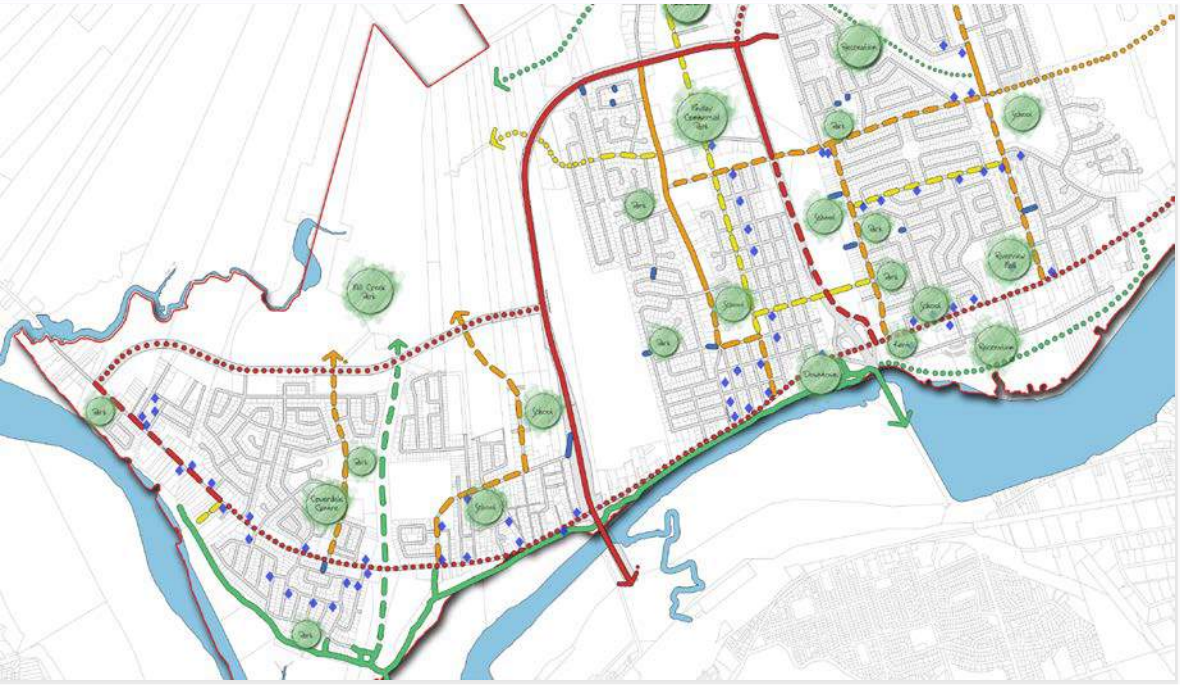

ACTIVE TRANSPORTATION PLAN

Town of Riverview

March 22, 2013

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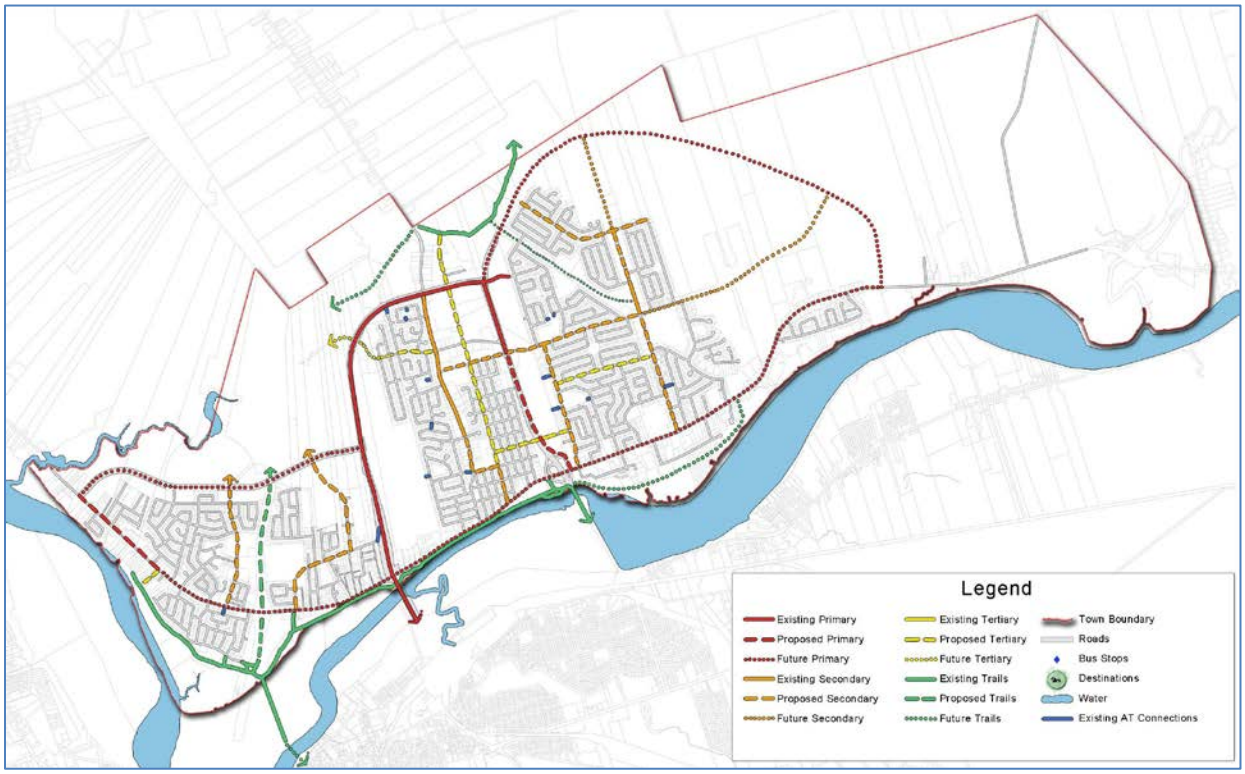
EXECUTIVE SUMMARY

Active Transportation (AT) and active living have become a focus of many municipalities throughout Canada. In terms of AT, the Town of Riverview is best known for its Riverfront Trail and the connection to the Dobson Trail. Through the development of this AT Plan, Riverview intends on extending and highlighting it's AT infrastructure. The intent of the plan is to connect Riverview's residents through a grid like network of AT routes. The AT routes are intended for any form of human powered transportation such as walking, cycling, skate boarding, wheelchairs, rollerblading, snowshoeing and cross-country skiing. The AT routes give residents an alternative to driving.

The Town of Riverview's AT Plan breaks the network into four designations:

1. Primary AT Routes
2. Secondary AT Routes
3. Tertiary Routes
4. Trails

Each category is further broken down into existing, proposed and future routes. Overlaid on a map, the AT routes help demonstrate the Town's existing routes and missing links. A design standard, developed for each category of AT route furthermore illustrates the look and intent of each route.



AT Master Plan

The network was developed through the analysis of the existing AT assets, a series of public and stakeholder consultation and the use of best practices. Based on the network the location, function and in some instances the design of signage was identified. The signage along with end of trip facilities, benches, washrooms and lighting help complete an AT network. By identifying this additional infrastructure, Riverview is ensuring it's AT network is complete and fully functional.

As mentioned above, design standards for both trails and streets were developed based on the Town of Riverview's existing road specifications. The standards provide guidelines for the integration of AT into the City's existing infrastructure. The cost associated with integrating this infrastructure was assessed for the routes highlighted in red in the table below. These routes were determined through an analysis of safety, connectivity, aesthetics and accessibility.

Project / Route	Class	Safety	Connectivity	Aesthetics	Accessibility	Average
Findlay Blvd	1	4	2	4	5	3.8
Coverdale Rd (Patricia to West Riverview)	1	4	2	4	4	3.5
Coverdale Rd (Patricia to Trites)	1	4	4	3	4	3.8
Coverdale Rd (Trites to Causeway)	1	4	4	3	4	3.8
Coverdale Rd (Causeway to Gunningsville)	1	4	4	3	4	3.8
Hillsborough Rd (Gunningsville to Hawkes)	1	4	4	3	4	3.8
Hillsborough Rd (Hawkes to Bridgedale)	1	4	4	3	4	3.8
Gunningsville Blvd	1	1	3	1	1	1.5
Cleveland Ave (Devere to Coverdale)	2	3	1	2	3	2.3
Pine Glen Rd (Devere to Gunningsville)	2	2	3	1	1	1.8
Devere Rd (Cleveland to Pine Glen)	2	2	3	2	2	2.3
Whitepine Rd	2	2	2	2	2	2
Buckingham Ave	2	3	1	2	2	2
Trites Rd (Coverdale to Whitepine)	2	2	2	2	3	2.3
Trites Rd (Callaghan to Callowhill)	2	5	4	4	5	4.5
East School	2	2	2	2	2	2
Runneymeade Rd	2	2	2	2	2	2
Callowhill Road	2	5	4	4	5	4.5
Cleveland Ave (Gunningsville to Pinewood)	3	4	2	4	5	3.8
Cleveland Ave (Pinewood to Devere)	3	2	1	2	2	1.8
Pinewood Rd	3	1	2	1	2	1.5
Bradford Rd	3	1	1	3	3	2
Sussex Ave	3	4	4	3	4	3.8
Hawkes St	3	4	4	4	4	4.0
Riverfront Trail (Old Coach to Causeway)	T	1	3	1	4	2.3
Riverfront Trail (East of Old Coach)	T	2	2	1	4	2.3

Route Analysis Table

Depending on the designation of the route, the probable cost may include sidewalk on one or both sides of the street or a multi-use trail along one side of the street. The designation, the length of the route and the existing infrastructure along the street influence the probable costs. Probable costs were developed for 12 proposed routes.

Project	Estimate Lengths	Applicable Standard(s)	Estimates of probable construction costs*	Time frame
Trites Rd (Callaghan to Callowhill)	550 m	Urban Collector Minor	$200,000 – $250,000	1-2 years
Hillsborough Rd (Hawkes to Bridgedale)	1.1 km	Arterial	$300,000 – $350,000	2-3 years
Hawkes St	200 m	Urban Local Primary	$40,000 – $60,000	2-3 years
Cleveland Ave (Gunningsville to Pinewood)	175 m	Urban Local Primary	$35,000 – $50,000	2-4 years
Findlay Blvd	1.4 km	Arterial	$300,000 – $350,000	3-5 years
Sussex Ave	1.0 km	Urban Local Primary	$200,000 – $250,000	4-6 years
Callowhill Rd	1.4 km	Urban Collector Minor	$550,000 – $600,000	5-7 years
Coverdale Rd (Causeway to Gunningsville)	1.8 km	Arterial	$950,000 – $1,100,000	6-9 years
Coverdale Rd (Trites to Causeway)	1.1 km	Arterial	$350,000 – $450,000	8-10 years
Coverdale Rd (Patricia to Trites)	1.4 km	Arterial	$450,000 – $550,000	9-10 years
Hillsborough Rd (Gunningsville to Hawkes)	2.6 km	Arterial	$1,250,000 – $1,450,000	11-13 years
Coverdale Rd (Patricia to West Riverview)	1.2 km	Arterial	$550,000 – $650,000	13-16 years
Total	**12.93 km**	**Various**	**$5,175,000 – $6,110,000**	**16 years**

Estimate of Probable Construction Costs Table

***The above estimates do not include the price to acquire lands where necessary.**

The above projects highlight the significant capital required to implement AT infrastructure throughout Riverview's AT network. Other than the significant infrastructure investment required to realize the AT network, the Town is also able to invest in smaller projects to help promote AT within the community. Such investments may include the following:

- Adding paint to all tertiary routes indicating they are shared routes;
- Installing signs to the tertiary routes indicating it is a shared route;
- Installing signage along primary, secondary and tertiary routes as well as trails;
- Widen the Riverfront Trail to 3 metres, pave it and realign wherever it is necessary to ensure the safety for snow plows;
- Working with Codiac Transit to ensure there is sufficient infrastructure available for transit users as well as AT users at all bus stops;
- Install AT end-of-trip facilities such as bike lockers, showers at key destinations along the AT network; and
- Install other AT infrastructure such as benches and washrooms along the AT network.

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Appendices:

1 Introduction

In recognition of the importance of providing safe and efficient infrastructure for alternative forms of transportation, the Town of Riverview has prepared this Active Transportation Plan. This plan furthers the Town's goal of providing a high quality of life, healthy lifestyle alternatives that help retain and attract residents.

1.1 Active Transportation

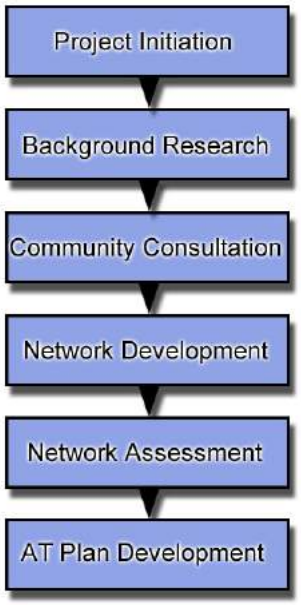
Active Transportation (AT) is both a recreational and commuter activity. It encompasses any form of human powered transporation such as walking, biking, skate boarding, wheelchairs, cross-country skiing and roller blading. Planning for AT is not a new phenomenon, many cities throughout the world, and many smaller towns are incorporating active transportation infrastructure into their commnities.

AT requires a two-pronged appraoch to achieve a truly vibrant network: infrastructure and education. A community can have excellent AT infrastructure, but the residents need to be educated on the proper use and benefits of this intrastructure. In most rural communities, social norms, such as using the car to go to the corner store, are entrenched. These can only be changed through education.

AT networks rely on the connectivity and quality of the infrastructure that makes up the network. Connectivity is gauged by the ease of access to the network. The accessibility of the network is determined by factors such as safety, aesthetics, and the location of key destinations. In many cases, accessibility of the network will differ for able-bodied people versus people with physical challenges.

1.2 Planning Process

Preparation of this Plan involved background research and community consultation. Information gathered in the initial stages helped identify the specific needs, challenges and opportunities that would need to be addressed as part of the Plan. A comprehensive summary including a preliminary AT network and set of recommendations can be found in the Background and Recommendations Report (Appendix A).



At various stages throughout the course of developing the Plan, the Project Team met with the Town's Steering Committee which was comprised of representatives from the Town's Departments of Parks, Recreation & Community Relations, Engineering & Public Works and Economic Development. These will be the Departments responsible for implementing the Plan and therefore provided valuable input into all aspects of the project.

Following the release and presentation of the draft Active Transportation Plan to the public, residents were asked for comments or suggestions to help identify changes or elements requiring further consideration before finalization and implementation. The adjacent diagram outlines the planning process carried out to-date.

2 Active Transportation Network

The location of the proposed AT routes is based on the analysis of current AT routes, the existing road system, access to routes from residential areas and access to key destination. Available mapping and on-site assessments were used in determining the existing road systems and its condition and in determining key destinations. Each route was assessed based on connectivity, accessibility, safety and aesthetics. The Steering Committee, comprised of representative from various Town Departments, provided additional information regarding route selection.

2.1 Existing Routes

The existing AT network consists of two major trails, several multi-use trails, sidewalks and several small formal and informal connecting trails within residential neighbourhoods. The major trails consist of the Riverfront Trail and Dobson Trail. The Riverfront Trail is a crushed stone multi-use trail running from the Causeway to Hawkes Street. The Dobson Trail begins in Riverview off of Pine Glen Road and travels for 51 km to the Fundy National Park. The existing multi-use trails within Riverview consist of Gunningsville Boulevard, Findlay Boulevard, Pine Glen Road, Pinder Road and Trites Road. Other existing AT infrastructure includes a bridge crossing Findlay Boulevard connecting Bradford Road East to Bradford Road West and several small connections throughout the community, which are highlighted below in Figure 1 as 'Existing AT Connections'. A larger version of Figure 1 can be found in Appendix B.

An existing cross-country ski trail is located in the Mill Creek Park area. A Park Master Plan for Mill Creek is in the process of being developed and will include the cross-country ski trails. This plan will simply acknowledge the trails existence as part of the Mill Creek Park Master Plan.

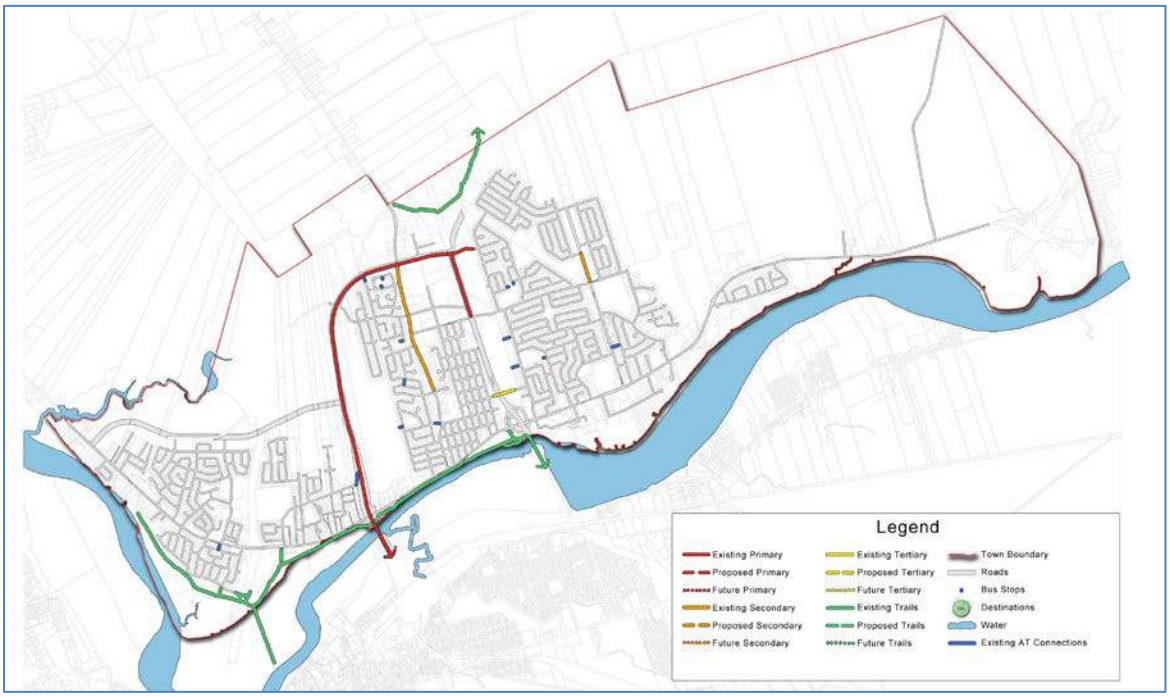


Figure 1 – Existing AT Infrastructure in Riverview

2.1.1 Codiac Transit

Public transportation is an effective bridge to facilitate the increased use of AT. Codiac Transit has already embraced AT with the installation of bike racks on each bus, known as the Bike and Ride system. Bus service is currently provided to Riverview through two bus routes. Further details including route maps can be found in Appendix C. The location of bus stops is also shown on the AT Map in Appendix D.

Through the installation of additional end of trip facilities at key destinations, Riverview will help make the use of both AT and public transportation more efficient and accessible. Key destinations may include Riverview Mall and the Chocolate River Station but could also include key bus stops along Hillsborough Road and Coverdale Road. By installing bike racks, bike shelters and/or bike lockers at these and other locations, residents will have the ability to travel by bicycle to a designated location, store their bike in a safe location and use the bus to travel to and from work. This is an excellent measure for those who do not feel safe biking on either of the two bridges or do not want to bike as lengthy of a distance.

Bike shelters can be incorporated into the design of a bus stop. The example in Figure 2 by SecuraBike shows a bike shelter that can shelter up to 32 bikes and could be large enough for transit users to also use as a sheltered bus stop.

Figure 2 – Bus Shelter, product of SecuraBike

2.2 Proposed and Future Routes

The routes on the AT Map are broken up into four designations; Primary Routes, Secondary Routes, Tertiary Routes and Trails. A copy of the map can be found in Appendix D.

2.2.1 Primary Routes

The primary routes, (Figure 3) are broken up into three designations: existing routes, proposed routes and future routes. The existing primary routes are already constructed, proposed primary routes are routes that can easily be added to existing streets and future primary routes are potential routes that can be incorporated into future developments or routes that require relatively substantial upgrades to existing infrastructure. The estimate length of existing primary route is 4.7 km, proposed primary route is 2.4 km and future primary route is 16.5 km.

Primary routes are the spine of the AT network. They are located along roads that experience high volumes of traffic from all transportation modes and can provide a choice of AT options ranging from multi-use trails, sidewalks to bike lanes.

The existing primary routes, mentioned in Section 2.1, are either paved or gravel trails featuring a landscaped buffer between it and the motorized vehicles. They include trails along Findlay Boulevard, Gunningsville Boulevard and Pinder Road.

The proposed primary routes consist of Findlay Boulevard and Hillsborough Road. The section of Findlay Boulevard between Whitepine Road and Coverdale Road is all that is left to complete the loop consisting of Gunningsville Boulevard, Findlay Boulevard and Coverdale Road. ***Until infrastructure is installed along Findlay Boulevard, it may be possible for AT users to use Buckingham Avenue as the north south connection between Whitepine Road and Coverdale Road.*** The eastern section of Hillsborough Road is having a water main installed in the coming years which provides the opportunity to also install AT infrastructure. The section of Hillsborough Road that is proposed primary route is from Hawkes Street to the future intersection of Hillsborough Road and Bridgedale Boulevard. ***It is recommended that the AT infrastructure be in the form of 1.5 meter wide bike lanes running on either side of the street between the sidewalk and the road and a new sidewalk along the north side of Hillsborough road.***

The future primary routes include Bridgedale Boulevard, West Riverview Boulevard, Coverdale Road and Hillsborough Road from Hawkes Street to Gunningsville Boulevard. ***It is recommended that AT infrastructure be included in the design for Bridgedale Boulevard and West Riverview Boulevard. It is also recommended that Riverview complete a detailed design of Coverdale Road and Hillsborough Road to determine whether or not there is width for AT infrastructure. In the meantime it is proposed that the Riverfront Trail be paved and widened to 3 meters from Hawks Street to the Causeway.*** This will give AT users an alternative route connecting Riverview East and West.

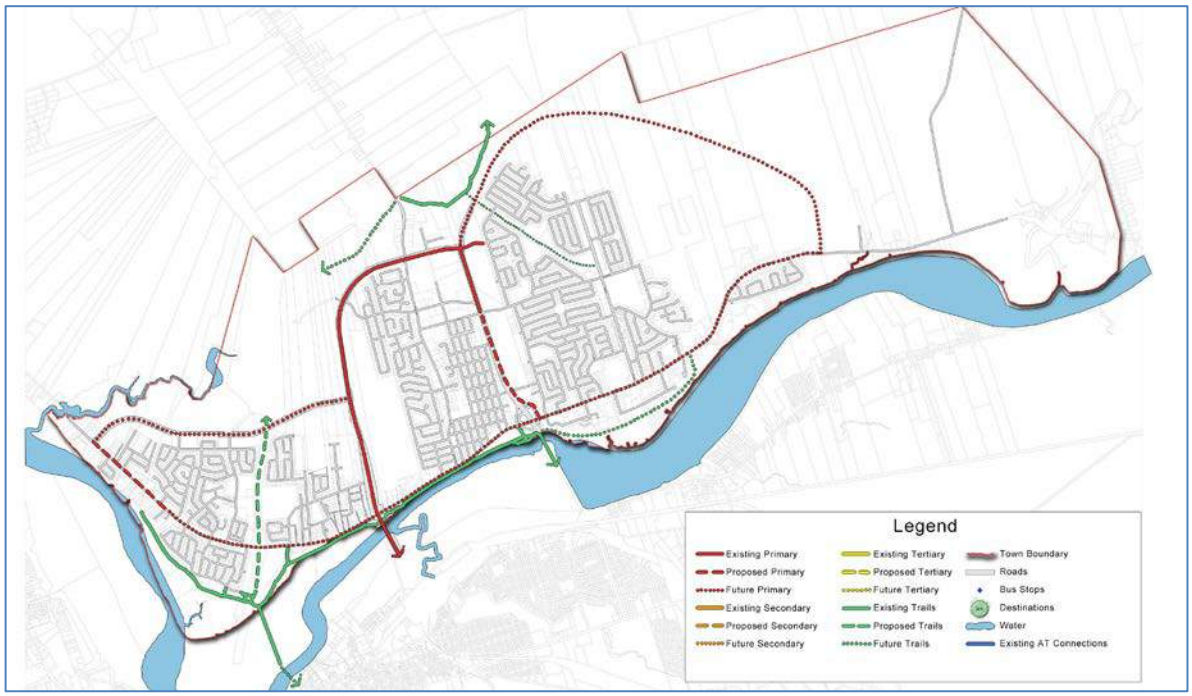


Figure 3 – AT Map: Primary Routes

2.2.2 Secondary Routes

Similar to the primary routes, the secondary routes (Figure 4) are broken up into three designations: existing, proposed and future. The secondary routes are located along routes that experience a moderate level of volume of all transportation modes. These routes will provide a choice of AT options from trails, sidewalks and bike lanes and are meant to connect tertiary routes and residential neighbourhoods to the Town's primary routes. The estimate length of existing secondary route is 1.8 km, proposed secondary route is 10.7 km and future secondary route is 3.2 km.

The existing secondary routes, mentioned in Section 2.1, include multi-use trails along a section of Pine Glen Road and Trites Road. The proposed secondary routes include:

- Callowhill Road;
- Trites Road from Coverdale Road to Callowhill Road (excluding the existing trail);
- Whitepine Road from Trites Road to Pine Glen Road;
- Pine Glen Road from Berkley Drive to Devere Road;
- Devere Road from Pine Glen Road to Cleveland Road;
- Cleveland Road from Devere Road to Coverdale Road;
- Old Coach Road from Hillsborough Road to Chamber Street;
- Chamber Street from Old Coach Road to Bridgedale Boulevard; and
- Runneymeade Road from Hillsborough Road to the Mill Creek Park.

The future secondary routes are located along potential extensions of existing roads to the West Riverview Boulevard. The routes include Whitepine Road from Trites Road to West Riverview Boulevard and Trites Road from Callowhill Road to West Riverview Boulevard.

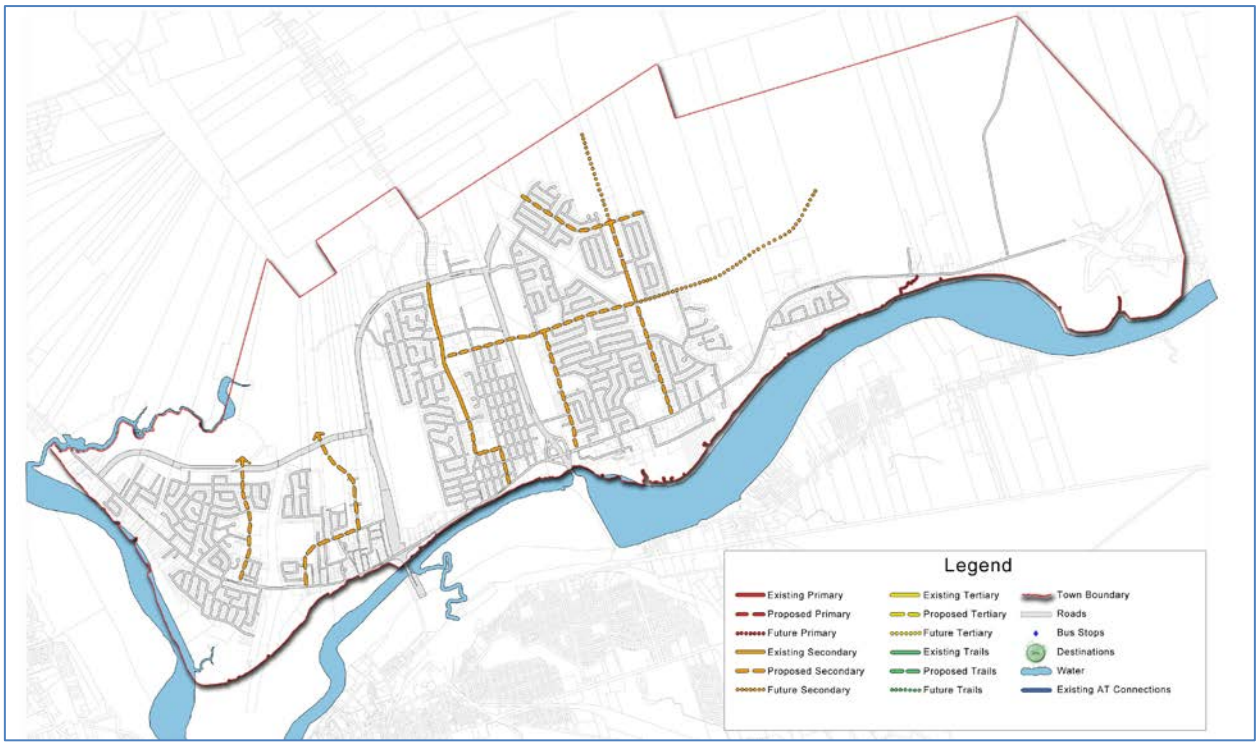


Figure 4 – AT Map: Secondary Routes

2.2.3 Tertiary Routes

The tertiary routes (Figure 5) are also broken up into three designations: existing, proposed and future. The tertiary routes are located along routes that experience a low to moderate level of volume of all transportation modes. These routes incorporate sidewalks and shared routes and are intended to connect the residential neighbourhoods with the secondary routes. The estimate length of existing tertiary route is 120 m, proposed tertiary route is 4.6 km and future tertiary route is 820 m.

The only existing tertiary route, mentioned in Section 2.1, is the pedestrian bridge linking Bradford Road East and Bradford Road West. This is the only connection crossing Findlay Boulevard between Coverdale Road and Whitepine Road. The proposed tertiary routes include:

- Sussex Avenue;
- Bradford Road East and West from Buckingham Avenue to Cleveland Avenue:
- Pinewood Road from Pine Glen Road to the Country Club Road;
- Cleveland Road from Devere Road to the Dobson Trail; and
- Hawkes Street.

The future tertiary routes include the extension of the proposed tertiary route on Pinewood Road to extend through Clayton Developments proposed subdivision and across Gunningsville Boulevard into Mill Creek Park. The route will be an extension of the sidewalks and shared route up until Gunningsville where a paved multi-use trail will extend into Mill Creek Park.

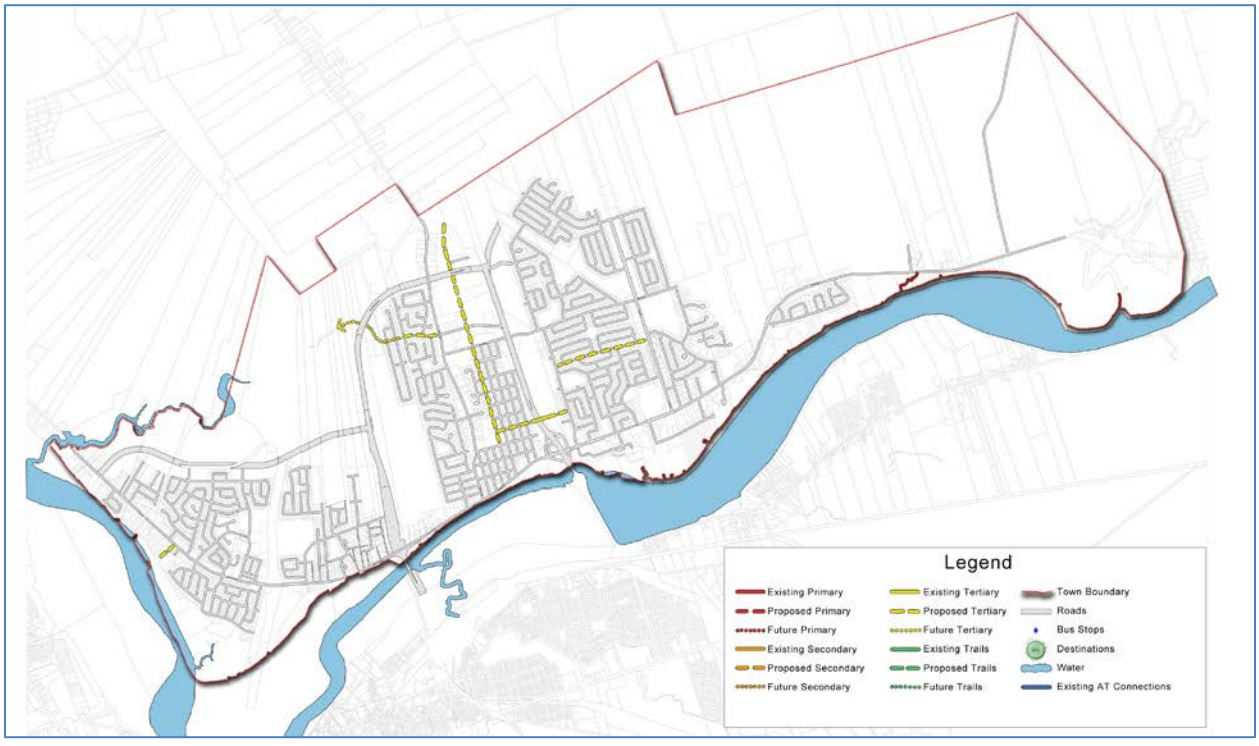


Figure 5 – AT Map: Tertiary Routes

2.2.4 Trails

The trails (Figure 6) are similarly broken up into three designations: existing, proposed and future. The estimate length of existing trail route is 7.8 km, proposed trail route is 1.9 km and future trail route is 5.3 km. The trails are typically used for recreational purposes and not for commuting, but that may not always be the case. The existing trails consist of the well-known Riverfront Trail and the Dobson Trail. ***As mentioned in Section 2.2.1, it is proposed that the Riverfront Trail be paved and widened to accommodate commuter traffic as an alternate route to Hillsborough Road and Coverdale Road.***

The proposed trail consists of an extension of the Riverfront Trail south to Mill Creek Park. This trail uses land owned by New Brunswick's Department of Transportation and Infrastructure. This land has been reserved for a future bridge connection from Riverview to Moncton and Dieppe. ***As the bridge may only be built in several decades it is proposed that the land be used for a multi-use trail.***

The future trails consist of the extension of the Dobson Trail to Trites Road and into the Mill Creek Park and the westward extension of the Riverfront Trail. The Dobson Trail is widely used by residents of Riverview and extending it further into the community only seems to make sense. However, as highlighted in Section 2.5 some land acquisitions may be required before constructing the extensions. The extension of the Riverfront trail also requires some land acquisition but for the most part will be able to travel over the sewer easement already in place. The barrier preventing the extension of the Riverfront Trail is the Causeway. Currently there is no safe way to cross the Causeway and based on conversations with traffic engineers, ***an AT bridge crossing the Causeway is recommended to help give AT users a safe East West passage over the Causeway.***

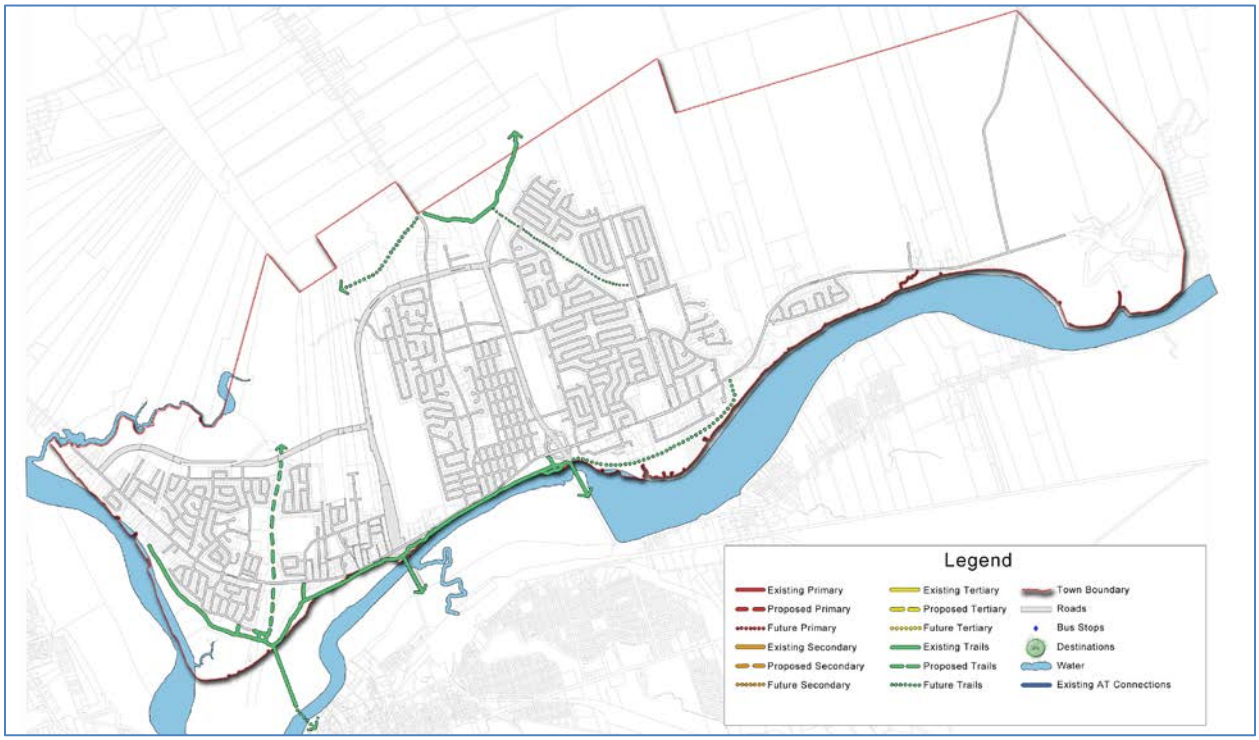


Figure 6 – AT Map: Trails

2.3 Destinations

An AT route is only as good as where it takes you. As outlined in the Background and Recommendations report, key destinations were determined through community consultation, existing land uses, future growth areas, and existing transportation networks. The key destinations (Figure 7) include schools, downtown (Riverview and Moncton), commercial areas, parks and other recreation facilities. The locations of the key destinations play a key role in determining the route of the AT network. A larger version of Figure 7 can be found in Appendix E.

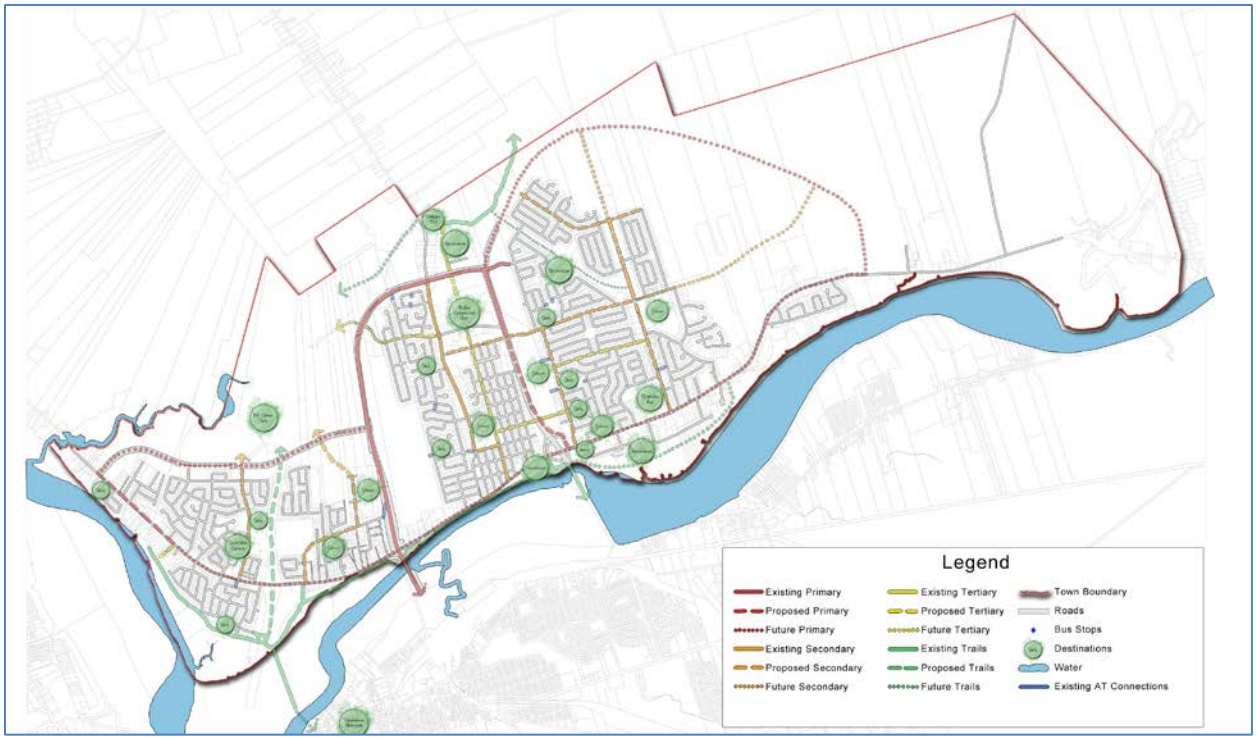


Figure 7 – Potential Land Acquisition Map

2.4 Potential Land Acquisitions and Easements

Based on the proposed and future AT routes, the Town of Riverview will be required to acquire lands or easements in order to construct some of the AT routes. The properties affected by the proposed and future AT routes are highlighted in Figure 8. The routes requiring the largest land acquisitions or easements are the extension of the Dobson trail to Trites Road and the extension of AT infrastructure from Cleveland Avenue to the Dobson Trail. These particular routes are all designated as future routes.

The extension of the Riverfront Trail west of the Causeway is proposed to run along the Town's current sewer easement similar to the existing Riverfront Trail east of the Causeway. The acquisitions or easements required to connect the Dobson Trail to the Mill Creek Park are dependent on the route. The exact route of the proposed extension of the Dobson Trail is part of the Mill Creek Park Master Plan.

A larger version of Figure 8 can be found in Appendix F.

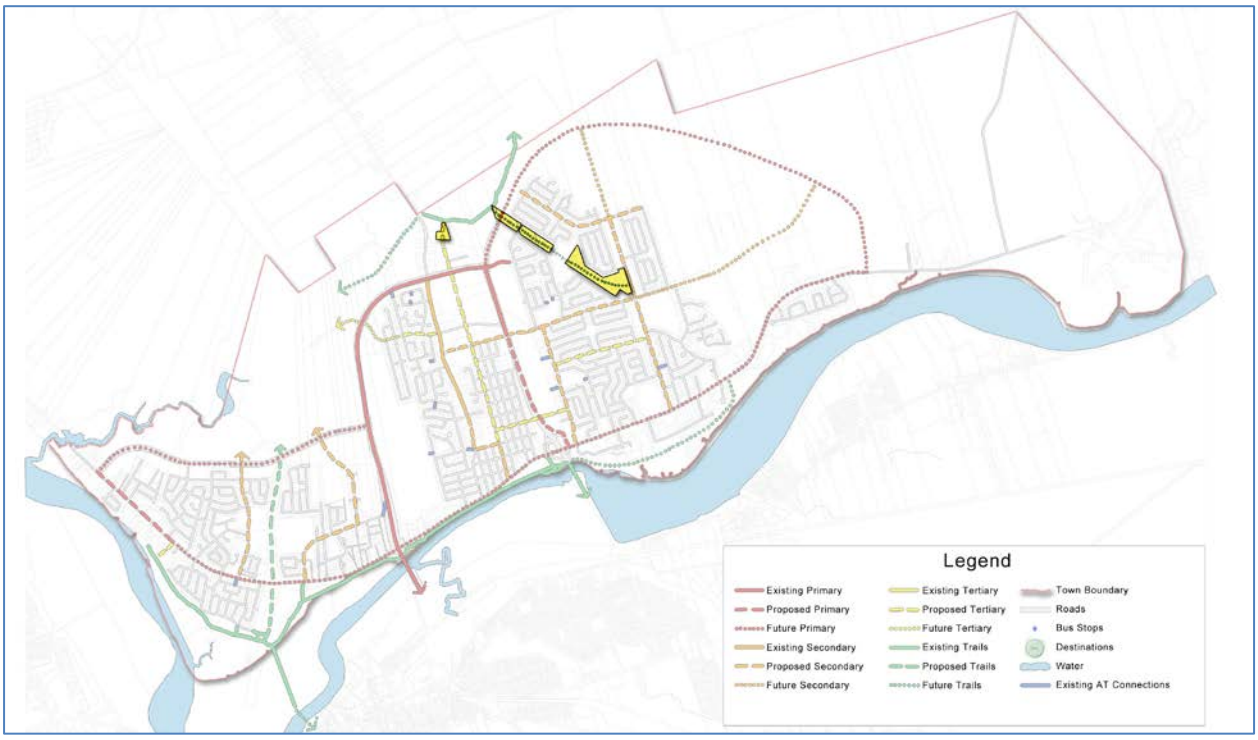


Figure 8 – Potential Land Acquisitions and Easements Map

2.5 Integration with Surrounding Communities

While Greater Moncton features a number of distinct and separate communities, all are within proximity to residents that spend time in more than one community on a daily basis. This allows residents of the region to easily take advantage of the various employment, recreation, entertainment and other opportunities in any of the communities. Connectivity between the various communities will therefore be an important component to encouraging AT use.

Currently Riverview has connections to the City of Moncton via Gunningsville Boulevard and the Causeway, to the communities of Hillsborough and Lower Coverdale via Hillsborough Road and to the community of Coverdale via the Coverdale Road. There are currently no direct connections to the City of Dieppe; however there is an indirect connection through Moncton to Dieppe.

Future connections to the City of Moncton may come in the form of a pedestrian and bicycle bridge over the Petitcodiac River to Bore View Park in downtown Moncton. Future connections to the City of Dieppe may similarly come in the form of a bridge over the Petitcodiac River to southern Dieppe. Future connections to Coverdale, Lower Coverdale and Hillsborough may come in the form of multi-use trails or bike lanes along Coverdale Road and Hillsborough Road. ***Along the sections of Coverdale Road and Hillsborough Road where the speed limit is 70 km/hr, it is not recommended that AT users share the road with motorists for safety reasons.***

The Tri-Community, City of Moncton, City of Dieppe and the Town of Riverview are in the process of completing a Regional Sustainable Transportation Master Plan. The Master Plan will develop a set of recommendations to improve and enhance transportation connections between the three communities. These recommendations should be referenced.

3 Active Transportation Design Standards

3.1 Engineering Design Standards

The Town of Riverview's current design standards for streets do not include provisions for AT infrastructure such as shared routes, bike lanes or multi-use trails. By working with the Town's Department of Engineering and following recommendations from the Traffic Association of Canada (TAC), revised standards have been developed to include AT infrastructure. The following subsections outline proposed standards for the Urban Local Primary, Urban Collector Minor and Urban Collector Primary.

3.1.1 Urban Local Primary Proposed AT Design Standard

The revised standard for the Urban Local Primary (Figure 9) includes the addition of shared routes. The current standard has a 20 metre right-of-way, 1.5 metre wide sidewalk on one side of the street, and a road configuration that can accommodate two motorized vehicle travel lanes with parking on both sides. The revised standard is the same except for the two travel lanes are dedicated and signed shared routes and the sidewalk is widened to 2.0 metres wide. Landscaping should also be included along the sidewalk in the form of trees and shrubs. Parking is still allowed on either side of the street.

The inclusion of the Urban Local Primary AT design standard should be incorporated into the AT tertiary routes along existing and future roads. A larger scale of Figure 9 can be found in Appendix G.

Figure 9 – Urban Local Proposed AT Design Standard

3.1.2 Urban Collector Minor Proposed AT Design Standard

The current design standard for the Urban Collector Minor includes a 20 metre right-of-way, 1.5 m wide sidewalk on one or two sides of the street and a road configuration that can accommodate two vehicle travel lanes with parking on both sides. The proposed AT design standard includes increasing the right-of-way to 23 metres and requiring a 2.0 metre wide sidewalk on one side and a 3.0 metre wide multi-use trail. Where there is space the multi-use trail should be widened to 3.6 metres as recommending in TAC. Landscaping should also be included along the sidewalk and multi-use trail in the form of trees and shrubs. Parking is still allowed on either side of the street.

The inclusion of the Urban Collector Minor AT design standard should be incorporated into the AT secondary routes along existing and future roads. A larger scale of Figure 10 can be found in Appendix H.

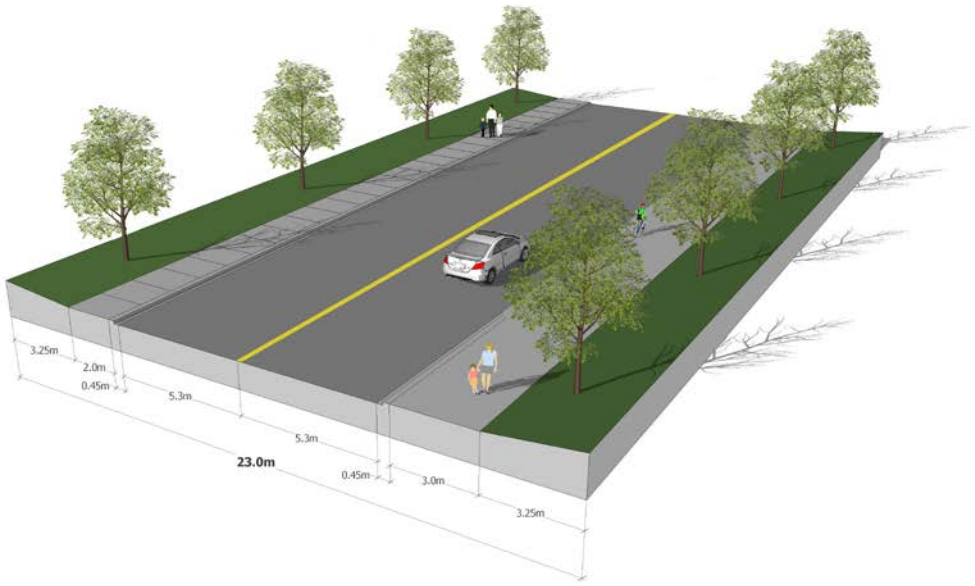


Figure 10 – Urban Collector Minor Proposed AT Design Standard

3.1.3 Urban Collector Primary Proposed AT Design Standard

The current design standard for the Urban Collector Primary includes a 23 metre wide right-of-way, 1.5 metre wide sidewalks on both sides of the street and a road configuration that can accommodate two vehicle travel lanes with parking on both sides. The proposed AT design standard includes widening the one sidewalk to 2.0 metres and the other 3.0 metres to a multi-use trail. Where possible the multi-use trail should be widened to 3.6 metres. Landscaping should also be included along the sidewalk and multi-use trail in the form of trees and shrubs. Parking is still allowed on either side of the street.

Similar to the Urban Collector Minor, the Urban Collector Primary AT design standard should be incorporated into the AT secondary routes along existing and future roads where a wider asphalt surface is required. A larger scale of Figure 11 can be found in Appendix I.

Figure 11 – Urban Collector Primary Proposed AT Design Standards

3.1.4 Trail Design Standard

There is currently no design standard for trails in the Town of Riverview. Based on the best practices outlined in Appendix A and discussions with town staff, a minimum design standard has been produced. The design standard includes a 3.0 m paved surface, a 1.0 m cleared area on either side of the trail and a 1.5 m landscaped area on the outer limits on the right-of-way. The 1.0 m wide cleared area running alongside the trail is based on CPTED principles and provides users with surveillance of surroundings. Not shown in Figure 12, trails should also have a vertical clearance of 2.4 – 3.0 m to ensure users are safe from any obstructions.

The inclusion of the Trail design standard should be incorporated into the Riverfront Trail and any other trail intended to be used by users with wheels. A larger scale of Figure 12 can be found in Appendix J.

Figure 12 – Trail Design Standards

3.2 Design Challenges

Based on Best Practices outlined in the Background and Recommendations report, several roads and intersections in Riverview pose some difficult design challenges when trying to incorporate AT infrastructure. These areas include:

- Coverdale Road and Hillsborough Road;
- Causeway Interchange; and
- Findlay Boulevard.

Coverdale Road and Hillsborough Road are one of the most heavily travelled routes in Riverview. They are the only streets that connect Riverview East and West. Sections of the roads are quite narrow and without a detailed analysis and redesign of the roads there is currently no space for bike lanes. ***As mentioned in Section 2.2.1, a prompt solution is to direct AT users to the Riverfront Trail and in the future any major work required to the street should include AT infrastructure.***

Figure 13 – Hillsborough Road and Coverdale Road Design Challenge

The Causeway interchange has proven to be a major barrier for AT users wanting to travel East or West along Coverdale Road. There is currently a sidewalk running along the south side of Coverdale Road crossing the Causeway, but based on public consultation and on-site assessment this is not a safe or inviting experience for AT users. ***After consultation with traffic engineers the most effective solution while maintaining the interchange is to build an AT bridge along the north side of Coverdale Road spanning over the causeway.*** The AT bridge will provide AT users with a safe and inviting connection over the Causeway Interchange.

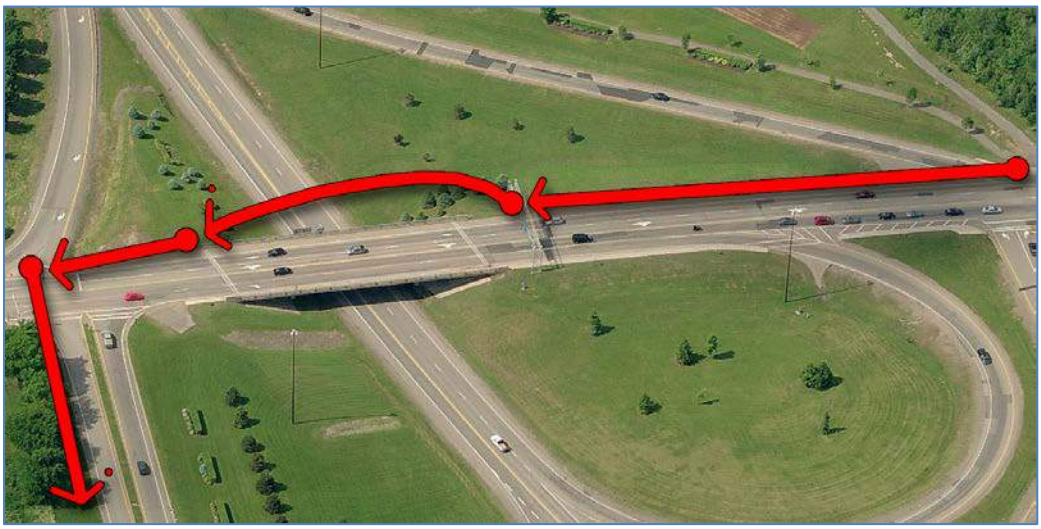


Figure 14 – Causeway Interchange Design Challenge

Findlay Boulevard is a heavily travelled route in Riverview and connects South West Riverview with Coverdale Road and Moncton. A multi-use trail runs along Findlay Boulevard from Gunningsville Boulevard to Whitepine Road but the trail does not continue down Findlay Boulevard towards Coverdale Road. This section of Findlay Boulevard experiences vehicles travelling at higher speeds and is not an ideal location for bike lanes or shared routes. ***We are proposing to continue the multi-use trail along the western side of Findlay Boulevard.*** The multi-use trail will connect to the high school in a number of locations as well as to Bradford Road West and to Coverdale Road.

Figure 15 – Findlay Boulevard Design Challenge

3.3 Other (i.e. curb cuts, storm grates)

When designing roads, sidewalks and trails it is important to consider the design of curb cuts, storm grates, and robust surfaces. With an aging population, more and more residents are limited to traveling with wheelchairs and walkers. The design details of an AT route can have a large impact on the users experience. Curb cuts of at least 1.5 metres helps ensure users will have any easier time traveling the AT route. Storm grates on the road should be designed and/or oriented so that cyclists' wheels cannot easily get caught in them. Figure 16 provides an example of storm grates in Riverview oriented the correct and incorrect way.

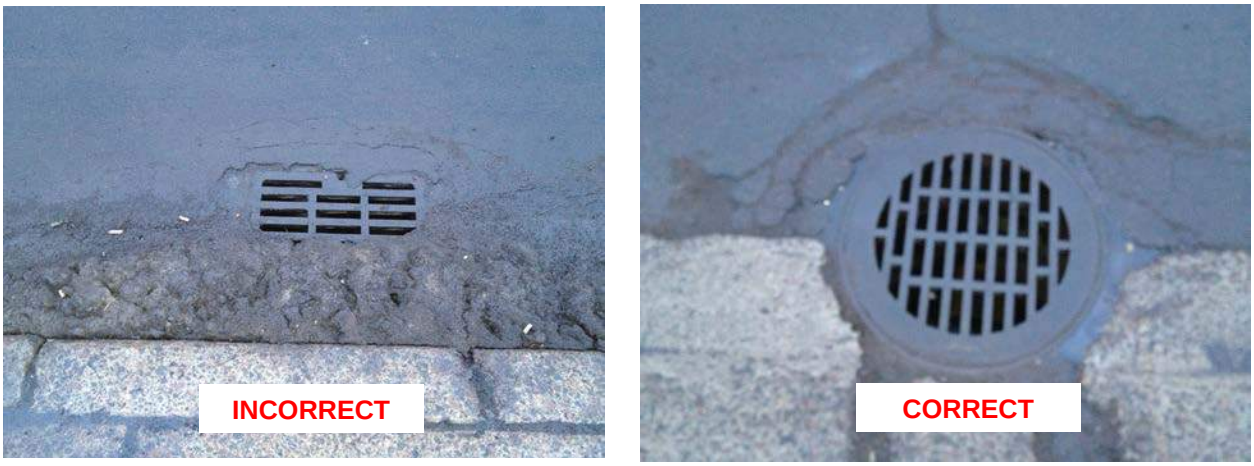


Figure 16 – Examples of storm grates in Riverview

When developing an AT network it is important that surface materials cater to the intended users. For example an ideal surface for walkers, joggers and runners is crushed rock as it is easier on the joints but for cyclists and individuals in wheelchairs and walkers an asphalt surface is the preferred surface. Concrete, which is typically used for sidewalks is more durable to wear and tear but is hard on the joints and less comfortable to travel with wheels. ***It is proposed that trails intended for walkers, joggers and runners are surfaced with crush rock and multi-use trails intended for walkers, joggers, runners, bikers and other forms of AT with wheels are surfaced with asphalt. It is also proposed that the Town consider asphalt for sidewalks.***

4 Additional Active Transportation Infrastructure

4.1 Signage

Signage and wayfinding are important consideration when promoting AT infrastructure. They provide users with information on points of interest, destinations and connections and encourage and inform users how to safely use the AT infrastructure. Providing mapping is also important to promote increased knowledge and use of this infrastructure. Signage should be used to create a cohesive “branding” and look to the trails and bike route network. Figure 17 provides an example of the signs that are in the process of being developed by the Town of Riverview. It is recommended that similar signs be used for the branding of the trails and bike route network.

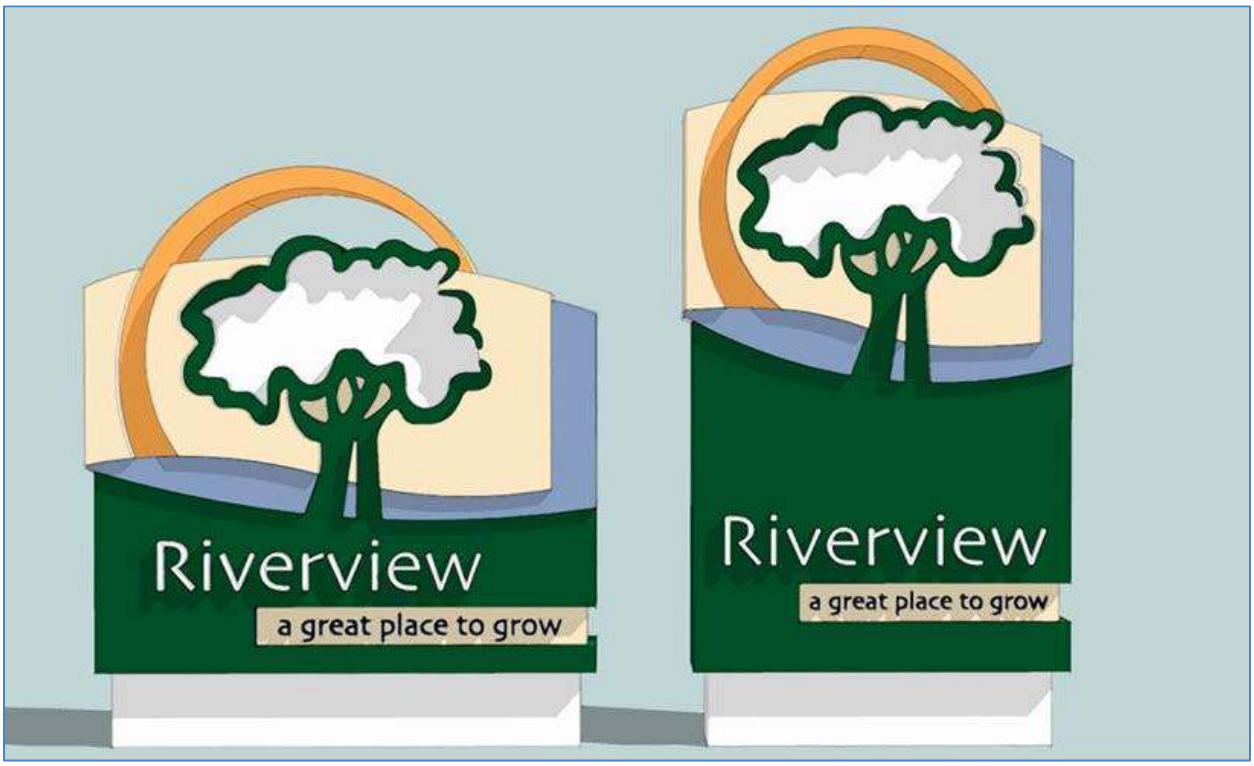


Figure 17 – Riverview Signage from the Town of Riverview

4.2 Traffic Control Signage

All bikeway traffic control signage should follow the *Bikeway Traffic Control Guidelines for Canada* produced by the TAC. These standards outline appropriate traffic control for the installation of signs and pavement markings on bikeways in Canada. The guidelines are intended for bikeways within the public right-of-way, but may be applicable to off-road bikeways as well. An outline of the TAC standards that apply to the AT Plan can be found in Appendix K.

4.3 Trail Access Signage

Trail access signage is broken up into two categories: primary access point and secondary access points. Different levels of signage are used for the two access points. Primary access points are located at the main access points of trails and include signage in the form of a kiosk. Every kiosk should have the following information.

- Map of the entire AT network including location and directional information.
- Names of the individual AT routes.
- Information on the different types of AT routes (i.e. paved trails, shared roads).
- Point of interest along the AT routes.
- Destination along the AT route.
- Rules on how to use the AT network.

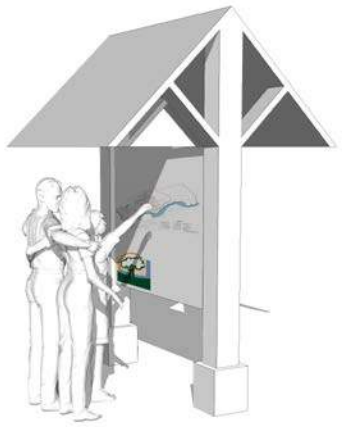


Figure 18 – Example of a Primary Access Point Sign

Kiosks may also include bulletin boards for community events associated with AT. Figure 18 is an example of a primary access point sign. The recommended locations of the kiosks are shown in Figure 19. A large version of Figure 19 can be found in Appendix L.

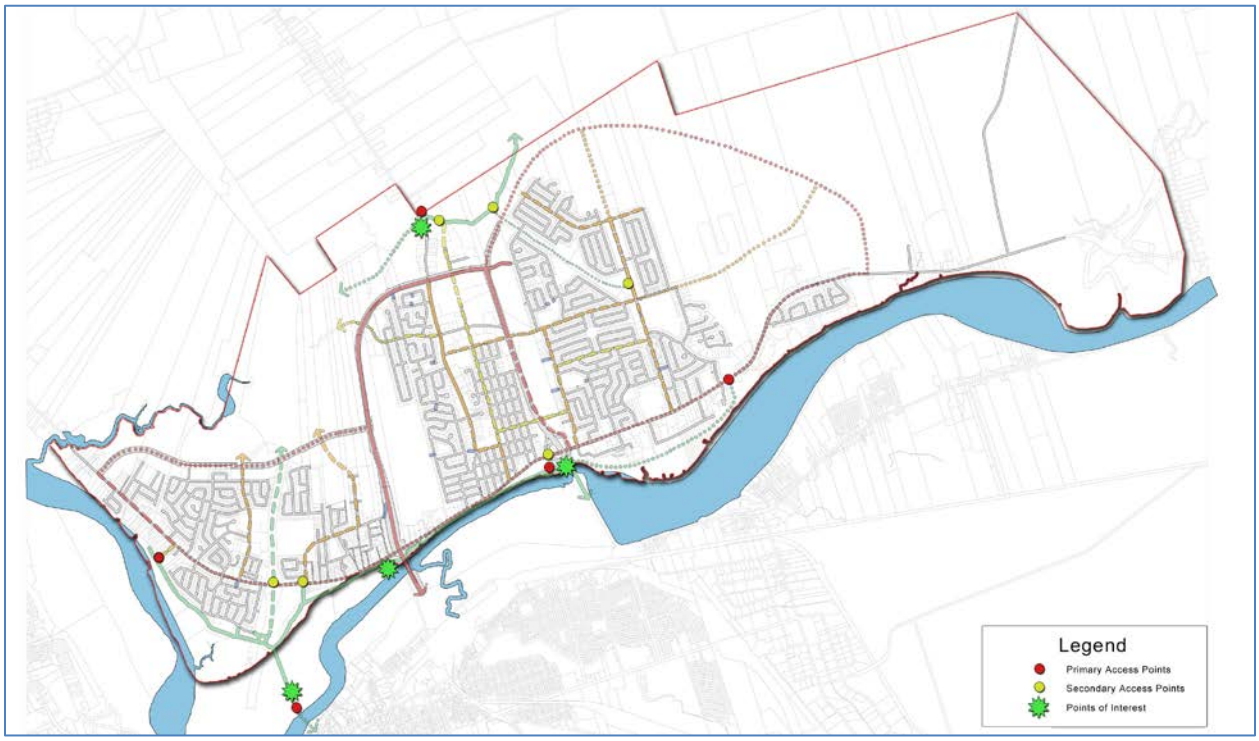


Figure 19 – Proposed locations of signage and points of interest

Secondary access points are located along the AT network and are in the form of signs such as the signs shown in Figure 20. These signs can include the name of the trail and the rules on how to use the specific route it advertises. The recommended locations of the secondary access point signs are shown in Figure 19.

Figure 20 – Example of a Secondary Access Point Sign.

4.4 Interpretive Signage

Interpretative signs are used for educational purposes along trails and routes. The interpretative signs can be tied directly to the route mapping and can aid in wayfinding. The development of interpretive signage provides an opportunity for partnerships with local trail systems or environmental groups. Below in Figure 21 are examples of interpretive signs. The recommended locations of interpretive signs are shown in Figure 19.

Figure 21 – Examples of Interpretive Signs

4.5 Mileage Markers and Wayfinding Signage

The mile marker signs should be located along routes frequently used by runners and walkers, such as the Riverfront Trail, Gunningsville Boulevard and Pine Glen Road. Figure 22 gives an example of a mile marker sign. Wayfinding signage should be located along all routes to reassure users that they are still on a designated AT route. Figure 22 gives an example of a wayfinding sign.

Figure 22 – Examples of a Mile Marker Sign and a Wayfinding Sign.

4.6 End of Trip Facilities

Effective bicycle infrastructure also includes end of trip facilities. End of trip facilities can include sheltered and non-sheltered bike racks, bike lockers, showers and changing rooms. Providing end of trip facilities removes a barrier for residents to use AT for commuting.

Sheltered and non-sheltered bike racks provide users a space to park and lock their bike while at their destination. Areas that should include sheltered bike racks are major bus stops and schools. Non-sheltered bike racks are sufficient at other destinations. Based on the best practices outlined in the Background and Recommendation Report the most recommended bike rack is the inverted U bike rack. Figure 23 is an example of an inverted U bike rack.

Figure 23 – Examples of an inverted U bike rack

Other end of trip facilities includes showers and changing rooms. These are typically provided for commuters and are found at schools and employment centres. It is essential for effective AT networks that the end of trip facilities be located near the key destinations throughout the Town.

4.7 Benches and Washrooms

Other forms of infrastructure that is important to the success of AT networks are benches and washrooms. These facilities are becoming increasingly important with an aging population. They provide the elderly, the young and the mobility-disabled residents with areas to rest along the AT network and an opportunity to use the washroom. These facilities are currently found along Riverview's Riverfront Trail. These facilities should be included at major bus stops, along future trails and at major destinations.

4.8 Lighting

Based on the Crime Prevention Through Environmental Design (CPTED) standards outlined in the Background and Recommendation Report lighting visibility along dark and unsafe sections of any AT route and sidewalk are essential. Lighting should be included along trails intended for commuters and/or along trails that act as key connections to major destinations during the early morning and early evening.

4.9 ATV and Snowmobile Signage

The Town has recently witnessed damages to its existing trails by individuals using the trails as ATV and Snowmobile routes. To help prevent future damages to the AT network signs prohibiting the use of ATVs and snowmobiles should be located at the entrance and along the route of the multi-use trails. The signs, shown in Figure24 are from the Bikeway Traffic Control Guidelines for Canada.

Figure 24 – All-Terrain Vehicles Prohibited Sign (RB-87) and Snowmobile Prohibited Sign (RB-65)

5 AT Route Management and Winter Maintenance

5.10 AT Route Management

The majority of AT Routes in Riverview are within the street ROWs, which are either owned by the Town or in some cases by the Province. As a result the responsibilities to maintain and manage the routes fall under the Town. The one exception is the Dobson Trail. The majority of the trail is out of Town limits and therefore is managed by the non-profit group Fundy Hiking Trail Association, which is made up of volunteers.

5.11 Winter Maintenance

Through discussions with councillors, town staff and residents, the following has been determined with regards to the winter maintenance of the AT network. Currently the Town clears sidewalks with three Trackless snow blowers, each covering on average roughly 12 km. The Riverfront Trail is currently not cleared, nor the multi-use trail along Gunningsville Boulevard. The Riverfront Trail has been cleared in the past, but with the realignment of the trail in 2010 after the causeway doors were opened the trail proved to be unsafe for Trackless snow blowers. The Riverfront Trail is also surfaced with crushed rock, which results in more wear and tear than an asphalted trail would on the Trackless snow blowers. ***It is proposed that the Town pave and widen the Riverfront Trail to a minimum of three metres from the Causeway to Hawkes St and realign it where deemed necessary.*** With these upgrades, it will most likely be more feasible to maintain the Riverfront Trail during the winter months.

Currently the Town clears the sidewalks along Gunningsville Boulevard but not the multi-use trail; however they do clear the multi-use trail along Pine Glen Road but only along the sections of the street that does not have sidewalk. Sidewalks are quicker to clear than multi-use trails as they are narrower. ***It is proposed that the Town continues to clear its sidewalks prior to the multi-use trails. It is also proposed that the Town prioritise the clearing of primary AT routes over secondary routes and tertiary routes.*** However, the Town should also continue to prioritise when clearing the AT routes such as first clearing AT routes leading to schools.

As the AT network develops, the Town will be require to purchase more snow blowers to clear the AT infrastructure in a timely manner. ***It is proposed that for every 10 km of AT infrastructure that requires winter maintenance, the Town have one Trackless snow blower or another form of snow clearing machine.***

The Town currently uses Trackless snow blowers to clear the sidewalks. These machines can cost upwards to $200,000 each. Below is a list of alternative snow clearing machines to consider in the future, which may also help with decreasing the upfront and on-going costs associated with snow blowers.

- Ventrac – Snow Blower with other attachments available;
- Holder – Snow Blower with other attachments available;
- Bobcat – Snow Blower with other attachments available.

6 Recommended Policies and By-laws

Similar to the engineering design standard revisions in Section 3.1, the AT Plan also recommends changes to the Town's Municipal Development Plan, Subdivision By-law and Zoning By-law. The intent of the recommendations is to integrate terminology to promote the development of AT education and infrastructure into the Town's governing policy documents. Specific areas the amendments address include:

- Integrating active transportation terminology into existing policies related to connectivity;
- Requiring the consideration and inclusion of active transportation infrastructure into new developments; and
- Clarifying terminology and standards related to trails and AT infrastructure required or considered under the Subdivision By-law.

6.1 Municipal Development Plan

As discussed in the Background and Recommendations Report, the Town's existing Municipal Development Plan already contains a number of policies that are supportive of AT even though it is not explicitly mentioned. This section outlines proposed amendments to the Municipal Development Plan that will integrate the Active Transportation Plan into the Town's governing policy document.

6.1.1 Amended Policies

The following table contains existing policies and proposed changes to text based on the Active Transportation Plan:

Table 10.1: Proposed Amendments to Existing Municipal Development Plan Policies and Proposals

Policy / Proposal		Text
4.6.13	**Existing Policy**	It shall be the intention of Council to consider sidewalks, trails and paths to be essential components of the Town's transportation network and to evaluate the need for these important connections during the review of all subdivision and terms and conditions applications.
	Proposed Policy	*Council shall recognize the importance of the existing and future active transportation network provided in Schedule E. When assessing subdivision, rezoning and terms and conditions applications, Council shall have specific regard for:* *(a) the integration of primary, secondary and/or tertiary active transportation infrastructure based on the standards of the Active Transportation Plan and Subdivision Standards;* *(b) the provision for smaller connections within neighbourhoods to establish or maintain a pedestrian grid; and*

		(c) the use of sidewalks, trails and multi-use paths as essential parts of the Town's transportation network.
4.6.14	**Existing Policy**	Council shall provide specific direction in the Subdivision Standards to ensure that sidewalks are an integral part of all newly developed areas.
	Proposed Policy	*Council shall provide specific direction in the Subdivision Standards to ensure that sidewalks,* ***bike lanes, multi-use trails, cross-country ski routes and/or other active transportation*** *infrastructure are an integral part of all newly developed areas.*
5.1.4	**Existing Policy**	In order to create beautiful and safe streets, Council shall ensure that street trees are required on all streets, and in an effort to promote walkable communities, provide specific direction in the Subdivision Standards to ensure that sidewalks are an integral part of all newly developed areas.
	Proposed Policy	***In order to create beautiful, safe and walkable streets and communities, Council shall ensure that all new developments include:*** *(a)* ***sidewalks, bike lanes, multi-use trails or other active transportation; and*** *(b)* ***where possible, separate pedestrian and active transportation infrastructure from the vehicular portion of the road through a landscaped strip featuring street trees to provide an attractive streetscape and enhanced experience for pedestrians and cyclists.***
5.6.4	**Existing Policy**	To assist with the implementation of Policy 5.6.3, Council will use the following objectives to evaluate the secondary plans: (a) the plan provides an appropriate amount of mix housing types which should (b) include a combination of single, two unit, semidetached, and rowhouse / (c) townhouse dwellings; (d) the efficient layout of streets and traffic in general; (e) the connectivity of the subdivision with adjacent lands; (f) the location and size of future parks, open spaces and trails; (g) detailed servicing and infrastructure information; and (h) any other applicable information.
	Proposed Policy	*To assist with the implementation of Policy 5.6.3, Council will use the following objectives to evaluate the secondary plans:* *(a) the plan provides an appropriate amount of mix housing types which should include a combination of single, two unit, semidetached, and rowhouse / townhouse dwellings;*

		(b) the efficient layout of streets and traffic in general; *(c) the connectivity of the subdivision with adjacent lands;* *(d) the location and size of future parks, open spaces and trails;* ***(e) integration of active transportation infrastructure;*** *(f) detailed servicing and infrastructure information; and* *(g) any other applicable information.*
Principal 4: Connectivity Must be Enabled	**Existing Text**	Developers will need to provide road, open space and trail connections to adjacent developments. Connectivity is about providing: (a) a variety of transportation options including vehicular, bicycle, walking, and other active transportation linkages; (b) open space linkages that create a connected network of parks, green spaces and public lands that are based on existing natural features. These networks of linked open space can provide space for trails and should be easily accessible to residents by bike or foot; and (c) safe and walkable communities through the use of sidewalks.
	Proposed Text	*Developers will need to provide road, open space,* ***active transportation*** *and trail connections to adjacent developments. Connectivity is about providing:* *(a) a variety of transportation options including vehicular, bicycle, walking, and other active transportation linkages;* *(b) open space linkages that create a connected network of parks, green spaces and public lands that are based on existing natural features. These networks of linked open space can provide space for trails and should be easily accessible to residents by bike or foot; and* *(c) safe and walkable communities through the use of sidewalks.*
9.0.3	**Existing Policy**	It shall be the intention of Council to establish a long-term, town-wide strategy for creating and developing future parks, open spaces and trails through a Recreation Master Plan and an Active Transportation Plan.
	Proposed Policy	*It shall be the intention of Council to establish a long-term, town-wide strategy for creating and developing future parks* ***and*** *open spaces through a Recreation Master Plan.*

9.0.13	**Existing Proposal**	To assist in the implementation of Policy 9.0.3, Council proposes to complete an Active Transportation Plan, which will be used improve and expand the existing transportation network for cycling, walking and public transit. The Plan should include the following: 1. Ensure safe and efficient accessibility for non-motorized transportation within the community. 2. Identify and create a network of trails and other paths providing connectivity to neighbourhoods, schools, work and shopping destinations. 3. Develop an educational and promotional program that encourages the use of alternative modes of transportation.
	Proposed Proposal	To assist in the implementation of Policy 9.0.3, Council proposes to periodically evaluate and review the existing Active Transportation Plan, which will be used to improve and expand the existing transportation network for cycling, walking and public transit. The review should include the following: 1. Ensure safe and efficient accessibility for non-motorized transportation within the community. 2. Identify and expand a network of trails and other paths providing connectivity to neighbourhoods, schools, work and shopping destinations. 3. Review the educational and promotional program that encourages the use of alternative modes of transportation.

6.1.2 New Policies and Proposals

This section contains new policies and policies that should be added to the Municipal Development Plan. The numbering will be at the discretion of the Town Clerk and Planning Staff.

Chapter 4 (Infrastructure and Municipal Services) Policies:

(1) Where a cul-de-sac is permitted, subject to Policies 4.6.2 and 4.6.3, provision must be made for pedestrian and active transportation connectivity from the end of the cul-de-sac to the adjacent street.

Chapter 4 (Infrastructure and Municipal Services) Proposals

(1) Council proposes to work with Codiac Transit to establish active transportation infrastructure that corresponds with bus routes and stops while considering the installation of infrastructure such as bike racks and/or lockers at key destinations and public transportation nodes.

Chapter 9 (Parks, Open Spaces and Recreational Facilities) Policies:

(1) Council shall recognize the importance of the Active Transportation Plan when considering any proposed development.

(2) Council shall discourage the use of all-terrain vehicles, snowmobiles and other motorized vehicles (with the exception of those designed for mobility disabled) on any trails, cross-country ski routes or other active transportation infrastructure and may consider installing infrastructure in certain instances to prevent this.

(3) When assessing Lands for Public Purposes as part of the subdivision process Council shall consider any existing, non-formalized trails and/or cross country ski routes and encourage the integration of these as formal active transportation routes within a proposed development.

(4) Council shall work with the Province of New Brunswick to incorporate Active Transportation infrastructure into any existing or future Provincially owned roads or crossings.

Chapter 9 (Parks, Open Spaces and Recreational Facilities) Proposals:

(1) Council proposes to undertake investments into active transportation based on the phasing outlined in the Active Transportation Plan.

(2) Council proposes to undertake a feasibility study that provides preliminary designs and cost estimates for new or upgraded active transportation crossings as outlined in the Active Transportation Plan.

6.2 Subdivision By-law

Amendments to the Town's Subdivision By-law are aimed at clarifying the use and development of trails as permitted Lands for Public Purposes. Other amendments are intended to provide standards with respect to right-of-way and street widths, connectivity and the introduction of AT infrastructure. One of the key elements of amendments to the Subdivision By-law will relate to the right-of-way and street widths along with Active Transportation infrastructure required for streets constructed as part of new subdivisions. The following outlines proposed amendments to this portion of the Subdivision By-law:

Existing Standard

2(1) In a subdivision, unless otherwise stipulated by the Commission, streets required pursuant to subsection 3(1)(a) of this by-law shall:

(a) contain the following minimum right of way width:

- urban arterial/freeway - 30 meters
- urban collector primary - 23 meters
- urban collector minor – 20 meters
- urban local primary - 20 meters
- urban local minor – 18 meters

(b) be constructed with the following minimum driving surface:

- urban arterial/freeway - to be determined by the Town's Engineering Department

- urban collector primary – 12.8 meters
- urban collector minor – 10.6 meters
- urban local primary – 9.25 meters
- urban local minor – 9.25 meters

Proposed Standard:

2(1) In a subdivision, unless otherwise stipulated by the Commission, streets required pursuant to subsection 3(1)(a) of this by-law shall:

(a) contain a minimum right-of-way and street width along with active transportation infrastructure in accordance with the following table:

Minimum Requirements for Right-of-Ways, Streets and Active Transportation Infrastructure					
Street Type	Minimum Right-of-Way Width	Minimum Street Width	Recommended Active Transportation Infrastructure	Minimum Active Transportation Infrastructure Width and Design	Proposed Parking
Urban Arterial / Freeway	30 m (98.4 ft)	To be determined by Town's Engineering Department	Separated multi-use Trails	Subject to Subdivision Standards	No
Urban Collector Primary	23 m (75.5 ft)	12.8 m (42.0 ft)	Sidewalks on either side of the street	Subject to Subdivision Standards	Yes
Urban Collector Primary AT Route	23 m (75.5 ft)	12.8 m (42.0 ft)	2 meter wide sidewalk and 3 meter wide multi-use trail	Subject to Subdivision Standards	Yes
Urban Collector Minor	20 m (65.6 ft)	10.6 m (34.8 ft)	1.5 meter wide sidewalk on one side with the option of another on the other side	Subject to Subdivision Standards	Yes
Urban Collector Minor AT Route	23 m (75.5 ft)	10.6 m (34.8 ft)	2 meter wide sidewalk and 3 meter wide multi-use trail	Subject to Subdivision Standards	Yes
Urban Local Primary	20 m (65.6 ft)	9.25 m (30.3 ft)	1.5 meter wide sidewalk on one side of the street	Subject to Subdivision Standards	Yes
Urban Local Primary AT Route	20 m (65.6 ft)	9.25 m (30.3 ft)	2.0 meter wide sidewalk on one side of the street with share route on the road.	Subject to Subdivision Standards	Yes

Urban Local Minor	18 m (59.1 ft)	9.25 m (30.3 ft)	No sidewalks required	Subject to Subdivision Standards	Yes

Additional amendments are outlined in the following table:

Table 10.2: Proposed Text Amendments to the Subdivision By-law		
Section		**Standard**
1. Definitions	***Proposed Amendment***	Add the following to the definition of lands for public purposes: ***(m) a trail or integrated network of trails designed to provide enhanced recreational opportunities and non-motorized connectivity throughout a neighbourhood.***
2. Streets and Services	***Proposed Amendment***	Add the following standard to 2(1): ***Where a cul-de-sac is permitted, subject to Section 2(1)(c), a paved multi-use trail to the specifications of the Subdivision Standards or a park must be provided from the bulb of the cul-de-sac to an adjacent street.***
5. Subdivision Agreements	**Existing Standard**	5(1) In a subdivision where streets are existing or required, pursuant to section 3(1)(a) of this by-law, the person proposing to subdivide land shall provide within that subdivision such facilities as streets, curbing, sidewalks, walkways, street lights, water and sewer lines, culverts, drainage ditches and the developer shall: (a) enter into a subdivision agreement with the municipality that is binding upon their heirs, successors and assigns to construct and pay the cost of facilities required within the subdivision, and shall deposit a sum of money, or an irrevocable letter of credit with the Town, sufficient to guarantee the faithful performance of said agreement; and (b) enter into a drainage agreement with the municipality that is binding upon their heirs, successors and assigns that will ensure compliance with the subdivision drainage plan.
	Proposed Standard	*5(1) In a subdivision where streets are existing or required, pursuant to section 3(1)(a) of this by-law, the person proposing to subdivide*

		land shall: *(a) provide within that subdivision such facilities as streets, curbing, sidewalks, walkways,* ***bike lanes, trails, multi-use trails,*** *street lights, water and sewer lines, culverts, drainage ditches;* *(b) enter into a subdivision agreement with the municipality that is binding upon their heirs, successors and assigns to construct and pay the cost of facilities required within the subdivision, and shall deposit a sum of money, or an irrevocable letter of credit with the Town, sufficient to guarantee the faithful performance of said agreement; and* *(c) enter into a drainage agreement with the municipality that is binding upon their heirs, successors and assigns that will ensure compliance with the subdivision drainage plan.*

6.3 Zoning By-law

While no major changes are required to the Town's existing Zoning By-law, it will be important to introduce standards requiring on-site bicycle parking spaces to improve end of trip facilities across the community. Similar standards already exist in Moncton and Dieppe and for the purposes of consistency amongst the three communities; we would recommend using the same standards in Riverview.

One change we would recommend is increasing the minimum amount of bicycle parking from two (2) bicycle parking spaces to four (4) bicycle parking spaces. The only other change we would recommend would be not allowing cash-in-lieu of bicycle parking. The following outlines the proposed additions to the Zoning By-law:

Section 2: Definitions

"bicycle parking space" means a slot in a bicycle rack, or in a bicycle locker, designed to hold one adult-sized bicycle and provide a fixed loop, bar or other feature to which an adult-sized bicycle may be secured at the bicycle frame by means of an 8" U-lock;

Section 3: General Provisions

No development shall be permitted for the erection, alteration or use of any building, use or structure, other than a single detached, semi-detached, duplex or townhouse dwelling, except where secure bicycle parking spaces are provided and maintained in conformity with the following provisions:

(a) The number of bicycle parking spaces shall be the greater of:
    (i) One bicycle parking space for every twenty (20) vehicular parking spaces required by the by-law;

(ii) One bicycle parking space for every twenty (20) vehicular parking spaces on the lot; or
(iii) Four (4) bicycle parking spaces.

(b) Bicycle parking spaces shall be in the form of inverted U, M-style, loop-style, post-mount or bollard racks of sufficient height that adult-sized bicycles may be locked to the rake with an 8” U-lock at the crossbar; or else in the form of indoor storage lockers.

(c) Bicycle racks shall be bolted, sunk, embedded or otherwise securely anchored to the pavement, ground surface or main building.

(d) Outdoor bicycle parking areas:
(i) shall be no less than three (3) metres deep;
(ii) shall be clearly marked and delineated on the pavement or ground surface;
(iii) shall not encroach upon, or be encroached upon by, vehicular circulation lanes, service lanes or loading bays; and
(iv) shall be cleared of snow in winter.

(e) Notwithstanding (a), where the main building lies within three (3) metres of the front lot line, the bicycle parking requirement may be met by a payment of cash in lieu, for the purposes of establishing and maintaining public bicycle parking facilities.

7 Community Education Program

The findings from community engagement initiatives have shown that knowledge of AT amongst Riverview residents is still in its relatively preliminary stages. The Active Transportation Plan should be supported with a continuous community education campaign designed to inform the public of the benefits of AT, while encouraging the safe use of infrastructure for both AT users and motorists. The promotion of the Plan and AT infrastructure should go hand-in-hand with community education. Every act of community education should be used as an opportunity to promote the Plan, the use of AT infrastructure and vice versa.

The campaign should begin with the release of the Plan and build on this momentum. The education campaign should be developed in concert with the mapping and wayfinding strategy as well as promotional material to create a cohesive “brand” to the trails and bikeways network in the Town. It will be important to start with the basics by emphasizing the “rules of the road”, signage and the benefits associated with AT.

A staff member should be assigned the task of implementing and promoting the Active Transportation Plan as well as educating the community. This is not intended or envisioned as a full-time role; it may be possible to integrate this into a current employee’s job description. An outline of the tasks that the dedicated Active Transportation Coordinator should be responsible for throughout the implementation and promotion of the AT plan and the education of the community can be found in Appendix M.

8 Route and Trail Names

The routes of the Active Transportation Network have been, for the most part, named in the context of the roadway for which they correlate (e.g. Gunningsville Route). Many existing routes already have been named by the community using this convention. This naming convention will be familiar to users of the network and will, for the most part, save on confusion. The exception to this is the East School Route which runs along Old Coach Road and Chamber Street. This route has been named based on the destination it services.

The existing unpaved trails in the Active Transportation Network have retained their names, Riverfront Trail and Dobson Trail. The proposed and future trails that connect to these trails have been named to express their continuation/extensions. Figure 25 has names associated with the proposed AT routes.

A larger scale of Figure 25 can be found in Appendix N.

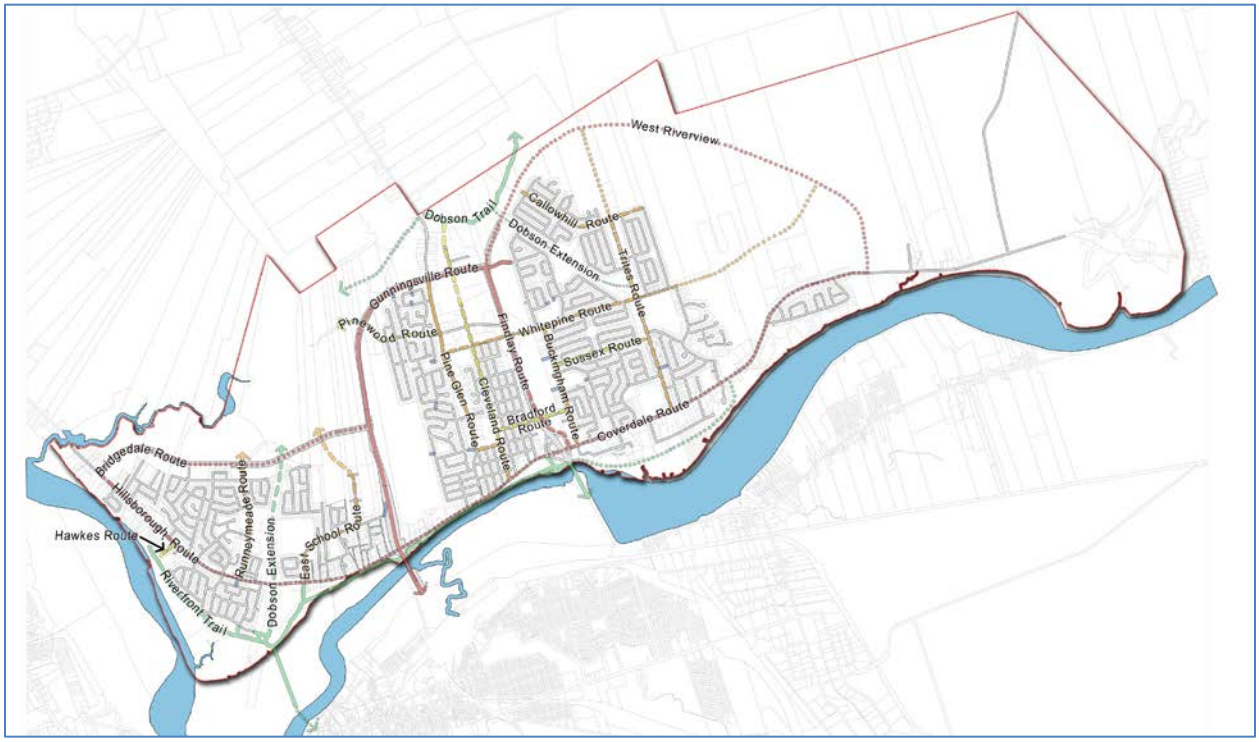


Figure 25 – AT Route and Trail Names

9 Additional Studies, Initiatives and Funding Opportunities

9.1 Additional Studies

In response to this AT Plan, the Town of Riverview should consider completing a preliminary design study of Coverdale Road from Gunningsville Bridge to the Trites Road and Hillsborough Road from Gunningsville Boulevard to Hawkes Street. Currently the road does not consistently have the width to support AT infrastructure other than the existing sidewalks. As Riverview continues to grow the demand for multi modal transportation along Coverdale Road and Hillsborough Road will increase. A road can only be widened so far to accommodate the private car. Eventually Riverview will have to increase AT and Public Transit infrastructure along Coverdale Road and Hillsborough Road to increase its capacity to move residents through the Town.

As part of the above recommendation, ***it is proposed that the Town also look at the possibility of implementing a road diet or street rightsizing for Coverdale Road from Pine Glen Road to Trites Road.*** Road diet is a technique in transportation planning whereby a road is reduced in the number if travel lanes and/or effective width in order to achieve systemic improvements. Many examples involve reducing the number of travel lanes and on street parking and involve increasing the space for landscaping, pedestrians and cyclists. Numerous streets that experience rightsizing see a reduction in traffic speeds and collisions and see an increase in pedestrian and cycling traffic. Based on our experience through working with and in the Town of Riverview, it is our understanding that the Town would like to see Coverdale Road develop into more of a downtown environment. Based on site visits and analysis vehicles seem to have been given priority in the area and as a result travel a faster than the posted speeds. Rightsizing Coverdale Road could result in slowing traffic down and improving the pedestrian experience in downtown Riverview.

9.2 Funding Opportunities

Funding for the implementation of the Active Transportation Plan can be obtained through a variety of sources including Federal and Provincial programs as well as corporate and charity based organizations.

A detailed analysis of funding opportunities was carried out and can be found in Appendix O. In summary several federal programs are unclear if they are accepting applications for funding in 2013. The Federation of Canadian Municipalities Green Municipality Fund (Federal) and the New Brunswick Environment Trust Fund (Provincial) are the only two government funding opportunities that are currently accepting applications for 2013. Other funding opportunities such as Bicycle Trade Association of Canada, Evergreen and other non-government funding opportunities are also available.

10 Implementation, Phasing and Costing

10.1 Implementation

Implementation 1 – Recommended AT policy and by-law amendments
The proposed amendments to the Municipal Development Plan, Subdivision By-law and Zoning By-law outlined in Section 5 should be accepted by council

Implementation 2 – Adopt TAC signage standards
The TAC standards for signage mentioned in Section 4.2 and outlined in Appendix L should be adopted by the Town as their standards for AT signage in Riverview.

Implementation 3 – Identify staff member as the "Riverview AT Coordinator"
A staff member should be assigned the task of implementing and promoting the Active Transportation Plan as well as educating the community. This is essential to the success of AT in Riverview.

Implementation 4 - Apply for funding opportunities
Based on funding opportunities outlined in Section 9.2 and Appendix O, the Town's AT Coordinator will begin applying for funding for the education program, branding program and the installation of AT infrastructure.

Implementation 5 – Set aside budget for AT infrastructure
The Town should include in their future budgets, funding for the educational program, investment in AT infrastructure and future feasibility studies relating to AT.

Implementation 6 - Begin education program
AT infrastructure must be supported with an education campaign. The campaign should begin with the release of the AT plan. The campaign should initially educate residents of the rules of the road for motorist, cyclists, pedestrians and any other AT users.

There is some truth to the "if you build it they will come" mentality; however, to achieve maximum use of the Town's AT infrastructure the Town needs to promote active living to change attitudes and perceptions about alternative forms of transportation.

Implementation 7 – Begin branding the AT network (through signage, route names)
With the help of the education program, the AT Coordinator can begin a branding program which will include educating the public of the AT route names and signage design. The branding exercise will bring awareness and understanding of the AT network.

Implementation 8 – End of trip facilities and bike racks

Adopt a policy for the purchase and installation of end of trip facilities and bike racks at key destinations in Riverview. These facilities are required for the adoption of biking as a feasible alternative to automobile use. Bike racks are an essential component for both commuter and part time bike users.

10.2 Phasing / Costing

As a final Section of the AT Plan, a decision matrix was used to help determine which routes require attention before others. The routes have already been prioritized by hierarchy classification (class) but the decision matrix will assess the safety, accessibility, connectivity and aesthetics of each route. Each criterion was ranked from 1 (for not needing upgrades) to 5 (needing immediate upgrades). Certain routes, such as on Trites Road are broken into several sections based on the level of AT infrastructure currently offered. Any route that ranked over an average of 3 was prioritized. Primary routes were given priority over Secondary and Tertiary routes unless a safety issue was identified.

Project / Route	Class	Safety	Connectivity	Aesthetics	Accessibility	Average
Findlay Blvd	1	4	2	4	5	3.8
Coverdale Rd (Patricia to West Riverview)	1	4	2	4	4	3.5
Coverdale Rd (Patricia to Trites)	1	4	4	3	4	3.8
Coverdale Rd (Trites to Causeway)	1	4	4	3	4	3.8
Coverdale Rd (Causeway to Gunningsville)	1	4	4	3	4	3.8
Hillsborough Rd (Gunningsville to Hawkes)	1	4	4	3	4	3.8
Hillsborough Rd (Hawkes to Bridgedale)	1	4	4	3	4	3.8
Gunningsville Blvd	1	1	3	1	1	1.5
Cleveland Ave (Devere to Coverdale)	2	3	1	2	3	2.3
Pine Glen Rd (Devere to Gunningsville)	2	2	3	1	1	1.8
Devere Rd (Cleveland to Pine Glen)	2	2	3	2	2	2.3
Whitepine Rd	2	2	2	2	2	2
Buckingham Ave	2	3	1	2	2	2
Trites Rd (Coverdale to Whitepine)	2	2	2	2	3	2.3
Trites Rd (Callaghan to Callowhill)	2	5	4	4	5	4.5
East School	2	2	2	2	2	2
Runneymeade Rd	2	2	2	2	2	2
Callowhill Road	2	5	4	4	5	4.5
Cleveland Ave (Gunningsville to Pinewood)	3	4	2	4	5	3.8
Cleveland Ave (Pinewood to Devere)	3	2	1	2	2	1.8
Pinewood Rd	3	1	2	1	2	1.5
Bradford Rd	3	1	1	3	3	2
Sussex Ave	3	4	4	3	4	3.8
Hawkes St	3	4	4	4	4	4.0
Riverfront Trail (Old Coach to Causeway)	T	1	3	1	4	2.3
Riverfront Trail (East of Old Coach)	T	2	2	1	4	2.3

The projects / routes prioritized in the decision matrix were then placed in the below table in which more details were given to each project / route. The estimates of probable construction costs are based on best available information. These estimates of probable construction costs are provided as a general guide for the prioritization of funding. A breakdown of each project is provided in Appendix P.

Project	**Estimate Lengths**	**Applicable Standard(s)**	**Estimates of probable construction costs***	**Time frame**
Trites Rd (Callaghan to Callowhill)	550 m	Urban Collector Minor	$200,000 – $250,000	1-2 years
Hillsborough Rd (Hawkes to Bridgedale)	1.1 km	Arterial	$300,000 – $350,000	2-3 years
Hawkes St	200 m	Urban Local Primary	$40,000 – $60,000	2-3 years
Cleveland Ave (Gunningsville to Pinewood)	175 m	Urban Local Primary	$35,000 – $50,000	2-4 years
Findlay Blvd	1.4 km	Arterial	$300,000 – $350,000	3-5 years
Sussex Ave	1.0 km	Urban Local Primary	$200,000 – $250,000	4-6 years
Callowhill Rd	1.4 km	Urban Collector Minor	$550,000 – $600,000	5-7 years
Coverdale Rd (Causeway to Gunningsville)	1.8 km	Arterial	$950,000 – $1,100,000	6-9 years
Coverdale Rd (Trites to Causeway)	1.1 km	Arterial	$350,000 – $450,000	8-10 years
Coverdale Rd (Patricia to Trites)	1.4 km	Arterial	$450,000 – $550,000	9-10 years
Hillsborough Rd (Gunningsville to Hawkes)	2.6 km	Arterial	$1,250,000 – $1,450,000	11-13 years
Coverdale Rd (Patricia to West Riverview)	1.2 km	Arterial	$550,000 – $650,000	13-16 years
Total	**12.93 km**	**Various**	**$5,175,000 – $6,110,000**	**16 years**

***The above estimates do not include the price to acquire lands where necessary.**

The above projects highlight the significant capital required to implement AT infrastructure throughout Riverview's AT network. Other than the significant infrastructure investment required to realize the AT network, the Town is also able to invest in smaller projects to help promote AT within the community. Such investments may include the following:

- Adding paint to all tertiary routes indicating they are shared routes;
- Installing signs to the tertiary routes indicating it is a shared route;
- Installing signage along primary, secondary and tertiary routes as well as trails;
- Widen the Riverfront Trail to 3 metres, pave it and realign wherever it is necessary to ensure the safety for snow plows;
- Working with Codiac Transit to ensure there is sufficient infrastructure available for transit users as well as AT users at all bus stops;
- Install AT end-of-trip facilities such as bike lockers, showers at key destinations along the AT network; and
- Install other AT infrastructure such as benches and washrooms along the AT network.

APPENDIX A – *Background and Recommendations Report*

GENIVAR

ACTIVE TRANSPORTATION PLAN – RECOMMENDATIONS REPORT

Town of Riverview

December 7, 2012

Riverview

TABLE OF CONTENTS

APPENDICES

1 INTRODUCTION

The following report outlines baseline data and information that will serve as the foundation of the Active Transportation for the Town of Riverview. Prior to putting the proverbial 'pen to paper' and laying out the network, it is critical to gain an in-depth understanding of the community and surrounding areas.

With a population of 19,130 (2011 Census), Riverview is the fifth largest municipality in New Brunswick. Regionally, Greater Moncton (Moncton, Riverview, Dieppe, Salisbury, other smaller communities and the surrounding unincorporated area) has a population of over 138,000 making it the largest census metropolitan area in the Province. The Town has historically been a predominantly residential community but through recent initiatives by Council and Town Staff has begun attracting more commercial development.

The Town has been a desirable location for families and seniors for a number which is due to a number of factors including:

- The small town character and feel of the community;
- Friendly nature of residents and community spirit;
- Stable residential neighbourhoods;
- Proximity to well-paying employment opportunities both within the Town and greater regional centre;
- Excellent access to retail, restaurants and other sources of entertainment;
- Well regarded schools; and
- Access to a variety of recreational opportunities.

Council and Staff want to build on these strengths through further investments in parks and recreation as evidenced by the preparation of an Active Transportation Plan and the ongoing Mill Creek Park Master Plan. These projects coupled with ongoing economic and business development initiatives will help the Town continue to be desirable location for residents and businesses well into the future.

This report will detail and assess various characteristics of the community from a population standpoint, physical characteristics, transportation and recreation policies, feedback and input from residents and stakeholders, existing active transportation (AT) infrastructure and land use patterns. The final portions of this report will highlight best practices for AT and establish a series of recommendations to be carried through in the Active Transportation Plan.

2 STATISTICAL ANALYSIS

An understanding of Riverview's demographics helps guide all components of the Active Transportation Plan. Statistics such as the population growth, age-sex breakdown, place of work and transportation to work will help determine particular needs relative to AT infrastructure. As part of this analysis we have also included population projections as estimated by demographic analysis software PCensus. It is important to note that these projections are solely based on historic data and do not account for major events that may cause significant in or out migration.

2.1 Population Growth

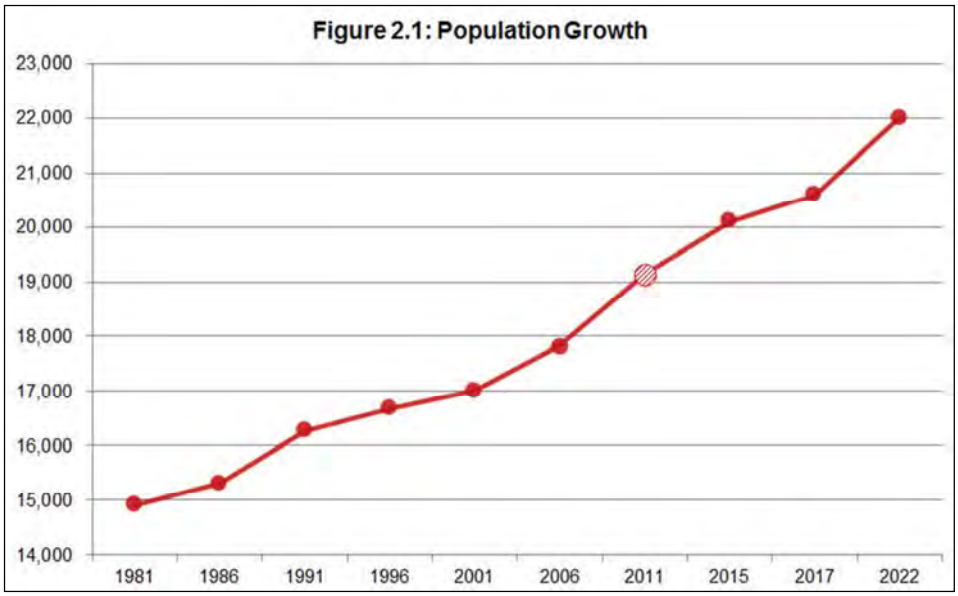
2.1.1 Riverview

Riverview has witnessed relatively steady growth over the past thirty years. Between 1981 and 2011, the Town increased its population by 4,223 or 28.3%. Based on these figures the Town has averaged an annual population increase of 140 residents. The percentage growth from each census period (every 5 years) was somewhat consistent ranging between 2% and 7.3%. The highest percentage growth (7.3%) occurred between 2006 and 2011. Based on historic trends, the Town's population is expected to continue growing over the next 11 years in the area of 14.3% or 2,873 residents. Table 2.1 provides historic and projected population figures while Figure 2.1 shows a graphic representation.

Table 2.1: Historic Population Growth and Estimates

Year	Population	Increase	% Increase
1981	14,907	-	-
1986	15,300	393	2.6%
1991	16,270	970	6.3%
1996	16,684	414	2.5%
2001	17,010	326	2.0%
2006	17,832	822	4.8%
2011	19,130	1,298	7.3%
2015	20,094	964	5.0%
2017	20,598	504	2.5%
2022	22,003	1,405	6.8%

Source: Statistics Canada, PCensus Demographic Analysis Software (Tetrad Computer Applications Inc.)



Source: Statistics Canada, PCensus Demographic Analysis Software (Tetrad Computer Applications Inc.)

2.1.2 Regional and Provincial Trends

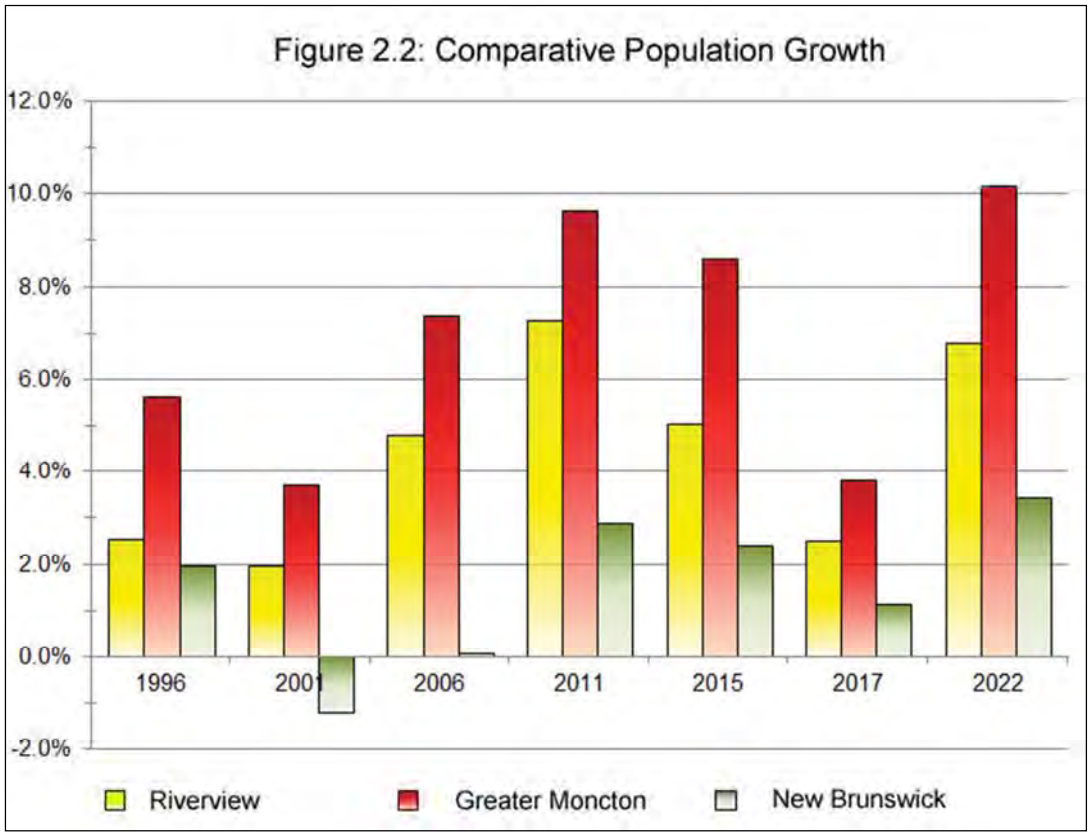
Over the past twenty years the Moncton Census Metropolitan Area (Greater Moncton) which is comprised of Moncton, Dieppe, Riverview, smaller towns and the surrounding unincorporated areas featured even more growth than Riverview with an increase of 31,208 residents or 29%. Within that same period, the Province also grew but at a more modest 3.8%. It is interesting to note that within the last twenty years the Province's population has increased by 27,271 which is less growth than has been experience in Greater Moncton alone. This is indicative of the region's economic strength and ability to attract residents.

Based on historic data both Greater Moncton and New Brunswick are expected to grow over the next 11 years. Table 2.2 and Figure 2.2 provide the data and graphical representation of the historic and projected growth of Greater Moncton and the Province relative to Riverview.

Table 2.2: Comparative Population Growth (as a %)

Year	Riverview	Greater Moncton	New Brunswick
1996	2.5%	5.6%	2.0%
2001	2.0%	3.7%	-1.2%
2006	4.8%	7.4%	0.1%
2011	7.3%	9.7%	2.9%
2015	5.0%	8.6%	2.4%
2017	2.5%	3.8%	1.2%
2022	6.8%	10.2%	3.4%

Source: Statistics Canada, PCensus Demographic Analysis Software (Tetrad Computer Applications Inc.)



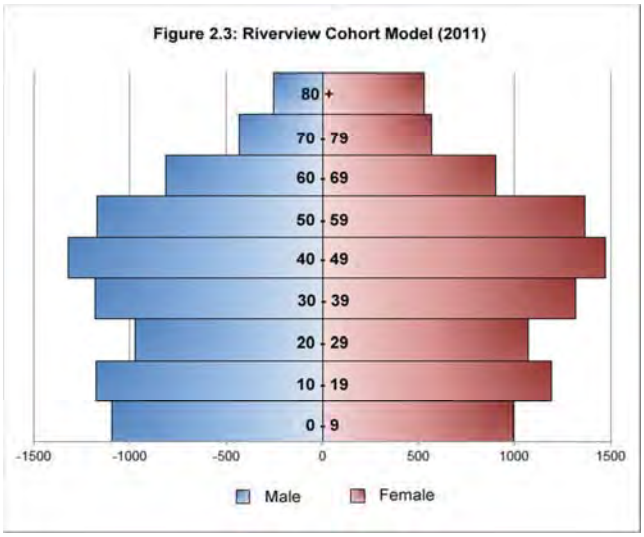
Source: Statistics Canada, PCensus Demographic Analysis Software (Tetrad Computer Applications Inc.)

2.2 Age Breakdown

Assessing the size of various age-groups can provide important information related to a municipality. Not only does it help identify the age groups the Town is successfully attracting or not attracting but also provides indicators related to the future composition of the Town. Nationally, the population is aging. This is due to a number of factors including improved health care (both in terms of technology and access) and a decrease in birth rates. Essentially, people are living longer but having fewer children. This will have significant implications for communities in a number of areas.

As it relates to Riverview and AT, assessing the breakdown of various age groups will help in determining the type of infrastructure that may function better for its residents. Table 2.3 provides data related to the Town's age groups and Figure 2.3 provides a graphic representation in what is referred to as a Cohort Model.

Table 2.3: Age/Sex Breakdown		
Age	Male	Female
0-9	1095	990
10-19	1180	1190
20-29	975	1070
30-39	1185	1315
40-49	1325	1470
50-59	1175	1365
60-69	815	900
70-79	435	565
80+	255	530



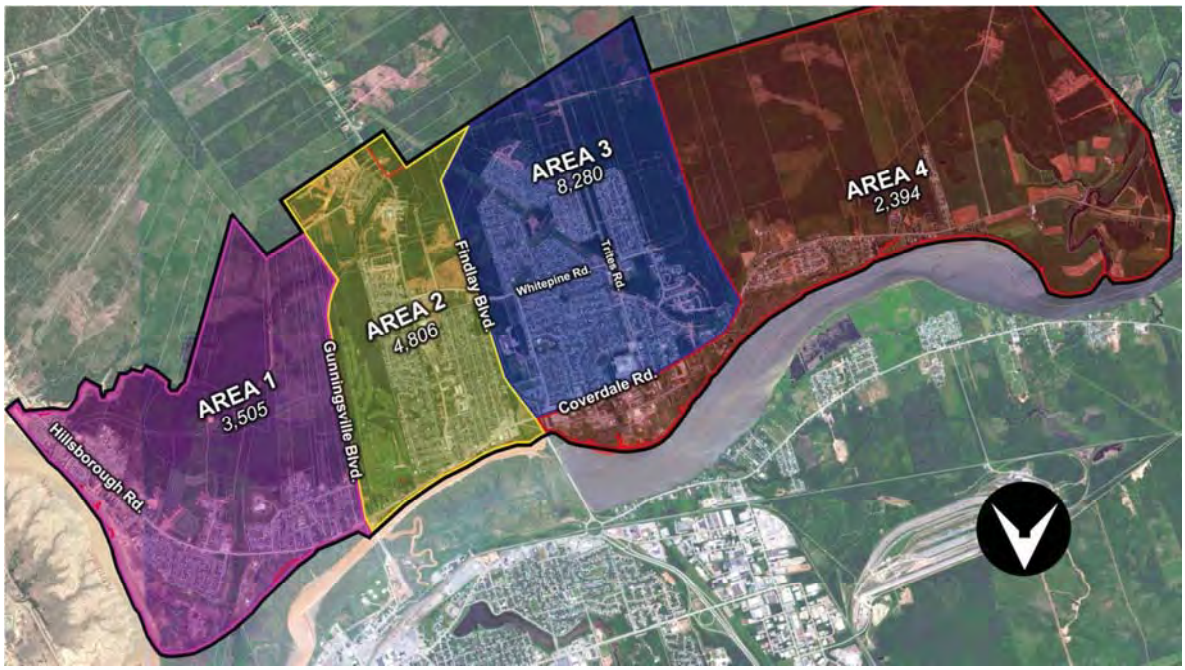
Source: Statistics Canada – 2011 Census

The Town of Riverview has a relatively typical disbursement of age-groups. Many municipalities are witnessing a significant decline in the 0 – 19 age range; however this remains strong in Riverview. This is an important age group as it represents youth within a community which directly correlates to the Town's attractiveness to families. There is a slight decline in the 20 – 29 age-group which is somewhat expected as this is the age many are attending secondary education institutions or living elsewhere as they begin their career. It does appear that the Town has struggled to retain those aged 60 and above as there is a rather significant decline. This can relate to any number of factors but highlights the importance of establishing infrastructure and housing to support an aging population. As it relates to AT, it is evident that the network must be designed and feature infrastructure for all age-groups.

2.3 Population Disbursement

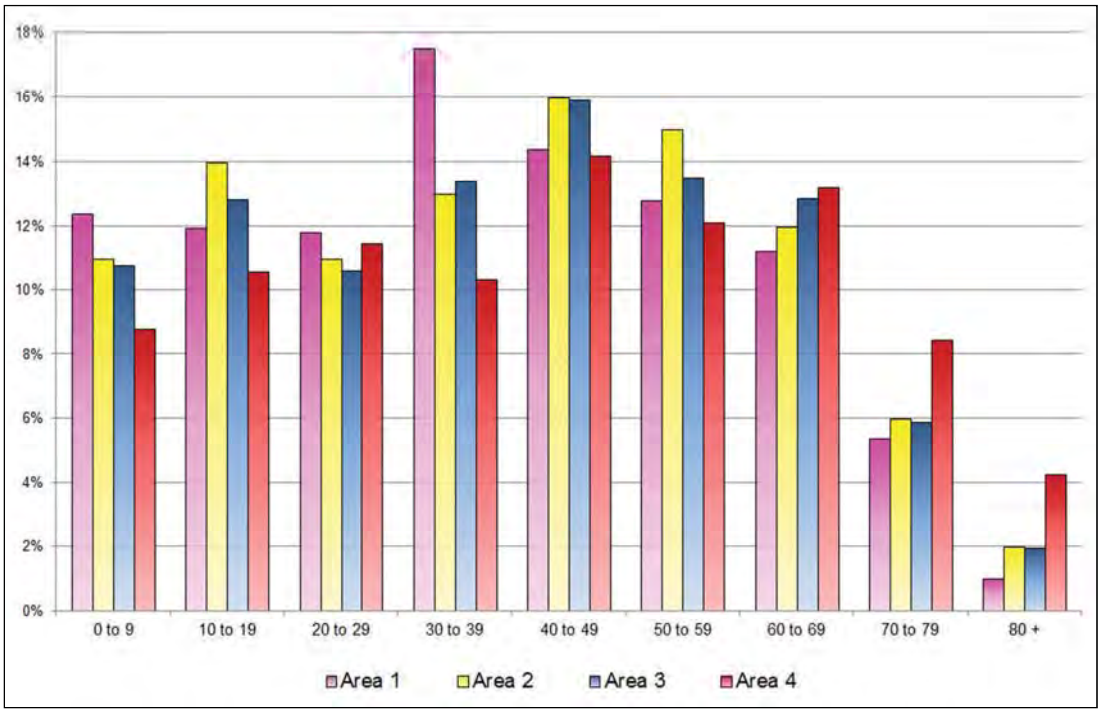
The disbursement of the Town's population is important in establishing where AT infrastructure will have the most immediate benefit. Riverview is bisected by a number of key collector and arterial roads. These roads typically receive the vehicular, pedestrian and bicycle traffic from the surrounding residential neighborhoods. They are designed and intended to move traffic in an efficient manner to key destinations either inside or outside of Town. In assessing Riverview's transportation network it becomes evident that the major arterial roads are Gunningsville Boulevard, Findlay Boulevard, and Coverdale Road. Based on the location of these collector roads we will compare the populations of four somewhat separate (in terms of traffic) areas. The following provides a graphical representation of the four areas.

Figure 2.4: Population Disbursement



Source: Statistics Canada, PCensus Demographic Analysis Software (Tetrad Computer Applications Inc.)

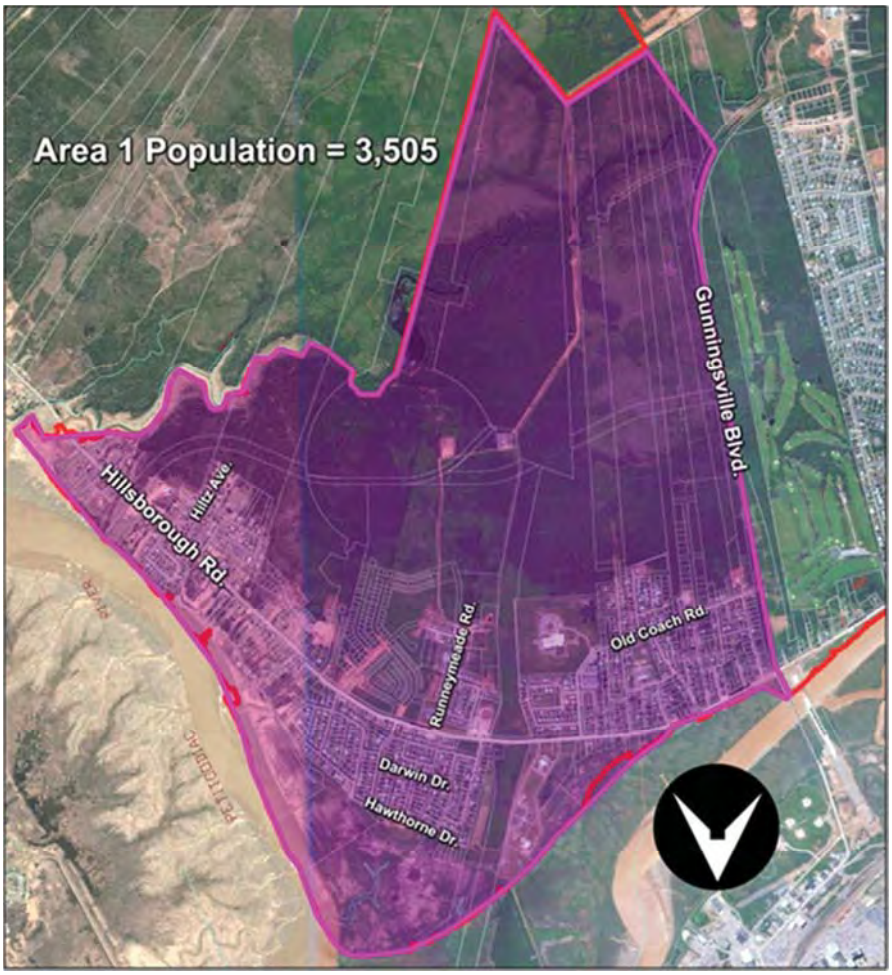
Figure 2.5: Population Breakdown of Four Areas



2.3.1 Area 1

As of the 2011 census Area 1 had a total population of 3,505. This has likely increased since that time and will continue to increase given this is the area of Town witnessing the majority of growth and new housing. This area has higher proportions of residents aged 0 to 9 and 30 to 39 which indicates this has been an attractive area for younger families but less attractive for those aged 50 and above. This could relate to the type of housing being constructed in this area which (in recent years) has been a mixture of townhouses and semi-detached units, often attractive to first time home buyers.

This portion of Riverview features a number of residential neighborhoods that more or less feed onto Hillsborough Road. Runneymeade Road will eventually develop into a more prominent collector road as development occurs and eventually traffic will be able to utilize the east-west corridor. This section of the corridor (Bridgedale Boulevard) will eventually connect Hillsborough Road to Gunningsville Boulevard and help disperse traffic is these neighborhoods. At the present time almost all traffic funnels onto Hillsborough Road.



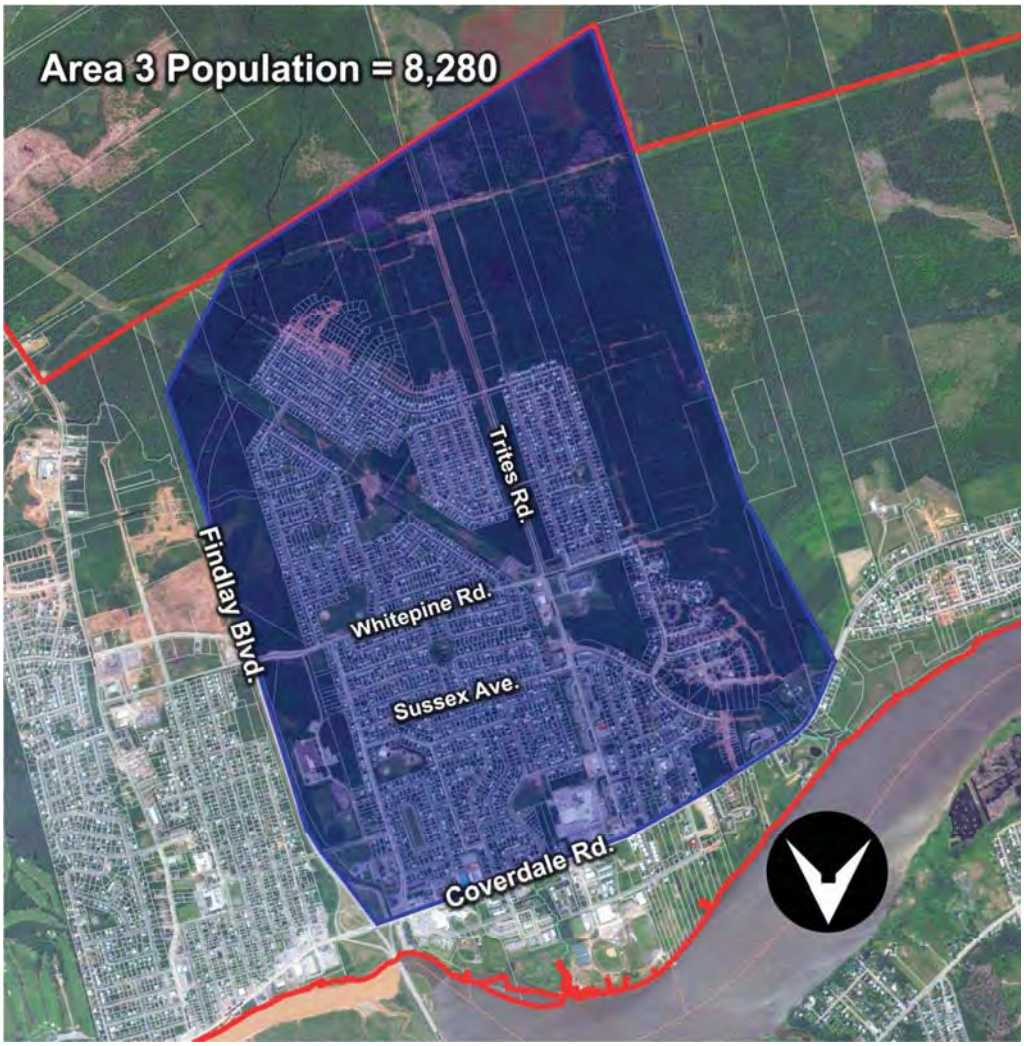
2.3.2 Area 2

With a population of 4,806, Area 2 is the second densest area of the Town which makes sense given it is one of the older, well established areas of Riverview. The age disbursement of this area's population is relatively consistent which should not be surprising as the area features a number of stable neighborhoods that are attractive to home-buyers of all ages.

The area is bounded to the east by Gunningsville Boulevard and the west by Findlay Boulevard. Whitepine serves as a collector providing access to Findlay Boulevard. Pine Glen Road is also an important corridor that acts as a collector for residents travelling to Coverdale Road and the town core or to Gunningsville Boulevard. While this area is more or less built-out, there is a proposed development south of the golf course which could add additional traffic and pedestrian activity to the area. Traffic from this area will likely use Pine Glen Road to access Coverdale Road, Gunningsville Boulevard and/or Findlay Boulevard.

2.3.3 Area 3

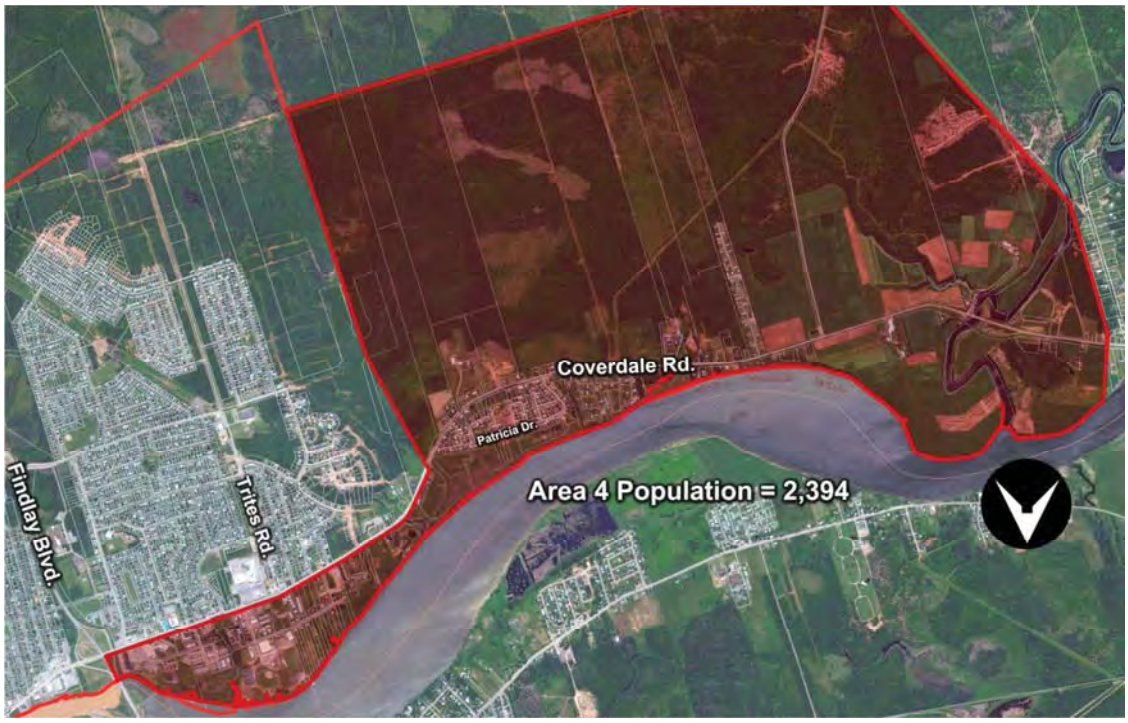
Area 3 features the highest population of any of the four areas with 8,280 residents. This area features a number of older neighborhoods but there has been additional development planned west of Trites Road. It is unclear when or if this development will take place but should any additional growth occur in the area; the majority of it will likely come once provision is made for extension of the east-west corridor into this area. The area features two major transportation corridors in Trites Road and Findlay Boulevard from north to south. Vehicular traffic moving east to west would predominantly travel along either Whitepine Road or Coverdale Road.



2.3.4 Area 4

The least populated area in Riverview, Area 4 has a population of 2,394. With the exception of a mini-home park, the area predominantly features ribbon form development with homes fronting directly onto Coverdale Road. It is also important to note that area features fewer young people and more within older age brackets. This likely relates to a limited range of housing alternatives in the immediate area.

Almost all traffic in this area would travel via Coverdale Road to access any number of other routes or destinations. Future population growth of this area will likely be limited until the east-west corridor is extended into western Riverview. Based on existing plans, this is the last phase of the construction of this so it will likely be a number of years before this area sees any major growth.



2.4 Place of Work and Mode of Transportation

2.4.1 Place of Work

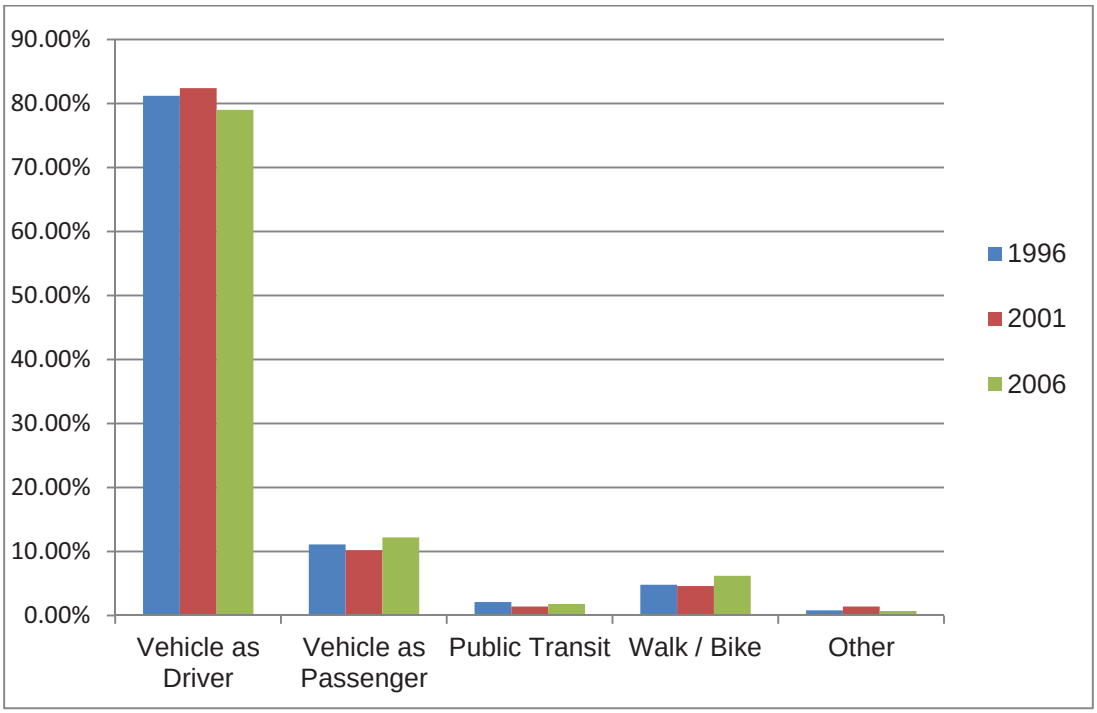
Historically, Riverview has been a predominantly residential community, meaning many residents travel outside of the Town for work. Census data still shows that the majority of residents 71.3% (based on 2006 Census data) worked in areas outside of the Town limits. The majority of these residents (62.2%) worked in a different Census Subdivision which would most likely mean Moncton, Dieppe and some of the outlying areas. While the Town has and continues to work on encouraging

additional employment opportunities within the community, establishing connections to major employment nodes as part of the AT network will be vital to overall success of the Plan.

2.4.2 Mode of Transportation

Residents within Riverview, like most North American communities, rely on the automobile to get to and from work. As of 2006, the majority of Riverview residents (91.2%) travelled to work by automobile. It should be noted that since 1996, the level of active transportation usage has increased by about 1.4%.

Figure 2.6: Mode of Transportation to Work



3 BEST PRACTICES

3.1 Introduction

Active transportation (AT) is both a recreational and commuter activity. Planning for active communities is not a new phenomenon. Many Cities and Towns across the world have incorporated active transportation infrastructure into their communities. The following sections review bike and trail network elements based on best practices currently being used across North America with an emphasis on particular standards that will apply to the Town of Riverview. A tabular summary of the recommended best practices for Riverview can be found in Appendix A.

The success of active transportation relies on the connectivity and quality of the particular routes within the network. Connectivity is gauged by the ease of access to the network and critical destinations in and around the community. The accessibility of the network is determined by factors such as safety, aesthetics, and destinations. In many cases, accessibility of a route will differ for able bodied versus non-able bodied people. This is an important consideration when assessing routes and developing trail infrastructure.

Whether for recreation or active commuting purposes, there are key barriers that keep people from utilizing bike and trail networks. Based on our experience in other communities and through the public consultation these include:

SCALE	BARRIERS
Community	• Perception that it takes too long to get to destinations. • Inadequate skills or a lack of self-confidence to use active transportation such as cycling. • Lack of knowledge of “rules of the road” by both motorists and cyclists. • Poorly designed or maintained transportation infrastructure. • Lack of connectivity to key destinations or nodes. • Lack of infrastructure such as bike racks at destinations. • Neighbourhood design that favours cars over other modes of transportation. • Inadequate or non-existent inter-modal connections, e.g., bicycle racks on buses.
Workplace	• A lack of amenities such as showers, change rooms, secure bicycle storage areas or bicycle racks, or a lack of knowledge that these facilities exist. • Inadequate knowledge of safe and convenient routes to and from work. • Unsafe routes to and from work including poorly lit paths, entrances, parking

	and storage areas. • Hostile attitudes towards active commuters (e.g., scorn by other employees, inflexible work hours, etc.). • Hidden subsidies that favour automobile traffic, such as free parking or mileage expenses.
Seasonal and/or weather-related	• Inadequate maintenance of sidewalks, bicycle lanes and trails • Lack of cycling skills and knowledge (e.g., dressing for different types of weather, best equipment to use, etc.) • Fear of injury in winter or in other inclement weather conditions[1]

Typically, bike and trail networks consist of sidewalks, trails and on street bikeways. For the purpose of this plan we have used biking, walking and wheel chairs as the key components of AT. We have focused on these modes of transportation as the "baseline design tools" required to determine the infrastructure requirements. The following sections review connectivity and routes and summarize the best practices review findings.

3.2 Connectivity

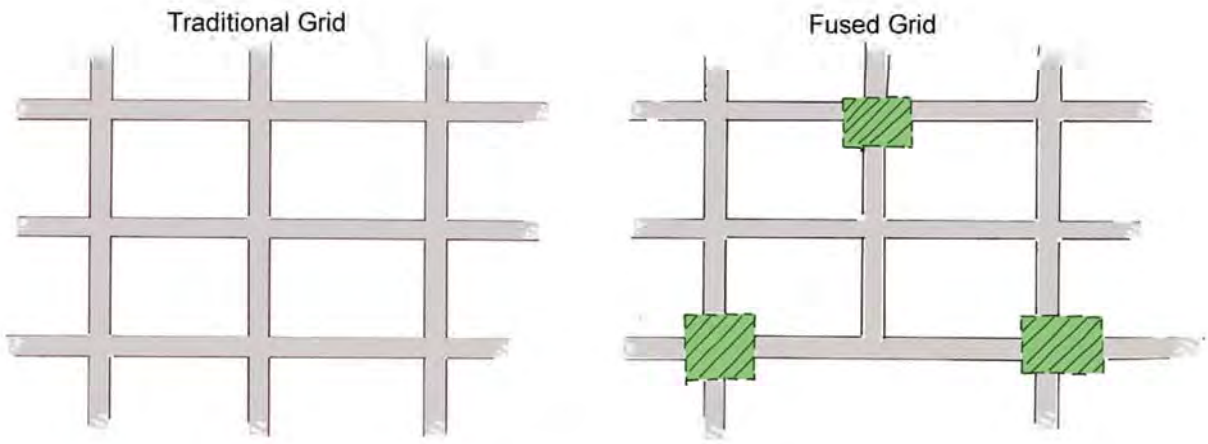
A community striving for an effective bike and trail network requires good connectivity. Connectivity is defined as the directness of links and connections in a community's travel network[2]. Good connectivity is achieved by providing as many links (streets and paths) and intersections as possible, while reducing dead-ends. As connectivity increases, travel times and distances decrease. Ideal block length is 100 meters but a street network can still provide good connectivity if the length is between 125 and 150 meters long. It is important to note that these connections do not always need to come in the form of streets and the use of trails and/or parks can be used as effective connectivity tools.

Literature suggests that the most effective street (and trail) pattern for connectivity is a grid. The standard grid pattern of streets is a relic from early town planning with many communities planned in this fashion during the late 19th and early 20th centuries. We are now designing many of our new communities based on this "old" form of design. One strategy used to maintain a pedestrian grid is the "fused grid". A fused grid is a grid of travel ways with areas "fused" keeping cars out, calming traffic, while maintaining the pedestrian grid[3]. This form of development is a predominant model used in New Urbanist communities.

1 Transport Canada, 2007. Amenities and Programs that Encourage Active Transportation in all Seasons.http://www.tc.gc.ca/programs/environment/utsp/docs/casestudiespdf/cs53e_allseason.pdf

2 Roadway Connectivity: Creating More Connected Roadway and Pathway Networks http://www.vtpi.org/tdm/tdm116.htm

3 IBID



In Riverview, the older neighborhoods have been developed in the traditional grid pattern, however many of the newer neighborhoods have or are being developed with more meandering streets featuring crescents and the occasional cul-de-sac. While not ideal for connectivity, it is possible to establish a pedestrian grid through the use of parks and trails. It is important to note that this is consistent with existing Town policy that limits the construction of cul-de-sac and strives for the design of new neighborhoods in the grid pattern.

Best Practices for Riverview:

1. Wherever possible, encourage new developments to be designed in either a grid or fused grid manner.
2. Avoid the construction of new cul-de-sacs.
3. Where cul-de-sacs are necessary ensure that trail connections from the bulb of the cul-de-sac are provided to adjacent streets to maintain the pedestrian grid.
4. In existing neighbourhoods, try to identify opportunities to establish new trails that will help re-establish the grid in areas with low connectivity.
5. Establish multiple connections to primary and secondary routes that will allow for efficient and fast movement across the Town.

3.3 Park Dedication

One of the most effective ways to plan and develop a trails and bikeways network is to allow for the dedication of parklands through trail systems. To achieve this, many municipalities across Canada have redefined a trail system as a linear park to permit property owners to connect trail networks across properties during subdivision. The municipalities then use their Parks Master Plan and Active Transportation Plan to promote the location where linear parks are more appropriate versus neighborhood or regional play parks. When there is a need for an additional park or recreational facility

within a specific neighborhood, ensure that easy access is provided for multiple forms of transportation through the inclusion of trails, bike lanes and bike racks.

Many municipalities have developed specific policy direction through their Municipal Plan that Council pursues the development of a linear parkway or connectivity system to enable AT. These also include provisions that system connectivity be a future focus of lands for public purposes acquisition through the subdivision process.

Best Practices for Riverview:

1. Include mapping of the AT network as part of the Municipal Development Plan.
2. Establish clear policies and standards in the Municipal Development Plan, Subdivision By-law promoting the use of trails as Lands for Public Purpose.

3.4 Routes

The quality and effectiveness of a route is based on connectivity, aesthetics, safety, and access to destinations. Also, criteria such as seasonal uses are essential for an attractive, well-used walkway and bike routes. Communities with active and vibrant bike and trail networks have a hierarchy of routes that reflect specific trail use such as residential uses; paths that are recreational in nature but also provide commuter options, and main commuter routes that provide direct linkage throughout the community[4].

A typical residential route

A recreational / commuter corridor

4 Smart Growth Network, 2002. Getting to Smart Growth: 100 Policies for Implementation. www.smartgrowth.org

A well-designed commuter route with sidewalk and bike lane
Source: www.pedbikeimages.org

The routes in a community should provide a variety of commuting options. To this end, an AT network should provide a variety of trails, sidewalks, and bikeways.

Best Practices for Riverview:

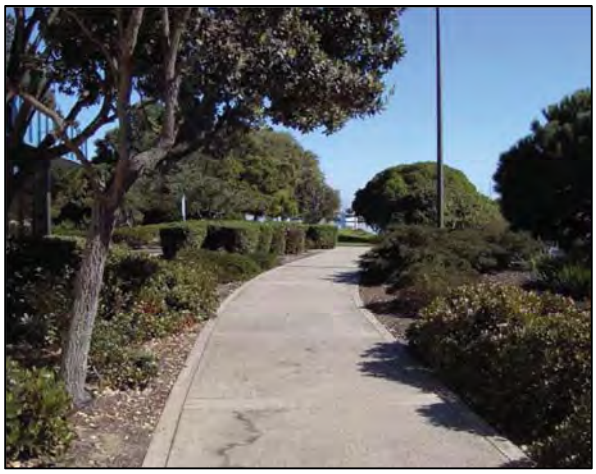
1. The bike and trail network should have a hierarchy of routes to provide for a variety of activities and paths to a destination.

3.5 Vegetation and Landscaping

Landscaping and vegetation are credited with increasing the use of trails and bikeways systems[5]. These design elements increase the aesthetics and comfort of a space, which promotes increased use of an area. Any landscaping and vegetation along trail systems should meet *Crime Prevention Through Environmental Design* (CPTED) principles (see Section 7.12). Landscaping along sidewalks and urban trail systems should be used to create rest areas and strengthen the delineation of

[5] Rosenblatt Naderi, J., B. Kweon, C.D. Ellis, and E. Serna (2001) Transportation + Street Trees: Effect of the Urban Design Industry's Roadside Landscape Improvement Standards on Driver and Pedestrian Performance. Presented at the ARCC Spring Research Conference at Virginia Tech, April, 2001

pedestrian space. This can be achieved by utilizing planting beds and vegetation placement beside buildings and between the sidewalk and roadway.



Examples of landscaping treatments for sidewalks and urban trails.

Best Practices for Riverview:

1. Sidewalks should be separated wherever possible by a landscaped buffer featuring trees to improve the aesthetics for users as well as the overall streetscape.
2. Additional landscaping and design should be considered for primary routes within the community.
3. The type, design and maintenance of landscaping should comply with CPTED principles.

3.6 Trails and Sidewalks

3.6.1 Sidewalks

Sidewalks on existing streets are essential to an effective bike and trail network. The use of a sidewalk is directly related to the cleanliness, separation from traffic and the aesthetics of the route[6,7]. Each of these elements can be addressed with good design and policy. Design criteria include:

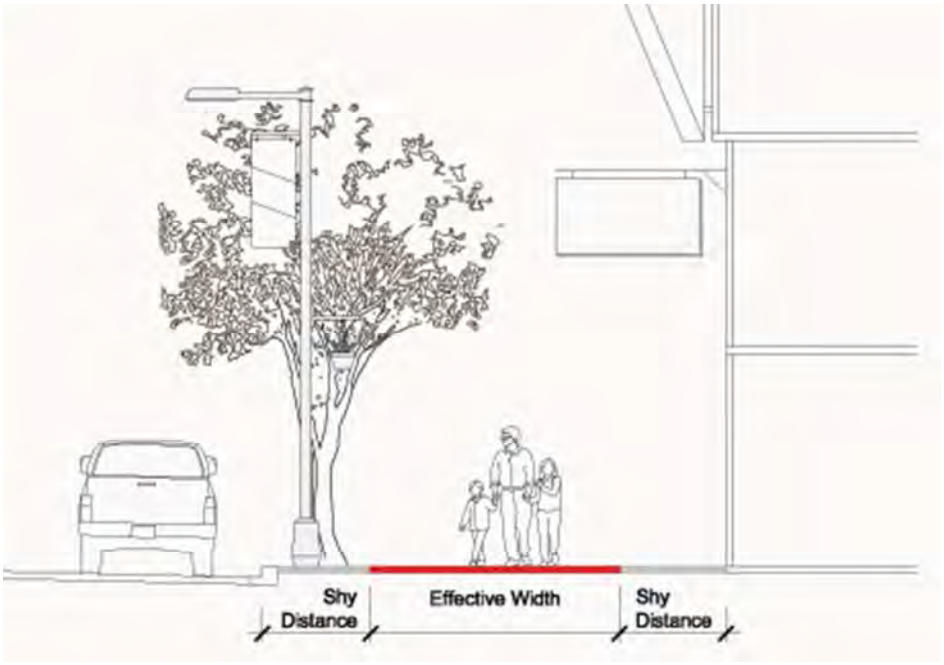
- the condition of surface material;
- surface width;
- level surface;
- clearance from obstructions such as poles and signs;

6 Humpel et. al, 2002

7 TFCPS, 2002

- provision of stairs or ramps on hills;
- areas of refuge and rest;
- separation between the sidewalk and vehicles through the use of a landscape buffer featuring high leafing trees;
- railings;
- effective and wide curb cuts for strollers and wheelchairs;
- seasonal use considerations (grit boxes on areas that are known to be slippery in winter);
- appropriate lighting; and
- sight distances and eyes on the space (surveillance).

Sidewalks are generally used for localized short trips, usually within a 500 m radius of a starting point to a destination[8]. Best practices suggest a minimum width of 1.5 - 1.8 m for sidewalks[9]. For sidewalks that are less than 1.5 m, passing lanes for strollers and wheel chairs are necessary. Design width should range from 1.5 m in residential areas to 3 m in the central commercial areas with storefronts and high volumes of pedestrian traffic.



Sidewalks should be designed to address the entire design width, including any encroachments onto the sidewalk such as street trees, signage and areas of refuge. A well-designed sidewalk will provide a comfortable environment for people that cannot walk great distances at a time. In addition, sidewalks will become the primary infrastructure in any AT network. They should be treated as public space and

[8] American Planning Association. 2006. Planning and Urban Design Standards. John Wiley and Sons. Hoboken New Jersey

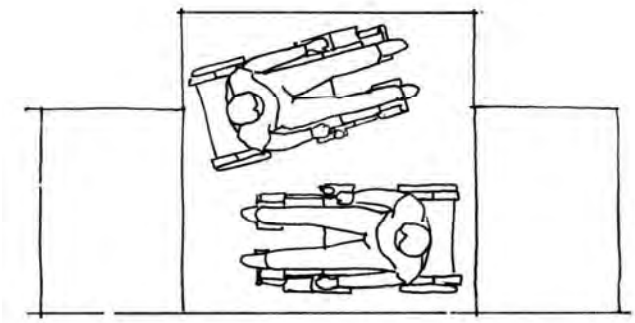
[9] IBID

linear parkways systems that draw people to and from various destinations while providing for attractive recreational opportunities.

Table 7.1: Sidewalk Design Considerations

Use	Width	Surface material	Cross-Grade	Effective width
Suburban Commercial	Min 1.5	concrete	Max 2%	~ 1.2 m
Suburban Residential	Min 1.5	concrete	Max 2%	~ 1.2 m
Urban Commercial	Min 2.25 m	concrete	Max 2%	~ 1.5 m
Urban residential	Min 1.8 m	concrete	Max 2%	~ 1.5 m

Sources: American Planning Association. 2006. Planning and Urban Design Standards. John Wiley and Sons. Hoboken New Jersey



Bump out on a sidewalk less than 1.5 m

Best Practices for Riverview:

1. A hierarchy of sidewalk design widths is required based on area and level of use.
2. The minimum sidewalk design width should be 1.5 m.
3. For sidewalks less than 1.5 m there should be passing bump outs for wheel chair, strollers and walkers.
4. Well-used sidewalks provide rest areas along the sidewalk with benches and amenities. These areas of refuge are essential for older pedestrians especially in hilly areas.
5. Cleanliness and aesthetics directly impact the use of a sidewalk or route.
6. Lighting and perceived safety are important for route use.

3.6.2 Trails

Trails are an effective way to create bike and pedestrian only corridors in a community. They provide for both recreational and commuter uses and are a key tool for reconnecting and creating the

pedestrian grid required for an effective AT network. Trail design varies based on intended use and the level of use. Trail design considerations are the same as for sidewalk design; however, crime and safety considerations are an essential component of trail design. Many trails do not have the natural surveillance of adjacent housing to provide the perception of safety, therefore the use of CPTED principals during design is necessary to promote safe and attractive spaces.

Rest intervals should be provided on trails to promote accessibility. The location of the rest areas is dependent on the slope of the trail and length of the sloping section. Any slope of 5% or greater should have a rest area immediately before and immediately after a section which has a slope of 5% or greater and a length in excess of 15 m. A multi-use trail should not exceed a grade of 10% for a distance in excess of 20 m. Table 7.2 summarizes general design characteristics for different trail uses.

Table 7.2: Trail Design Considerations

Use	Width	Surface material	Grade	Clearing width
Multi-use	2 – 5 m	Gravel/asphalt	0 – 5 % not exceeding 10 % for more than 20 m	4 – 10 m
Walking/hiking	1.25 m	Crusher dust/ gravel	Less than 20 %	2.25 m
Bike trail	2.5 – 3.5 m	Asphalt/gravel	0 – 5 % not exceeding 10 % for more than 20 m	4.5 – 7.5 m

Sources: City of Surrey, San Diego Riverway Trails Plan, Allegheny County Parks, City of Kwartha Lakes Plan, City of Guelph

Best Practices for Riverview:

1. Trails provide an effective tool for connecting the pedestrian grid.
2. Trails will require a variety of design widths based on proposed use.
3. Trails must be carefully designed to provide users with surveillance of surroundings. This requires clearing tall vegetation from the sides of trails.
4. Not all trails will be 24-hour use due to safety.
5. Trails should be encouraged for use by snowshoers and cross-country skiers in winter months.
6. Multi-use paths need to be wide enough to accommodate pedestrians and cyclists travelling in both directions.
7. Where possible, avoid the use of granular paths as it presents barriers to those with strollers and in wheelchairs.

3.7 Bike Lanes

Cycling is an efficient mode of transportation. Bike lanes can be incorporated into most existing road right-of-ways; however, bike lanes need to be highly visible and clearly defined. A review of the literature states that visibility is achieved through signage, lighting, and colour and/or painted bike lanes. The use of these techniques will vary based on the volume and speed of traffic on a route. Areas with high volumes of fast moving traffic will incorporate wider, highly visible well-defined bike lanes. These infrastructure strategies need to be supported with driver education. Table 7.3 provides a summary of bike and vehicle lane widths.

Table 7.3: Bike Lane Standards

Use	Width	Location	Traffic Volume	Traffic Speed
Shared-lane	Bike and car lane combined, Min 4 m with 4.25 m ideal.	Residential areas	Low (less than 3000 vehicles/day)	low
Paved shoulder	1.2 min paved shoulder with 1.5 ideal. A 3.5 m car travel lane	Rural routes	moderate	Moderate - high
Bike lane with on street parking	Min. 1.6 m bike lane. Car lane 3 – 3.5 m	Town core and core commercial areas	high	low
Dedicated Bike lane	1.5 m min. 2.0 m with high traffic volumes or high speed traffic. Car lane 3 – 3.5 m	Arterial routes	high	Moderate - high

Sources: City of Surrey, San Diego Riverway Trails Plan, Allegheny County Parks, City of Kwartha Lakes Plan, City of Guelph

Best Practices for Riverview:

1. Visibility is essential for safety of the biker and driver.
2. Signage and cues such as painted bike lanes are needed to educate drivers on shared right of ways with bikers is required.
3. Route selection should be based on ROW and traffic speeds.
4. Bike racks are essential to promote the use of bikes within a community.
5. Bike lanes should be separated from vehicular traffic on primary and secondary routes through the use of signage, bike lane symbols and pavement markings.

3.8 End of Trip Facilities

Effective bicycle infrastructure also includes end of use facilities. Providing end of use facilities removes a barrier from the use of alternative modes of transportation for commuting.

3.8.1 Bike Parking

Bike racks are required at key destinations. Bike racks usually include covered and non-covered storage for commuters and recreational biking respectively. A bike rack must:

- Support the bicycle upright by its frame in two places
- Prevent the wheel of the bicycle from tipping over
- Enable the frame and one or both wheels to be secured
- Support bicycles without a diamond-shaped frame with a horizontal top tube (e.g. a mixed frame)
- Allow front-in parking: a U-lock should be able to lock the front wheel and the down tube of an upright bicycle
- Allow back-in parking: a U-lock should be able to lock the rear wheel and seat tube of the bicycle[10].

The most frequently recommended bike rack currently on the market is the inverted U or A bike rack, as it meets the above listed criteria. These racks can provide parking for bike in multiples of two and can be expanded to provide for large bike parking facilities. They are also easy to install and maintain. Bike racks need to be spaced to allow for movement in and out of the space and to permit easy access to secure the bike. Suggested spacing for bike parking spaces are:

(1) Long-term bicycle parking

- Also known as bicycle parking space–occupant, Type 1 or Class A bicycle parking.
- Includes bicycle racks in an enclosed, secured area with controlled access; or
- Individual, secure enclosures like bicycle lockers.

(2) Short-term bicycle parking

- Also known as “bicycle parking space–visitor, Type 2 or Class B bicycle parking”.
- These bike parking facilities include bicycle racks in an easily accessible location;
- Available for public use;
- Sheltered or unsheltered;
- Does not protect bicycles from vandalism or theft attempts.[11]

[10] Association of Pedestrian and Bicycle Professionals, 2002. Bicycle Parking Guidelines. http://www.apbp.org/

[11] City of Toronto, 2008. Guidelines for the Management of Bike Parking Facilities. http://www.toronto.ca/planning/pdf/bicycle_parking_guidelines_final_may08.pdf

3.8.2 Changing and Shower Facilities

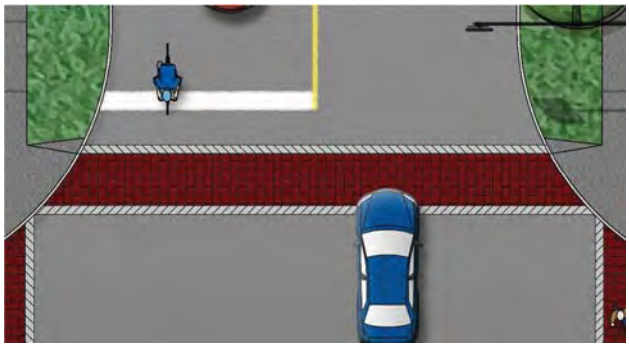
End of trip facilities also include access to showers and changing facilities. Most communities will integrate these facilities with local gyms, pools or recreational facilities. It is essential for effective transportation networks that the end of trip facilities be located near the key destinations throughout the City. As part of the Municipal Plan, Council should encourage Developers to include shower and changing facilities in any place of employment.

Best Practices for Riverview:

1. Bicycle parking standards should be incorporated into the Zoning By-law. These would include the number and type of spaces to be provided for bicycle parking and guidance on the design of bicycle racks to be installed.
2. Additional end-of-trip facilities such as showers and change rooms should be encouraged through the development approvals process.

3.9 Intersections and Crossings

Intersections and crossings between non-motorized and vehicle traffic create conflict points. The nodes must be addressed to ensure a comfortable and safe environment for both vehicles and other modes of transportation. The key element for safe crossings is visibility[12]. Also, it is very important to delineate between pedestrian and vehicle space. Visibility and space delineation is achieved with colour or texture changes, lighting, raised crossings, and a clear line of sight between the pedestrian and vehicle. For the visually impaired, urban Braille tiles at intersections should be installed[13]. Urban Braille aids in the definition of pedestrian space and provides a physical cue to pedestrians.



An example of a coloured and textured crossing.

Example of Urban Braille

[12] Florida Trail Intersection Handbook: http://www.dot.state.fl.us/Safety/ped_bike/handbooks_and_research

[13] S. Tomic, 2003. Hamilton Urban Braille System: Urban Design for an Aging Society. Plan Canada 43 (1):41-3

Another essential element to effective and safe intersections is the type and effectiveness of curb cuts. A universally accessible network must ensure accessible and safe curb cuts that allow mobility impaired and people with strollers to navigate the crossing safely. An additional measure that should be taken at highly congested intersections is the use of "bike boxes" which provide the necessary space at intersections to allow cyclists to make often difficult left hand turns.

Example of a Bike Box in Portland, Oregon

Best Practices for Riverview:

1. Providing good visibility between driver and pedestrian creates intersection safety. This can be achieved with lighting, providing good signage and using visual cures for traffic to slow down.
2. Safety for the visually impaired can be promoted using changes in texture (urban Braille), colour and height variation at key intersections.
3. Consider the use of bike boxes at highly travelled and congested intersections.
4. Curb cut design needs to address safety for wheelchairs and strollers.

3.10 Signage and Mapping

3.10.1 Mapping

A network map is used to provide a reference that illustrates the entire network and provides clear information on the route location and use information. A good map will be available in both hardcopy and on-line format. The map should be directly linked to signage used on the system so that the map and signage graphic design matches. A route map should identify all routes by the "level" of rider from novice to advanced rider routes. Novice rider routes will typically be trails and low traffic residential

roads, or roads with designated bike lanes. An advanced riders route will be a route with a shared lane with high speed, high volume traffic.

Best Practices for Riverview:

1. Providing good mapping for the existing trail and bikeway network is important in promoting usage of this infrastructure. Mapping should be provided both on the web and in hard copy format through such locations as recreation facilities, along the Riverfront Trail and in the Findlay Business Park.

3.10.2 Signage and Wayfinding

Signage and wayfinding is essential for the effective management and use of a trail and bike system. Signs are required for user safety, to state regulatory and advisory warnings, to identify destinations, and provide education and information regarding a trail system. The following are typical trail and bikeway signage.

a) Warning (Pedestrian Crossing)

Warning signs are used predominantly on roadways to warn automobiles of trail crossing or the presence of a bike route. These are typically yellow background with black lettering.

b) Regulatory (usage control) signs

Regulatory signs are typically used in the automobile right of way to delineate traffic speeds. Regulatory signs can also be used on multi-use trails and bike routes to delineate permitted users and speeds.

c) Access sign

Access signs are used to demark an entrance to a trail or bike route. These are used at secondary access points.

d) Trailhead Information sign/Kiosk /you are here signs

Trailhead signage/kiosk are used at the main access points to a trail and bike network. Trailhead signs/or kiosks are stationary maps that provide both information about a system as well as location and directional information about a trail. These kiosks can be used as bulletin boards for community events associated with a bikeway and trail system.

e) Reassurance markers/ Identification signs (trail logos)

Markers are used along a route to provide wayfinding for trail/route users. These will clearly identify which route they are on and are typically associated with mileage postings. The example below illustrates some good reassurance marker examples from Winnipeg. These trail identification markers clearly identify the route/trail combined with mileage markers and trail logo for wayfinding.

f) Interpretive signs

Interpretative signs are used for educational purposes along trails and routes. These signs should be tied directly to the route mapping and can aid in way finding.

Best Practices for Riverview:

1) Signage is also an important consideration in promoting trail usage and providing user information regarding points of interest and amenities.
2) Signage should incorporate any long-term branding initiatives the Town currently has underway.

3.11 Winter Maintenance

Winter maintenance for a bike and trail network needs to be based on the proposed winter use of the system. In our climate, it is not feasible for the entire network to be cleared of snow for people to walk and commute. The network should be classified based on use for winter maintenance. An effective approach for winter trail access is to identify key trails for winter use and all-season use. This approach allows for cross country ski areas, some suburban walking paths, urban walking paths, and bike routes to be chosen for maintenance promote winter recreational activity. The routes chosen for winter maintenance will typically be based on the route hierarchy. Primary routes would be chosen as prime winter maintenance candidates. Typical maintenance costs for winter trail maintenance is $350/km of trail which is comparable to winter sidewalk maintenance. Many municipalities partner with trail user groups for winter maintenance (i.e. cross-country skiing and snowmobiling groups).

Best Practices for Riverview:

1. Not all trails require maintenance during the winter months. The level of winter maintenance should be based on the level of usage over the winter and the role of the connection.

3.12 Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design (CPTED) focuses on the physical design of space to deter criminal behavior. This is predominantly achieved through providing natural surveillance or “eyes on the street”. Much of this is achieved through the strategic placement of lighting, benches, vegetation and open areas in a space. However there are other tactics that can be used to promote safe spaces. These include effective and well-defined access to spaces, ensuring easy identification of boundaries to a space, and providing clean and attractive well maintained spaces. All of these techniques promote safe and health public areas.

The four key design components of CPTED are territoriality, surveillance, access control, and maintenance.

3.12.1 Territoriality

Space within the trail width and along the edges should be well defined and delineated to create a sense of ownership, such that intruders and strangers stand out. This may be accomplished through the use of pavement materials, landscaping, art, signage, screening, fencing, and similar techniques.

3.12.2 Surveillance

Create an environment where it is possible for people engaged in their normal behavior to observe the spaces around them. Maximize a space's visibility through thoughtful design of building orientation, window placement, entrances and exits, landscaping of trees and shrubs, and other physical obstructions. Utilize night time illumination of parking lots, walkways, entrance, stairwells, and related areas that promote an environment in which natural surveillance is possible.

Lighting is a key element of surveillance and CPTED. Areas that feel unsafe should be lit for safety reasons to promote visibility, however, for overall trail and bikeway lighting there are currently no standards or guidelines, but if a trail is intended to serve commuters, or the trails acts a key urban connection, providing lighting, at least in the early morning and early evening, should be given serious consideration.

3.12.3 Access Control

Plan and implement access control to restrict criminal intrusion, especially in areas where criminal activity cannot be easily observed. Access control may include, but is not limited to, use of fences, walls, landscaping, and lighting to prevent or discourage access to or from dark or unmonitored areas.

In addition, sidewalks, pavement, lighting, and landscaping areas should be used to guide the people to and from primary development entrances and exits.

3.12.4 Maintenance

Lack of maintenance creates a perceived element of crime, which will reduce the use of an area. An area with scattered garbage and graffiti will be less used than the same area that is clean of debris with no graffiti. Maintenance supports territorial reinforcement, natural surveillance, and access control. The more an area is used the safer it becomes which provides a comfortable, safe atmosphere.

Best Practices for Riverview:

1. Create defined public and non-public spaces using landscaping.
2. Provide lighting for key routes in the community.
3. Where necessary strengthen the territoriality of a space by controlling access with fencing, landscaping and walls.
4. Long-term continued maintenance is essential to promote safe and vibrant public spaces.

4 CONSULTATION SUMMARY

As part of the initial stages of this project, GENIVAR held three separate focus group workshops with various stakeholders and one public open house. The intent of these sessions was to engage participants in mapping key active transportation routes, destinations and barriers in the community. A community questionnaire was also made available both on the Town's website at Town Hall.

The three focus groups included bicycle and recreational interest groups, seniors, and Town staff. The public open house attracted a variety of residents, as well as several councilors. All public consultation followed a similar structure and started with GENIVAR providing a brief presentation to help familiarize residents with AT, its benefits and the current project being undertaken by GENIVAR and the Town of Riverview. Following the presentation, participants were broken into small groups to discuss and map the AT challenges, destinations, barriers and opportunities within Riverview and the surrounding areas. The following sections provide a summary of input gathered as part of the initial consultation process.

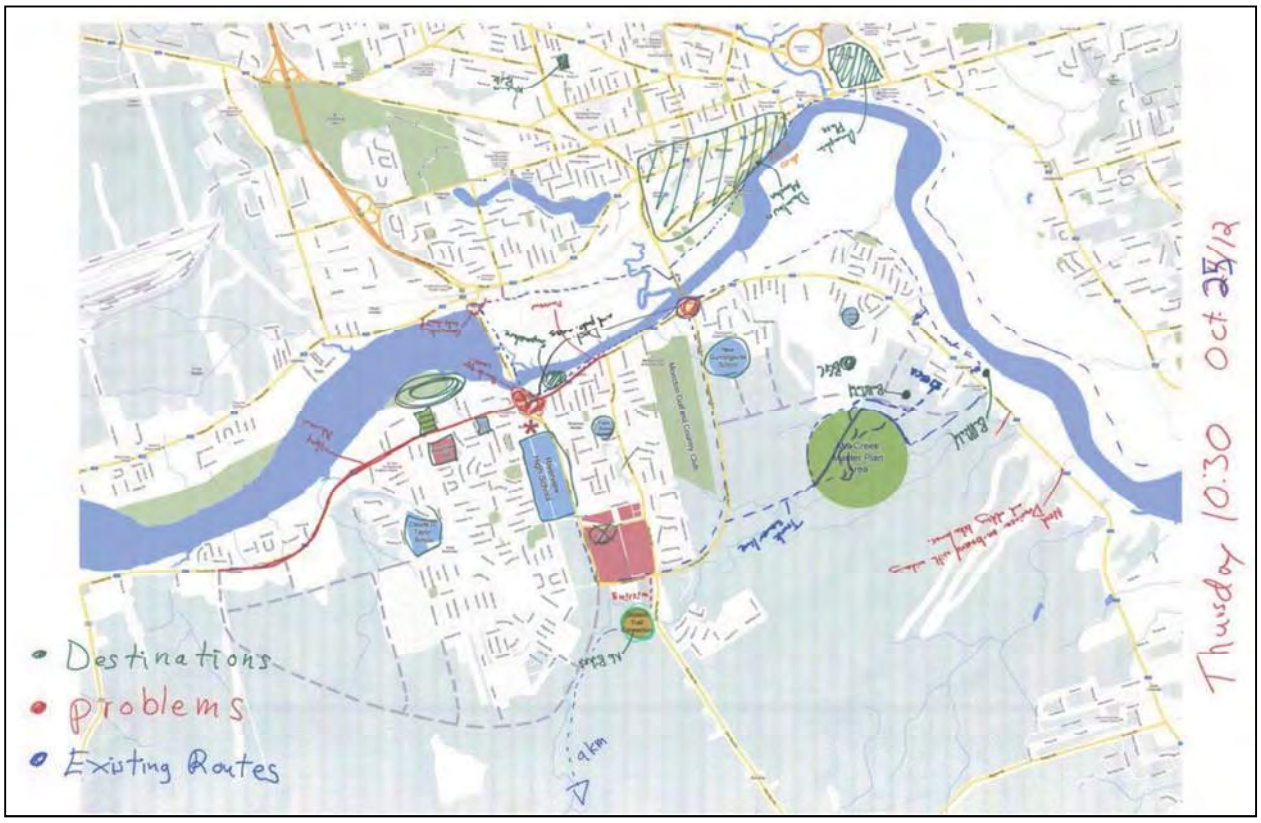
4.1 Focus Group Workshops

4.1.1 Focus Group Workshop #1: Bicycle and Recreation Groups

The first focus group workshop took place on October 25th at 10:30 am. Various stakeholder groups and were represented at this meeting including: a board member of La Bikery Bicycle Co-op, a CAN-BIKE instructor, a Dobson Trail board member and members of the Riverview Cross Country Ski Club. In addition, a handful of residents who actively walk and bike throughout Greater Moncton also attended. The following are notes taken during the workshop and a copy of the map (full size version found in Appendix B) developed during the session:

- Access to the Dobson Trail via active transportation such as a sidewalk along Pine Glen Road from Gunningsville Boulevard to the Dobson Trail entrance.
- Trails should, where possible, avoid crossing roads.
- Educate both AT users and vehicle drivers of the rules of the road.
- Prevent 4 wheelers from using AT trails.
- Require end of trip facilities such as bike lockers in developments.
- Bike lanes work in Moncton and they would like to see them in Riverview as a starting point.
- Need to ensure that the rules of the road are the same in all three municipalities.
- A pamphlet explaining the rules of the road for all users should be created for local police to distribute.
- Winter maintenance along some key routes is not sufficient.

- Create maps and pamphlets illustrating safe and alternate routes and place them throughout the community.
- Largest barrier in Riverview is the interchange at the Causeway.
- As AT development moves forward, look for possible connections to neighbouring rural communities such as Salisbury, Hillsborough.



* *The above map illustrates key destinations (green), problems/barriers (red) and existing routes (blue) within the Town of Riverview and its neighboring communities.*

4.1.2 Focus Group Workshop #2 – Town Staff

The second focus group took place on October 25th at 2:00 pm. The intent of this focus workshop was to gather feedback and input from Town Staff who ultimately will be responsible for implementing the Active Transportation Plan. This included Staff from the following departments: Engineering and Public Works, Recreation and Community Relations, the Greater Moncton Planning District Commission and Economic Development. The following are notes from the meeting and maps developed at the session (larger version found in Appendix B):

- Green space between sidewalks and the road make it difficult to clear snow on the sidewalks.
- Maintenance cost is a big issue.

- Philip Street has visibility issues.
- Like the look of the new sidewalk along Pine Glen Road.
- Possible connection from the existing tobogganing to the Dobson Trail.
- Education is key for the success of AT in Riverview.
- By-laws currently do not allow skate boards on sidewalks or consider it an AT use.
- Tie in the recreational services into the AT network.
- There is a big push to add more lanes along Hillsborough Road for car traffic. This would affect AT users.
- Barriers include cost to maintain AT routes during the winter.

* *The above map illustrates key destinations (green), problems/barriers (red) and existing routes (blue) within the Town of Riverview and its neighboring communities.*

* *The above map illustrates key destinations (green), problems/barriers (red) and existing routes (blue) within the Town of Riverview and its neighboring communities.*

4.1.3 Focus Group Workshop #3 – Seniors

The third focus group took place on October 26th at 10:30 am. The focus group had five senior residents with various levels of mobility. Below are key notes from the meeting and a map (larger version found in Appendix B) developed at the session:

- Secondary trails to connect residential neighbourhoods to the perimeter trails (riverfront trail) are needed.
- Better winter maintenance on trails. They are currently icy and not cleared.
- Better align the intersection of Blythwood, Coverdale Road and the Super Store entrance
- Add guard rails at the end of Pine Glen to help protect pedestrians on the waterfront trail from cars coming down the hill at Pine Glen in the winter.
- People need to learn how to share the trails. Seniors do not always hear the bell of cyclists coming up behind them.
- Public transit needs to connect to AT routes.

* *The above map illustrates key destinations (green), problems/barriers (red) and existing routes (blue) within the Town of Riverview and its neighboring communities.*

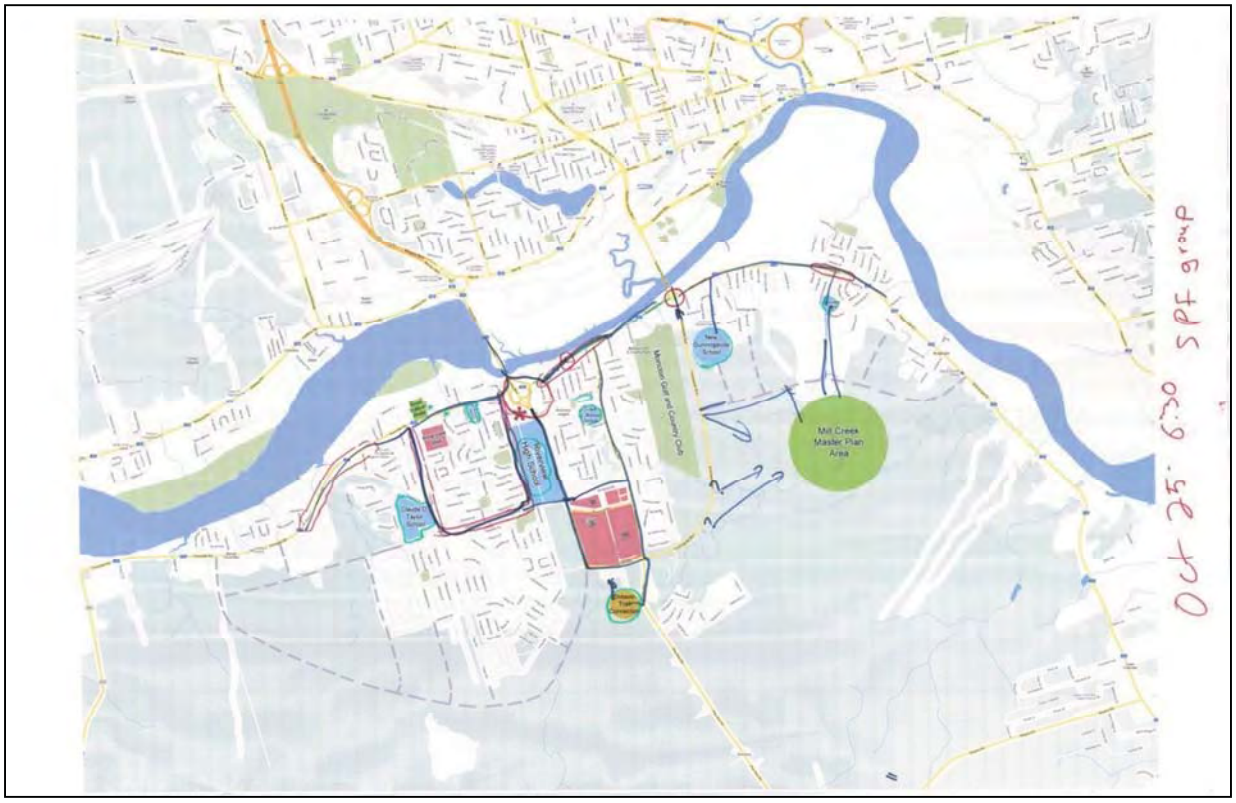
4.2 Public Open House

A public open house was held on October 25th at 6:30 p.m. and attracted 25 residents of various ages including a few councilors. Following a brief presentation outlining the project and the basics of AT, attendees were broken into three small groups to discuss and map potential issues and opportunities. The following are key notes from the open house and mapping (larger versions found in Appendix B) illustrating key destinations, problems/barriers and existing routes

- Connection to Dobson Trail is essential
- Barrier – no sidewalks leading to schools. Congestion area around schools because parents are dropping kids off.
- Gunningsville Boulevard is a great trail but has no destination for the residents of Riverview
- As a pedestrian, Riverview is divided in three – East of Gunningsville, between Gunningsville and Findlay and West of Findlay.
- Safety issues for pedestrians walking along Coverdale from Trites to Cleveland.
- Interconnectivity between Mill Creek Park and the surrounding residential neighbourhoods.

- A pedestrian trail connecting Riverview to downtown Moncton via the future third connection. An AT bridge would give commuters a safer route to downtown Moncton by avoiding Hillsborough Road.
- Make more AT loops throughout the community.
- With signs indicate that pedestrians should not walk along Findlay Boulevard as it is not safe.
- Better winter maintenance of the trails.
- Look into ways to prevent motorist from using trails.
- Signage throughout Riverview showing trails and paths.
- Use materials that are welcoming to the disabled.
- Asphalt works best for all users.
- Have more mixed zoning throughout residential neighbourhoods to create more destinations.
- Turning left onto Coverdale Road is really dangerous.
- Educate students and their parents of the different trails in Riverview, Moncton and Riverview.

* *The above map illustrates key destinations (blue), problems/barriers (red), existing routes (green) and future connections (black) within the Town of Riverview and its neighboring communities.*



** The above map illustrates key destinations (cyan), problems/barriers (red), existing and future routes (dark blue) and future connections (black) within the Town of Riverview and its neighboring communities.*

4.3 Questionnaire

GENIVAR received 30 questionnaire responses from Riverview residents. The results of the questionnaires have been compiled into several tables which can be found in Appendix C. Questions focused on gathering basic household information, existing transportation and AT usage, comfort with different types AT infrastructure and establishing key routes and destinations. The following subsections provide a summary of information gathered.

4.3.1 Household Information

As shown in Table 3.1, the majority of respondents were between the ages of 26 – 54 years old (75.8%) and travelled between 3 – 20 km to get from work or school every day. The majority of households have two drivers and one or two vehicles.

Table 3.1: Compilation of Questions 10, 11, and 12

	0	1	2	3	4	5
How many residents in the household	0.0 %	13.3 %	30.0 %	13.3 %	23.3 %	20.0 %
How many drivers in the household	0.0 %	16.7 %	66.7 %	6.7 %	3.3 %	6.7 %

How many vehicles in the household	6.7 %	30.0 %	56.7 %	0.0 %	6.7 %	0.0 %

	1 – 3 km	3 – 10 km	10 – 20 km	> 20 km
Daily commute distance	11.1 %	51.9 %	25.9%	11.1 %

Age	- 18	19 – 25	26 – 40	41 – 54	55 – 65	+ 65
Age of individual responding	3.4 %	6.9 %	51.7 %	24.1 %	10.3 %	3.4 %

4.3.2 Existing Transportation and Active Transportation Usage

Table 2 shows that the majority of residents use a vehicle as their primary mode of transportation. It is also evident that majority of residents never or rarely use active transportation for commuting purposes though 77% of the residents use AT for recreational purposes. The survey results indicate that the main reasons for the lack of AT use is that the commute time is too long and that there are not enough trails or bike lanes. Close to 5% of the participants were concerned with the safety of AT while another 5% indicated a lack of infrastructure such as bike racks at destination the reason for not using this transportation mode.

Table 3.2: Compilation of questions 1, 2, 3, and 4 of the questionnaire

Forms of Transportation	Car/Truck	Bicycle	Walking/Running	Public Transit	Wheelchair	Other
Most frequently used	96.7 %	3.3 %	0.0 %	0.0 %	0.0 %	0.0%

Active Transportation Use					
	Daily	Weekly	Monthly	Never	
For commuting purposes	18.0 %	18.0 %	11.0 %	54.0 %	
For recreational purposes	13.0 %	37.0 %	27.0 %	23.0 %	

Reasons for not using Active Transportation	
Not enough trails, bike lanes, cross-country ski routes, etc.	22.7 %
Infrastructure does not allow me to go to my desired destination	0.0 %
I do not feel safe	4.5 %
Takes too much time to get anywhere	40.9 %
Weather	4.5 %
There is a lack of infrastructure at destinations (bike racks, lockers, showers)	4.5 %
All of the above	22.7 %

4.3.3 Comfort with AT Infrastructure

As shown in Table 3.3, the majority of respondents are most comfortable using gravel and paved trails for biking and walking. They also felt more comfortable on sidewalks that have a landscape buffer between them and the road. Residents felt most unsafe on the shoulder of rural roads and on trails and sidewalks without any street lighting.

To support active transportation users, respondents highlighted the need for further infrastructure such as bike racks, lockers, showers and signage and also to improve road maintenance, increase the number of off street trails, bike lanes and connections to key destinations.

Table 3.3: Compilation of questions 5, 6, and 7

Level of comfort	Very Comfortable	Comfortable	Uncomfortable	Very Uncomfortable
Walking on a gravel multi-use trail	75.0 %	25.0 %	0.0 %	0.0 %
Walking on a paved multi-use trail	75.0 %	25.0 %	0.0 %	0.0 %
Walking on the shoulder of a rural road	10.3 %	27.6 %	41.4 %	20.7 %
Walking on the sidewalk without a landscaped buffer	22.2 %	63.0 %	14.8 %	0.0 %
Walking on the sidewalk with a landscaped buffer	71.4 %	28.6 %	0.0 %	0.0%
Walking where there is not street lighting	3.6 %	10.7 %	42.9 %	42.9 %
Cycling on a gravel multi-use trail	51.7 %	31.0 %	13.8 %	3.4 %
Cycling on a paved multi-use trail	67.9 %	32.1 %	0.0 %	0.0 %
Cycling on the shoulder of a rural road	10.3 %	10.3 %	55.2 %	24.1 %
Cycling where there is no street lighting	11.1 %	11.1 %	40.7 %	37.0 %

Level of agreement with statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Secure bicycle parking at work/school/shopping center	34.5 %	44.8 %	17.2 %	0.0 %	3.4 %
Improved road maintenance	35.7 %	25.0 %	35.7	0.0 %	3.6 %

			%		
Improve sidewalk and trail maintenance	25.0 %	28.6 %	42.9 %	0.0 %	3.6 %
Improved signage for bike and pedestrian routes	37.9 %	24.1 %	31.0 %	6.9 %	0.0 %
The existing trails and sidewalks are meeting my needs	3.6 %	3.6 %	60.7 %	21.4 %	10.7 %
Nothing will encourage me to walk or bike more often	3.4 %	3.4 %	34.5 %	44.8 %	13.8 %
More multi-use trails (off-street)	27.6 %	41.4 %	20.7 %	3.4 %	0.0 %
Bike lanes or paved shoulders for cycling (on-street)	37.9 %	27.6 %	27.6 %	3.4 %	3.4 %
More connections to key destinations	31.0 %	34.5 %	27.6 %	6.9 %	0.0 %
Reduce traffic speed	3.4 %	20.7 %	34.5 %	17.2 %	24.1 %

4.3.4 Key Routes and Destinations

When asked about key routes and destinations, respondents indicated the areas that need better connected trails, bikeways or sidewalks are the Causeway/Traffic Circle, Trites Road, Gunningsville Boulevard area and Coverdale Road. They also indicated areas that should be included as part of the Active Transportation network are Downtown Riverview, Findlay Boulevard retail center, schools, connections to Downtown Moncton, Biggs Drive recreational fields and facilities, library, Riverview mall and Mill Creek area. The table below presents respondents recommendations on key routes and destinations.

Table 4: Compilation of questions 8, and 9

Areas that require better connected trails, bikeways or sidewalks	Areas that should be included as part of the Active Transportation network
1. Causeway / Traffic Circle 2. Trites Road 3. Gunningsville Boulevard Area 4. Lower Coverdale Road	1. Downtown Riverview (between the bridge and causeway) 2. Findlay Boulevard Retail Centre 3. Schools

5. Buckingham Avenue 6. Upper Coverdale Road 7. Coverdale Road 8. Schools 9. Old Coach Road to Gunningsville Boulevard 10. Trites Road Extension 11. South End – Findlay Park 12. Findlay Boulevard 13. Linier parks in new development	4. Downtown Moncton 5. Riverview High School 6. Biggs Drive Recreational Fields / Facilities 7. Library Town Hall 8. Riverview Mall 9. Mill Creek Area 10. Moncton Industrial Park

4.3.5 Additional Comments

Part of the questionnaire asked respondents to provide any additional comments that they may have in regards to an active transportation plan for Riverview. The following are some of the comments as written by the respondents:

- Need some kind of services for people that would like to get out without the cost of taxis from East Riverview to West Riverview Only.
- The rules of the road should be posted online and in schools to tell people where they are allowed to ride bikes and where they shouldn't (sidewalks, wrong side of the road, etc.). I've had arguments with friends over the rules and that shouldn't happen, the rules are the law and everyone should know them.
- Do whatever you can to ensure bicyclists obey the rules of the road - otherwise, keep them away.
- Cross Creek on Pine Glen Road would be a good spot for more AT infrastructure. There is no bus service or trails for biking/walking to the main areas of Riverview.
- I like the idea of surveys like this to get ideas from the public.
- I feel that more Bike Lanes should be added to the streets of Riverview making it easier for cyclist to navigate the streets of Riverview... as well as the proper signage to notify motorist of cyclist on the street and to share to road. I also believe more trails should be created throughout the town which eventually would lead to each trail being connected in some way or other making it easier to access different areas of the town either by foot or by bicycle.
- I used to live in Downtown Riverview and would walk to restaurants and stores and bike to work in Downtown Moncton on the riverfront trail, but now I live in Upper Coverdale and I don't feel safe biking along the gravel shoulder of the road with cars going 80k beside me, so the bike sits in the garage gathering dust while my vehicle racks up the miles. I also now work on

Mapleton Rd. too far too bike but I wouldn't even dare attempt to go around the traffic circle on a bike anytime of the day let alone morning rush hour traffic.

4.4 Summary

The consultation process saw participations from a variety of residents, the majority of which expressed an interest in AT and potential enhancements to the Town's existing network. Some key points that repeatedly came up throughout the consultation process were:

- The interchange of the Causeway, Findlay Boulevard and Coverdale Road is a large barrier for active transportation users traveling from West Riverview to downtown Riverview.
- The lack of bike lanes along Hillsborough Road and Coverdale Road is a barrier for cyclists traveling from east Riverview to downtown Riverview and downtown Moncton.
- Residents of Riverview would like to see more multi-use trails similar to what is in place at Gunningsville Boulevard.
- Enhance and encourage through design the use of active transportation as a more desirable form of transportation for kids traveling to school. Need more sidewalks and bike lanes leading to schools.
- Educate the motorists, cyclists, students and parents the rules of the road for all forms of transportation. Also educate the residents of safe and alternative routes for active transportation users through signage placed throughout the community.
- Connect the Dobson Trail and Mill Creek Park into the community through trail connections, bike lanes and signage.
- Encourage end of trip facilities such as bike racks, bike lockers and shower facilities.

5 EXISTING ACTIVE TRANSPORTATION INFRASTRUCTURE

5.1 Riverfront Trail

The Riverfront Trail runs along the Petitcodiac River between the causeway (Findlay Boulevard) east to Hawks Road. The trail is widely used by residents for walking, jogging, running, biking, dog walking. The trail surface is crushed gravel which is not ideal for roller blading, biking, skateboarding and other forms of active transportation that uses wheels. Through consultations, residents expressed the need for signage and perhaps additional trail width to reduce conflicts between cyclists and pedestrians. Additionally, a number of residents indicated a desire to see the trail cleared during the winter months.

5.2 Trites Road

Trites Road recently saw a portion of an informal trail formalized. The portion of the trail running from Whitepine Road to Callaghan Road was recently paved with a landscaped buffer running between the multi-use trail and Trites Road. The trail is ideal for cyclists and other wheeled AT users as it is paved while providing pedestrians a safer environment to walk, jog and run in than the typical sidewalk as there is a landscape buffer between them and the street.

5.3 Gunningsville Boulevard

The Gunningsville Boulevard multi-use trail runs alongside Gunningsville Boulevard from Coverdale Road to Findlay Boulevard and Pinder Road. The multi-use trail has a wide landscaped buffer between it and Gunningsville Boulevard. The trail is paved and is used by walkers, cyclists, runners, joggers and dog walkers.

Residents have expressed a desire for increased winter maintenance of the trail to allow for year round use. The multi-use trail has no formal connections between Coverdale Road and Pine Glen Road, which limits the connectivity to the surrounding neighborhoods and services. However the trail does connect to the Riverfront Trail and the multi-use trail on the Gunningsville Bridge. A residential development has been proposed south of the Moncton Golf & Country Club. The Town should work with the developer to create multiple connections to Gunningsville Boulevard.

5.4 Gunningsville Bridge

The Gunningsville Bridge was built in 2005 and with it came a multi-use trail connecting Riverview to Moncton. The multi-use trail is paved and separated from the street by a decorative concrete barrier. The multi-use trail connects Riverview and Moncton's Riverfront Trails. The trail is widely used by pedestrians and cyclists; however users indicated there is limited space on the multi-use trail for both cyclists and pedestrians. A further barrier is the fact that cyclists are not legally able to use the roadway despite ample street width.

5.5 Pinder Road

Pinder Road has a multi-use trail running alongside it between Gunningsville Boulevard and Lawson Road. The multi-use trail is surfaced with crushed gravel and has a landscape buffer between it and the street. On the ground the trail looks like a simple continuation of the Gunningsville Boulevard multi-use trail. The multi-use trail helps provide a connection to residents of south western Riverview to Findlay Business Park and the Gunningsville Boulevard multi-use trail.

5.6 Findlay Boulevard

Similar to Pinder Road, the multi-use trail running alongside Findlay Boulevard from Gunningsville Boulevard to Whitepine Road is surfaced with crushed gravel and is separated from the street with a landscaped buffer.

5.7 Findlay Boulevard Pedestrian Bridge

The pedestrian bridge spanning over Findlay Boulevard connects Bradford Road East and West. This is the only connection crossing Findlay Boulevard between Coverdale Road and Whitepine Road. The bridge is paved and surrounded by a chain linked fence for safety purposes. The bridge does help connect the neighborhoods on either side of Findlay Boulevard.

5.8 Pine Glen Road

One of the more recent additions to the AT network in Riverview is a multi-use trail running alongside Pine Glen Road from Gunningsville Boulevard to Berkley Drive. It is our understanding that this multi-use trail will be extended to Hebron Street in 2013. The multi-use trail is paved and abuts the street however; there is no landscaped buffer between it and the street. The trail provides connections to the surrounding residential neighborhoods, Findlay Business Park, Riverview Middle School and the All

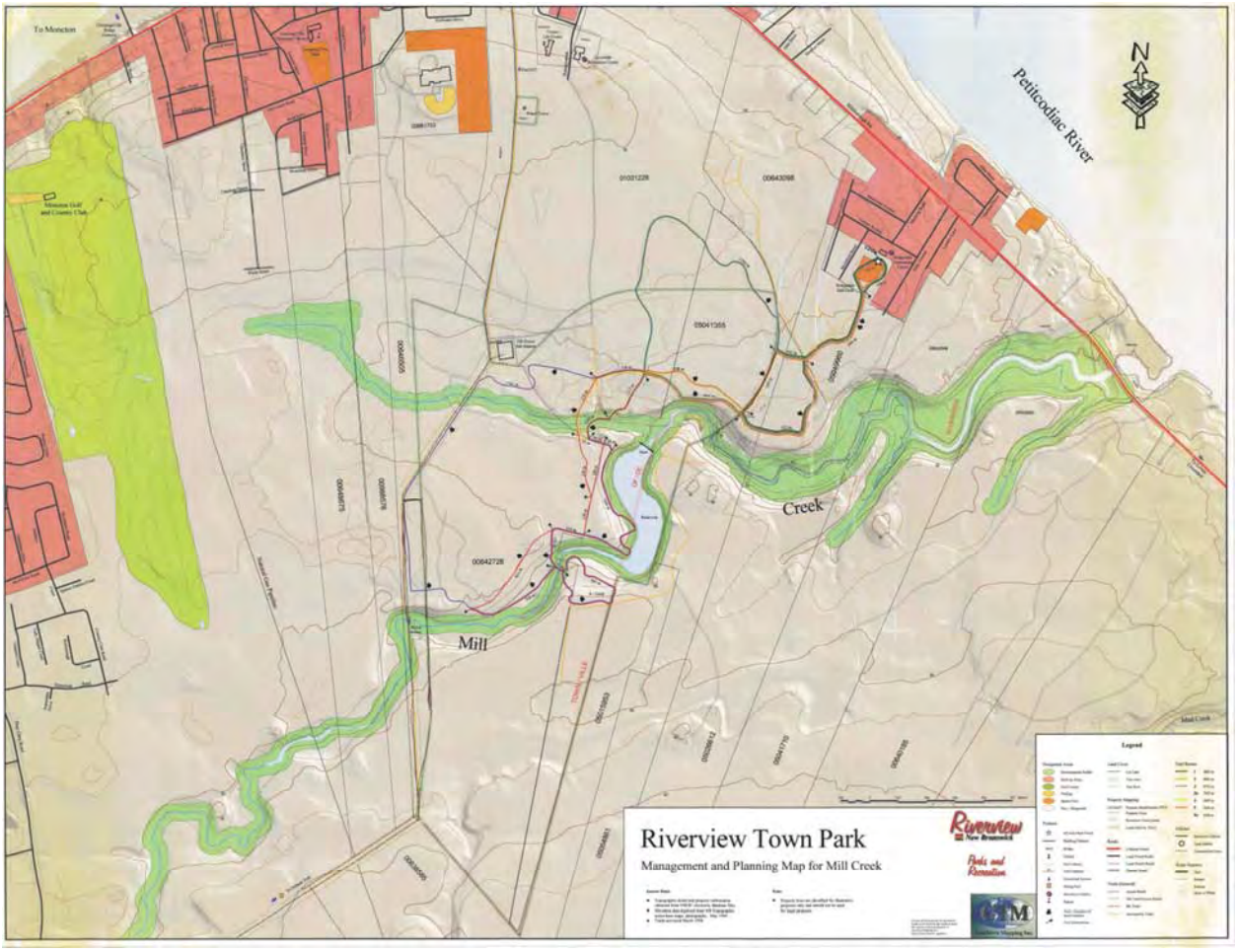
World Super Play Park. The street is a heavily travelled and if additional AT connectivity can be provided to Pine Glen Road then it can become a key route in the overall network.

5.9 Dobson Trail

The Dobson Trail is a footpath that stretches nearly 58 km from Riverview to the northern boundary of Fundy National Park. The start of the trail is in southern Riverview on Pine Glen Road across the street from Angus Road. At the entrance of the trail is a small parking lot for users to park their cars. The trail is a footpath through the woods. The trail is used year round by walkers, joggers, runners, dog walkers and snowshoers and cross-country skiers. As part of the Active Transportation Plan, enhanced connections to trail will be assessed to improve access for pedestrians and other AT users.

5.10 Cross Country Ski Routes

There is currently a well-established system of cross-country ski routes in eastern Riverview. A group of volunteers maintain the approximately 8 km network that starts at the Bridgedale Community Centre and extends as far south as the Dobson Trail. The majority of the trails pass through private, undeveloped land which puts the network at risk as development continues to occur here.



6 PHYSICAL CHARACTERISTICS AND LAND USE PATTERNS

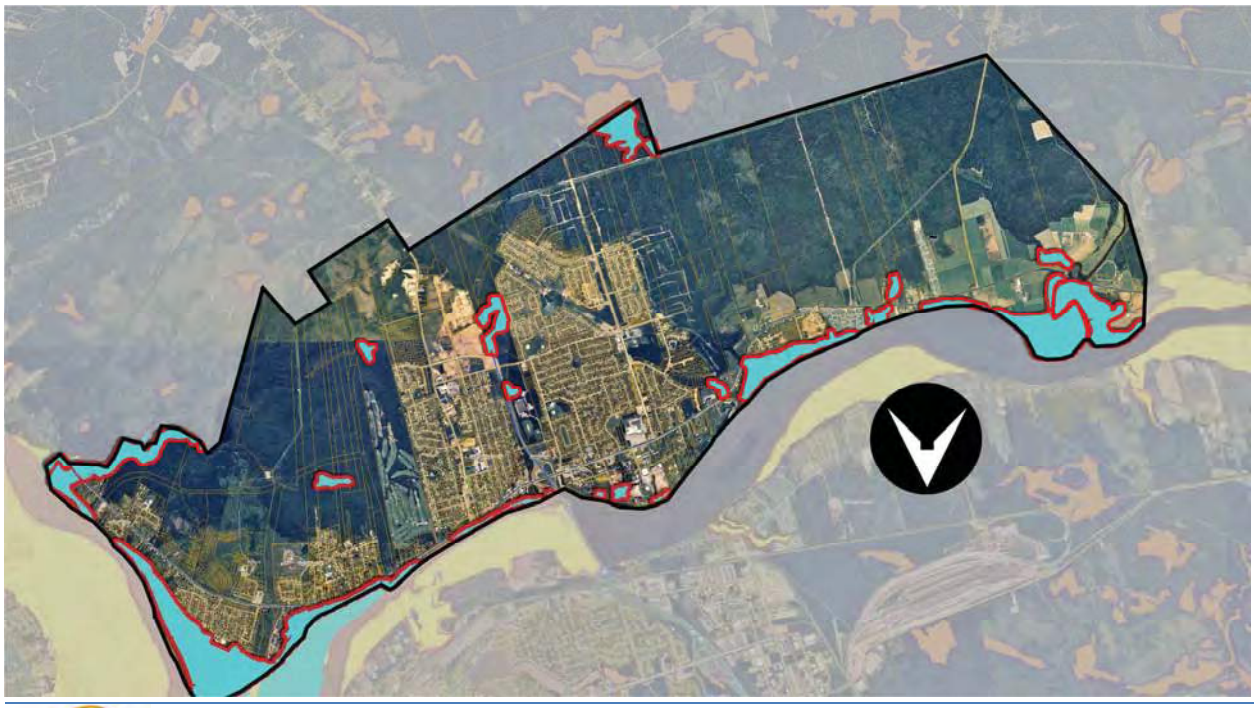
6.1 Watercourses and Wetlands

In 2010 the Province of New Brunswick began providing mapping of wetlands through its online tool GeoNB (www.geonb.ca). While edits have been made to the mapping since that time, it provides the approximate location of wetlands across the province. Development within 30 metres of any regulated wetland or watercourse features is strongly discouraged by the Provincial Department of Environment and requires approvals in the form of Watercourse and Wetland Alteration Permits of in the case of larger watercourses and wetlands, an Environmental Impact Assessment.

In the case of Riverview, the dominant feature is the Petitcodiac River. This is considered a Provincially significant watercourse / wetland by the Province of New Brunswick and any development within 30 metres of this is prohibited. This presents some potential limitations to the location of any new or enhanced trails along the waterfront. While Staff from the Provincial Department of Environment may permit some trail development within this area, there could be requirements for the Town to go through the sometimes lengthy approval process in order to facilitate this. In preparing the routes and destinations associated with the Active Transportation Plan, it will be crucial to avoid these environmentally significant areas.

The following map provides wetland mapping within Riverview (larger version found in Appendix D):

Figure 5.1: Riverview Wetland Mapping



6.2 Topography

The Town of Riverview slopes rather significantly from south to the north. The majority of the Town has been built within the context of these slopes and grades so while they may not present barriers to constructing cost-effective AT infrastructure, specific consideration will need to be given to providing rest areas such as benches to those travelling up steeper slopes. Topographic mapping (Appendix E) will be assessed when determining the location of new AT routes as part of the Active Transportation Plan.

6.3 Land Use and Future Growth Areas

6.3.1 Existing Neighbourhoods and Commercial Areas

As outlined in Section 2, the Town of Riverview has grown rather steadily over the past thirty years. In that time, the community has remained predominantly residential in nature. In recent years the Town has witnessed more commercial development in the Findlay Boulevard and Coverdale Road areas. The Town would like to see continued large scale commercial growth in the Findlay Business Park area while centralizing smaller, more pedestrian oriented commercial uses along Coverdale Road.

Residential development within Riverview has historically been in the form of single-family homes though there has been a shift towards semi-detached units, townhouse / rowhouse units and smaller apartment buildings in new or expanding areas of the community.

6.3.2 East-West Corridor

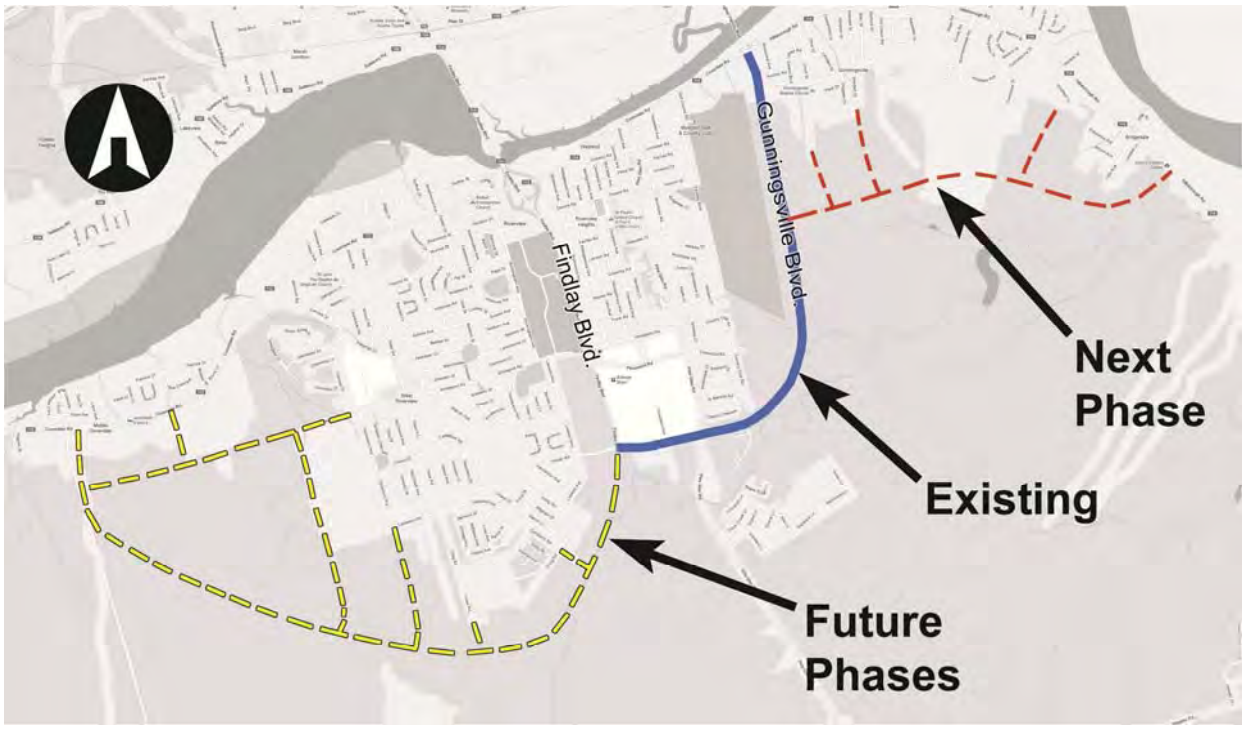
While many factors ultimately determine the rate in which a community grows, ultimately the major element dictating the location of growth in Riverview will relate to the East-West Corridor. This is a large scale transportation initiative designed as a controlled access roadway intended to enhance connectivity between the eastern and western areas of Riverview while providing for efficient connections to Moncton. While predominantly constructed in response to vehicular congestion in the Town, this route has and will continue to provide an excellent piece of the overall AT network.

The initial phase of this project (Gunningsville Boulevard) is now complete. The next phase of this project will be the construction of Bridgedale Boulevard which will connect Hillsborough Road and the east portion of Riverview to Gunningsville Boulevard. Given current limitations in government funding, it is unclear when or if the Provincial and Federal Governments will provide additional funds to help complete the remaining portions of the project. In response to this, the Town will work with developers to fund and construct the next section. Ultimately the speed with which this portion is constructed will

depend on the growth and development of this area, unless additional funding comes available in the near future.

The future phases of the project will connect western Riverview to Findlay Boulevard. The timing for this phase has yet to be determined but will more than likely follow the completion of the work in eastern Riverview (Bridgedale Boulevard). Active transportation infrastructure in the form of a paved multi-use trail was included as part of the existing infrastructure. Residents have expressed a desire for similar infrastructure so it will be important to consider this in the detailed design of the remaining portions of the East-West Corridor.

Figure 5.2: Existing and Future Portions of East-West Corridor



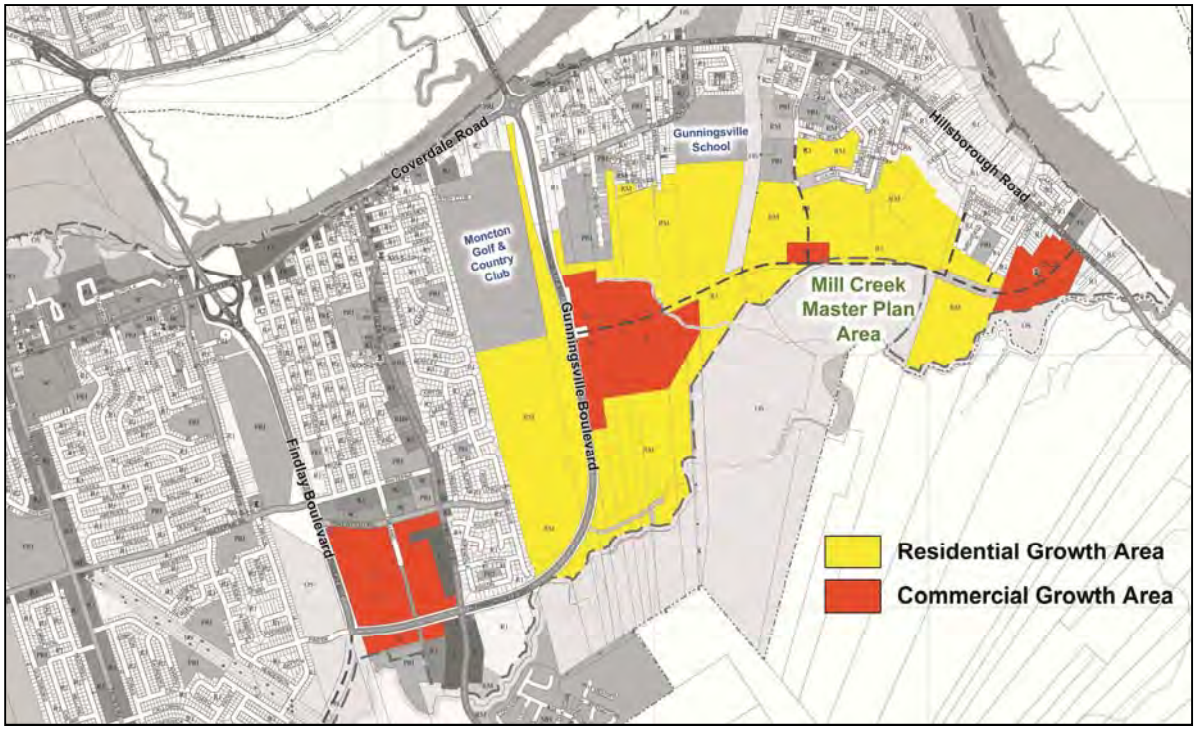
6.3.3 Future Growth Areas

The Town and Planning Commission have established zoning and land use designations to direct future development in Riverview. These are predominantly based on areas of the Town that can be efficiently and cost-effectively serviced. The East-West Corridor will also play a crucial role in determining the areas of growth given servicing and transportation constraints of the municipalities existing infrastructure. The area of Town which has witnessed the majority of growth is Eastern Riverview.

This area will likely continue to be the focal point of residential growth due to the construction of a new school and anticipated investments by the Town into Mill Creek. As development continues to occur in this area, it is anticipated the Town and Developers will begin funding and constructing portions of Bridgedale Boulevard.

Barring some substantial change to either local economics or government funding, we would anticipate that the above mentioned areas to receive the majority of the Town's growth in the next 10 to 20 years. The following map outlines the commercial and residential growth areas for Riverview:

Figure 5.3: Future Growth Areas



7 EXISTING POLICIES AND DESIGN STANDARDS

7.1 Municipal Development Plan

In May 2012 the Town of Riverview enacted a number of amendments to their Municipal Development Plan. The amendments were predominantly focused on residential development, though a number of new policies addressed and considered active transportation and connectivity within the community. The Municipal Plan recognizes the important role active transportation plays in sustainability and creating complete streets.

A Municipal Development Plan is the dominant policy document for municipalities. It contains relatively broad policies and proposals that guide the decisions and initiatives or Council. Policies often focus on land use, servicing, transportation and recreation as well as any other matters deemed important by Staff and Council. The following table outlines policies from the Municipal Plan that are relevant to Active Transportation:

Table 7.1: Relevant Municipal Plan Policies

Policy or Proposal #	Policy or Proposal
4.6.2	Council shall discourage new cul-de-sacs in new subdivisions.
4.6.3	Cul-de-sacs shall be permitted to a limited extent in any subdivision or when the topography and dimension of the land provide for no other option of design.
4.6.10	Council shall continue to work with the City of Dieppe, the City of Moncton and the Province on a tri-community Sustainable Transportation Plan and any other initiatives that will improve the transportation system at the regional level.
4.6.13	It shall be the intention of Council to consider sidewalks, trails and paths to be essential components of the Town's transportation network and to evaluate the need for these important connections during the review of all subdivision and terms and conditions applications.
4.6.14	Council shall provide specific direction in the Subdivision Standards to ensure that sidewalks are an integral part of all newly developed areas.
5.6.3	To ensure that large undeveloped Residential Mix (RM) zoned lands are developed in a coordinated manner that is consistent with this Plan, developers, in cooperation with the Town of Riverview and the Planning Commission, will need to provide secondary plans to guide the overall development of these lands.

5.6.4	To assist with the implementation of Policy 5.6.3, Council will use the following objectives to evaluate the secondary plans: (a) the plan provides an appropriate amount of mix housing types which should include a combination of single, two unit, semidetached, and rowhouse / townhouse dwellings; (b) the efficient layout of streets and traffic in general; (c) the connectivity of the subdivision with adjacent lands; (d) the location and size of future parks, open spaces and trails; (e) detailed servicing and infrastructure information; and (f) any other applicable information.
5.1.2	It shall be the intention of Council to encourage developments to incorporate smart growth principles such as: (a) mix land uses; (b) complete, walkable, vibrant neighborhoods; (c) transportation choices; (d) housing choices; (e) encourage new developments within the existing urban growth boundary; (f) preserve green spaces, natural beauty, and environmentally sensitive areas; (g) utilize smarter and cost effective infrastructure and green buildings; (h) foster a unique sense of identity; and (i) community involvement.
5.1.4	In order to create beautiful and safe streets, Council shall ensure that street trees are required on all streets, and in an effort to promote walkable communities, provide specific direction in the Subdivision Standards to ensure that sidewalks are an integral part of all newly developed areas.
5.1.5	In order to maintain attractive neighborhoods, it shall be the intention of Council to develop a conservation policy and regulation around tree preservation in order to prevent the clear cutting of lands on parcels 1 hectare or larger.
Principle 4: Connectivity must be enabled	Developers will need to provide road, open space and trail connections to adjacent developments. Connectivity is about providing: (a) a variety of transportation options including vehicular, bicycle, walking, and other active transportation linkages; (b) open space linkages that create a connected network of parks, green spaces and public lands that are based on existing natural features. These networks of linked open space can provide space for trails and should be easily accessible to residents by bike or foot; and (c) safe and walkable communities through the use of sidewalks.
Principle 5: Landscaping	To provide a pleasant streetscape, all residential development areas will require street tree planting. Minimum landscaping requirements will be established for all new subdivisions and multi-unit dwelling buildings.
9.0.3	It shall be the intention of Council to establish a long-term, town-wide strategy for creating and developing future parks, open spaces and trails through a Recreation Master Plan and an Active Transportation Plan.
9.0.13	To assist in the implementation of Policy 9.0.3, Council proposes to complete an Active Transportation Plan, which will be used improve and expand the existing transportation network for cycling, walking and public transit. The Plan should include

	the following: 1. Ensure safe and efficient accessibility for non-motorized transportation within the community. 2. Identify and create a network of trails and other paths providing connectivity to neighborhoods, schools, work and shopping destinations. 3. Develop an educational and promotional program that encourages the use of alternative modes of transportation.

7.2 Subdivision By-law

The purpose of a Subdivision By-law is to establish the framework with which lands are subdivided. Of particular interest to Active Transportation, this addresses roads, parks and trails. As part of the subdivision process a developer or landowner is required to contribute parkland in what is referred to as Lands for Public Purposes (LFPP) or alternatively, pay cash-in-lieu. A developer providing land must contribute a total of ten (10%) percent of the land area of the subdivision (excluding the area of public streets). Under Provincial legislation (*Community Planning Act*), this percentage cannot exceed 10%.

Alternatively, Council may require the developer to contribute cash-in-lieu of LFPP at a rate of eight (8%) percent of the market value of the land being subdivided. Money provided is typically added to a fund which helps in the construction and/or maintenance of new or existing recreation infrastructure within the community. LFPP can be used for a variety of purposes as shown in the definition from Riverview's Subdivision By-law:

"land for public purposes" means land other than streets for the recreational or other use for the enjoyment of the general public such as:

(a) an access to a lake, river, stream, sea, or other body of water;
(b) a beach or scenic area along the shore of a lake, river, stream, sea, or other body of water;
(c) a conservation area;
(d) land adjoining a school for joint recreational purposes;
(e) land for a community hall, public library, recreational use or other similar community facility;
(f) open space to provide air and light to afford a view to or from a development, or to a lake, river, stream, sea, or other body of water, or for other purposes;
(g) a park, greenbelt, or buffer area dividing developments, parts of highway, or development and a highway;
(h) a pedestrian way to a school, shopping centre, recreational area, or other facility;
(i) a protection area for a water course, stream, marsh, water supply, lake, or other body of water;

(j) a public park, playground, or other recreational use;

(k) a visual feature, or;

(l) a wooded area, slope area, or a sight giving view to a scenic area to provide diversity.

The Subdivision By-law also provides a breakdown of the various right-of-way and road widths that should be used for all new streets. While more detailed standards are provided in the Subdivision Design Standards (Section 6.5). The following table provides a breakdown of the requirements under the Subdivision By-law:

Table 7.2: Street Types and Widths Under Subdivision By-law

Type	Minimum ROW Width	Minimum Driving Surface
Urban Arterial Freeway	30 m	At discretion of Engineering Department
Urban Collector Minor	20 m	9.8 m
Urban Collector Primary	23 m	12.8 m
Urban Local	18 m	9.8 m

As part of the Active Transportation Plan implementation measures in the form of amendments to the Subdivision By-law will need to be considered that allow sufficient width for bike lanes and encourage developers to establish trail networks as part of new developments.

7.3 Secondary Plans

Policy 5.6.3 and Proposal 5.6.4 of the Municipal Development Plan outline the requirement for developers to prepare secondary plans for large-scale developments within Riverview's growth areas. This will be an effective tool that can be used to assess the overall connectivity of a proposed development. As part of the Active Transportation Plan it may be necessary to make some minor amendments to this proposal requiring developers to delineate trails, bike lanes and other active transportation infrastructure that will be integrated into the neighborhood.

7.4 Zoning By-law

The nature and intent of a Zoning By-law is to establish the location of specific land uses within the Town while providing specific standards that the design and operation of the use must adhere to. The contents of the Zoning By-law are entirely based on the governing policy framework established in the Municipal Development Plan. In general, a Zoning By-law will not have a significant role in the location, design and construction of most AT infrastructure. One area that will need to be addressed through an

amendment is with regards to end of trip facilities. The current Zoning By-law does not establish any requirements for developers to include bicycle parking as part of commercial or multiple unit residential developments.

7.5 Engineering Standards

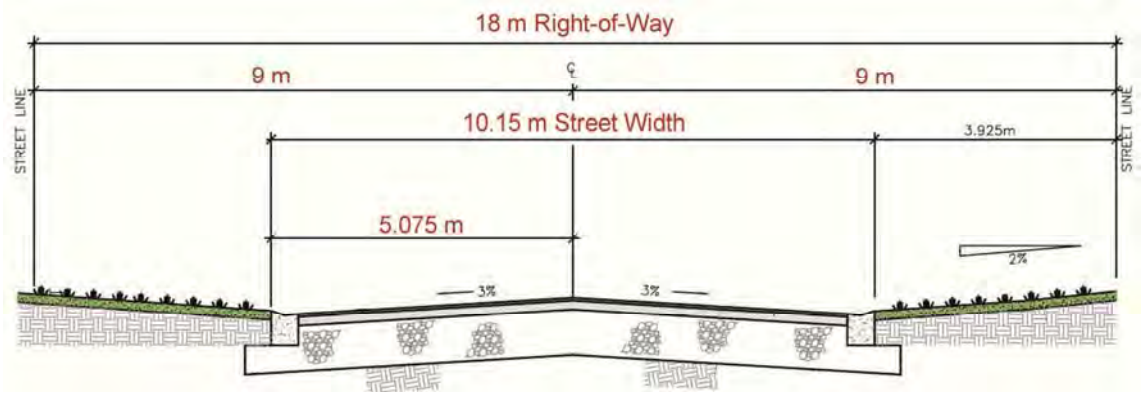
As part of any new subdivision, developers must design all streets and services in accordance with the Subdivision Development Design Standards established by the Town's Engineering Department. In terms of AT, it will be important to work with the Engineering Department to revise these standards so that they include the provision for bike lanes, multi-use trails and other active transportation infrastructure in the design of all new streets within the Town. Ultimately the particular type of infrastructure, design and landscaping will depend upon the street's role, usage and the context of how it will fit within the overall network for Riverview.

The following subsections look at the cross-sections of each street design provided in the Subdivision Development Design Standards. One important item to note is that the names and street widths for various road types do not appear to be consistent between the Subdivision By-law and the Subdivision Development Design Standards.

7.5.1 Local Streets

Under the engineering guidelines, there are two design criteria established for local streets. A local street provides direct access to residential lots and is used predominantly by people living in the immediate or surrounding area. These streets should not receive high volumes of traffic and function as roads to move residents to surrounding collector and arterial roads. The Town of Riverview has two separate design standards for these streets, the "Urban Local Minor", shown below and the "Urban Local Primary". As shown in Figure 6.1, the Urban Local Minor Street does not have any sidewalk and an 18 metre right-of-way. Based on Policy 5.1.4 of the Municipal Plan, it would appear that this street design is no longer encouraged.

Figure 6.1: Urban Local Minor Cross Section



The Urban Local Primary (Figure 6.2) serves the same purpose as an Urban Local Minor street in that it is intended to be used predominantly by residents who live on the street or in the immediate vicinity. The major difference this and the previous design standard is that the urban local primary has a 20 metre right-of-way and features a sidewalk on one side of the road.

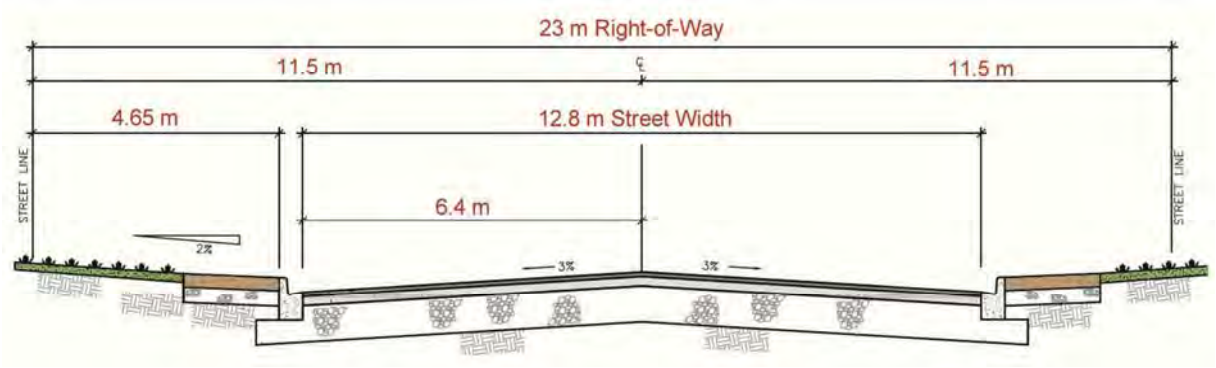
Figure 6.2: Urban Local Primary Cross Section

7.5.2 Collector Roads

Collector roads are streets that generally receive traffic from local streets and direct them to major arterials within the Town. These streets still feature low vehicular speed and typically feature sidewalks on one or both sides of the street depending the estimated usage and pedestrian traffic. The Town's engineering standards, the "Urban Collector Minor" (Figure 6.3) and the "Urban Collector Primary" (Figure 6.4). The major difference between the two is that the Urban Collector Primary includes sidewalks on both sides of the streets with 22 m wide right-of-way versus the 20 m right-of-way of the Urban Local Minor. Examples of collector roads in Riverview include: Trites Road, Canusa Drive; Callowhill Road; Pinewood Road, Sussex Avenue, Buckingham Drive, Whitepine Road, Cleveland Avenue, Runnymeade Road, Pine Glen Road and Old Coach Road.

Figure 6.3: Urban Collector Minor Cross Section

Figure 6.4: Urban Collector Primary Cross Section



7.5.3 Arterial Roads

Arterial roadways are streets with limited access designed to move large volumes of traffic (between 7,000 and 30,000 vehicles daily), often at faster speeds. These streets often require a much greater right-of-way and street width to accommodate turning lanes and other features. Given their importance and strategic locations, arterial routes often function as critical routes within AT networks. Within Riverview, the key arterial roadways include Coverdale / Hillsborough Road, Gunningsville Boulevard and Findlay Boulevard. At the present time there are no specific design guidelines within the Town's Subdivision Development Design Standards. This is due to the fact that these roadways often require a great deal of design consideration and are dependent on specific situations.

7.6 Summary

Recent amendments to Riverview's Municipal Development Plan have introduced a number of new policies that will encourage the development of AT infrastructure across the Town. While no large scale policy changes are anticipated within this document, it will be important to include mapping of the AT network along with as part of the document to provide developers with a clear indication of where new infrastructure will be expected. Amendments will be required to both the Subdivision By-law, Subdivision Development Design Standards and Zoning By-law as they do not address many areas associated with AT.

With regards to the design of arterial roadways, while no formal design requirements should be included, due to the unique circumstances of each road and situation, it will be important to include policies and standards within the Municipal Development Plan, Subdivision By-law and Subdivision Design Standards that require the inclusion of active transportation infrastructure in their design and construction.

8 RECOMMENDATIONS

The following section outlines a number of recommendations to be incorporated into Active Transportation Plan. These recommendations are based upon our background research, extensive site visits, community consultations and best practices.

8.1 Key Routes and Destinations

Based on our assessment of existing land uses, future growth areas, the existing transportation network and through community consultation we have identified a number of key routes and destinations that will form the core of the Town's AT network. Appendix F features the preliminary routes and destinations mapping.

8.1.1 Key Routes

Routes identified on the Preliminary Routes and Destinations Map will function as the primary or secondary routes for AT throughout the community. Many of these routes already currently function as major vehicular collector and arterial routes in and around the community. As such, they also provide the ability to move the greatest volume of AT users in as efficient as a manner as possible. These routes are also some of the most readily cleaned and maintained routes both in winter and summer months providing the greatest opportunity for year round AT use. As part of the Active Transportation

Plan, specific methods and design elements will be outlined to introduce active transportation infrastructure into these key routes.

8.1.2 Destinations

An Active Transportation Plan is only as good as where it takes you. Residents and stakeholders have indicated that the downtown, commercial areas, parks and other recreation facilities, schools and downtown Moncton are key destinations. Many of these destinations are located along key routes previously discussed and the Active Transportation Plan will need to focus on providing safe, efficient, aesthetically pleasing and accessible infrastructure to encourage significantly more residents to use active transportation to travel to and from these destinations. It is also important to note the work presently being done on the Mill Creek Master Plan. In the future this will be a key destination so as part of the Active Transportation Plan it will be critical to identify infrastructure that will provide easy access to the park by multiple modes of transportation.

8.1.3 Connectivity Within Existing Neighbourhoods

We have prepared a schematic to help assess connectivity across Riverview (Appendix G). While some areas requiring additional infrastructure are easily identifiable, others within existing built-up areas are not as obvious and present challenges. Enhancing connectivity within these areas often requires the purchase of properties or establishing easements for the creation of trails or other AT infrastructure. As part of the Active Transportation Plan it will be important to try to identify feasible and cost-effective solutions to enhance connectivity within these existing neighborhoods.

8.2 Significant Barriers and Challenges

AT infrastructure can be incorporated into many of the Town's existing streets rather easily and at relatively minimal cost. However there are a few locations within the Town that will require specific design consideration and potentially substantial investments in infrastructure. The following subsections outline specific areas that will need to be looked at in detail as part of the Active Transportation Plan.

8.2.1 Findlay Road – Coverdale Road Overpass

Both Coverdale Road and Findlay Boulevard will serve as primary active transportation routes in Riverview. The waterfront trail already provides infrastructure for many modes of AT but it essentially ends at Findlay Boulevard. At the present time there is not a safe route for cyclists, pedestrians or those in wheelchairs to cross Findlay Boulevard with the exception of the sidewalk along the overpass. The narrow width of this overpass will also limit the ability to establish bike lanes or other infrastructure.

8.2.2 Findlay Boulevard

Findlay Boulevard serves as a major north south connector within the Town and is a major access point to the City of Moncton. This is a heavily travelled road that should also serve as a primary route within the Active transportation network. The major barrier with this roadway will be the lack of access

to the route from the adjacent residential neighborhoods. Opportunities to enhance access to this route will need to be carefully considered under the Active Transportation Plan.

8.2.3 Gunningsville Boulevard

Similar to Findlay Boulevard, Gunningsville Boulevard will serve as a critical route within the AT network. While the roadway already features a multi-use trail, there is limited access to it from surrounding neighborhoods. Our understanding is that a proposed development just south of the golf course will provide additional trail connections to Gunningsville. In preparing the AT Plan, this should be reviewed and until the development is built out, temporary infrastructure should be put in place improving access to the infrastructure in the short term.

8.2.4 Coverdale Road

Coverdale Road is the main arterial road providing access to many of the Town's retail stores, restaurants and other services. The major barrier with this street will be a limited right-of-way width in certain areas. Due to the important role this street plays from a vehicular standpoint, it will be difficult to fit bike lanes or other AT infrastructure within the existing street.

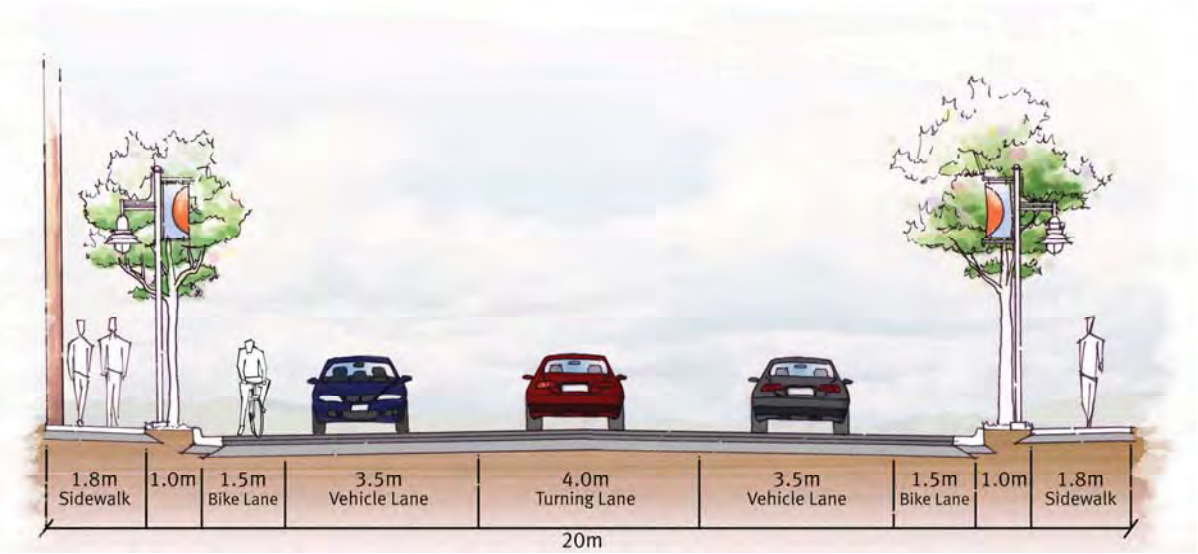
8.3 Policy and Design Standards

The Town's existing Municipal Development Plan contains a number of policies and proposals directly related to the enhancement of connectivity across the Town. However, the existing Subdivision By-law, Zoning By-law and Subdivision Development Design Standards all lack the policies and standards to effectively promote and implement active transportation infrastructure within the Town of Riverview. As part of the Active Transportation we recommended the preparation of policy and standards to be incorporated as amendments to the Town's existing documents. The following provides a brief summary of amendments that will be prepared:

- Include the AT network map into the Town's Municipal Development Plan so Developers have a clear indication of where specific infrastructure must be incorporated into their design.
- Establish requirements within the Zoning By-law requiring bicycle parking for all commercial, industrial, recreational and multiple unit residential developments.
- Amend the Subdivision By-law to encourage the use of trails as Lands for Public Purposes.

- Revise the current Subdivision Development Design Standards with policies and cross-sections that outline the location of bike lanes, sidewalks, multi-use trails and street trees consistent with best practices.

Figure 8.1: Example of a Design Standard with AT Infrastructure



8.4 Community Education and Engagement

Even with an AT network in place, education of residents will be necessary in order to provide the comfort and knowledge needed to increase the use of the network while creating a safe environment for users and motorists. The following are a number of key elements that should be included as part of the implementation of the Active Transportation Plan.

8.4.1 Staff Contact and Educator

Designate one staff member from the Recreation and Community Relations Department to be responsible for AT within Riverview. This should not require full-time dedication but this person should serve as:

- Contact for any resident who has questions, concerns or comments with regards to Active Transportation.
- They should receive training from qualified CAN-BIKE trainers and be prepared to provide regular presentations to schools.
- Work with CAN-BIKE trainers to establish workshops a few times a year for residents of all ages. Perhaps include La Bikery in this initiative to lend bikes to those who currently do not have one but may be interested. Town should consider funding part of this to help keep the cost to residents minimal.

Appendix A:
Best Practices Summary

Summary of Active Transportation Best Practices for Riverview	
Connectivity	1. Wherever possible, encourage new developments to be designed in either a grid or fused grid manner. 2. Continue prohibition of cul-de-sacs (where possible). 3. Where cul-de-sacs are necessary (due to topography, wetlands or other landscape related barriers) ensure that trail connections from the bulb of the cul-de-sac are provided to adjacent streets to maintain the pedestrian grid. 4. In existing neighbourhoods, try to identify opportunities to establish new trails that will help re-establish the grid in areas with low connectivity. 5. Establish multiple connections to primary and secondary routes that will allow for efficient and fast movement across the Town.
Park Dedication	1. Include mapping of the Active Transportation network as part of the Municipal Development Plan. 2. Establish clear policies and standards in the Municipal Development Plan, Subdivision By-law promoting the use of trails as Lands for Public Purpose.
Routes	1. The bike and trail network should have a hierarchy of routes to provide for a variety of activities and paths to a destination.
Vegetation and Landscaping	1. Sidewalks should be separated wherever possible by a landscaped buffer featuring trees to improve the aesthetics for users as well as the overall streetscape. 2. Additional landscaping and design should be considered for primary routes within the community. 3. The type, design and maintenance of landscaping should comply with CPTED principles.
Sidewalks	1. A hierarchy of sidewalk design widths is required based on area and level of use. 2. The minimum sidewalk design width should be 1.5 m. 3. For sidewalks less than 1.5 m there should be passing bump outs for wheel chair, strollers and walkers. 4. Well-used sidewalks provide rest areas along the sidewalk with

	benches and amenities. These areas of refuge are essential for older pedestrians especially in hilly areas. 5. Cleanliness and aesthetics directly impact the use of a sidewalk or route. 6. Lighting and perceived safety are important for route use.
Trails	1. Trails provide an effective tool for connecting the pedestrian grid. 2. Trails will require a variety of design widths based on proposed use. 3. Trails must be carefully designed to provide users with surveillance of surroundings. This requires clearing tall vegetation from the sides of trails. 4. Not all trails will be 24-hour use due to safety. 5. Trails should be encourage for use by snoeshoers and cross-country skiiers in winter months. 6. Multi-use paths need to be wide enough to accommodate pedestrians and cyclists travelling in both directions. 7. Where possible, avoid the use of granular paths as it presents barriers to those with strollers and in wheelchairs.
Bike Lanes	1. Visibility is essential for safety of the biker and driver. 2. Signage and cues such as painted bike lanes are needed to educate drivers on shared right of ways with bikers is required. 3. Route selection should be based on ROW and traffic speeds. Bike routes for strictly commuter purposes can be located along routes with higher traffic. 4. Bike racks are essential to promote the use of bikes within a community. 5. Bike lanes should be seperated from vehicular traffic on primary and secondary routes through the use of signage, bike lane symbols and pavement markings.
End of Trip Facilities	1. Bicycle parking standards should be incorporated into the Zoning By-law. These would include the number and type of spaces to be provided for bicycle parking and guidance on the design of bicycle racks to be installed. 2. Additional end-of-trip facilities such as showers and change rooms should be encouraged through the development approvals process.

Intersections and Crossings	1. Providing good visibility between driver and pedestrian creates intersection safety. This can be achieved with lighting, providing good signage and using visual cures for traffic to slow down. 2. Pedestrians safety can be promoted using changes in texture (urban Braille) , colour and height variation at key intersections. 3. Consider the use of bike boxes at highly travelled and congested intersections. 4. Curb cut design needs to address safety for wheelchairs and strollers.
Signage and Mapping	1. Providing good mapping for the existing trail and bikeway network is important in promoting usage of this infrastructure. Mapping should be provided both on the web and in hard copy format through such locations as recreation facilities, along the Riverfront Trail and in the Findlay Business Park. 2. Signage is also an important consideration in promoting trail usage and providing user information regarding points of interest and amenities. 3. Signage should incorporate any long-term branding initiatives the Town currently has underway.
Winter Maintenance	1. Not all trails require maintenance during the winter months. The level of winter maintenance should be based on the level of usage over the winter and the role of the connection.
Crime Prevention Through Environmental Design	1. Create defined public and non-public spaces using landscaping. 2. Provide lighting for key routes in the community. 3. Where necessary strengthen the territoriality of a space by controlling access with fencing, landscaping and walls. 4. Long-term continued maintenance is essential to promote safe and vibrant public spaces.

Appendix B:
Consultation Maps


New Gunningsville School
Moncton Golf and Country Club
Mill Creek Master Plan Area
Riverview Mall
Riverview High School
Claude D Taylor School
Frank L. Bowser School
Dobson Trail Connection
Byron Dobson Arena
Centennial Park
Marsh
Destinations
Problems
Existing Routes
Oct 25/12
Thursday 10:30


Mill Creek Master Plan Area
Moncton Golf and Country Club
High School
Future Connections
Existing
Problems
Destinations
Oct 25
- Town staff

Oct 25th/12 - Town staff

Moncton

New Gunningsville School

Moncton Golf and Country Club

Mill Creek Master Plan Area

Riverview Mall

Riverview High School

Byron Dobson Arena

Frank Bowser School

Claude D Taylor School

Dobson Trail Connection

Centennial Park

Centennial Place

Coverdale Centre

Improve safety

Speed limit?

Improve safety at main intersection

Better connection to Mill Creek

Water feature

Multi-use pathway

Multi-use pathway

Jesse Oct 26 Focus Group Seniors

Oct. 25 - 6:30
— Jesse group


problem
Destinations
Existing
New
① — Parked cars/trucks
— White pine
— Buckingham
② condition of sidewalks
③ Sidewalks
- no separation from road
④ Education program
⑤ local commercial
⑥ Maps/signs
Mill Creek Master Plan Area
Moncton Golf and Country Club
Bennet Drive
Bennet Drive School
Clarke D Taylor School
Byron Dobson Arena
New Gunningsville School
Dobson Trail Connection
Oct 25 - 6:30
Session
Group 602
no lights
access to bridge
no bikes
fast traffic
no separation from street
bridge
Paved surface for multiuse

New Gunningsville School
Moncton Golf and Country Club
Mill Creek Master Plan Area
Riverview High School
Riverview Mall
Claude D Taylor School
Dobson Trail Connection
Byron Dobson Arena
Frank L Bowser School
Moncton
Centennial Park
Centennial Place
Magnetic Hill
Oct 25 6:30 SPF group

Appendix C:
Questionnaire Results

Riverview Active Transportation Plan – Questionnaire Responses

In total, thirty (30) questionnaire responses were received either digitally or in hard copy format. The following tables present the responses from residents to each question.

1. EXISTING TRANSPORTATION AND ACTIVE TRANSPORTATION USAGE

1. How do you most frequently get around the Town of Riverview?		
Mode of Transportation	**#**	**%**
a) Car / Truck	29	97%
b) Bicycle	1	3%
c) Walking / Running	0	0%
d) Public Transit	0	0%
e) Wheelchair, motorized scooter, push scooter, etc.	0	0%
f) ATV (All Terrain Vehicle)	0	0%
g) Inline Skating / Skateboard	0	0%
h) Boat	0	0%
TOTAL	30	100%

2. How often do you use a form of active transportation for commuting purposes (work, school, groceries, other shopping, etc.)?		
	#	**%**
a) Daily	5	18%
b) Weekly	5	18%
c) Monthly	3	11%
d) Never	15	54%
TOTAL	28	100%

3. How often do you use a form of active transportation for recreational / health purposes?		
	#	**%**
a) Daily	4	13%
b) Weekly	11	37%
c) Monthly	8	27%
d) Never	7	23%
TOTAL	30	100%

4. If you currently do not use active transportation for commuting or recreational purposes, what is the major reason why? (circle one)		
	#	%
a) Not enough trails, bike lanes, cross-country ski routes.	5	18%
b) Infrastructure does not allow me to go to the destinations I would like to go to.	0	0%
c) I do not feel safe.	1	4%
d) Takes too much time to get anywhere.	9	32%
e) Weather.	1	4%
f) There is a lack of infrastructure at destinations (bike racks, bike lockers, showers, rest rooms, etc).	1	4%
g) All of the above.	5	18%
h) Other (please specify).	4	14%
No Answer	2	7%
TOTAL	28	100%

2. COMFORT WITH ACTIVE TRANSPORTATION INFRASTRUCTURE

5. Please indicate your comfort level with regards to walking for each of the following statements. *(1 = Very Comfortable, 2 = Comfortable, 3 = Uncomfortable, 4 = Very Uncomfortable or 5 = Unsure)*					
	VC	C	U	VU	Unsure
a) Walking on a gravel multi-use trail	72.4%	24.1%	0.0%	0.0%	3.4%
b) Walking on a paved multi-use trail	75.0%	25.0%	0.0%	0.0%	0.0%
c) Walking on the shoulder of a rural road	10.3%	27.6%	41.4%	20.7%	0.0%
d) Walking on the sidewalk without a landscaped buffer	22.2%	63.0%	14.8%	0.0%	0.0%
e) Walking on the sidewalk with a landscaped buffer	71.4%	28.6%	0.0%	0.0%	0.0%
f) Walking where there is no street lighting	3.4%	10.3%	41.4%	41.4%	3.4%

6. Please indicate your comfort level with regards to cycling for each of the following. *(1 = Very Comfortable, 2 = Comfortable, 3 = Uncomfortable, 4 = Very Uncomfortable or 5 = Unsure)*					
	VC	**C**	**U**	**VU**	**Unsure**
a) Cycling on a gravel multi-use trail	51.7%	31.0%	13.8%	3.5%	0%
b) Cycling on a paved multi-use trail	67.9%	32.1%	0%	0%	0%
c) Cycling on the shoulder of a rural road	10.3%	10.3%	55.2%	24.2%	0%
d) Cycling where there is no street lighting	10.3%	10.3%	38.0%	34.5%	6.9%

3. DESTINATIONS

7. Please indicate your level of agreement with the following statements, regarding initiatives that might encourage you to walk or bike more often.					
	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
a) Secure bicycle parking at work / school / shopping centres.	34.5%	44.8%	17.3%	0%	3.4%
b) Improved road maintenance.	35.7%	25.0%	35.7%	0%	3.6%
c) Improved signage for bike and pedestrian routes.	37.9%	24.2%	31.0%	6.9%	0%
d) No improvements are necessary, the existing trails and sidewalks are meeting my needs.	3.6%	3.6%	60.7%	21.4%	10.7%
e) Nothing will encourage me to walk or bike more often	3.4%	3.4%	34.6%	44.8%	13.8%
f) More multi-use trails (off-street).	27.6%	48.3%	20.7%	3.4%	0%
g) Bike lanes or paved shoulders for cycling (on-street).	38.0%	27.6%	27.6%	3.4%	3.4%
h) More connections to key destinations (i.e. shopping, school, Downtown, etc.).	31.0%	34.5%	27.6%	6.9%	0%
i) Reduced traffic speeds.	3.4%	20.7%	34.5%	17.3%	24.1%
j) Improved sidewalk and pathway maintenance.	25.0%	28.6%	42.8%	0%	3.6%

8. What do you think are the top three locations in the Town that require new or better connected trails, bikeways, or sidewalks?			
Location	**Votes**	**Location**	**Votes**
Causeway / Traffic Circle / Coverdale overpass	7	Buckingham	2
Gunningsville Boulevard / Area	3	Old Coach Road to Gunningsville Blvd	1
Upper Coverdale	3	Trites Extension	1
Coverdale Road	3	Mongomery	1
Trites	3	South End - Findlay Park	1
Schools	2	Whitepine	1
Bike Trail to West Riverview	2	Green space like the Mill Creek Area	1
Lower Coverdale	2	Liner park in new development	1
Findlay Boulevard	2	Waterfront	1

9. Please rank in order the destinations you feel will be most important to be included as part of the Active Transportation network (1 through 11) – Table with ranking based on scoring formula below.												
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**TOTAL**
Downtown Riverview (between the bridge and causeway)	13	6	3	0	2	1	0	1	0	0	0	26
Riverview Mall	0	1	0	1	5	2	6	3	2	2	2	24
Findlay Boulevard Retail Centre	6	7	1	1	3	0	5	1	2	0	0	26
Biggs Drive Recreational Fields / Facilities	1	1	5	5	3	5	1	3	0	1	0	25
Riverview High School	0	5	5	3	3	3	2	1	1	1	0	24
Downtown Moncton	1	3	7	4	2	2	2	2	3	0	0	26
Moncton Industrial Park	0	0	0	1	0	1	4	2	5	7	3	23
Schools	4	2	1	7	1	7	0	3	0	0	0	25
Library / Town Hall	0	1	2	3	5	2	5	2	4	2	0	26
Mill Creek	0	0	2	0	1	2	0	5	5	8	2	25
Other	0	0	0	1	0	0	0	1	1	2	2	7
Cross Creek on Pine Glen	0	0	0	0	1	0	0	0	0	0	0	1

In order to calculate and assess the ranking of the various destinations we applied a value that corresponds to how people ranked the destinations. For instance, every first rank vote a particular destination received gets value of 11; second ranked destination votes received a value of 10 and so on. As an example, the following is the breakdown of Downtown Riverview:

Breakdown of Destination Scoring (Downtown Riverview Example)				
Rank	Value	Number of Votes	Calculation	Total
1	11	13	11 x 13	143
2	10	6	10 x 6	60
3	9	3	9 x 3	27
4	8	0	8 x 0	0
5	7	2	7 x 2	14
6	6	1	6 x 1	6
7	5	0	5 x 0	0
8	4	1	4 x 1	4
9	3	0	3 x 0	0
10	2	0	2 x 0	0
11	1	0	1 x 0	0
			Total	254

Question 9: Desintation Ranking based on Formula (Rank of 1 = 11, 2 = 10, 3 = 9, 4 = 8, 5 = 7, etc)		
Rank	**Location**	**Value**
1	Downtown Riverview (between the bridge and causeway)	228
2	Findlay Boulevard Retail Centre	183
3	Schools	165
4	Downtown Moncton	163
5	Riverview High School	153
6	Biggs Drive Recreational Fields / Facilities	151
7	Library / Town Hall	122
8	Riverview Mall	95
9	Mill Creek	65
10	Moncton Industrial Park	51
11	Other	21

4. GENERAL HOUSEHOLD INFORMATION OF RESPONDANTS

10. The following questions are intended to give us an idea of your transportation needs.									
	0	1	2	3	4	5	6	7	8
How Many Residents	0%	13.3%	30.0%	13.3%	23.4%	20.0%	0%	0%	0%
Home many drivers?	0%	16.7%	66.7%	6.6%	3.4%	6.6%	0%	0%	0%
How many cars in the household?	6.6%	30.0%	56.8%	0%	6.6%	0%	0%	0%	0%

11. What is the approximate distance of your daily commute to work or school?					
< 1 km	1 to 3 km	3 to 10 km	10 - 20 km	> 20 km	No Answer
0%	10.7%	50.0%	25.0%	10.7%	3.6%

12. What is your age group?		
18 or younger	1	3.4%
19 - 25	2	6.9%
26 - 40	15	51.7%
41 - 54	7	24.1%
55 - 65	3	10.3%
65+	1	3.4%
TOTAL	29	100.0%

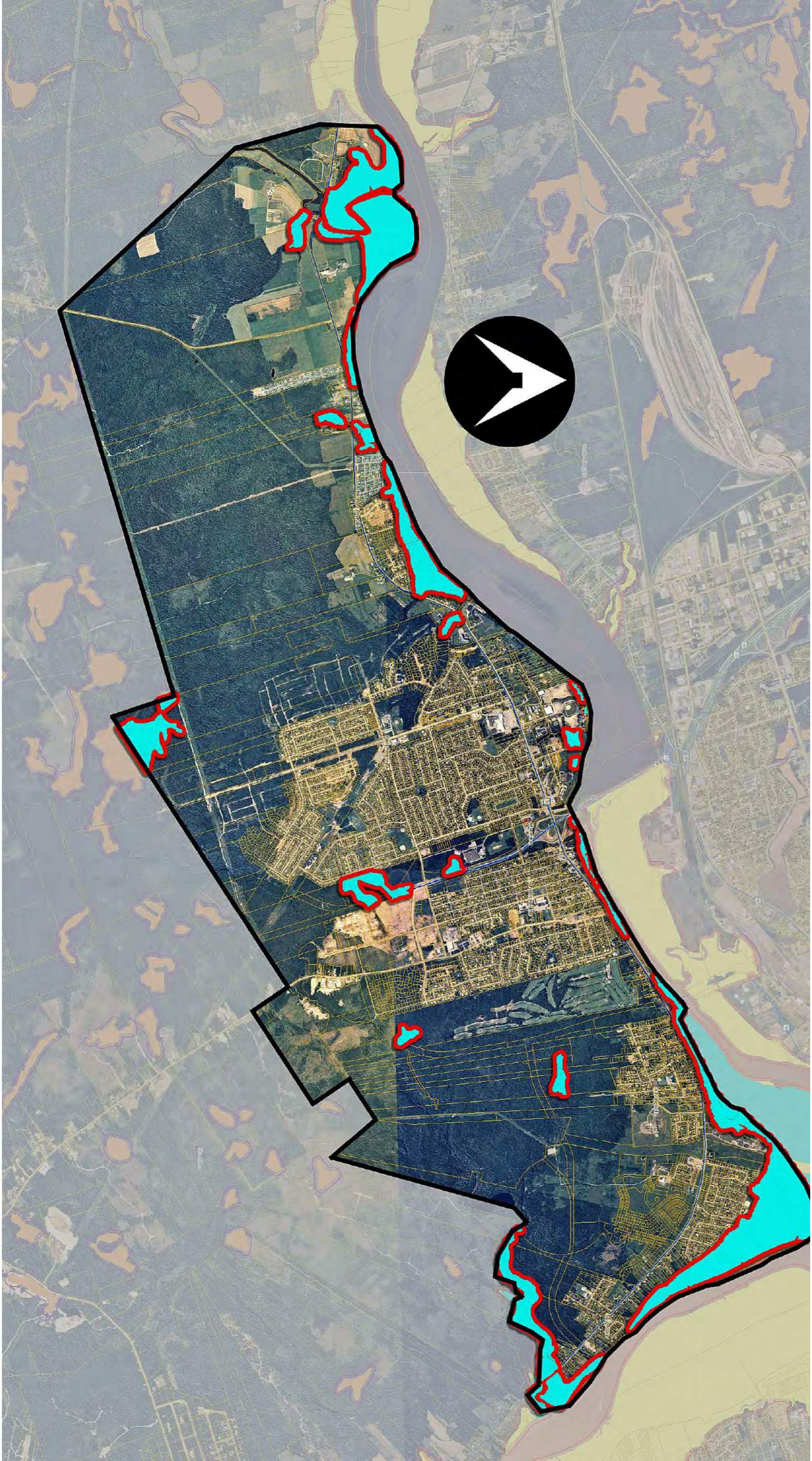
ADDITIONAL COMMENTS

- Need some kind of services for people that would like to get out without the cost of taxis from East Riverview to West Riverview Only.
- The rules of the road should be posted online and in schools to tell people where they are allowed to ride bikes and where they shouldn't (sidewalks, wrong side of the road, etc.). I've had arguments with friends over the rules and that shouldn't happen, the rules are the law and everyone should know them.
- Do whatever you can to ensure bicyclists obey the rules of the road - otherwise, keep them away.
- Cross Creek on Pine Glen Road would be a good spot for more AT infrastructure. There is no bus service or trails for biking/walking to the main areas of Riverview.
- I like the idea of surveys like this to get ideas from the public.
- I feel that more Bike Lanes should be added to the streets of Riverview making it easier for cyclist to navigate the streets of Riverview... as well as the proper signage to notify motorist of cyclist on the

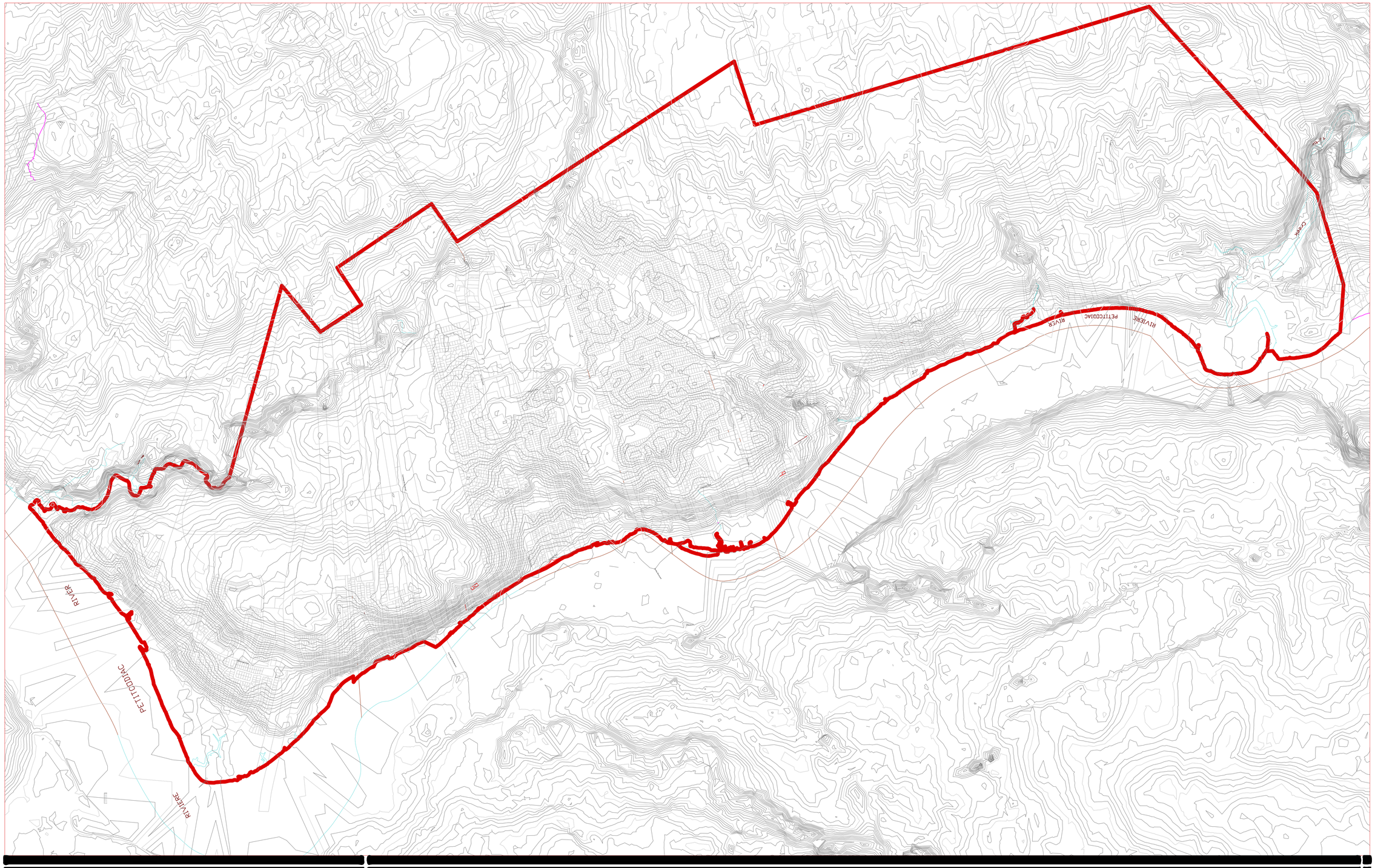
street and to share to road. I also believe more trails should be created throughout the town which eventually would lead to each trail being connected in some way or other making it easier to access different areas of the town either by foot or by bicycle.

- I used to live in Downtown Riverview and would walk to restaurants and stores and bike to work in Downtown Moncton on the riverfront trail, but now I live in Upper Coverdale and I don't feel safe biking along the gravel shoulder of the road with cars going 80k beside me, so the bike sits in the garage gathering dust while my vehicle racks up the miles. I also now work on Mapleton Rd. too far too bike but I wouldn't even dare attempt to go around the traffic circle on a bike anytime of the day let alone morning rush hour traffic
- The main deterrent for my household is in terms of active transportation to go to work is that there are no shower facilities at either of our destinations. For grocery shopping it would not be convenient to try and lug groceries home on a bike or shop daily. For other activities we could use it more often but have not yet. We run almost daily in the house and occasionally outside for health/recreation purposes and use the trails for this.

Appendix D:
Wetland Mapping



Appendix E:
Topographic Mapping



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Riverview

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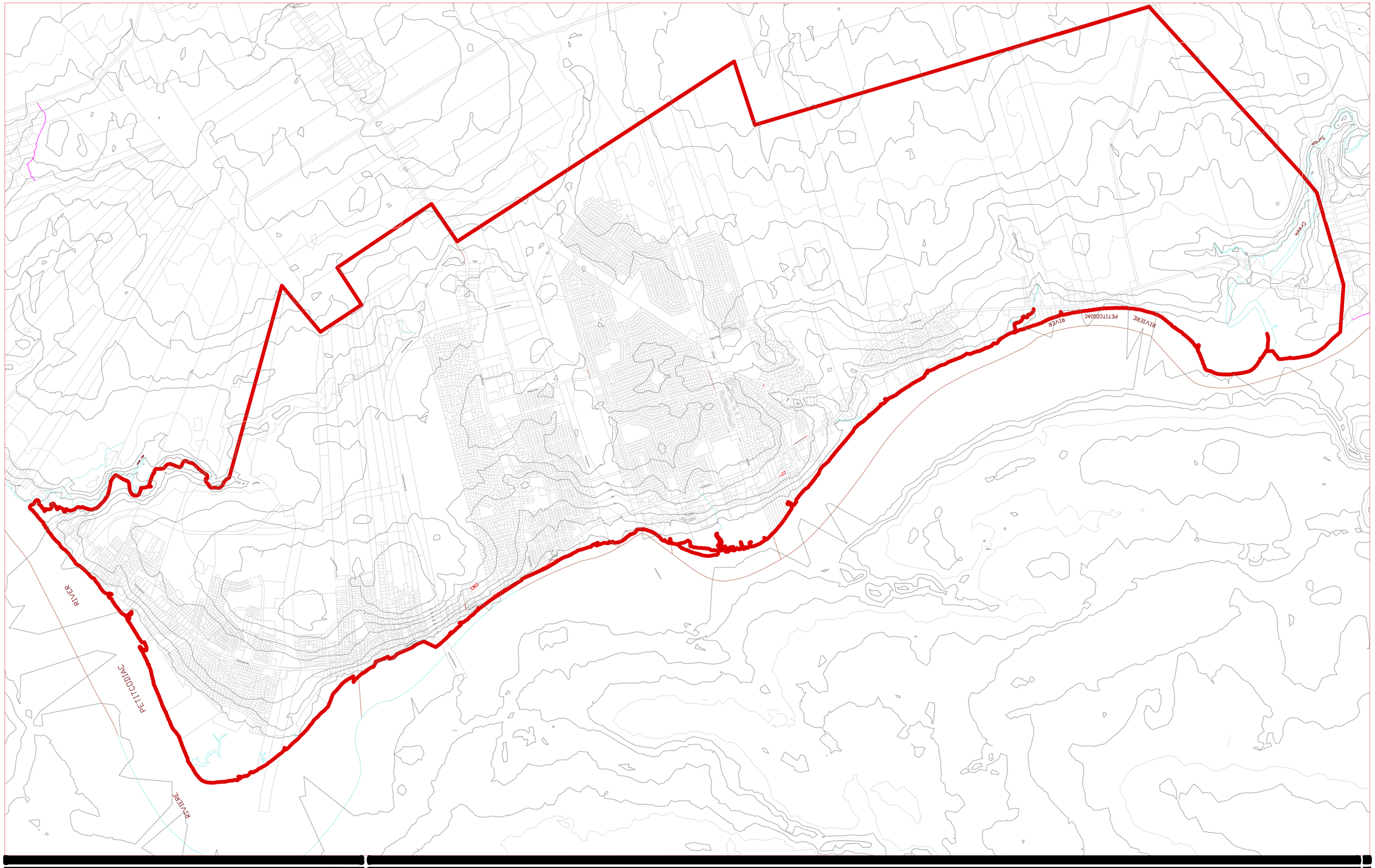
750 500 250 0 2,000 m

Riverview Active Transportation Plan
Topographic Map 1m Interval

Riverview, New Brunswick

November 28, 2012 ~ RIVERVIEW_TOPO_1M



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Riverview Active Transportation Plan
Topographic Map 5m Interval

Riverview, New Brunswick

November 28 , 2012 ~ RIVERVIEW_TOPO_5M

Appendix F:
Key Routes and Destinations

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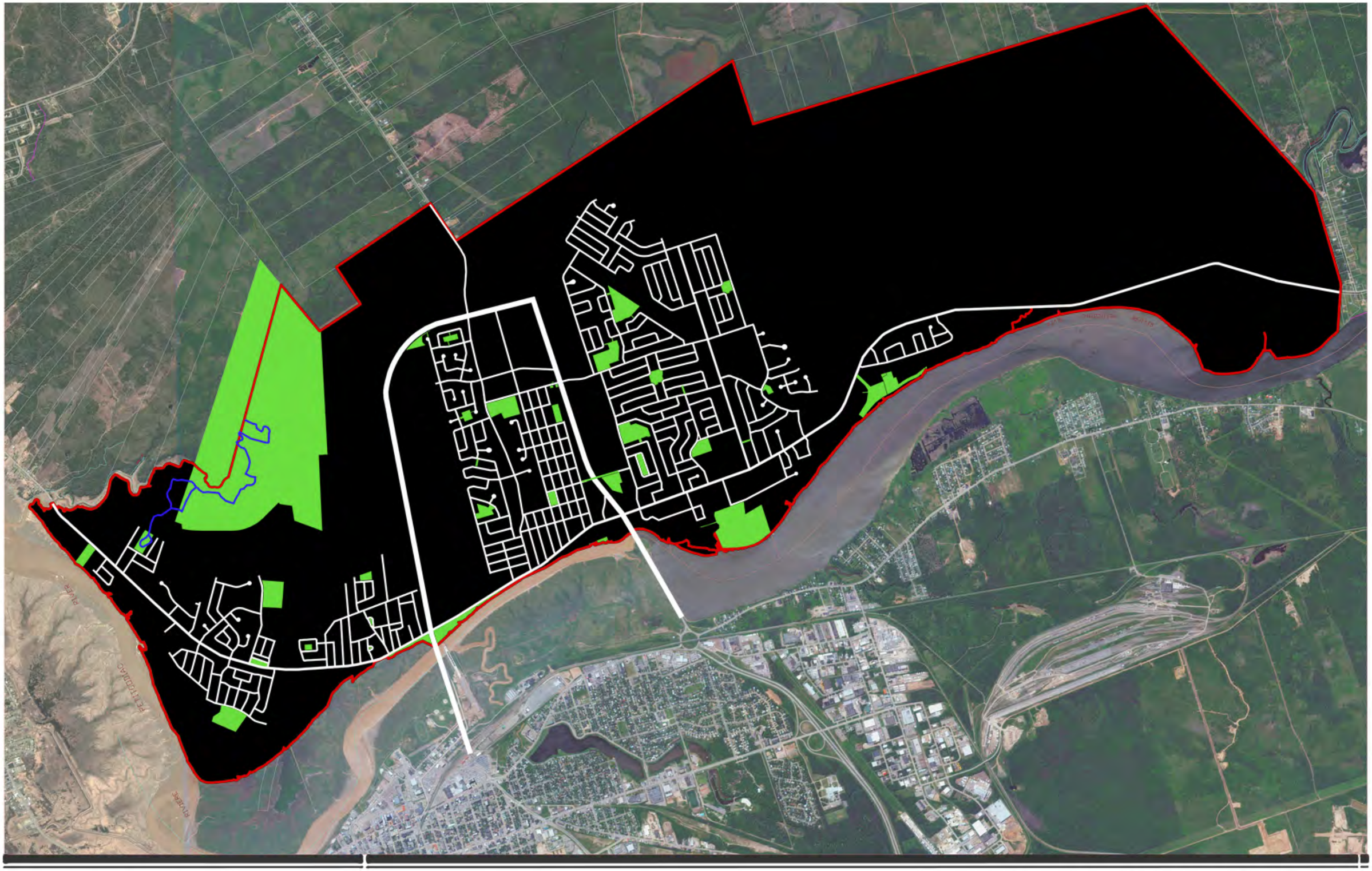
Riverview Active Transportation Plan
Preliminary Routes and Destinations Map

Riverview, New Brunswick

December 6 , 2012 ~ PRELIMINARY_ROUTES+DESTINATIONS

Appendix G:
Connectivity Base Plan



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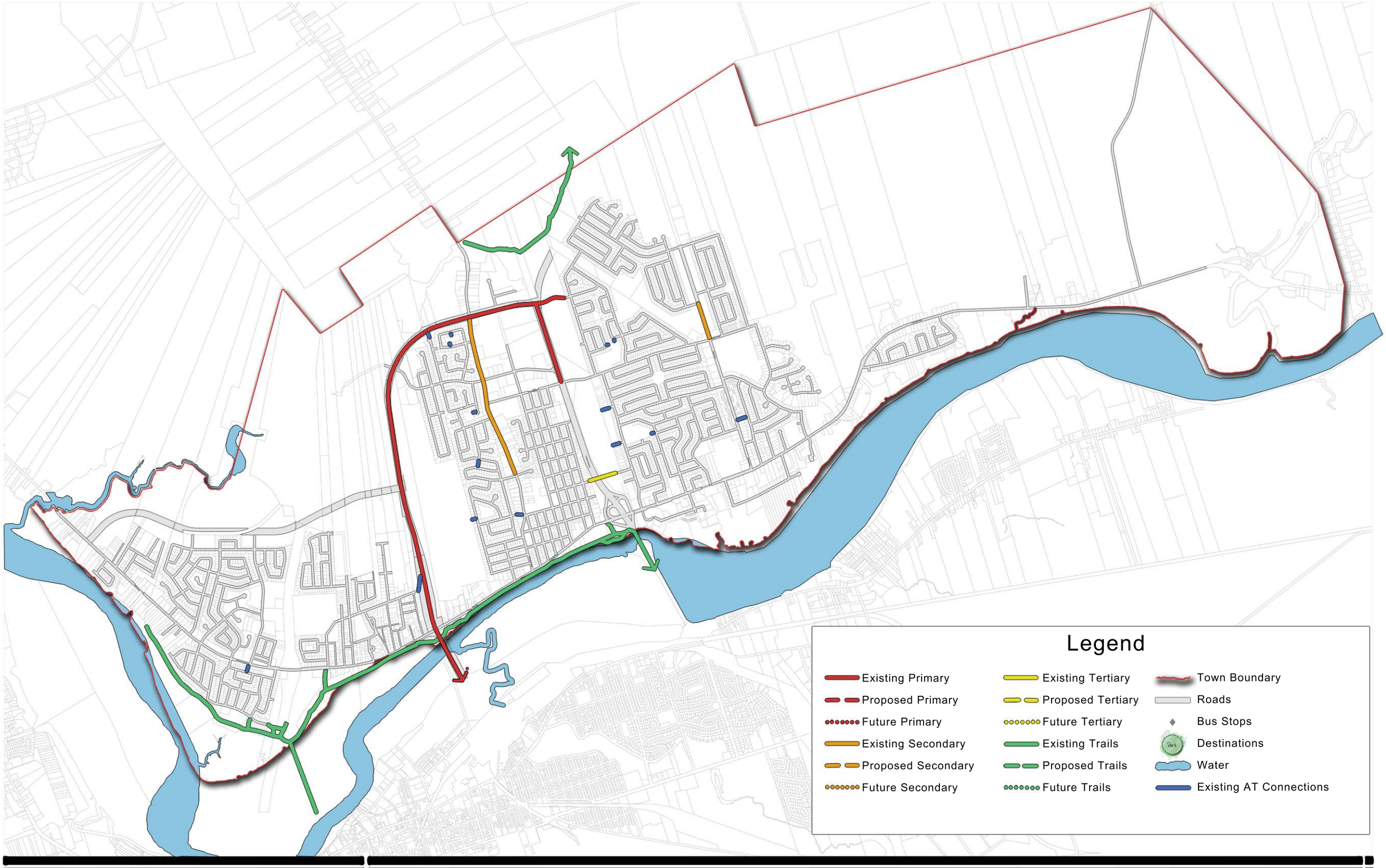
Riverview Active Transportation Plan

Connectivity Map

Riverview, New Brunswick

APPENDIX B – *Existing AT Infrastructure Map*



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Riverview

Town of Riverview - Active Transportaion Plan
Existing Active Transportation Infrastructure

Riverview, New Brunswick
January 30, 2013

APPENDIX C – *Codiac Transit Routes*

1 Codiac Transit Routes

1.1 Route 80: Eastern Riverview (Gunningsville Route)

The eastern portion of Riverview is provided regular bus service predominantly along Hillsborough road to Highfield Square where passengers can transfer to a number of different buses travelling around Moncton and Dieppe. The route is predominantly scheduled to provide service for morning and evening commutes to and from work with limited service in the evening. As this area of Town continues to grow, we anticipate this route will expand.

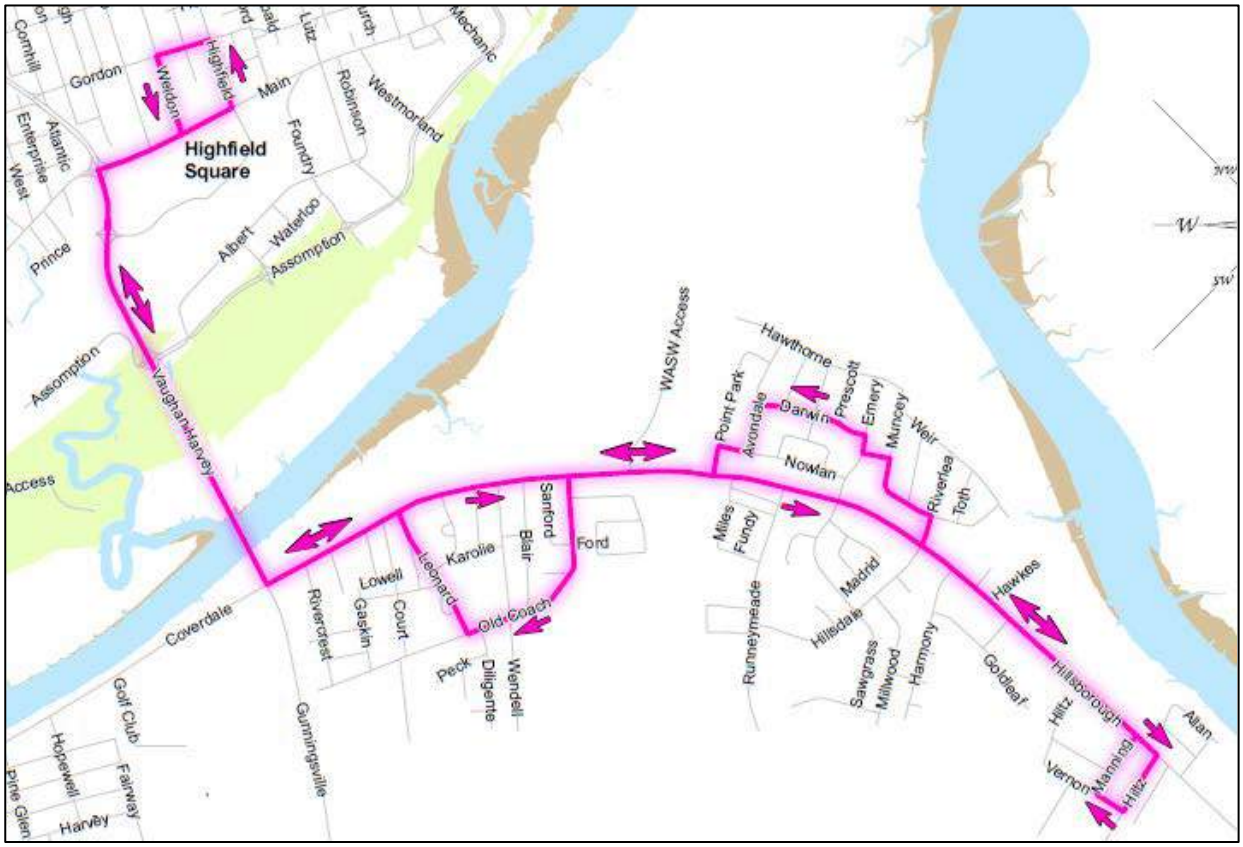


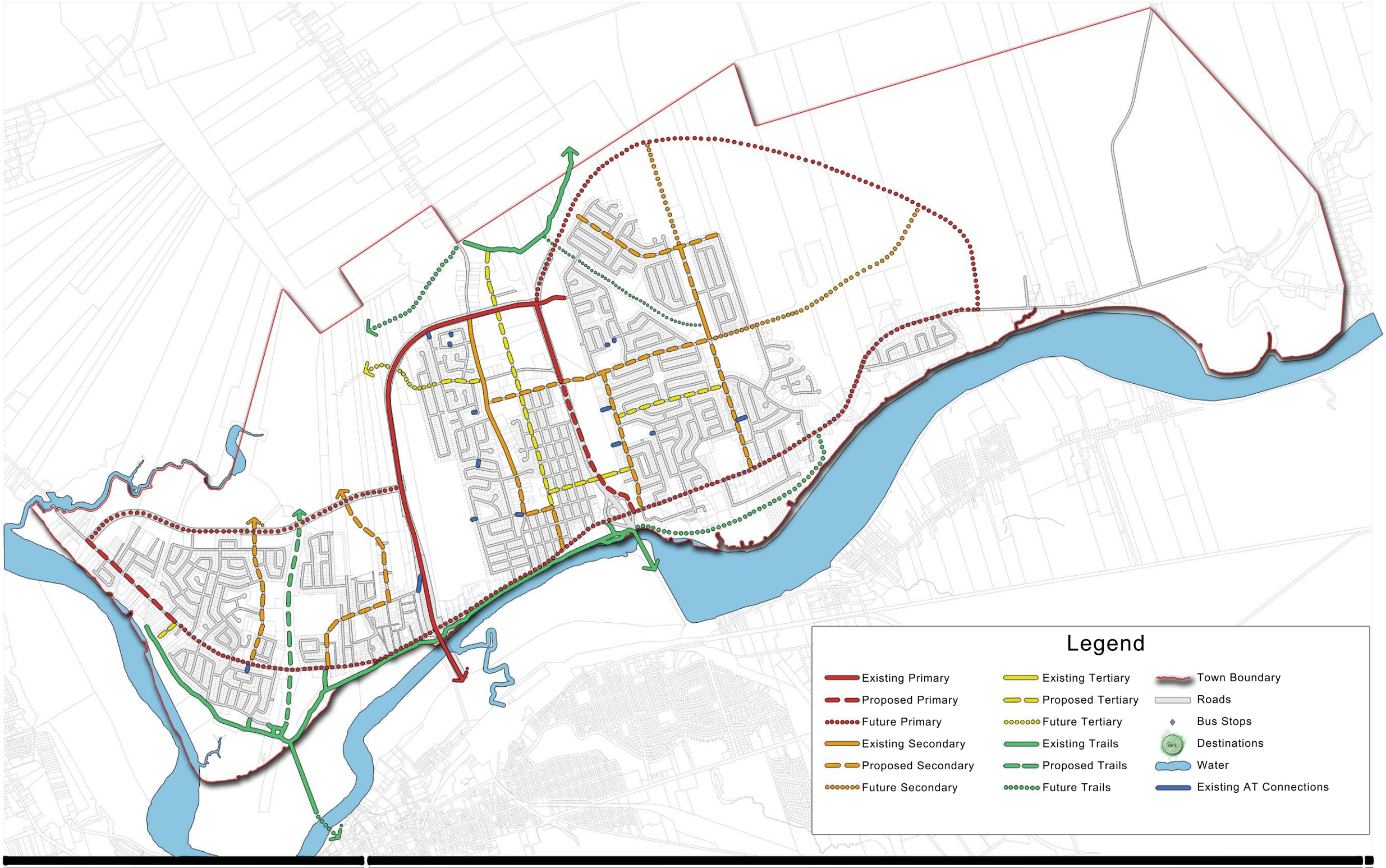
Figure 1.1 – Codiac Transit Route 80 Map

1.2 Route 81: Western Riverview (Riverview Route)

Western Riverview is serviced by Route 81 which also terminates at Highfield Square, a node where passengers are able to transfer to other buses travelling around greater Moncton. This route provides hourly service from 6:30 am to 9:30 pm though there have been recent discussions about expanding this service. One of the key stops along this route is the Riverview Mall which is home to a call centre that employs a number of people at various times during the day and evening.

Figure 1.2 – Codiac Transit Route 81 Map

APPENDIX D – *AT Map*



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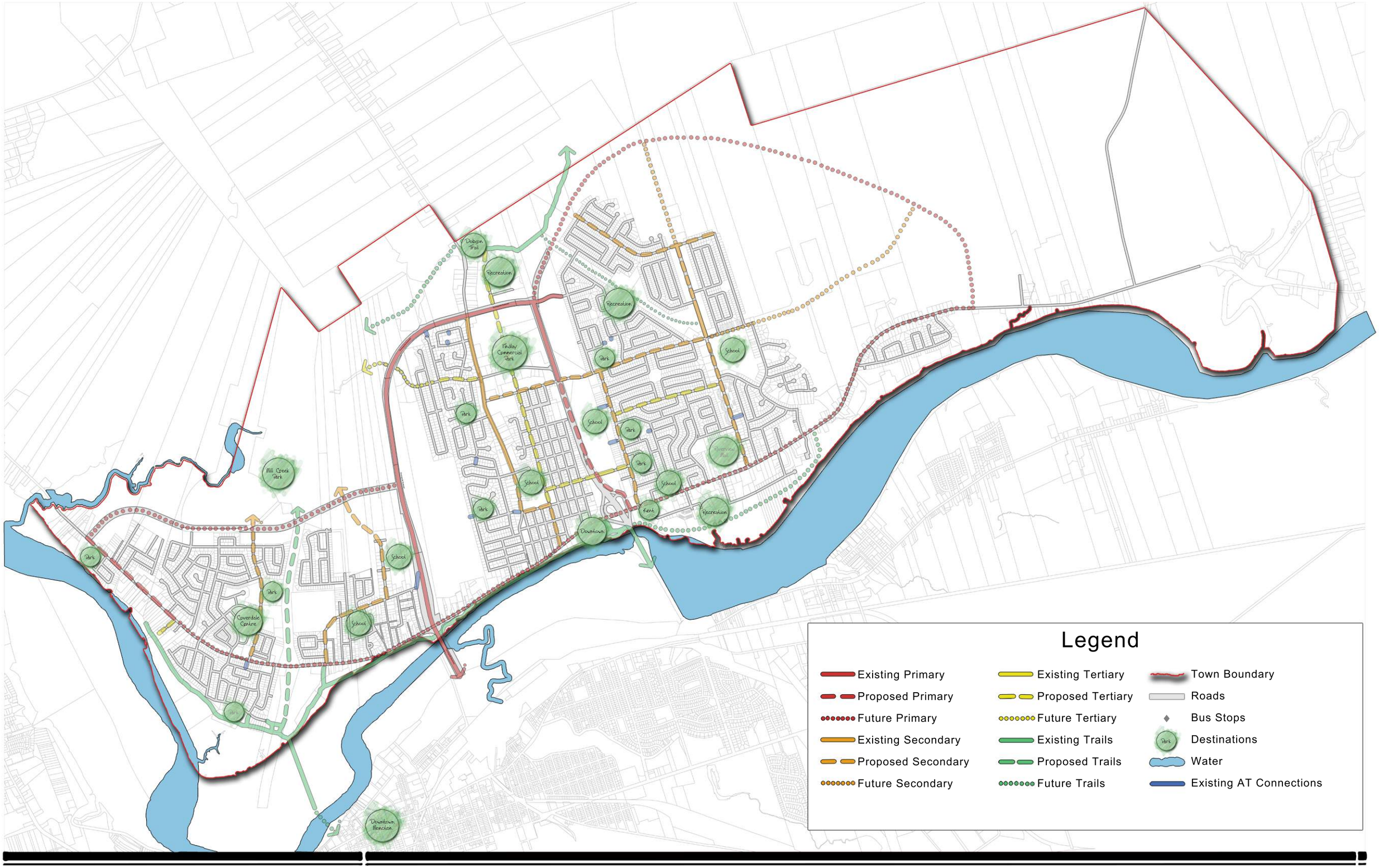
Riverview

Town of Riverview - Active Transportaion Plan
Active Transportation Map

Riverview, New Brunswick
January 30, 2013

APPENDIX E – *Key Destinations Map*



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Town of Riverview - Active Transportaion Plan
Key Destinations Map

Riverview, New Brunswick
January 30, 2013

APPENDIX F – *Land Acquisition Map*

Legend

- Existing Primary
- Proposed Primary
- Future Primary
- Existing Secondary
- Proposed Secondary
- Future Secondary
- Existing Tertiary
- Proposed Tertiary
- Future Tertiary
- Existing Trails
- Proposed Trails
- Future Trails
- Town Boundary
- Roads
- Bus Stops
- Destinations
- Water
- Existing AT Connections

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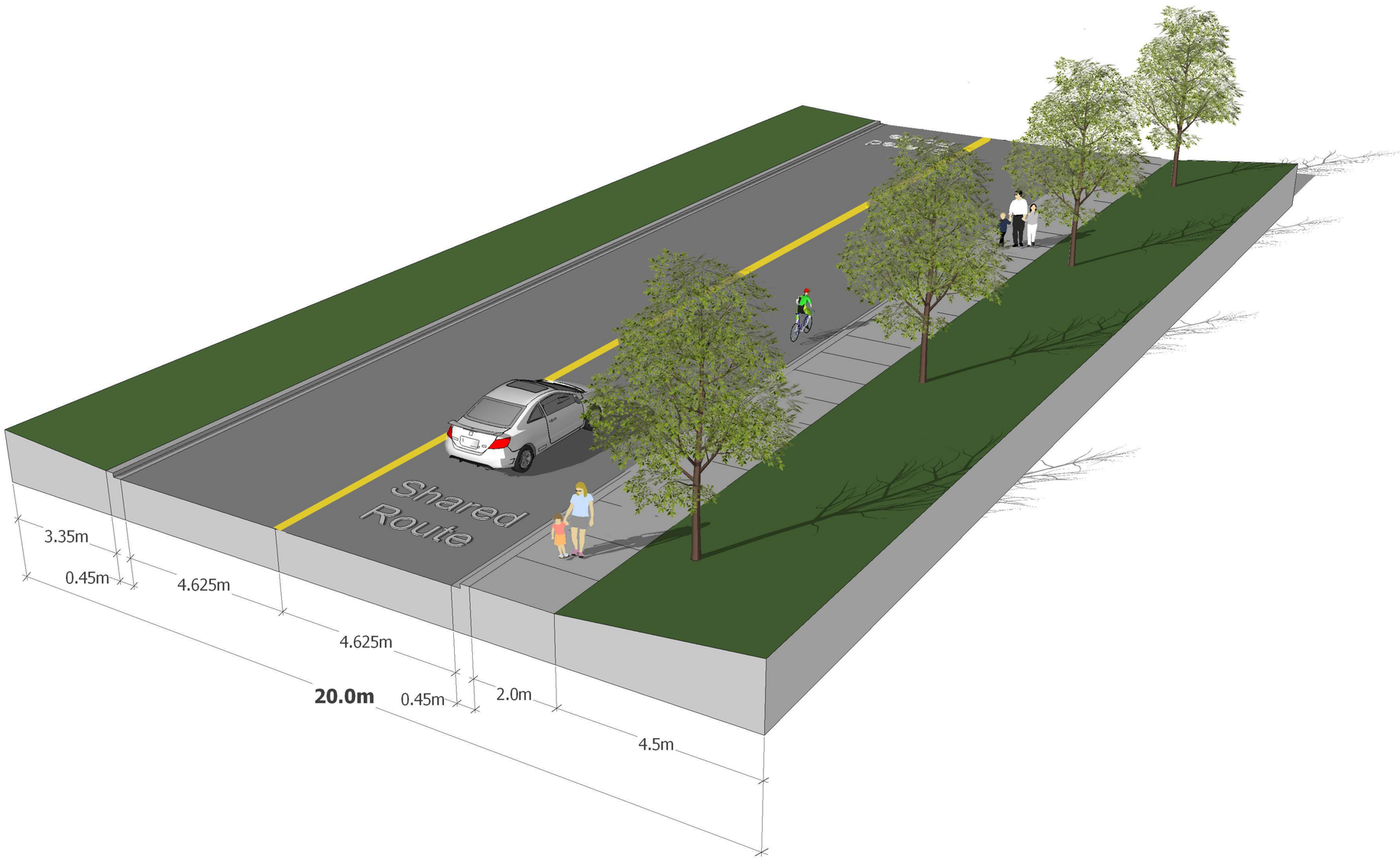
Town of Riverview - Active Transportaion Plan
Land Acquisition Map

Riverview, New Brunswick
January 30, 2013

APPENDIX G – *Urban Local Primary Proposed AT Design Standard*

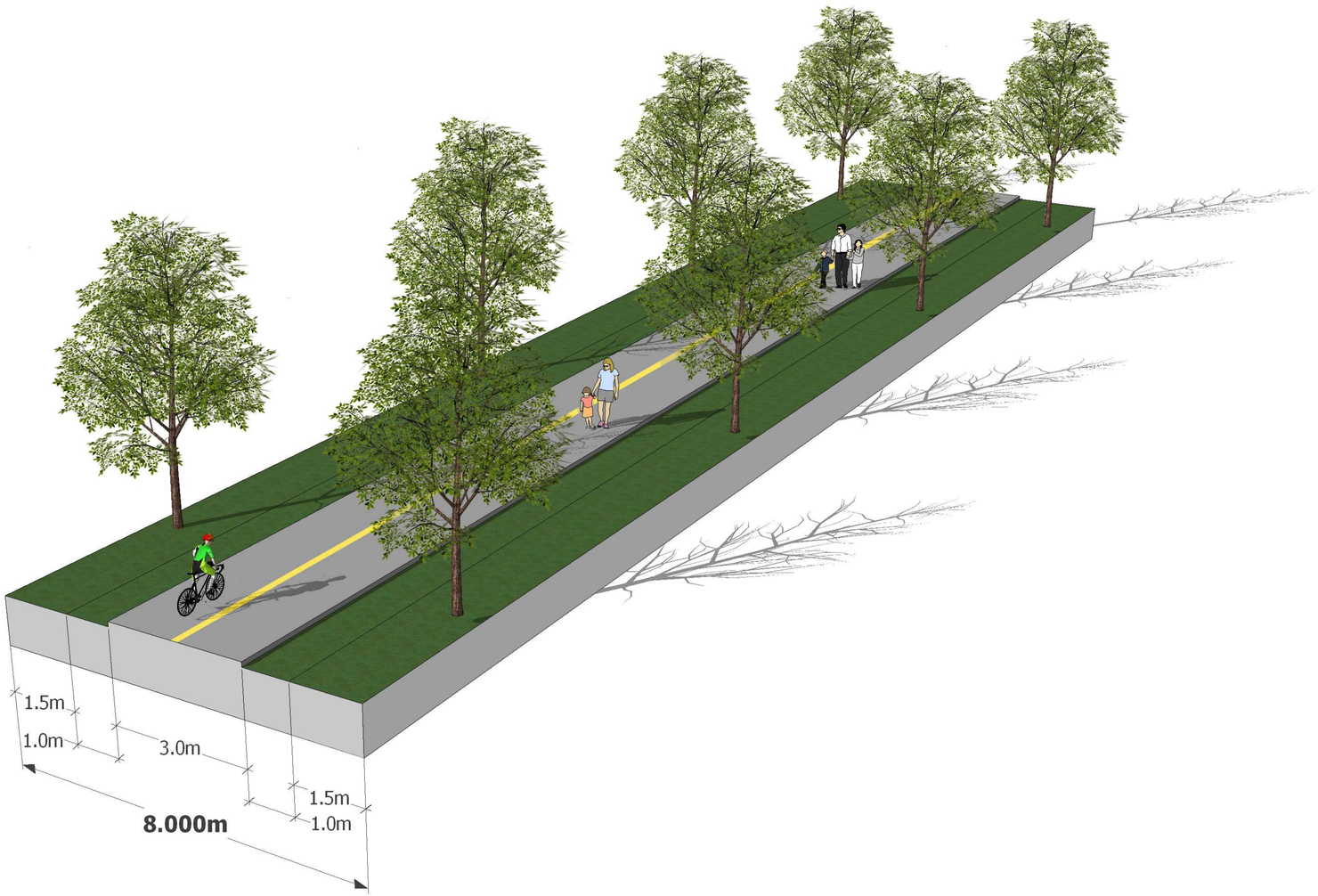

Shared Route
3.35m
0.45m
4.625m
4.625m
20.0m
0.45m
2.0m
4.5m

APPENDIX H – *Urban Collector Minor Proposed AT Design Standard*

APPENDIX I – *Urban Collector Primary Proposed AT Design Standard*


2.15m
2.0m
0.45m
6.4m
6.4m
23.0m
0.45m
3.0m
2.15m

APPENDIX J – *Trail Design Standard*


1.5m
1.0m
3.0m
1.5m
1.0m
8.000m

APPENDIX K – *TAC Signage Standards*

1 TAC Signage Standards

All bikeway traffic control signage should follow the *Bikeway Traffic Control Guidelines for Canada* produced by the Transportation Association of Canada (TAC). These standards outline appropriate traffic control for the installation of signs and pavement markings on bikeways in Canada.

1.1 Shared Routes

It is important to provide appropriate signage on shared routes to encourage safe use of infrastructure for both cyclists and motorists.

The intent of the Share the Road sign is to advise motorists and cyclists to use extra caution on the upcoming section of the road as well as provide adequate space for those on the road. The Shared Use Lane Single File Sign warns motorists that the lane is too narrow for side-by-side operation and cyclist are allowed full use of the lane.

Figure 1.1 – Examples of Share the Road (WC-19) and Shared Use Lane Single File (WC-20) signs.

1.2 Bike Lanes

Bike lanes are a major component of the proposed active transportation network; as such it is important that signage and lane markings are incorporated into the long-term active transportation network development. Effective signage and lane marking can be achieved through standard road sign and pavement marking. TAC provides standards and examples of signage and lane markings for bike routes[1]. This sign is used to warn motorists that they are approaching a reserved bicycle lane.

1 Transportation Association of Canada (1998) Bikeway and Traffic Control Guidelines for Canada. Available from: www.tac-atc.ca

Figure 1.2 – Examples of Reserved Bicycle Lane Ahead Sign (WB-10).

The purpose of these signs is to indicate that a lane is reserved for exclusive use by bicycles. TAC has specific standards on placement of Reserve Bicycle Lane Signs that should be followed.

Figure 1.2 – Examples of Reserved Bicycle Lane Signs (RB-90, RB-91, RB-92).

1.3 Multi-use Trails

Signage on multiuse trails will encourage safe use of trails for pedestrians, bicyclists and other AT users.

TAC provides standards for Shared Pathway and Pathway Organization signs. Shared Pathway signs indicate that both cyclists and pedestrians are permitted while Pathway Organization signs indicate how to share the path when there is an area designated for each.

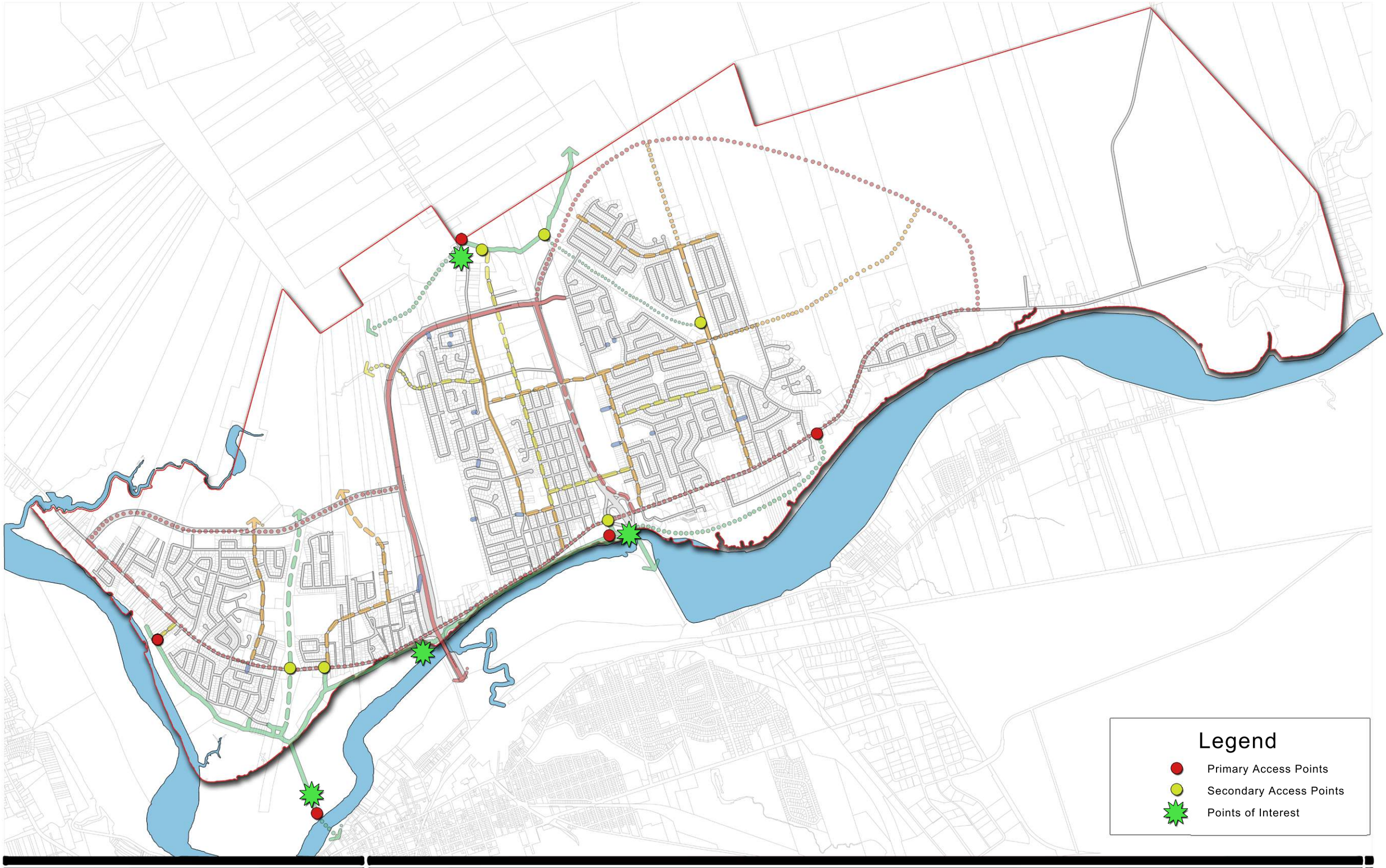
Figure 1.3.1 – Examples of Shared Pathway (RB-93) and Pathway Organization signs (RB-94R) (TAC).

Trail signage is essential to link local trail systems to the greater AT Network.

This sign is used when a trail crosses a road and indicates to drivers that pedestrians or cyclists could be crossing.

Figure 1.3.2 – Example of Pedestrian and Bicycle Crossing Ahead Sign (WB-10).

APPENDIX L – *Signage Map*



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Town of Riverview - Active Transportaion Plan
Signage Map

Riverview, New Brunswick
January 30, 2013

APPENDIX M – *Community Education Program*

1 Community Education Program

A Staff member should be assigned the task of implementing and promoting the Active Transportation Plan as well as educating the community. This is not intended or envisioned as a full-time role; it may be possible to integrate this into a current employee's job description. The following provides an outline of the tasks that the dedicated Active Transportation Coordinator should be responsible for throughout the implementation and promotion of the AT plan and the education of the community.

1.1 Campaign Initiation

Key Action Item	Description	Timeframe
1. Review of goals	The goals provided in the Active Transportation Plan should be reviewed at the start of the project and annually. New goals can be added as necessary. **Responsibility:** Review goals and add new goals as necessary.	1 day then on-going annually
2. Steering Committee	Setup a Steering Committee comprising of predominantly Staff members to implement the AT Plan and education campaign. This Steering Committee should include representatives from the Recreation and Community Relations, Engineering and Public Works, local Police, a resident familiar with AT and a member of Council. The Steering Committee should meet on a quarterly or semi-annual basis to discuss any issues or challenges that have been encountered (whether it relates to maintenance, safety or education) and upcoming initiatives/events. **Responsibility:** Organize and chair steering committee meetings quarterly or semi-annually.	1 month then on-going quarterly or semi-annually
3. Checklist of Stakeholders	Identify individuals who can assist in facilitating educational events and be AT champions in your community. These will be groups that have an interest in making AT safer, more accessible and more prominent in the community. Stakeholders who attended the focus groups include: o Post Carbon Greater Moncton o La Bikery (Bike Co-op) o Bridgedale Community Centre o Cross Country Ski Club o Riverview Striders Club o Riverview cyclist, CAN-BIKE Instructor o Boys and Girls Club o Moncton Outdoor Enthusiasts o Dobson Trail	3 weeks then on-going

	o Recreation o Parks, Recreation and Community – Coverdale Centre o Communications Coordinator o Economic Development o Riverview CAO o Riverview Planning Department o Fire Department o Engineering and Public Works Bringing these AT allies together can facilitate education amongst the groups as well as leverage their shared interests and knowledge to assist in educating the wider community. **Responsibility:** Work with Communications Staff to maintain and add to existing stakeholders list.	
4. Review of educational brochure and presentation	The final Active Transportation Plan will include a brochure outlining the basics of AT including safety rules for AT users as well as motorists and information relating to AT infrastructure in Riverview. This brochure will be provided in PDF and InDesign format allowing for future updates/edits as desired. The final Active Transportation Plan will also include the framework for a PowerPoint presentation that can be used by Staff and/or Steering Committee as a template for educational sessions. These are intended as tools to assist with the community educational campaign and the intention is that these will be modified as necessary to suit the audience and method of education delivery. **Responsibility:** Updates to PowerPoint Presentation and Brochure.	1 day then on-going
5. Town's Website	**Responsibility:** Establish and maintain section of Town's website dedicated to Active Transportation (i.e. www.riverview.ca/AT)	1 week then on-going

1.2 ATP Implementation, Building Community Awareness and On-going Education

Implementing the education campaign will occur through a combination of efforts. The dedicated Staff working closely with the individuals identified as AT Champions will be integral to the success of the campaign. The methods chosen should be effective, fun and help to promote the Plan and use of AT infrastructure. Outlined below are some community education programs and action items that would assist in meeting the goals of the Plan:

Key Action Item	Description	Timeframe

6. Funding Opportunities	**Responsibility:** Apply for available funding opportunities and continually look for additional funding (See Section 6.3).	Monthly and as necessary
7. Securing Permits	**Responsibility:** Secure any necessary permits required for the construction of AT infrastructure.	On-going
8. Kickoff Event	A special event should be held to announce and celebrate the Town's first AT project. This event can be similar to SWITCH Halifax (https://www.facebook.com/Switchhfx). Work with Communications Staff and local media. **Responsibility:** Organize kickoff event.	1 day
9. Small infrastructure wins	**Responsibility:** Celebrate and promote small infrastructure development (e.g., new trail development, bike rack installation). Work with Communications Staff and local media.	As appropriate
10. Celebrating AT Events	**Responsibility:** Research and celebrate international, national and provincial AT events such as Bike-to-Work Day.	As appropriate
11. Booths at Local Events	**Responsibility:** Setting up booths at local events and key community locations to promote the AT plan and educated the public.	As appropriate
12. Educational Videos	**Responsibility:** Develop or find applicable educational videos to be placed on website and Town's Facebook page.	Year 1
13. School Programs	**Responsibility:** Establish "Safe School Routes" mapping for website and organize walk to school programs in the community.	Twice annually (spring and fall)
14. Skill Building Workshops	**Responsibility:** Working with the local CAN-BIKE instructor, explore potential to subsidize a portion of the bike training he provides. This education should include specific target "how to ride" programs to teach proper cycling etiquette and safety for on street riding for all age groups. These should be promoted on Facebook, the Town's website and local newspaper.	2 – 3 times per year
15. Trail Hikes	**Responsibility:** Work with stakeholders to co-host seasonal community trail hikes to introduce the participants to different trails within greater Moncton and Riverview.	Quarterly
16. Bike Rides	Work with stakeholders (i.e. La Bikery) while organizing short monthly community bike rides at a regular time. Introduce the participants to different trails/routes in the community.	Monthly as infrastructure is put in place

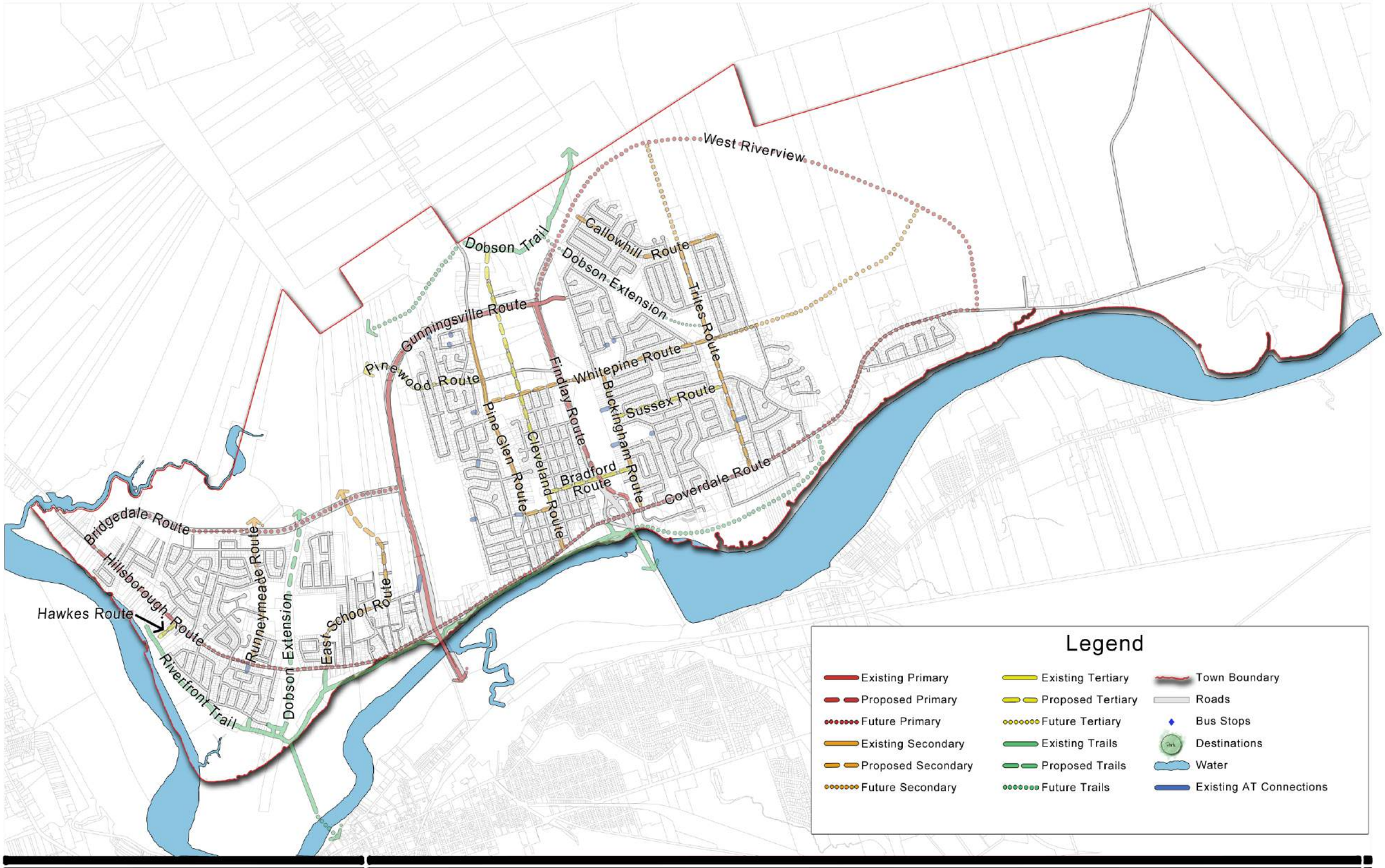
17. Smart Phone Application	**Responsibility:** Explore potential to develop smart phone application with Moncton and Dieppe that provides detailed AT mapping of routes and destinations to allow users to plan routes.	3 months
18. Meetings with Moncton and Dieppe	**Responsibility:** Organize semi-annual meetings with staff from Moncton and Dieppe responsible for Active Transportation to discuss on-going initiatives, any issues or challenges identified and potential cost-sharing measure that can be realized between the communities.	Semi-annually
19. Updates to Mapping	**Responsibility:** Coordinate any updates to mapping based on construction / installation of any new AT infrastructure.	As needed

1.3 Evaluating Progress

It is important to evaluate the success of the Community Education Campaign and assess whether the goals have been met.

Key Action Item	Description	Timeframe
20. Annual Evaluation	An annual evaluation of the success of the Active Transportation Plan should take place. There is a variety of information that can be used as measures of success: • Historical police reports relating to motor vehicle and pedestrian/cycling incidents prior to Plan development compared to that following the community education campaign. Measure annually to evaluate any areas needing additional assessment. • Follow up community surveys regarding knowledge and use of AT by residents. • Membership numbers of local user groups (i.e. Riverview Striders Club, Cross Country Ski Club, etc.) • km's of AT infrastructure added • any additional AT related groups that have been established or growth of existing groups. • Monitor hits on AT website and Facebook posts • Event attendance **Responsibility:** Prepare brief annual report of above findings, any issues or opportunities based on discussions with residents and potential action items or adjustments to education program.	Annually

APPENDIX N – *Route Naming Map*



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Town of Riverview - Active Transportaion Plan
Route Naming Map

Riverview, New Brunswick
January 30, 2013

APPENDIX O – *Funding Opportunities*

1 Funding Opportunities

Funding for the implementation of the Active Transportation Plan can be obtained through a variety of sources including Federal and Provincial programs as well as corporate and charity based organizations.

1.1 Federal Programs

ecoMOBILITY

Transportation Canada's ecoMOBILITY program is part of the ecoTRANSPORTATION strategy, which is a Federal Government initiative aimed at addressing greenhouse gas emissions and air pollution from transportation sources.

Since 2008 program has funded 13 projects in 12 communities, one of which is in the City of Saint John. In partnership with Saint John Transit Commission and Saint John Parking Commission, the City is delivering a project to increase ride sharing and the use of public transit.

Proposals are no longer being accepted for the ecoMOBILITY contribution program. It is uncertain if opportunities for funding through this program will be available in the future.

http://www.tc.gc.ca/eng/programs/environment-ecomobility-menu-eng-144.htm

Moving on Sustainable Transportation Program (MOST)

Moving on Sustainable Transportation Program (MOST) is a Transport Canada contribution program that provides financial support to help organizations implement demonstrations, research, education and pilot projects that create and support new sustainable transportation options. Since 1999 the program has funded 97 projects, of which 40 have a primary focus on Active Transportation. Not-for-profit organizations, private companies or individuals, universities and colleges, First Nation Communities/Organizations, and others are eligible. The program funds projects to a maximum of 50% of eligible costs (cash or in-kind) and to a maximum of $150,000 over a three-year period.
At this time it is unclear whether applications will be accepted in 2013.

http://www.tc.gc.ca/eng/programs/environment-most-menu-711.htm

Federation of Canadian Municipalities (FCM) Green Municipality Fund

The Federation of Canadian Municipalities (FCM) provides funding through the Green Municipal Fund to support the creation of sustainable communities in five sectors of municipal activity including transportation. One example of a transportation capital project would be a modal shift, which is the change in travel patterns from one type or mode to another and specifically includes:

- improvements to active transportation infrastructure around transit nodes;
- development or completion of walking and cycling networks and systems planned around travel to work, school, shopping or culture, that promote safety, accessibility and viable alternatives to car travel; and
- the development of complete streets (roadways designed and operated to enable safe, attractive and comfortable access and travel for all users).

The FCM offers grants to cover up to 50% of eligible costs for plans, feasibility studies and field tests to a maximum of $175,000. They also offer below-market loans, usually in combination with grants, to cover 80% of eligible costs for capital projects. Loan maximum is $10 million, and the grant amount is set at up to 20% of the loan to a maximum of $1 million (grants are typically 10% of loan amount approved).
This funding is made available to all municipal governments and their partners in eligible projects.

Applications are accepted year-round.

http://www.fcm.ca/home/programs/green-municipal-fund/about-gmf/gmf-update.htm

1.2 Provincial Programs

New Brunswick Environmental Trust Fund
The Environmental Trust Fund provides assistance for action-oriented projects with tangible, measurable results, aimed at protecting, preserving and enhancing the Province's natural environment. Many projects focus around Climate Change Adaptation, water quality, recycling programs, energy conservation, and community education. The Trust awarded $20,000 towards helping to establish and promote a sustainable transportation system in the Tantramar region as part of their 2012-2013 projects.

Eligible groups include community groups, NB municipalities, non-profit NB organizations, and institutions furthering sustainable development. Proposal must come under at least one of the six categories to be considered for funding: protection, restoration, sustainable development, conservation, education, and beautification. Department Staff will analyze applications to ensure they meet the program's criteria. The Environmental Trust Fund Advisory Board then reviews all applications and makes recommendations to the Minister. Once projects are approved, the Minister will announce the ETF awards.

The Fund reimburses actual costs up to, but not exceeding, the approved amount for eligible activities. The Letter of Offer sent to successful applicants explains reimbursement, time frames and other procedures. It constitutes a contractual agreement between the successful proponent and the department. Awards are for expenses incurred within the fiscal year (April 1 - March 31) in which they are announced. Based on an evaluation of the work completed, the Fund reserves the right not to continue providing assistance to multi-year projects

Online applications are being accepted for the 2013/14 fiscal year.

http://app.infoaa.7700.gnb.ca/gnb/Pub/EServices/ListServiceDetails.asp?ServiceID1=13136&ReportType1=ALL

1.3 Other Programs

Bicycle Trade Association of Canada (BTAC)
The Bicycle Trade Association of Canada provides grants of up to $5,000 to support grassroots cycling projects with a connection to specialty bike retailers. Eligible projects must encourage and promote cycling and support bicycle advocacy. The Association will fund projects that have significant potential for changing behaviours, and that have a measurable success. Priority is given to bicycle organizations and projects that build capacity for cycling. A key goal of the grants program is to fund projects and communities that have not received BTAC funding in the past.

Contact: Bill Yetman, NTAC executive Director, 416-427-2807, byetman@btac.org

www.btac.org/grant_program/index.html

Evergreen

As a national charity working to create sustainable communities, schools and homes, Evergreen offers a range of community funding projects. Evergreen's Common Grounds Grants are offered to support community groups in protecting and restoring urban green spaces. All proposed projects must be open to the community, have strong volunteer-involvement component, and must be located entirely on publicly accessible lands. Eligibility school and community groups must be working in partnership with local government or other institutional partner.

Walmart – Evergreen Grants of up to $10,000 are also offered for community-based restoration and stewardship initiatives in urban and urbanizing areas, including naturalization, community food gardens native planting initiatives, youth based and intergenerational projects. Applications are available mid-January 2013.

In 2012, the Causeway Work Centre received funding from the Walmart – Evergreen grant for the Right Bike Project. This project provides a public bike-sharing program that addresses the need for affordable and sustainable transportation options in the Ottawa area.

www.evergreen.ca
(Note: The Evergreen website also provides an up-to-date list of additional funding resources)

Additional Revenue Streams

Additional revenue streams should be explored including:

- Integrating advertising into trail signage, benches, bike racks and bike lockers.
- Route Sponsorship Program
- Local business owners who support AT sponsoring AT initiatives
    - TD Friends of the Environment
    - MEC
    - Public Health Agencies of Canada – Active Health
    - Health and Stroke Foundation – NB – Physical Activity
    - NS Trails Federation Website – Funding Sources for Trails
    - CN Eco connextions – From the ground Up
    - Environment Canada – Green Source Funding Database
        - http://www.ec.gc.ca/financement-funding/sv-gs/index_e.cfm
    - Green Communities Canada
        - www.greencommunitiescanada.org/

APPENDIX P – *Phasing and Costing*

1 Phasing and Costing

The following is a breakdown of what is included in the projects highlighted in Section 9.2 - Phasing and Costing.

1.1 Trites Rd (Callaghan Rd to Callowhill Rd)

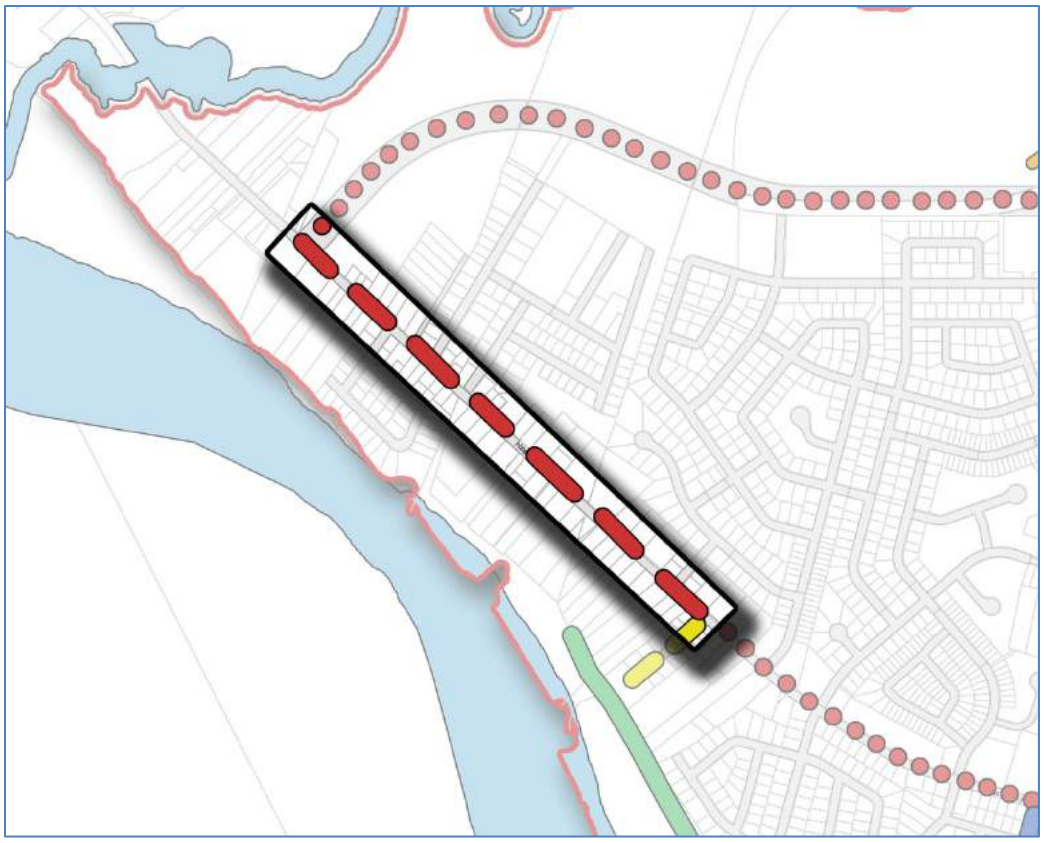
Estimated length: 550 m
Applicable Standard: Urban Collector Minor AT
Estimates of probable construction costs: $200,000 – $250,000
Time Frame: 1 – 2 years

The figure below illustrates the location and extent of this particular project. The project includes installing a 2 meter wide sidewalk along one side of the street and a 3 meter wide multi-use trail along the other side. The estimated cost also includes installing 5 benches and some topsoil and sod along the edges of the sidewalks and multi-use trails. The estimate probable construction cost does not include grading or any upgrades or reinstatements to the street.

1.2 Hillsborough Rd (Hawkes St to the future Bridgedale Blvd)

Estimated length: 1.1 km
Applicable Standard: Arterial
Estimates of probable construction costs: $300,000 – $350,000
Time Frame: 2 – 3 years

The figure below illustrates the location and extent of this particular project. The project includes painting in bike lanes on either extremity of the road and installing a 2 meter wide sidewalk along the north side of the road. The estimated costs also includes the planting street trees every 10 meters along both sides of the road, 10 benches, some topsoil and sod along the edges of the sidewalk and trees and reinstating the driveways the sidewalk crosses. The estimated probable construction cost does not include the costs associated with land acquisition to achieve the desired and/or necessary right-of-way width.



1.3 Hawkes St

Estimated length: 200 m
Applicable Standard: Urban Local Primary AT
Estimates of probable construction costs: $40,000 – $60,000
Time Frame: 2 – 3 years

The figure below illustrates the location and extent of this particular project. Hawkes Street currently connects Hillsborough Road to the Riverfront Trail, but there is no AT infrastructure along Hawkes Street. This project involves installing a 2 meter wide sidewalk on one side of the street with 2 benches and reinstating the driveways the sidewalk crosses. The estimated probable construction cost does not include grading or any costs associated with upgrading or reinstating the street.

1.4 Cleveland Ave (Gunningsville Blvd to Pinewood Rd)

Estimated length: 175 m
Applicable Standard: Urban Local Primary AT
Estimates of probable construction costs: $35,000 – $50,000
Time Frame: 2 – 4 years

The figure below illustrates the location and extent of this particular project. Cleveland Avenue currently extends from Coverdale road south to just past Pinewood Road. The road suddenly stops and turns into a dirt path. The estimate probable cost includes installing a 2 meter wide sidewalk along one side of the future road, 2 benches and planting trees every 10 meters along the sidewalk. The estimated probable construction cost does not include grading for the sidewalk and designing and constructing the future road.

1.5 Findlay Blvd (Whitepine Rd to Coverdale Rd)

Estimated length: 1.4 km
Applicable Standard: Arterial
Estimates of probable construction costs: $300,000 – $350,000
Time Frame: 3 – 5 years

The figure below illustrates the location and extent of this particular project. Findlay Boulevard currently extends from Coverdale road south to Gunningsville Boulevard. There is a multi-use trail along Findlay Boulevard from Gunningsville Boulevard to Whitepine Road. This project involves extending the multi-use trail along Findlay Boulevard from Whitepine Road to Coverdale Road. The probable cost consists of installing a 3 meter wide multi-use trail along the west side of Findlay Boulevard located on the outside of the existing fence. The costs also include 7 benches, a painted line down the center and a meter wide topsoil and sod along the edges of the multi-use trail. The estimate probable construction cost does not include grading or any connections to Riverview High School.

1.6 Sussex Ave

Estimated length: 1.0 km
Applicable Standard: Urban Local Primary AT
Estimates of probable construction costs: $200,000 – $250,000
Time Frame: 4 – 6 years

The figure below illustrates the location and extent of this particular project. This project involves installing a 2 meter wide sidewalk along one side of Sussex Avenue and planting trees every 10 metres alongside the sidewalk. The probable cost also includes reinstating the driveways the sidewalk crosses, installing 5 benches and placing some topsoil and sod along the sidewalk. The estimated probable construction cost does not include grading or any other costs in upgrading or reinstating the street.

1.7 Callowhill Road

Estimated length: 1.4 km
Applicable Standard: Urban Collector Minor AT
Estimates of probable construction costs: $550,000 – $600,000
Time Frame: 5 – 7 years

The figure below illustrates the location and extent of this particular project. This project involves installing 2 meter wide sidewalk along both sides of the street, planting trees along both sides of the street every 10 meters, reinstating the driveways the sidewalks cross, installing 13 benches along the sidewalk and placing 1 meter wide strip of topsoil and sod along both sidewalks. The estimated probable construction cost does not include grading or any other costs to upgrade or reinstate the street.

1.8 Coverdale Rd (Causeway to Gunningsville Blvd)

Estimated length: 1.8 km
Applicable Standard: Arterial
Estimates of probable construction costs: $950,000 – $1,100,000
Time Frame: 6 – 9 years

The figure below illustrates the location and extent of this particular project. This project involves replacing the current sidewalk with a 2 meter wide sidewalk and a 3 meter wide multi-use trail. The pricing also includes the planting of trees every 10 meters along both sides of the street, the installation of amenities such as benches, the reinstatement of driveways and the placement of 1 meter wide strip of topsoil and sod along the sidewalk and multi-use trail. The estimated probable construction cost does not include grading, land acquisitions or upgrades or reinstatement of the street.

1.9 Coverdale Rd (Trites Rd to the Causeway)

Estimated length: 1.1 km
Applicable Standard: Arterial
Estimates of probable construction costs: $350,000 – $450,000
Time Frame: 8 – 10 years

The figure below illustrates the location and extent of this particular project. This project involves replacing one of the current sidewalks with a 3 meter wide multi-use trail. The pricing also includes the planting of trees along both sides of the street, the reinstatement of driveways and the installation of 15 benches. The estimated probable construction cost does not include grading, land acquisitions or street upgrades or improvements.

1.10 Coverdale Rd (Trites Rd to Patricia Dr)

Estimated length: 1.4 km
Applicable Standard: Arterial
Estimates of probable construction costs: $450,000 – $550,000
Time Frame: 9 – 10 years

The figure below illustrates the location and extent of this particular project. This project involves installing a 3 meter wide multi-use trail along the north side of the street, planting trees along the existing sidewalk and multi-use trail, reinstating the driveways the sidewalk and multi-use trail cross and installing 16 benches along the multi-use trail and existing sidewalk. The estimated probable construction cost does not include grading, land acquisitions or upgrades or reinstatements to the street.

1.11 Hillsborough Rd (Hawkes St to Gunningsville Rd)

Estimated length: 2.6 km
Applicable Standard: Arterial
Estimates of probable construction costs: $1,250,000 – $1,450,000
Time Frame: 11 – 13 years

The figure below illustrates the location and extent of this particular project. This project involves replacing the current sidewalks with a 2 meter wide sidewalk and a 3 meter wide multi-use trail. The pricing also includes the planting of trees every 10 meters along both sides of the street, the installation of 26 benches along the sidewalk and multi-use trail, the reinstatement of driveways and the placement of 1 meter wide strips of topsoil and sod along both the sidewalk and multi-use trail. The estimated probable construction cost does not include grading, land acquisitions or upgrades or reinstatements to the street.

1.12 Coverdale Rd (Patricia Dr to the future connection with West Riverview Blvd)

Estimated length: 1.2 km
Applicable Standard: Arterial
Estimates of probable construction costs: $550,000 – $650,000
Time Frame: 13 – 16 years

The figure below illustrates the location and extent of this particular project. This project involves installing a 2 meter wide sidewalk and a 3 meter wide multi-use trail, the planting of trees every 10 meters along the sidewalk and multi-use trail, the installation of 14 benches, the reinstatement of driveways and the placement of a 1 meter wide strip of topsoil and sod along both the sidewalk and multi-use trail. The estimated probable construction cost does not include grading, land acquisitions or upgrades or reinstatements to the street.

APPENDIX Q – *Definitions*

1 Definitions

Accessibility – refers to the ability to and ease at which persons of all ages and physical abilities are able to utilize AT infrastructure. The level of accessibility differs depending on a person's physical abilities. For instance while a gravel trail is accessibility to many, it is not very accessible to someone using a wheelchair, stroller or walker. Universal accessibility refers to infrastructure has been designed to allow for the ease of use of all potential users.

Active Transportation (AT) - Includes any form of human powered transporation such as walking, biking, skate boarding, wheelchairs, and roller blading. It is both a recreational and commuter activity.

Bike Lane - A bike lane is a dedicated space for cyclists located within the travelled portion of the street but separated from vehicles by a solid or dashed white line. Symbols are painted within the bike lane at regular intervals to further distinguish the spaces use for cyclists.

Connectivity – Refers to the ease of access to various neighbourhoods and destinations in and around the community by various modes of transportation.

Landscaped Strip – A linear vegetative strip located parallel to sidewalks, trails or other active transportation infrastructure. This can be located between the sidewalk and road or on the opposite side of the sidewalk. Landscaped strips can be used to create a physical and/or visual barrier from the vehicular portion of the road while enhancing the aesthetics of the overall street.

Route, Primary – Refers to the AT routes that are required to accommodate the greatest volume of use and general provide access to major destinations in an around the community. These are often located along major collector and arterial vehicular routes but can also come in the form of multi-use trails not necessarily located with street right-of-ways.

Route, Secondary – These are AT routes designed to connect neighbourhoods with primary routes and other destinations within the community. These are generally located along collector or local streets. AT infrastructure along these routes can consist of dedicated bike lanes, shared streets or multi-use trails.

Route, Tertiary – Refers to an AT route that will be used predominantly by residents living within the immediate neighbourhood to connect with primary and secondary routes. These are typically located along local streets and generally feature shared route signage though a multi-use trail is a desirable alternative.

Shared Route – means a street where vehicles and cyclists share the same travel area. These are typically incorporated into lower volume streets though they may be necessary where streets lack the appropriate paved width or right-of-way to incorporate dedicated bike lanes. These routes feature shared route signage and in certain instances pavement markings.

Trail – A trail refers to an unpaved linear route designed predominantly for use by pedestrians and those running. These generally feature either a dirt, crushed stone or gravel surface that is not considered as

accessible for those using bicycles, wheelchairs, strollers and walkers. In the winter months trails can either be cleared or adapted into routes for cross-country skiers or snoeshoers. An example of a trail would be the Riverfront Trail.

Trail, Multi-Use – For the purpose of this Plan, a multi-use trail refers to a paved linear trail located outside of the travelled portion of a street which is universally accessible. An example of a multi-use trail is the infrastructure along Gunningsville Boulevard.

Wayfinding – relates to signage designed to enhance users ability to navigate the AT network in Riverview. This includes larger signage outlining the overall network posted at key destinations, signage along individual routes indicating proximity to other routes and destinations as well as signage indicating the end or beginning of a route.