Sowchea Bay Provincial Park





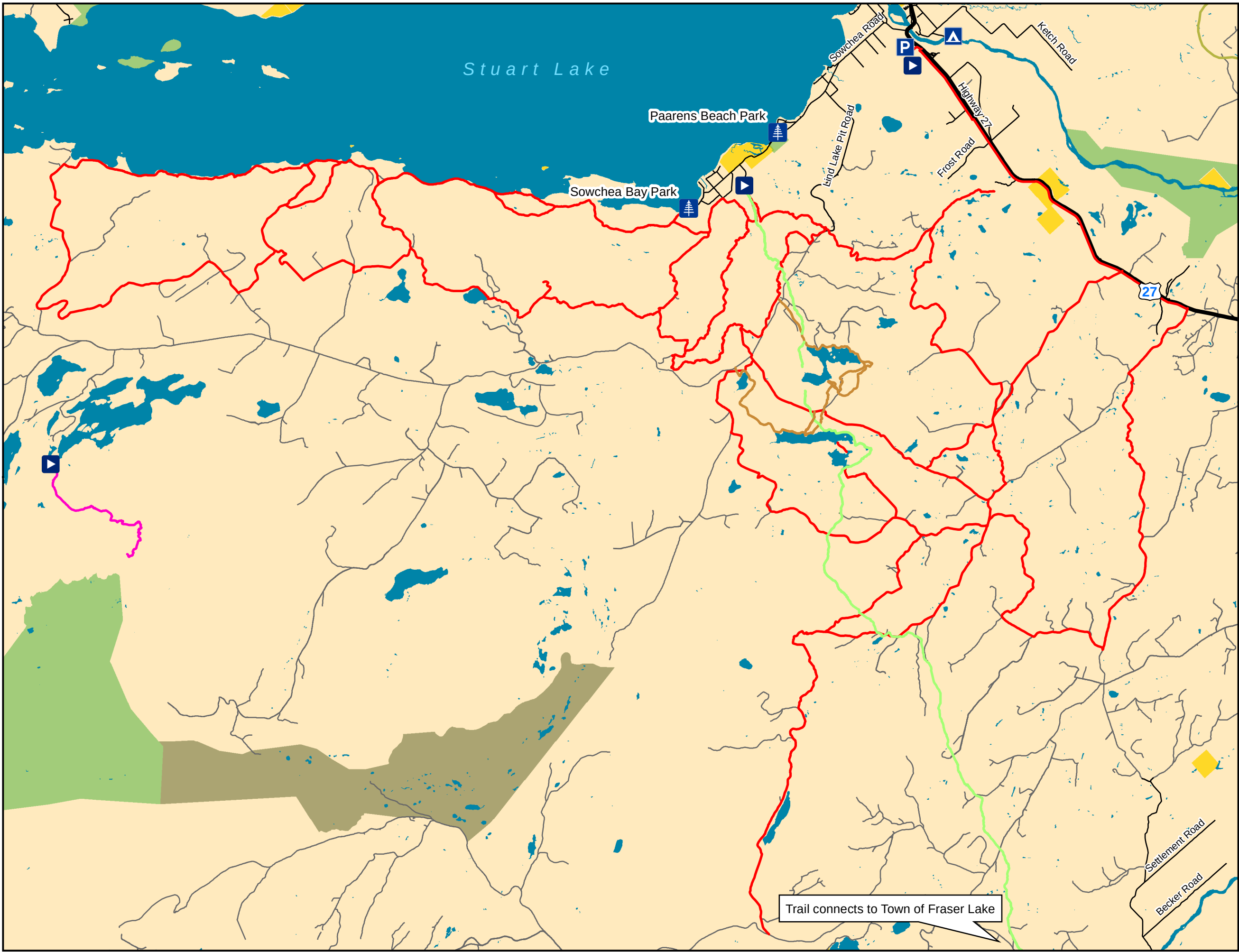
Legend

- Trailhead
- Provincial Park
- Camping
- Parking
- Mountain Bike Trails
- Cross Country Trails
- Historic Site
- Trail or Alley
- Mount Pope Hiking Trail
- Duzcho Grease Trail
- Murray Ridge Nordic Trails
- Bike Trails
- Motor Sport Trails
- Unpaved Road
- Paved Road
- Provincial Highway
- Provincial Park
- Reserve Land
- Municipal Boundary



FIGURE 17:
EXISTING REGIONAL
TRAILS - NORTH

0 0.5 1 2 3 4 Kilometres

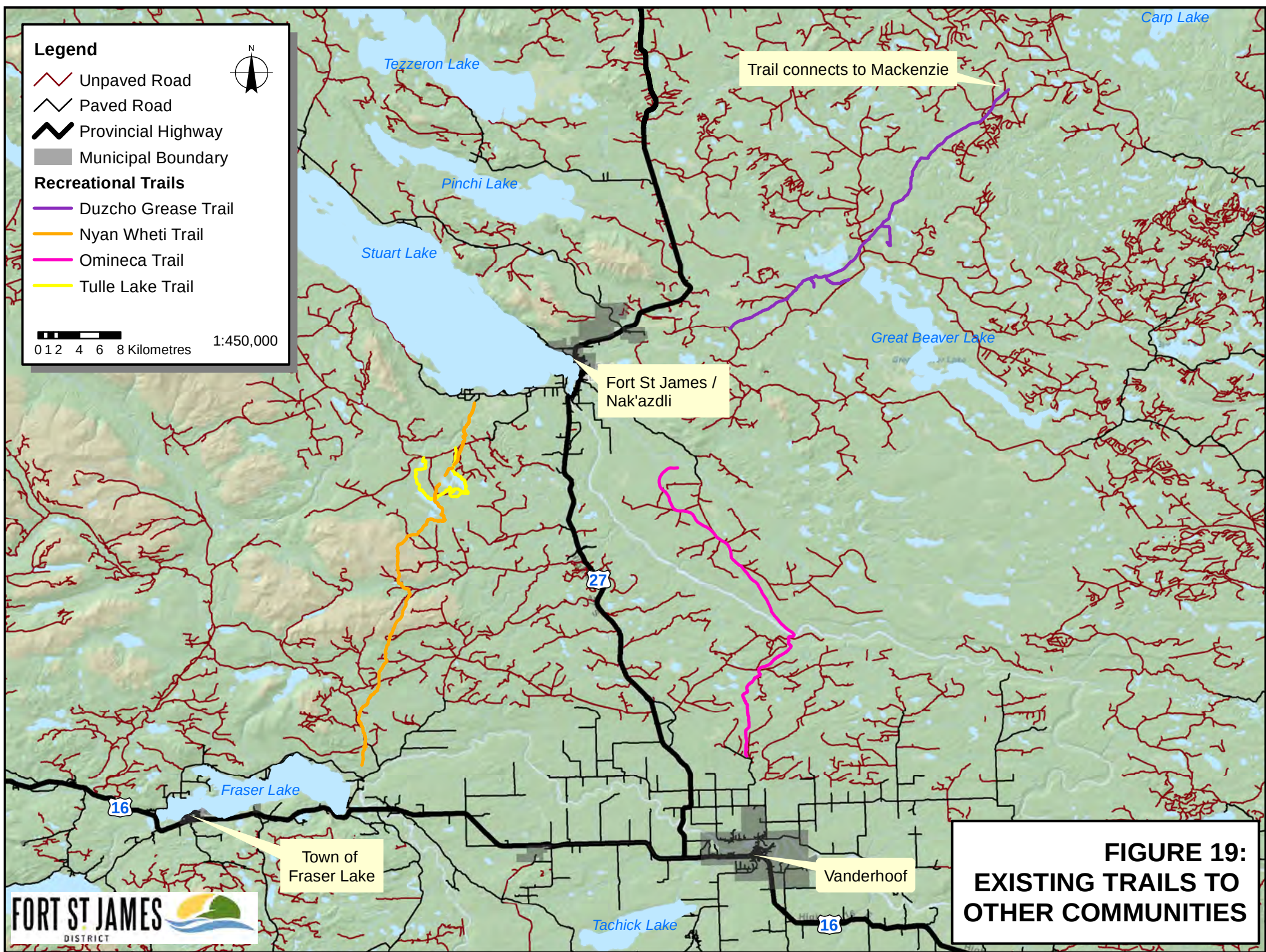


Legend

- Trailhead
- Provincial Park
- Parking
- Camping
- Nyan Wheti Trail
- Omineca Trail
- Shass Mountain Trail
- Tulle Lake Trail
- Motor Sport Trails
- Unpaved Road
- Paved Road
- Provincial Highway
- Protected Area
- Provincial Park
- Reserve Land

**FIGURE 18:
EXISTING REGIONAL
TRAILS - SOUTH**

0 1 2 4 6 8 Kilometres



7 SAFETY ANALYSIS

To evaluate the pedestrian and cycle safety issues in Fort St. James, the last 10 years of claims data from ICBC was analyzed. This data included all reported collisions between January 2003 and December 2012. In total, there were 1,518 collision records during this period. However, many of these were collisions occurring outside the District limits.

Within the District, there were no cycle-related collisions reported within the last ten years, but there were four (4) pedestrian-related collisions. These occurred at the following locations:

- 300 Block of Stuart Drive West (Highway 27).
- 800 Block of Fourth Avenue West
- Seventh Avenue West and Elm Street intersection
- Third Avenue East

There were no apparent collision trends related to the time of day, days of the week, or months of the year. In this respect, the collisions largely appeared to be random events. However, three of the four collisions were located on residential roads with no sidewalks. While it would be costly to install sidewalks on all District roads, pedestrian safety could be improved if sidewalks were installed on roads with higher traffic volumes, such as the section of Highway 27 through Cottonwood Park, and the main residential collectors (e.g. Elm Street, Ash Street, and Douglas Avenue north of Connelly Street). This would also create a walking loop around the town perimeter. The desire for sidewalk improvements was also identified in the public and stakeholder consultation.

There were an additional five (5) pedestrian-related collisions which were reported as having occurred in parking lots. These were not considered in the analysis.

South of Fort St. James, there were two fatal pedestrian collisions reported on Highway 27, through the Nak'azdli community. The Ministry of Transportation and Infrastructure improved the safety of pedestrians crossing the highway by installing a pedestrian signal at the intersection of Highway 27 and Greenview Drive in 2012. However, the safety of pedestrians walking along the highway shoulder through this area remains a concern, as emphasized in the public and stakeholder consultation.

8 STANDARDS AND GUIDELINES

8.1 GENERAL GUIDELINES

8.1.1 Planning Guidelines

The objective of the planning guidelines is to establish a network of pathways which link together residential areas to facilities such as schools, parks, natural features, employment centres, etc. Through trail classification, alignments, boulevards, street crossings, parking lots and natural areas, different levels of trail connections are developed to encourage community connections and provide active and passive recreational opportunities for the residents and visitors of Fort St. James.

8.1.2 Design Guidelines

The objective of the design guidelines is to yield a safe and agreeable trail while integrating the needs of different users. These users may include walkers, joggers, runners, cyclists, children in strollers, roller-bladers, skateboarders and those with disabilities. Surface materials, widths, clearances, signage and other amenities should be based on the needs of these users.

The design of off-road cycling and pedestrian systems should take into consideration stopping sight distances for bicycles and wheelchairs.

Table 6: Stopping Sight Distances for Wheeled Trail Users

Grade %	Design Speed (km/h)								
	10	15	20	25	30	35	40	45	50
Minimum Stopping Sight Distance (m)									
+12	8	13	18	-	-	-	-	-	-
+10	8	13	18	24	-	-	-	-	-
+8	8	13	19	25	32	-	-	-	-
+6	8	13	19	25	32	40	-	-	-
+4	8	13	19	26	33	41	49	-	-
+2	8	14	20	26	34	42	51	61	-
0	9	14	20	27	35	44	53	63	74
-2	9	14	21	28	36	45	55	66	77
-4	9	15	21	29	38	47	58	69	81
-6	9	15	22	30	39	50	61	73	86
-8	9	16	23	32	42	53	65	68	92
-10	10	16	24	34	44	56	70	84	100
-12	10	17	26	36	48	61	76	92	110

Source: Geometric Design Guide for Canadian Roads, TAC, 1999. (TAC Table 3.4.5.1)

To ensure accessibility, facilities should be designed according to guidelines provided in the Accessible Parks and Trails Report and Toolkit (Ref. 8).

8.1.3 Safety Guidelines

The implementation of trail facilities should incorporate the following principles from Crime Prevention Through Environmental Design (CPTED):

- Surveillance: Maximize surveillance by encouraging “people watching”, e.g. facilitate residents’ and business’ ability to view public spaces, provide unobstructed views of public spaces, provide rest areas, etc. Where possible, trail access points should be located in developed areas next to public parks, shopping centres, or residential developments. Many public amenities, including rest rooms, telephone booths, parking areas, and refreshment facilities, will already be in place.
- Visibility, e.g. by avoiding the creation of dark and hidden areas, or having landscaping that may conceal offenders;
- Illumination: Provide an appropriate level of lighting.

To further enhance safety and security, help phones could be made available at strategic locations in the trail system.

The *Alberta Recreation Clearing and Trails Classification System* document takes all the above criteria into consideration. Various uses are considered, incorporating design factors to ensure consistent, safe standards for a variety of trail types. The following cross section details typically reflect this reference document.

8.2 TRAIL TYPES

There are many classifications of trail types that can be used for specific communities. To implement the trail network for Fort St. James, a clear hierarchy of standard pathways must be defined. Five (5) categories of trail types have been developed based on existing trail analysis, current standards, previous trail project experience and the special needs of the primary users. The five (5) trail types are:

1. **Sidewalks**
2. **Shared Bike Lanes**
3. **Multi-Use Trails - Non-Motorized**
4. **Multi-Use Trails - Motorized**
5. **Rustic Trails**

For each trail type, the following trail design characteristics are shown in a table.

Surface: The material on the Trail Width. i.e. natural, gravel, asphalt, concrete, etc.

Dimensions

Trail Width: Width of the actual trail.

Horizontal Clear Width: Clearing width along one or both sides of the trail width surface. This area should be free of trees and shrubs or other hazards which may impede trail users.

Vertical Clear Height: Height above the trail surface which should be free from obstructions, such as signs, tree branches, etc.

Gradient: The maximum recommended slope of the trail parallel to the path of travel. The gradient can be gradual, moderate or extreme depending on the type of experience appropriate to the expected users.

8.2.1 Sidewalks

Sidewalks providing safe and accessible pathways for pedestrians to walk adjacent to public roads, and may connect to recreational trails. The primary target users are residents of Fort St James, and visiting tourists.

Sidewalks currently exist in Fort St. James on Stuart Drive and Douglas Avenue. As the design of sidewalks typically requires curb and gutter, traditional sidewalk construction is limited to areas with underground drainage systems. This limits the number of streets in the District that can accommodate sidewalks. However, as existing roads are upgraded over time, and as new roads are built, sidewalks should be considered. Furthermore, cost-effective alternatives to traditional sidewalk design can be explored, including widened paved shoulders, asphalt sidewalks with drainage to a ditch system by catch basins (as often used on highways), and parallel off-street trails.

The design of sidewalks should be based on the following principles:

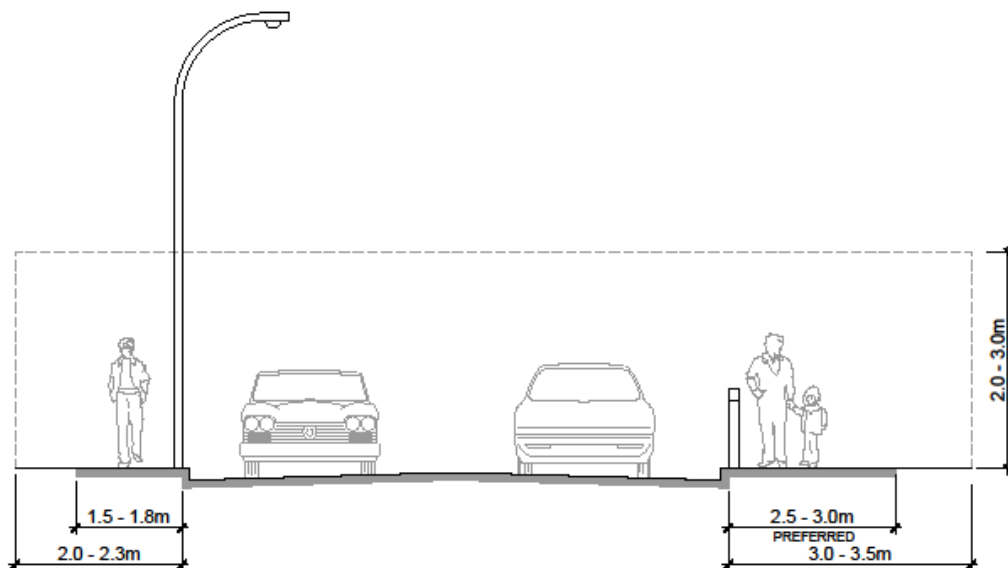
1. Sidewalks should be located along the road right-of-ways behind the curb. Where possible, sidewalks should be buffered from vehicular traffic through the use of street light poles, vegetated strip, trees and/or bollards.
2. Sidewalks should be a minimum of 1.5 metres wide, but desirably 1.8 m for unobstructed pedestrian traffic in opposing directions. When the inside of the sidewalk abuts a wall or other vertical face, an extra 0.5 meters of width should be provided for the safety and comfort of pedestrians. In areas of heavy pedestrian traffic (e.g. Downtown), a width of 2.5 – 3.0 m is preferred. This is also the width of a multi-use path in the road boulevard.
3. On major roads (e.g. Stuart Drive), sidewalks should be provided on both sides of the road. On collector and local roads, sidewalks may be planned on one side of the road. The choice of sides should be based on the following considerations (in order of priority):
 - a) Existing desire lines (visibly worn paths)
 - b) Adjacent pedestrian generators (schools, Fort St. James, etc.)
 - c) Constructability (available right of way)
 - d) Connectivity between pedestrian facilities
 - e) Sun exposure
 - f) Parking availability
 - g) Funding opportunities
 - h) Existing street lighting
 - i) Snow storage and removal
 - j) Aesthetics
4. A vertical clearance of no less than 2.0 meters should be provided over all sidewalks to prevent hazards to pedestrians, especially the visual impaired. Consideration should be given to the proximity to signs and tree branches which may protrude into the sidewalk area.

5. There should not generally be any obstacles in the sidewalk. However, if obstacles are unavoidable, the lateral clearance should be no less than 1.2 metres for safe wheelchair passage and 2.0 meters for snow removal.
6. Sidewalk crossfalls (i.e. the slope of the sidewalk transverse to the direction of travel) should be kept between 1.0 and 2.0% to the curb to manage drainage while maintaining a surface that is safe for pedestrians.
7. Sidewalks should be continuous across accesses to private developments to provide for the safety and comfort of pedestrians. On sidewalks with erect curb, the front and back of the sidewalk should both be lowered to preserve the standard 1-2% crossfall to the curb.
8. On lower class roads with a high density of access, mountable or semi-mountable curbs should be considered where the frequency of curb/sidewalk drops becomes problematic to pedestrians.
9. Where gratings must be located in sidewalks, no opening should be wider than 13mm. Bar grating should be perpendicular to the path of travel.

Table 7: Sidewalk Standards

SIDEWALKS			
Surface	Concrete or Asphalt		
Dimensions	Trail Width 1.5m-1.8m	Horizontal Clear Width 2.0-2.3m	Vertical Clear Height 2.0-3.0m
Gradient	Dependent on the grade of the adjacent road		

Figure 20: Sidewalk Cross Section



8.2.2 Shared Bike Lanes

In Fort St. James, most roads do not have the necessary width to establish formal bike lanes or paved shoulders. Therefore, in areas where bicycles frequently share the road with traffic, a shared lane concept may be considered. A formal shared lane has “Share the Road” warning signing and painted “Sharrows”, which help define the area as a shared facility.

Shared lanes should be based on the following design considerations:

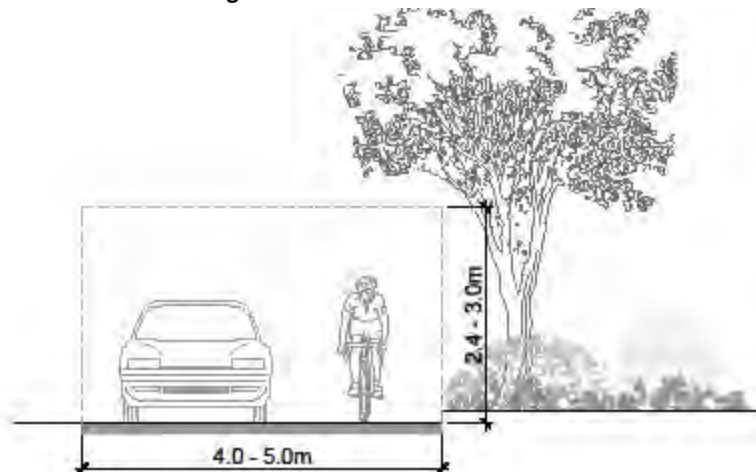
1. The posted speed on the roadway is 60km/h or less.
2. Shared lanes should be between 4.0 and 5.0 meters wide, measured between the road centreline and the road edge. Where this width exceeds 4.5 metres, consideration should be given to creating formal bicycle lanes or paved shoulders.
3. On very low volume rural roads with constrained pavement width, the existing traffic lanes may be designed as shared lanes provided that sight lines are adequate.



Table 8: Shared Bike Lane Standards

SHARED BIKE LANES			
Surface	Asphalt on Roadway		
Dimensions	Trail Width 4.0-5.0m (Includes one lane of vehicular traffic)	Horizontal Clear Width n/a	Vertical Clear Height 2.4-3.0m
Gradient	Dependent on the grade of the road		

Figure 21: Shared Bike Lane Cross Section



8.2.3 Multi-Use Trails (Non-Motorized)

Non-motorized multi-use trails are intended to accommodate all types of non-motorized users of a wide variety of abilities. In this respect, they are designed wide for safe passage at different speeds, and with easy grades and smooth surfaces for the comfort and safety of users of all levels of ability.

Multi-use trail standards may be applied in the road boulevard, on connections between roads (e.g. alleys), or on well-used connections through undeveloped/forested areas. Considerations for non-motorized multi-use trails include:

1. These trails are restricted to non-motorized use, with the exception of electric wheelchairs and scooters.
2. Trails widths should be a minimum of 3.0 m, especially in areas with heavy pedestrian traffic. Additional width should be provided in pathway curves with radii less than 32m.
3. The trail alignment should be safe for cycling, incorporating sufficient sight distance for stopping and manoeuvring.
4. For accessibility and safety of inexperienced users, grades in excess of 5% should be avoided wherever possible. Steeper grades should incorporate level rest areas, and benches if feasible.
5. Provide signage of allowable uses and information on how to share the trail with others.
6. Transitions between on-road cycling facilities and multi-use trails must be designed in consideration of the changes in the cyclists' trajectory, and of the change between sharing a pathway with motor vehicle traffic and pedestrians.
7. Barriers or bollards should be considered at trail entrances to prevent access by unauthorized users such as motor vehicles.
8. Environmental information should be used in the planning and management of all trails. Where sensitive habitats are known, the proposed trail alignments, design or uses should be altered to mitigate negative impacts on the environment.

Table 9: Non-Motorized Multi-Use Trail Standards

MULTI-USE TRAILS (NON-MOTORIZED)			
Surface	Asphalt, granular, snow in winter		
Dimensions	Trail Width Min. 3.0m	Horizontal Clear Width 4.0-5.0m	Vertical Clear Height 2.4-3.0m
Gradient	5% desirable maximum; 8% maximum		

Figure 22: Non-Motorized Multi-Use Trail Cross Section

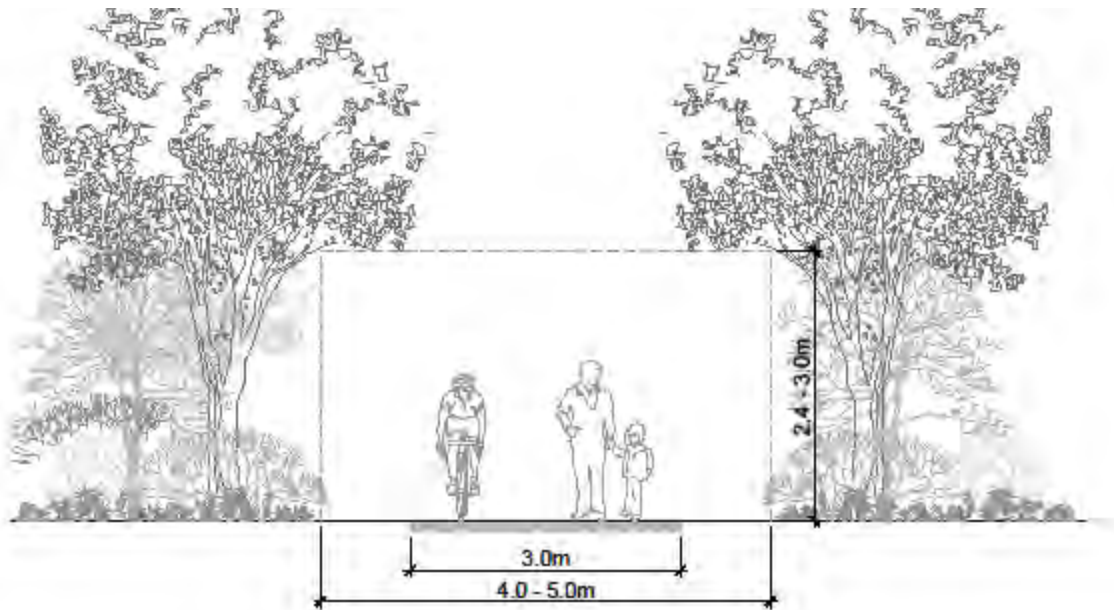


Figure 23: Candidate Multi-Use Trail, Ash Street



8.2.4 Multi-Use Trails (Motorized)

Fort St. James enjoys close proximity to a vast network of regional trails intended for motorsports (e.g. snowmobiles, all-terrain vehicles, dirt bikes, etc). These trails are typically destination trails for residents and visitors of Fort St. James, and should be designed wide where possible (especially in sharp corners) to allow safe passage of opposing vehicles. However, grades may be much steeper than on other trails.

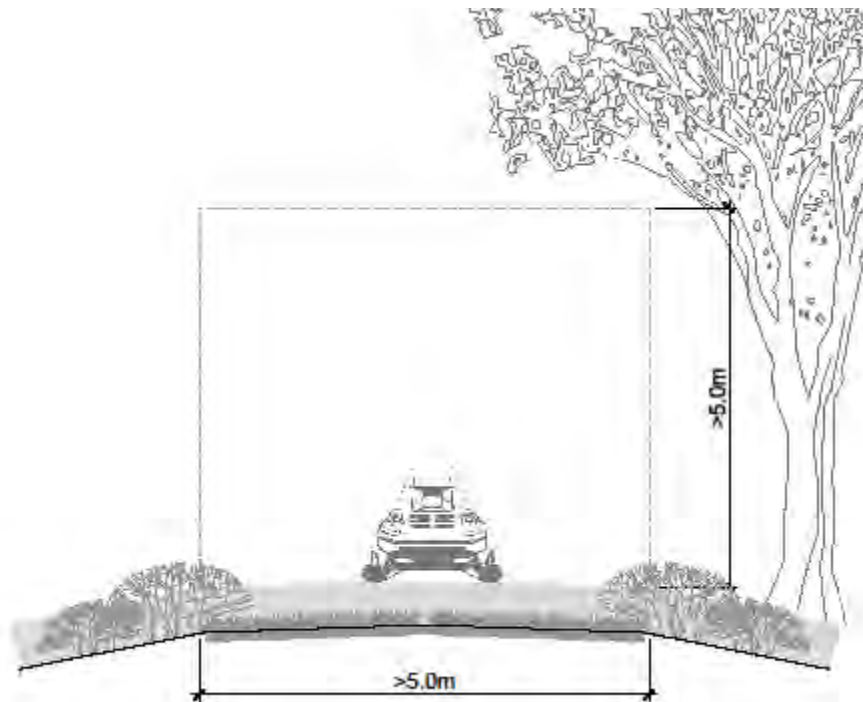
Considerations in motorized multi-use trails include:

1. Trails are unsurfaced, although large rocks and obstacles should be removed.
2. Gradients are not excessive, yet provide moderate challenge for recreational touring.

Table 10: Motorized Multi-Use Trail Standards

MULTI-USE TRAILS (MOTORIZED)			
Surface	Unsurfaced / Snow covered		
Dimensions	Trail Width >5.0m	Horizontal Clear Width >5.0m	Vertical Clear Height >5.0m
Gradient	Maximum 20%		

Figure 24: Motorized Multi-Use Trail Cross Section



8.2.5 Rustic Trails

Rustic trails complement the multi-use trail network, providing access to more natural areas with little maintenance required. These paths can be used for hiking, mountain biking, horseback riding, etc. The narrow widths, increased severity of the alignment, and natural surfaces reduce the accessibility of these trails to small-wheeled users and the physically-challenged.

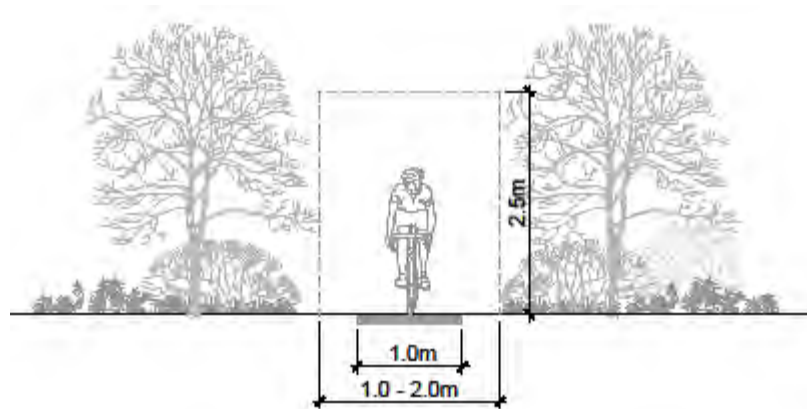
Design considerations for rustic trails include:

1. Trails have natural surfaces, with minimal clearing required.
2. The unobstructed trail width should be a minimum of 1.0 metres.
3. Ideally, rustic trails should be designed to International Mountain Bicycling Association (IMBA) Trail Solutions standards.

Table 11: Rustic Trail Standards

RUSTIC TRAILS			
Surface	Natural		
Dimensions	Trail Width 1.0 m Minimum	Horizontal Clear Width 1.0 – 2.0 m	Vertical Clear Height 2.5 m
Gradient	Maximum 10-15%, but more allowed for mountain bike trails		

Figure 25: Rustic Trail Cross Section



8.3 OTHER TRAIL CONNECTIONS

8.3.1 Crosswalks and Grade Separated Crossings

Crosswalks establish the right-of-way between pedestrians and motorists to allow pedestrians to safely cross the street. Crosswalks should have signing (with micro-prismatic reflective materials) and pavement markings, and may be enhanced with flashing beacons or signals where volumes are heavy.

The warrants and configuration of crosswalks depend on (a) the suitability/safety of the location, (b) the number of pedestrians crossing, and (c) the number of available gaps in traffic, as defined by the Transportation Association of Canada. Crosswalks may also be considered at mid-block locations where multi-use trails cross the roadway.

Design considerations for crosswalk installations are as follows:

1. Crosswalks should be painted at or near right angles to the roadway.
2. Parking should be restricted within at least 15.0 metres in advance of a crosswalk and 6.0 metres after a crosswalk to protect sight lines for pedestrians.
3. Crosswalks should be illuminated if possible.
4. At crosswalks on wide arterial roads, sidewalk bulbs or median refuge islands should be considered to improve pedestrian visibility and reduce crossing distances. Refuge islands also improve the safety by allowing pedestrians to cross one side of the street at a time.
5. The sidewalk on the crosswalk approach should have contrasting colour and/or tactile features to alert the visually impaired of the end of the sidewalk, and help those pedestrians align themselves with the opposing side of the street (Figure 26). These should be supplemented with audible indicators at traffic signals.

Figure 26: Sidewalk Ramp with Tactile Grooves, Prince George



At locations where the traffic and pedestrian crossing volumes are heavy and the location is not conducive for an at-grade crosswalk, a grade-separated crossing may be considered. Underpasses generally cost less than overpasses, are easier to maintain, and are preferred by equestrians. However, in some neighbourhoods there may be concerns with graffiti and the personal security of users. Overpasses have relatively few concerns with personal security, and are preferred for winter trail crossings. However, the effort to climb the overpass may induce some users to cross at street level regardless.

Figure 27: Heritage Trail Underpass on Highway 16, Prince George



8.3.2 Stairways

Stairways may be considered along pathways where steep grades cannot be avoided, and ramps would be unsafe or infeasible. Stairways should not be used on equestrian or winter use trails. Design considerations are as follows:

1. Stairways should include a bike ramp so that trail users can wheel their bike beside them. The ramp should be designed to prevent bicycle handlebars from catching in the handrail.

Figure 28: Stairway with Bicycle Ramp



2. A series of short flights of 14 steps or less, with landings in between, is preferable to a single long flight.
3. Steps should be of firm, non-slip materials with a maximum rise of 150mm and maximum tread of 280mm. Tread nosings should be clearly marked and rounded to 6mm radius.
4. Continuous handrails should be installed on both sides where flights consist of more than three risers.
5. Signage may be considered to direct physically disabled users to the nearest accessible route around the stairway.

8.3.3 Bridge Crossings

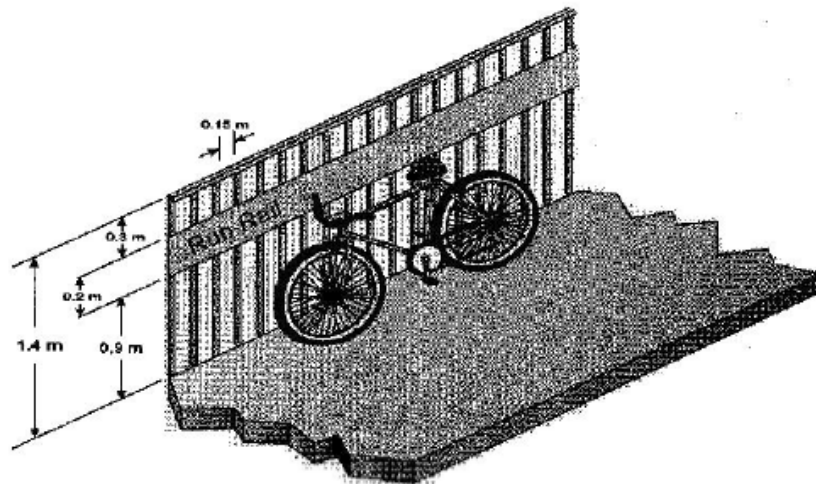
A trail can be routed across a road bridge in one of three ways:

- Demarking a bicycle lane on the travelled way;
- Sharing the sidewalk with pedestrians; or
- Widening the roadway to permit shared use of the traffic lane.

Trail bridges may also be necessary on non-motorized multi-use trails. The guidelines for these bridges are as follows:

1. Multi-use trail bridges should be designed with non-slip surfaces, and include cover plates over expansion joints. When planks are used, gaps should be provided greater than 3.8 mm to allow for drainage, but no more than 7.6 mm to minimize the hazards for users.
2. Slopes on bridges should not exceed 5% gradient and a 2% crossfall.
3. Access to bridges should be via ramps, not stairways.
4. Sight lines onto the bridge should be free of obstructions, and the approach to the bridge should be wider than the trail to accommodate potential congestion on or near the bridge. The approach railings should extend at least 4.6 metres from each end of the bridge and should be flared to funnel pathway traffic onto the bridge.
5. Bridges should include vertical hand rails attached to the outside of the structure. Railings should be 50 mm wide and at least 107 cm above the surface or the bridge decking for pedestrians, and 137 cm for cyclists. Safety 'rub-rails' may be considered along to prevent a cyclist's handlebar from catching the vertical supports of the railing.

Figure 29: Rub-Rails on a Trail Bridge



9 TRAIL PLACE BRANDING AND AMENITIES

9.1 EXISTING PLACE BRANDING

9.1.1 Brand Precedents

The proposed amenities for the trail system in Fort St James should support and enhance the brand of the Town. A review of the existing information on and about Fort St. James gives a fairly clear picture of how people have previously branded the community, intentionally or not. The three sources of the information reviewed are publications, the internet, and the community infrastructure, as discussed below:

Publications:

Publications and promotional material available at the Visitor Centre and around Fort St. James emphasize the recreation and cultural activities in the community. Documents available include the brochure for the “*Ripples of the Past*” Interpretive Trail. In this brochure, emphasis is put on the historic resources that are in the Town. The brochure coincides with a series of interpretive plaques located around the Interpretive Walk. The brochure and plaques are professionally produced. The graphics for the material include a background of water (the lake) overlaid with a historical map paper on which historical images are presented. The Area Guide and Business Directory have a similar graphic design as the Ripples of the Past flyer. It includes more images of nature and the people of Fort St James. There are images of recreational activities and points of interest throughout. There is a significant section on the recreational activities found in the area.

Internet:

The Internet is widely used by people to learn about different communities. The impression that is given by the websites on the internet is influential, and the style and messages are therefore important in building a brand. An analysis of the first three websites listed on an Internet search of Fort St. James reveals the following messages about the community:

- [Fort St James District](#)

Fortstjames.ca is the top listed site on the subject. Key communication of this site is a banner of images of wildlife, nature scenes, some recreation and the caption “Historic and Resourceful”. The first text context starts with “Welcome to Fort St James, BC. Discover your history. Come to work. Come to play...”

- [Fort St James. BC – Wikipedia](#)

The site begins by describing the Town as a “former fur trading post.” It quickly begins to describe the history of the place. There is an image of the fur storage warehouses from the National Historic Site. There is little else to support a brand.

- Fort St James – Destination BC

The primary message is a reference to history through the use of beautiful imagery of the historic fort. Text refers to “Outdoor activities mostly focused around Stuart Lake.” Description of outdoor activities is included.

Infrastructure

A survey of the public infrastructure of Fort St James including the architectural character and signage is very revealing of the existing Town brand. The first expression of the Town brand is made by the Town entry sign. The sign is comprised of an image of a bear, a moose and a landscape. The materials are wood and stone. A large timber is supported by a stone base. The sign suggests that the community is close to nature, and that resources are important.

The building architecture of Fort St James is varied, and has no apparent theme. The Visitor Centre is a small log sided rustic building. The building references a historical theme but the theme is not clear. The street-scaping is not uniform and does not appear to emphasize a particular theme. The banners on light poles have an image of a sunset with a tree - a reference to the natural beauty of the area.

Summary

It appears from a survey of the architecture, print media, and web based material that there is a consistent theme being presented about Fort St James. Consistently the natural environment is being presented as beautiful and full of recreation opportunities. The idea that Fort St James is full of recreational activities fishing, hunting and snowmobiling is clearly presented. The history of the area is presented as an important part of the place. The historic Fort is the most dominant historic resource presented.

9.2 PROPOSED BRANDING CONCEPT

9.2.1 *The Concept*

The proposed theme for the Fort St. James brand looks forward while respecting the past. The theme refers to the natural environment of the region, the First Nations People, and the resource driven settlement history of Fort St. James. The theme considers what Fort St. James can be through its rich natural resources, its cultural resources and its people. The theme is:

“Fort St James, a historic place with a resourceful future.”

9.2.2 *The Materials*

The wood used in the features refers to the natural resources that are abundant in the area. Steel is a modern material that represents the future prosperity of the place. Images of wildlife represent the common respect for the land that the people of Fort St. James have for the environment.

The proposed features use wood and steel as their primary materials. The stripped timber elements are the primary material used. This material is a reflection of the surrounding forests and is the traditional building material. Steel accents are modern and functional. The light silver colour of steel refers to the steel used on many boats and on bush planes. The material is fresh and modern to reflect the future. LED lighting is used to accent the features and is environmentally friendly and modern.

On many of the features the timber posts are capped to provide functional protection and architectural detail to the post. The cap is made of steel and is sometimes perforated. The perforation is used to create a subtle image of various kinds of wildlife. The use of the perforation can be functional as well as it lets light out from within. The light projecting from within is subtly reminiscent of the stars or constellations. The lighting could be provided by solar-powered LED lights.

On some of the features symbols of wildlife tracks are branded or painted on the features. This is a subtle reference to the stone petrification found in the area as well as the more obvious trapping that is historically significant.

The recommended brand is illustrated in the following sections.

9.3 TRAIL AMENITIES

9.3.1 Trailhead Markers

1. Usage:

Trailhead Markers act as a beacon and are located at primary entrances of major destinations to give visitors a sense of arrival. They are typically located near the parking area entrances, and positioned to maximize visibility from the main thoroughfare from the viewpoint of drivers, bicyclists and pedestrians. The location and positioning of the sign should not obstruct exiting site visibility.

2. Design Features:

The Trailhead Marker is a large stripped timber post. The feature is approximately 4.2m high and 40cm in diameter. The post is stained and is branded with the tracks of a particular animal or bird. At the top of the post is a steel cap. The cap has a solid top but the sides are perforated. A silhouette of the animal from which the tracks are taken is covering the perforated steel. If power is available, the cap is lit from within by LED lights. The lights could be designed to be coloured to match the water of Stuart Lake. The lights create the effect of movement by transitioning through a variety of shades of colour. The feature is supported by a concrete pile.

Figure 30: Trailhead Marker

3. Proposed Locations:

- Cottonwood Park
- Mount Dickinson Trail
- Old Railway Trail at highway
- PNG Trail



9.3.2 Minor Trail Markers

1. Usage:

Minor Trail Markers are small signs located on trails to identify the trails that users are on. They are typically located on longer trails and provide users reassurance that they are on a specific trail.

The visual identity for trail markers can be similar to the trail sign for consistency.

2. Design Features:

The Minor Trail Markers are a small 1.2m high stripped timber post. The feature is approximately 20cm in diameter. The post is stained and is notched by a saw. At the top of the post is a steel cap. The cap is silver in colour. The cap has a cut out of an animal matching the trail it belongs to. The feature is set in the ground.

3. Locations:

Trail markers are located at 1 km intervals or at required key points where way-finding is required.

Figure 31: Minor Trail Marker



9.3.3 Trail Directional Signs

1. Usage:

Trail Directional Signs are used to identify different trails and provide users a sense of direction. They provide simple trail information and direction, and may include a map, description of trail(s), trail uses and length.

Trail Directional Signs can be simplified visual identities that ties in to the main trail to which it is associated.

2. Design Features:

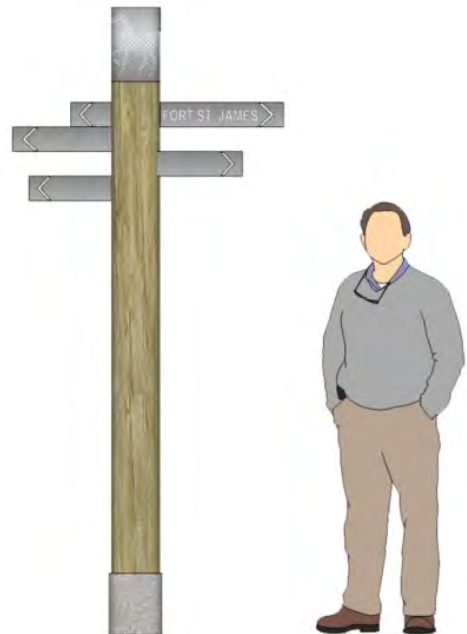
The Trail Directional Signs are a 2.5m high stripped timber post. The feature is approximately 20cm in diameter. The post is stained to match the other signage. At the top of the post is a steel cap. The cap is silver in colour. The top and the sides of the cap are solid apart from a perforated image of an animal or bird that identifies the trail. The cap could be lit. The feature is supported by a concrete pile.

Sign information should be written with a font type, size, and contrast to improve legibility, especially for the visually impaired.

Figure 32: Trail Directional Sign

3. Locations:

Trail Directional Signs are located at minor trail connectors, trail forks, points of interest, or decision points.



9.3.4 Information and Orientation Signs

1. Usage:

Information and Orientation Signs are located at major trail entrances or destination sites. They provide destination and/or trail information such as welcome messages, maps, regulation and trail etiquette information.

2. Design Features:

The Information and Orientation Signs are approximately 2.3m high and are made of two stripped timber posts. The posts are approximately 20cm in diameter. The post is stained to match the other signage. At the top of the post is a steel cap. The cap is silver in colour. The top and the sides of the cap are solid apart from a perforated image of an animal or bird that identifies the trail. A silhouette of the same animal is located on the information panel frame. The information panel frame is made of steel and can support a variety of panel types. The existing Ripples of the Past sign panels could be incorporated into the frame. The cap could be lit. The feature is supported by a concrete pile.

The signs should provide information about the trail alignment, amenities, and distance to destinations. For those with vision impairments, sign information should be written with a font type, size, and contrast to improve legibility, and potentially supplemented with audible messaging (e.g. solar-powered).

Figure 33: Information Sign

3. Locations:

Information and Orientation Signs are located at primary entrances or major destinations (e.g. Cottonwood Park, Mount Dickinson Trail). Signs can be located anywhere information is required.



9.3.5 Picnic Tables

1. Usage:

Picnic Tables are located at major trail entrances or destination sites. They provide a welcome place to sit and enjoy the surroundings.

2. Design Features:

The Picnic Tables are made from stripped timbers. The top of the table is also made from a split timber.

3. Locations:

- Picnic Tables are located at primary entrances or major destinations (e.g. KDL Bike Park, Cottonwood Park, Mount Dickinson Trail, etc).
- Picnic Tables can be located anywhere seating is required.

Figure 34: Picnic Table



9.3.6 Rain Shelters

1. Usage:

Rain Shelters are located at major trail entrances or destination sites. They provide shelter from inclement weather. They can be used to cover a table, information sign, or other features.

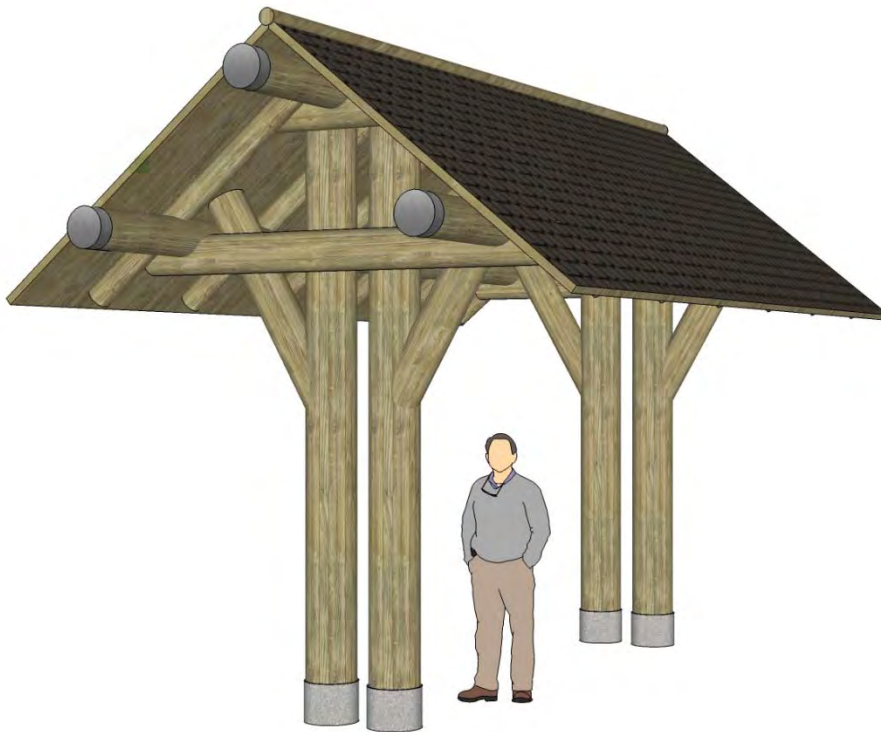
2. Design Features:

The Rain Shelters are approximately 3.8m high and are made of stripped timber posts and beams. The diameter of the timbers varies. The timber is stained to match the other signage. The shingles are local cedar. The feature is supported by a concrete pile or footing system.

3. Locations:

Rain Shelters are located at primary entrances or major destinations (e.g. KDL Bike Park, Cottonwood Park, Mount Dickinson Trail, etc), or anywhere shelter is required.

Figure 35: Rain Shelter



9.3.7 Site Furnishings

1. Usage:

Site furnishings are provided as amenities for the trail system users, especially at designated rest areas to improve accessibility. The Bollards can be used to separate people from cars or to define a space. Benches, waste receptacles, and bike racks are used to provide comfort as required. Illumination can provide further comfort and safety on well-used trail links. To save costs of electrical connection and power, the lights could be powered by solar cells. However, these would have to be designed to account for the daylight conditions in this northern location.

2. Design Features:

Furnishings can be cost-effectively built with wood (using the steel accents as necessary) to reflect the proposed Fort St. James motif. Bike racks should be predominantly steel for security, but can be designed to match a given theme.

3. Locations:

Site furnishings are located throughout the trail network. Benches, waste receptacles, and bike racks can be located as needed. A relatively level approach space of suitable width is necessary for accessibility. Examples of furnishings are shown below.

Figure 36: Benches:



Figure 37: Illuminated LED Bollards:

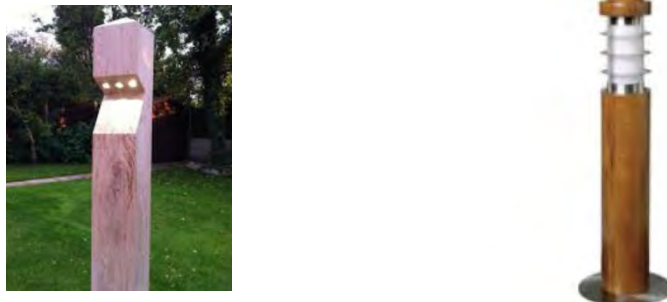


Figure 38: Waste and Recycling Receptacles:



(Animal-Proof)

Figure 39: Bike Racks



Figure 40: Trail Lamp Posts



10 TRAIL NETWORK ANALYSIS

10.1 FORT ST. JAMES TRAIL NETWORK ISSUES

Within the District limits of Fort St. James, there were eleven (11) main discontinuities and/or safety concerns identified in the trail network. These and their recommended solutions are listed below in descending order of suggested priority.

1. Sidewalk Across Douglas Avenue Bridge

The highest recommended priority for the trail system is the extension of the Douglas Avenue sidewalk across the bridge crossing the creek at Ash Street West. The existing sidewalk ends on the south side of the bridge, which requires pedestrians (frequently school children) to cross the bridge adjacent to traffic. Northbound pedestrians typically cross the road bridge with their backs to traffic.

There is little room available on the existing bridge to develop a suitable sidewalk. Therefore, the sidewalk should ideally be a separate pathway attached or adjacent to the road bridge, as was created at a crossing of the same creek on Highway 27. A 2.0 metre clear width is assumed, although a wider crossing would enable use by cyclists as well. The project would require approvals from DFO and the Ministry of Environment by virtue of crossing a fish-bearing stream. The School District should also be consulted with respect to the route to school. As a pedestrian safety improvement, the work is a strong candidate for ICBC funding.

Figure 41: Douglas Avenue Bridge



2. Waterfront Pathway Extension to Spirit Square

The second recommended priority for trail improvements is the development of the waterfront trail between the National Historic Site and Spirit Square to a Multi-Use Trail Standard. This is a popular trail which should ideally connect to Cottonwood Park. However, conflicts with adjacent properties will have to be resolved to achieve this extension. Even an extension as far as Spirit Square would require negotiations with the adjacent hotel. This may be feasible as part of a waterfront development initiative with the hotel, if pursued.

A second obstacle to the development of the trail is the stability of the bank. Stabilization and grading/surfacing would be necessary for this trail link. A local student identified 15 potential solutions to stabilize the slopes. The most practical of these were planting (e.g. with willows) and live staking to preserve the natural environment. Rip rap may also be considered in areas of extreme problems. These activities would require approvals from DFO and the Ministry of Environment.

The trail is assumed to connect from the end of the existing trail to Spirit Square as a 3.0 metre paved trail, to ensure accessibility. Illumination should also be considered to enhance safety and personal security during hours of darkness. However, these costs were not included in the cost estimate.

The existing trail should likewise be upgraded to a similar standard. This may require negotiations with the National Historic Site to which it connects.

Figure 42: Waterfront Trail



3. Ash Street Connection to Highway 27

A trail improvement frequently mentioned in the public survey was the regrading and resurfacing of the trail connecting Ash Street across the creek bridge to Highway 27 at the grocery store. The existing steep slopes and unstable surface render this trail challenging for residents traveling between the Downtown and the residential area north of the creek. A 3.0 metre paved Multi-Use Trail standard should be considered for accessibility. Illumination is also recommended to improve the security of the area, although this wasn't included in the cost estimate.

As this link connects across a stream and to the highway, approvals from DFO, Ministry of Environment, and the Ministry of Transportation and Infrastructure (MoTI) would be required. As a chief connection to the grocery store, the project may be a candidate for corporate sponsorship.

Figure 43: Ash Street Trail to Highway 27



4. Trail through Cottonwood Park

Due to existing drainage issues near the lake, the Ministry has not supported a proposed sidewalk along the east side of the highway between the Birch Street and Elm Street. Instead, pedestrians and cyclists are invited to cross the highway at a new crosswalk at the Birch Street intersection, and walk through the Cottonwood Park. Although there are numerous trails and roadways within the park area, there is no formal trail parallel to the highway. A new link in this respect would afford a safe opportunity for trail users to travel along the highway and connect to the trails and bike parks further north.

A 3.0 metre gravel Multi-Use Trail standard is assumed. Any work in the highway right-of-way would require MoTI approval. As both a cycle network improvement and a pedestrian safety improvement, the project may be a candidate for funding from ICBC and the provincial Cycling Infrastructure Partnership Program (CIPP).

Figure 44: Proposed Location of Cottonwood Park Trail



5. North Road Trail Connection across Stones Bay Road

A wide, well-graded boulevard trail is located along the west side of North Road from Stones Bay Road to Cottonwood Park. This trail can provide a safe and comfortable connection between the residential area, the park users, and the bike trails. The only concern is that the trail is discontinuous at Stones Bay Road. The trail should be upgraded and realigned to cross Stones Bay Road at the North Road intersection. A 3.0 metre gravel Multi-Use Trail standard is assumed.

As the work would be in the highway right-of-way, MoTI approval would be required.

Figure 45: Proposed Location for Trail Extension to Stones Bay Road



6. Crosswalk on Stones Bay Road at Resort Hill Road

A wide trail on the old rail bed is located on the north side of Stones Bay Road. The trail connects between the golf course and North Road, but crosses private property. If public use of this trail was formally negotiated (see Appendix C), trail users on “the Loop” could access the trail by crossing Stones Bay Road at the intersection of Resort Hill Road. This crossing would involve a formal signed/painted crosswalk and some regrading on the north side. The cost for a 3.0 metre gravel trail connection and crosswalk signing/painting are expected to be relatively low.

Figure 46: Proposed Location of Crosswalk on Stones Bay Road



7. Sidewalk on Douglas Avenue

As a major collector road connecting to Highway 27 at Stuart Drive, Douglas Avenue is heavily used by traffic and pedestrians. When the bridge across the creek is improved for pedestrians (i.e. Recommended Improvement No. 1), the sidewalk should be continued north as funds permit. In the absence of underground drainage systems, a non-traditional sidewalk standard could be considered, as discussed in Section 8.2.1.

A standard 1.8 metre concrete sidewalk is assumed, with curb/gutter and catch-basins directing drainage to the ditch. The cost would be less for an asphalt sidewalk, or a simple paved shoulder.

Figure 47: Proposed Location of Douglas Avenue Sidewalk



8. Sidewalk on Elm Street

Elm Street is also a major collector in Fort St. James, carrying traffic between Douglas Avenue and Highway 27. For these reasons, and to complete a loop of sidewalks around the residential neighbourhood, a sidewalk should be considered on Elm Street as funds permit. In the absence of underground drainage systems, a non-traditional sidewalk standard could be considered, as discussed in Section 8.2.1.

As there are existing concerns with traffic speeds on Elm Street, the sidewalk could be bulbed at the intersections to narrow the road width and improve pedestrian safety. This is an effective traffic calming application.

A standard 1.8 metre concrete sidewalk is assumed, with curb/gutter and catch-basins directing drainage to the ditch. The cost would be less for an asphalt sidewalk, or a simple paved shoulder

Figure 48: Proposed Location of Elm Street Sidewalk



9. Crosswalk on Highway 27 at Elm Street

A number of crosswalks on the highway have improved pedestrian safety and connectivity, especially the new crosswalk at Birch Street. When warranted by pedestrian crossing volumes, a new crossing should be considered on the highway at the Elm Street intersection. A crosswalk at this location would facilitate crossings at the north end of Cottonwood Park and at the start of the trail along North Road. This crosswalk would be over 250 metres north of the crosswalk at the Birch Street intersection, which would achieve an appropriate spacing on the highway. However, the high volume of truck traffic on the highway should be a strong consideration in the warrants and design of this crosswalk. For this reason, the costs have been increased to account for the potential need for overhead signage.

This crosswalk would require approval by MoTI.

Figure 49: Proposed Location of Highway Crosswalk at Elm Street



10. Underpass on Highway 27 at Old Railway Trail

North of the Stones Bay Road intersection, there is a potential major trail crossing of North Road. This crossing would connect the trail adjacent to Stones Bay Road (currently on private land; see recommended improvement No. 6 above) to the old railway grade west of North Road. However, at this location, traffic speeds appear higher and the highway grade and alignment may reduce stopping sight distance. Therefore, when warranted by crossing volumes (in the long term future), this location may be a candidate for an underpass. This would require more detailed study, particularly of drainage and geotechnical issues. Based on similar highway underpasses in northern BC, this structure is estimated at approximately \$500,000, and would require approval from MoTI.

As a future maintenance consideration, an underpass would need snow shovelled inside to maintain continuity as a cross country ski trail.

Figure 50: Proposed Location of Future Highway Underpass



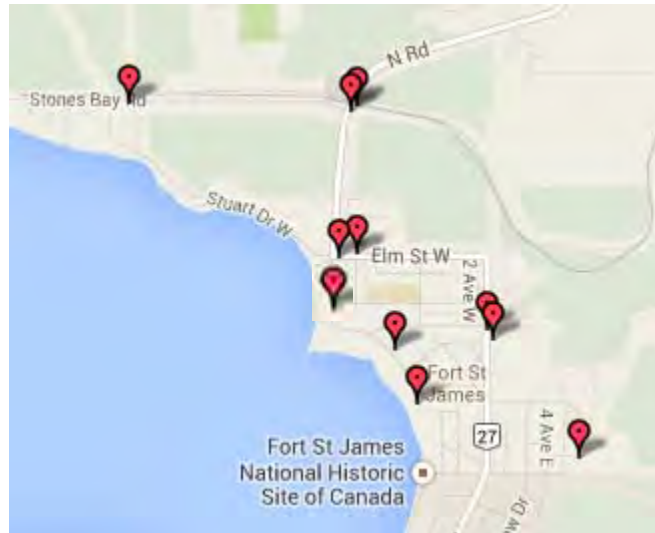
11. Junker Street Connection to Stuart Drive East

On the east extension of the Junker Street intersection is a pathway connection to the hospital. Although the demand for this connection is unclear for utilitarian trips, the connection would complete the loop for the PNG-Mount Dickenson Trail. A feasible connection to Stuart Drive East will have to be determined in consultation with the hospital, especially to ensure there are no conflicts with the adjacent heliport.

Figure 51: Proposed Junker Street Trail to Heliport



The locations of all recommended trail improvements in Fort St. James are illustrated below.



Other trail network improvements were considered, such as a connection from Birch Street to Ash Street at the trail head to the grocery store; a bridge across the creek on the trail connecting Murray Street to Ash Street, and a stairway on the steep hill behind the ball fields. However, these were not deemed to be high priorities relative to the recommended improvements. Furthermore, the need for these improvements is subject to the desires of the specific users, who may appreciate some obstacles in the trail system.

10.2 NAK'AZDLI TRAIL NETWORK ISSUES

In the Nak'azdli community south of Fort St. James, there were four (4) main issues with the trail system identified. These are listed below in descending order of suggested priority.

1. Connection from Carrier Frontage Road to Kwah Road

Band representatives identified the main trail concerns as pedestrian safety on the highway and connections to Fort St. James. For these reasons, the upgrade of the connection from the Carrier Frontage Road to Kwah Road was listed as the top priority. This is also a relatively inexpensive improvement as a 3.0 metre wide gravel trail.

Figure 52: Proposed Carrier Frontage Road Extension to Kwah Rd



2. Connection to Necoslie River Bridge – South End

To improve pedestrian safety on the highway, the connection between the highway shoulder and the trail adjacent to the highway should be realigned to a more gradual grade. This connection is necessary to bring trail users from the trail to the pedestrian crossing on the Necoslie River Bridge. The current link has a steep grade to the highway, which could be prohibitive to some users. Furthermore, trail users may be at an increased risk for a fall onto the highway, especially in winter conditions.

This work is proposed in the highway right-of-way, and therefore requires MoTI approval.

Figure 53: Proposed Trail Connection at South End of Necoslie Bridge



3. Connection to Necoslie River Bridge – North End

On the north side of the Necoslie Bridge, there is no obvious connection between the highway paved shoulder and the trails and roadways to the west. Currently, trail users wishing to make this connection would use the intersection of Lower Road on Highway 27. A connection closer to the bridge would improve pedestrian safety by reducing the exposure of trail users to the highway.

This improvement is envisioned as a 3.0 metre gravel trail on a ~6% decline from the highway, and therefore would require MoTI approval.

Figure 54: Proposed Trail Connection at North End of Necoslie Bridge



4. South Extension of Carrier Frontage Road Trail

The final missing link in the trail adjacent to Highway 27 is the extension of the Carrier Frontage Road south. An informal trail currently exists, but does not appear to connect to the trails further south. If the project is in highway right-of-way, MoTI approval would be required.

With the aforementioned connections, this link would complete a continuous trail on the west side of the highway from Kwah Road to the Stuart River Bridge.

Figure 55: Proposed Trail Extension on Carrier Frontage Road



10.3 REGIONAL TRAIL NETWORK ISSUES

There were three (3) issues identified with the regional trail network. These are listed below.

1. New Stuart River Crossing and Connection to Sowchea Road

The primary concern repeatedly mentioned in public and stakeholder consultation was the difficulty trail users had crossing the Stuart River Bridge on Highway 27. This connection is not only important from a safety perspective, but it also provides the final link between Fort St James and the motor-sport trail heads on Sowchea Road.

The most feasible and cost-effective concept would be to construct a new trail bridge on the old piers east of the existing bridge. To complete the connection to Sowchea Road, the trail would have to be continued under the Stuart River Bridge and through the highway right-of-way to the Sowchea Road intersection. At that location, a crosswalk would connect trail users directly to the existing trail on the south side of Sowchea Road.

This project would be a strong candidate for ICBC and CIPP funding. By involving a river crossing, the work would require approvals from MoTI, DFO, Ministry of Environment, and Navigable Waters.

Figure 56: Proposed Connection across Stuart River

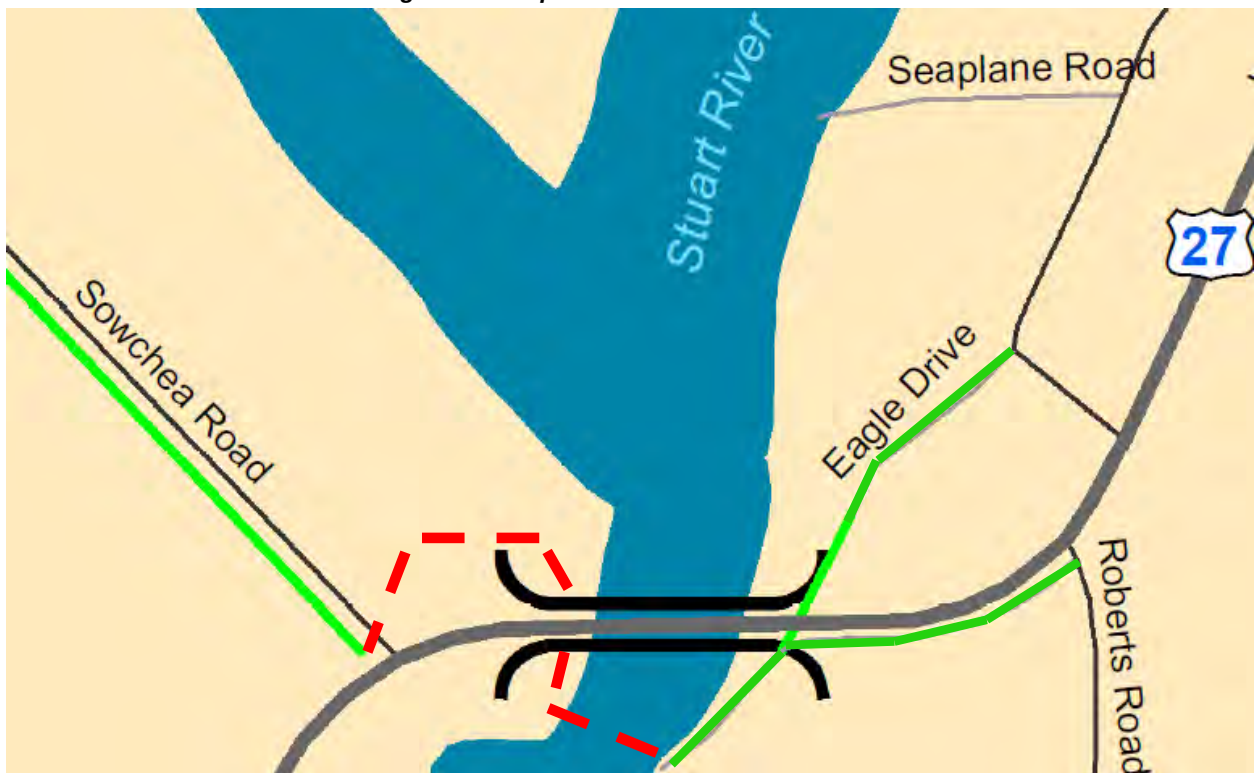


Figure 57: Old Concrete Piers across Stuart River



Figure 58: Proposed Trail Connection from Bridge to Sowchea Road



2. Trail Improvements on Sowchea Road

The second recommended improvement to the regional trail system is the upgrade of the trail on the south side of Sowchea Road. This was identified frequently in the public and stakeholder consultation, especially since this trail affords a safe route to the Sowchea Elementary School. The trail improvements should include realignment, widening and surfacing as required to achieve a 3.0 metre gravel multi-use trail standard.

As a pedestrian and cycle safety improvement, this project would be a candidate for ICBC and CIPP funding. The work would require approval from MoTI, and should involve consultation with the school.

Figure 59: Sowchea Road Trail



3. Grade Improvements on Mt Dickenson Trail

The Mt. Dickenson Trail is a popular recreational link for trail users. To improve the safety and accessibility of the trail, grade and alignment improvements are desirable at a number of problematic locations.

If the work involves clearing of potential wildfire fuel, the project may qualify for Strategic Wildfire Prevention funding.

Figure 60: Mt Dickenson Trail



11 TRAIL POLICIES, PROCEDURES AND PROGRAMS

The trail infrastructure is complemented and supported by a number of policies and programs which maintain and enhance the trail system, as well as inform the users thereof. Comments received from the public survey indicated a desire for many of these policies and programs. These included:

- Trail maintenance, including grooming and litter collection;
- Trail signing and marking; and
- Trail mapping.

The following sections outline a number of policy, procedure and program initiatives for consideration by the District as the trail system evolves.

Figure 61: Rotary Kiosk, Fort St James



11.1 PLANNING AND DEVELOPMENT POLICIES

Land-use directly influences people's transportation choices. As new development and redevelopment are invited to incorporate sustainable transportation modes, more people are likely to use the trail system. The District already enjoys a dense, compact core, which is conducive to walking and cycling trips. A number of land-use statements and policies to further encourage the development of the trail system are as follows:

1. Every building to which the public is invited should have a safe, accessible and convenient connection to the public pedestrian network. Buildings entrances should also have a safe buffer for pedestrians, physically separated from the areas designated for vehicles. Further guidelines are available in "Promoting Sustainable Transportation Through Site Design" (ITE, 2004).

Figure 62: Our Lady of Good Hope Church

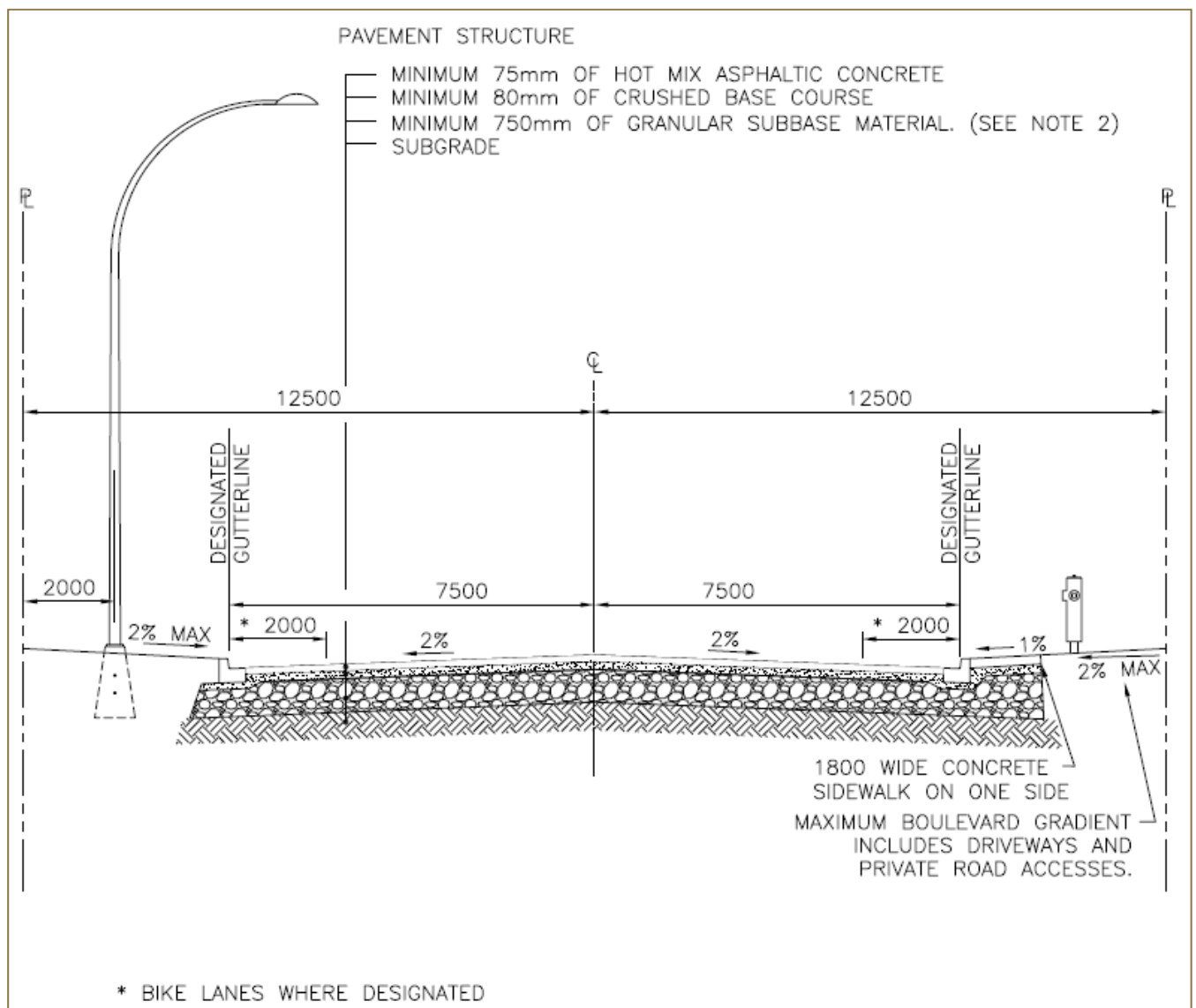


2. Convenient and secure bicycle parking should be available for all public and private development in the City. This may be calculated under the Zoning Bylaw as a percentage of the parking stalls provided. Bicycle parking facilities are divided into long term parking facilities (lockers, compounds, etc) and short term parking facilities (bike racks).
3. Large employers should provide showers and other end-of-trip amenities to facilitate employees cycling to work.

11.2 SUBDIVISION AND SERVICING STANDARDS

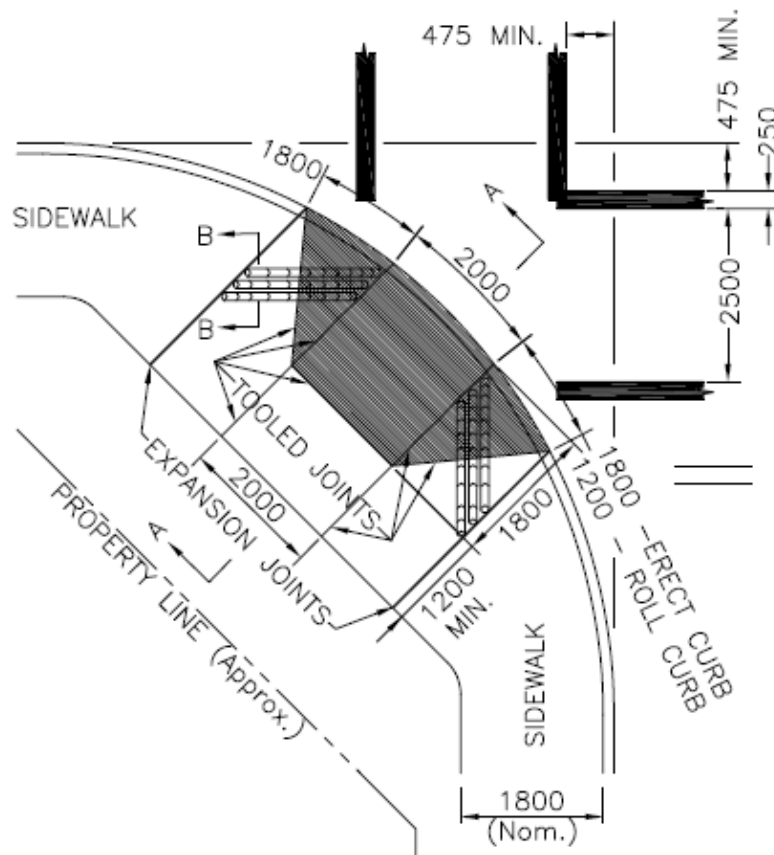
The District Subdivision Servicing Bylaw No. 599 (1995) is the document used to regulate the installation of new municipal infrastructure. However, the existing Bylaw does not provide standards or guidance for pedestrian, cycle or trail infrastructure. This document should be revamped and updated to establish standards for the design, placement, and construction of sidewalks (especially with respect to their placement in the road right-of-way), wheelchair ramps, crosswalks, alleys/walkways, multi-use trails and rustic trails. An example of an urban collector cross section and a sidewalk ramp detail (with tactile grooves for the visually impaired) are shown in Figures 63 and 64 respectively.

Figure 63: Urban Collector Cross Section



Source: City of Prince George

Figure 64: Sidewalk Ramp Detail



Source: City of Prince George

In applying subdivision standards for new sidewalks, consideration should be given to continuing sidewalks across private accesses, except where traffic volumes are particularly heavy. This provides greater safety for pedestrians as drivers are given the impression of crossing a pedestrian environment, instead of pedestrians crossing the traffic environment.

11.3 EDUCATION

Walking and cycling modes of transportation are not generally well-understood. The 2005 “Go For Green” National Active Transportation Survey indicated that many adults consider Active Transportation to be reserved for those who are eccentric and/or fitness-conscious. However, in Fort St. James, a larger percentage than the BC Average was found to choose walking or cycling as their mode of commuting. This positive attitude toward sustainable transportation can be further developed by a number of educational initiatives.

There are two education objectives: (a) to improve attitudes, understanding and awareness; and (b) to teach people how to use and interact with walking and cycling modes in order to improve safety and reduce frustration.

Figure 65: Bicycle Education



Many motorists do not routinely look for cyclists and pedestrians. Conversely, cyclists and pedestrians need to be aware of the rules and etiquette of the road, understanding the responsibility they have for their own personal safety. Furthermore, education about the safe use of winter trails on the frozen lake is critical, and should be provided with signage at primary lake access points.

Transport Canada (2008) advocates the use of a five-step process for educating and encouraging the community in walking and cycling, as follows:

- a. Identify the desired behaviour change
- b. Identify the barriers
- c. Design the behaviour change program
- d. Pilot the program
- e. Evaluate and improve the program

This process has been undertaken throughout North American municipalities for community and workplace Active Transportation programs. The process can be used to target individuals, specific user groups, or the general public, and may include such

mediums as flyers/brochures, media releases, internet websites, video broadcasts (online and television), informational road signing, classroom intervention, formal courses (for both children and adults), and word-of-mouth. These procedures can be extended to all modes of trail use in Fort St. James.

Figure 66: Crosswalk Safety



Some educational topics are listed below:

- **Pedestrians:** walking with traffic; being seen by drivers; crossing the street safely at intersections, crosswalks and signals; safe routes to school.
- **Cyclists:** traffic laws and etiquette; bicycle handling skills; bicycle safety and protection; bicycle maintenance;
- **Trail Users:** trail etiquette; crossing roadways; personal security.
- **Motor Vehicle Drivers:** watching for pedestrians/cyclists; traffic laws and etiquette.
- **All users:** health and fitness; environmental considerations.

Some existing educational programs in Fort St. James include the Sowchea Elementary School “Be Seen/Be Safe” program, and other safety education initiatives organized by the Transportation Committee. Additional resources for developing Active Transportation educational programs include:

- Participate PG committee
- Walking, The Activity of a Lifetime
- International Walk to School Day (www.iwalktoschool.org)
- Pedestrian and Bicycle Information Centre (www.pedbikeinfo.org)
- Bike Sense
- Bicycles at Rest (www.capitalbikeandwalk.org)
- National Centre of Biking and Walking (www.bikewalk.org)
- Velo Quebec (www.velo.qc.ca)

11.4 MARKETING AND PROMOTION

Marketing campaigns are needed to raise the profile of the trail system and the use thereof. As more people become aware of the choices available, more are likely to choose Active Transportation modes. Some recommended marketing initiatives for Fort St. James include:

1. A formal trail brand should be adopted, as discussed in Section 9. The brand would be incorporated into the signing of both on and off-road pathways to demonstrate consistency and continuity in the system.
2. The trail system could be promoted with advertizements in the media (e.g. newspaper, radio, television, internet), and on the street (e.g. signing, etc).
3. Pocket maps of the developed Active Transportation System should be published to safely guide users around the trail network. This was a common issue raised in the public and stakeholder consultation. The maps could be made available in both hardcopy and electronic version from the District's website. The maps could show major destinations, and include educational tips for users, as discussed in the previous section. For accessibility, the maps should also identify the severity of the different trail link alignments.
4. Promotional events for the trail system could be hosted or sponsored. These include Bike To Work Week (as is already hosted in Fort St. James), the Commuter Challenge, Walk/Bike to School Week, etc.
5. Partnerships with local businesses, institutions, and the public should be encouraged to generate interest and commitment in the trail system. Two existing examples of this in the District are the "Adopt a Trail" and "Pitch-In Week" programs.
6. An award system could be created to honour those in the community that make a difference to the trail system and/or its users.

11.5 MAINTENANCE

Although trail maintenance was an issue raised frequently in the public survey, the limited funding available preclude an elaborate trail maintenance program. As much as possible, trail alignments and construction materials should be designed to minimize maintenance demands. A general disclaimer at information kiosks may be provided to advise users of the inherent risks of the trail system, and inform the users how those risks can be managed. And finally, with “Adopt-a-Trail” and “Pitch-In” programs (as discussed in Section 11.4), routine litter collection and trail brushing activities could be donated by local businesses and the public in exchange for recognition.

Snow clearing and/or grooming may be considered by the District on trails with heavy volumes of users or with specific uses (e.g. cross-country skiing), as may be afforded by available budgets. This was specifically requested by users of the Murray Ridge trails, which are now only partially groomed.

Irrespective of the maintenance program adopted by the District, an inspection and reporting program (either active or passive) is recommended to ensure hazards are identified and rectified as necessary.

Figure 67: Steam Shovel, Cottonwood Park



11.7 INTER-AGENCY COORDINATION

The trail system involves multiple facilities, users, and jurisdictions. Therefore, there are a number of agencies and stakeholders that may contribute to and/or be affected by the development of the trail system. These include, but are not limited to:

1. Nak/azdli First Nation
2. Ministry of Transportation and Infrastructure
3. Regional District of Bulkley-Nechako
4. School District 91
5. Royal Canadian Mounted Police
6. Insurance Corporation of British Columbia
7. Cycling Club
8. Stuart Lake Nordic Club
9. Snowmobile/ATV club
10. Seniors Association
11. Other associated groups and agencies.

A coordinated and communicative approach is necessary to confirm priorities and synchronize projects, especially across jurisdictional boundaries. The District should continue to work with these agencies on the development, maintenance, and regulation of the trail system.

Figure 68: W34 Junkers Airplane Replica, Cottonwood Park



12 RECOMMENDATIONS

Fort St. James is a community that is well sized and well situated to enjoy an integrated, safe, and aesthetic trail system. Following detailed literature review, public/stakeholder consultation, and network analysis, this Master Trails Plan has identified the following recommendations to help realize this vision:

12.1 STANDARDS AND GUIDELINES

The District of Fort St. James should define and adopt five (5) formal standards for trails in the community. These are: sidewalks, shared bike lanes, multi-use trails (motorized and non-motorized), and rustic trails. These standards should be incorporated into the next update of the Fort St. James Subdivision Servicing Bylaw, and road standards should be updated to reflect how trails are incorporated into the public right-of-way.

Additional standards may be adopted, formally or informally, for such trail infrastructure as crosswalks, stairways, and bridges.

12.2 SYSTEM BRANDING

A new brand for Fort St. James is proposed based on the theme: “*Fort St. James, a historic place with a resourceful future*”. The brand would include raw wood decorated with local animal silhouettes and steel coverings. This theme would be incorporated into all trail amenities, including markers, signage, tables, shelters, etc.

12.3 NEW INFRASTRUCTURE

The existing trail system is generally well connected, although a few discontinuities may impact the comfort, and in some cases safety, of the trail users. The following improvements were identified to complete the trail system, listed in descending order of recommended priority for each area. A high level “order of magnitude” cost estimate is provided for the benefit of prioritization, but should not be used for project budgeting.

Table 12: Summary of Recommended Trail Network Improvements

Area	Report Section	Recommended Improvement	Order of Magnitude Estimate	Potential Stakeholders	Considerations and Potential Funding Sources
Short Term Recommended Improvements (0 to 5 Years)					
Fort St. James	10.1(1)	Sidewalk Across Douglas Avenue Bridge	\$ 150k	DFO, MoE, SD91	Strong candidate for ICBC RIP funding.
	10.1(2)	Waterfront Pathway Extension to Spirit Square	\$ 50k	DFO, MoE, National Historic Site, hotel	Candidate for tourist funding, and partnership with adjacent hotel. Stabilization issues.
	10.1(3)	Ash Street Connection to Highway 27	\$ 20k	MoTI, DFO, MoE Overwaitea	Potential for corporate sponsorship.
	10.1(4)	Trail through Cottonwood Park	\$ 20k	MoTI	Candidate for ICBC, CIPP, and tourism funding.
	10.1(5)	North Road Trail Connection across Stones Bay Road	\$ 5k	MoTI	Completes connection to intersection and trails beyond.
Nak'azdli	10.2(1)	Connection from Carrier Frontage Road to Kwah Road	\$ 2k	Nak'azdli	Needed for accessibility.
	10.2(2)	Connection to Necoslie River Bridge – South End	\$ 2k	MoTI Nak'azdli	Candidate for ICBC funding.
Region	10.3(1)	New Stuart River Crossing and Connection to Sowchea Road	\$ 1,000k	MoTI, DFO, MoE & Navigable Waters	Expensive project; can use existing piers. Candidate for ICBC and CIPP funding.
Medium Term Recommended Improvements (5 to 15 Years)					
Fort St. James	10.1(6)	Crosswalk on Stones Bay Road at Resort Hill Road	\$ 1k		Trail on north side of Stones Bay Rd is on private land.
	10.1(7)	Sidewalk on Douglas Avenue	\$ 120k	SD91	Challenging to retrofit sidewalk, but route to school.
	10.1(8)	Sidewalk on Elm Street	\$ 250k		Challenging to retrofit sidewalk, but completes loop.
Nak'azdli	10.2(3)	Connection to Necoslie River Bridge – North End	\$ 10k	MoTI Nak'azdli	Provides better access to Nak'azdli neighbourhood trails
Region	10.3(2)	Trail Improvements on Sowchea Road	as required	MoTI SD91	Candidate for ICBC and CIPP funding.
Long Term Recommended Improvements (15 Years or more)					
Fort St. James	10.1(9)	Crosswalk on Highway 27 at Elm Street	\$ 5k	MoTI	When warranted by crossing volumes. Heavy truck traffic.
	10.1(10)	Underpass on Highway 27 at Old Railway Trail	\$ 500k	MoTI	When warranted by crossing volumes, safety and/or trail network connectivity.
	10.1(11)	Junker Street Connection to Stuart Drive East	\$ 15k	Heliport, Property owners	Completes PNG- Mt Dickenson Trail loop.
Nak'azdli	10.2(4)	South Extension of Carrier Frontage Road Trail	\$ 10k	MoTI Nak'azdli	Candidate for ICBC funding.
Region	10.3(3)	Grade Improvements to Mt Dickenson Trail	as required		Candidate for Strategic Wildfire Prevention funding

12.4 POLICIES AND PROGRAMS

To complement and support the trail system, a number of policies and programs were recommended, as follows:

1. Planning/Development Policies: to ensure future development in the District supports the trail system and the users thereof.
2. Subdivision Servicing Standards: to establish in municipal bylaw the standards for the trail system.
3. Education: to teach motorists and trail users about the trail system, and how to keep trail users safe.
4. Marketing and Promotion: to raise awareness of the trail system in Fort St. James through media such as maps, brochures, events, and other information.
5. Maintenance: to keep trails in an acceptable state without creating a burden on municipal finances.
6. Inter-agency coordination: to adopt a coordinated and communicative approach to trail development and management with other affected agencies.

12.5 FUNDING

To maximize the investment in the trail system, the District should continue to explore opportunities to partner with other government agencies and the private sector. Some opportunities for this are:

1. Senior government grants (e.g. Cycling Infrastructure Partnership Program) are often available for specific project funding. These grant programs require a trail or cycle master plan and shelf-ready designs. The District should therefore pro-actively prepare designs for priority projects in anticipation of these grant programs.
2. Where a major improvement can potentially reduce vehicle collisions, grants may be available through the Road Improvement Program (RIP) of the Insurance Corporation of BC. In these cases, ICBC would contribute a portion of the estimated savings in claims reductions.
3. As the trails have the potential to increase tourism to Fort St. James, some trail improvements may qualify for funding under the Northern Development Initiative Trust's Economic Diversification Infrastructure Fund.
4. When trail improvements necessitate clearing of wildfire fuel, the District may qualify for provincial funding under the Ministry of Forests' Strategic Wildfire Prevention Initiative.
5. CN and Tree Canada sponsor the Eco-Connections grant program, of which some trail initiatives may qualify. In early 2013, Fort St. James applied for a grant under this program for trail construction in Cottonwood Park and a crosswalk at Hwy 27/Birch Street, but this was not successful.
6. As the trail system promotes healthy activities, some trail initiatives may qualify for funding under the Northern Health Authority's Healthy Communities Fund.
7. Pursuant to recent amendments to Section 906 of the Local Government Act, developers can contribute to the development of the District's trail (either specific improvements, or a general fund) in lieu of constructing or paying a levy toward off-street parking facilities.
8. Local corporations and businesses could sponsor infrastructure in exchange for naming rights and advertizing space.
9. Some private businesses desire bicycle racks, but lack the space to install them. In cities like Vancouver, these businesses may apply to install bicycle racks on City property. The permit is free, but stipulates terms of location, ownership, and maintenance.
10. Phased development agreements (Section 905.1 of Local Government Act) can be used to ensure trail infrastructure is constructed concurrently with new developments.

13 REFERENCES

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8. Golden, S and Associates, *Accessible Parks and Trails Assessment Report*, 2008
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10. Kananaskis Country, *Design Standards and Guidelines for Trail Systems*
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14. Ransom, Angel, *Pedestrian Safety / Walking Path Development Along Highway 27*, 2011
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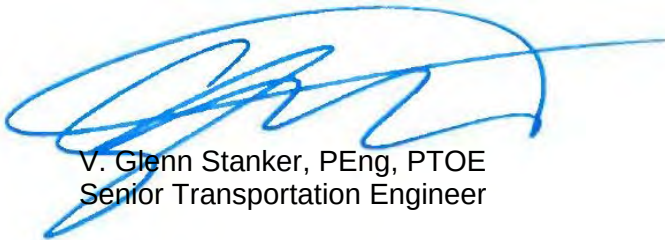
14 CLOSURE

This Master Trails Plan has been prepared by McElhanney Consulting Services Ltd. (MCSL) for the benefit of the District of Fort St. James. The information and data contained herein represent MCSL's best professional judgment in light of the knowledge and information available to MCSL at the time of preparation.

McElhanney Consulting Services Ltd. denies any liability whatsoever to other parties who may obtain access to this report for any injury, loss or damage suffered by such parties arising from their use of, or reliance upon, this document or any of its contents without the express written consent of MCSL or the District of Fort St. James.

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APPENDIX A

PROJECT MEETING MINUTES



Fort St. James Master Trails Plan Project Team Meeting

Time: 2:30 PM
Date: July 17, 2013
Location: Council Chambers, District of Fort St. James

Attendees:

- Kevin Crook, Chief Administrative Officer, District of Fort St James
- Emily Colombo, Economic Development Officer, District of Fort St James
- Niranjan Tank, Director of Finance, District of Fort St James
- Dave Stewart, Public Works Superintendent, District of Fort St James
- Olivia McMahon, District of Fort St James
- Glenn Stanker, PEng, PTOE, McElhanney Consulting Services Ltd.
- Kim Klaczek, McElhanney Consulting Services Ltd.

Minutes:

1. The objectives of the Plan are to (a) identify existing and planned trail links, both within and outside the District boundary; (b) create a GIS-based map showing all trails, which may be used by residents and tourists; (c) develop a prioritized list of trail improvements which may be the subject of future grant applications; and (d) identify the policies necessary to manage the trail system.
2. The project is co-funded by the Northern Health Authority, the Omineca Beetle Action Coalition (tourism funding), and the Northern Development Initiative Trust.
3. Within the District boundary, the scope of the Plan will be a comprehensive study of all existing and potential future trail links to develop an integrated network with a focus on non-motorized trail users. These may include existing trails, footpaths, and alleyways. This will help the District's efforts in supporting sustainable transportation modes, improving community health, and reducing Greenhouse Gas emissions.
4. Outside the District boundary, the Plan will show trail connections to other communities (esp. Nak'azdli) and the regional trail networks. However, the scope of the analysis for the regional trail system will be limited to mapping known trails and summarizing improvement initiatives identified by others. This will help the District's efforts in supporting local recreation and tourism.
5. Trail uses include walking, cycling, hiking, skiing, snow-shoeing, dog-sledding, horse-back riding, snowmobiles, all-terrain vehicles, and dirt bikes. The Plan should address both utilitarian (e.g. commuting, shopping, etc) and recreational users.
6. The snowmobile/ATV club has built many kilometres of trail infrastructure and developed mapping over the past five years.
7. The local cycling club has not mapped their trails, but is building more infrastructure.
8. There are some cross-country ski trails in Sowchee.
9. There are many existing trails that informally cross private property. A procedure for formalizing these links is included in the scope of the project.
10. The District would like to develop a waterfront walkway, but is having difficulty with slope stability and getting approval from the Dept. of Fisheries and Oceans. A student has



- proposed a solution on how to manage the bank erosion. The project also needs the cooperation of two or three property owners.
11. In winter, the lake is itself a trail link for cross-country skiing and snowmobiling. There are a number of locations where lake access is available.
 12. Background project materials, literature, and traffic/safety records are available in the Transportation Committee file (copied to McElhanney). The committee was formed last year by a number of community representatives.
 13. Matthew Parslow at the Regional District can provide base GIS mapping for the District.
 14. The public survey for the project could be developed online, but many residents do not have access to computers. The District could provide assistance for those without computers. A cost-effective alternative is to send hard-copy surveys to local residents through the post office. This would reach approximately 1,000 of the 1,700 population.
 15. Project communications will be through Emily. A project status report will be submitted by McElhanney bi-weekly.
 16. The project deadline is October 31, 2013.

/VGS



Fort St. James Master Trails Plan Stakeholders Meeting

Time: 3:30 PM
Date: July 17, 2013
Location: Council Chambers, District of Fort St. James

Attendees:

- Emily Colombo, Economic Development Officer, District of Fort St James
- Olivia McMahon, District of Fort St James
- Pearl Graham, Seniors Association
- Wayne Moll, Snowmobile/ATV Club (connected with Dog Mushers)
- Angel Ransom, RPP, Nak'azdli Band
- Paul Inden, Stuart Lake Nordic Club
- Glenn Stanker, PEng, PTOE, McElhanney Consulting Services Ltd.
- George Harris, Landscape Architect, McElhanney Consulting Services Ltd.
- See-Yin Lim, Landscape Arch-Tech, McElhanney Consulting Services Ltd.
- Kim Klaczek, McElhanney Consulting Services Ltd.

Minutes:

1. Project objectives, scope and financing were explained to group.
2. Many of the snowmobile/ATV regional trails have been mapped and colour-coded (and were provided to McElhanney). These trails are covered with liability insurance from the government when tenured, and are maintained by the District.
3. The Snowmobile/ATV Club is applying for grants for a snow groomer and trail signage. Trail brochures are currently being funded, and will be developed in Autumn; these should be coordinated with the mapping produced by the Trails Master Plan. A signing theme and strategy is needed for the overall trail system.
4. As with other northern communities, Fort St James would like to foster and promote snowmobile and ATV recreational tourism.
5. In the winter months, snowmobilers can use the frozen lake to access trails. In the summer months, trail access is more limited. This should be improved, esp. to the north side of the lake.
6. Although some people may use snowmobiles and ATVs in town, the practice is considered illegal without proper licensing, and is largely discouraged. Very few complaints about these users are received by the District, as most motorized trail users seek the regional trails. The Ministry of Parks regulates Mount Pope, and does not permit motorized traffic on those trails.
7. Cross country ski trails are generally separate from the motorized sport trails. Paul has GIS files for the gazetted trails around Murray Ridge. There is also an idea for a ski loop around the Mission Lands, but these will have to be sensitive to First Nations interests and will have to be protected from motorized sport vehicles.
8. The old railway line may be a strong candidate for a trail link if the property issues can be resolved. The link connects the town to the mill in the northeast section of the town,



- which would allow employees to walk, cycle, or ski to work. However, this link would also be desirable for motor sports. Perhaps the corridor could be divided for different users?
9. There is a strong demand for the waterfront walk, but there are problems with private property easements.
 10. The local Rotary Club is planning to construct a foot bridge on the old piers immediately downstream of the Stuart River Bridge on Highway 27. Currently, pedestrians and cyclists use the highway bridge. Emily can provide plans for the new bridge.
 11. The Nyan Wheti trail is historic trail connecting the First Nations communities, and should be shown on the trail mapping. The Dog Creek Trail should also be shown.
 12. There are many alleys available for walking/cycling trips. These are not typically paved, but are ploughed in winter.
 13. The elderly residents need to walk. This can be facilitated in the Plan by designing shorter links to key destinations for which automobiles are not required. Trail trip origins/destinations may include the post office, supermarket, etc. Emily provided a map with other destinations.
 14. Glenys Snowdymond is an authority on accessibility, and can audit trails. She should be contacted to discuss objectives and relevant accessibility criteria for Fort St James.
 15. Connections to the Nak'azdli community should be formalized so that the trail system works together as one. Angel is able to help walk and map the existing routes.
 16. Environmental protection is needed around Nahounli Creek.
 17. In general, the trail system needs a theme ("branding") to tie everything together.

/VGS



Fort St. James Master Trails Plan Transportation Committee Meeting

Time: 5:00 PM
Date: July 17, 2013
Location: Council Chambers, District of Fort St. James

Attendees:

- Joan Burdeniuk, Healthy Communities Committee (chair)
- Emily Colombo, Economic Development Officer, District of Fort St James
- Dave Stewart, Public Works Superintendent, District of Fort St James
- Bob Hughes, Regional District of Bulkley-Nechako
- Angel Ransom, RPP, Nak'azdli Band
- Sgt. Paul Thalhofer, Royal Canadian Mounted Police
- Glenn Stanker, PEng, PTOE, McElhanney Consulting Services Ltd.
- Kim Klaczek, McElhanney Consulting Services Ltd.

Minutes:

1. Project objectives and scope were discussed.
2. The Transportation Committee was created a few years ago to discuss traffic safety concerns, and to advocate for local transportation improvements. The committee was instrumental in getting illumination on the highway through Nak'azdli, and the new passing lane south of Fort St James.
3. There was a fatal pedestrian collision in 2011 at the crosswalk on Highway 27 at the gas station. The location was upgraded in 2012 to a pedestrian signal. The highway was also widened to improve the available paved shoulder width for pedestrians. There is a large volume of pedestrians using this route.
4. Industrial traffic in Fort St James is almost exclusively limited to Highway 27.
5. The Ministry of Transportation and Infrastructure (MoTI) is planning sidewalk bulbs (i.e. extensions of the sidewalk area into the road) at a number of crosswalks on Highway 27. The bulbs are effective means for traffic calming, due to the constricted road width. They also improve pedestrian safety by increasing visibility and reducing crossing distances.
6. An application for a trail improvement was recently denied. The Master Trails Plan is necessary to facilitate future grant applications.
7. LIDAR mapping for the community may be available from MoTI.

/VGS



APPENDIX B

PUBLIC SURVEY RESULTS



Public Survey Results – Raw Data

Distributed Surveys – 1,000 (also available online)

Total Respondents: 65

1. **Aside from the personal automobile, how do you currently travel around the town?** (multiple answers permitted)

Mode of Transportation	Response Count
Walking	62
Running	15
Cycling	37
Scooter/Wheelchair	2
Skateboarding	0
In-line Skating	2
Horseback Riding	6
Snow-Shoeing	6
Skiing	9
Dog Sledding	1
All-Terrain Vehicle/Snowmobile	19
Motorcycle/Dirt Bike	3
None	0
Total	162

2. **Where do you typically go on these trips?**

- Spencer's Ridge
- Airport Road
- Cottonwood Park
- Lake Loop
- Rom Mountain
- Whitefish Bay
- Murray Ridge
- Sowchea Road Area
- Ski Hill
- Pinchie Lake
- Local Camping Area
- North Road, Necoslie Road, Hait Lake Road
- To the beach
- Pope Mountain
- Around
- Around town and in surrounding areas

- Shopping in stores downtown, walks or to visit family/friends' homes downtown and surrounding area.
- Post office, cottonwood park
- Around loop - Stones Bay
- Parks (Goodwin Park, Russ Baker Memorial, Bike Park), Overwaitea, Post Office, work (Forest Service on Stones Bay rd), "the loop", beaches (Cottonwood, Parren's)
- To town and to work
- The Loop, Stones bay mountain bike trails, Pope Mtn., downtown, Mt. Dickinson, Historic site, along the beach,
- Everywhere I can
- From home (Goodwin Park area) to downtown
- Behind the graveyard, the loop and on the lake in winter
- Mountain bike Park
- Downtown core, cottonwood beach, the loop
- Paarens Beach, Cottonwood Park, 1 mile hill.
- FSJ, Vanderhoof, Burns Lake, Smithers
- Nowhere special

3. Why do you choose these mode(s) of transportation?
(multiple answers permitted)

Reason	Response Count
Don't drive or have a car	1
Easier to travel	8
Save money	13
Reduce impact on Environment	23
Exercise	53
Pleasure	53
Total	151

4. Where would you like to see improvements or additions to the town pathways?

- Bike paths along roadways
- Decrease pot holes in road
- Additional sidewalks near Cottonwood Park
- Groomed ski trails into towns
- Gravel swept off roads ASAP – as needed
- More trails around town
- Along waterways and behind graveyard trails
- Trail along the lake through town connecting to the park
- Want all-terrain vehicles out of town
- Develop old rail grade as trail
- Indoor area for seniors to walk in winter

- Upgrade bike trail from travel info center going out of town to Sowchea Road turn off
- Some sections of sidewalks are needing to be replaced
- More beach trails
- Garbage pickup
- From hoy subdivision road to Douglas Street, a walking trail lit up by the pipe line... Also, having crosswalks on the highway by Heathmont Street to the walking trail with a sign and at end of Birch Street to Cottonwood Park
- Overwaitea to Ash Street trail lit by street lights and regular clean up.
- Alternative access to downtown hub perhaps utilizing ash street more
- Need more kid-friendly trails.
- Fix the trail up to Overwaitea (coming from Ash St. after the bridge over Nahounli creek, the trail gets too steep and is very rutted - cannot push stroller up it. Need more sidewalks, especially on busy residential streets like Elm and Douglas. Also continue the sidewalks along the highway (eg across from Overwaitea, the sidewalk just ends with no safe crossing to get to the other side) Pedestrian crosswalks (even just some painted lines!) to cross the highway at Ash, Birch, Elm & Heathmont (lots of people crossing to get to the beach or the loop path, and most drivers are ignorant). District support for proposed cross country ski loop would be awesome.
- Trail from bridge behind Overwaitea
- A perimeter trail around the town would be nice (incorporating many existing trails), legitimizing the mountain bike/hiking trails near the cemetery, The Dickinson area could be brushed and another trail down the hill could be added so that is a loop created. Signage would be helpful for tourists and new residents.
- A path along the lake front would be nice. Also, sidewalks along Elm and Douglas would be great.
- Trail to Apollo so you don't have to ride alongside large truck traffic
- I would like to see more developed trails through the bush, on less hilly terrain, more even surfaces for walking.
- Wherever needed
- Use of back alleys to allow bikes/ped to get off of the main road. way to get through the reserve that is off of the main road. A way to get over Stuart River that doesn't feel like I'm risking my life.
- Well marked ATV paths along Sowchea that continue. Many times we have to drive on the road to access the rest of the trails.
- you have pretty good pathways already, a wider easier pathway in the biking trails would be awesome

5. Do you use the regional trail system?

Response	Response Count
Yes	48
No	14
Total	62



6. How do you use the regional trails?
(multiple answers permitted)

Response	Response Count
Walking/Hiking	45
Running	14
Cycling	26
Horseback Riding	7
Motorcycle/Dirt Bike	1
Dog Sledding	3
ATV/Snowmobile	22
Skiing	18
Total	136

7. Where would you like to see improvements or additions to the regional trails?

- Second bridge across Stuart River for multi-use
- Ski trail maintenance
- Bike trail that could host regional and/or provincial meets
- Funding support to Cross Country Club – need grooming equipment
- Drainage problems along roads
- Trails connect to other towns
- Walking and Biking Paths with Lights
- Safety issue on Sowchea Road
- Wider trails
- Information on trails – signs on grave yard trails
- Turn old bridge across river into access only for biking, All-Terrain Vehicles
- Make One Mile Hill to town a better trail
- Signage for regional trails
- More loops to avoid doubling back
- Expand “Loop” to include pathway from Stanley Park at the end of Douglas Street up to Hwy 27 and back down One Mile Hill on the side of Hwy 27
- Turn Sowchea Road and Spencer’s Ridge Road into recreation only use areas
- Map regional trails
- On the pipeline by hoy subdivision road to Douglas street and by cottonwood and heathmont
- We live on top of 1 mile hill and it would be wonderful if the 'pipeline' trail could be upgraded and actually accessible year long (as is the loop trail). With the increase in industrial traffic over the last few years, the highway up One Mile Hill is a VERY dangerous route for pedestrians and for those on bikes (including a lot of kids!!) A built up and gravelled trail down the pipeline would connect our area to the community as well as expand trail accessibility to everyone in the community.
- up to date and well-marked maps both in town and on the trails.

- Legalize the existing mountain bike trails near the cemetery/ to Mount Pope Park. Make more pedestrian routes and/or bike lanes down Sowchea (eg to Parren's beach) and Stones Bay Rd.
- Nyan Wheti and Shas Mt. could be better maintained. Would be nice to see more of the trails at Murray ridge XC skiing groomed. A trail from town to Murray ridge would be nice.
- Better signage, maps perhaps.
- maps
- Better linkage between trails so that you don't have to bob on and off the road. Mapping so that I know where the trails are. Roads swept so that they are safer for biking or trails so that we can get off of the roads.
- More signage and maps online. I'm new to town and it is hard to find out these things when you don't know many people yet. :)
- a beginner doubletrack trail behind the graveyard the more people can ride
- A few places

8. Gender of Respondents

Gender	Response Count
Male	18
Female	47
Total	65

9. Age of Respondents

Age	Response Count
5 - 15	0
15 - 25	1
25 - 35	14
35 - 45	19
45 - 55	13
55 - 65	10
65 and Over	8
Total	65

APPENDIX C

PROCEDURE FOR SECURING TRAIL EASEMENTS





December 18, 2013

Glenn Stanker, P.Eng., P.T.O.E
McElhanney Consulting Services Ltd.
1633 First Avenue
Prince George, BC V2L 2Y8

Re: DFSJ Master Trails Plan

Dear Glenn,

This letter is with respect to Task 2.7 Procedure for Legitimizing Private Trails, as described within the DFSJ Master Trails Plan proposal:

4.2.7 Procedure for Legitimizing Private Trails

Some existing and planned trails connect across multiple jurisdictions. Although the users may not be concerned with the property jurisdiction, the land owners face potential liabilities with respect to trail use. McElhanney and Radloff staff will work together to research and clarify the legal procedures required to negotiate and legitimize trail right-of-ways through multiple jurisdictions for both the convenience of the trail users and the protection of the land owners. These jurisdictions may include public lands within the District, regional district lands, provincial park areas, and private property.

Introduction

Trails and paths are often created by local governments to accommodate and encourage active transportation for recreation and commuting. These formalized trails are typically located on land owned and maintained by the local government, the Crown or a land trust. A local government may own the land on which the trail is developed (e.g. statutory right of way) or have an interest in the land expressed in an agreement such as a license to occupy, easement or covenant. "Informal" trails are trails or paths built on private property without a registered agreement accommodating public use or occupancy. In these cases, conflicts between trail users and the private property owner may occur, which often leads to the public being prevented from using the trail due to safety concerns, liability, or lack of funds for maintenance. Formalizing these trails and paths may be an important goal for local governments to ensure trail network continuity and safe and convenient public access, while addressing liability issues for the private property owner.

The following Local Government Tool Kit includes the typical planning tools available to local government to acquire lands and resources for trail development. This toolkit also addresses some of the major issues that arise with trail development such as property negotiation, liability and natural hazards.

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Local Government Tool Kit

Official Community Plan (OCP)

The following section summarizes the enabling legislation related to a community's OCP goals and policies for trail development, as well as planning tools which require or benefit from definition within the OCP.

An OCP "must include statements and map designations...respecting the approximate location and phasing of major road, sewer and water systems" (LGA, Sec. 877). Along with "major roads", most communities now include OCP statements and map designations for active transportation modes such as pedestrian trails, bike paths, and transit.

An OCP "must include targets for the reduction of greenhouse gas emissions..." (LGA, Sec. 877). It is becoming common for local governments to cite the development of commuting trails in their OCP as a tactic to reduce vehicle use and corresponding GHG emissions.

The LGA also states that "to the extent that it deals with these matters, an OCP should work towards the purposes and goals referred to in section 849 [*regional growth strategy goals*]. Applicable statements include:

- (b) settlement patterns that minimize the use of automobiles and encourage walking, bicycling and the efficient use of public transit;
- (c) the efficient movement of goods and people while making effective use of transportation and utility corridors;
- (g) reducing and preventing air, land and water pollution;
- (l) preserving, creating and linking urban and rural open space including parks and recreation areas;

LGA Sec. 940 Amenity/Density Bonusing. Although commonly used in major urban centres, this tool is not applicable to smaller jurisdictions where permissive density regulations typically outpace development demand. Please see the "Incentives" section below for a further description of this tool.

LGA Sec. 919.1 & 920 Development Permits. This tool can be used to protect natural features (e.g. vistas) that may include access. This tool can also be used to protect development from natural hazards that may be created or exacerbated by inappropriate trail development (e.g. landslides). Additionally, this tool can be used to control the sequence and timing of construction, character of development including the siting of buildings, structures, and landscaping. Finally, development permits can promote the reduction of greenhouse gas emissions including promoting sustainable transportation modes on a site.

LGA Sec. 920.1 Development Approval Information. Impact assessment could include "transportation patterns", "local infrastructure", and "public facilities". This may be used as a tool to understand the anticipated impacts of a development on the local government's trail network.

Sec 906. Allow governments who collect off-street parking fees to be used for transportation infrastructure including walking (trails, sidewalks, foot paths and pedestrian corridors), bicycling (bicycling paths, bike lanes) and alternate forms of transportation.

LGA Sec. 905.1 to 905.5 Phased Development Agreements. Allow the exchange of guaranteed zoning for on-site or off-site amenities ("amenities" can be defined in OCP, and may include trails).



A local government will need to consider their Financial Plan when adopting or amending an OCP. To avoid conflicts between these two key planning tools it is recommended that local governments not designate private land for public use without a corresponding budget line in the Financial Plan for land acquisition at market rates (Please see Sec. 914 of the LGA). A simple way to avoid this potential conflict is to not identify specific properties for park or trail development and instead designate general areas or corridors, or express the intent in a policy objective (e.g. “2.2 Ha of park space is preferred for every 1,000 residents in new neighbourhoods”, or “Active transportation shall be an integral consideration in the planning and development of all neighbourhoods and sites”).

Zoning Bylaw

The following section describes the most commonly used zoning tools to secure trail development.

One method to create the space necessary for the development of trails is to enact setbacks and special siting regulations in the Zoning Bylaw. For example, a regulation could specify a minimum building setback from a transportation corridor, thereby preventing development on land that would otherwise be useful for future trail network widening. When creating such regulations it is important to consider how the land owner’s existing development rights may be negatively impacted.

Comprehensively developed neighbourhoods or larger sites are often given comprehensive development zones (or mixed-use zones) specific to the uses, densities, as well as form and function desired for a particular site. The development of a CD zone affords a local government an opportunity to negotiate with the developer and ensure public interests are included in the outcome. For example, trail connections and public access corridors can be identified in addition to utility corridors and other public infrastructure needed to support the private development.

Regulations supporting the clustering of residential properties in rural and suburban settings can offer a developer the opportunity to achieve their desired lot yield and reducing capital infrastructure costs for transportation and services, while preserving key amenities on a site including resources areas (e.g. farm land), environmentally sensitive areas (e.g. habitat) and pedestrian corridors (e.g. trails and paths). This can be achieved through negotiation at the zoning stage of development, but can also be addressed in OCP policy supporting “lot area averaging” which enables clustering while achieving the desired overall densities of the growth management plan or strategy.

Where conditions permit, density bonusing has been used as an effective tool to negotiate for the development of public amenities including pedestrian paths and trails. This process is reliant on a developer wishing to develop lands at a density higher than current zoning permits, enabling a negotiation to occur involving a trade-off of increased density for community benefits.

Hazards & Risks

Natural hazards are not uncommon when developing or maintaining trails and paths. The following section describes some of the key issues a local government may face.

Natural hazards on local government property, including dedicated paths and trails, can have significant financial and political consequences for local governments. Such hazards should be considered during development approvals. A local government needs to ask “Are you introducing people or property to a known risk?” Additionally, undevelopable lands are sometimes offered to local governments during zoning amendment negotiations and the subdivision processes. Local governments need to be cautious when accepting undevelopable from developers to ensure the land achieves a public purpose (e.g. storm water management or trail development) without creating inappropriate liabilities for the local government (e.g. slope instability, flooding or interface fire hazards).

Local governments also need to consider their duty to warn members of the public who may be exposed to a hazard (FOIPPA Sec. 25) including known hazards adjacent to trails systems. This duty can be addressed through proactive disclosure of engineering reports and appropriate signage at trail heads, or operational actions such as maintenance or trail closures. Local government also have a duty to protect local government infrastructure. Such infrastructure often supports public health and welfare, therefore proactive maintenance or capital improvements take-on a special importance when addressing hazardous situations.

Council-adopted maintenance policies are often cited as progressive ways to reduce a local government’s liability. However, maintenance policies that describe “realistic” service levels (i.e. no preventative maintenance) can be politically challenging for Councils especially when facing increasing public expectations. Once a policy decision is made a duty arises at the operational level. Therefore, staff must develop and consistently apply “call for service” and “inspection” systems that document staff actions in response to community complaints where required. An additional method to reduce potential liability for the local government is the placing and maintaining appropriate signage at trail heads. Section 3.3 (c) of the *Occupiers Liability Act* specifically reduces a local government liability when trails are signed “Recreation Trail”.

The following list summarizes the topics that should be considered by staff and Council when responding to hazards on public property:

- The degree of risk to safety of persons and property
- The cost of mitigation measures and their potential effectiveness at eliminating or reducing the natural hazard
- Budgetary constraints
- Degree of potential exposure to the local government
- Whether the natural hazard originates on the local government’s land or other’s land
- Whether or not the natural hazard in question arises naturally or is being made worse as a result of the local governments actions
- Whether or not adjacent property owners have the ability to undertake measures themselves on their property to deal with the natural hazard.
- Whether or not there are other parties or other levels of government that should take responsibility in whole or in part for the mitigation
- The adverse effect of mitigation measures on the natural environment.

Land Acquisition

Local governments may acquire the right or use and occupy land through a number of means. The following section describes some of the most common land acquisition tools used by local government for the development of trails and paths.

The most common method to acquire land is through a property purchase negotiation between a private land owner or the Crown and the City. Often a third party may be involved in the negotiations. Third parties may include a land trust or community groups who wish to see lands preserved or maintained for environmental or recreational benefits.

Local government will also commonly negotiate for an interest in land at the rezoning stage of development. The local government interest is typically secured through a Section 219 covenant which prevents certain types of development activity over a portion of the land thereby reducing the potential future land acquisition costs. Limitations of this tool include:

- (1) it does not obligate the owner to dedicate the trail, nor does it ensure a particular price (Actually securing dedication requires an option to purchase)
- (2) if the owner fails to follow the covenant the local government's only recourse is to seeking a court order or court-awarded damages which may be difficult to recover, and
- (3) failure to enforce the covenant in a timely fashion once a breach is discovered by the local government may jeopardise the covenant's future enforceability.

Other issues for a local government to consider with Section 219 covenants include:

- (1) having covenant templates prepared in advance by a solicitor to ensure consistent wording and enforceability,
- (2) adopting appropriate bylaw fees in advance to recover the local government's costs to review legal documents prepared by the developer's solicitor,
- (3) including wording describing the development review process that triggered the need for the covenant, and objectives the covenant is trying to achieve, to reduce misinterpretation by future Council's, staff, and courts,
- (4) obtaining a priority agreement over other charges on the legal title (e.g. lease or mortgage holder),
- (5) ensuring the local government has received proof that the covenant has been registered on the legal title prior to scheduling Final Reading of the associated bylaw (a lawyer's undertaking is not the same), and
- (6) amendment or discharge of the covenant may necessitate a public process similar to the zoning bylaw amendment.

Benefits of using a Section 219 covenant include enabling development to proceed while securing a local government's long-term interest in the property, and indemnity for the local government.

Another commonly used method for local governments to acquire land for trail development is through subdivision. Sec. 75 (1) of the *Land Title Act* requires the owner of the land being subdivided to provide without compensation a sufficient highway to provide necessary and reasonable access to all new parcels, and through the land being subdivided to lands beyond or around the subdivided land. The term "highway" includes paths, trails, walkways and bridges. This can also include upgrading existing paths lying beyond or around the land or via off-site servicing powers of s. 939 of the *Local Government Act*. Sec. 75 of the *Land Title Act* also includes provisions enabling an Approving Officer to require public access to bodies of water.



It is important for local government to adopt OCP objectives and policies, as well as subdivision & development standards for works and services to assist the Approving Officer in their role. Tip: Land developers may suggest that the trail dedication is part of their 5% park land dedication required under the *Land Title Act* (certain exceptions apply). However, as noted previously the authority to require the dedication of paths, trails, and walkways is a separate power.

With the adoption of the *Community Charter* all lands in a municipality that is dedicated as park or public square by subdivision plan, reference plan, or explanatory plan will be vest in the municipality (S. 29), and applies to all Crown owned park within the municipality that was previously dedicated by subdivision, reference or explanatory plan. A municipality may only dispose of such land by bylaw with approval of the electors and only in exchange for other land suitable for park or public square or for money to be deposited in a park land acquisition reserve fund.

Trails and paths will typically be secured through a statutory right of way as a condition of subdivision approval. An easement is another tool commonly used to address access interests between private property owners for lands that do not have access directly to a highway. Such agreements should address the possibility of further subdivision. Local governments and the Approving Officer are often named in the document simply so it is not discharged or modified without consent. The *Guide for Approving Officers for Local Governments* (5th Ed.) includes templates that can be modified for a particular purpose.

A less common, but effective method of land acquisition is through private donation. There are certain incentives and benefits that may entice different private land owners to donate land for trail development. It is important to be sensitive to these interests during negotiation. For example, one land developer may be enticed by the Ecological gifts programs because of the potential for tax credits, while another may wish to memorialize a loved-one through naming rights.

The Ecological gift program provides a donator with a tax benefit for donated lands that have been assessed and certified for its environmental values. Gifts that do not meet the criteria will also be eligible for charitable tax credits, at the standard rates, but subject to capital gains. A local government should suggest that the potential donator seek advice from their accountant or lawyer. Additionally, local governments should pursue their own due diligence on the lands proposed for donation to avoid accepting land with liabilities including contaminated sites or hazardous conditions.

Other creative methods of donation should be explored including lease back provisions that allow an owner of private property to donate and lease back all or a portion of their land. Finally, some donators may wish to give gifts of residual interest (life estate) which give the right to use the property for a specified length of time. Sometimes until death or may be a specified time limit