McElhanney

CANADA BEST MANAGED COMPANIES

City of Quesnel
Active Transportation Plan: 2025 Update

February 2025

EXECUTIVE SUMMARY

Situated in the traditional territory of the Lhtako Dene Nation, and surrounded by Lhoosk'uz Dene Nation, Nazko First Nation and ?Esdilagh First Nation, Quesnel is a vibrant community with a population of close to 10,000 residents, and another 13,000 in the surrounding region. The city provides abundant opportunities for indoor and outdoor recreation, much of which are connected by a strong and integrated pathway network (i.e. sidewalks, trails, bike lanes, etc). The City of Quesnel has built this network over many years, especially following the development of the *Active Transportation Plan* (ATP) in 2016.

To continue the work from the original plan, and help the community realize its potential for greater use of the active transportation modes (walking, cycling, transit), the City has commissioned this formal update to the *Active Transportation Plan*. This update included (a) community engagement; (b) detailed analysis of the pathway network; (c) revisiting the pathway standards in consideration of the latest provincial guidelines (e.g. *BC Active Transportation Design Guide*); and (d) a new list of recommendations for pathway improvements, supporting policies, and programs.

The community engagement was comprised of meetings with stakeholders, an online public survey (with 62 respondents), and *Vertisee* (an interactive online tool enabling respondents to add comments directly into a GIS map of the city; see right). The key findings of the community engagement were:

- 92% of survey respondents considered themselves to be users of the active transportation system in Quesnel, which was a much higher percentage than the survey for the 2016 ATP.
- Almost half of the survey respondents expressed satisfaction with the system, and many cited the Riverfront Trail System as a key asset.
- In general, survey respondents were using active transportation more often than in 2016.
- The main reasons for using active transportation were listed as accessing the trails/parks, shopping/Downtown, and accessing the local neighbourhoods.
- Most of the residents used active transportation less often in inclement/winter weather.
- The scenery/natural environment was considered to be the primary attraction for active transportation users, followed by exercise, and accessing key destinations.
- Weather was considered the biggest deterrent to active transportation, followed by safety concerns, lack of facilities, and system maintenance.
- Respondents desired more sidewalks/pathways, improved safety, increased winter maintenance, and more benches and bicycle parking facilities.
- In general, transit was very underutilized, with respondents citing the desire for more shelters, better schedule information, improved security, and improved routes/schedules.

The pathway system in Quesnel was visited, photo-documented, reviewed, and analyzed in detail to determine how and where new connections were needed. This ground-level evaluation was supplemented by network analysis in GIS to identify missing links that are needed to connect key active transportation origins and destinations. These were then compared to updated design standards and criteria for the various pathway facilities that could be applied to the network.

The key recommendations of the Active Transportation Plan were as follows:

Active Transportation Infrastructure

There are 19 short-term projects (0-5 year horizon), 13 medium-term projects (5-15 year horizon), and 3 long term projects (beyond 15 year horizon) recommended for the City's consideration, as budget permits. These are listed in Tables 9 to 11 in the report, and include:

- 7 paved roadside Multi-Use Pathways (MUP), with three advanced to conceptual design.
- 4 paved off-road Multi-Use Pathways.
- 2 gravelled off-road trails
- 3 bike lane projects
- 11 shared lanes on roadways
- 3 sidewalk improvements and associated intersection improvements
- 5 crosswalk improvements, including signalized crossings, RRFBs, and signed/painted.

Funding assistance for these recommended pathway improvements could be derived from numerous sources, including senior government grants, contributions from local developers, and other partnerships and sponsorships.

Supporting Policies and Programs:

The infrastructure improvements should be complemented by supporting policies and programs as follows:

- Adopt planning/development policies and new design standards to promote and guide the implementation of more active transportation infrastructure.
- Strategically inspect and maintain the active transportation system with both active (City led) and passive (user reporting) systems.
- Provide education about active transportation, rules, etiquette, and wayfinding.
- Conduct marketing programs to promote active transportation, such publishing maps of the pathway network, and hosting promotional events.
- Implement enforcement initiatives as required to ensure safety and etiquette is maintained on the pathway system.
- Coordinate with other agencies, partners, and road authorities to create an integrated pathway network within and outside the city limits.

The City may consider additional study following the adoption of this ATP, including detailed trail designs, crosswalk reviews, school/playground zone reviews, and additional transit planning.

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1 INTRODUCTION

1.1 BACKGROUND

Quesnel sits in the traditional territory of the Lhtako Dene Nation, and is surrounded by Lhoosk'uz Dene Nation, Nazko First Nation and ?Esdilagh First Nation. Nestled west of the Cariboo Mountains within the Cariboo Regional District of British Columbia, the city is situated at the confluence of the Quesnel River, Fraser River, and Baker Creek. While the gold rush and forestry sector have played a pivotal role in shaping the community's development (and forestry remains a key economic driver), Quesnel has since grown into a vibrant municipality with a population of close to 10,000 residents within its 36-square-kilometre boundary (Figure 1). An additional 13,000 people reside in the surrounding region and use the city as a service centre.

Figure 1: Downtown Quesnel and Fraser River

Quesnel's connectivity is supported by a robust transportation network, including Highways 97 and 26, a municipal airport, BC Transit services, and an active transportation network, all enabling movement within and beyond the city. Outdoor recreation enthusiasts are drawn to Quesnel's proximity to breathtaking parks, abundant wildlife, and diverse opportunities for adventure. The nearby Hallis Lake Cross-Country Skiing Facility, Quesnel Bike Park, and numerous trail networks further enhance Quesnel's appeal as a year-round destination for nature-based recreation.

Quesnel's active transportation network is primarily composed of trails and pathways that provide safe, accessible, and attractive routes for pedestrians, cyclists, and users of small-wheeled devices and mobility aids. The City has a long-standing commitment to promoting active transportation, recognizing its wide-ranging benefits for the environment, community health, and the local economy.

A prime example of this commitment is the Riverfront Trail system, which offers inclusive access for people of all ages and abilities. Building on this foundation, the City continues to prioritize the development and enhancement of its active transportation infrastructure and connections. New and upgraded routes are designed with a focus on safety, accessibility, and connectivity, supporting a comprehensive network that encourages active, sustainable, and community-focused mobility.

Despite this investment in the active transportation system, the census data in Table 1 indicates that over 90% of commuters in Quesnel use the personal automobile, either as a driver or a passenger. Less than 10% of local commuters use transit or active transportation modes. The commuting modes shifted slightly more toward personal automobiles in 2021 versus 2016, but this trend was likely influenced by the reduction in the total number of commuters reported in the census data. In comparison to the statistics for BC as a whole, there is a clear opportunity for more growth in active transportation usage in Quesnel.

Table 1: City of Quesnel Primary Commuting Mode

Main Mode of Commuting	2016 Census		2021 Census		BC Avg
	Amount	Percent	Amount	Percent	Percent
Car, truck, van – as a driver	4,260	83%	3,120	85%	74%
Car, truck, van – as a passenger	345	7%	260	7%	6%
Public Transit	80	2%	35	1%	9%
Walked	300	6%	200	5%	7%
Bicycle	70	1%	30	1%	2%
Other Method	60	1%	45	1%	2%
TOTAL	**5,120**	**100%**	**3,690**	**100%**	**100%**

Source: Canada Census

Quesnel also has the advantage of a smaller, compact urban core, with the Downtown within a comfortable walking distance from the surrounding residential neighbourhoods. This is reflected in Table 2, which shows that a significant majority of local commuters commute less than 15 minutes to their destination. This is more than double the average for the province. Therefore, with continued and strategic investments in active transportation infrastructure (and the promotion thereof), there is a strong potential to shift more residents to active transportation modes in Quesnel.

Table 2: City of Quesnel Commuting Destination

Commuting Duration	2016 Census		2021 Census		BC Avg
	Amount	Percent	Amount	Percent	Percent
Less than 15 minutes	3,345	65%	2,645	72%	32%
15 to 29 minutes	1,295	25%	720	20%	34%
30 to 44 minutes	205	4%	120	3%	20%
45 to 59 minutes	35	1%	80	2%	7%
60 minutes and over	230	5%	125	3%	7%
TOTAL	**5,120**	**100%**	**3,690**	**100%**	**100%**

Source: Canada Census

In 2016, the City commissioned a formal Active Transportation Plan for Quesnel. The plan involved community engagement, research, and analysis to identify a series of recommended network improvements, as well as supporting policies and other initiatives to facilitate and encourage active transportation in Quesnel. Since 2016, many of these improvements have been implemented/constructed.

To guide strategic improvements over the next 10-15 years, the City has commissioned a formal update to its Active Transportation Plan. Building on the foundation of the 2016 plan, the updated plan maintains a strong focus on pedestrian and cycling infrastructure while also incorporating considerations for local transit services and connections to the active transportation network.

Figure 2: Reid Street, Downtown Quesnel

1.2 OBJECTIVES

The objectives of the update to the Quesnel Active Transportation Plan are to expand on the 2016 ATP, and specifically:

1. To identify the local active transportation issues, opportunities, and priorities through community engagement, site visits, and network analysis;

2. To increase the accessible connections around the city;

3. To update the prioritized list of improvements to the active transportation network, especially those which may be the subject of future grant applications;

4. To complete preliminary designs for three major pathways in the Quesnel network;

5. To recommend policies and programs necessary to facilitate, manage, maintain, and promote active transportation as both a viable and appealing mode in Quesnel.

1.3 STUDY AREA

The study area for the Active Transportation Plan includes all areas within the boundaries of the City of Quesnel, as shown in Figure 4, and all the roads, sidewalks, pathways, and walkways therein.

The study also includes consideration of Highway 97 and Highway 26 where appropriate. However, these are both under the jurisdiction of the BC Ministry of Transportation and Transit (MoTT).

Figure 3: Fraser River Foot Bridge

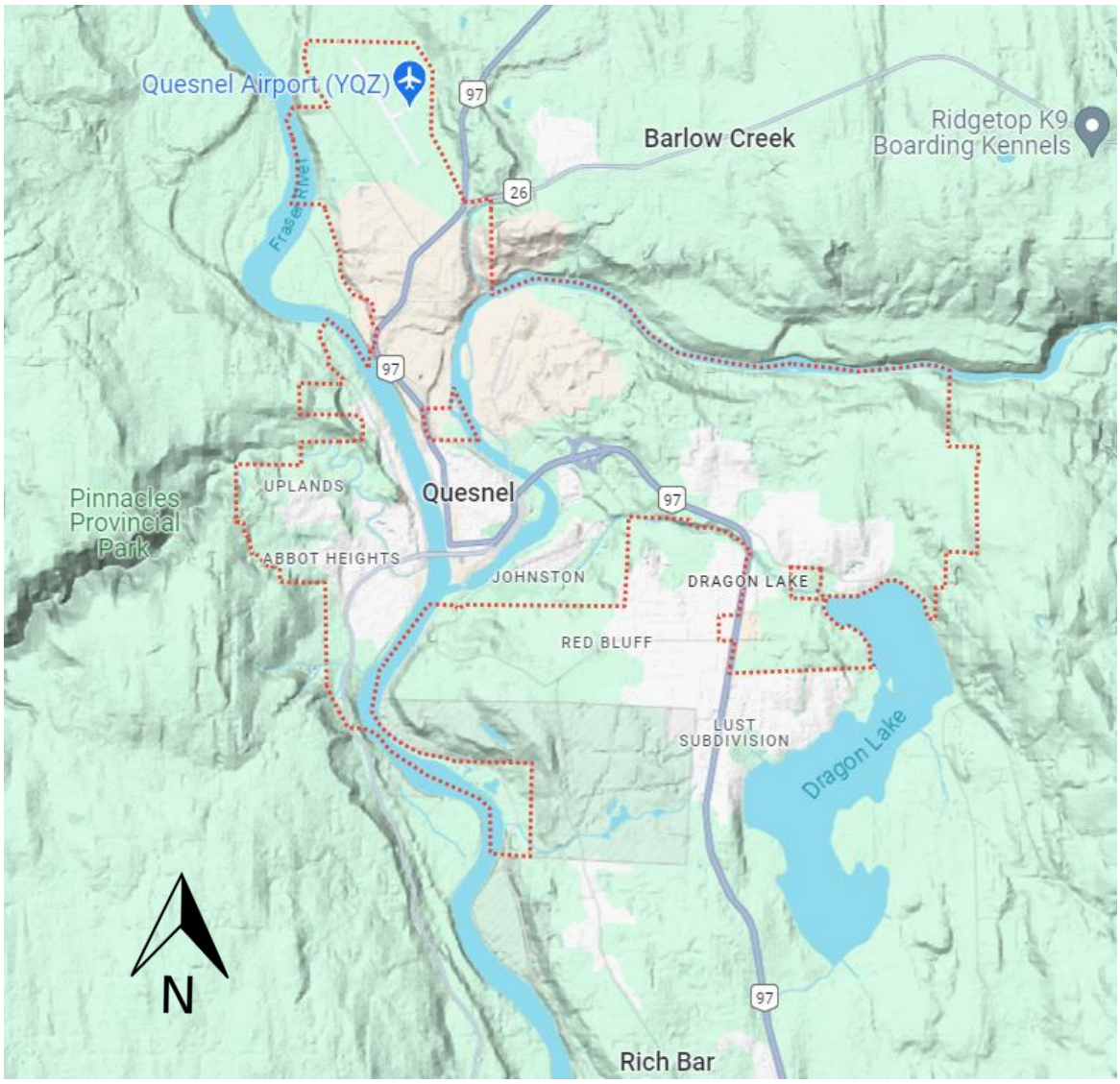


Figure 4: Quesnel Active Transportation Plan Study Area

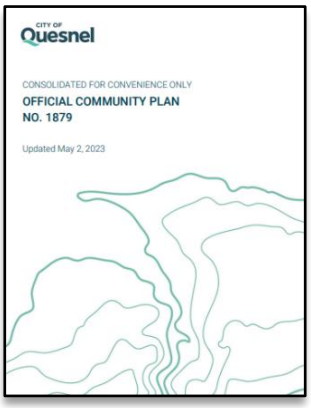
2 LITERATURE REVIEW

A number of key documents were used to guide the development of the Quesnel Active Transportation Plan. These were grouped according to local, provincial, and national context, as summarized below and referenced in Section 9: References.

2.1 LOCAL CONTEXT

2.1.1 City of Quesnel Official Community Plan

The 2023 Official Community Plan outlines the following relevant policies and objectives:



1. Support the Active Transportation Routes outlined in the Active Transportation Plan (2016).
2. Encourage the use of biking and walking systems to lessen the impact of automobile and truck traffic, especially within the Downtown Core.
3. Provide short-term and long-term bicycle parking facilities on public lands.
4. Develop a signage program for cycle routes to provide information about the route itself and facilities and services, directions, potential hazards and rules and regulations.
5. Implement shared use signage and pavement markings to accommodate multiple modes of transportation within a single area (i.e. Share the Road sign).
6. Support the implementation of a “Safe Routes to School” program.
7. Adhere to the long-term pedestrian and bicycle network plans outlined in the City’s Active Transportation Plan (2016).
8. Support pedestrian enhancement in areas with high pedestrian activity, such as in the Downtown core through the addition of planters, patios, benches, and public art along the transportation routes.
9. Support the implementation of traffic calming techniques along the interface of roads and active transportation routes.
10. Increase the number of safe crossings as outlined in the Quesnel Active Transportation Plan (2016).
11. Encourage additional lighting and enhance natural surveillance (Crime Prevention Through Environmental Design, CPTED) along active transportation routes.
12. Explore further options for timely snow removal on public trails, sidewalks, and bicycle lanes throughout the city.
13. Develop and support active transportation education and awareness events and programs.

2.1.2 City of Quesnel Wayfinding and Placemaking Community Workshop

The 2017 Wayfinding and Placemaking Community Engagement Workshop outlines the following relevant policies and objectives:

1. Provide better information and guidance for locals and visitors.
2. Encourage lengthier dwell times among tourists and passing travelers.
3. Increase civic pride among local residents.
4. Create a plan for iconic places and or structures that encourage gathering and go on to identify as landmarks unique to the City of Quesnel.

Figure 5: Wayfinding and Placemaking Areas

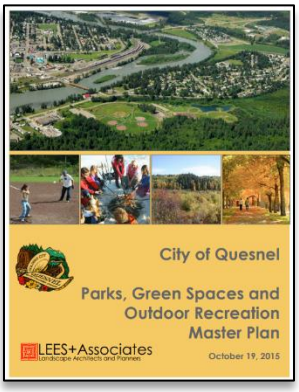
2.1.3 City of Quesnel Trail Report and Strategy

The 2022 Trail Report and Strategy document outlines the following relevant policies and objectives:

1. Create formal plans and strategies that tie together active transportation corridors with trail networks.
2. Incorporate signage and mapping to tie in active transportation to trail networks.

Figure 6: Wonderland Trails

2.1.4 City of Quesnel Parks, Green Spaces and Outdoor Recreation Master Plan



The 2015 Parks, Green Spaces and Outdoor Recreation Plan outlines the following relevant policies and objectives:

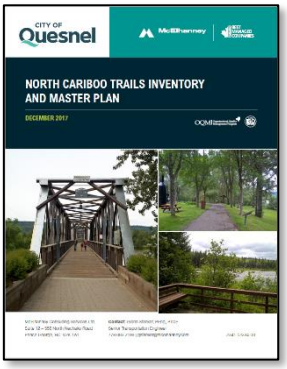
1. Develop a volunteer Active Transportation and Cycling Advisory Committee with a mandate to reduce transportation infrastructure and promote self-propelled activities as part of healthy living.
2. Improve trail safety at intersections between trails and high-volume roads. Consider signage and simple surface treatments as a cost-effective measure to denote safe crossing locations. These could become part of a broader signage and branding program for the trails system.
3. Ensure a range of steepness/abilities to ensure that all residents can access the trail system (children, those with limited mobility or strollers, seniors).
4. Consider winter sports on trails, designate and maintain for winter sport use (snowshoeing, cross-country skiing), in addition to ploughing key pedestrian trails.
5. Expand the trail network through West Quesnel, including a loop trail, utilizing sidewalk and signage where a formal trail is not feasible, to the Quesnel Youth Soccer Complex.
6. Complete the existing trail connection on N. Star Road by ensuring consistent sidewalk.

2.1.5 City of Quesnel Integrated Community Sustainability Plan

The 2013 Integrated Community Sustainability Plan outlines the following relevant policies and objectives:

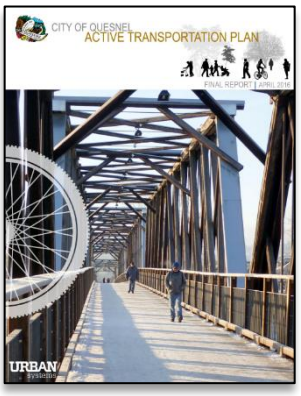
1. Quesnel's transportation system is accessible by all users.
2. The transportation system is convenient, cost-effective and affordable, and allows for efficient and safe movement of people, vehicles and goods.
3. It is easy to get around Quesnel year-round using a variety of transportation options, including non-motorized modes.
4. Excellent access to regional and international travel supports a robust and diverse economy.
5. The transportation system uses increasingly sustainable technologies.
6. Existing roads and transportation infrastructure are used efficiently, reducing the need for new roads encroaching on natural areas.

2.1.6 North Cariboo Trails Inventory and Master Plan



The 2017 Trails Master Plan largely focussed on the recreational trail systems within and around Quesnel. However, the document did stress the importance of integrating the different pathway networks. In particular, residents and visitors to Quesnel should have opportunities to use the local active transportation network to access the nearby recreational trail systems.

2.1.7 City of Quesnel Active Transportation Plan



The 2016 Active Transportation Plan outlines the following relevant policies and objectives:

1. Expand and enhance the pedestrian and cycle networks
2. Improve walking and cycling access to existing bridges and overpasses.
3. Provide improvements to existing pedestrian and bicycle crossings at intersection locations.
4. Provide lighting along pathways, walking and bicycle routes where appropriate.
5. Consider the adoption of a Sidewalk Maintenance Policy.
6. Ensure new bicycle routes are designed to facilitate snow removal/storage and drainage
7. Provide accessible curb ramps at all intersections.
8. Consider developing Accessibility Guidelines for walking and cycling facilities.
9. Review pedestrian clearance intervals to ensure that the time required for a person to walk across the intersection is sufficient to avoid conflicting with traffic.
10. Develop requirements for short-term and long-term bicycle parking and other end-of-trip facilities for new developments.
11. Work with BC Transit to inventory the existing bus stops and identify priorities for shelters and accessibility upgrades.
12. Continue to support the installation of public amenities such as planters, patios, benches, and public art where appropriate, particularly in the City's downtown.
13. Develop and support active transportation education and awareness programs and initiatives within the City.

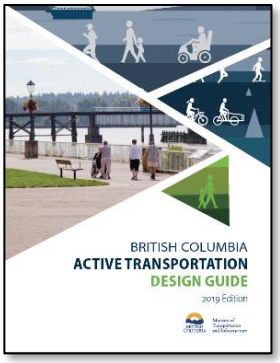
Since the completion of the Active Transportation Plan, the following active transportation system improvements have been completed by the City:

- McLean Street, Bowron Avenue to Shepherd Avenue: new sidewalk
- Shepherd Ave, Highway 97 to Kinchant Street: shared lane signage and letdowns
- St Laurent at Jones Street: sidewalk improvements
- Johnston Avenue/North Star Road: shared lane signage/sharrows
- Moffat Avenue: shared lane signage/sharrows
- North Fraser Drive, Edkins to Fuller: Sidewalk widening and reconstruction
- Sugarloaf Park: pathway paving
- Reid Street / McNaughton Ave: shared lanes
- Vaughan Street, Shepherd Ave to Barlow Ave: shared lanes
- Doherty Drive, Anderson Drive to Wilkinson Street: bicycle lane
- Barlow Avenue: Multi-Use Pathway connection, parallel to Gary Avenue
- St Anne's Pathway to Two Mile Flat: partial construction
- Reid Street, Shepherd Avenue to Carson Avenue: sidewalk enhancements
- Paved shoulders on Westland Rd, Coach Rd, Neighbour Rd, and Sanderson Rd.
- Safety improvements, such as bridge and overpass enhancements/rehabilitation, pathway lighting, and a new crosswalk on Nadeau Street.

The City has also implemented a number of programs and initiatives to support active transportation, such as routine pathway inspection; enhanced snow removal on bike routes; and the development and implementation of guidelines for improved accessibility, bicycle parking/end-of-trip facilities, bus stop infrastructure, and wayfinding for pathways.

2.2 PROVINCIAL CONTEXT

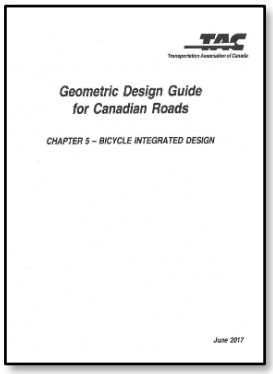
2.2.1 Active Transportation Design Guide for BC



The 2019 *Active Transportation Design Guide* from the BC Ministry of Transportation and Infrastructure covers the latest guidelines for the design of pedestrian, cycling, and multi-use facilities in British Columbia. The guidelines explain what facilities are appropriate for use in the context of the adjacent roadways, traffic volumes, and traffic speeds. The guide also includes advice on the minimum and desirable widths, buffering, grades, cross slopes, drainage, sight distances, surface material, and traffic control for the application of sidewalks, walkways, trails, bike lanes, and shared lanes. This guidance is incorporated into the review of pathway standards in Section 4: Standards and Guidelines.

2.3 NATIONAL CONTEXT

2.3.1 Geometric Design Guide for Canadian Roads

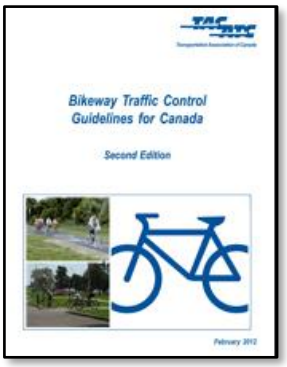


The fifth chapter of the *Geometric Design Guide for Canadian Roads* from the Transportation Association of Canada explains the design principles, user needs, and various facility types for cycling in Canada. The guidelines also include criteria to support the design of cycling facilities around roadways, transit facilities, and bridges. Additional advice is provided about lighting, bicycle parking, and maintenance practices.

The sixth chapter provides guidance about integrating pedestrian modes into the transportation system, with advice on preferred dimensions of pathways, buffers, and crosswalks. The eleventh chapter, added in 2020, provides guidance on special roads, which includes recreational and winter roads.

This guidance is incorporated into the review of Quesnel's pathway standards in Section 4: Standards and Guidelines.

2.3.2 Bikeway Traffic Control Guidelines



The *Bikeway Traffic Control Guidelines* from the Transportation Association of Canada provide detailed design guidance on the layout, paint marking, and signage for bike lanes and other on-street cycle facilities. The resource stresses the importance of careful design and installation of traffic control devices related to bicycles in order to maximize safety and effectiveness.

The guidelines within this 2012 document are expected to evolve with time as practices improve. Note that many guidelines are applicable to off-road bikeways as well as on-road; however, the focus is on bikeways within the public right-of-way. Typical installation diagrams are included for reference and can be found in Section 8: Typical Applications.

3 COMMUNITY ENGAGEMENT

To ensure the Active Transportation Plan addressed concerns and opportunities identified by local residents and stakeholders, a comprehensive community engagement process was completed. The results are discussed below.

3.1 STAKEHOLDER CONSULTATION

The project team met with local stakeholders in Quesnel at Council Chambers on August 17, 2023. The stakeholders included representatives from City Council, the Downtown Association, the local Business Improvement Associations, and city staff. The following comments, thoughts, and ideas were collected:

1. Wade Avenue is a candidate for a pathway link, but has parking conflicts adjacent to the school.

2. The Johnston Bridge is used for recreational purposes, and as a route to school. The bridge requires a better link for pedestrians and cyclists, especially to improve connectivity to Downtown and the adjacent campground. The new pedestrian crossing flashers at the Davie Street intersection have helped.

3. A better/safer crossing is needed at the Moffat Bridge intersection.

4. The Quesnel River Bridge (Highway 97) is used heavily for utilitarian purposes. The pathway is narrow and should be improved when the bridge is replaced by MoTT.

5. Maple Drive improvements could be mentioned in the report, even though it is outside the City Limits.

6. Roddis Drive and Wilkinson Street (around Cariboo Fields) appears to have the width for a Multi-Use Pathway.

7. Flamingo Street is a key route to school, and should be considered on the plan.

8. Lewis Drive has a parallel off-street pathway. This is also a bus route.

9. A formal pathway is needed to Two Mile Flat. Employees can use an existing pathway through the industrial property.

10. Lighting and better maintenance would be beneficial on the Bryce Trail.

11. Juniper Road is a priority for a better/safer pathway for active transportation, potentially with traffic calming. This would also benefit the bus stops on the road.

12. A connection between Quesnel Hydraulic Road and the Bryce Trail is needed.

13. A connection between Gook Road and Balsam Avenue would be beneficial, although could be considered a lower priority.

3.2 PUBLIC INPUT

The public was invited to share their ideas and concerns about the active transportation system through an online survey and through the *Vertisee* GIS system.

3.2.1 Public Survey

An online public survey was hosted on the City's website between June 25 and July 24, 2023. The survey questions were similar to those in public survey for the 2016 Active Transportation Plan, thus allowing the changes in feedback and perceptions to be examined.

The survey generated 62 responses, of which 17 were male and 42 were female. This was somewhat lower than the response to the previous survey, which generated 96 responses.

As with the previous survey, the respondents were evenly represented across the different age groups between 25 and 65, with only four respondents younger than 25. Based on the postal codes, there were responses from most of the neighbourhoods of the city (Figure 7). There were 15 respondents living outside the City Limits south of town, many of whom requested safer conditions for pedestrians and cyclists on Maple Drive, etc.

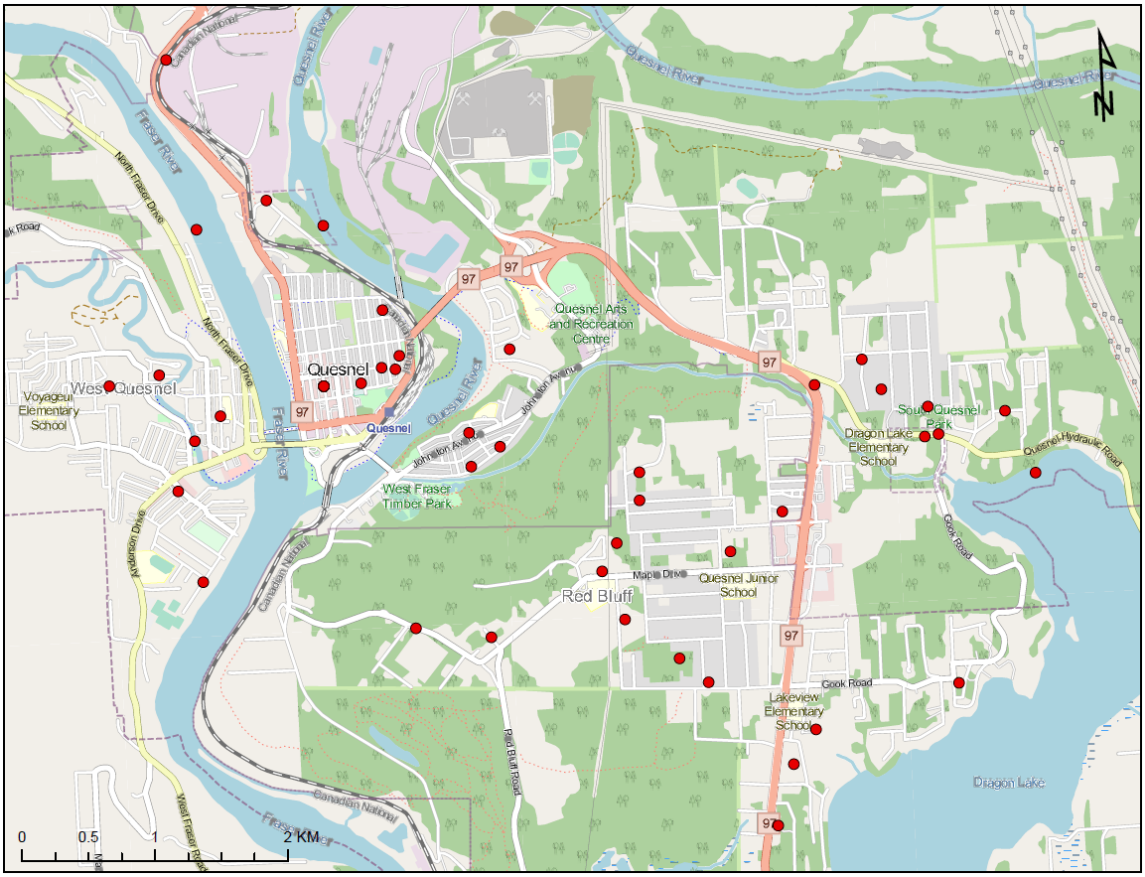


Figure 7: Postal Code Locations of Public Survey Respondents

The key findings of the survey are summarized below. The complete survey results are provided in Appendix A.

1. 92% of respondents considered themselves to be users of the active transportation system in Quesnel, including the pathways, cycle routes, and transit. This was much higher than in 2016, when only half of the respondents considered themselves to be system users.

2. Regarding the level of satisfaction with the various modes of active transportation system in Quesnel:
   a. Walking: 48% satisfied/very satisfied; 23% neutral; 27% unsatisfied, indicating a largely favourable impression, esp. with the Riverfront Trails.
   b. Cycling: 34% satisfied/very satisfied; 24% neutral; 40% unsatisfied/very unsatisfied, indicating the need for more improvements for cyclists.
   c. Transit: 15% satisfied/very satisfied; 66% neutral; 18% unsatisfied/very unsatisfied, reflecting the low use of transit in Quesnel.

3. Regarding the typical duration of active transportation trips in Quesnel:
   a. Walking: 44% were 30-60 minutes, with another 24% longer than an hour; this represented a shift to longer walking trips since the 2016 survey.
   b. Cycling: 34% were 30-60 minutes, with another 11% longer than an hour; this represented a shift to shorter cycling trips since the 2016 survey.
   c. Transit: 82% of respondents indicated they did not use local transit.

4. Regarding the frequency of active transportation trips in Quesnel:
   a. Walking: 44% were 3-5 times/week, with another 26% walking more than 5 times/week; this indicated more frequent walking trips since 2016.
   b. Cycling: 23% were 3-5 times/week, with another 11% more than 5 times/week; this is slightly higher than the results from the 2016 survey.
   c. Transit: 90% of respondents said they never use local transit.

5. Regarding the purpose of active transportation trips in Quesnel:
   a. Walking: the most common responses were exercise (31%), dog walking (21%), recreation/leisure (19%), and shopping/errands (18%). Most of this is similar to 2016, although there has been a large increase in dog walking.
   b. Cycling: the most common responses were exercise (26%), commuting (18%), and recreation/leisure (18%). There were slight decreases in the amount of exercise and recreation trips, but an increase in commuters.
   c. Transit: 85% indicated “not applicable”.

6. Regarding the active transportation destinations in Quesnel:
   a. Walking: the most common responses were trails/parks (84%), shopping/ Downtown (65%), and local neighbourhood (58%); these were also the top three destinations for walking trips in the 2016 survey.

b. Cycling: the most common responses were trails/parks (61%), local neighbourhood (34%), and work/school (31%); the work/school cycling commuters have increased substantially since the 2016 survey.
c. Transit: 89% indicated “not applicable”.

7. Regarding the effect of snow on local use of active transportation modes:
   a. Walking: 63% of respondents took fewer trips, but 35% were not affected. These results were similar to those in the 2016 survey.
   b. Cycling: 66% of respondents took fewer trips; 29% indicated “not applicable”. Fewer cyclists were deterred by snow than in 2016.
   c. Transit: 82% indicated “not applicable”. The remainder were evenly split between taking fewer trips and the same amount of trips.

8. Regarding local impressions of the different active transportation modes:
   a. Walking: 55% of respondents use the system as often as desired, but 39% want to walk more often. Compared to the 2016 survey, more respondents are now walking as often as they like.
   b. Cycling: 29% of respondents use the system as often as desired, but 42% want to cycle more often. Compared to the 2016 survey, more respondents are now cycling as often as they like.
   c. Transit: 58% of respondents indicated no interest in the local transit system. Only one respondent wanted to use transit more often.

9. Regarding what respondents liked most about active transportation in Quesnel:
   a. Walking: 76% of respondents appreciated the scenery/natural environment, 65% said the trail system, 61% said the exercise, and 27% said the connections to key destinations. The top responses were similar to the 2016 survey, except that appreciation for the exercise benefits of active transportation has increased substantially.

b. Cycling: 58% of respondents appreciated the exercise, 56% said the trail system, 53% said the scenery/natural environment, and 26% said the access to key destinations. The trail system and scenery/natural environment were the top responses in 2016, with very few citing exercise.
c. Transit: although few respondents said they use transit, the responses indicated a general appreciation for the system's accessibility (31%), the feeling of safety (19%), and the access to key destinations (24%).

10. Regarding the perceived barriers to active transportation in Quesnel:
    a. Walking: weather was the top response with 61%, with other common responses being personal safety (45%), travel distance (40%), traffic safety (35%), lack of facilities/connectivity (24%), and maintenance (21%).
    b. Cycling: weather and traffic safety were the top responses (each 55%), with other common responses being personal safety (35%), lack of facilities/ connectivity (26%), travel distance (23%), and system maintenance (21%).
    c. Transit: the top two responses were travel time/distance and lack of facilities / connectivity, both with 26%.

11. Regarding what system improvements are desired by respondents:
    a. Walking: the top responses were more sidewalks/pathways (69%), better snow removal (50%), improved security/lighting (48%), better sidewalk maintenance (42%), traffic calmed streets (37%), and more benches/ rest stops (26%). These results were much different from the 2016 survey, which prioritized more crosswalks, accessibility, and wayfinding.
    b. Cycling: the top responses were more pathways (off-street (52%) and on-street (44%)), more bicycle parking (50%), traffic-calmed streets (40%), better bike lane maintenance (37%), better driver education (32%), and better snow removal (27%). These results were much different from the 2016 survey, which prioritized wayfinding, integration with transit, and cycling education.
    c. Transit: the top responses were more shelters (32%), better schedule information (29%), improved accessibility (23%), and improved security (21%).

The comments section of the survey included a number of observations and requests about the active transportation and transit systems in general. These are listed below, with the number in parentheses indicating how many respondents mentioned the issue:

- The transit system should be improved, with more frequency and coverage (3)
- Improved pedestrian pathways and crosswalks are needed, esp for school kids (1)
- Cycling does not feel safe in Quesnel, esp. when drivers don't obey the rules (3)
- More cycling infrastructure is desired, especially separated from the road (3)
- The river trail system and Bryce Trail are excellent, and appreciated (1)
- Maintenance of the trails is important, esp. snow removal (2)
- More secure bicycle parking/storage is needed (2)
- More promotions of cycling in Quesnel would be beneficial (1)
- Some sidewalks are too narrow, especially for passing other users (1)

There were also a number of specific requests for pathway improvements, as follows:

- Bike pathway north to Finning Road (Two Mile Flat) (3)
- Bike pathway west to the soccer fields (1)
- Bike pathways south to recreation centre (1)
- Bike pathway from Bryce Trail to Maple Drive School (1)
- Crosswalk across Hwy 97 from railway station to the Visitors Centre/Museum (1)
- Pathways connection from Red Bluff to Downtown (outside city limits) (2)
- Pathways/sidewalks along Maple Drive (outside city limits) (1)
- Pathways/sidewalks along Quesnel Hydraulic Road (1)
- Pathways/sidewalks on Reid St (1)

These pathway requests were considered in detail, and incorporated into the list of recommended improvements in Section 6, as appropriate.

3.2.2 Vertisee Interactive GIS Input

Concurrent with the online survey, residents were invited to provide their specific ideas and feedback about the existing active transportation network using an online GIS-based mapping system ("*Vertisee*"), which was accessible by both personal computer and smart phone. The feedback is shown in Figure 8, colour coded as follows:

- **Orange pins**: 41 locations where respondents had concerns or issues, largely about safety, traffic conflicts, or lack of connectivity.
- **Green pins**: 10 locations where respondents appreciated the existing features, which included the Riverfront Trails, the trail bridge across the Fraser River, and the trails around West Fraser Timber Park.
- **Blue pins**: 62 locations where respondents had ideas for improvements, such as new pathway connections and locations for bike racks.

Figure 8: Residents' Ideas and Feedback on Active Transportation

The comments and details for each pin are included in the GIS files provided to the City.

4 STANDARDS AND GUIDELINES

4.1 GENERAL PRINCIPLES

4.1.1 Pedestrian Facility Design

According to the guidelines from the Transportation Association of Canada (Ref 13), the preferred width of pedestrian facilities depends on the operating envelopes of the users in terms of activity, expected pedestrian volumes, shared modes, and accessibility. These range from a minimum width of 1.2 metres for a simple pathway to 1.8 metres for the safe passage of two opposing wheelchairs. Larger widths are needed for pathways shared with cyclists, etc. The operating envelopes for pedestrians are shown in Figure 9.

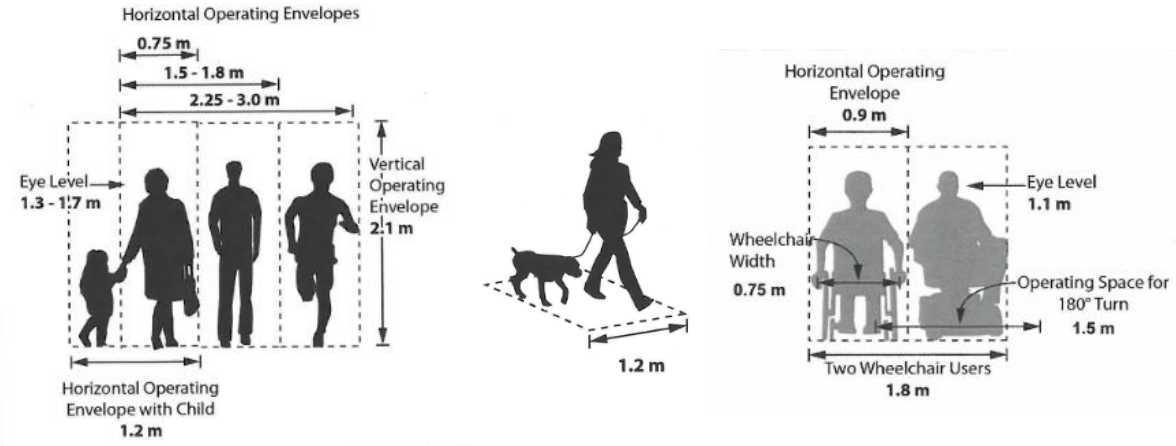


Figure 9: Pedestrian Operating Envelopes
Source: TAC Geometric Design Guide (2017)

4.1.2 Bikeway Facility Design

To maximize the potential use of the cycle network, the cycle pathways and facilities must be designed to accommodate users of all levels of confidence, experience, and ability. Based on the guidelines from the Transportation Association of Canada (Ref. 13), the operating envelope for a typical cyclist is approximately 2.5 metres high by 1.2 - 1.5 metres wide (Figure 10). This allows for variations in the cycle path, especially from less experienced cyclists or cyclists traveling uphill. An additional 0.5 metres offset should be provided around any obstacles. These dimensions form the basis for all pathway designs discussed in Section 6, including shared lanes, bike lanes, and separate pathways.

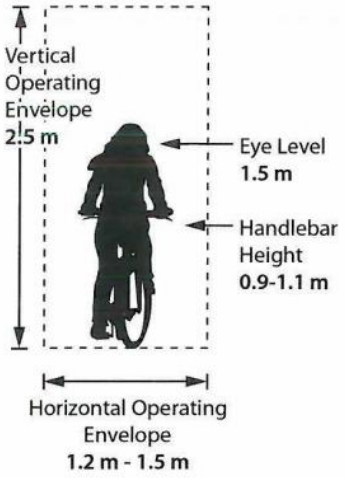


Figure 10: Cyclist Operating Envelope
Source: TAC Geometric Design Guide (2017)

To minimize the risks of cyclists colliding with fixed obstacles or other pathway users, sufficient sight distance should be provided on all facilities, as outlined in Table 3 (Ref.13).

Table 3: 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)

Grades on pathways and trails less than 4% are ideal for cyclists. On a grade of 4%, a typical uphill speed is 10 km/h, and downhill coasting speeds can reach 25 km/h. On grades of 4% to 6%, downhill coasting speeds can reach 40 km/h in some locations. Grades between 6% to 8% are considered steep but may be used if necessary. These steep grades will reduce uphill speeds to the minimum to maintain balance, and downhill coasting speeds can exceed 50 km/h. The practical upper limit for the grade of a bikeway is 8%. Beyond this grade, many cyclists will need to dismount and walk.

Figure 11: Smooth Curves on Bryce Trail

4.1.3 Safety and Security

The implementation of active transportation 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, pathway access points should be located in developed areas next to public parks, shopping centres, or residential developments. Many public amenities, including rest rooms, parking areas, and refreshment facilities, will already be in place.
- Visibility: Avoid the creation of dark and hidden areas, or having landscaping that may conceal threats;
- Illumination: Provide an appropriate level of lighting, especially at intersections, structures, and tunnels. Lighting design should follow the guidelines from the TAC *Guide for the Design of Roadway Lighting*.

Where appropriate and necessary, the active transportation facilities can also be complemented by wayfinding signage and other guidance / information (Figure 12).

Figure 12: Quesnel Bike Park Signage

4.1.4 Road Network

The Quesnel road network inherently comprises part of the active transportation system. Roads connect between walkways and pathways, and are frequently used by pedestrians and cyclists as a shared space.

Local and residential roads are particularly suited for active transportation users due to the lower traffic volumes and speeds. However, unless these roads form a key link in the active transportation system, they have generally been left off the designated network.

Collector roads are also suited to active transportation, and have advantages in connectivity to other routes and destinations. As collectors typically have higher volumes and speeds than local roads, they can be enhanced for active transportation by the implementation of traffic calming devices (e.g. curb extensions, speed humps, etc), improved accessibility (e.g. wheelchair ramps, etc), and 30 km/h regulatory posted speeds where appropriate.

Arterial roads are intended for the movement of large volumes of traffic at higher speeds. Therefore, active transportation on these roads generally requires a clearly designated space for users (e.g. bike lanes), or parallel off-street pathways.

4.2 CYCLE FACILITY DESIGN GUIDELINES

4.2.1 Off-Street Pathways / Multi-Use Pathways

The City of Quesnel has a significant network of off-street concrete and asphalt pathways and multi-use pathways (MUP) and trails through the developed areas of the town, much of which is outside of the road right-of-way. These invite a wide range of non-motorized users, including pedestrians, cyclists, skateboards, roller blades, and scooters. These pathways are generally designed with easy grades and smooth surfaces for the comfort and safety of users of all abilities (Figure 13).

Figure 13: Bryce Trail

In order to provide sufficient space to minimize conflicts between these users, both the Transportation Association of Canada (Ref. 12) and BC provincial guidelines (Ref. 1) suggest a minimum pathway width of 3.0 metres, with at least 0.6 metres of clearance to any adjacent obstacles. This width accommodates two opposing cyclists, based on the typical operating envelopes discussed in Section 4.1.2. On busier pathways, especially those requiring delineation between users and/or directions, a minimum pathway width of 4.0 metres is recommended.

To further clarify the intended usage of the off-road pathway network and minimize the potential for conflicts, the City could also continue to provide:

1. Signage outlining allowable uses of the pathways, as well as information on how to share the trail with others.

2. Barriers and/or bollards at pathway entrances to prevent access by unauthorized motor vehicles.

4.2.2 Boulevard Trails

Along roadways (and within the road right-of-way), the City can continue its pathway network with “boulevard trails” (Figure 14). These pathways may arguably be considered as wide sidewalks, except that (a) the widths should be at least 3.0 metres, ideally with a minimum 0.6 metre offset from the roadway; and (b) the pathways are available for shared use by pedestrians, cyclists, and small-wheeled users. Here also, a 4.0 metre width would be desirable for busier boulevard trails experiencing conflicts between users, which may warrant separation between users and/or directions of travel.

Signage is also recommended to clarify the use by cyclists.

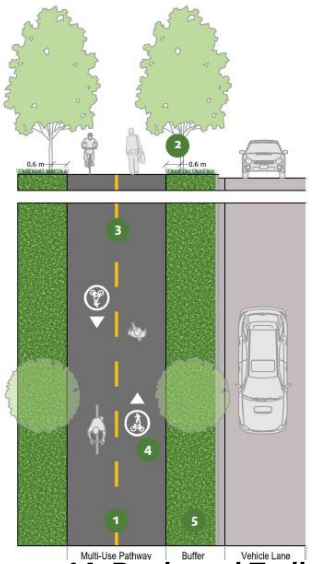


Figure 14: Boulevard Trail

4.2.3 Bike Lanes and Paved Shoulders

Bike lanes (i.e. cycle pathways within the paved road area) may be physically separated from the travelled roadway by paint lines or physical barriers. With the amount of snow clearing required in Quesnel during the winter months, physical barriers are not considered practical.

The desirable width for bike lanes is 1.8 metres of paved surface (not including the gutter width), delineated by a 100 – 200 mm white line. The minimum bike lane width on roads with traffic speeds of 50 km/h or less is 1.5 metres. The absolute minimum practicable width for bike lanes is 1.2 metres, which should only be used for short sections (<100 metres) in constrained situations. Bike lanes up to 2.1 metres may be considered on higher speed roads.

There are three types of painted bike lanes which may be used in Quesnel:

1. Buffered Bike Lanes: are separated from the travelled lanes by a painted/hatched buffer of 0.3 to 0.6 metres (Figure 15, left). The lane should be supplemented with white bicycle and diamond symbols, indicating the dedicated use.

2. Unbuffered Bike Lanes: have no painted buffer (Figure 15, right). These should also be supplemented with white bicycle/diamond symbols.

3. Bicycle Accessible Shoulders: are not officially designated bicycle lanes, insofar as they may be used for other purposes (e.g. pedestrians, temporary vehicle stops, etc). In this respect, they do not have any painted symbols.

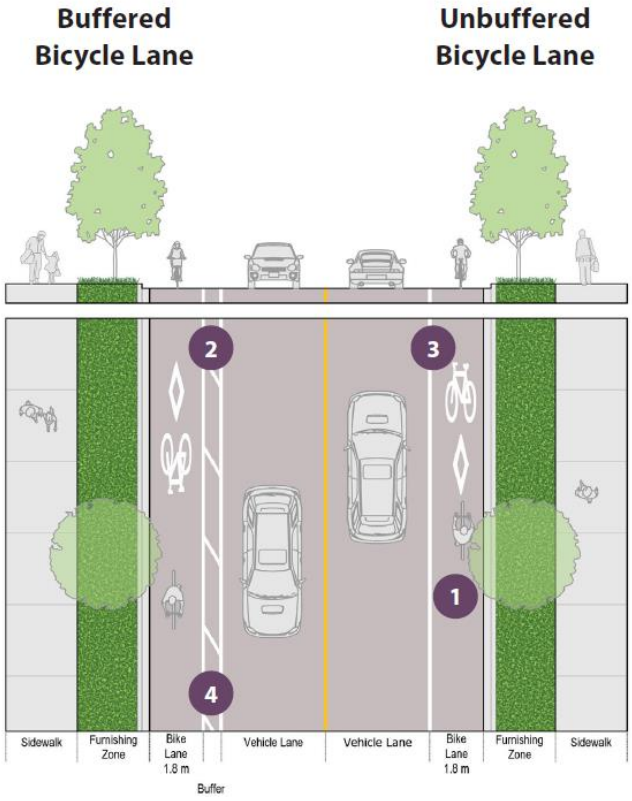


Figure 15: Painted Bike Lane Guidelines
Source: BC Active Transportation Design Guidelines

Bike lanes can be provided on any streets with sufficient width, as per the guidelines above. In many cases, the City may consider adding cycle lanes along major roads that also have the benefit of boulevard trails, thereby providing a faster alternative for experienced cyclists. However, the provision of these bicycle lanes may require the removal of any affected on-street parking to ensure these lanes remain clear and safe for users. This trade-off should be clarified for affected residents and business owners prior to implementation.

4.2.4 Shared Lanes

In many areas of the City, the roads do not have the necessary width to establish formal bike lanes, trails, or paved shoulders. If cyclists may be expected to use these roads, a shared lane concept may be considered. These facilities are appropriate for use on roads with posted speeds of 60 km/h or less, with 4.3 to 4.9 metres available in each direction between the road centreline and the road edge. This width generally allows vehicles to safely pass cyclists on the road. If there is a potential for on-street parking, the upper limit of this range should be used (i.e. measured between the edge of the parking space and the centreline) in order to give sufficient space for cyclists to avoid opening car doors.

These shared lanes are implemented using "Share the Road" warning signing and white painted shared use lane markings ("sharrows", see right), which define the road as a shared facility. The sharrows should be painted at the beginning and end of each block, and at a 75 metre spacing.

Figure 16: Shared Lanes, Johnston Avenue

4.2.5 Bridge Crossings

Bikeways and trails can be extended across watercourses, ravines, railways, and highways with dedicated bridges (e.g the Fraser River Footbridge) or by sharing road bridges (e.g. the Moffat Bridge). A cycle facility can be added to a road bridge in one of three ways:

- Sharing the sidewalk with pedestrians;
- Demarking a bike lane on the travelled roadway section of the bridge; or
- Shared use of the traffic lane.

The guidelines for cycle facilities on bridges are as follows:

1. Bike lanes and shared lanes should use the same width guidelines as on-road facilities, with an extra 0.5 metres buffer to any fixed objects (as noted in Section 4.1.2), such as barriers and railings

2. Trail facilities on bridges should ideally be 3.0 metres in width (but not less than 2.5 metres) to accommodate two-way cycle traffic.

3. Access to bridges should be via ramps, rather than stairways.

4. Sight lines onto a 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.

5. Bridges should include vertical handrails attached to the outside of the structure. Safety 'rub-rails' may be considered along the bridge to prevent a cyclist's handlebar from catching the vertical supports of the railing.

To cost-effectively achieve trail connections across existing bridges in Quesnel (e.g. Baker Creek, Quesnel River), the existing pedestrian pathways will have to be shared. This may be accomplished with signage stating cyclists yield to pedestrians. When the bridges are eventually replaced, these pathways should be upgraded to 2.5-3.0 metre standard trails.

Figure 17: Baker Creek Bridge, Marsh Drive

4.3 PEDESTRIAN FACILITY DESIGN GUIDELINES

4.3.1 Sidewalks

Sidewalks adjacent to the roadway should ideally be concrete, with a minimum width of 1.5 metres. The absolute minimum width for clearance around obstacles is 1.2 metres.

Sidewalks should ideally be 1.8 metres where achievable, in order to provide comfortable clearance between two opposing users. In busy areas (e.g. Downtown), sidewalks can be up to 3.0 metres wide.

Figure 18: Existing Concrete Sidewalk, Newman Road

4.3.2 Crosswalks and "Cross Rides"

At many locations where pathways cross roadways, crosswalks are provided to alert motorists to the potential for crossing pedestrians. On free-flow roadways, these crosswalks should have standard crosswalk signage, and zebra stripe paint markings. For higher volume crosswalks and/or those with safety concerns, the crosswalks can be supplemented with Rapid Rectangular Flashing Beacons (RRFBs; Figure 19).

Figure 19: Existing Crosswalk with RRFBs, Kinchant Street

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 (Ref. 14). Crosswalks may also be considered at mid-block locations where multi-use trails cross the roadway.

At locations where a crosswalk is also on a cycle route, the crosswalk can be supplemented with "cross-ride" signage (see right), and dotted white paint markings ("elephant's feet"). These devices legitimize the use of the crosswalk by cyclists, without requiring cyclists to dismount.

Crosswalks (and "cross-rides") should be designed with the following considerations:

1. Crosswalk locations should have sufficient sight distance on the roadway to ensure cyclists and motorists can see each other before the crossing manoeuvre. Adjacent foliage should be kept cleared, and parking should be restricted within at least 15.0 metres upstream and 6.0 metres downstream of the crosswalk.
2. Crosswalks should be painted at or near right angles to the roadway.
3. Accessible sidewalk ramps are required at each end of the crosswalk.
4. Crosswalks should be illuminated if possible.
5. At crosswalks on wide arterial roads, sidewalk bulbs or median refuge islands may be considered to improve visibility and reduce crossing distances. Refuge islands (2.0 metres minimum) can also improve safety by allowing pedestrians and cyclists to cross one side of the street at a time. Furthermore, "Sharks Teeth" pavement markings can be used to indicate where drivers should stop for crossing pedestrians to improve sight lines and safety.

5 ACTIVE TRANSPORTATION SYSTEM ANALYSIS

Applying the background research in Section 2, the community input in Section 3, and the facility standards in Section 4, the active transportation network was analyzed at both a network and ground level. This analysis was completed in the context of the key destinations (utilitarian and recreational) of local active transportation trips (Figure 20) in an effort to ensure these destinations were connected to the pathway system. The result was a series of recommended short, medium, and long term improvements to the pathway system in each area of the city, as outlined in Section 6.

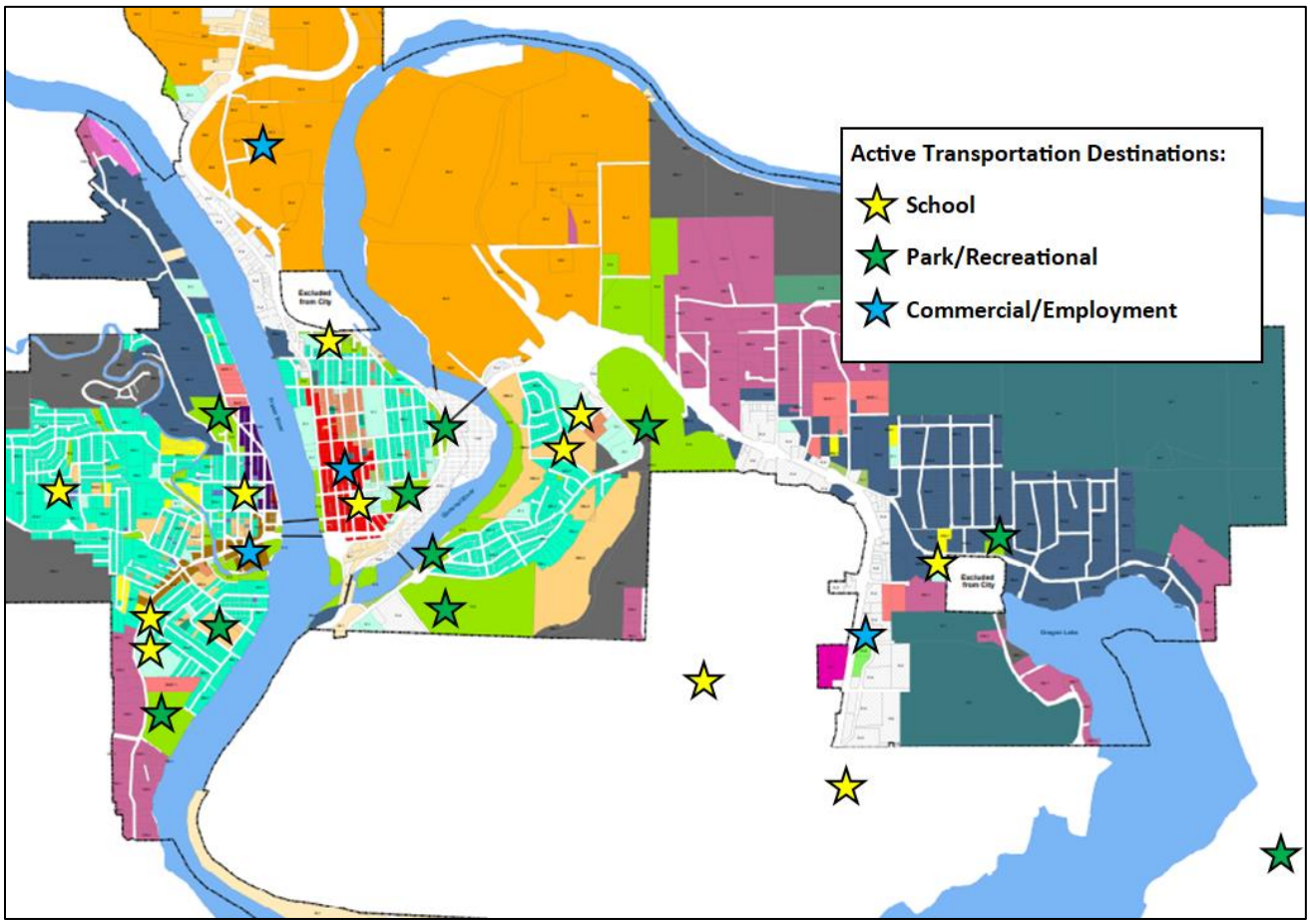


Figure 20: Key Active Transportation Destinations in Quesnel

6 NETWORK RECOMMENDATIONS

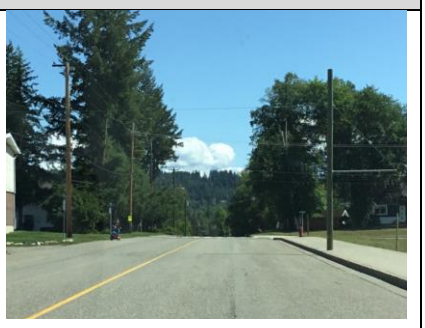
Based on the key origins-destinations for active transportation trips, the network analysis, and the input received from the community engagement, the following improvements to the active transportation pathway network are recommended. The estimated planning-level cost estimates are derived from the unit costs provided in Appendix B. Improvements with estimated costs less than $10,000 should generally be easily/quickly implemented.

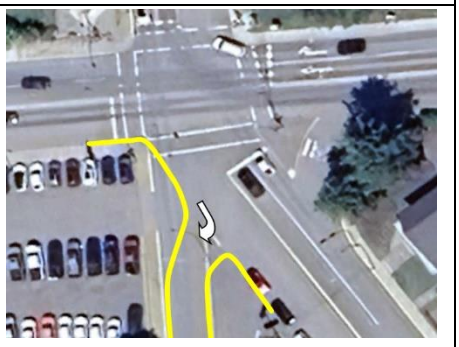
6.1 CITY CENTRE

The active transportation network improvements in the City Centre are outlined in Table 4, and illustrated in Figure 21.

Table 4: Recommended Pathway Improvements – City Centre

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
1	Med. Term	**New Pathway across Quesnel River:** with MoTT's planned replacement of the Highway 97 bridge across the Quesnel River, there will be an opportunity to improve on the existing narrow pedestrian pathway. The future bridge alignment is not confirmed at this time, but the pathway should be designed to connect the trails west of Nadeau Street to the Riverfront Trail system.	N/A	TBD in consultation with MoTT	
2	Short Term	**Pathway Connection to Quesnel River Bridge:** On the east side of the Quesnel River, a steep informal gravel trail connects the bridge to the trails in the adjacent park. If MoTT's replacement of the Quesnel River Bridge is delayed, this pathway connection should be improved for pedestrian and cycle users. This will require coordination with the affected gas utility and potentially the MoTT bridge crossing project.	50	TBD	
3	Long Term	**Connection to Two Mile Flat:** At the north end of McLean Street, a trail alignment could potentially be constructed to connect users to Two Mile Flat, north of the City Centre. For more details, see Section 6.5.	See Section 6.5	See Section 6.5	

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
4	Short Term	**Bowron Avenue Shared Lanes, Jones Street to McLean Street:** To continue the Riverfront Trail through the City Centre, the extra width on Bowron Avenue could be developed as shared lanes. This could be extended to the proposed shared lanes on Kinchant Street (Improvement No. 8) or further to the proposed trail to Two Mile Flat on McLean Street (Improvement No. 3).	540	$7,000	
5	Long Term	**Sidewalk on West Side of Callanan Street, Bowron Avenue to Shepherd Avenue:** Depending on the future development of the old school site west of Callanan Street, a new sidewalk may be beneficial to pedestrians.	300	$150,000	
6	Med. Term	**Sidewalk on North Side of Shepherd Avenue, Kinchant Street to Reid Street:** Shepherd Avenue is a key corridor for active transportation, especially with a pedestrian signal connecting across the highway to the hospital. There is currently no sidewalk on the north side of the street.	150	$75,000	
7	Short Term	**Second Crosswalk across Highway 97 (Front Street) at Shepherd Ave:** Many pedestrians would benefit from a second crosswalk on the north side of the intersection, which is a shorter connection to the hospital. This would connect to the new sidewalk proposed on Shepherd Ave (Improvement No. 6), but would require MoTT approval.	N/A	$50,000	
8	Short Term	**Kinchant Street Shared Lanes, Shepherd Avenue to Carson Avenue:** The large width of Kinchant Street could allow for the development of shared lanes. If the angle parking was replaced with parallel parking, there may be sufficient space for bike lanes instead.	540	$7,000	

9	Med. Term	**Highway 97 (Carson Avenue) Bike Lanes, Highway 97 to Front Street:** With MoTT approval and supporting traffic analysis as necessary, Carson Avenue could potentially have the three lanes repainted to allow for dedicated bike lanes. The few parking stalls on Carson Avenue would have to be removed.	570	$30,000	
10	Short Term	**Davie Street – Johnston Bridge Shared Lanes:** The proposed shared lane on Kinchant Street could be continued south of Carson Avenue to Davie Street, and across the Johnston Bridge. This would require special signage on the bridge identifying the need for slower speeds and shared space for bicycles.	540	$7,000	
11	Long Term	**Reconfiguration of the Kinchant Street – Davie Street Intersection:** Some residents identified pedestrian safety concerns due to the traffic laning south of Carson Ave. This could be addressed by shifting the entrance to the one-way section further south of the intersection (see diagram, right). This issue is considered in the Davie Street Revitalization Plan.	N/A	$150,000	
12	Short Term	**Crosswalk on Hwy 97 at Carson:** A new crosswalk and pedestrian signal phase could be added to the existing signal to create a safe connection between the museum and the train station (subject to MoTT approval). This would also require new accessible ramps on the existing raised corner islands.	N/A	$50,000	
13	Short Term	**LeBourdais Park Path, Museum to West Fraser Centre:** New paved multi-use pathway through the LeBourdais Park, connecting the Museum to the West Fraser Centre.	190	$198,000	

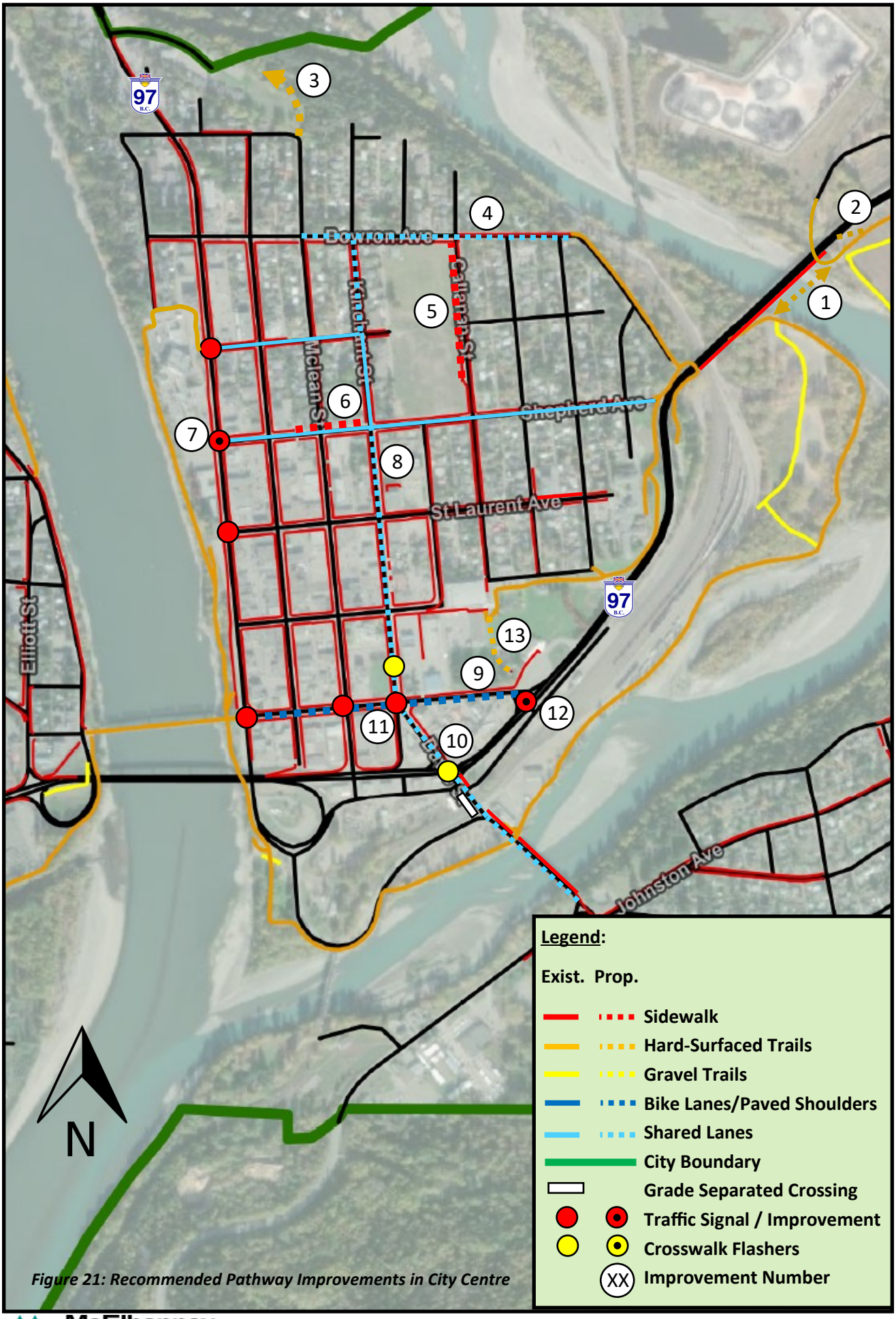


Figure 21: Recommended Pathway Improvements in City Centre

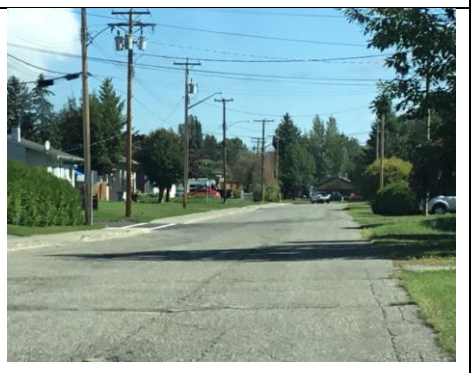
6.2 WEST QUESNEL

6.2.1 Pathway Improvements in West Quesnel

The active transportation network improvements in West Quesnel are outlined in Table 5, and illustrated in Figure 22.

Table 5: Recommended Pathway Improvements – West Quesnel

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
1	Short Term	**MUP on Anderson-Marsh Drive, Elliott Street to Soccer Fields:** see design discussion in Section 6.2.2.	1,700	$7.6 Million	
2	Short Term	**Pathway Widening, Elliott Street to Fraser River Bridge:** the existing ~1.5 metre pathway is functional for pedestrian traffic, but should be widened to a 3 metre MUP to accommodate cyclsts. This will complement the MUP proposed on Anderson-Marsh Drive (Improvement No. 1).	110	$60,000	
3	Med. Term	**Shared Lanes, Fuller Avenue:** Although only a local residential road, Fuller Avenue is a key link in the Riverfront Trail System. As a lower priority (and if safety concerns are raised by users), Fuller Avenue could be signed and painted as shared lanes.	80	$1,000	
4	Short Term	**Crosswalk RRFBs, N Fraser Drive at Fuller Avenue:** to facilitate safe trail crossings across N Fraser Drive, between Fuller Drive and the new paved trail to the Sugarloaf Dog Park, pedestrian-activated Rapid Rectangular Flashing Beacons are recommended.	n/a	$15,000	

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
5	Short Term	**Shared Lanes, Baker Drive and Harcourt Avenue:** As part of the Riverfront Trail System, these roads should be signed and marked for shared use with cyclists. The route can be extended south on Baker Drive to the proposed MUP on Marsh Drive. A continuous sidewalk already exists for pedestrians.	1,300	$17,000	
6	Med. Term	**Shared Lanes, Lewis Drive, Flamingo-Perry Street, Abbott Drive:** To legitimize the use of these collector roads for cycle use, the route can be signed and painted for shared use. The route generally has the advantages of width and directness, and connects to the proposed MUP on Anderson Drive and other key destinations. At some locations, additional signage and/or traffic calming devices may be necessary to address issues with road geometry and grades.	3,000	$38,000	
7	Short Term	**Bike Lanes on Doherty Drive, Anderson Drive to Wilkinson Street:** The large width available on Doherty Drive would allow for signed/painted bicycle lanes in addition to the existing on-street parking.	300	$5,000	
8	Med. Term	**Shared Lanes, Ritson Avenue and Rolph Street:** These collector roads complete the active transportation connection from the MUP on Anderson Drive to the Cariboo Field and Soccer Fields.	1,000	13,000	

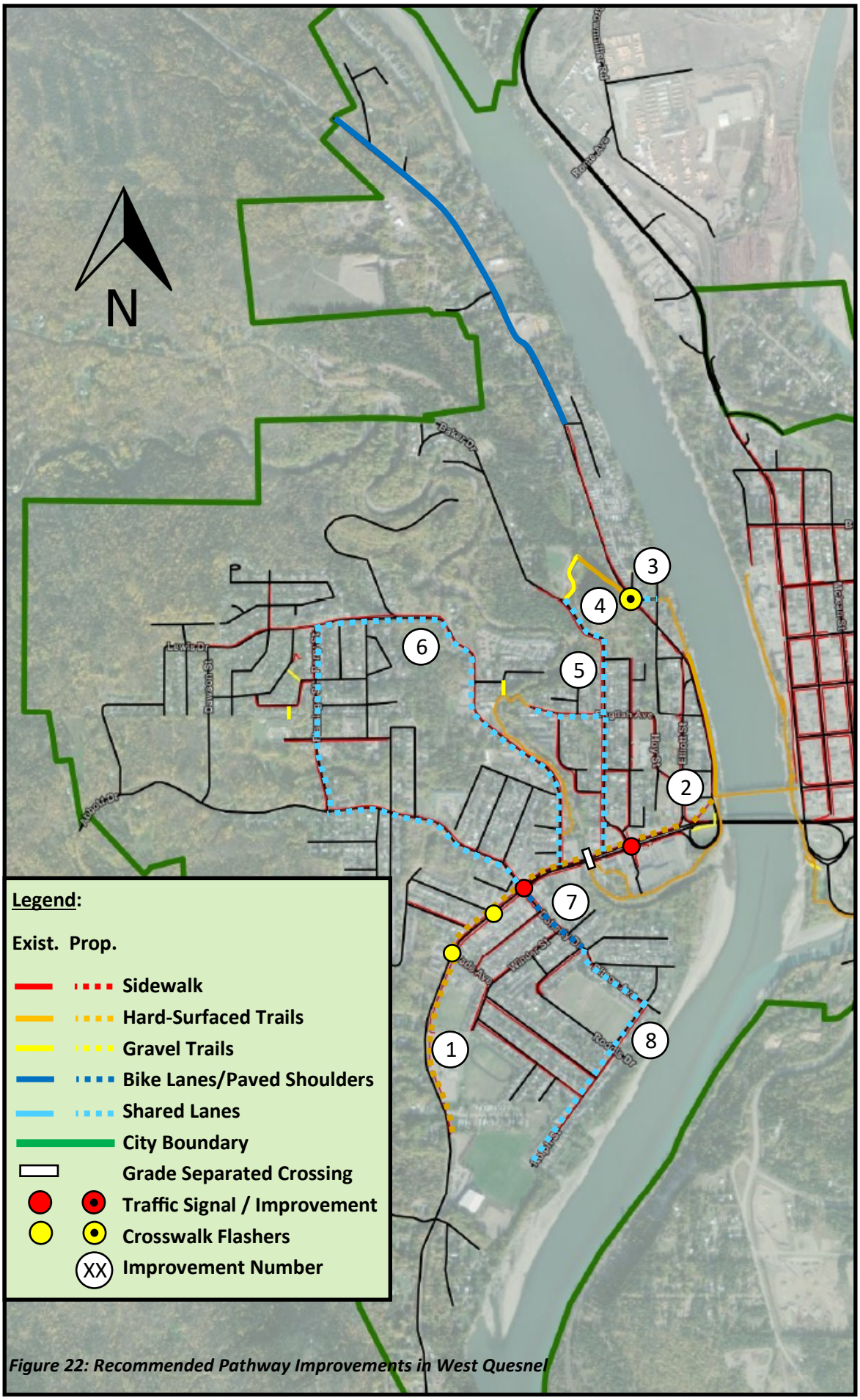


Figure 22: Recommended Pathway Improvements in West Quesnel

6.2.2 Anderson-Marsh Multi-Use Pathway

To connect the schools, businesses, and recreational facilities in West Quesnel to the rest of the city's active transportation network (via the Fraser River Footbridge), a 3.0 metre multi-use pathway / boulevard trail is proposed along Anderson Drive and Marsh Drive. The pathway would be approximately 1,700 metres in length, and is divided into the four sections below. The preliminary design for the pathway is provided in Appendix C.

1. Soccer Field Access to Wade Avenue (700 metres):

   The pathway would begin at the access to the youth soccer complex and would follow Anderson Drive behind the existing ditch, requiring some property acquisition. The pathway would cross the access to Correlieu Secondary School, and connect to the existing sidewalk through the school property (Figure 23). The school sidewalk should be widened toward the road ditch to achieve the 3.0 metre MUP standard. An agreement with School District 28 is proposed to allow the pathway to traverse school property, especially in consideration of the benefits to commuting staff and students. This design makes use of the existing sidewalk asset (avoiding redundancy), and avoids the challenges of fitting a trail on this narrow section of Anderson Drive.

   Another agreement with School District is proposed for the use of the existing sidewalk along the school field fence. The sidewalk should be widened to 3.0 metres on the school side, requiring the setback of the fence, and additional grading as required. The pathway should connect to the landing at the covered stairway, potentially requiring some minor adjustments. The sidewalk cannot easily be widened toward the road due to the adjacent power poles and the potential need for on-street parking along Anderson Drive during bell times and school events. However, some localized widenings could be constructed between the poles to manage site constraints.

   At the Wade Avenue intersection, the proposed pathway would cross to the west (north) side of Anderson Drive at the existing crosswalk. The safety of this crosswalk has been enhanced with a sidewalk extension and Rapid Rectangular Flashing Beacons (RRFBs).

Figure 23: Existing Sidewalk through Correlieu Secondary School

2. Wade Avenue to Abbott - Doherty Drive (400 metres):

   The pathway is proposed to continue along the north side of Anderson Drive with the widening of the existing sidewalk toward the boulevard. This side of the road avoids the power pole conflicts on the south side of Anderson Drive, and also serves the large residential neighbourhood to the north.

   The pathway can generally be constructed with negligible property impacts, although some regrading and boulevard landscaping are anticipated. The widening is also expected to require the relocation of some light poles, fire hydrants, and a couple short retaining walls.

3. Abbott– Doherty Drive to Malcolm – Baker Drive (400 metres):

   The design strategy east of Abbot-Doherty Drive intersection is similar to the previous section, with the pathway being widened on the boulevard side of the existing sidewalk. Most of this can be constructed without property acquisition, although there are two locations where commercial properties would be impacted. The first is a gas station, which is expected to require the relocation of the commercial sign. The second is a car dealership, which would require the relocation of a retaining wall.

   At the Baker Creek Bridge, the existing pedestrian pathway is too narrow for use by opposing cyclists and pedestrians. As the cost of bridge widening or a new bridge crossing would be in the order of $2 Million, the narrow width on the existing bridge should instead be managed with signage stating “Cyclists Yield to Pedestrians” (see right). When the bridge is ultimately replaced, a wider pathway for pedestrians and cyclists should be constructed.

   At the east end of the bridge, the new pathway would connect to the existing underpass beneath the bridge, and allow users to cross to the bike park and Riverfront Trail System south of Marsh Drive (Figure 24).

Figure 24: Baker Creek Bridge Underpass, Marsh Drive

4. Malcolm – Baker Drive to Elliott Street (200 metres):

East of the Malcolm-Baker Drive intersection, the sidewalk would be widened on the boulevard side of the road, requiring negligible property impacts if any. The only expected constraint is at the building at 101 Marsh Drive, which would reduce the pathway width to approximately 2.5 metres for a few metres (Figure 25). This will have to be managed with warning signage until the building is renovated/rebuilt in the future.

Figure 25: Pathway Narrowing at 101 Marsh Drive

The alternative to widening the sidewalk into the boulevard is to consider a lane reduction on Anderson Drive (which could be extended to Elliott Street), and widening into the roadway. As discussed in the Tech Memo (see References), this lane reduction could be limited to the loss of one westbound lane only, leaving the eastbound lanes intact. The result would be additional westbound vehicle delays and queueing in the PM Peak Hours (particularly at the Baker/Malcolm Drive intersection), but these are expected to remain within acceptable levels for the foreseeable future. The lane reduction might also warrant a new signal at the Lewis Drive intersection.

At the Elliott Street intersection, the stakeholders identified a concern with the safety of the crosswalk due to the traffic volumes and speeds of vehicles turning southbound right onto Marsh Drive. To address this issue, the raised corner islands could be reconfigured to reduce speeds and improve sight lines.

6.3 JOHNSTON SUBDIVISION

6.3.1 Pathway Improvements in Johnston Subdivision

The active transportation network improvements in the Johnston Subdivision are outlined in Table 6, and illustrated in Figure 26.

Table 6: Recommended Pathway Improvements – Johnston Subdivision

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
1	Short Term	**Pathway Connection to Quesnel River Bridge:** As described in the second recommended improvement in Section 6.1 (City Centre), this pathway would connect the existing paths through the fields to the sidewalk on the highway bridge.	50	(see Section 6.1)	
2	Short Term	**RRFBs at Nadeau Street Crosswalk:** In response to public concerns about the safety of the crosswalk as vehicles exit the highway at high speeds, the crosswalk should be enhanced with RRFB pedestrian-activated flashers.	N/A	$15,000	
3	Short Term	**MUP on North Star Road, Interchange to Bryce Trail:** see design discussion in Section 6.3.2.	530	$1.0 Million	
4	Short Term	**MUP on Johnston Avenue, Recreation Centre to Nadeau Street:** see design discussion in Section 6.3.2.	520	$1.8 Million	

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
5	Short Term	**MUP on Nadeau Street, Johnston Avenue to Nickel Ridge Avenue:** This Multi-Use Pathway is recommended instead of a new sidewalk on the north side of Nadeau Street. The MUP would serve both pedestrian and cyclist trips to and from the proposed new elementary school, and connect to the proposed MUP recommended on Johnson Street.	550	$550,000	
6	Med. Term	**Riverside Trail, Nadeau Street to Johnston Bridge:** The existing dirt trail through the greenspace along the south side of the Quesnel River could be upgraded with gravelling to connect the Nadeau Street subdivision and new school to the Johnston Bridge (via the Johnston Subdivision Park), and the rest of the City's active transportation network. If paved, the estimated trail cost would be much higher. Also potential property issues to consider.	1,000	$200,000	
7	Short Term	**Johnston Roundabout Shared Lanes:** As described in the 10th recommended improvement in Section 6.1 (City Centre), the Johnson Bridge should be signed and painted to legitimize shared use by cycle traffic. The shared space should be continued south into the roundabout, where cycle traffic can either proceed east or west on Johnston Avenue.	350	$5,000	
8	Short Term	**Johnston Avenue Bike Lane Extension to Roundabout:** The bike lanes on Johnston Avenue, west of the roundabout, should be extended to fully connect to the roundabout, creating continuous dedicated space for cyclists (particularly on the south side of the road). Additional "Share the Road" signage should be installed where the bike lane ends and the shared space begins.	100	$2,000	
9	Medium Term	**Pathway Extension from West Fraser Timber Park to Lawlor Drive:** Although the land is zoned RM-2 for future multi-family housing, the existing dirt pathway should be formalized with the future development. This would provide a continuous connection between Johnston Ave (via Lawlor Dr) and the parklands for the benefit of residents and recreational users. This trail is in the feasibility planning stage.	800	$1 Million	

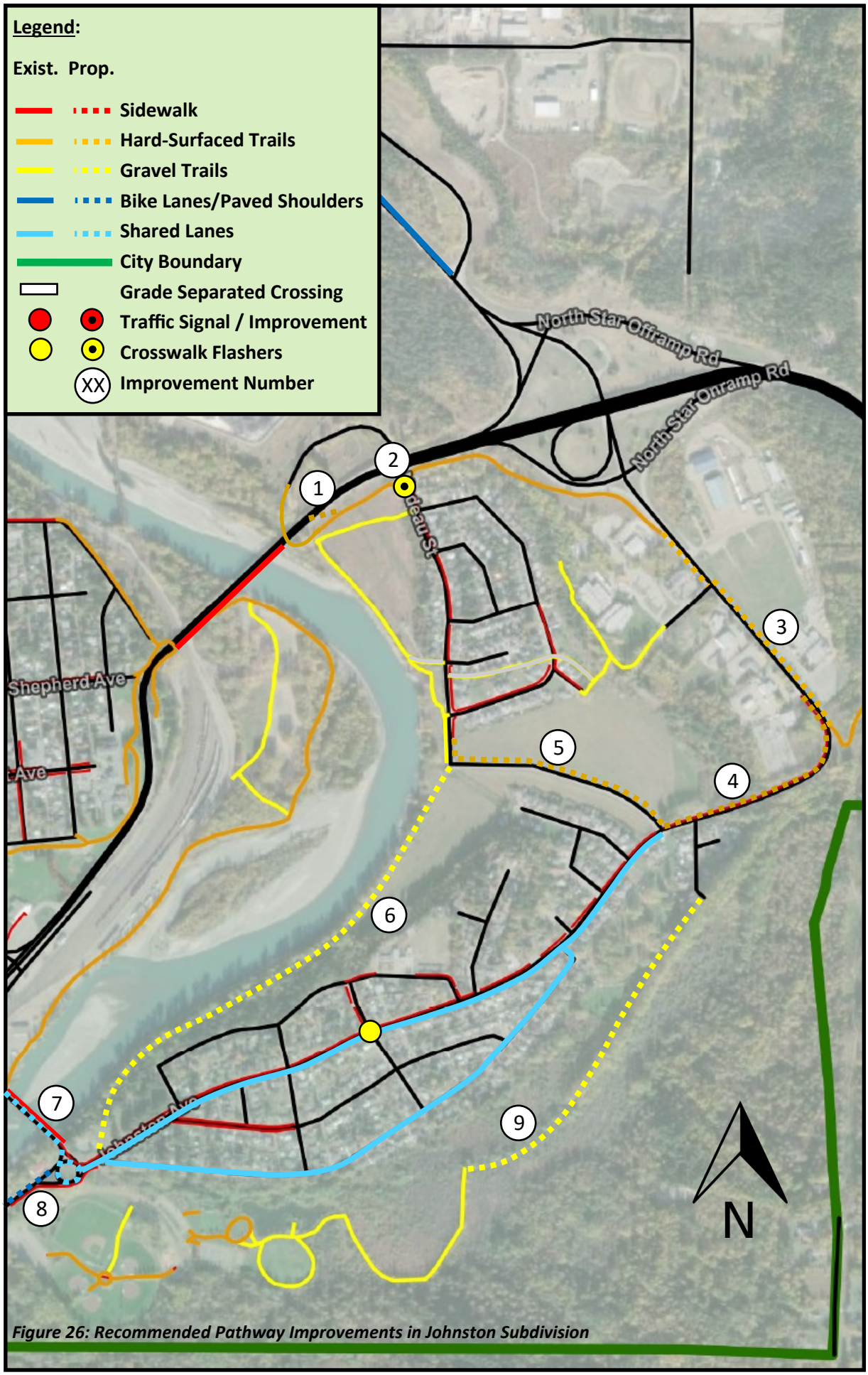


Figure 26: Recommended Pathway Improvements in Johnston Subdivision

6.3.2 North Star - Johnston Multi-Use Pathway

A new 3.0 metre multi-use pathway / boulevard trail is proposed on North Star Road – Johnston Avenue (see Improvement Nos. 3 and 4, Figure 26). This pathway would provide an accessible connection from the pathway at the North Star Interchange to the rodeo grounds, the Quesnel Campus of the College of New Caledonia, the Arts and Recreation Centre, the Bryce Trail, and the new elementary school being constructed on Nadeau Street. The pathway can be divided into three sections, as outlined below, with a total length of approximately 1,100 metres.

1. <u>North Star Interchange Pathway to Campus Way (130 metres):</u>

   The first section of the pathway would start at the end of the existing pathway at the North Star Interchange and continue along the south side of North Star Road to the existing crosswalk at Campus Way (Figure 27). The pathway is proposed as a 3.0 concrete MUP, with a 0.6 metre buffer to a new curb/gutter. This will require new catch basins to drain this side of the road to the public right-of-way.

   The existing bus shelter would have to be relocated further east or west on North Star Road to prevent trail users from conflicting with riders boarding an alighting the bus. Alternately, the trail could be realigned into the undeveloped road right-of-way behind the existing bus shelter.

   The handrails on top of the retaining wall in this section should also be reviewed at the detailed design stage to ensure cyclists do not catch a handlebar in the handrails.

Figure 27: Existing Crosswalk on North Star Road at Campus Way

2. Campus Way to Bryce Trail (400 metres):

   The crosswalk at the Campus Way intersection should be upgraded to standard crosswalk signage, with accessible ramps to access the trail on each side of the road. If desired, the City could extend a short pathway connection to the gate into the rodeo grounds, near the crosswalk. By virtue of being a trail crossing, the crosswalk is anticipated to be a good candidate for pedestrian-activated Rapid Rectangular Flashing Beacons (RRFBs).

   The pathway would continue as a paved trail along the north side of North Star Road, through the boulevard, across the accesses to the Arts and Recreation Centre, and terminating at the Bryce Trail. The alignment will have to avoid the existing power poles in the boulevard. There appears to be sufficient width available for this, although additional width could potentially be achieved by moving back the existing fence.

3. Rec Centre Crosswalk to Nadeau Street (520 metres):

   As part of the North Star Road boulevard trail project, a separate pathway alignment is proposed along the south side of North Star Road, and extending along the west side of Johnston Avenue. This pathway would connect from the crosswalk at the Arts and Recreation Centre to Nadeau Street as the widening of the existing sidewalk (Figure 28) to a 3.0 metres concrete trail with a 0.6 buffer to the existing curb.

   This design requires the regrading and replanting of the adjacent hillside. Although this would affect the adjacent private property, the land does not necessarily have to be acquired by the City. The regrading and terrain restoration could potentially be completed using a temporary construction agreement.

   As the grade of the pathway along Johnston Avenue is approximately 10% at some locations, two level areas are proposed along the pathway, with benches to allow pedestrians to rest.

Figure 28: Existing Sidewalk on Johnston Road

6.4 SOUTH QUESNEL

6.4.1 Pathway Improvements in South Quesnel

The active transportation network improvements in South Quesnel are outlined in Table 7, and illustrated in Figure 29.

Table 7: Recommended Pathway Improvements – South Quesnel

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
1	Med. Term	**MUP on Juniper, Newman, Rita and Chew Roads:** see design discussion in Section 6.4.2.	1,950	$4.9 Million	
2	Med. Term	**MUP on Quesnel Hydraulic Road and Valhalla Road:** see design discussion in Section 6.4.2.	650	$2.0 Million	
3	Med. Term	**Relocated Crosswalk on Quesnel Hydraulic Road:** The existing crosswalk at the intersection of Juniper Road and Quesnel Hydraulic Road should be relocated ~65 metres to the east to improve safety and sight lines, and to align with the proposed MUP connection to Juniper Road (Improvement Number 1).	N/A	$3,000	
4	Med. Term	**Shared Lanes in Quesnel Hydraulic Road Neighbourhood:** The key roads in the rural residential subdivision north of Quesnel Hydraulic Road (i.e. Coach Road, Gavlin Road, Brears Road, Neighbour Road, Phillips Road, Thompson Road, Fiege Road) should be signed and painted for shared use with cyclists and pedestrians. The neighbourhood roads are all designed similarly, with no clear hierarchy, so the designated roads are recommended near Quesnel Hydraulic Road, where activity is expected to be highest.	2,200	$28,000	 *Neighbour Road*

No.	Horizon	Improvement Description	Estimated Length (m)	Estimated Cost ($)	Photo
5	Med. Term	**Shared Lanes in Valhalla Road Neighbourhood:** The key roads in the rural residential subdivision north of Valhalla Road (i.e. Racing Road, Ryan Road, Gassoff Road, Westland Road) should be signed and painted for shared use with cyclists and pedestrians. The roads in the neighbourhood are all designed similarly, with no clear hierarchy, so the designated roads are recommended near Valhalla Road, where activity is expected to be highest.	1,400	$18,000	 *Westland Road*
6	Short Term	**Shared Lanes on Dragon Hill Road:** The short section of road connecting the highway underpass to the Bryce Trail should be designated for shared use with cyclists and pedestrians. Ultimately, this connection could be upgraded to a formal trail, which would create one continuous Multi-Use Pathway through South Quesnel, between Chew Road and North Star Road.	400	$5,000	

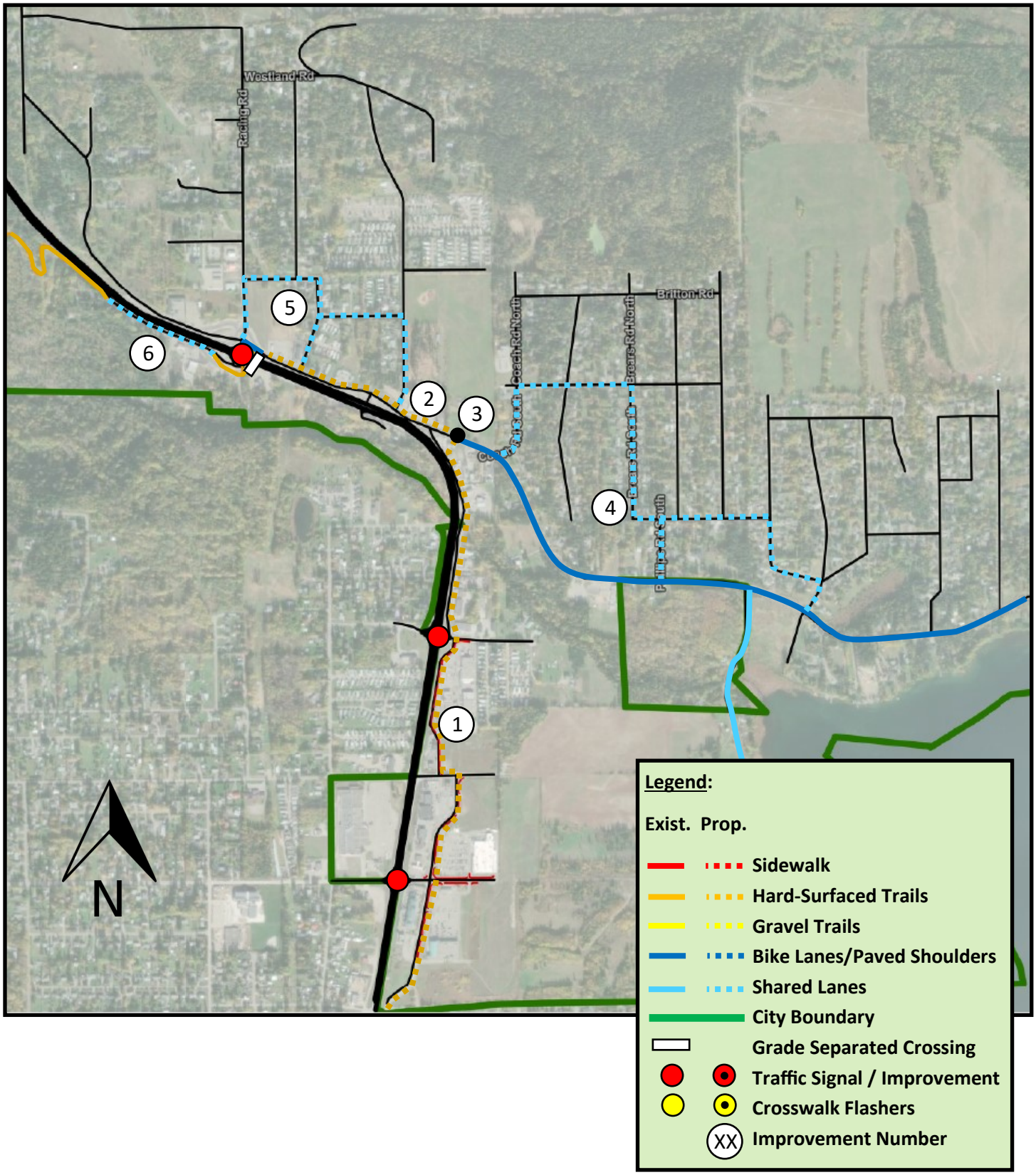


Figure 21: Recommended Pathway Improvements in South Quesnel

6.4.2 Valhalla-Juniper-Chew Road Multi-Use Pathway

To connect the Bryce Trail to the commercial activity and residential neighbourhoods along the frontage road on the east/north side of Highway 97, a multi-use pathway / boulevard trail is proposed. The pathway would extend from the crosswalk at the pedestrian underpass at Racing Road to the south City Limits, with a total length of 2,600 metres. The pathway can be divided into seven sections, as outlined below.

1. Racing Road Underpass to Quesnel Hydraulic Road (350 metres):

   The pathway would begin at the crosswalk to the highway underpass and proceed along the north side of the Valhalla Frontage Road. This section is already painted as a shared bicycle/pedestrian lane, but is not wide enough for a bi-directional multi-use pathway. As the road is generally flat and there is no existing storm system available, the trail is recommended as a 3.0 metre paved shoulder with a 0.6 metre buffer to the edge of the roadway. At localized constraints (e.g. power poles), the pathway may have to be reduced to 2.5 metres for a few metres, as long as (a) adequate sight distance is maintained for opposing trail users, and (b) the obstruction is clearly marked with reflectorized signage/markings. This concept will facilitate snow clearing in winter, and allow the continued use of the ditch system (relocated as required).

   If the existing bus stop cannot be relocated, the trail should be realigned behind the shelter to ensure trail users do not conflict with bus riders boarding and alighting. This would require additional property acquisition.

   The buffer space between the roadway and the trail should ideally have a vertical feature (i.e. curb stops, bollards, etc) if possible, which would physically separate the trail space from the traffic lanes (see example, Figure 30). If used, these would have to be removed in winter to facilitate snow clearing activities.

Figure 30: Temporary Bollards in Bike Lane Buffer
Source: Develotech

2. Quesnel Hydraulic Road to Juniper Road (300 metres):

   Continuing the widened/paved shoulder concept east of Valhalla onto Quesnel Hydraulic Road, the 3.0 metre pathway in the paved shoulder would connect from the access to Highway 97 to the east side of Juniper Street. There, on the east side of the existing gas station property, the pathway would connect to a crosswalk, relocated ~60 metres east from its current location at the Juniper Road / Quesnel Hydraulic Road intersection (Figure 31). This will improve the sight lines at the crosswalk, and reduce the amount of conflicts between turning vehicles, cyclists, and pedestrians.

   The same buffer / temporary bollards are recommended, if possible.

Figure 31: Existing Crosswalk on Quesnel Hydraulic Road at Juniper Road

3. Quesnel Hydraulic Road to Larch Avenue (650 metres):

   The pathway is proposed to follow the west perimeter of the overflow parking lot for the adjacent motel, which would necessitate property acquisition. This avoids the narrow road width on Juniper Rd, next to the gas station. Then, on Juniper Road, the widened paved shoulder concept with buffer (and bollards if possible), would continue south to the Larch Avenue intersection. Through some of the wider commercial accesses, clear paint markings are required to delimit the trail space for users.

   Just north of the Larch Avenue intersection, a large power pole is situated in the middle of the preferred pathway alignment. At this location, additional property acquisition is recommended to allow the pathway to go around the power pole and its guy wires. This section of pathway terminates at the crosswalk on Larch Avenue.

   A short section of sidewalk with curb/gutter is proposed on the south side of Juniper Road to facilitate an accessible southbound bus stop on the north side of the Larch Avenue intersection. This will replace the existing southbound bus stop further north.

4. Larch Avenue to Balsam Avenue (450 metres):

South of Larch Avenue, the pathway would become a standard 3.0 metre concrete trail along Newman Road, with a 0.6 metre buffer to the roadway. This would involve widening the existing concrete sidewalk (Figure 32), and setting back the existing retaining wall, light poles, hydrants, etc. Much of this is expected to require a thin strip of property acquisition, especially to achieve the recommended 0.5 metre offset from the face of the retaining wall.

The new pathway would continue east on Balsam Avenue to connect to the existing crosswalk at the Rita Road intersection.

Figure 32: Existing Sidewalk on Newman Road

5. Balsam Avenue to Maple Drive (400 metres):

   South of Balsam Avenue, the existing concrete sidewalk could simply be widened into the boulevard on Rita Road to achieve the recommended 3.0 metre pathway standard with a 0.6 metre buffer to the curb (Figure 33). This should not involve any property acquisition, since the boulevard should be wide enough through this section. However, the existing street light poles and street signage would have to be relocated from the back of the sidewalk to the 0.6 metre buffer space, adjacent to the curb.

   This section of the pathway would terminate at the crosswalk on Maple Drive.

Figure 33: Existing Sidewalk on Rita Road

6. Maple Drive to City Limits (450 metres):

   South of Maple Drive, the road and sidewalk crosswalk section is similar to that north of Maple Drive. Therefore, the same approach is recommended, including widening the existing concrete sidewalk into the boulevard and relocating the light poles and signage to the buffer space at the curb.

6.5 TWO MILE FLAT

There were three comments in the public survey and five in *Vertisee* requesting a safe pathway from Downtown to Two Mile Flat. The primary destination would be the West Fraser Mill, just north of town. A dedicated pathway would allow mill employees to walk or cycle to and from work. Currently the only option is along Highway 97, which has narrow shoulders adjacent to high-speed traffic.

A ~340 metre pathway currently connects River Park Road (within Regional District land) to the internal road network of the mill. In partnership/coordination with both of these parties and potentially some nearby property owners (e.g. St Ann's Catholic Church, Super Save Gas Station), a continuous pathway could be developed to Downtown, through the controlled railway crossing on River Park Road, and around the church lands to the road right-of-way extending north from McLean Street (Figure 34).

Figure 34: Potential Trail Connection between City Centre and Two Mile Flat

If paved, this pathway connection would cost in the order of $350k. As the trail only benefits the mill employees north of River Park Road, the trail may be a candidate for funding/sponsorship from the mill itself. In consideration of the amount of coordination and consultation required, this improvement is considered for the long term.

6.6 OTHER SYSTEM IMPROVEMENTS

The following general recommendations for the active transportation system would complement the pathway improvements in the previous sections.

Table 8: Additional Recommendations for General System Improvements

No.	Horizon	Improvement Description	Photo Example
1	As Time and Budget Allow	**Pathway Clearance Widths:** Sidewalks and pathways should be constructed with a minimum clearance of 1.2 metres for safety and accessibility. Power poles, hydrants, street lights, and other obstacles should be relocated as time and budget permit. Short sidewalk diversions around the obstacles may be a short-term, cost-effective alternative, if necessary. Example shown at right on Lewis Drive.	
2	As Time and Budget Allow	**Accessible Sidewalk Ramps:** At all crosswalks, a standard sidewalk ramp is necessary to ensure the pathway is accessible for pedestrians of all abilities. These improvements can be added to adjacent sidewalk and/or road rehabilitation projects, or rebuilt on an individual prioritized basis. Example shown on Carson Avenue (Highway 97)	
3	As Time and Budget Allow	**Accessible Pedestrian Buttons:** According to provincial standards, pedestrian phase activation push-buttons at traffic signals and crosswalk flashers should be mounted at a height of 1.0 metres to ensure they are accessible for all users. At a number of locations in Quesnel, push-buttons were installed higher than standard. Example shown at Marsh Drive/Baker Drive, with height of ~1.4 metres.	
4	As Time and Budget Allow	**Offsets from Vertical Faces:** As per TAC guidelines, retaining walls, fences, or building faces immediately adjacent to a pathway reduce the effective width of the pathway for users. As opportunities to reconstruct these locations arise, an additional 0.5 metres of offset should be provided as and where feasible. Example shown at Carson Avenue (Highway 97)	

5	As Time and Budget Allow	**Wayfinding Signage:** The City has done well with wayfinding signage for the local pathway system, especially with the implementation of the 2018 plan. This was reflected in the lack of concerns about wayfinding cited in the public survey. As the active transportation system expands, the City should continue its efforts to provide effective wayfinding signage. Example shown at Riverfront Trails.	
6	As Time and Budget Allow	**Bike Racks:** Bike racks were requested in the public survey at a number of locations, including around the Riverfront Trail System, at Dragon Lake, etc. Secure end-of-trip facilities are a critical requirement for many active transportation trips. Therefore the City should continue to install bike racks as and where required. Also see Sections 7.1 and 7.2. Example shown at Public Library.	
7	As Time and Budget Allow	**Standardization of Crosswalks:** A number of crosswalks in Quesnel were found to have deficiencies and/or old standards in the signage and paint marking. Current standards require signage on both sides of both approaches. Also, the current TAC guidelines reserve the white painted "X" on the road for railway crossings only. These "X" markings can be removed. Example shown on Wade Avenue	
8	As Time and Budget Allow	**Accessible Bus Stops:** At some locations, bus stops and shelters were not accessible for wheelchairs etc. These locations should have paved or concrete landing platforms for boarding/alighting, and sidewalks and ramps as required. Example shown on Lewis Drive	

7 RECOMMENDED PROGRAMS AND POLICIES

The active transportation system can be complemented and supported by a number of policies and programs which maintain, promote, regulate, and enhance the system. The following initiatives are provided for consideration by the City.

7.1 PLANNING AND DEVELOPMENT POLICIES

Land-use directly influences transportation choices. As new development and re-development are invited to incorporate sustainable transportation modes, more people are likely to use transit and pathways. The city already has the benefit of a vibrant, dense, and compact core, which is conducive to active transportation trips. A number of suggested land-use and development policies to further encourage the development of the active transportation system are as follows:

1. All roads with adjacent development should have sidewalks on at least one side of the road. Major roads through urban areas should have sidewalks on both sides of the road.

2. Every building to which the public is welcome should have safe, accessible, and convenient connection(s) to the adjacent pathway network.

3. Convenient and secure bicycle parking should be available for all major public and private developments within the city. Bike parking may be divided into long-term parking facilities for staff and employees (e.g. lockers or compounds) and short-term parking facilities for visitors and shoppers (e.g. bike racks).

4. Large employers should be encouraged to provide showers and other end-of-trip amenities to facilitate employees cycling to work.

5. The City can invite developers to contribute to the development of the pathway network and transit system through the application of Development Cost Charges and/or a formalized policy to offer a reduction in site parking requirements in exchange for sustainable transportation improvements (pathways, bus shelters, etc.). The rationale for the latter is that the site parking demand should theoretically be lower if more customers are able to cycle to the business location.

Figure 35: Downtown Quesnel

7.2 DEVELOPMENT AND INFRASTRUCTURE STANDARDS

City standards for active transportation infrastructure could be formally added to the City's Development Servicing Bylaw, such as:

- Pathway standards and guidance, including multi-use pathways, bike lanes, shared lanes, etc, as outlined in Section 4.
- Bike racks, with a standard recommended design and placement guidance that facilitates use in the northern climate and uses a colour scheme/aesthetic that reflects the City's vision and system branding
- Bus stop infrastructure, including bus stop layout, bench and shelter placement, etc.

7.3 INSPECTION AND MAINTENANCE

Concerns with pathway maintenance and snow removal were often cited by survey respondents as deterrents to the use of the active transportation system. As the pathway network expands, additional City resources and funding will be necessary to ensure the system is maintained and rehabilitated for safety and accessibility.

Figure 36: Rehabilitated Sidewalk, North Fraser Drive

In addition to the maintenance and rehabilitation programs as outlined above, the City should continue a formal program of inspection and reporting to ensure hazards are identified and rectified as necessary. The hazards may include debris, obstacles, loss of surface integrity, slope failures, drainage problems, etc. The inspection program is comprised of both active and passive reporting:

- Active reporting involves periodic and methodical site inspections commissioned by the City, using technical rating criteria for risk and severity.
- Passive reporting involves providing residents with a formal procedure to report issues and concerns to the City. The "Report a Problem" page on the City's website could be enhanced with a GIS link to allow people to accurately locate concerns for reporting.

7.4 EDUCATION

There are two education objectives for active transportation in Quesnel: (a) to improve attitudes, understanding, and awareness; and (b) to teach people how to use and interact with active modes in order to improve safety and reduce frustration. Many motorists do not routinely look for cyclists or pedestrians. As well, 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. Education on using the transit system and crosswalks would also be beneficial for the community, and was cited as an issue in the public survey.

Educational initiatives can be provided through a number of means, including: public service announcements on local television, radio, or newspapers; on-street signage; formal or informal training and educational programs; and online resources, such as the City of Quesnel website and social media. The educational topics may include:

1. Traffic and cycle laws and regulations (e.g. BC Motor Vehicle Act)
2. Etiquette and pathway use guidelines
3. Safe use of crosswalks, including signalized and RRFBs
4. Driver awareness of cyclists and pedestrians
5. Bike riding skills development, secure bike parking, and traffic awareness
6. Bike repairs and maintenance
7. Local bike routes and available facilities
8. Transit system use, and interpreting routes and schedules (hardcopy and online)
9. Planning for using active transportation and transit during inclement weather
10. Health and fitness benefits from active transportation

Figure 37: Cycling Education for All User Groups

7.5 MARKETING AND PROMOTION

Marketing campaigns are necessary for raising the profile of the active transportation system and the benefits of its use within a community. As active transportation infrastructure quality and quantity increases, and as more people become aware of the choices available, more are likely to select active transportation modes. Some recommended marketing initiatives for the City of Quesnel include:

1. A formal cycle system brand (reflecting City colours, etc.) could be adopted and incorporated into the signing of both on- and off-road cycle routes, bike racks and other cycle amenities, and messaging to demonstrate commitment and consistency.

2. The transit and pathway systems could be promoted with advertisements in the media (e.g. internet, newspaper, radio, television) and on the street (e.g. signing, etc.).

3. Maps of the developed urban and recreational pathway networks could be published to safely guide users around the system; they could be made available in hardcopy and on the City's website. The maps should show pathway routes, major destinations, key supporting amenities, and include educational tips for users as discussed in the previous section.

Figure 38: Bike to Work Week Advertisement
Source: GoByBike BC (2024)

4. Promotional events for the system could be hosted or sponsored. Some examples include Bike To Work Week, the Commuter Challenge, and triathlons. These events encourage mass participation and provide incentives for achievements. Raising the profile of local cycling could even potentially enhance local tourism.

5. Partnerships with local businesses, institutions, and the public could be encouraged to generate interest and commitment in the cycle system. Two examples of these are the "Adopt a Pathway" and "Pitch-In Week" programs, which allow residents and groups to take ownership of a pathway component, thereby raising the quality and aesthetics of the routes without the need for additional funding. It can also instill pride within the community.

6. Help local bicycle shops, outfitters, and other trail-based dealerships to become ambassadors for the system and create opportunities for them to promote their businesses within the active transportation system.

7. Implement a regular resident survey to understand the participation habits, satisfaction, perceptions, and priorities of system users. The results should be evaluated by the City and advanced to priorities for action as required.

7.6 ENFORCEMENT INITIATIVES

For those users who deliberately ignore the rules, enforcement is a necessary and effective management tool for the active transportation system. The following actions may be considered to assure compliance with the rules and regulations:

1. Ensure rules, regulations, and etiquette are provided with all pathway information guides (electronic and hardcopy) and at the key locations (Figure 39).

2. Provide a phone number which can be called for the reporting of pathway issues, vandalism, or other concerns. This can convey a sense of ownership and responsibility for the system, as well as provide users with a sense of comfort and safety.

3. As resourcing allows, enhance the presence of enforcement personnel on the pathway system.

4. Undertake targeted enforcement campaigns during peak seasons and in high-problem areas to address recurring pathway compliance issues.

Figure 39: Riverfront Trail Rules & Regulations Signage

7.7 INTER-AGENCY COORDINATION

The active transportation system involves multiple facilities, users, operators, and jurisdictions. Therefore, there are a number of agencies, stakeholders, and land-owners that may contribute to and/or be affected by the development of the active transportation system on an on-going basis. These include, but are not limited to, the following:

- Lhtako Dene First Nation
- Ministry of Transportation and Infrastructure
- Cariboo Regional District
- Northern Health Authority
- West Fraser Mills
- School District 28
- Royal Canadian Mounted Police
- BC Transit
- Insurance Corporation of British Columbia
- Local clubs for cycling, hiking, seniors, youth, etc.

A clear, coordinated, and communicative approach is necessary to confirm priorities and synchronize projects, especially between jurisdictional boundaries (e.g. Maple Drive, outside the City Limits). The City of Quesnel should continue to work with these agencies on the development, maintenance, and regulation of the active transportation system.

Figure 40: Gold Rush Cycling Club Event Photo

8 RECOMMENDATIONS

Over the past few decades, the City of Quesnel has developed a large and attractive pathway network in the community. The following sections outline a prioritized strategy to further develop and fund this pathway network to create an integrated, accessible, and attractive system, and to support that system with effective policies and programs.

8.1 IMPLEMENTATION PLAN

8.1.1 Improvements as Time and Budget Allow

The following general improvements and initiatives can be implemented at any time, as they all directly improve the active transportation system. Priority should be given to those projects that (a) resolve issues with safety and accessibility; (b) align with community priorities; and (c) take advantage of project or grant opportunities which may save costs.

Pathway Infrastructure Improvements:

1. Pathway Clearance Widths: provide at least 1.2 metres of clearance around obstacles.
2. Accessible Sidewalk Ramps: install accessible ramps at all crosswalks
3. Accessible Pedestrian Buttons: ensure pedestrian push-buttons are 1.0m above grade
4. Offsets from Vertical Faces: add an extra 0.5m clearance on pathways next to vertical faces.
5. Wayfinding Signage: continue provision of effective wayfinding signage as the system expands.
6. Bike Racks: facilitate the installation of bike racks at major destinations in town, public and private.
7. Standardization of Crosswalks: upgrade crosswalks to standard signage and paint markings.
8. Accessible Bus Stops: ensure all bus stops are accessible and convenient for riders.

Policy and Program Implementation:

1. Planning and Development Policies: to ensure system support from new development.
2. Development and Infrastructure Standards: to formalize the system design standards for use.
3. Inspection and Maintenance: to allow the system to be accessible for users in all seasons.
4. Education: to ensure all motorists and system users understand the expectations.
5. Marketing and Promotion: to encourage and facilitate more use of the pathway system.
6. Enforcement Initiatives: to ensure problematic motorists and system users are corrected.
7. Inter-Agency Coordination: to create partnerships for integrated system development.

8.1.2 Short Term Network Improvements

The following network improvements should be considered for implementation within the next five years, as they represent important and/or affordable upgrades to benefit users. These have been divided further into recommended High, Medium, and Low priorities for the City's consideration.

Table 9: Short Term Network Improvements

Neighbourhood	Reference No.	Improvement	Estimated Length (m)	Estimated Cost ($)
High Priorities				
City Centre	§ 6.1 No. 4	Bowron Avenue Shared Lanes, Jones Street to McLean Street	540	$7,000
City Centre	§ 6.1 No. 10	Davie Street – Johnston Bridge Shared Lanes	540	$7,000
City Centre	§ 6.1 No. 12	Crosswalk on Hwy 97 at Carson	N/A	$50,000
Johnston Subdivision	§ 6.3 No. 2	RRFBs at Nadeau Street Crosswalk	N/A	$15,000
Johnston Subdivision	§ 6.3 No. 5	MUP on Nadeau Street, Johnston Avenue to Nickel Ridge Avenue	550	$550,000
Johnston Subdivision	§ 6.3 No. 7	Johnston Roundabout Shared Lanes	350	$5,000
City Centre	§ 6.1 No. 13	LeBourdais Park Path, Museum to West Fraser Ctr	190	$198,000
Medium Priorities				
City Centre	§ 6.1 No. 2	Pathway Connection to Quesnel River Bridge	50	TBD
City Centre	§ 6.1 No. 8	Kinchant Street Shared Lanes, Shepherd Avenue to Carson Avenue	540	$7,000
West Quesnel	§ 6.2 No. 1	MUP on Anderson-Marsh Drive, Elliott Street to Soccer Fields	1,700	$7.6 Million
West Quesnel	§ 6.2 No. 7	Bike Lanes on Doherty Drive, Anderson Drive to Wilkinson Street	300	$5,000
Johnston Subdivision	§ 6.3 No. 3	MUP on North Star Road, Interchange to Bryce Trail	530	$1.0 Million
Johnston Subdivision	§ 6.3 No. 4	MUP on Johnston Avenue, Recreation Centre to Nadeau Street	520	$1.8 Million
Low Priorities				
City Centre	§ 6.1 No. 7	Second Crosswalk across Highway 97 (Front Street) at Shepherd Ave	N/A	$50,000
West Quesnel	§ 6.2 No. 2	Pathway Widening, Elliott Street to Fraser River Bridge	110	$60,000
West Quesnel	§ 6.2 No. 4	Crosswalk RRFBs, N Fraser Drive at Fuller Avenue	n/a	$15,000
West Quesnel	§ 6.2 No. 5	Shared Lanes, Baker Drive and Harcourt Avenue	1,300	$17,000
Johnston Subdivision	§ 6.3 No. 8	Johnston Avenue Bike Lane Extension to Roundabout	100	$2,000
South Quesnel	§ 6.4 No. 6	Shared Lanes on Dragon Hill Road	400	$5,000

8.1.3 Medium Term Network Improvements

The following network improvements may be considered for implementation within the next 5 to 15 years. These may be more complex, expensive, and/or have less imminent benefits to users.

Table 10: Medium Term Network Improvements

Neighbourhood	Reference No.	Improvement	Estimated Length (m)	Estimated Cost ($)
City Centre	§ 6.1 No. 1	New Pathway across Quesnel River	N/A	TBD in consultation with MoTT
City Centre	§ 6.1 No. 6	Sidewalk on North Side of Shepherd Avenue, Kinchant Street to Reid Street	150	$75,000
City Centre	§ 6.1 No. 9	Highway 97 (Carson Avenue) Bike Lanes, Highway 97 to Front Street	570	$30,000
West Quesnel	§ 6.2 No. 3	Shared Lanes, Fuller Avenue	80	$1,000
West Quesnel	§ 6.2 No. 6	Shared Lanes, Lewis Drive, Flamingo-Perry Street, Abbott Drive	3,000	$38,000
West Quesnel	§ 6.2 No. 8	Shared Lanes, Ritson Avenue and Rolph Street	1,000	$13,000
Johnston Subdivision	§ 6.3 No. 6	Riverside Trail, Nadeau Street to Johnston Bridge	1,000	$200,000
Johnston Subdivision	§ 6.3 No. 9	Pathway Extension from West Fraser Timber Park to Lawlor Drive	800	$1 Million
South Quesnel	§ 6.4 No. 1	MUP on Juniper, Newman, Rita and Chew Roads	1,950	$4.9 Million
South Quesnel	§ 6.4 No. 2	MUP on Quesnel Hydraulic Road and Valhalla Road	650	$2.0 Million
South Quesnel	§ 6.4 No. 3	Relocated Crosswalk on Quesnel Hydraulic Road	N/A	$3,000
South Quesnel	§ 6.4 No. 4	Shared Lanes in Quesnel Hydraulic Road Neighbourhood	2,200	$28,000
South Quesnel	§ 6.4 No. 5	Shared Lanes in Valhalla Road Neighbourhood	1,400	$18,000

Figure 41: Existing Pedestrian Pathway across Quesnel River

8.1.4 Long Term Network Improvements

The following improvements may be considered for implementation beyond the 15 year horizon. These are largely improvements that require substantial more funding and/or coordination, and may have lower benefits to system users.

Table 11: Long Term Network Improvements

Neighbourhood	Reference No.	Improvement	Estimated Length (m)	Estimated Cost ($)
City Centre	§ 6.1 No. 5	Sidewalk on West Side of Callanan Street, Bowron Avenue to Shepherd Avenue	300	$150,000
City Centre	§ 6.1 No. 11	Reconfiguration of the Kinchant Street – Davie Street Intersection	N/A	$150,000
North Quesnel	§ 6.5	Trail to Two Mile Flat	800	$350,000

Figure 42: Kinchant Street-Davie Street at Carson Avenue

8.2 FURTHER STUDY

The recommendations in the update to the Active Transportation Plan can be advanced further with additional study and design activities. The following are some initiatives that may be considered by the City.

8.2.1 Detailed Trail Designs

The three preliminary multi-use pathway designs (i.e. Anderson-Marsh, North Star Road, and Juniper; see Appendix C) can be advanced to detailed design, with topographical surveys to provide sufficient detail for construction drawings. Other pathway recommendations from the study can likewise be advanced to preliminary and detailed design stages. The estimated costs for design are included in Appendix B.

8.2.2 Crosswalk Review

A number of the crosswalks in Quesnel were found to have deficiencies, such as missing signage and issues with paint marking. A comprehensive crosswalk review could be commissioned to confirm (a) where crosswalks should be upgraded to standard; (b) what crosswalks may require enhancements (e.g. pedestrian flashers); and (c) whether any crosswalks may be candidates for removal. This could be undertaken for an estimated cost of $15,000 to $25,000, depending on the number of crosswalks studied.

8.2.3 School Zone / Playground Zone Review

To ensure all school and playground zones in the City are effective and enforceable (in accordance with the Motor Vehicle Act), a simple review could be completed. The review would include site visits, calculation of TAC warrants to confirm what signage is required, and ideally consultation with the affected schools and the School District. This could be completed for an estimated $20,000.

8.2.4 Transit Plan

According to the BC Transit website, the last transit service plan for Quesnel was completed in 2013. As most of the respondents in the online public survey identified a number of concerns with the accessibility and convenience of the existing transit system, a formal review could be completed to determine what enhancements would improve ridership. This could be completed for between $30,000 and $50,000, depending on the scope and level of detail of the analysis.

Figure 43: Bus Shelter, Valhalla Rd

8.3 FUNDING OPPORTUNITIES

To maximize the investment in the active transportation system, the City should continue to explore opportunities to partner with other government agencies and the private sector. There are three categories of external funding available:

8.3.1 Grant Opportunities

1. Senior government grants to enhance local cycling (e.g. BC Active Transportation Infrastructure Grants), improve road safety (e.g. ICBC RIP), or reduce greenhouse gas emissions are often available for specific project funding. These grant programs typically require a trail or cycle master plan and design drawings (at least at a preliminary or conceptual level).

2. Pathway improvements that can demonstrably reduce the potential for collisions with street traffic may be eligible for ICBC grants through the Road Improvement Program (RIP). In these cases, ICBC would contribute a portion of the estimated savings in claims reductions.

3. As the cycle system promotes local health, some trail initiatives may qualify for funding under the Northern Health Authority's Healthy Communities Fund.

4. Northern Health also offers ImagineGrants (up to $5k) for local business initiatives that promote health, which could include the development of a bicycle salvage, repair, and/or borrowing program.

8.3.2 Contributions from Local Developers

1. The City can implement Development Cost Charges (DCCs) to have developers contribute funding toward the active transportation system. This would require the City to adopt a Development Cost Charges Bylaw in advance.

2. Developers could be given an opportunity to provide payment to the City for the development of cycling facilities, pathways, or bus stop improvements in the neighbourhood in lieu of providing the full amount of off-street parking required under the Zoning Bylaw.

8.3.3 Partnerships and Sponsorships

1. Local corporations, businesses, service clubs, and residents could sponsor cycling, pathway, trail, and/or bus stop infrastructure in exchange for naming rights and/or advertising space. This could apply to larger projects (e.g. pathways, kiosks, bus shelters) or smaller initiatives (e.g. bike racks, local cycling brochures and maps).

2. Some private businesses desire bicycle racks, but lack the space to install them. In cities like Vancouver, businesses may apply to install bicycle racks on municipal property. The permit is free, but stipulates terms of location, ownership, and maintenance.

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10 CLOSURE

This update to the 2016 Active Transportation Plan has been prepared by McElhanney Ltd. ("McElhanney") for the benefit of the City of Quesnel. The information and data contained herein represent McElhanney's best professional judgment in light of the knowledge and information available to McElhanney at the time of preparation.

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PERMIT TO PRACTICE
McElhanney Ltd.
PERMIT NUMBER: 1003299
Engineers and Geoscientists of BC

APPENDIX A:

PUBLIC SURVEY RESULTS

The online public survey was conducted between June 25 to July 24, 2023. The same questions were asked as in the survey for the original Active Transportation Plan in order to determine how community perspectives have changed since 2016.

There were 62 responses received, with more than half within the city limits. The other responses were outside the city limits, but still within the Cariboo Regional District.

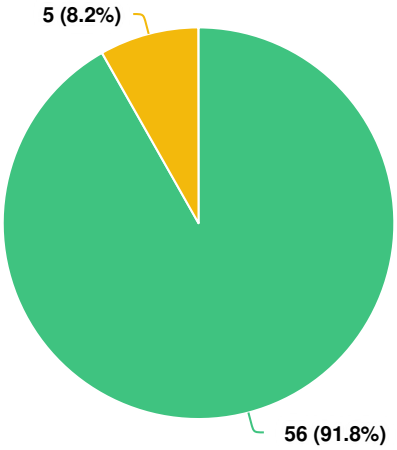
Survey - Active Transportation Plan

SURVEY RESPONSE REPORT
25 June 2023 to 24 July 2023

PROJECT NAME:
Active Transportation Plan

BANG THE TABLE engagementHQ

Q1 Do you consider yourself a user of the active transportation networks (paved paths, pathways, sidewalks, transit, etc)?

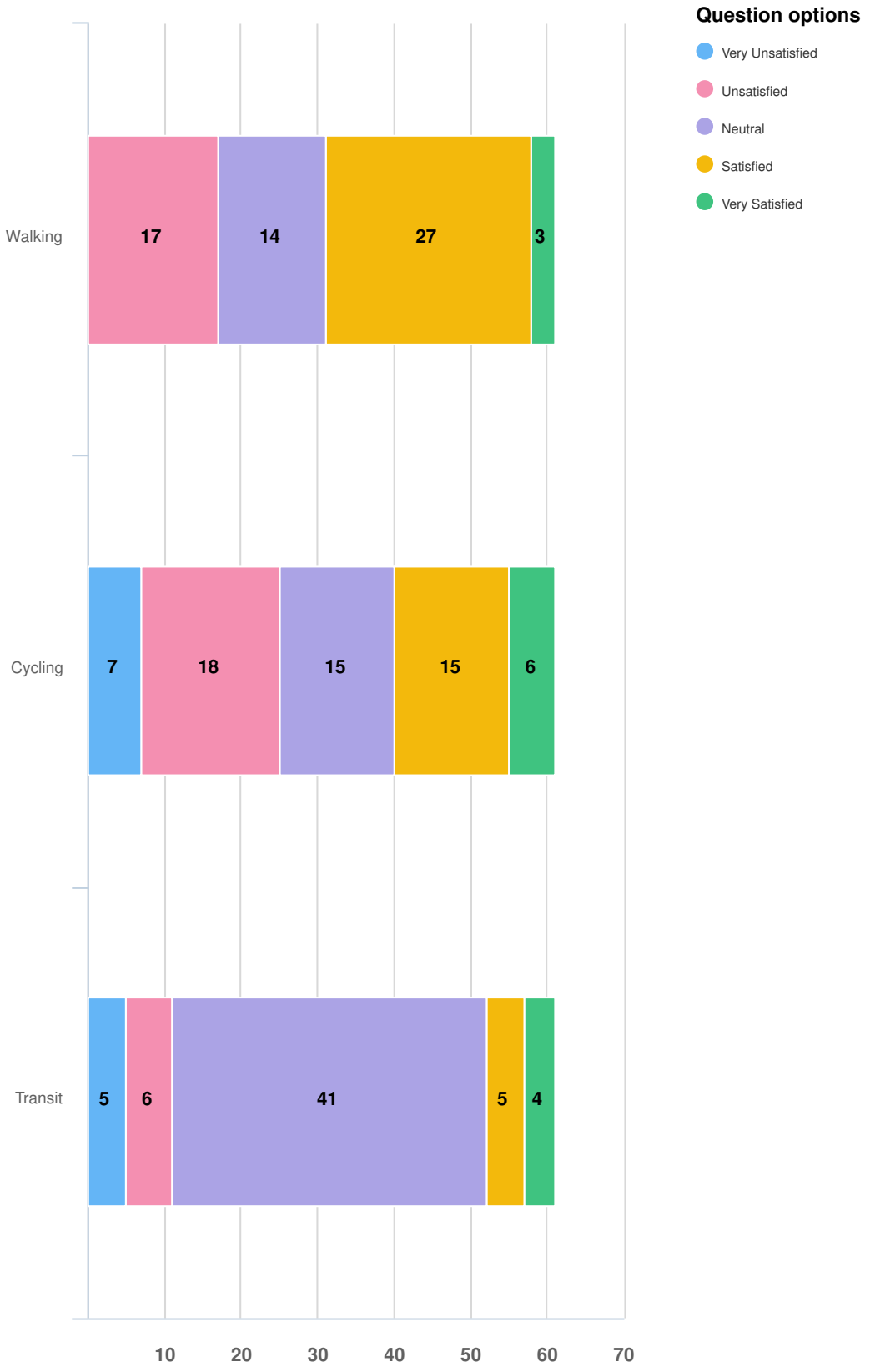


Question options

Yes No

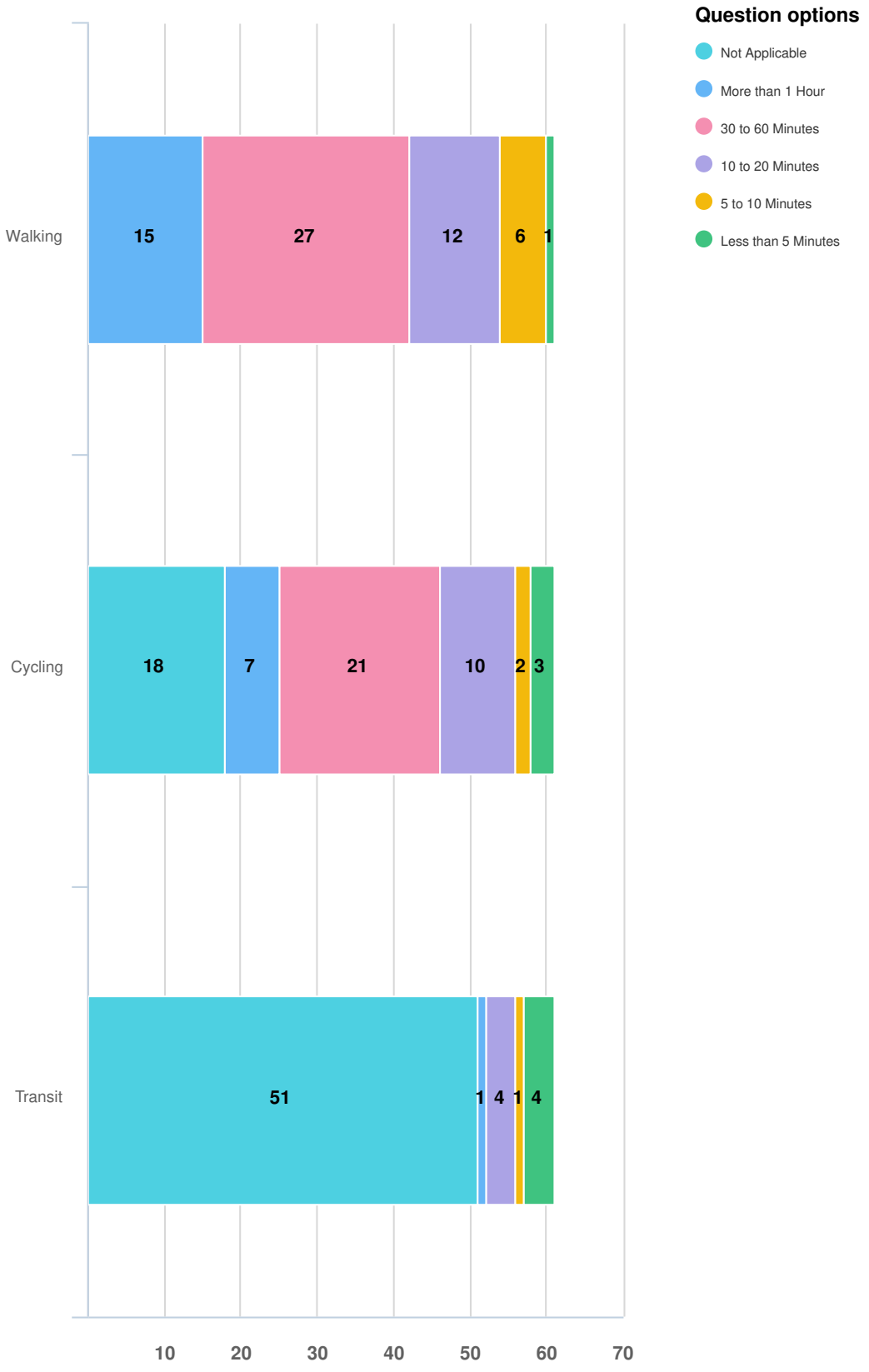
Mandatory Question (61 response(s))
Question type: Radio Button Question

Q2 How satisfied are you with the existing Quesnel active transportation system?



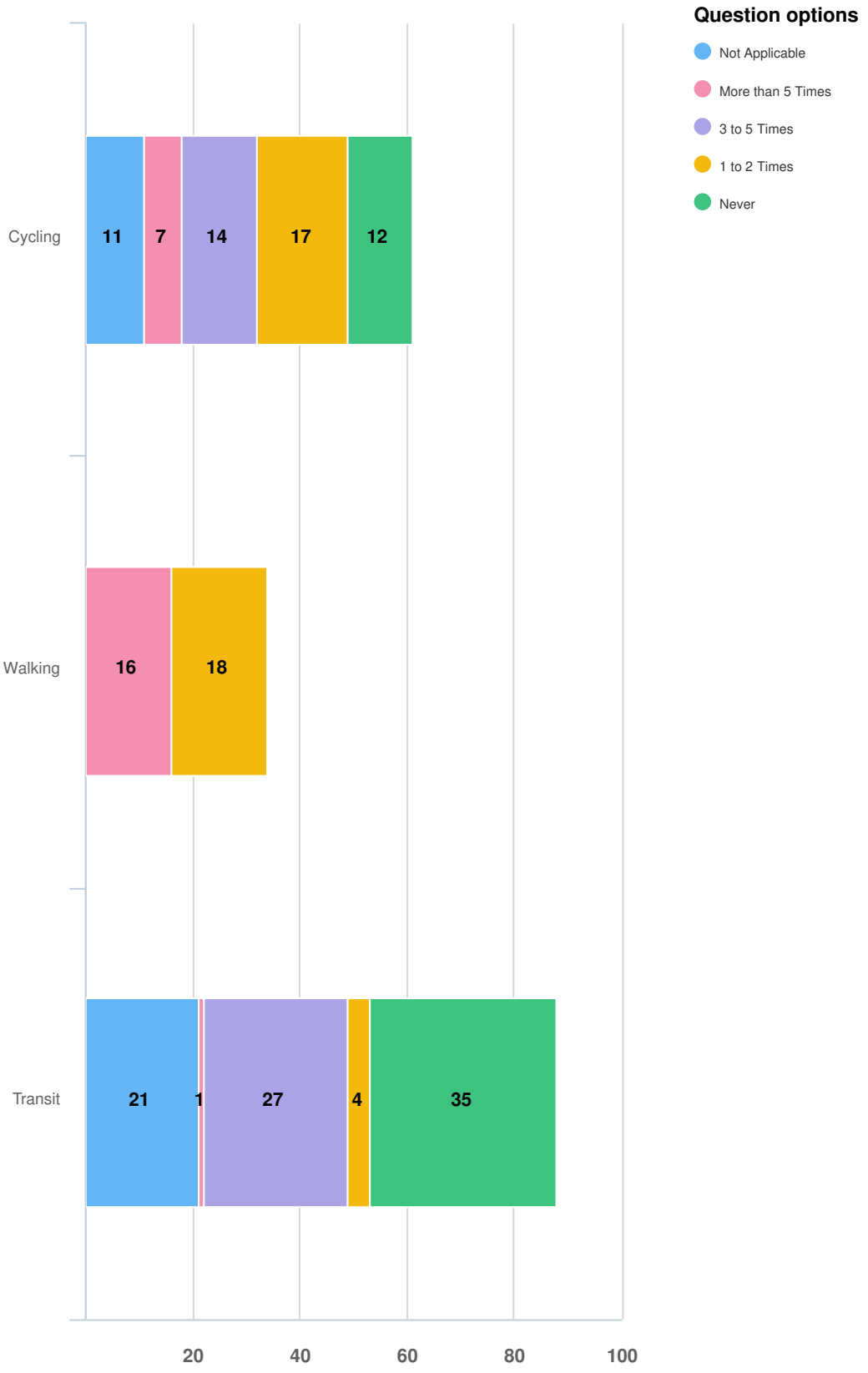
Mandatory Question (61 response(s))
Question type: Likert Question

Q3 What is your typical trip duration in Quesnel using active transportation?



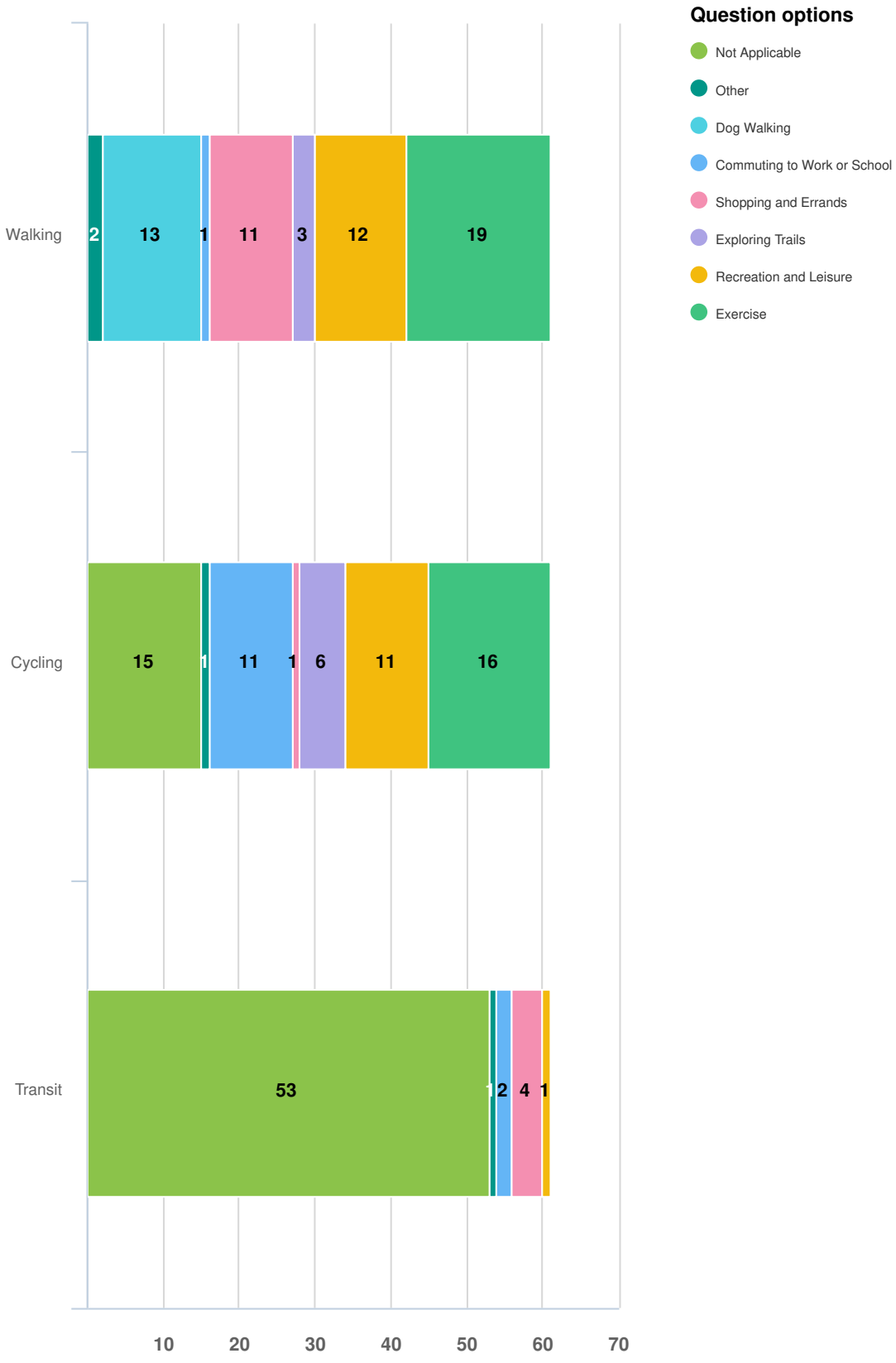
Optional question (61 response(s), 0 skipped)
Question type: Likert Question

Q4 How many times per week do you typically use active transportation in Quesnel?



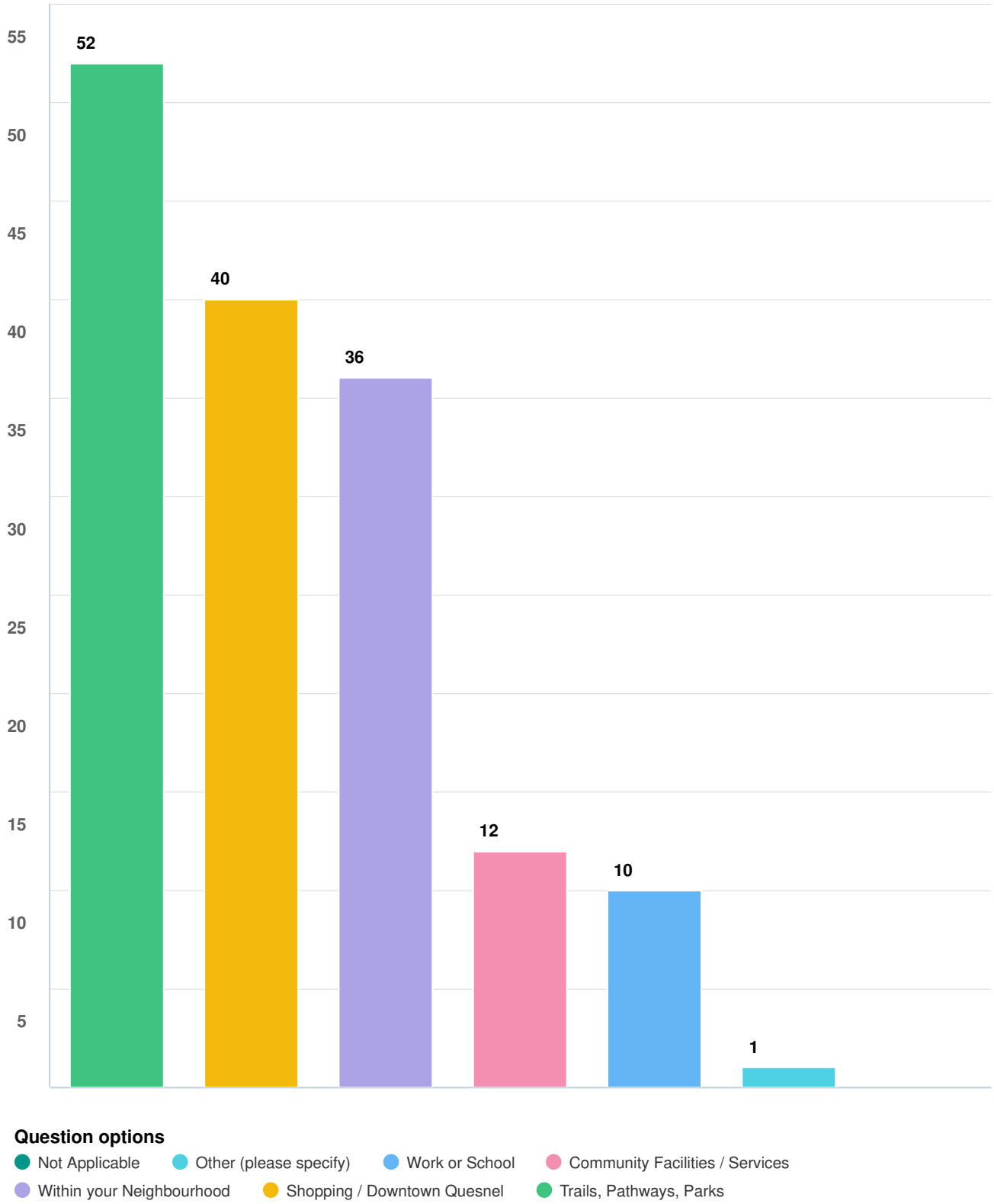
Mandatory Question (61 response(s))
Question type: Likert Question

Q5 What is your main purpose for taking trips in Quesnel using active transportation?



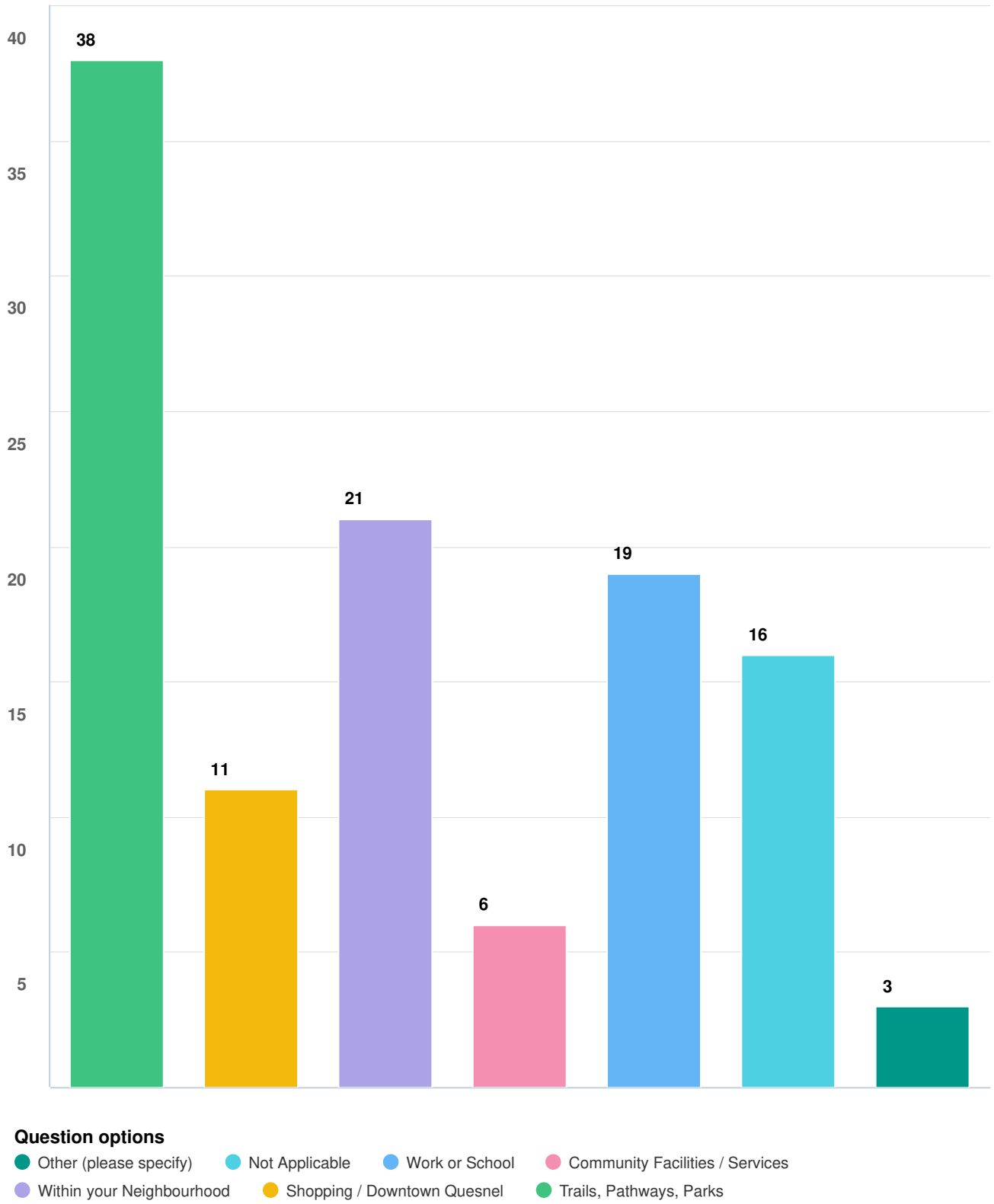
Mandatory Question (61 response(s))
Question type: Likert Question

Q6 What are your common destinations when taking trips using WALKING as your mode of active transportation?(Please choose up to 3)



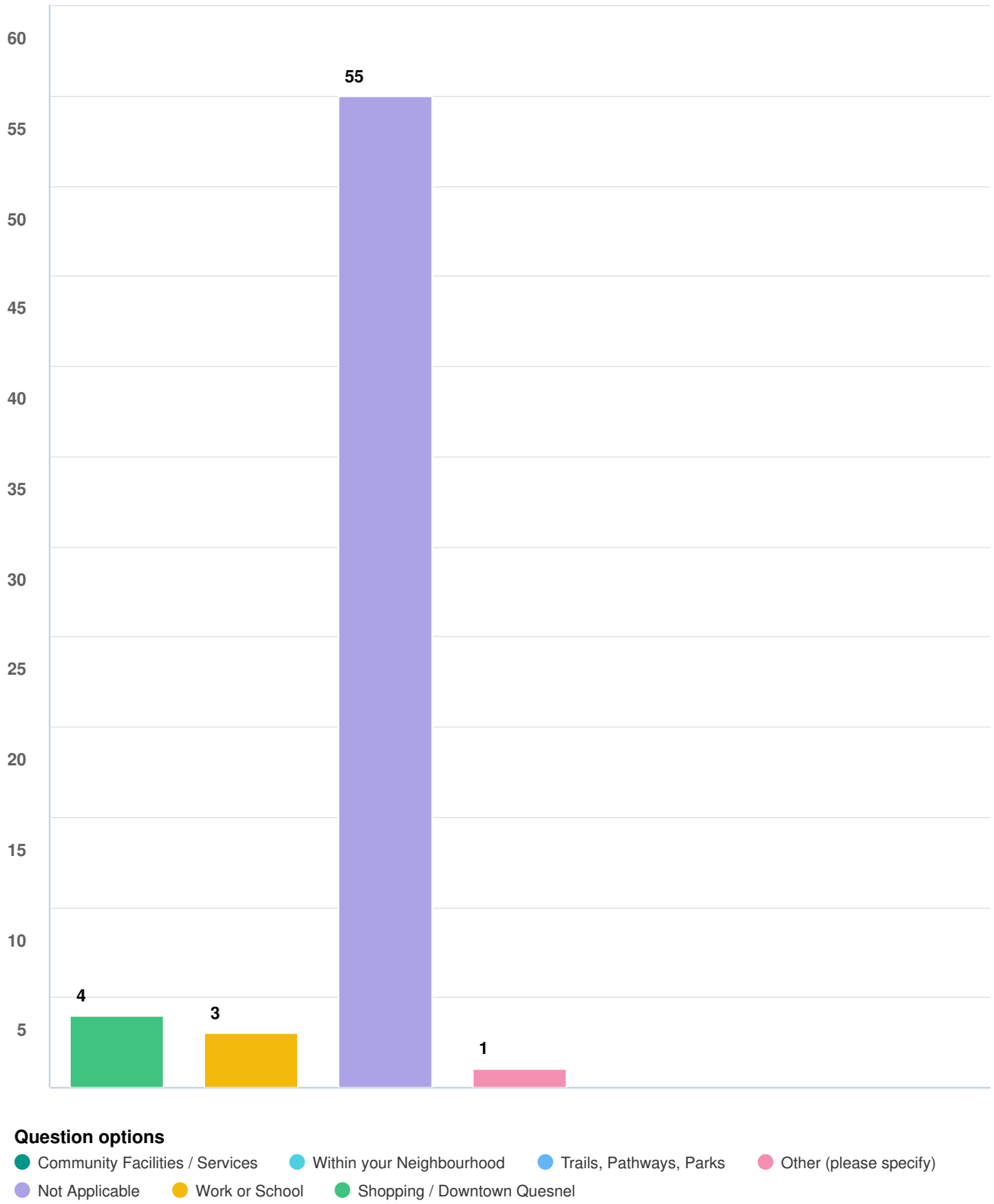
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q7 What are your common destinations when taking trips using CYCLING as your mode of active transportation?(Please choose up to 3)



Mandatory Question (61 response(s))
Question type: Checkbox Question

Q8 What are your common destinations when taking trips using TRANSIT as your mode of active transportation?(Please choose up to 3)

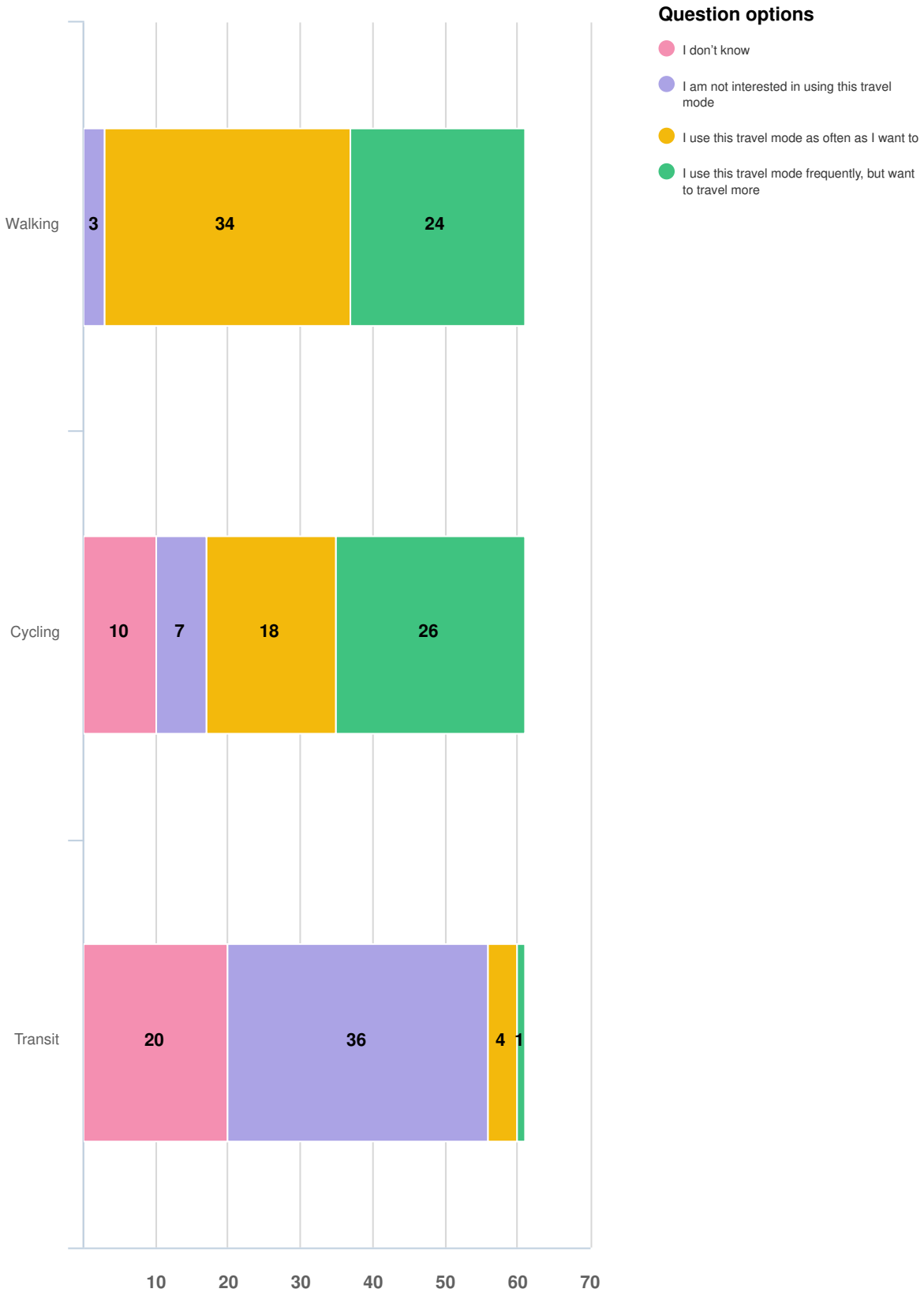


Mandatory Question (61 response(s))
Question type: Checkbox Question

Q9 How does the presence of snow affect how often you take trips using active transportation?

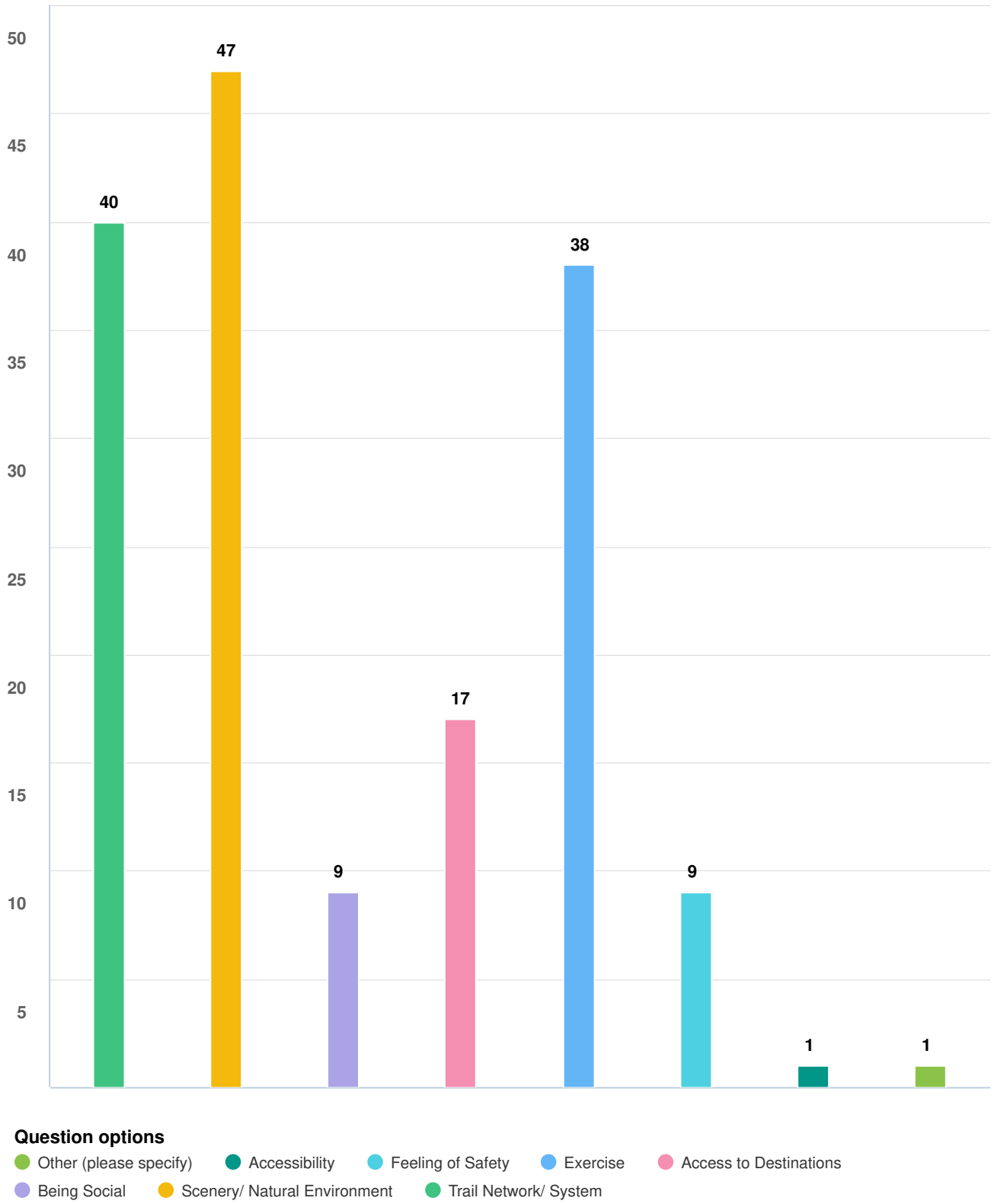
Mandatory Question (61 response(s))
Question type: Likert Question

Q10 What are your thoughts about taking trips in Quesnel using active transportation?



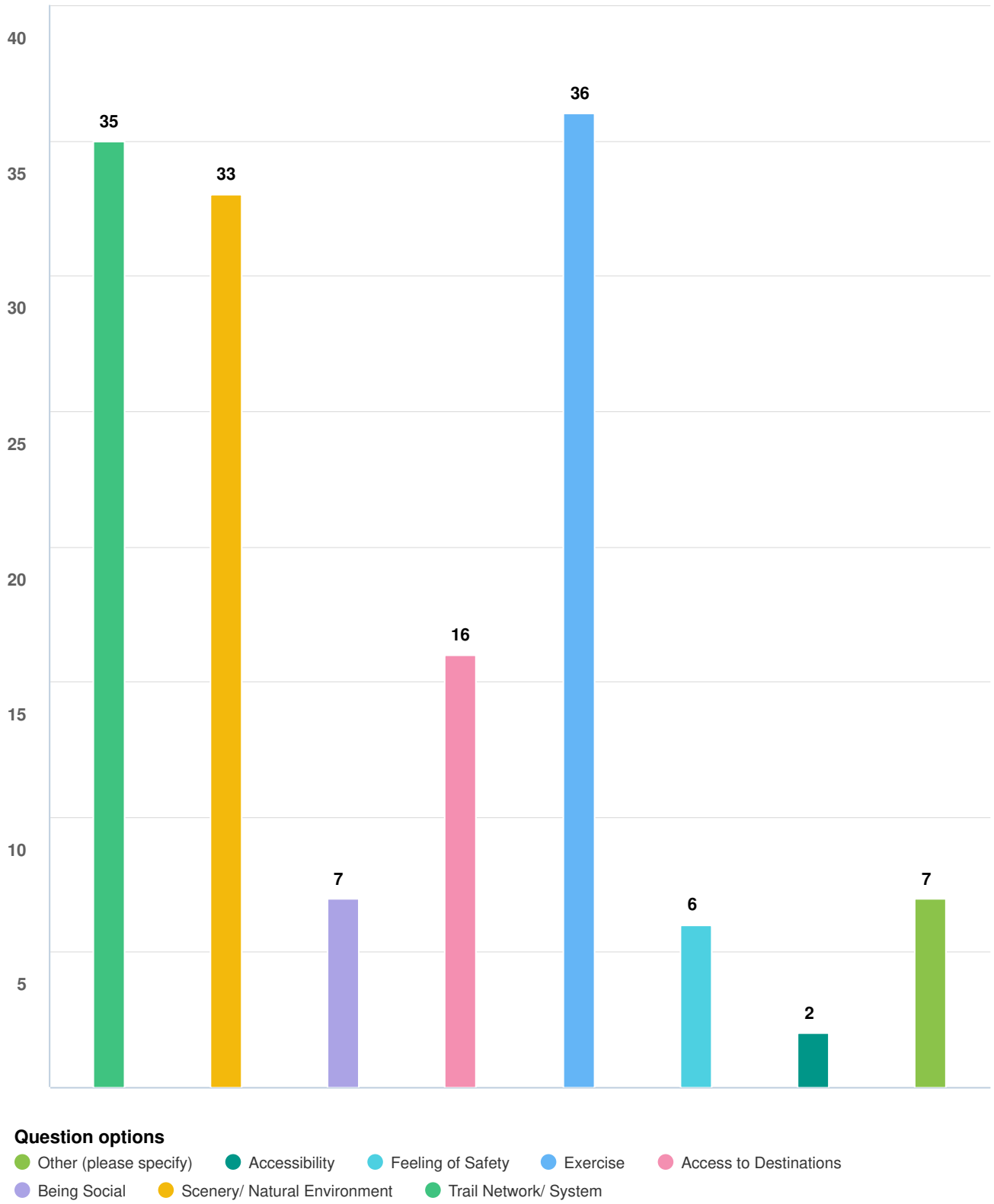
Mandatory Question (61 response(s))
Question type: Likert Question

Q11 What do you enjoy about using WALKING as your mode of active transportation in Quesnel?(Please choose up to 3)



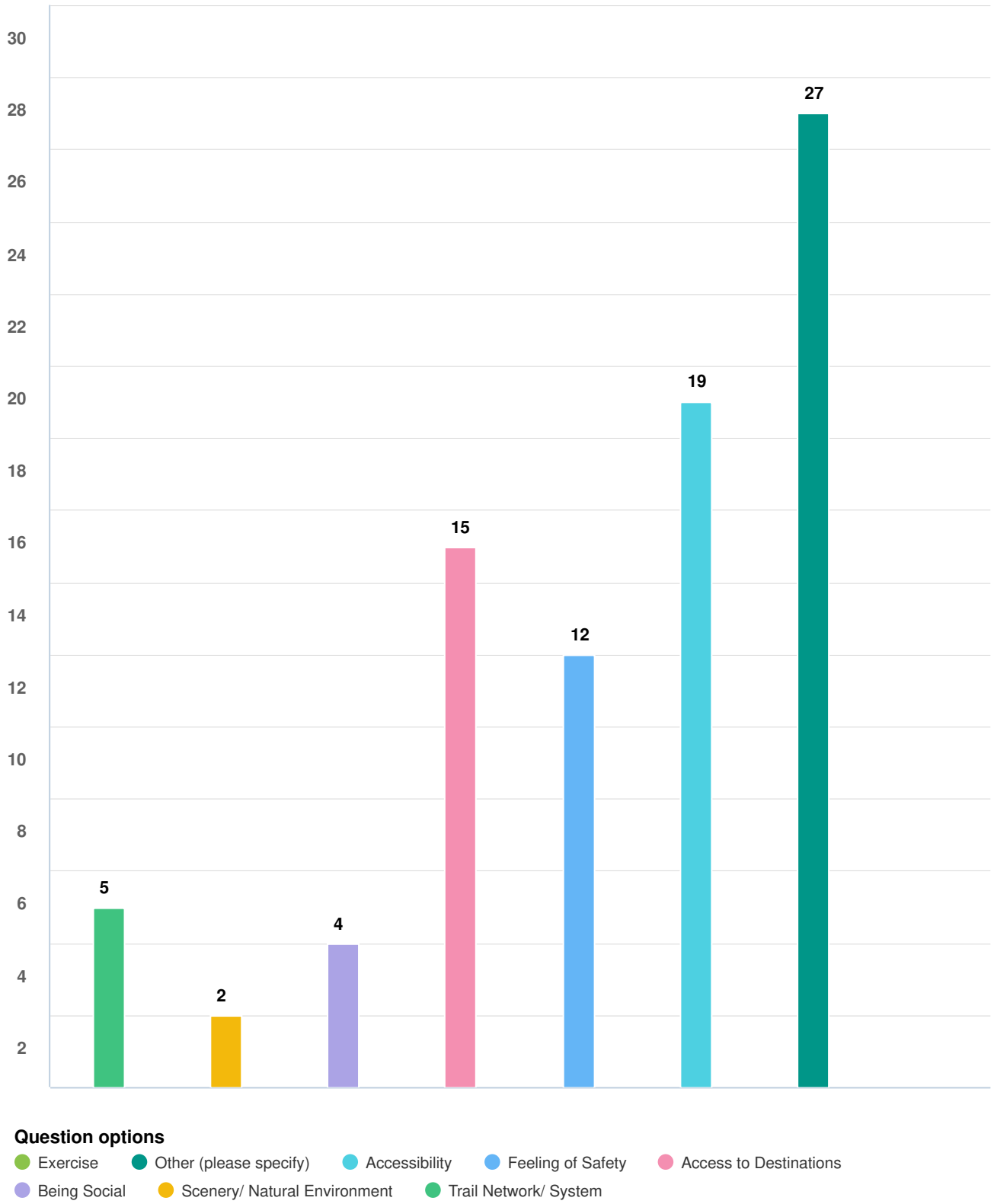
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q12 What do you enjoy about using CYCLING as your mode of active transportation in Quesnel?(Please choose up to 3)



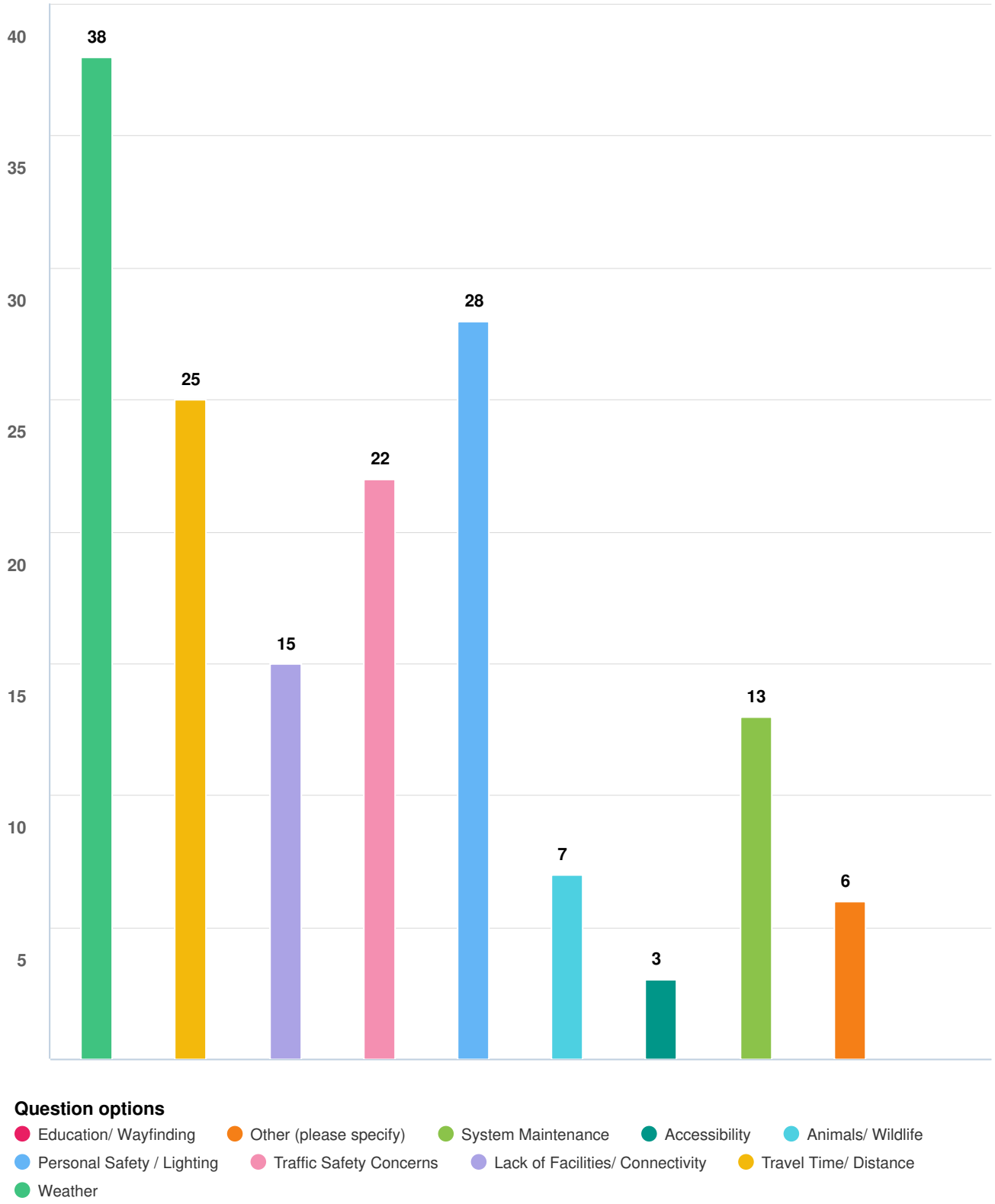
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q13 What do you enjoy about using TRANSIT as your mode of active transportation in Quesnel?(Please choose up to 3)



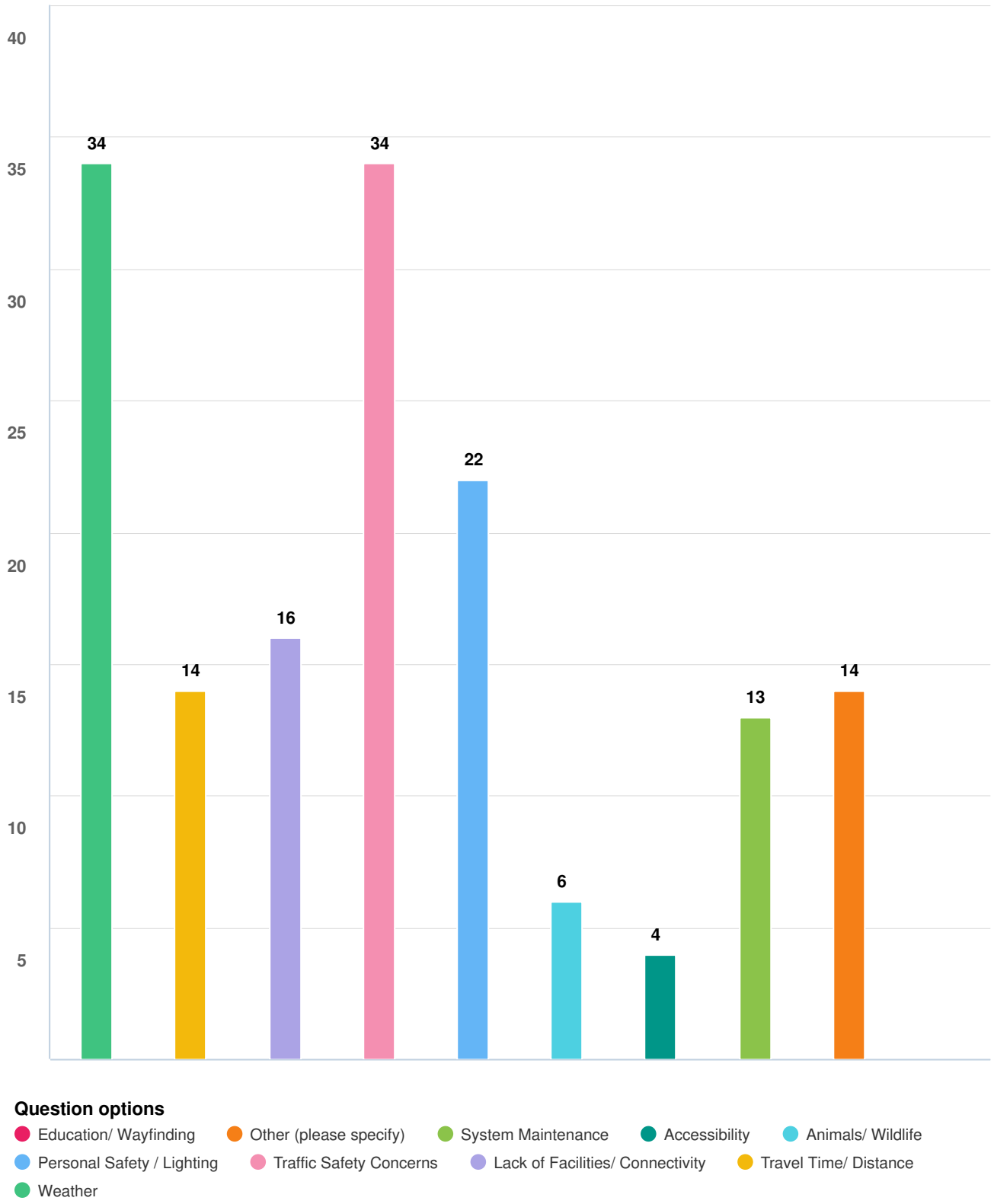
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q14 What prevents you from using WALKING as a mode of active transportation more often?(Please choose up to 5)



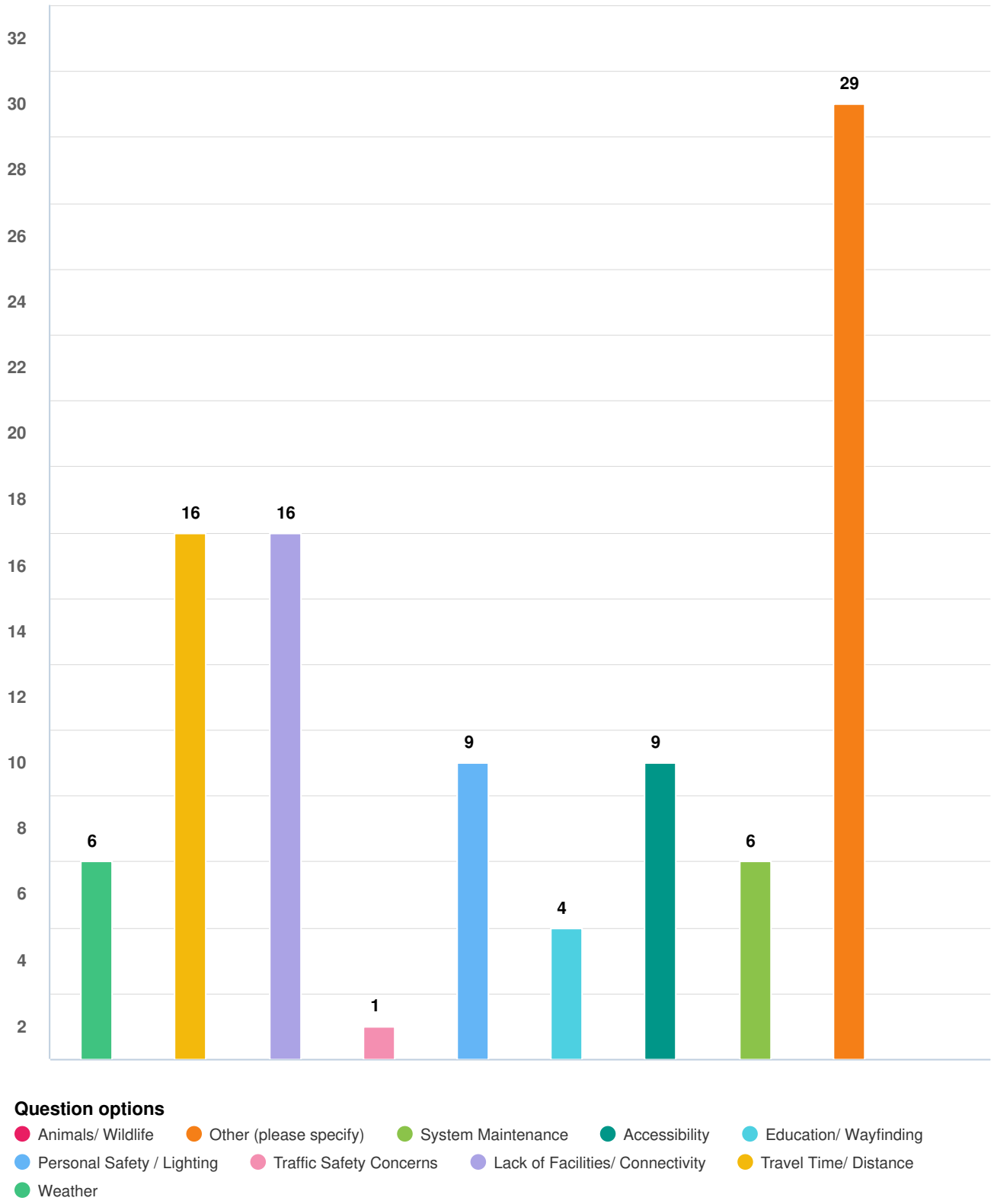
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q15 What prevents you from using CYCLING as a mode of active transportation more often? (Please choose up to 5)



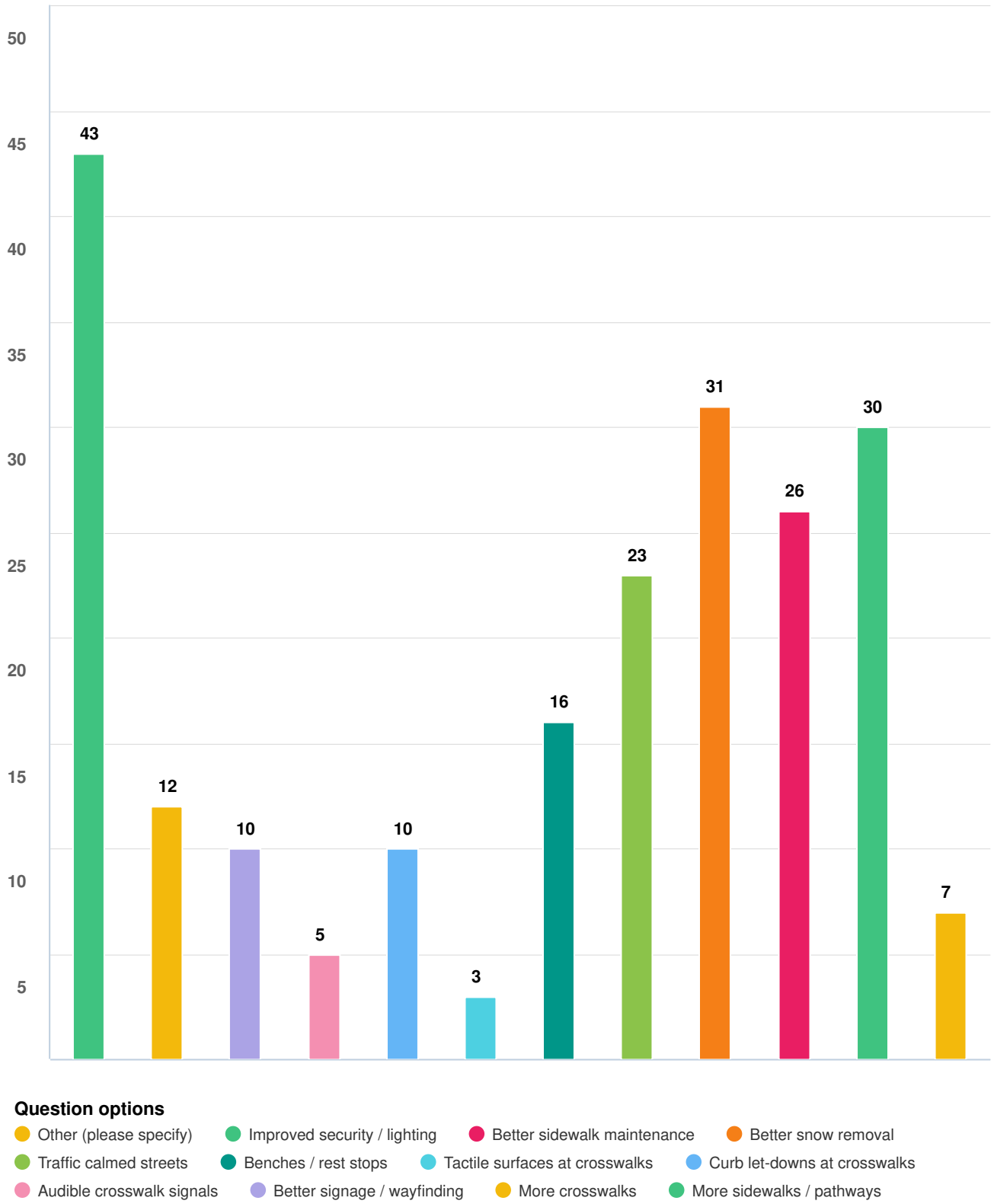
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q16 What prevents you from using TRANSIT as a mode of active transportation more often? (Please choose up to 5)



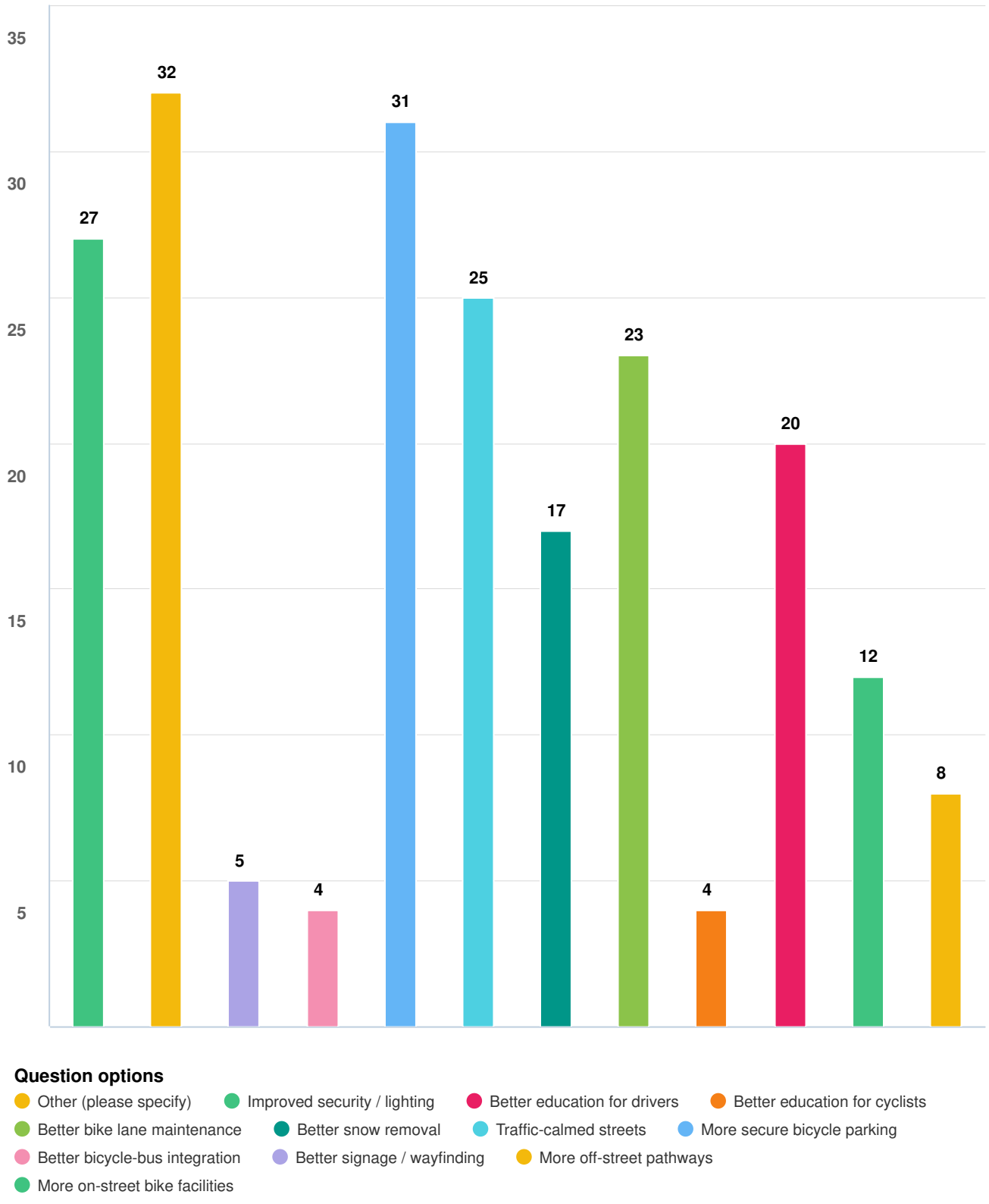
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q17 What improvements would you like to see for WALKING in Quesnel's active transportation system?(Please select your top 5)



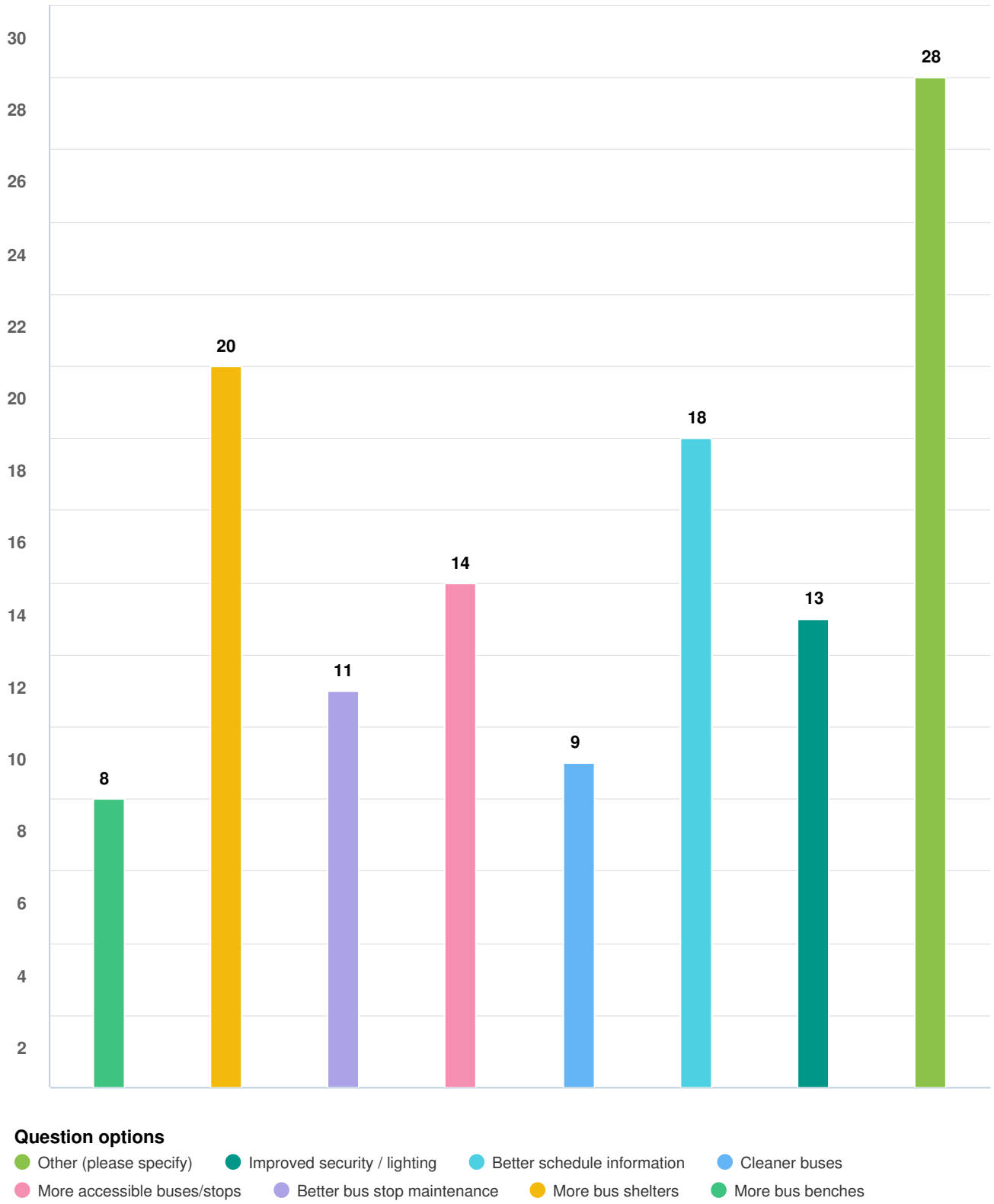
Mandatory Question (61 response(s))
Question type: Checkbox Question

Q18 What improvements would you like to see for CYCLING in Quesnel's active transportation system?(Please select your top 5)



Mandatory Question (61 response(s))
Question type: Checkbox Question

Q19 What improvements would you like to see for TRANSIT in Quesnel's active transportation system?(Please select your top 5)



Mandatory Question (61 response(s))
Question type: Checkbox Question

Q20 Please add any other comments you have about Quesnel's active transportation system.

6/26/2023 01:15 PM	Thank you for this initiative. Cycling is my prefer mode. Can you get rid of the hills please!?
6/26/2023 02:01 PM	I think Quesnel has done a great job for cyclists and walkers, now funding should be focused on the transit system especially with our sad taxi services
6/26/2023 10:28 PM	Better walking infrastructure and pedestrian safety would also encourage more kids to walk alone to school. There also need to be more marked crosswalks along Highway 97 as people frequently run across the highway with no other option. (Especially north of downtown)
6/28/2023 05:45 PM	Buses should run more often and cover larger area
6/28/2023 10:35 PM	Would like to have a bike friendly city. Don't feel safe on roads because of lack of traffic enforcement for speeding and the disregard for driving rules.
6/28/2023 10:37 PM	Bike lanes, bike lanes, bike lanes, bike paths! No safe biking route along highway 97 North into town.
6/29/2023 06:33 AM	Safe bike lanes added from the downtown core north along the highway to Finning Road and west to the Soccer Complex would encourage commuting by bike. A connection from the existing trail that comes from the rec center into the downtown core is needed. The current lack of safety hinders many from riding on roads when logging trucks are passing within a close distance to cyclists. Quesnel has done a great job with the river walk trail and the trail up to and past the rec center. We just need to expand it.
6/29/2023 08:19 AM	We are off to a good start with having the river walk, and the connecting Bryce trail from uptown to downtown. I also really liked the changes to Reid street to make it walking friendly, and slow traffic down. The new signs all over town are great. What I would like to

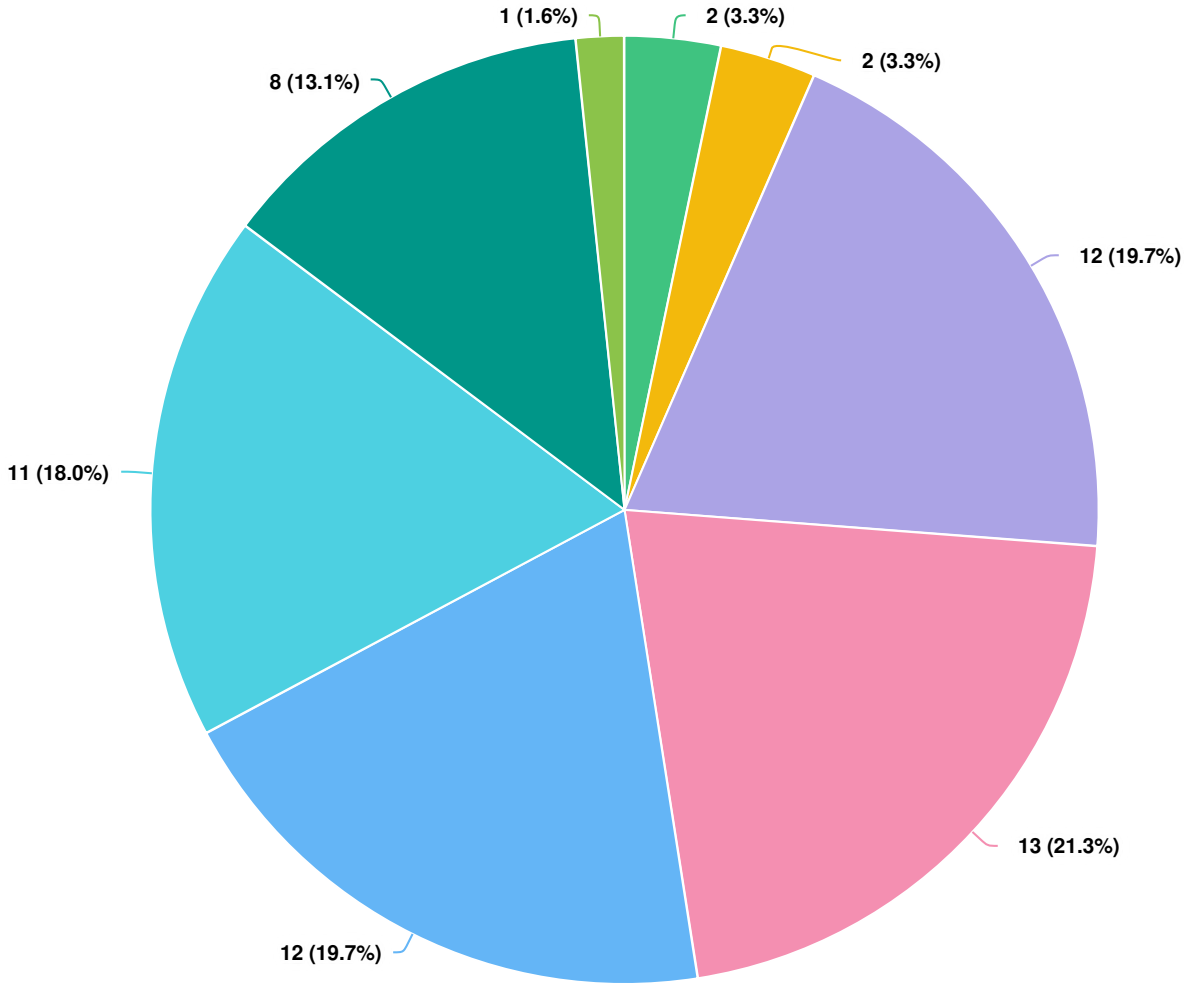
	see, is increasing accessibility for more people (e.g., another path to the industrial 2 mile flat area, a path connecting Maple Drive school to Bryce) so that we can see more people use active transportation. The cycling infrastructure is behind from what I have seen in other Northern towns. Smithers is now connected to Telkwa, Terrace has a long path connecting its First Nations band and the industry park and their town. Drivers are not respectful to cyclists here (though this is problem larger than Quesnel). This is not in City of Quesnel, but the CRD is terrible for walking in, no sidewalks, no lights, not even shoulders on the road. So many people live in the CRD and its not safe for them to walk about.
6/29/2023 08:36 AM	A large part of the problem for road cyclists is the drivers, if there were a way to help separate cyclists from them... that could help with the honking/passing on blind corners.
6/30/2023 05:09 AM	Riverwalk was terrible with no snow removal this past year.
6/30/2023 06:37 PM	The most important thing for me to use more active transportation is having places to lock up my bike securely.
7/07/2023 06:32 PM	Although I don't personally cycle or take transit, I think the City does a great job in providing options for both. As a walker, the only issue I have is with crosswalks and you are steadily addressing most of them, but the big one is by the railway station, RCMP detachment, an Visitor Center/Museum - that needs to be a full-on, traffic light controlled, pedestrian crossing (probably a Highways issue but the City can strongly advocate).
7/08/2023 09:11 AM	Planning needs to be done to provide for increased use of e-bikes especially for those inexperienced at using bicycles for transportation and leisure. Separated and well-signed bike lanes are required.
7/08/2023 09:33 AM	There is little or no provisions for public transit past the city boundaries. Even the roads have little or no provisions for bicycling and walking in more rural areas. If the city and district were truly interested in make such activities more viable and improving the environmental aspects, then the obvious solution is to make such activities more available and enjoyable as well as safer in general!
	Better connections from Red Bluff to downtown please!

7/11/2023 10:39 PM	
7/12/2023 09:34 AM	I could see how this would be worth spending money on if we lived in a somewhat flat place. It wasn't so spread out. But aside from driving to where you want to go and then walking. It's not really moneywise. Sounds like just another reason for people to waste our money and our taxes. Do the Riverwalk you have to drive down here. It would be nice if we were all in peak performance with our bodies but we have an aging population. Spending money on bike trails and bus routes would be nice if we were 15 minutes city. But we're not so don't try and make us one.
7/18/2023 03:48 PM	I would like to see trail in south hills in the res bluff area. It seems you hit the top of the hill and they just stop. Downtown, great! And then Westside, awesome! And over by the pool fantastic! Ypu go up the hill those bike trails rock! You get up the hill tho and it's just roads, with sometimes very little lighting and there is a LOT of kids on some of those side atreets
7/18/2023 05:25 PM	Electric scooters are quickly becoming popular especially during the off winter months. Come up with an urban plan to integrate scooters in with traffic and pedestrians. Pathway along 2 mile and 3 Mile Flat, sidewalks along Maple Drive and Hydraulic Road.
7/19/2023 09:10 AM	I think there could be more encouragement for cycling through collaboration with existing programs such as go by bike which is put on by the province of BC https://gobybikebc.ca/. I love the trail systems. I also feel that security is a major issue and lighting is not enough. Being approached by people begging for money or are drunk or on drugs on the trail systems or down town all of time any time of day does not feel safe for my kids or I.
7/19/2023 09:46 AM	I would love for the City to spend some time thinking of the fitness aspect for children. Parents these days often both work and cannot get their children to after school programs. This is a missed opportunity, I would like to see buses stop at both QJ and Correlieu Secondary after school. Stopping at both the Recreation Centre and the Arena's.
7/19/2023 02:53 PM	We have a fairly solid trail and pathway network to access the city including South Quesnel and West Quesnel. The biggest factor that limits users from using our network for foot/bike/scooter traffic is that they are not prioritized for snow removal. If these pathways are

	maintained during the winter and always available for use you would be amazed at the traffic they get. I run commute to work 6 days a week year round so I am very familiar with how long it takes for snow removal. The Bryce pathway to connect south Quesnel to downtown was out of commission to any traffic for weeks at a time last winter due to snow removal. This either forces people to risk their lives on Dragon lake hill or just give up on healthy commuting options in Quesnel during the 8 months of the year we have snow. Consistent snow removal is the key for every municipality with a pedestrian path network.
7/19/2023 06:46 PM	Quesnel needs bike lanes that are separated with a curb from roadways, and good signage telling cyclists which way to go, and bike lane stoplights that have automatic right of way
7/21/2023 11:35 AM	Bike theft is such a huge concern
7/21/2023 10:27 PM	NA
7/22/2023 10:26 PM	We need more sidewalks in neighborhoods and they need to not be cracked and broken. Emergency buttons like the one on the bridge would help me feel safer. Wider oaths so that if I'm using a stroller, I don't have to get off the path to pass a cyclist. More lighting would also help.
. 7/23/2023 08:39 AM	I would love to see Reid street become pedestrian-only at some point in the future.

Optional question (26 response(s), 35 skipped)
Question type: Essay Question

Q22 Please confirm your age:

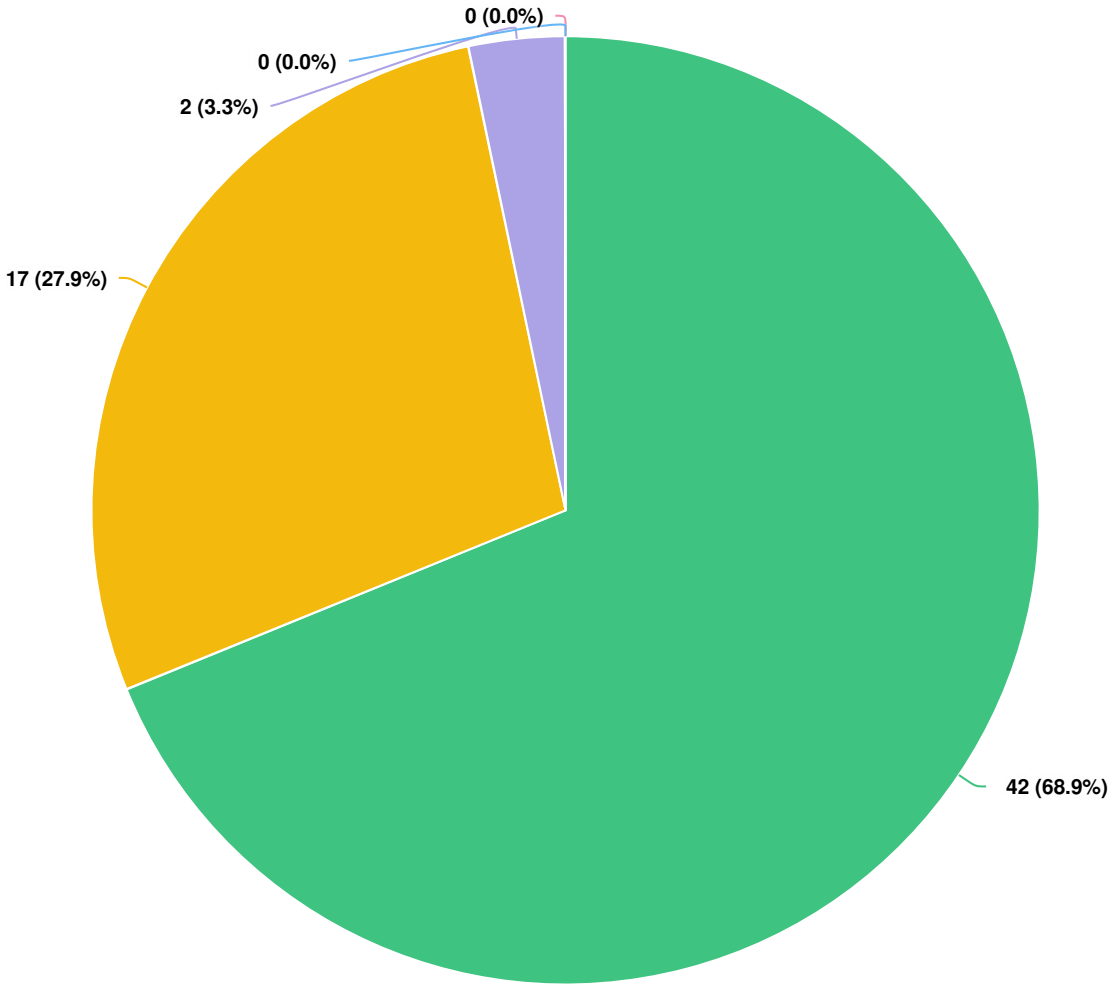


Question options

Prefer not to answer | 65 or Older | 55 to 64 | 45 to 54 | 35 to 44 | 25 to 34 | 19 to 24 | 18 or Younger

Mandatory Question (61 response(s))
Question type: Radio Button Question

Q23 Gender: how do you identify?



Question options

Other (please specify) Non-binary Prefer not to answer Male Female

Mandatory Question (61 response(s))
Question type: Radio Button Question

APPENDIX B:

COST ESTIMATES

1. Assumed Unit Costs for Improvements

The following unit costs are planning-level rates based on assumed average site conditions, for the purpose of generating order-of-magnitude estimates for project prioritization and programming. More detailed designs and cost estimates based on actual site conditions should be developed prior to advancing the projects for implementation.

No.	Facility Type	Unit Cost	Notes
1.	Concrete MUP (3m width)	$1,000/metre	
2.	Concrete Sidewalk (1.8m width)	$500/metre	
3.	Asphalt MUP (3.0m width)	$600/metre	
4.	Gravel Pathway (2.0m width)	$200/metre	
4.	Designated Bike Lane	$16/metre* (two ways)	$400/bike symbol every 200 metres x 2 directions $4/metre paint lines x 2 directions $800 sign every ~400 metres x 2 directions
5.	Cycle Accessible Shoulder	$8/metre* (two-ways)	$4/metre paint lines x 2 directions
6.	Shared Lane	$12.5/metre (two ways)	$400/bike symbol every ~75 metres x 2 directions $800/sign every ~800 metres x 2 directions
7.	RRFB Crosswalk Upgrade	$10,000 ea	

- *Prices do not include costs for road widening or property acquisition.*

2. Planning-Level Cost Estimates for Major MUP Projects

- Anderson - Marsh MUP
- North Star – Anderson Road MUP
- Juniper MUP

Quesnel - ATP Update

Conceptual Design Project Cost Estimate

ML Proj #: 2341-21544-00

Estimate Date: November 2024

Description	ID-1 Quesnel Anderson MUP Soccer field access (terminus) to Wade Ave	ID-2 Quesnel Anderson MUP Wade Ave to Doherty Dr	ID-3 Quesnel Anderson MUP Doherty Dr to Malcolm/Baker Dr	ID-4 Quesnel Anderson MUP Malcolm/Baker Dr to Elliott St (terminus)
Road Length	675	375	425	338
Grade Construction	$951,867	$565,871	$633,979	$454,409
Other Construction (Environmental Mitigation & Archaeological)	$23,288	$23,288	$23,288	$23,288
Drainage	$39,774	$14,732	$8,486	$6,748
Bridge Construction	$0	$15,877	$9,687	$5,020
Retaining Walls Construction	$0	$453,640	$276,760	$143,440
Paving Construction	$122,153	$5,854	$6,940	$4,441
Signing & Pavement Markings / Operational Construction (Signing, Pavement Marking and Guard Rail ie. Barriers)	$10,344	$8,015	$13,579	$6,877
Electrical (Lighting and Signal)	$0	$94,185	$8,280	$33,120
Landscaping	$19,637	$13,286	$15,057	$11,975
Utility Construction (hydro, telephone, pipelines etc.)	$30,000	$20,000	$0	$10,000
Subtotal Construction	***$1,197,063***	***$1,214,748***	***$996,055***	***$699,319***
Construction Contingency 40%	$478,825	$485,899	$398,422	$279,728
Total Construction (Primary) Cost	***$1,675,888***	***$1,700,647***	***$1,394,477***	***$979,046***
Land acquisition	$0	$0	$0	$0
Planning & Preliminary Design (2%)	$33,511	$34,013	$27,889	$19,581
Engineering (10%)	$167,588	$170,065	$139,448	$97,904
Project Management (10%)	$167,594	$170,064	$139,447	$97,905
Construction Supervision (10%)	$167,588	$170,065	$139,449	$97,904
Total External Costs	**$536,281**	**$544,207**	**$446,233**	**$313,295**
Total Costs	***$2,212,169***	***$2,244,854***	***$1,840,709***	***$1,292,341***

Quesnel - ATP Update

Conceptual Design Project Cost Estimate

ML Proj #: 2341-21544-00

Estimate Date: November 2024

Description	ID-5 Quesnel North Star MUP End of existing paved trail after interchange (terminus) to Campus Way	ID-6 Quesnel North Star MUP Campus Way to Bryce Trail (terminus) along the north side of the road	ID-7 Quesnel North Star MUP Crosswalk at the Rec Centre (terminus) to Nadeau St (terminus) along the south side of the road
Road Length	128	400	570
Grade Construction	$201,830	$177,456	$644,245
Other Construction (Environmental Mitigation & Archaeological)	$23,288	$23,288	$23,288
Drainage	$2,708	$8,463	$11,381
Bridge Construction	$0	$0	$8,270
Retaining Walls Construction	$0	$0	$236,280
Paving Construction	$23,480	$69,915	$4,962
Signing & Pavement Markings / Operational Construction (Signing, Pavement Marking and Guard Rail ie. Barriers)	$5,247	$8,209	$9,529
Electrical (Lighting and Signal)	$0	$0	$8,280
Landscaping	$3,195	$9,984	$29,059
Utility Construction (hydro, telephone, pipelines etc.)	$0	$0	$0
Subtotal Construction	***$259,748***	***$297,316***	***$975,293***
Construction Contingency 40%	$103,899	$118,926	$390,117
Total Construction (Primary) Cost	***$363,647***	***$416,242***	***$1,365,410***
Land acquisition	$0	$0	$0
Planning & Preliminary Design (2%)	$7,275	$8,325	$27,309
Engineering (10%)	$36,365	$41,624	$136,541
Project Management (10%)	$36,366	$41,625	$136,541
Construction Supervision (10%)	$36,365	$41,624	$136,539
Total External Costs	**$116,371**	**$133,198**	**$436,930**
Total Costs	***$480,018***	***$549,440***	***$1,802,340***

Quesnel - ATP Update

Conceptual Design Project Cost Estimate

ML Proj #: 2341-21544-00

Estimate Date: November 2024

Description	ID-8 Quesnel Juniper MUP City Limits (terminus) to Maple Drive	ID-9 Quesnel Juniper MUP Maple Drive to Balsam Ave	ID-10 Quesnel Juniper MUP Balsam Ave to Larch Ave	ID-11 Quesnel Juniper MUP Larch Ave to new crosswalk on Quesnel Hydraulic Rd	ID-12 Quesnel Juniper MUP Along Quesnel Hydraulic Road to highway intersection (start of Valhalla Rd)	ID-13 Quesnel Juniper MUP Along Quesnel Hydraulic Road to highway intersection (start of Valhalla Rd)
Road Length	436	301	641	504	340	410
Grade Construction	$235,106	$144,532	$607,798	$563,936	$364,781	$436,471
Other Construction (Environmental Mitigation & Archaeological)	$23,288	$23,288	$23,288	$23,288	$23,288	$23,288
Drainage	$26,613	$6,368	$34,892	$26,833	$30,399	$8,186
Bridge Construction	$0	$0	$0	$0	$0	$0
Retaining Walls Construction	$0	$0	$526,852	$0	$0	$0
Paving Construction	$76,119	$52,550	$113,399	$4,653	$2,771	$3,342
Signing & Pavement Markings / Operational Construction (Signing, Pavement Marking and Guard Rail ie. Barriers)	$5,086	$3,187	$7,528	$5,614	$3,490	$4,884
Electrical (Lighting and Signal)	$0	$0	$0	$24,840	$74,520	$74,520
Landscaping	$18,325	$12,651	$26,941	$21,012	$14,175	$17,093
Utility Construction (hydro, telephone, pipelines etc.)	$16,000	$20,000	$0	$0	$0	$0
Subtotal Construction	***$400,536***	***$262,576***	***$1,340,698***	***$670,176***	***$513,423***	***$567,784***
Construction Contingency 40%	$160,214	$105,030	$536,279	$268,070	$205,369	$227,113
Total Construction (Primary) Cost	***$560,751***	***$367,606***	***$1,876,977***	***$938,246***	***$718,793***	***$794,897***
Land acquisition	$0	$0	$0	$0	$0	$0
Planning & Preliminary Design (2%)	$11,218	$7,352	$37,540	$18,765	$14,374	$15,894
Engineering (10%)	$56,075	$36,760	$187,697	$93,824	$71,879	$79,490
Project Management (10%)	$56,076	$36,761	$187,696	$93,825	$71,882	$79,492
Construction Supervision (10%)	$56,073	$36,761	$187,697	$93,825	$71,879	$79,490
Total External Costs	**$179,441**	**$117,633**	**$600,630**	**$300,239**	**$230,014**	**$254,366**
Total Costs	***$740,192***	***$485,240***	***$2,477,607***	***$1,238,485***	***$948,807***	***$1,049,263***

APPENDIX C:

CONCEPTUAL DESIGN DRAWINGS

Three conceptual designs were developed for Multi-Use Pathways along the following roadways in Quesnel. The designs for each proposed pathway generally incorporate the recommended standards outlined in Section 4.2.2, with adjustments as necessary to fit site conditions and constraints.

1. Anderson – Marsh Drive MUP
2. North Star Road MUP
3. Juniper MUP

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