

April 8th, 2019

Route Selection

*Phase 2 of the Blue Route Hubs
Bikeway Study*

Prepared by:



1.0 Introduction

The Blue Route Hubs Bikeway Project is a collaboration between Bicycle Nova Scotia (BNS) and several communities in Lunenburg County, including the Town of Bridgewater. The project is intended to help communities evaluate their potential to develop bicycle routes that make residents of all ages and abilities feel comfortable cycling in their community and encourage active transportation. There are two main deliverables in the project. The first is a suggested bicycle network plan as developed in Phase 1, and the second is an in-depth evaluation of one of the routes in the bicycle network plan, which will be developed in Phase 3. Phase 2 of the project bridges the gap between the first and third phase by selecting the route from the bicycle network plan to take forward for in-depth evaluation. Phase 2 of the project occurred concurrently with Phase 1 from September 2018-April 2019. The purpose of this report is to present a summary of the options that were considered as well as the rationale for the route that was ultimately selected.

2.0 Phase 1 Summary

In Phase 1 of the project, a comprehensive cycling infrastructure network, as seen in Figure 1, was proposed based on an analysis of route connectivity, the existing cycling conditions, access to destinations, regional connectivity and stakeholder engagement. As well, a short-term implementation plan was developed to narrow down projects over a shorter timeframe. The short-term plan, as shown in Figure 2, focuses on developing a high-quality connected network on the west side of town, and included primarily projects that are already on the town’s radar for upcoming construction or maintenance work.

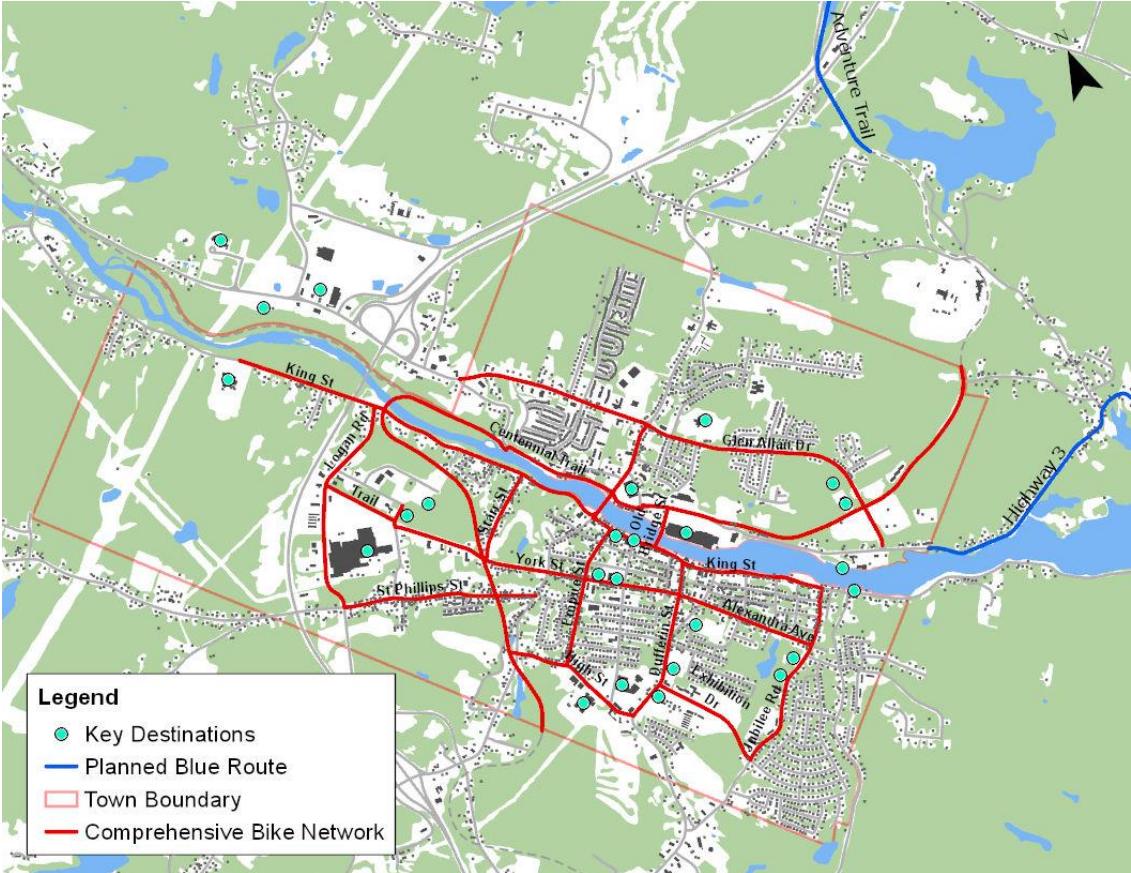


Figure 1-Comprehensive Bicycle Network for the Town of Bridgewater

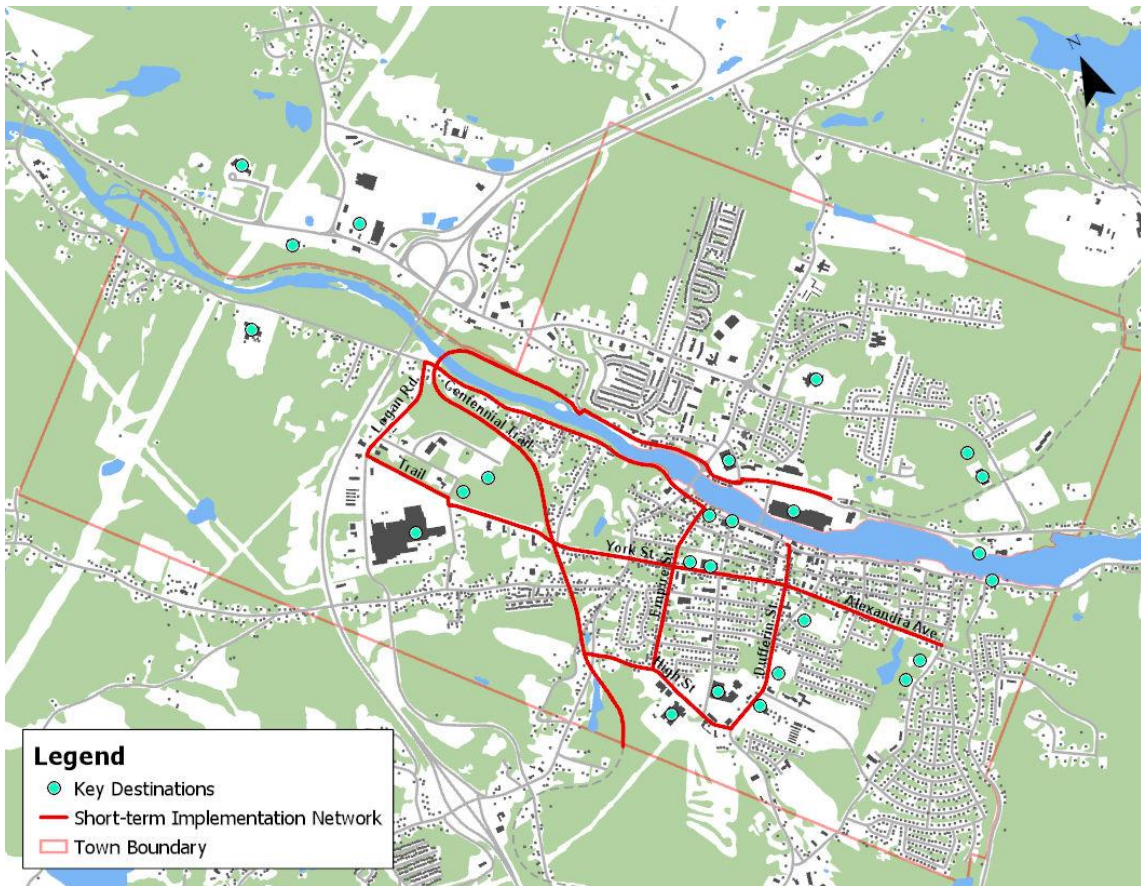


Figure 2-Short-term Implementation Network for the Town of Bridgewater

3.0 Route Options

In December 2018, Bicycle Nova Scotia presented a draft proposed bicycle network as well as potential route options for Phase 3 to town staff. The proposed route options were narrowed to five, as shown in Figure 3, and Bicycle Nova Scotia used SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis to evaluate each option. The descriptions and SWOT analysis for each of the five projects is presented below. This SWOT analysis was conducted prior to the finalization of the short-term implementation plan and comprehensive grid that is shown in Section 2.0. As a result, some of the routes that were evaluated below are not included in the comprehensive or short-term implementation networks. However, this route analysis was used in discussions with town staff and stakeholders in the finalization of the two grids in Phase 1 as well as in route selection.

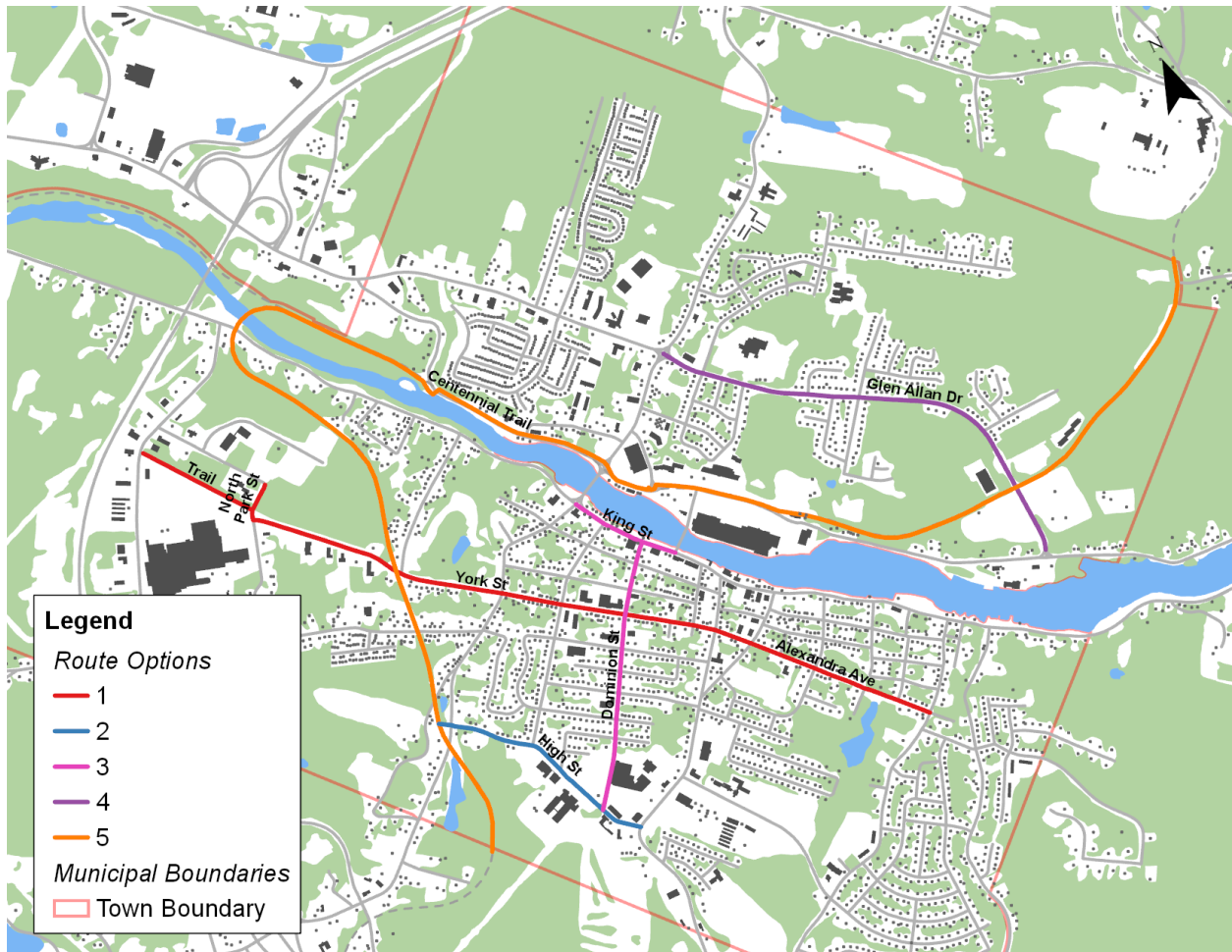


Figure 3: Route Options for the Blue Route Hubs Bikeway Project

Potential Project Option 1: Develop an All Ages and Abilities north-south bicycle route along Alexandra Ave/York Street/town-owned trail.

Background: Alexandra Ave and York Street are existing shared bicycle lanes. There is also an existing town-owned trail located between Wentzell Drive and the Michelin plant that continues north from where York Street ends. There is potential to upgrade both the road and trail route to high quality active transportation standards.

It is now recognized that shared bicycle lanes do not achieve the safety and comfort level to be attractive for cycling to the general population. To determine the appropriate facility type for cyclists along the different segments of this route, the new TAC guidelines would be used. A feasibility study would then be undertaken to investigate different options. One possible treatment along the residential portions of this route (i.e from the south end of Alexandra Ave to York Street at Victoria Road) could be a bicycle boulevard. This would likely involve traffic calming, to control motor vehicle speeds, and potentially traffic diversion, depending on current traffic volumes. Upgrades such as bicycle actuation at the signalized crossings would also need to be considered. The trail would also need to be assessed for its potential as an active transportation and particularly as a commuter route. A proper connection from the road route to the trail is also critical.

Strengths:

- Route connects residences and many destinations including two schools, the industrial park, and Lunenburg County Lifestyle Centre.
- The route provides direct access to destinations.
- In many areas, Bridgewater's topography presents a challenge due to steep grades. However, this route is fairly flat.
- The route is already a designated cycling route.
- The route connects to the well-used Centennial Trail, which means it directly builds on the existing network.
- Route is located on the west side of town, which has a high concentration of destinations and residences. Due to this land development and the existing constraints to crossing the river, focused improvements to the west are likely to have higher impacts.
- Much of the road segment runs through residential areas, while the trail runs along its own right-of-way. This creates a quieter and more appealing environment for cycling.
- As this routing option connects to the Centennial Trail, it builds on the existing local and regional network.

Weaknesses:

- School drop-off and pick-up typically takes place on York Street and would need to be examined carefully and in consultation with the school to determine impacts and feasible changes.

Opportunities:

- With bicycle travel optimized, the route has the potential to be a fast and efficient cycling for all transportation use.
- As the route provides access to two schools, it can improve independent mobility for students, a demographic that can't drive.
- If a bicycle boulevard treatment is feasible, traffic calming and diversion elements have the potential to improve overall conditions for residents, pedestrians and students.

Threats:

- There may not be public or political support for the project.
- There may be funding constraints.

Potential Project Option 2: Develop an All Ages and Abilities route on High Street that aligns with reconstruction along that route.

Background:

High Street is an arterial roadway located on the west side of town. High Street connects to the Centennial Trail on its north end. Traffic count data on High Street, south of Victoria Road, showed that the 2017 AADT was 8330 veh/day. North of Dufferin Street, 2013 data indicates that AADT was 7070 veh/day. High Street carries a large volume of motor vehicle traffic, and this is clearly a dominating function of the road. Due to these high volumes, the 50 km/h speed limit, and the road function, the appropriate facility type based on TAC standards would be a bicycle path, multi-use path or protected bicycle lane. As there are currently repaving/sidewalk upgrades and storm/sanitary upgrades planned along segments of High Street, there may be an opportunity to introduce bicycle facilities along the roadway.

Strengths:

- High Street provides access to important destinations including the NSCC campus, Exhibition Grounds, and shopping plaza at Dominion Street.
- High Street is a busy road that currently poses a major barrier for the general population to feel comfortable cycling due to the high traffic volumes. Adding a segregated facility on this busy arterial road will increase the comfort and potential ridership.
- High Street connects to the Centennial Trail, which means it connects to a greater cycling network instead of being an isolated piece.
- By designing and constructing the facility along with existing plans for road upgrades, there's potential for cost savings.

Weaknesses:

- Unclear as more information, data and Town feedback would need to be considered. Potential weaknesses could include limited right-of-way and road width or other constraints that may impede retrofit along this road without significant cost.

Opportunities:

- By creating an All Ages and Abilities route, cycling on High Street can become more accessible to the general public.
- As NSCC is located on High Street, the route can also improve mobility options for college students, who are often less able to afford more expensive modes of travel like private automobile.
- Adding cycling infrastructure on arterial roads that provides access to destinations is a critical component of a comprehensive cycling network.

Threats:

- There may not be public or political support to add bicycle infrastructure to High Street.
- There may be funding constraints.

Potential Project Option 3: Develop an east-west bicycle corridor along Empire or Dominion Street and provide a connection on King Street to the bridges.

Background:

Empire Street and Dominion Street are residential roads that could form a strong east-west connection for cyclists on the west side of town. Dominion Street was selected in the draft proposed bicycle network as it provides greater access to destinations including the shopping plaza at the corner of Dominion and High Street. However, for the feasibility study, a comparison of Dominion Street and Empire Street would be undertaken to determine the best route, as it is noted that Dominion Street has very steep grades. A bicycle boulevard treatment would be examined for feasibility along either of these routes. A 2018 traffic count on Dominion Street, east of High Street, showed that the AADT was 1860 veh/day, which indicates that a bicycle boulevard could be the appropriate treatment along this route.

King Street is a busy roadway that provides critical connections, including access to Bridgewater's downtown and to the bridges. It also is a section of longer distance routes, as it becomes Highway 331 to the south and connects to Lower Branch Road to the north. Recently, streetscaping and road work was completed along King Street south of the Old Bridge to enhance the downtown core. Future streetscaping will be done on the rest of King Street, which may present an opportunity to improve the

cycling accommodation on the road. The 2010 AADT on King Street between the Old Bridge and Dominion Street was 8,340, indicating that the preferred facility type would be protected bicycle lanes or bicycle paths. Due to the pedestrian focus of this downtown area, multi-use paths would be unlikely to be a suitable facility.

Strengths:

- As Empire and Dominion Street are predominately residential roads, they will provide a quiet route for cycling.
- King Street is a vital cycling connection because it leads to the downtown area as well as provides access to the bridges. With streetscaping on King Street being scheduled in the future, this presents a once in a lifetime opportunity to improve conditions for cycling.
- Both Empire Street and Dominion Street are being considered for repaving/sidewalk and storm/sanitary upgrades. Streetscaping on King Street will also be an upcoming capital project. By designing and constructing the facility along with existing plans for road upgrades, there's potential for cost savings.

Weaknesses:

- The route would be an isolated piece of bicycle infrastructure, as it currently does not connect to other bicycle routes that are comfortable for the general population to use.
- As it doesn't connect to the Centennial Trail, it does not feed into the larger long-distance network.
- Both Empire Street and Dominion Street have steep grades both as they approach the LaHave River, and as they approach High Street. The treatment at the steep grade needs to be carefully considered so cyclists feel safe when they are going both up and down the hill.
- For the King Street component, there may be constraints that could impede retrofits along the road without significant cost or trade-offs to other modes. However, more information would be needed to determine what (if any) constraints exist.

Opportunities:

- By creating an All Ages and Abilities route, cycling on Empire Street and a section of King Street can become more accessible to the general public.
- Due to the limited crossings of the LaHave River, the bridges have been identified as a major barrier to active modes. While this project would not address the actual bridges, improving the connection to the bridges would reduce the barrier to get to the bridges by bicycle and set the stage for future improvements to the bridges.
- If a bicycle boulevard treatment is feasible on Dominion Street, traffic calming and diversion elements have the potential to improve overall conditions for residents, pedestrians and students.

Threats:

- There may not be public or political support to add bicycle infrastructure to these two routes.
- There may be funding constraints.
- As a first project, the lack of connectivity may result in the route not being highly used, which could result in a loss of faith in bicycle infrastructure implementation.

Potential Project Option 4: Develop an enhanced bicycle facility on Glen Allan Drive from Lahave Street to Aberdeen Road. Enhancements to existing town-owned trails from Glen Allan Drive to the Centennial Trail along Lahave Street could also be considered.

Background:

Glen Allan Drive from Lahave Street to Nafthal Drive is currently a designated “shared bicycle lane”. It is a key route for the east side of Bridgewater as it connects to numerous residences as well as destinations including the dog park and hospital. There are also several existing town-owned trails that connect from Glen Allan Drive to Lahave Street.

It is now recognized that shared bicycle lanes do not achieve the safety and comfort level to be attractive for cycling to the general population. To determine the appropriate facility type for cyclists along the different segments of this route, the new TAC guidelines would be used. The 2018 AADT on Glen Allan Drive near Lahave Street was 2260 veh/day. While the traffic volume may be reasonable for shared bicycle/car operation, there are several characteristics that would favour implementing a designated space for cycling. The first is that it is unlikely to be reasonable to reduce the speed on the road to 30 km/h, the desirable maximum speed for shared operation, because there is no alternate route for cars. The second is that Glen Allan Drive is on an incline, one that is particularly steep near Lahave Street. Having a designated space for cycling would likely be more comfortable for cyclists as they could proceed at their own pace up the hill. More data would be needed to fully narrow down options but potential facility types could be a painted buffered or unbuffered bicycle lane, protected bicycle lane or bicycle path. Finally, there are several town-owned trails between Lahave Street and Glen Allan Drive. These trails would also be considered to determine if any enhancements are needed for them to be used as transportation routes for active modes.

Strengths:

- Route connects residences to the hospital, dog park and fieldhouse.
- Route connects to the Centennial Trail along Lahave Street, where there are many destinations. As well, this means that the route feeds into the larger regional network.
- The route is already a designated cycling route.

Weaknesses:

- Route is located on the east side of town, which has a lower concentration of destinations and residents. Due to this land development and the existing constraints in crossing the river, the active transportation impact may be lower compared to other proposed projects.
- Depending on facility type, there is likely to be impacts to the parking on Glen Allan Drive.
- More information is needed to determine the feasibility of fitting a facility within the existing road and/or right-of-way width.

Opportunities:

- By creating an All Ages and Abilities route, cycling on Glen Allan Drive can become more accessible to the general public.

Threats:

- Road width may not be sufficient to incorporate the appropriate bicycle facility, and Glen Allan Drive is not scheduled for upcoming roadwork, which may reduce the potential for cost optimization.

- There may not be public or political support to add bicycle infrastructure.
- There may be funding constraints.

Potential Project Option 5: Enhance the Centennial Trail as well as its connections to destinations on the route.

Background: The Centennial Trail is a strong connector for active modes within Bridgewater. However, there is potential to improve the route further to make it even better for transportation purposes. One key component would be enhancing or adding connections from the trail to important destinations. This would also include adding wayfinding. Other enhancements that could be considered include the addition of lighting, paving the path, and considering separation of cyclists and pedestrians depending on existing user volumes. As well, additional problem areas could be looked at, such as the section of the path that becomes indistinguishable from the roadway on the north side of Lahave Street.

Strengths:

- Route is already a highly used and successful active transportation corridor.
- Trail connects to key destinations on the east side such as the Bridgewater mall and also passes close to many destinations on the west side including NSCC, the skate park, Lunenburg County Lifestyle Centre and the industrial park.

Weaknesses:

- None identified.

Opportunities:

- The trail on the east side along Lahave street provides great access to destinations; however, more could be done to enhance connections on the west side. Adding, enhancing or formalizing connections on the west side of the river to connect the trail to important destinations will make the trail route more convenient to use for transportation purposes.
- Adding lighting can make the route easier and safer to use when it is dark outside. The section of the trail that does not parallel Lahave Street is quite isolated, which likely constitutes a barrier for users without the addition of lighting.
- Paving the path can increase accessibility to a larger population, such as to strollers, wheelchairs and rollerblades.

Threats:

- Focusing on the trail may not address other significant barriers posed to cyclists, particularly access to destinations including residences that can only be approached from on-road routes.
- There may be funding constraints.

4.0 Route Selection

Based on the SWOT analysis, Bicycle Nova Scotia recommended Route Option 1 for an in-depth evaluation in the December 2018 report, due to its high potential within the cycling network. However, Alexandra Ave/York Street was not up for construction in the near future unlike several other routes in the network plan. These other routes offered the opportunity for cost efficiencies as roadwork already needs to be completed. Planning work for bicycles on those routes was therefore, considered a higher priority as they could also otherwise be a missed opportunity. Town staff identified High Street from Victoria Road to Empire Street (Route Option 2) as a high-priority route as it was up for construction in the 2019 season, and there was some back-and-forth on facility type and trade-offs along that corridor. The High Street project was already in the design phase, and the town was able to incorporate a multi-use path into the design for town council consideration. However, it did not see in-depth evaluation by Bicycle Nova Scotia and therefore, a different route could be selected for this project.

After further discussion with staff, Empire Street from King Street to High Street was selected as the route to go forward for the Blue Route Bikeways Hub Project. This project was a variation on Option 3. After discussing the proposed network with both town staff and the Active Transportation Committee, Empire Street was seen as the more desirable route for bicycle route connectivity, compared to Dominion Street, as the grades were less steep, and it is a quieter road. If the High Street multi-use path is constructed, the Empire Street route could provide east-west connectivity from High Street. Finally, Empire Street is already scheduled for construction in the near future. The Empire Street Study (Phase 3 of the Blue Route Hubs Bikeway Project) is expected to go from April to August 2019.