



Appendix I

Active Transportation Review



BURNSIDE



Innisfil

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Project Name: Innisfil Transportation Master Plan Update
To: Town of Innisfil
From: R.J Burnside & Associates Limited / TraffMobility

1.0 Role of Active Transportation Systems

Any form of self-propelled mode of transportation that uses human energy such as walking, cycling, skating, jogging, rolling and skiing, referred to as Active transportation, provides a benefit to the residents of Innisfil and the broader population. Active transportation helps to promote a healthy lifestyle, contribute to sustainable transportation and reduce the impact on the environment. Active transportation is explicitly supported in the Provincial Policy Statement and is supported as an important component of multimodal transportation systems.

The benefits of walking, cycling and other non-motorized modes of transportation contribute to improved health and well-being. According to the World Health Organization (WHO), physical inactivity is the second highest health risk in developed countries and it is associated with many tens of billions of dollars in healthcare costs. Active transportation has been documented as helping to minimize the risk of coronary heart disease, strokes, diabetes and cancer. The National Cooperative Highway Research Program Report 552 has quantified the contributions that active transportation can make to lower health care costs.

For short distance and recreational travel needs, bicycle ownership has cost and health benefits relative to a motor vehicle or a secondary household motor vehicle. The annual cost of operating a motor vehicle, including fuel, insurance, maintenance and parking is estimated by CAA as \$9,500 annually. Safe cycling and walking routes can help address financial barriers for travel to work for some residents.

Pedestrian and cyclist-friendly neighbourhoods can improve the livability of streets, increasing public presence and contributing to the sense of community. Town roads and trails are an element of many communities. Active transportation solutions can also be a key element to climate change mitigation strategies.

2.0 Recent and Ongoing Town Studies and Initiatives

Since the completion of the 2018 TMP, new growth objectives have been identified including the Orbit development plan and land use forecasts to 2051. In response to this growth, the Town conducted several initiatives that aim to enhance or provide opportunities to enhance the Town's active transportation network.

2.1 Orbit Development and Innisfil GO Rail Station

The Orbit GO station design and immediately surrounding area has been conceptually designed with the input of residents, stakeholders, professionals, Council and Town staff. The vision of the Orbit is to be a sustainable and mixed-use Transit Oriented Community.

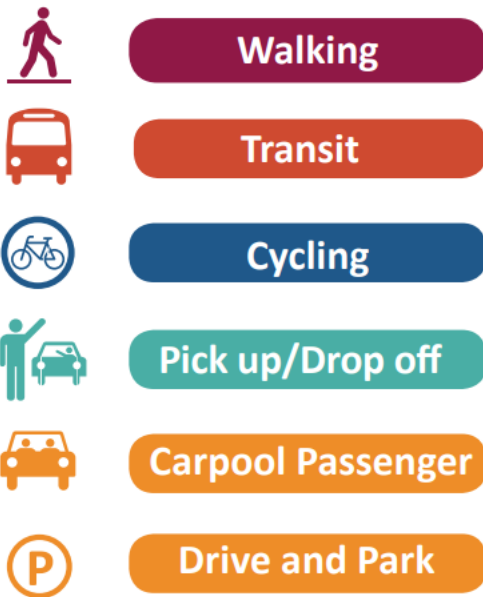
Transit-oriented communities are communities that contain a mix of housing, jobs, retail, public amenities, and entertainment within walking distance of transit stations. Higher residential densities allow many residents access to the Innisfil GO station using active transportation modes.

Supplementing the transit-oriented community concept, the Orbit Potential and Innovation Plan aims to create 15-minute neighbourhoods designed with a people-first approach and integrated green spaces. These 15-minute neighbourhoods are planned to have development connected by green spaces that provide four-season benefits including shade and weather protection. Urban forests, parks, and green spaces will provide opportunities for meaningful interaction with fellow residents and visitors, active recreation opportunities, human and environmental connections, and contribute to the concept of a '15-minute City' whereby residents can access all basic services within a 15-minute walk.

Another objective of the development of the Orbit is to have higher quality density that promotes social cohesion using well-planned neighbourhoods. This human-centered design aims to combat the social issue of loneliness that was exacerbated during the COVID-19 pandemic and resulting travel restrictions. Active transportation networks can provide opportunities for people to interact in the proposed green and open spaces within The Orbit.

The Metrolinx GO Rail Station Access Plan provides direction for access to GO rail stations (including the planned Innisfil GO Rail Station), that focuses on creating “safe and direct pedestrian and cycling routes to transit stations that are complemented with clear wayfinding and potential bike share programs within the station area.” The GO Rail Station Access Plan aims to address the need to change travel behaviours to GO stations as a result of increased frequency and service as a result of Regional Express Rail. The Plan identified that if existing travel behaviours (pre-2016) were not changed, there would need vehicle use and substantial additional parking spaces for access to GO Rail to accommodate the transit demand by 2031.

The guiding principles of this Metrolinx plan is to invest and support ridership growth by creating a balance of pedestrians, cyclists, local transit, and other vehicles to ensure safe and efficient movement to and through the station for All GO Transit customers. The modal hierarchy will prioritize more sustainable travel behaviour. Targeted parking expansion will be undertaken to support ridership growth while minimizing conflicts with relevant policy objectives. The hierarchy of station access investments from high to low include walking, transit, cycling, pickup/drop-off, carpool passenger, drive and park. This hierarchy is shown in the image below.



Metrolinx identified that in 2015, 9.5% of trips accessing GO stations were made by walking or cycling and 62% of trips accessing GO stations were made by drive and park. The 2031 access target for walking is 12% to 14% and 2% to 4% for cycling.

Station design guidelines to promote walking include providing on-site pedestrian connections at the station to support direct, safe and convenient access into the station while minimizing conflict with vehicles and other users. The guidelines around the station include establishing a safe, comfortable and well-maintained pedestrian routes that connect directly to the station that are activated with a mix of higher density transit-supportive uses.

Station design guidelines to promote cycling include creating safe, comfortable and direct bicycle routes to the station and support cyclists by providing secure storage areas and supporting amenities at the station. The guidelines around the station are to create safe and direct pedestrian and cycling routes to transit stations that are complemented with clear wayfinding and potential bike share programs within the station area.

A challenge in providing active transportation connectivity within the Orbit will be the rail crossing in Alcona. Metrolinx operations will ultimately require 3 tracks and electrifications. As part of the Phase 1 Orbit development, the 6th Line Bridge replacement is planned to be constructed to integrate developments on the north and south side.

2.2 Land and Lakes Master Plan (2022)

The Land and Lakes Master Plan is an update to the Parks & Recreation Plan (Land Plan) and the Lake Simcoe Enjoyment Strategy (Lake Plan). It is a strategy to improve Innisfil's parks, waterfront, and recreation programs.

2.3 Highway 400 and 6th Line Interchange

In 2017, The Town of Innisfil completed a Schedule 'C' Class environmental Assessment (Class EA) for the proposed interchange at 6th Line and Highway 400. The Ministry of Transportation Ontario (MTO) currently has plans to replace the existing bridge structure on Highway 400 at 6th Line as part of the widening of Highway 400 to 10 lanes. Due to anticipated vehicular speeds of the ramps and design of the interchange, there is an anticipated challenge to accommodate active transportation. Multi-use trails along 6th Line are currently planned to ensure that cyclists and pedestrians will be provided continual safe accommodation of active transportation infrastructure.

2.4 Bike Lane Pilot Project (2020)

As a result of the 2018 Transportation Master Plan, bike lanes were installed on four streets in Alcona: Anna Maria Avenue, Jans Boulevard, Leslie Drive, and Webster Boulevard to encourage people to cycle. An example of these bike lanes is shown in Figure I-1.

Figure I-1: Cycle lanes along Jans Boulevard
(Source: Google Streetview, Image Captured in 2021)



2.5 Sidewalk Improvement Program

As part of the planned construction improvements, the Town of Innisfil will be repairing various sidewalks within the Town beginning at the end of June 2021. The selected sections of sidewalk were chosen based on the results of the Sidewalk Needs Study, which is completed every 5 years. This study evaluates the sidewalk condition and rates each sidewalk section. Those that receive higher ratings are in worse condition than a section of sidewalk that has a lower rating.

By programming the repair of sidewalks, the Town can keep maintenance costs down as opposed to leaving the sidewalks to deteriorate. When sidewalks deteriorate, they require replacement instead of resurfacing which raises costs.

In 2021, the following sidewalk sections were constructed:

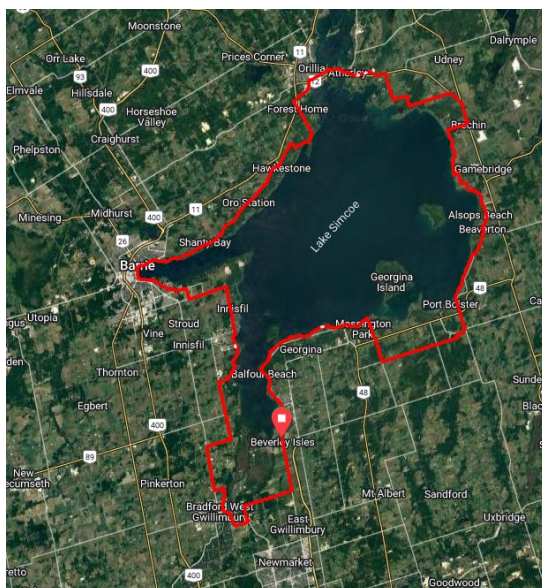
- King Street South from Queen Street to Victoria Street West (West side of the road).
- King Street South from Church Street to Hamilton Street (East side of the road).
- Church Street from King Street to William Drive (South side of the road).
- Church Street from Elizabeth St to 114m to the East (North side of the road).
- Cook Avenue from Victoria Street East to Heritage Road (West side of the road).

3.0 Active Transportation Needs and Opportunities

3.1 Lake-Adjacent Trail

A lake-adjacent trail would provide an opportunity to connect communities in York Region and Simcoe County. It would provide both commuters and recreational pedestrians, cyclists, and other AT users a chance to explore the Region and the County to travel on dedicated and comfortable infrastructure. A conceptual route is shown in Figure I-9.

Figure I-2: Conceptual Lake-Adjacent Trail



Other possible benefits would be to improve tourism within the County, the Town of Innisfil, and adjacent municipalities. Cycle and cycle tourists would be able to travel adjacent to Lake Simcoe and lake destinations and strengthen the County’s position as a cycle destination.

Facilities could range from signed routes to more protected facilities such as multi-use trails and cycle tracks depending on active transportation needs for each municipality.

Coordination between Simcoe County, York Region, and local municipalities would be required to facilitate a lake-adjacent trail. Implementation would require common elements across municipalities including signage development and installation and marketing. Marketing includes the following:

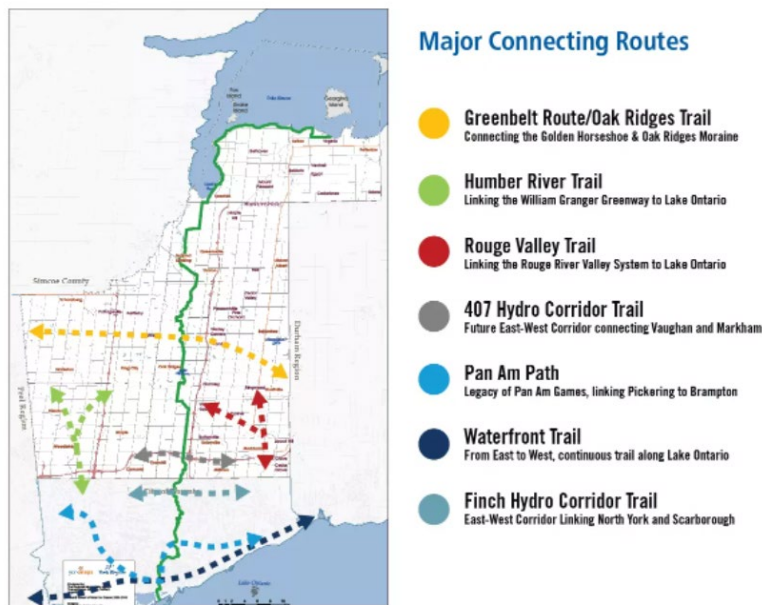
- Establishing a brand identity.
- Mapping the route.
- Creating a website.
- Printing of marketing material.
- Advertising and promotion.

Examples of current lakeside or waterfront are documented below.

3.1.1 York Region Lake-to-Lake Connections

The Lake-to-Lake Route is a 121-kilometre recreational and commuter trail that will connect Lake Simcoe to Lake Ontario. This initiative aims to form a key spine of York Region and City of Toronto’s active transportation network, connecting to trails like the Greenbelt Route, PanAm Path and Waterfront Trail, destinations like transit hubs, and other attractions. This is illustrated in Figure I-3.

Figure I-3: York Region Lake-to-Lake Connections



3.1.2 Georgian Bay Cycling Route

The Georgian Bay Cycling Route will be a 1,000 kilometre long, signed Signature Cycling Route around Georgian Bay that connects communities around the Bay to develop the region’s cycling tourism potential. This route requires involvement from multiple counties or districts such as Parry Sound District, Muskoka District, Simcoe County, Grey County, Bruce County, Manitoulin Island, and District of Sudbury. This is illustrated in Figure I-4

Figure I-4: Georgian Bay Cycling Route



3.2 Highway 400 Bridge Replacement

The Ministry of Transportation Ontario (MTO) currently has plans to replace the bridge structure as shown in Figure I-12 in Innisfil Heights as part of their plans to widen Highway 400 to 10 lanes.

As part of this 2022 TMP, the Town of Innisfil, Simcoe County, the City of Barrie, and MTO has undertaken discussions to explore the feasibility of accommodating an active transportation connection under Highway 400 adjacent to the rail spur. This connection would be able to provide active transportation users the ability to cross Highway 400 using an off-road facility which provides added safety and comfort. Establishing a connection from the Town of Innisfil east of Highway 400 to the Trans-Canada Trail would provide users access to an inter-municipal trail enhancing the livability and pedestrian-oriented environment within the Town of Innisfil. This connection is also currently part of the Town’s Land and Lakes proposed Alcona Trail.

Figure I-5: Highway 400 in Innisfil Heights
 (Source: Google Streetview, Image taken April 2021)

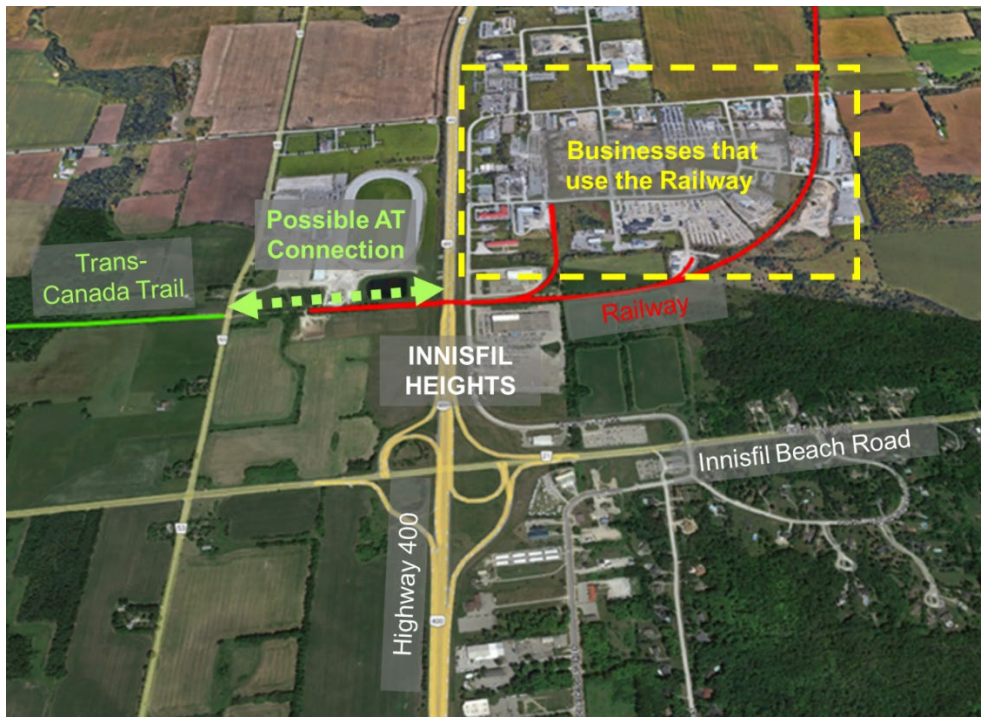


There are two major constraints that were identified with this connection.

- In April 2022, MTO provided detailed design drawings (Attachment 2) of the bridge structure replacement. The design of the rail underpass of Highway 400 bridge replacement offers no physical space for a trail connection. The underpass is 14.625 metres with the south side occupied by the main track and the north side occupied by the siding track.
- There are existing businesses that use the railway, currently owned by CN Rail. The rail spur on the west end is critical for rail operations within Innisfil Heights. Any changes to the rail infrastructure or operations would impact the existing businesses.

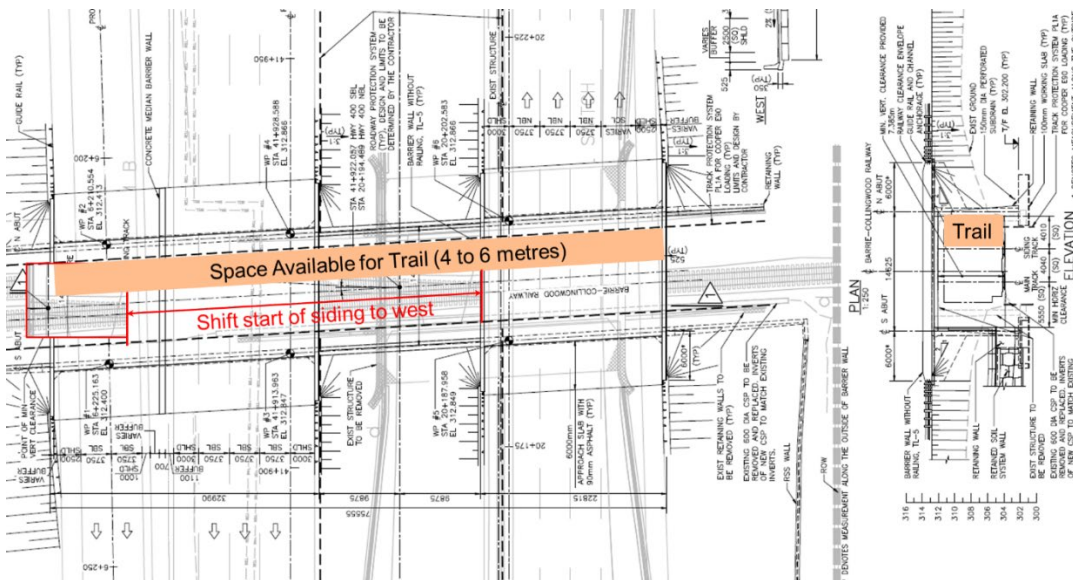
These constraints are highlighted in Figure I-6.

Figure I-6: Potential AT Connection at the Highway 400 Bridge Underpass
 (Source: Adapted from Google Earth, Satellite Imagery from 2015)



A possible solution, Solution 'A', is to introduce the siding track further west so that there is a continuous width available for a trail through the underpass on the north side as shown in Figure I-7. A 50-metre shift would require the introduction of a new rail frog and track alignment. It may also require an extension of the spur line at the west end.

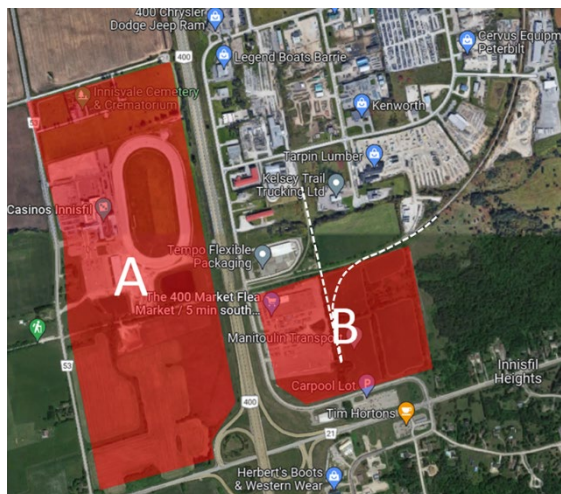
Figure I-7: Solution 'A' for Rail Connection at Highway 400 Underpass



Another possible option, Solution 'B', is to relocate and re-align the railway to the south, then connect the rail spur to the north to the existing businesses as shown in Figure I-15.

However, future developments in areas labeled Area A and Area B may be impacted. Town planning staff would be able to provide development applications and planning guidance to the areas surrounding Innisfil Heights.

Figure I-8: Solution 'B' for AT Connection at Highway 400 Underpass
(Source: Adapted from Google Maps)



4.0 Facility Selection

In selecting the appropriate cycling facility, the following guiding principles should be applied to consider the level of protection and road user needs.

4.1 Level of Protection

According to the updated Book 18 of the *Ontario Traffic Manual (OTM)*, a preliminary assessment of bicycle facility requirements should be conducted using nomographs for urban/suburban and rural conditions, as shown in Figure I-9 and Figure I-10, respectively. These nomographs inform the level of protection required for a bicycle facility, which is contingent on the Average Annual Daily Traffic (AADT) and posted speed limit along the road. Estimated AADT ranges consolidated over various years of data between 2012 to 2017 is illustrated in Figure I-11.

The physically separated bikeway and paved shoulder with buffer facilities under urban/suburban and rural conditions, respectively, are most critical as they require the greatest level of protection based on posted speeds and volumes. Within the urban context, the requirement for safer, physically separated bicycle lanes are a function of both high posted speed limits and/or high daily traffic volumes. Within the rural context, the need for more protected bicycle facilities via paved shoulders with buffers are less reliant on posted speed limits as the actual operating speeds along the corridor tend to vary more along rural roadways; as such, surveyed 85th percentile operating speeds better inform the design condition and are typically used instead of posted speeds to assess cycling facilities in rural areas.

While most roads within the Town are currently operating with AADT volumes less than 6,000 vehicles, the future allocated population and employment growth is expected to add significant traffic along these roads and continued monitoring of the AADT is required to determine the desirable cycling facility on a corridor basis.

Figure I-9: OTM Nomograph for Cycling Facilities in Urban/Suburban Context

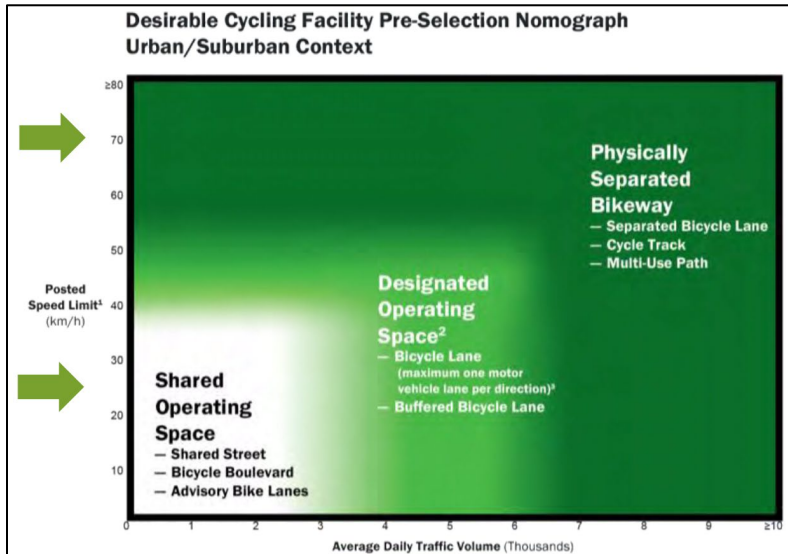


Figure I-10: OTM Nomograph for Cycling Facilities in Rural Context

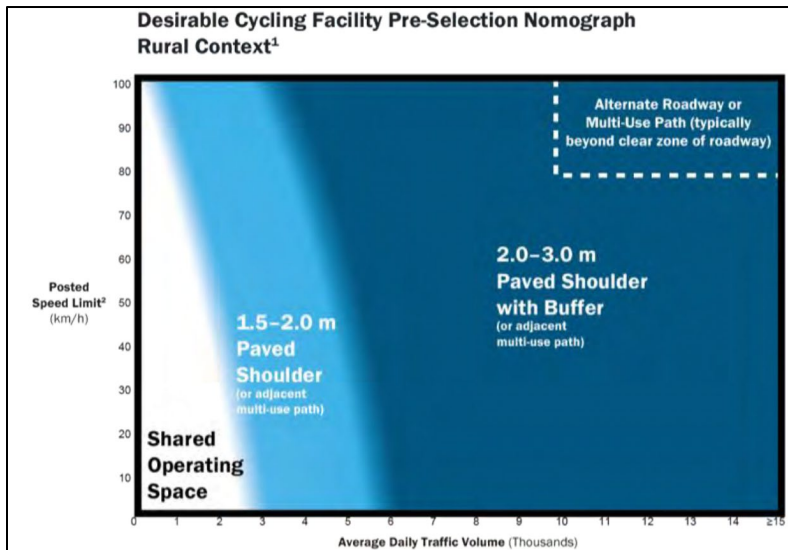
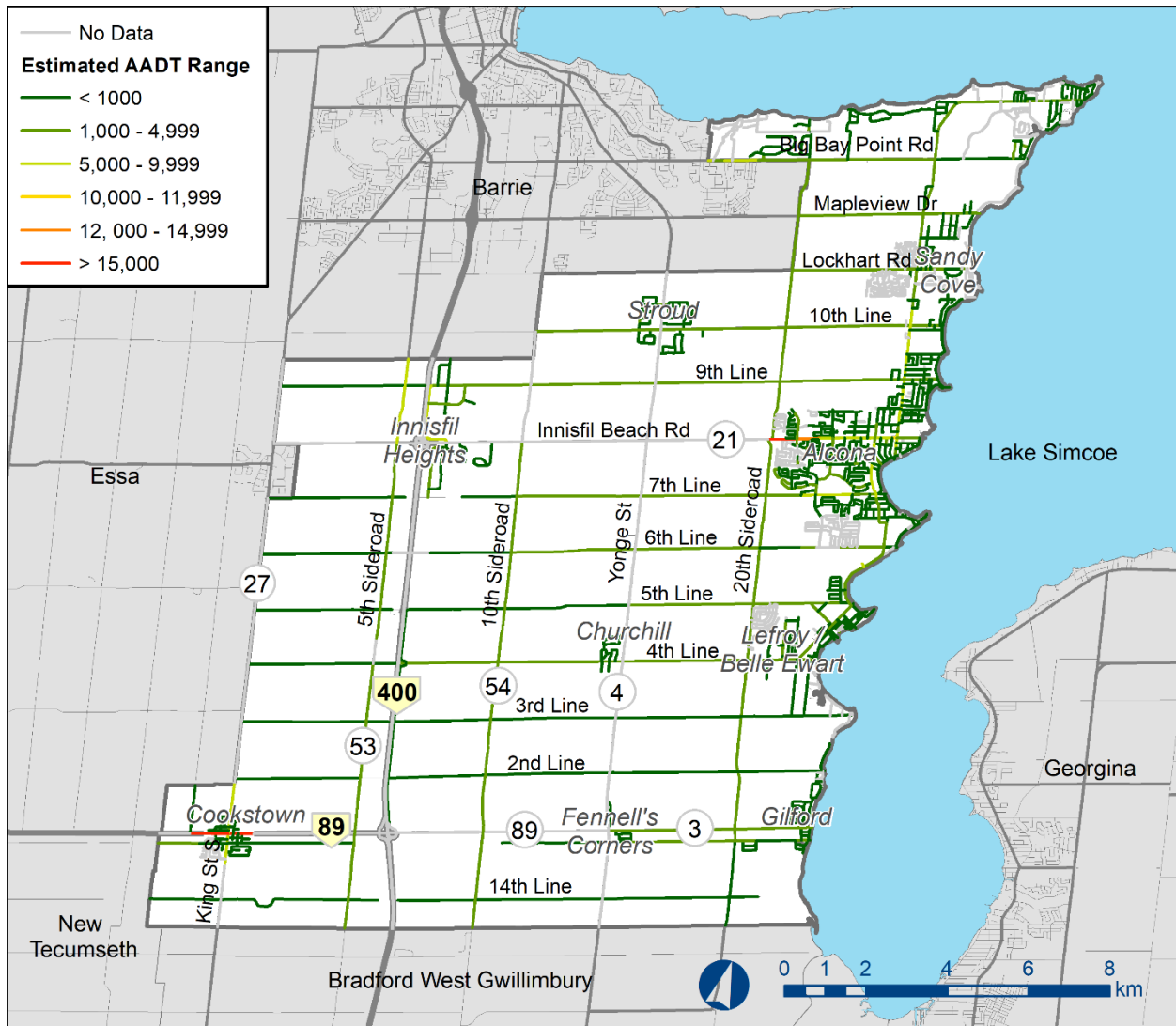


Figure I-11: Existing AADT Ranges



4.2 Road User Needs

Proposed active transportation routes may be categorized into three functional categories, as described in Table I-1, based on the main type of cyclist it is expected to serve. Distinguishing the preferences of these distinct user groups allows for better prioritization of the active transportation facility type along the road.

Table I-1: Road User Categories

Type	Route Characteristics	Preferred Bicycle Facilities
Recreational		
Recreational riders typically bike for the purpose of enjoyment or exercise. They are usually less experienced and therefore have a lower comfort level when it comes to biking along high-speed or high-volume roads.	Quiet neighbourhoods (i.e., local roads) Low-volume and low-speed roads Trail connections	Dedicated bicycle lane Multi-use trail Paved shoulders (along rural roads)
Touring		
Experienced, or ‘touring’, riders typically take longer routes with scenic views. These trips usually take place between urban areas and/or key destinations, which may also require route planning beforehand. This user group generally consists of more experienced cyclists who do not mind travelling along high-speed roads.	Longer (i.e., less direct) routes Scenic viewpoints / key destinations Connections between Caledon cycling club meet-up points	Dedicated bicycle lane or paved shoulder on high-speed and/or high-volume roads Signed route on low-speed or low-volume roads Multi-use trail
Commuter		
Commuter, or ‘utilitarian’ riders make destination-oriented trips, typically for work, school or errands. They usually prefer direct routes to minimize travel time.	Major roadways (preferably with minimal signalized/stop-controlled intersections) Direct routes	Dedicated bicycle lane or paved shoulder on high-speed and/or high-volume roads Signed route on low-speed or low-volume roads

It is important to note that these serve as guidelines only and a more detailed analysis is required on a corridor-level to identify the appropriate level of separation and facility type that matches the context of the road and/or recommend unique mitigation actions, if required. For instance, other factors that determine the appropriate bicycle facility include the volume of buses and/or larger trucks expected to use adjacent travel lanes, on-street parking, pedestrian activity, intersection frequency, traffic operations, right-of-way (ROW) widths, and more.