

TRURO ACTIVE TRANSPORTATION NETWORK REVIEW



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Date: 2025-Feb-18
File No. 242057

Truro Active Transportation Network Review

1	Final Report	M. MacDonald	2025-Feb-18	M. MacDonald
0	Draft Report	M. MacDonald	2025-Jan-15	M. MacDonald
Rev #	Reason for Issue	Reviewed by	Date	Issued by



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Truro Active Transportation Network Review

1 INTRODUCTION

An *Active Transportation Plan* was developed for the Town of Truro in 2023 which explores the benefits of a multi-modal network and presents a recommended network including regional and neighbourhood routes. The plan involved significant public consultation to determine the needs of residents and establish key destinations, routes and corridors that should be connected by an active transportation network.

While the plan included a high-level phasing plan categorizing routes into two phases, prioritizing those requiring no street modifications over those requiring significant street reconstruction, the Town has identified the need for a more detailed phasing plan.

As part of the next phase in the development of the Town's active transportation network, this study was initiated to:

- Conduct a detailed review of the infrastructure recommendations to investigate the feasibility of the proposed cross sections and identify potential challenges.
- Identify locations where active transportation crossings or connections between routes with different types of facilities will require further investigation.
- Develop a revised plan to incorporate any revised cross sections and recommendations.
- Develop a detailed phasing plan for the active transportation network which focuses on key connections within the Town and includes recommendations for the short (0-5 years), medium (5-10 years) and long term (10+years) horizon.

2 REVIEW OF INFRASTRUCTURE RECOMMENDATIONS

A detailed review of the *Active Transportation Plan's* infrastructure recommendations was conducted to:

- Review the suitability of the proposed active transportation facilities and cross sections.
- Investigate the feasibility of implementing the proposed cross sections and identify impacts and potential challenges.

2.1 FACTORS

A number of factors were considered in the review of the suitability of the proposed active transportation facilities and cross sections including:

- Bikeway facility type,
- Bikeway facility width,
- Vehicle travel lane width,
- Parking lane width, and
- Impacts to utilities, properties, intersections, etc.

2.1.1 Bikeway Facility Type

The proposed bikeway facilities were reviewed against the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads'* guidance for the selection of bikeway facilities¹. Table 1 summarizes the recommended facility types based on the posted speed and daily traffic volumes on a street.

¹ Transportation Association of Canada, *Geometric Design Guide for Canadian Roads*, June 2017.

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Table 1: Recommended Bicycle Facilities by Speed and Volume

Posted Speed	Daily Traffic Volume	Recommended Facility Type
≤30 km/h	<2,500	Shared roadway/ lanes ¹
	≥2,500	Unbuffered or buffered bike lanes Protected bike lanes
>30 to 50 km/h	<1,000	Shared roadway/lanes ²
	<4,000	Unbuffered or buffered bike lanes ³
	≥4,000	Protected bike lanes Bike path/ multi-use path
>50 to 80 km/h	-	Protected bike lanes Bike path/ multi-use path
>80 km/h	-	Bike path/ multi-use path

1. If there is more than a negligible volume of heavy vehicles/transit buses on the street (≥10 heavy vehicles in the peak hour) shared roadways/lanes and advisory bike lanes are less suitable.
2. Unseparated facilities may be suitable if motor vehicle speeds are ≤40 km/h.
3. If there is more than a negligible volume of heavy vehicles/transit buses on the street (≥10 heavy vehicles in the peak hour) protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

2.1.2 Bikeway Facility Width

The proposed active transportation facility widths were reviewed against the TAC *Geometric Design Guide for Canadian Roads*' guidance. Table 2 summarizes the recommended widths for bikeway facilities. It is important to note that bike lane widths can be inclusive of gutter width if the gutter width is less than 0.375 metres. The Nova Scotia Roadbuilders standard detail for concrete curb and gutter includes a gutter width of 0.37 metres.²

Table 2: Recommended Bicycle Facility Widths

Facility Type	Parameter		Practical Lower Limit	Recommended Lower Limit	Recommended Upper Limit
Unbuffered Bike Lane	Bike Lane ¹		1.5 m	1.8 m	2.1 m
Buffered Bike Lane	Bike Lane		1.5 m	1.8 m	2.1 m
	Buffer ²		0.3 m	0.3 m	0.9 m
	Total		1.8 m	2.1 m	3.0 m
Protected Bike Lanes	Unidirectional	Bike Lane	1.5 m	1.8 m	2.5 m
		Buffer ²	0.3 m	0.3 m	1.0 m
		Total	1.8 m	2.1 m	3.5 m
	Bidirectional	Bike Lane	2.4 m	3.0 m	3.6 m
		Buffer ²	0.3 m	0.3 m	1.0 m
		Total	2.7 m	3.3 m	4.6 m
Bike Path (Cycle Track)	Unidirectional	Path	1.5 m	1.8 m	2.5 m
	Bidirectional	Path	2.4 m	3.0 m	3.6 m
Multi-Use Path	Path		2.7 m	3.0 m	6.0 m
Shared Lanes	Side-by-Side Operation		4.3 m	4.3 m	4.9 m
	Single File Operation		Lane width	Lane width	4.0 m

1. If an unbuffered bike lane is adjacent to a parking lane, the recommended width is 2.1 m to provide 0.6 m of space for vehicle doors opening in addition to the 1.5 m cyclist operating width.
2. If a buffered or protected bike lane is adjacent to a parking lane, a minimum buffer width of 0.6 m is required.

² Nova Scotia Roadbuilders Standard Specifications for Municipal Services, Detail No. 32 16 00-01, 2022.

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2.1.3 Vehicle Lane Width

The proposed vehicle lane widths were reviewed against the TAC *Geometric Design Guide for Canadian Roads'* guidance. Table 3 summarizes the recommended vehicle through lane widths.

It is important to note that these vehicle lane widths are exclusive of any gutter width. The Nova Scotia Roadbuilders standard detail for concrete curb and gutter includes a gutter width of 0.37 metres. Where a gutter does not exist adjacent to a curb, the minimum offset to the travelled lane is 0.25 metres.

Table 3: Recommended Through Lane Widths, Exclusive of Gutter

Design Speed	Roadway Type	Practical Lower Limit ¹	Recommended Lower Limit ¹	Recommended Upper Limit	Practical Upper Limit
≤ 60 km/h	Urban	2.7 m	3.0 m	3.7 m	4.0 m
	Rural (≤450 vph)	2.7 m	3.0 m	3.7 m	4.0 m
	Rural (>450 vph)	3.0 m	3.5 m	3.7 m	4.0 m

1. Where buses and larger trucks are expected to regularly use a lane, a minimum lane width of 3.3 m is recommended regardless of the design speed or traffic volume.

TAC also offers the following guidance:

- Widths below 3.25 metres are not ideal, through some places allow as low as 3.0 metres in urban environments.
- Right-turn and left-turn lanes are typically the width same as adjacent through lane or 0.2 to 0.25 metres less.
- Left turn lanes adjacent to raised medians are offset 0.5 metres from the face of curb.

2.1.4 Parking Lane Width

The proposed parking lane widths were reviewed against the TAC *Geometric Design Guide for Canadian Roads'* guidance. TAC recommends a parking lane width of 2.4 metres exclusive of any gutter width.

2.1.5 Feasibility and Impacts

A high-level review of each route was conducted to identify and document potential impacts to utilities (utility poles, fire hydrants, culverts, ditches, storm sewer, etc.), properties, intersections (traffic signal infrastructure, turning lanes etc.) and determine if implementation would require major or minor reconstruction of the road corridor.

2.2 REGIONAL STREET ROUTES AND TRAILS

The *Active Transportation Plan's* network plan includes 4 regional trail routes and 20 regional street routes which provide broad connectivity throughout the town, and to adjacent communities. These routes are intended to combine to form the spine of the regional network.

It is noted that there are a number of additional regional street routes illustrated in the *Active Transportation Plan's* Figure 5 Regional Routes, which are not described in the report and for which no infrastructure recommendations are included. These include:

- Abenaki Road,
- Court Street, and
- Juniper Street.

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2.2.1 Wabanaki Trail

The proposed Wabanaki Trail includes two distinct segments:

- Millbrook to Downtown: new trail along under-utilized rail corridors
- Downtown to William Barnhill Drive: through the Railyard and Victoria Park by upgrading the surface of existing trails to 3.0 - 3.5-metre-wide paved trails.

There are a number of challenges associated with implementing the segment of the Wabanaki Trail from Millbrook to Downtown. While the proposed trail segment generally follows an abandoned rail bed that runs parallel to an active railbed, there are segment where only the active railway corridor exists.

South of Abenaki Road/Brooks Lane to opposite of Church Road, the proposed trail follows the active railway corridor. This segment also includes a stream crossing of McClures Brook. Opposite of Church Road to Willow Street, the trail transitions to an abandoned rail bed which runs parallel to the active corridor and Willow Street until King Street. Any connection to the trail from Willow Street would require introducing a new crossing of the active railway, and any connection from Abenaki Road would require a new brook crossing. This segment also introduces a trail crossing on Willow Street near McClures Mills Road.

Once the Wabanaki Trail reaches the existing Cobequid Trail at King Street, the proposed trail once again follows an active railway corridor to Downtown. While an informal path may already exist along this segment, there are concerns with formalizing a walking and cycling trail adjacent to an active rail corridor. The connection from the Downtown segment to William Barnhill Drive would also formalize a trail crossing of the railway to connect to Park Road.

The proposed Wabanaki Trail is not considered a feasible corridor.

2.2.2 Cobequid Trail

The report recommends improvements to the existing Cobequid Trail between Willow Street and Kaulback Street as a component of the Wabanaki Trail. However, the improvements are not specified.

2.2.3 Salmon River Trail

The Salmon River Trail is a proposed off-road trail along the Salmon River linking Park Street to Walker Street. The proposed trail has the potential to form part of a future regional trail connection with a crossing over the Salmon River. The proposed trail could be considered for implementation as a recreational trail but may not be a high priority as it's use may be dependent on the completion of regional connections which are outside of the Town's control.

2.2.4 Marshland Trail

The proposed Marshland Trail links Marshland Drive to the Fundy Tidal Centre and the Cobequid Trail. The trail would connect the Town to a future crossing of the Salmon River at the former Boardlanding Bridge which is contemplated in the Municipality of the County of Colchester's *Active Transportation Strategy*.³ The proposed trail could be considered for implementation as a recreational trail but may not be a high priority as it's use may be dependent on the completion of regional connections which are outside of the Town's control.

³ Municipality of the County of Colchester. Revised Active Transportation Strategy, November 2017.

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2.2.5 Arthur Street

2.2.5.1 Existing Cross Section

Figure 1 illustrates the existing cross section on Arthur Street. Utility poles are located in the buffers on both sides of the street.

EXISTING STREET SECTION

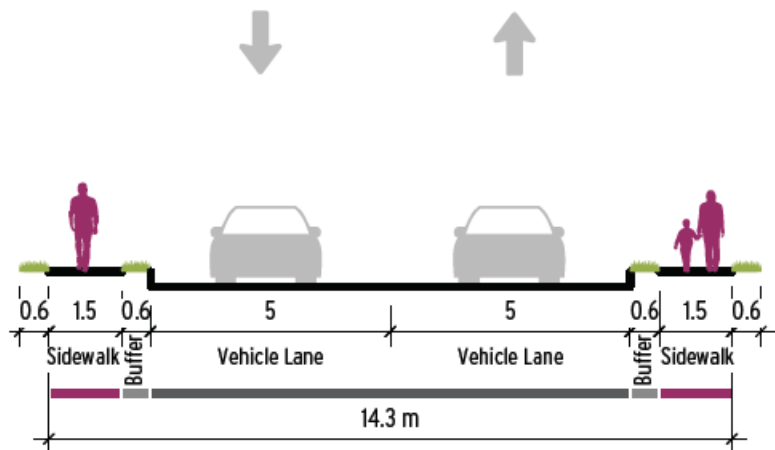


Figure 1: Arthur Street, Existing Cross Section

2.2.5.2 Proposed Cross Section

Figure 2 illustrates the proposed cross section on Arthur Street. The existing sidewalks and buffers are maintained and 1.5-metre-wide, unbuffered bike lanes are provided within the existing pavement width by reducing the vehicle lane widths to 3.5 metres.

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PROPOSED STREET SECTION

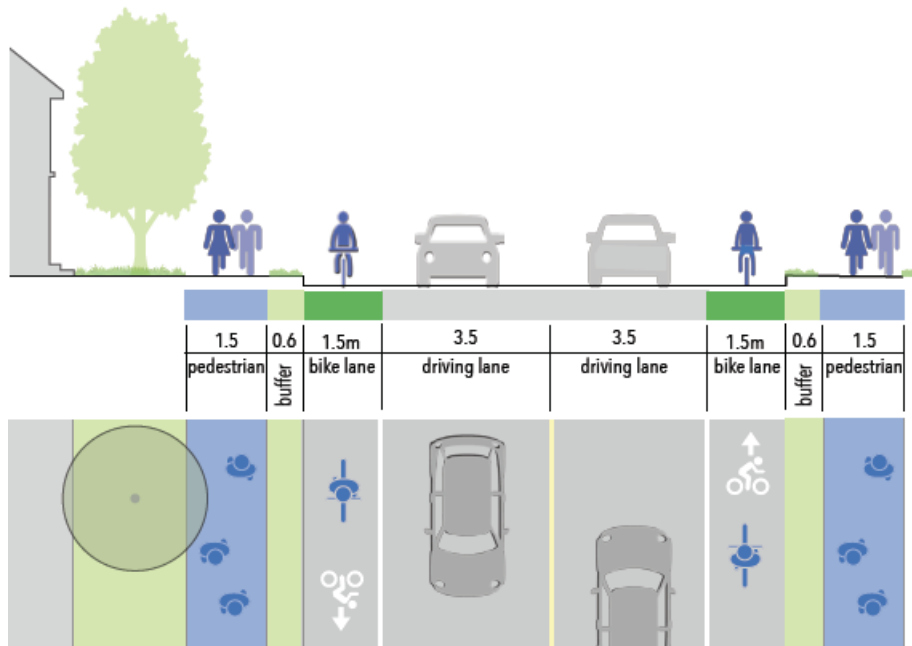


Figure 2: Arthur Street, Proposed Cross Section

2.2.5.3 Bikeway Facility Type

TAC indicates that on roadways with vehicles speeds greater than 30 km/h and up to 50 km/h, cyclists should be separated from vehicles by a painted line at minimum, however, where vehicles volumes exceed 4,000 vehicles per day, protected bike lanes or bike path/multi-use path are more suitable than bike lanes. Based on peak hour traffic data at intersections along Arthur Street, traffic volumes are estimated to be in the range of 6,000-8,500 vehicles per day, indicating that unbuffered bike lanes are not the most suitable bikeway facility for Arthur Street.

Further to this, Arthur Street is a designated Full Time Truck Route. TAC also indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour), protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

The proposed unbuffered bike lane treatment is not suitable for Arthur Street.

2.2.5.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered bike lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under constrained environments and for short distances of up to 100 metres.

2.2.5.5 Vehicle Lane Width

The proposed 3.5-metre-wide travel lanes exclusive of gutter are suitable for a truck route.

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2.2.5.6 Feasibility and Impacts

While the implementation of the proposed cross section is considered feasible and the cross section can be implemented with only changes to pavement markings, the proposed narrow unbuffered bike lanes are not a suitable facility for Arthur Street and would not be perceived as comfortable or safe by most users. The provision of a wider and/or more suitable bikeway facility on Arthur Street cannot be provided without major reconstruction of Arthur Street and impacts to existing utility poles.

Without the proposed segment of the Wabanaki Trail between King Street and Downtown envisioned in the Plan, an alternative east-west connection between the Cobequid Trail/Willow Street and Downtown will be required. The east-west connection could be made via the Arthur Street/Esplanade Street or Charles Street/Brunswick Street. The two alternative corridors are further discussed in Section 3.1.

If maintained as part of the network, the Arthur Street corridor would need to be re-evaluated to include a suitable bikeway facility.

2.2.6 Elm Street

2.2.6.1 Existing Cross Section

Figure 3 illustrates the existing cross section on Elm Street. Utility poles are located in the buffers on both sides of the street.

While the report only includes a cross section recommendation for Elm Street which connects Queen Street to Robie Street, the map clearly includes Court Street as part of the regional route network. Court Street is the extension of Elm Street connecting Queen Street to Prince Street. Court Street is a short segment (approximately 100 metres) with a four-lane cross section. It is unclear if the report intended for the Elm Street recommendation to also apply to Court Street. However, a cycling facility is required on Court Street to complete the downtown loop.

EXISTING STREET SECTION

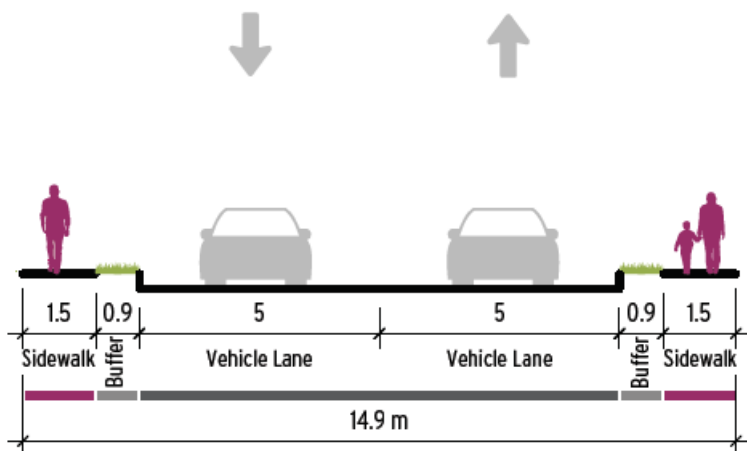


Figure 3: Elm Street, Existing Cross Section

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2.2.6.2 Proposed Cross Section

Figure 4 illustrates the proposed cross section on Elm Street. The existing sidewalk and buffer are maintained on one side and the sidewalk and buffer on the other side are widened by reducing the vehicle lane widths to 3.5 metres. Sharrows are used to indicate shared lanes.

It is noted that the text description in the report does not correspond to the cross section diagram, the text indicates that buffers are widened on both sides while the cross section illustrates widening the buffer and sidewalk on one side.

PROPOSED STREET SECTION

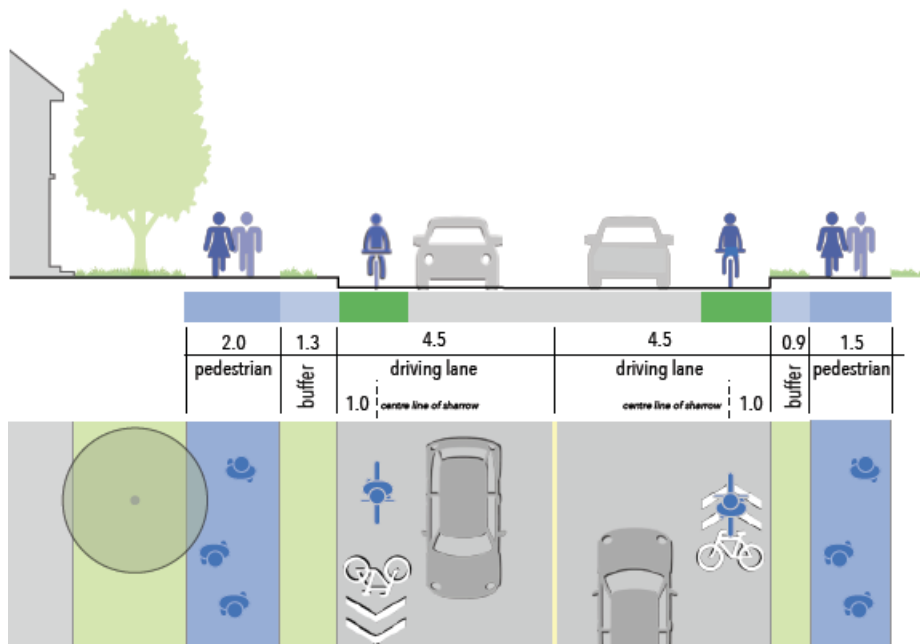


Figure 4: Elm Street, Proposed Cross Section

2.2.6.3 Bikeway Facility Type

TAC indicates that on roadways with vehicles speeds greater than 30 km/h and up to 50 km/h, cyclists should be separated from vehicles by a painted line at minimum, however, where vehicles volumes exceed 4,000 vehicles per day, protected bike lanes or bike path/multi-use path are more suitable than bike lanes. Based on peak hour traffic data at the intersection of Elm Street and Queen Street, traffic volumes are estimated to be in the range of 7,000 vehicles per day, indicating that shared lanes are not the most suitable bikeway facility for Elm Street.

Further to this, Elm Street is a designated Daytime Truck Route (7:00 am to 8:00 pm) and Court Street is a Full Time Truck Route. TAC also indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour) protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

The proposed shared lane treatment is not suitable for Elm Street.

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2.2.6.4 Bikeway Width

The proposed 4.5-metre-wide shared lanes exceeds the TAC recommended lower limit of 4.3 metres for side-by-side operation.

2.2.6.5 Vehicle Lane Width

The proposed 4.5-metre-wide travel lanes are suitable for a truck route.

2.2.6.6 Feasibility and Impacts

The proposed cross section does not include a suitable bikeway facility and should not be implemented. The proposed cross section requires the reconstruction of Elm Street to provide minor improvements to the pedestrian environment only. The shared lanes recommendation also does not take into account that the cross section is widened to four lanes with the presence of turning lanes at the signalized intersections with Queen Street and Prince Street. The proposed shared lanes are not a suitable facility for Elm Street or Court Street and would not be perceived as comfortable or safe by most users.

If maintained as part of the network, the Elm Street/Court Street corridor would need to be re-evaluated to include a suitable bikeway facility. Maintaining this corridor would likely be dependent on whether both the Queen Street and Prince Street corridors are maintained. It is noted that there may be an opportunity to provide a multi-use pathway connection between Prince Street and Queen Street through Victoria Square.

2.2.7 Esplanade Street

2.2.7.1 Existing Cross Section

Figure 5 illustrates the existing cross section on Esplanade Street. The existing sidewalk is located on the north side of the street. Light poles for the Truro Centre shopping mall are located behind the curb on the south side of the street.

EXISTING STREET SECTION

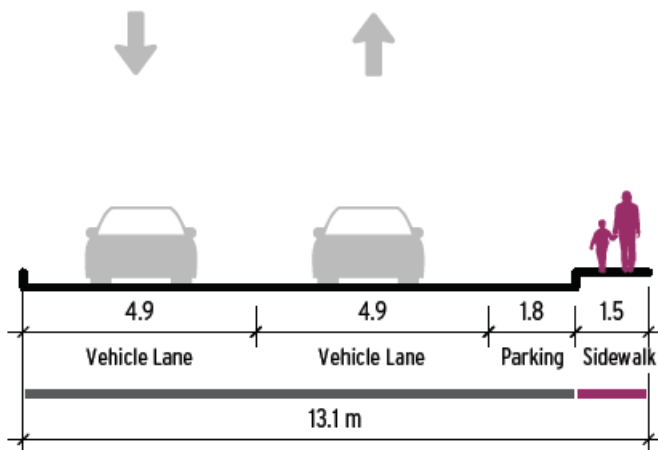


Figure 5: Esplanade Street, Existing Cross Section

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2.2.7.2 Proposed Cross Section

Figure 6 illustrates the proposed cross section on Esplanade Street. The existing sidewalk and parking on the north side are maintained and a new 2.0-metre-wide sidewalk is provided on the south side. The additional space required for the new sidewalk is accommodated by reducing the vehicle lane widths to 3.3 metres. The proposed cross section does not include any cycling facilities. This results in a lack of continuity with proposed cycling facilities on Arthur Street and Young Street.

It is noted that the dimensions on the proposed cross section result in 0.9 metres of unused street width compared to the existing cross section. It may have been intended to be allocated to a wider sidewalk on the north side but the existing width measurement of 1.4 metres was not changed.

PROPOSED STREET SECTION

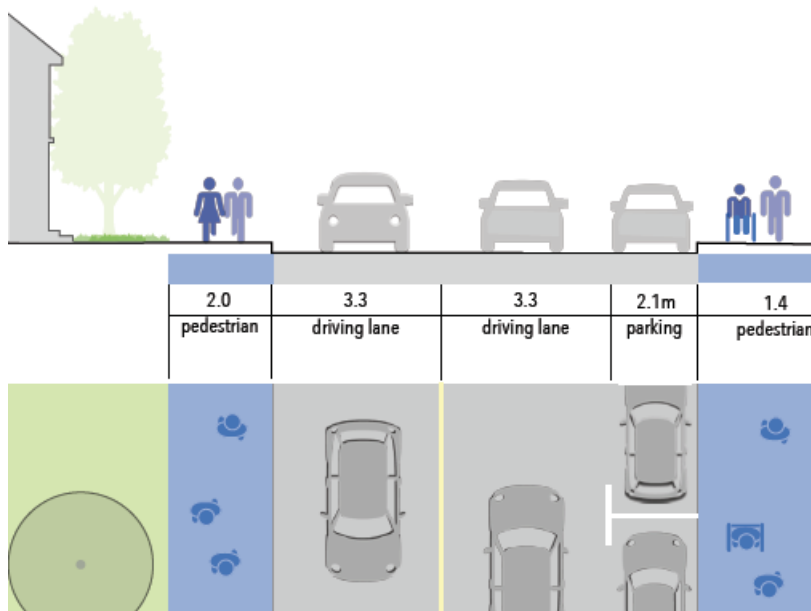


Figure 6: Esplanade Street, Proposed Cross Section

2.2.7.3 Bikeway Facility Type

No bikeway facilities are proposed. Based on peak hour traffic data at intersections along Esplanade Street, traffic volumes are estimated to be in the range of 9,000-11,000 vehicles per day. Esplanade Street is also a designated Full Time Truck Route. Protected bike lanes or bike path/multi-use pathway would be a suitable bikeway facility for Esplanade Street.

2.2.7.4 Vehicle Lane Width

The proposed curbside vehicle lane width of 3.3 metres inclusive of gutter is not suitable for a designated truck route. A minimum lane width of 3.7 metres inclusive of gutter is required to accommodate heavy vehicles.

Truro Active Transportation Network Review

2.2.7.5 Parking Lane Width

The proposed 2.1-metre-wide parking lane width inclusive of gutter is less than the width recommended by TAC.

2.2.7.6 Feasibility and Impacts

The proposed cross section does not include suitable vehicle lane widths for a truck route or suitable parking lane widths and should not be implemented.

Without the proposed segment of the Wabanaki Trail between King Street and downtown envisioned in the Plan, an alternative east-west connection between the Cobequid Trail/Willow Street and downtown will be required. The east-west connection could be made via the Arthur Street/Esplanade Street or Charles Street/Brunswick Street. The two alternative corridors are further discussed in Section 3.1.

If maintained as part of the network, the Esplanade Street corridor would need to be re-evaluated to include a bikeway facility to complete the connection from Arthur Street to Walker Street. It would be challenging to accommodate cycling facilities on Esplanade Street without significant impacts to parking.

2.2.8 Glenwood Drive

2.2.8.1 Existing Cross Section

Figure 7 illustrates the existing cross section on Glenwood Drive. Utility poles are located in the buffer on the south side of the street. On-street parking is permitted on some sections, the existing parking is not delineated.

EXISTING STREET SECTION

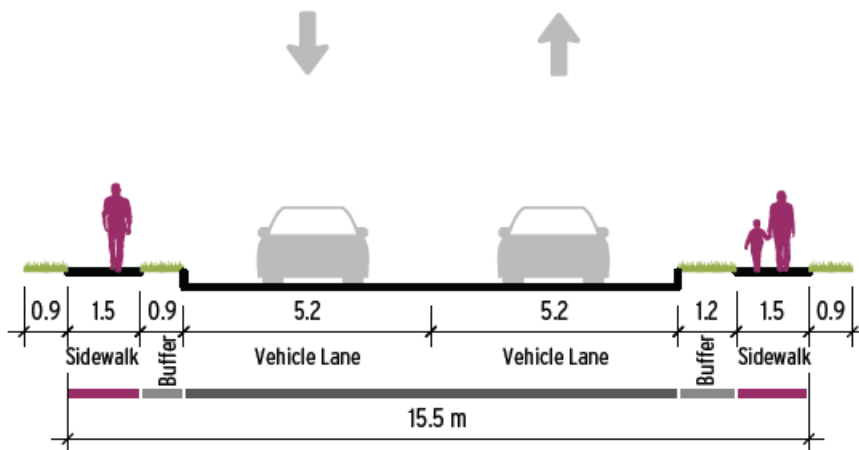


Figure 7: Glenwood Drive, Existing Cross Section

Truro Active Transportation Network Review

2.2.8.2 Proposed Cross Section

Figure 8 illustrates the proposed cross section on Glenwood Drive. The existing sidewalk and buffer on the south side are maintained and a new 3.0-metre-wide multi-use pathway with buffer is provided on the north side. The additional space required for the multi-use pathway is accommodated by reducing the vehicle lane widths to 3.3 metres.

While a parking lane is shown on the cross section to illustrate permitted on-street parking, the report notes that it may not need to be delineated.

PROPOSED STREET SECTION

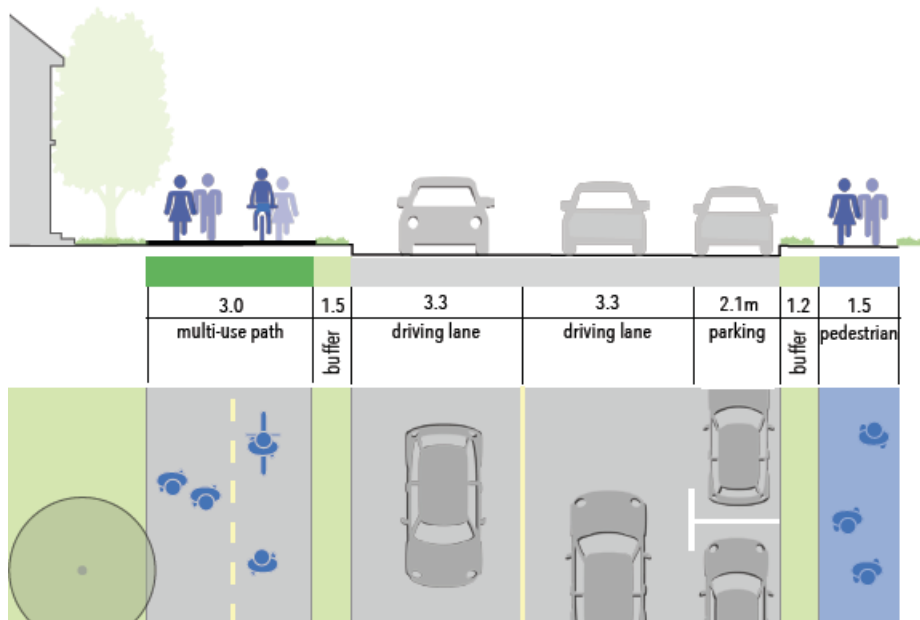


Figure 8: Glenwood Drive, Proposed Cross Section

2.2.8.3 Bikeway Facility Type

No volume data is available for Glenwood Drive. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.2.8.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.8.5 Vehicle Lane Width

Glenwood Drive is a designated Daytime Truck Route (7:00 am to 8:00 pm). The proposed curbside vehicle lane width of 3.3 metres inclusive of gutter is not suitable for a designated truck route. A minimum lane width of 3.7 metres inclusive of gutter is required to accommodate heavy vehicles. This could be remedied by not delineating permitted on-street parking.

Truro Active Transportation Network Review

2.2.8.6 Parking Lane Width

The proposed 2.1-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

2.2.8.7 Feasibility and Impacts

The proposed cross section with some modifications is considered suitable for Glenwood Drive. The implementation will require minor street reconstruction including new curb work but is expected to have minor impacts to utilities and/or property. Maintaining existing sidewalk and buffer on the south side minimizes impacts to utility poles. There may be some minor impacts to a few utility poles and/or fire hydrants in the buffer on the north side. It is expected that there will be some flexibility in the design with the width of the buffer.

It is noted that there are some sections of Glenwood Drive with significant grades that may prove challenging to the average cyclist. Where steep grades exist, they are typically over a length of less than 200 metres. Grades of less than 4% are ideal for cyclists but grades up to 8% may be used where necessary. Many cyclists will need to dismount if the grade exceeds 8%. A grade exceeding 8% is expected for a length of approximately 150 metres.

2.2.9 Industrial Avenue

2.2.9.1 Existing Cross Section

Figure 9 illustrates the existing cross section on Industrial Avenue. It is noted that the segment of Industrial Avenue between Upham Drive and Glenwood Drive features curb and gutter as opposed to shoulders. Utility poles are located on the east side of the street with a number of guy or connection poles on the west side of the street between Glenwood Drive and William Barnhill Drive. Between Glenwood Drive and Kaulback Street, utility poles are located on the west side of the street until the street curves and runs parallel to the rail track at which point the utility poles are located on the east side of the street up to Kaulback Street.

EXISTING STREET SECTION

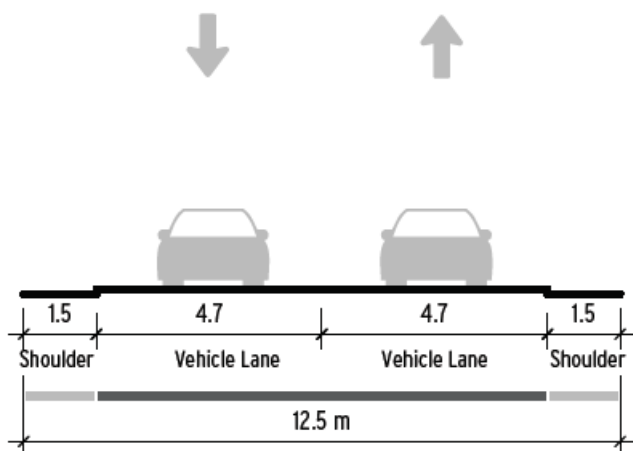


Figure 9: Industrial Avenue, Existing Cross Section

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2.2.9.2 Proposed Cross Section

Figure 10 illustrates the proposed cross section on Industrial Avenue. The shoulders and vehicle lanes are narrowed to provide 1.5-metre-wide unbuffered bike lanes. The vehicle lane widths are reduced to 3.5 metres. The proposed cross section does not include any pedestrian facilities.

PROPOSED STREET SECTION

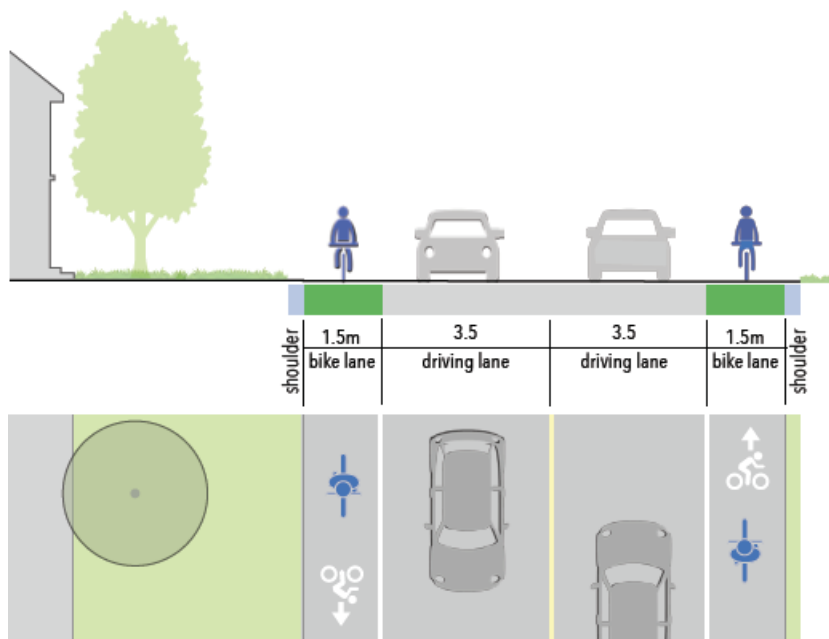


Figure 10: Industrial Avenue, Proposed Cross Section

2.2.9.3 Bikeway Facility Type

No volume data is available for Industrial Avenue. While Industrial Avenue is not a designated truck route, the industrial land uses are expected to generate a significant volume of heavy vehicles. TAC indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour) protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

Volume data is required to confirm if the proposed unbuffered bike lane treatment is suitable on Industrial Avenue. Volume data should also include classification data to review heavy vehicle volumes.

2.2.9.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered bike lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under constrained environments and for short distances of up to 100 metres.

2.2.9.5 Vehicle Lane Width

The proposed 3.5-metre-wide travel lanes exclusive of gutter are suitable for a street with heavy truck use.

Truro Active Transportation Network Review

2.2.9.6 Feasibility and Impacts

There is a section of Industrial Avenue where curb and gutter exists instead of shoulders and there is insufficient pavement width to accommodate the proposed bike lanes within the existing curbs. Street reconstruction would be required to accommodate the unbuffered bike lanes.

Volume data would be required to confirm if the proposed unbuffered bike lane treatment is suitable on Industrial Avenue. While the proposed cross section is considered feasible, it requires street reconstruction and does not include any pedestrian infrastructure.

Further to this, the feasibility of the Industrial Avenue corridor is dependent on the feasibility of the Kaulback Street cross section which is required to connect it to the Cobequid Trail. The feasibility of the Kaulback Street corridor is discussed in Section 2.2.10.6. There are potential challenges with implementing the proposed Kaulback Street corridor.

Given that the Kaulback Street/Industrial Avenue route also forms a cycling corridor parallel to the proposed Willow Street corridor which includes both cycling and pedestrian infrastructure and provides better north-south connectivity, the proposed Industrial Drive/Kaulback Street cross sections should not be implemented.

2.2.10 Kaulback Street

2.2.10.1 Existing Cross Section

Figure 11 illustrates the existing cross section on Kaulback Street between Arthur Street and Industrial Avenue. The existing sidewalk is located on the east side of the street between Arthur Street and the Cobequid Trail. However, sidewalk is located on the west side between the Cobequid Trail and Industrial Avenue. Utility poles are located on the east side of the street.

While the existing cross section includes 1.2 metres of additional right-of-way space behind the existing sidewalk, it is unlikely that this space exists where the NSCC parking lot backs onto the sidewalk.

EXISTING STREET SECTION

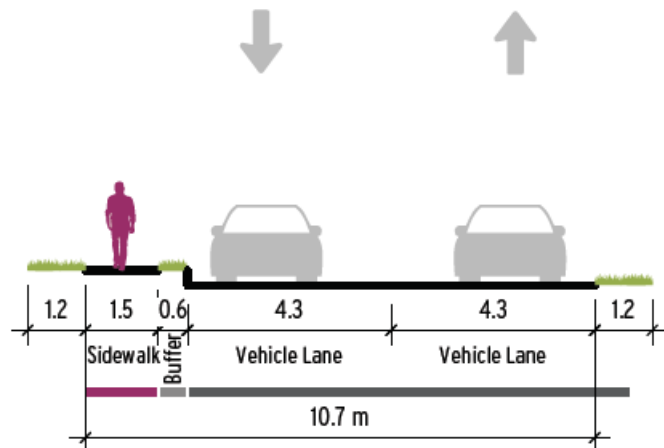


Figure 11: Kaulback Street, Existing Cross Section

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2.2.10.2 Proposed Cross Section

Figure 12 illustrates the proposed cross section on Kaulback Street. The existing sidewalk is removed and replaced with a 3.0-metre-wide multi-use pathway with buffer on the east side. While the report indicates that the multi-use pathway is to be provided on the east side, it does not take into account that the existing sidewalk transitions to the west side south of the Cobequid Trail. The additional space required for the new multi-use pathway is accommodated by reducing the vehicle lane widths to 3.3 metres.

PROPOSED STREET SECTION

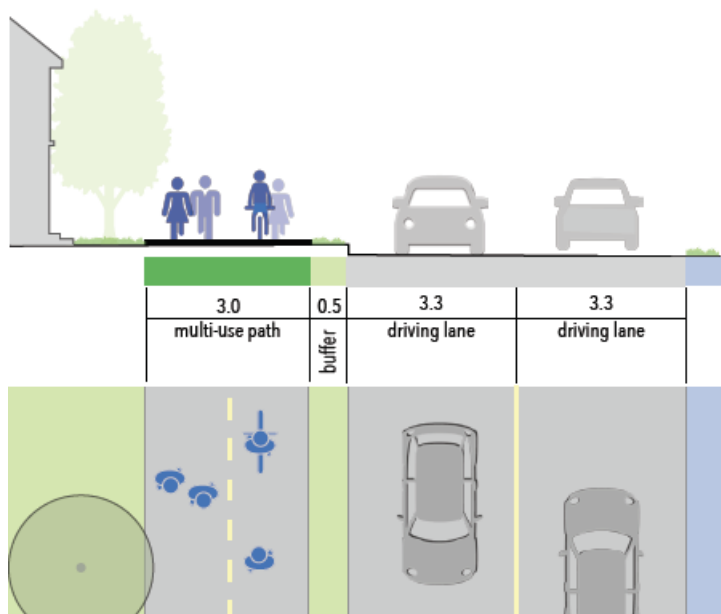


Figure 12: Kaulback Street, Proposed Cross Section

2.2.10.3 Bikeway Facility Type

No volume data is available for Kaulback Street. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.2.10.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.10.5 Vehicle Lane Width

The proposed vehicle lane width of 3.3 metres inclusive of gutter adjacent to the multi-pathway is not suitable. A minimum lane width of 3.4 metres is required to accommodate a minimum lane width of 3.0 metres plus gutter.

Truro Active Transportation Network Review

2.2.10.6 Feasibility and Impacts

While the report indicates that the multi-use pathway will be on the east side of the street replacing the existing sidewalk, the existing sidewalk is located on the east side of the street from Arthur Street to the Cobequid Trail (approximately 160 metres) and on the west side from the Cobequid Trail to Industrial Avenue (approximately 315 metres). The cross section ignores the location of utility poles, which between Arthur Street and the Cobequid Trail are located in the sidewalk buffer and would have to be relocated to accommodate the multi-use pathway.

The corridor also includes two railway crossings. The railway signals infrastructure for both railway crossing locations would need to be relocated to accommodate the multi-use pathway. Near Industrial Avenue, Kaulback Street runs parallel to the rail corridor.

In some areas, the right-of-way width is as narrow as 13 metres and the right-of-way further narrows to 10 metres at or near rail crossings where property on the west side is owned by CN Rail. It appears that the utility poles may be located outside of the right-of-way. Given the constraints along this corridor, it is difficult to conclude if the proposed cross section is feasible without detailed survey and property data.

Given that the Kaulback Street/Industrial Avenue route also forms a cycling corridor parallel to the proposed Willow Street corridor which includes both cycling and pedestrian infrastructure and provides better north-south connectivity, the proposed Industrial Drive/Kaulback Street cross sections should not be implemented.

2.2.11 Lorne Street

2.2.11.1 Existing Cross Section

Figure 13 illustrates the existing cross section on Lorne Street between North Street and Park Street (Section A). Utility poles are located behind the shoulder on the west side of the street.

EXISTING STREET SECTION A

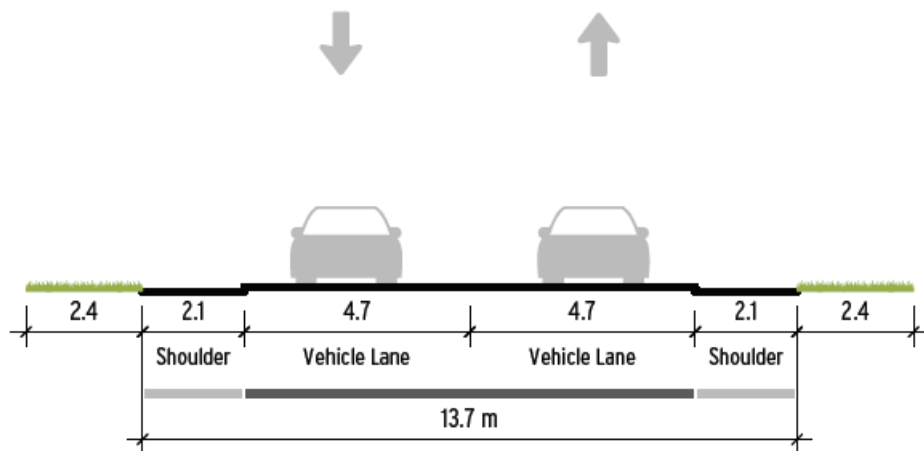


Figure 13: Lorne Street Section A, Existing Cross Section

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Figure 14 illustrates the existing cross section on Lorne Street between Queen Street and North Street (Section B). The existing sidewalk is located on the west side of the street. Utility poles are located in the buffer on the west side of the street. The shoulder on the east side of the street is used for on-street parking by high school staff/students.

EXISTING STREET SECTION B

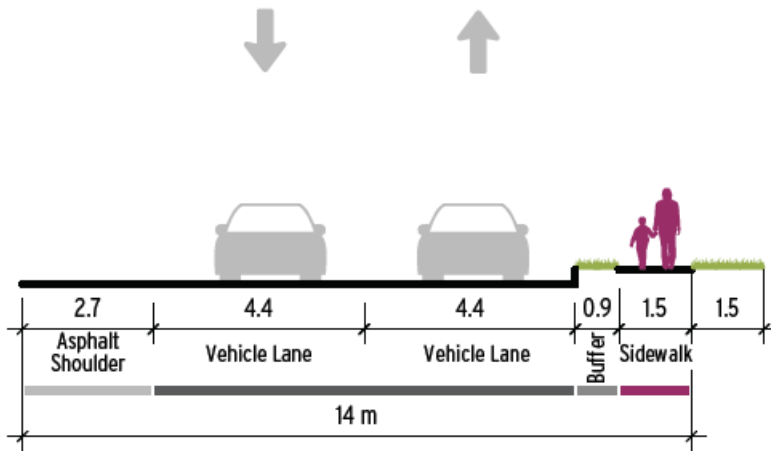


Figure 14: Lorne Street Section B, Existing Cross Section

2.2.11.2 Proposed Cross Section

Figure 15 illustrates the proposed cross section on Lorne Street between North Street and Park Street (Section A). A 3.0-metre-wide multi-use pathway with buffer is provided. The report does not clearly indicate on which side of the road street the pathway is proposed in Section A. No changes are made to the vehicle lanes to accommodate the multi-use pathway.

Figure 16 illustrates the proposed cross section on Lorne Street between Queen Street and North Street (Section B). The existing sidewalk is removed and replaced with a new 3.0-metre-wide multi-use pathway and on-street parking for the high school is maintained. While the report states that the multi-use pathway is proposed on the east side of the street in Section B, this is believed to be an error as the existing sidewalk is located on the west side and utility poles are located in the existing sidewalk buffer. It is also noted that the existing and proposed cross sections for Section B are flipped with the parking located on different sides. No changes are made to the vehicle lanes to accommodate the multi-use pathway. The multi-use pathway is accommodated through the use of existing space within the right-of-way behind the existing sidewalk.

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PROPOSED STREET SECTION A

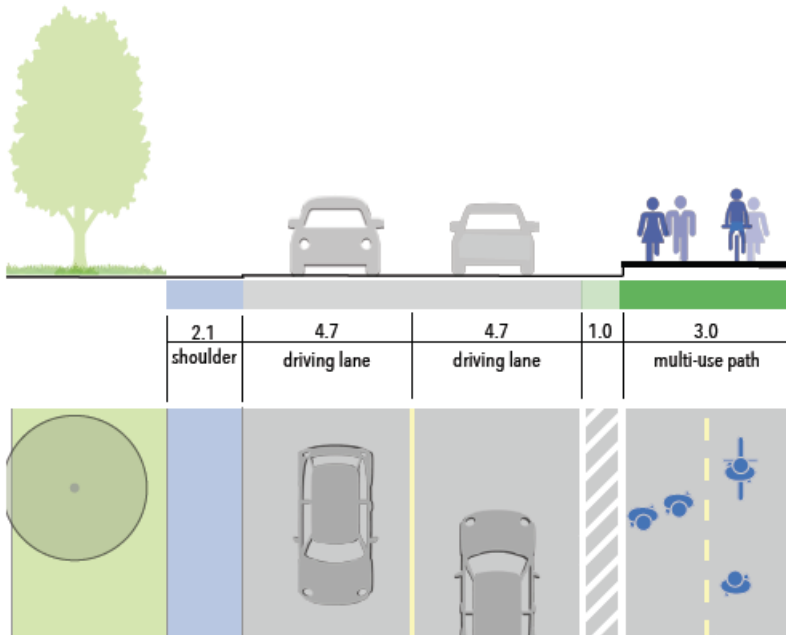


Figure 15: Lorne Street Section A, Proposed Cross Section

PROPOSED STREET SECTION B

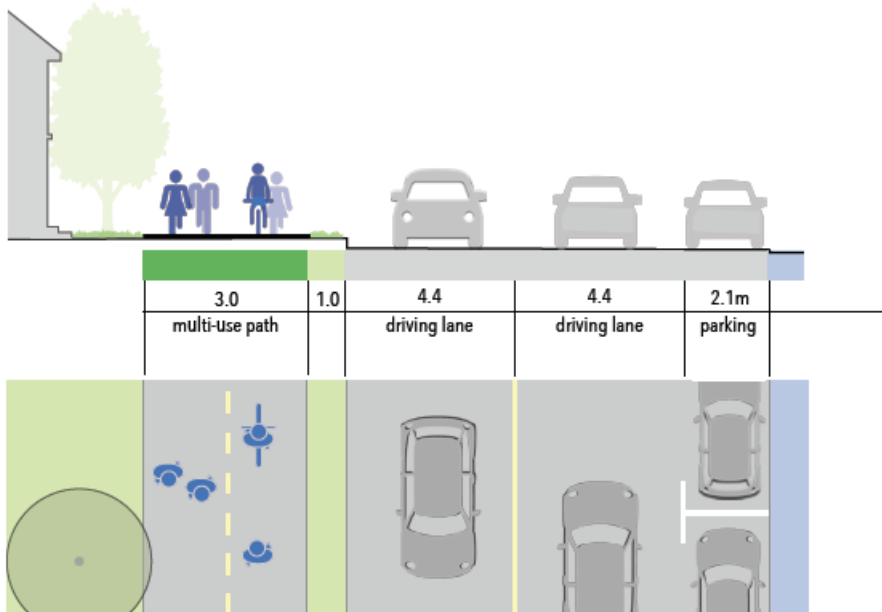


Figure 16: Lorne Street Section B, Proposed Cross Section

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2.2.11.3 Bikeway Facility Type

No volume data is available for Lorne Street. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.2.11.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.11.5 Vehicle Lane Width

No changes are proposed to the vehicle lane widths. Existing lane widths of over 4.0 metres are maintained. Consideration could be given to reducing lane widths to reduce vehicle speeds and increase space used for buffers or parking. Reducing lane widths would require street reconstruction.

2.2.11.6 Parking Lane Width

The proposed cross section formalizes the existing parking on the road shoulder by providing a paved on-street parking lane. The proposed 2.1-metre-wide parking lane width is less than the width of 2.4 metres recommended by TAC. The width of the parking lane could be increased by utilizing more of the road shoulder or reducing the vehicle lane widths.

2.2.11.7 Feasibility and Impacts

It appears that it is generally feasible to replace the existing sidewalk between Prince Street and North Street (Section B) with a multi-use pathway along the majority of the corridor while maintaining the existing buffer with the utility poles. Detailed survey data will be required to confirm that there are no significant impacts to private property.

Between North Street and Park Street, the pathway should be kept on the west side of the street so that pedestrians and cyclists are not required to cross the street to access the multiple recreational facilities on Lorne Street. This will also ensure that only one crossing is required at the Lorne Street and Park Street intersection to connect to the multi-use pathway on the south side of Marshland Drive. No utility poles are expected to be removed. However, a culvert and small portion of ditch may be impacted near the Tim Horton's Soccer Pitch driveway.

2.2.12 Marshland Drive

2.2.12.1 Existing Cross Section

Figure 17 illustrates the existing cross section on Marshland Drive. It is noted that there is a short segment of sidewalk on the east side of the street near Robie Street. Utility poles are set back behind the shoulder on the south side of the street. While not illustrated in the cross section, there are ditches on both sides of the street.

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EXISTING STREET SECTION

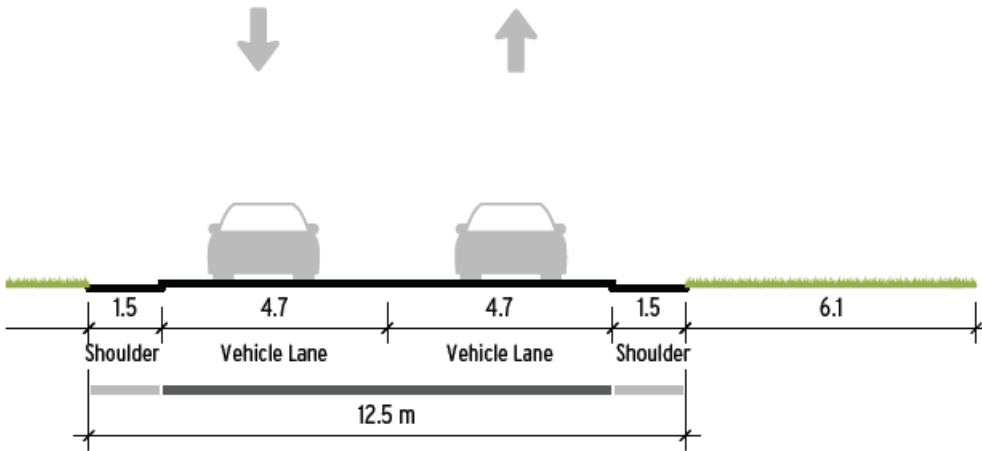


Figure 17: Marshland Drive, Existing Cross Section

2.2.12.2 Proposed Cross Section

Figure 18 illustrates the proposed cross section on Marshland Drive. A multi-use pathway is provided on one side of Marshland Drive. While the report describes a 3.0-metre-wide pathway, the cross section illustrates a 3.6-metre-wide pathway. The report does not specify which on side of Marshland Drive the multi-pathway is proposed, however, it appears to be on south side of the street based on the additional space within the right-of-way illustrated in the existing cross section. The space required for the new multi-use pathway is accommodated by reducing the vehicle lane widths and eliminating the road shoulder.

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PROPOSED STREET SECTION

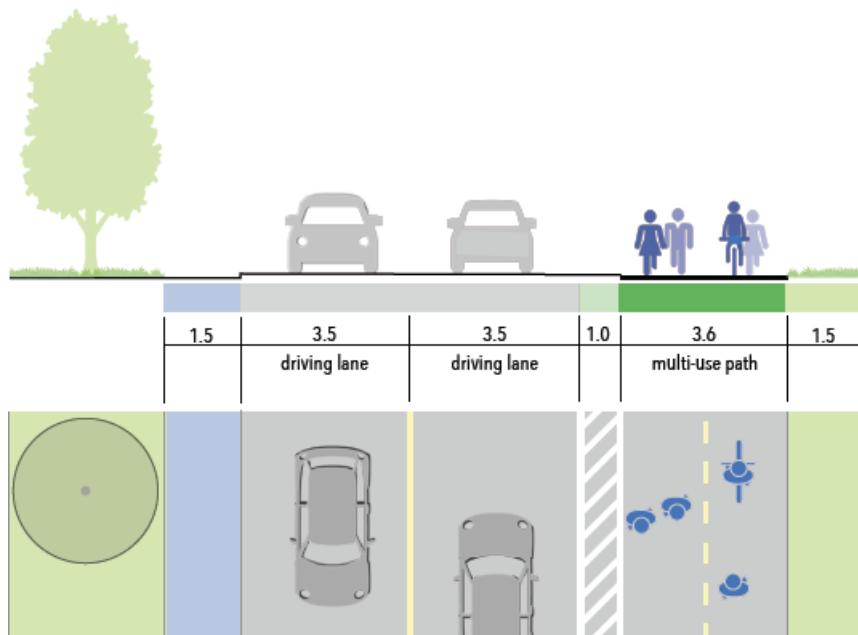


Figure 18: Marshland Drive, Proposed Cross Section

2.2.12.3 Bikeway Facility Type

No volume data is available for Marshland Drive. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.2.12.4 Bikeway Width

The proposed multi-use pathway width (3.0 or 3.6 metres) meets or exceeds the TAC recommended lower limit.

2.2.12.5 Vehicle Lane Width

Marshland Drive is a designated Full Time Truck Route. The proposed 3.5-metre-wide travel lanes exclusive of gutter are suitable for a truck route.

2.2.12.6 Feasibility and Impacts

The proposed multi-use pathway would potentially impact existing ditches. The right-of-way on Marshland Drive is up to 30 metres wide and the Town owns some of the properties fronting on Marshland Drive. Where possible, the multi-use pathway should be constructed off-road behind the existing ditch and utility poles to minimize impacts and provide increased separation from traffic travelling at higher speeds. This would also eliminate impacts to the travel lanes, reducing construction costs and impacts. The Town has indicated that the Hub Shopping Centre Mall is potentially willing to allow the construction of the pathway on their property.

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2.2.13 McClures Mills Road

2.2.13.1 Existing Cross Section

Figure 19 illustrates the existing cross section on McClures Mills Road. The existing sidewalk is located on the south side of the street. It is noted that between James Street/Lower Truro Road and Willow Street, the buffer is less than 3.0 metres wide and sidewalk is also provided on the north side of the street. Utility poles are set back behind the sidewalk on the south side of the street. Between James Street/Lower Truro Road and Willow Street there are also utility poles set back behind the sidewalk on the north side of the street.

EXISTING STREET SECTION

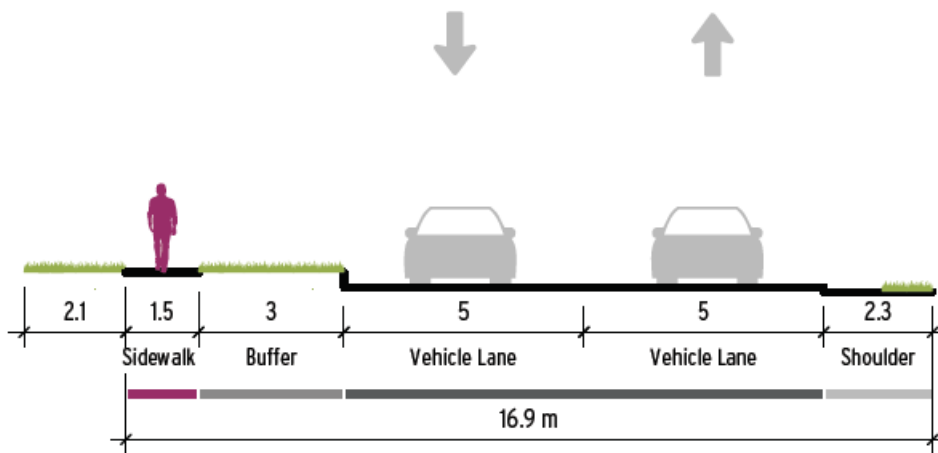


Figure 19: McClures Mills Road, Existing Cross Section

2.2.13.2 Proposed Cross Section

Figure 20 illustrates the proposed cross section on McClures Mills Road. The existing sidewalk is removed and replaced with a 3.2-metre-wide multi-use pathway on the south side. The additional space required for the new multi-use pathway is accommodated by reducing the width of the existing buffer to 1.5 metres. No changes are made to the vehicle lanes to accommodate the multi-use pathway.

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PROPOSED STREET SECTION

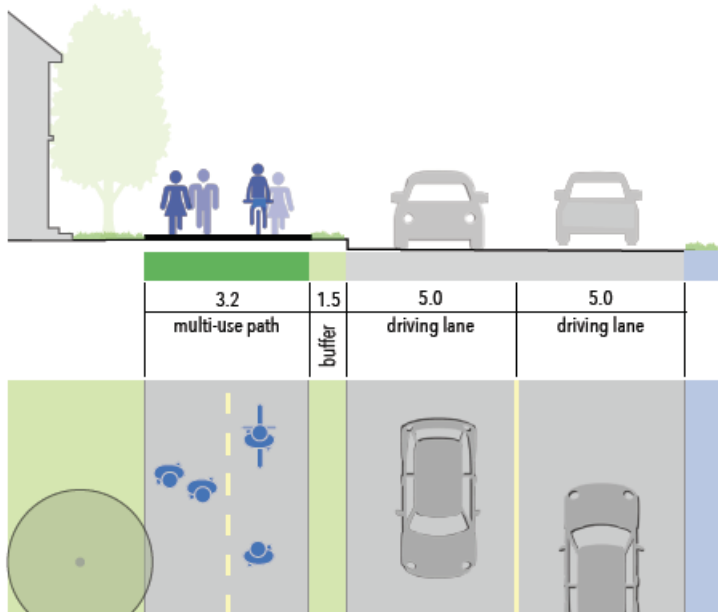


Figure 20: McClures Mills Road, Proposed Cross Section

2.2.13.3 Bikeway Facility Type

Based on peak hour traffic data at intersections along McClures Mills Road, traffic volumes are estimated to be in the range of 16,000-18,000 vehicles per day. A multi-use pathway is the appropriate facility type for McClures Mills Road.

2.2.13.4 Bikeway Width

The proposed 3.2-metre-wide multi-use pathway exceeds the TAC recommended lower limit.

2.2.13.5 Vehicle Lane Width

No changes are proposed to the vehicle lane widths. Existing lanes widths of 5.0 metres exceed the TAC practical upper limit. Consideration could be given to reducing lane widths to reduce vehicle speeds and increase the buffer space. Reduced lane widths would need to consider that McClures Mills Road is a designated Full Time Truck Route. Reducing lane widths would require street reconstruction.

2.2.13.6 Feasibility and Impacts

The construction of the multi-use pathway is feasible along the majority of the corridor with no impacts to the street or utility poles. The multi-use pathway may impact existing trees planted in the buffer.

However, between James Street/Lower Truro Road and Willow Street the existing buffer is not wide enough to accommodate the pathway. There are steep grades and utility poles directly behind the existing sidewalk on the south side, lane narrowing and street reconstruction will be required on this segment to accommodate the multi-use pathway. The removal of the left turn lanes at James Street and

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Lower Truro Road should be explored. It is recommended that intersection traffic volumes be collected and a traffic analysis be completed to determine if the left turn lanes are warranted and the impact of their removal on traffic operations. The potential to convert the Lower Truro Road intersection to right-in, right-out should also be explored.

Between Abenaki Road and the existing pathway at the Highway 102 interchange, the multi-use pathway, if maintained along the street, would have to be built over the existing ditch between the street and the Rath Eastlink Community Centre. This would require the installation of catch basins and a stormwater sewer system to maintain drainage. Alternatively, there may be the opportunity to collaborate with the Municipality of the County of Colchester, who owns the Rath Eastlink Community Centre, to route the multi-use pathway through the property.

2.2.14 Park Street

2.2.14.1 Existing Cross Section

Figure 21 illustrates the existing cross section on Park Street. It is noted that there is only sidewalk on the west side of the street between North Street and Marshland Drive/Lorne Street and there are no sidewalks north of Marshland Drive/Lorne Street. Utility poles are located in the buffer on the west side of the street.

EXISTING STREET SECTION

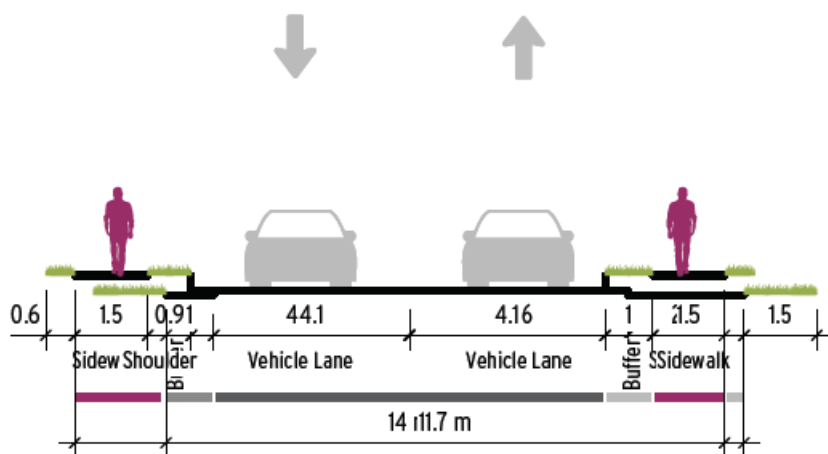


Figure 21: Park Street, Existing Cross Section

2.2.14.2 Proposed Cross Section

Figure 22 illustrates the proposed cross section on Park Street. The existing sidewalk and buffer on the west side are maintained and a new 3.0-metre-wide multi-use pathway with buffer is provided on the east side. The additional space required for the multi-use pathway is accommodated by reducing the vehicle lane widths to 3.8 metres and additional space within the right-of-way behind the existing sidewalk.

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PROPOSED STREET SECTION

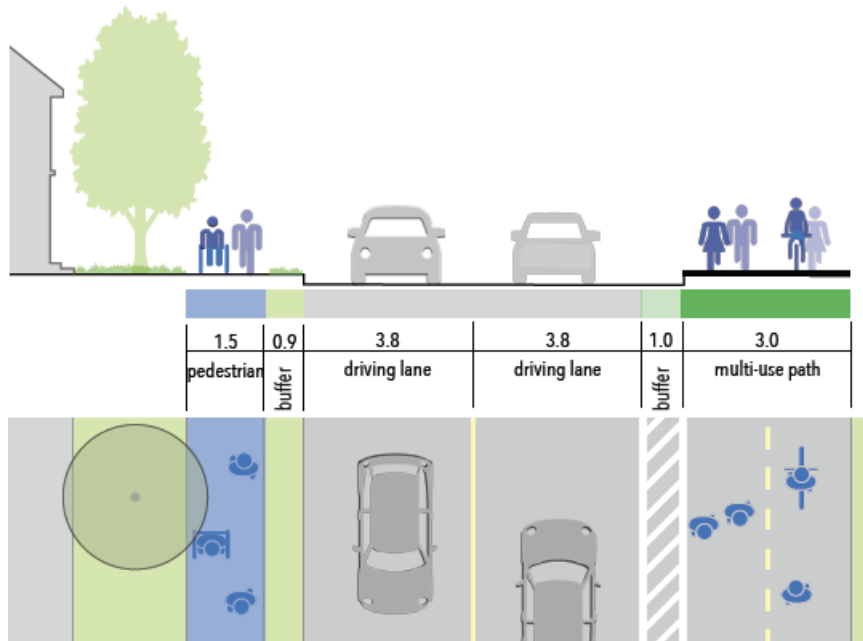


Figure 22: Park Street, Proposed Cross Section

2.2.14.3 Bikeway Facility Type

No volume data is available for Park Street. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.2.14.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.14.5 Vehicle Lane Width

Park Street is a designated Full Time Truck Route between the north Town boundary (bridge) and Marshland Drive. The proposed 3.8-metre-wide travel lanes are suitable for a truck route.

2.2.14.6 Feasibility and Impacts

The proposed cross section illustrates a painted buffer however, curb and gutter with a raised grassed median should be provided instead. Maintaining the sidewalk and buffer on the west side minimizes impacts to utility poles. It appears that it is generally feasible to replace the existing sidewalk on the east side with a multi-use pathway. There will be some impacts to mature trees, a retaining wall and a few staircases leading to the existing sidewalks. There are also areas where there are steep grades at the edge of the existing sidewalks that may require new retaining walls. Detailed survey data will be required to confirm impacts to private property.

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2.2.15 Prince Street East

While the report describes Section A as between Walker Street and Munroe Street and Section B as East of Munroe Street, the cross sections do not match the descriptions. Based on the existing cross sections, Section A is East of Munroe Street (two-lane cross section with sidewalk on one side) and Section B is between Walker Street and Munroe Street (three-lane cross section with sidewalk on both sides).

2.2.15.1 Section B: Between Walker Street and Munroe Street

2.2.15.1.1 Existing Cross Section

Figure 23 illustrates the existing cross section on Prince Street between Walker Street and Munroe Street (Section B). It is noted that the three travel lanes are present between Walker Street and the Sobeys Driveway where the centre lane consists of turning lanes. East of the Sobeys Driveway, there are only two travel lanes on Prince Street. Utility poles are located behind the sidewalk or in the buffer on the north side of the street. This section includes an at-grade rail crossing and a bridge structure.

EXISTING STREET SECTION

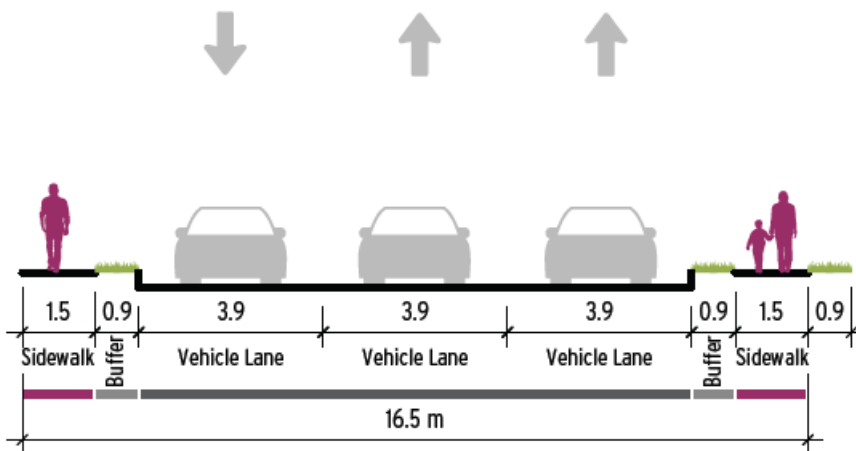


Figure 23: Prince Street East Section B, Existing Cross Section

2.2.15.1.2 Proposed Cross Section

Figure 24 illustrates the proposed cross section on Prince Street between Walker Street and Munroe Street (Section B). The existing sidewalk is maintained on one side and removed and replaced with a 3.0-metre-wide multi-use pathway with buffer on the other side. The additional space required for the new multi-use pathway is accommodated by reducing the vehicle lane widths to 3.3 metres.

The report does not specify which on side of Prince Street the multi-pathway is proposed. However, based on the additional space assumed behind the sidewalk and the direction of the two travel lanes, which are likely the turning lanes at the Walker Street intersection, it appears that the pathway would be on the north side.

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PROPOSED STREET SECTION

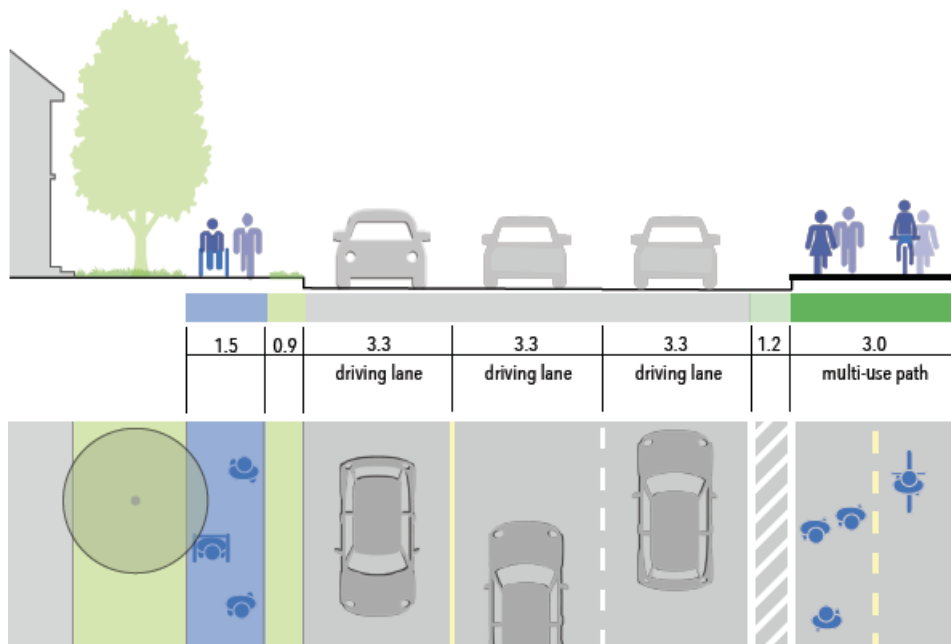


Figure 24: Prince Street East Section B, Proposed Cross Section

2.2.15.1.3 Bikeway Facility Type

Based on peak hour traffic data at the intersection with Walker Street, traffic volumes are estimated to be in the range of 8,000 vehicles per day. A multi-use pathway a suitable bikeway facility for Prince Street East.

2.2.15.1.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.15.1.5 Vehicle Lane Width

Prince Street is a designated Full Time Truck Route between Walker Street and the east Town boundary. The proposed 3.3-metre-wide travel lanes are not suitable for a truck route. A minimum lane width of 3.7 metres inclusive of gutter is required to accommodate heavy vehicles in the curbside lanes. Suitable lane widths could be accommodated by reducing the width of the buffer and/or the width of the turning lane.

2.2.15.1.6 Feasibility and Impacts

The proposed cross section should be modified to accommodate suitable lane widths for a truck route and curb and gutter instead of a painted buffer between the road and the multi-use pathway. The implementation will require minor street reconstruction including new curb but is expected to have only minor impacts to utilities and/or property. There may be impacts to two utility poles in the buffer on the north side closer to Munroe Street. Barriers on the bridge will need to be modified to a suitable height for cyclists.

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2.2.15.2 Section A: East of Monroe Street

2.2.15.2.1 Existing Cross Section

Figure 25 illustrates the existing cross section on Prince Street East of Monroe Street (Section A). The existing sidewalk is located on the south side of the street. Utility poles are located in the buffer on the south side of the street and behind the shoulder on the north side of the street. This section also includes an at-grade rail crossing.

EXISTING STREET SECTION

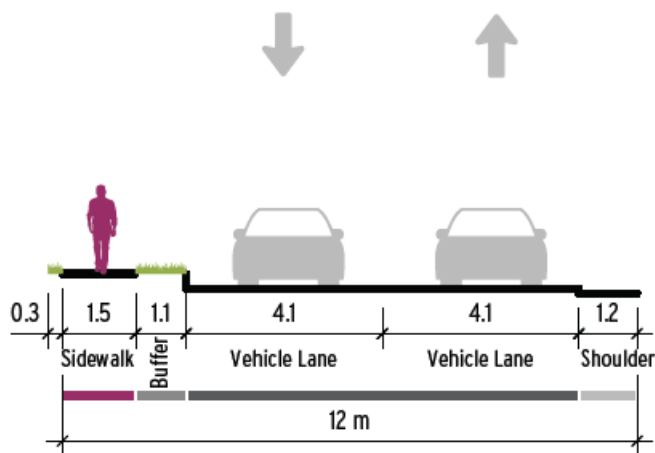


Figure 25: Prince Street East Section A, Existing Cross Section

2.2.15.2.2 Proposed Cross Section

Figure 26 illustrates the proposed cross section on Prince Street. The existing sidewalk and buffer are maintained on the south side and 1.5-metre-wide, unbuffered bike lanes are provided. The additional space required for the bikes lanes is accommodated by reducing the vehicle lane to 3.0 metres and paving the existing shoulder.

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PROPOSED STREET SECTION

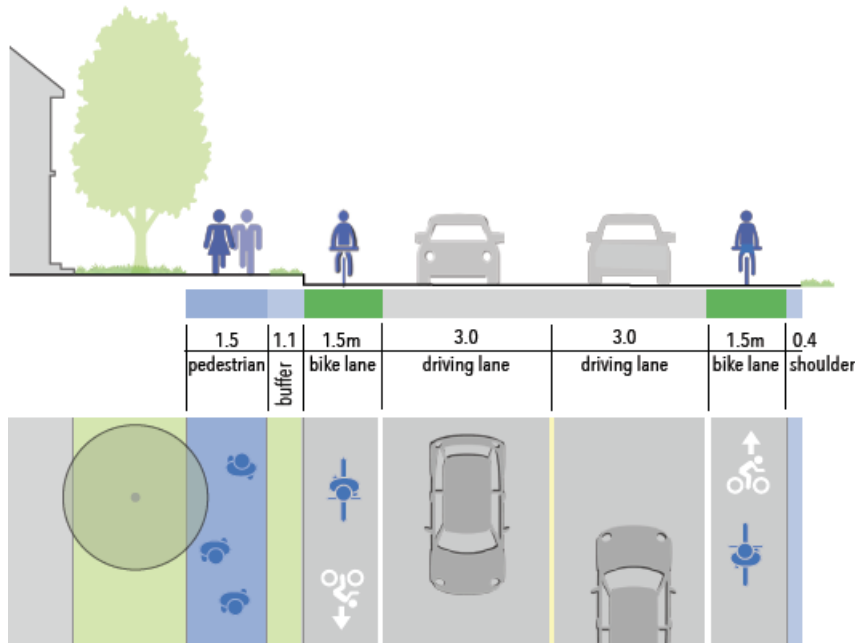


Figure 26: Prince Street East Section A, Proposed Cross Section

2.2.15.2.3 Bikeway Facility Type

TAC indicates that on roadways with vehicles speeds greater than 30 km/h and up to 50 km/h, cyclists should be separated from vehicles by a painted line at minimum, however, where vehicles volumes exceed 4,000 vehicles per day, protected bike lanes or bike path/multi-use path are more suitable than bike lanes. Based on peak hour traffic data at the intersection with Walker Street, traffic volumes are estimated to be in the range of 8,000 vehicles per day in Section B. This suggests that high volumes are likely present along most of this Section (Section A), indicating that unbuffered bike lanes are not the most suitable bikeway facility for Prince Street East.

Further to this, Prince Street is a designated Full Time Truck Route. TAC also indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour), protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

The proposed unbuffered bike lane treatment is not suitable for Prince Street.

2.2.15.2.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered bike lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under constrained environments and for short distances of up to 100 metres. Further narrowing of the vehicles lanes to increase the width of the bike lanes is not feasible.

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2.2.15.2.5 Vehicle Lane Width

Prince Street is a designated Full Time Truck Route between Walker Street and the east Town boundary. The proposed 3.0-metre-wide travel lanes are not suitable for a truck route. A minimum lane width of 3.3 metres exclusive of gutter is required to accommodate heavy vehicles.

2.2.15.2.6 Feasibility and Impacts

The proposed cross section does not include suitable vehicle lane widths for a truck route or a suitable bikeway facility and should not be implemented.

Further to this, the change in cycling infrastructure from a multi-use pathway to on-street bike lanes at Monroe Street would require a crossing for cyclists to transition from the multi-use pathway on the north side to the eastbound bike lane. The location of the transition in cycling infrastructure type along two reverse curves with an at-grade rail crossing would require careful attention at the design stage.

If maintained as part of the network, the Prince Street East corridor would need to be re-evaluated to include a suitable bikeway facility and adequate lane widths. It is noted that this corridor forms a parallel corridor with Brunswick Street. Cottage Street could be used to connect the Prince Street to Brunswick Street should the route terminate at Monroe Street.

2.2.16 Prince Street West

2.2.16.1 Existing Cross Section

Figure 27 illustrates the existing cross section on Prince Street west of Court Street. Utility poles are located in the buffers on both sides of the street.

EXISTING STREET SECTION

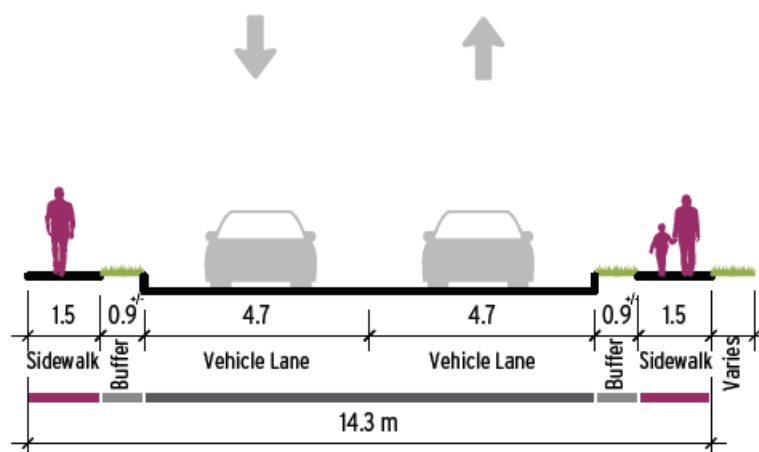


Figure 27: Prince Street West, Existing Cross Section

Truro Active Transportation Network Review

2.2.16.2 Proposed Cross Section

Figure 28 illustrates the proposed cross section on Prince Street west of Court Street. The existing sidewalks and buffers are maintained and 1.5-metre-wide, unbuffered bike lanes are provided within the existing pavement width by reducing the vehicle lane widths to 3.2 metres.

PROPOSED STREET SECTION

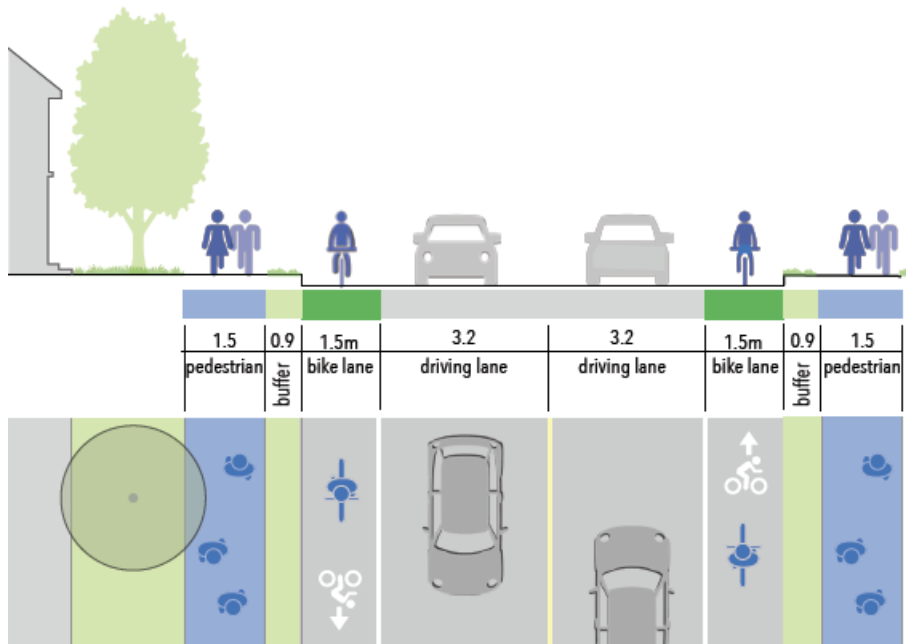


Figure 28: Prince Street West, Proposed Cross Section

2.2.16.3 Bikeway Facility Type

TAC indicates that on roadways with vehicles speeds greater than 30 km/h and up to 50 km/h cyclists should be separated from vehicles by a painted line at minimum, however, where vehicles volumes exceed 4,000 vehicles per day, protected bike lanes or bike path/multi-use path are more suitable than bike lanes. Based on peak hour traffic data at intersections along Prince Street West, traffic volumes are estimated to be in the range of 6,500-7,500 vehicles per day, indicating that unbuffered bike lanes are not the most suitable bikeway facility for Prince Street West.

Further to this, Prince Street is a designated Full Time Truck Route between Juniper Street and Court Street. TAC also indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour) protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

The proposed unbuffered bike lane treatment is not suitable for Prince Street.

2.2.16.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered bike lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under

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constrained environments and for short distances of up to 100 metres. Further narrowing of the vehicles lanes to increase the width of the bike lanes is not feasible.

2.2.16.5 Vehicle Lane Width

The proposed vehicle lane width of 3.2 metres is not suitable for a designated truck route. A minimum lane width of 3.3 metres exclusive of gutter is required to accommodate heavy vehicles.

2.2.16.6 Feasibility and Impacts

The proposed cross section does not include suitable vehicle lane widths for a truck route or a suitable bikeway facility and should not be implemented. The provision of a wider and/or more suitable bikeway facility on Prince Street West cannot be provided without major reconstruction of Prince Street and impacts to utility poles.

If maintained as part of the network, the Prince Street West corridor would need to be re-evaluated to include a suitable bikeway facility and adequate lane widths.

2.2.17 Queen Street

2.2.17.1 Existing Cross Section

Figure 29 and Figure 30 illustrate the existing cross section on Queen Street. Separate cross sections were provided to illustrate the varying width of travel lanes and buffers along the corridor. Utility poles are located in the buffers on both sides of the street between Elm Street and Walker Street. Beyond Walker Street, the utility poles are mainly on the south side of the street.

While illustrated as a two-lane cross section, the pavement width is generally consistent throughout the corridor but there are intermittent left turn lanes provided at intersections.

EXISTING STREET SECTION A

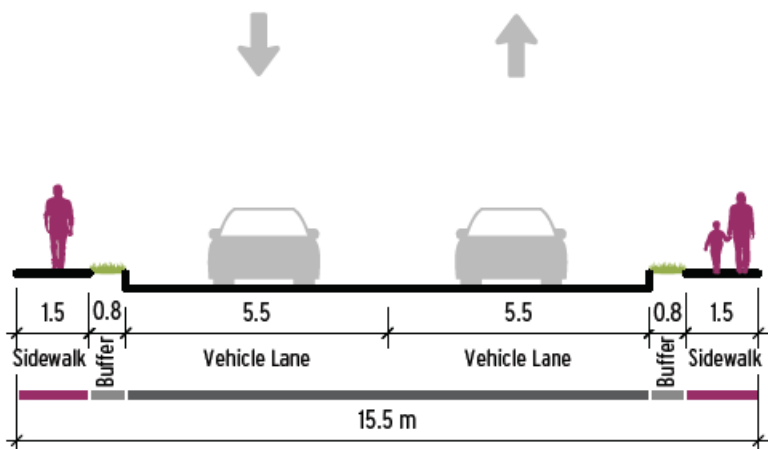


Figure 29: Queen Street Section A, Existing Cross Section

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EXISTING STREET SECTION B

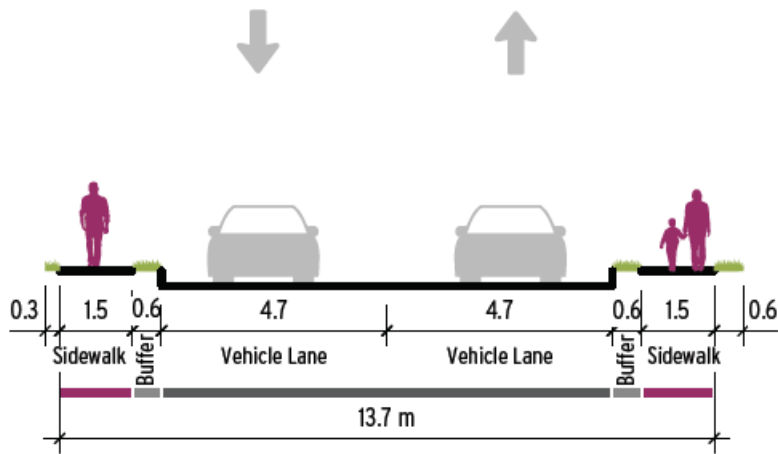


Figure 30: Queen Street Section B, Existing Cross Section

2.2.17.2 Proposed Cross Section

Figure 31 and Figure 32 illustrate the proposed cross section on Queen Street. The existing sidewalks and buffers are maintained and 1.5-metre-wide bike lanes are provided within the existing pavement width. Where the existing pavement width is wider, bike lanes will include a 0.5 metre buffer and are accommodated by reducing the vehicle lane widths to 3.5 metres. Where the existing pavement width is narrower, bike lanes will be unbuffered and accommodated by reducing the vehicle lane widths to 3.2 metres.

PROPOSED STREET SECTION A

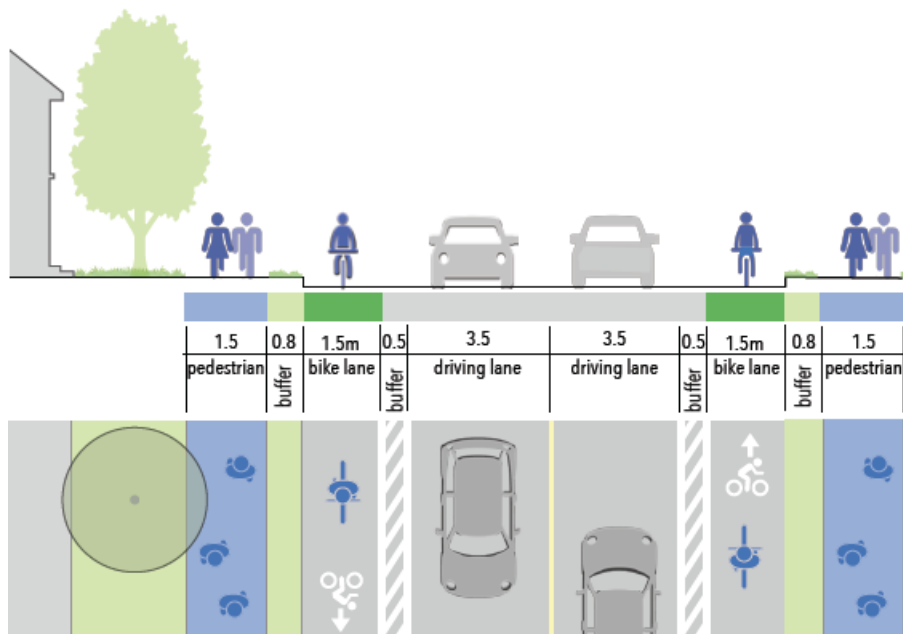


Figure 31: Queen Street Section A, Proposed Cross Section

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PROPOSED STREET SECTION B

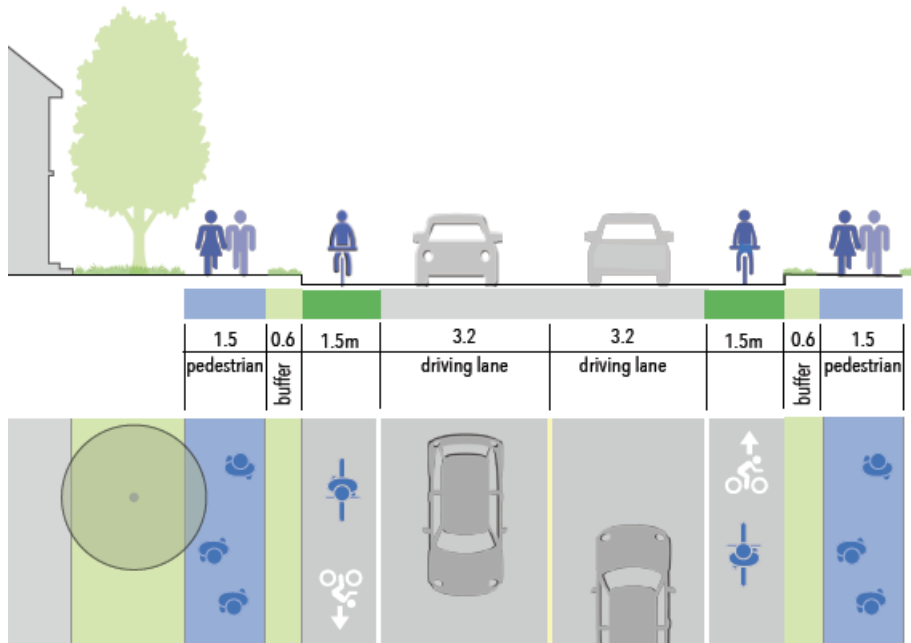


Figure 32: Queen Street Section B, Proposed Cross Section

2.2.17.3 Bikeway Facility Type

TAC indicates that on roadways with vehicles speeds greater than 30 km/h and up to 50 km/h, cyclists should be separated from vehicles by a painted line at minimum, however, where vehicles volumes exceed 4,000 vehicles per day, protected bike lanes or bike path/multi-use path are more suitable than bike lanes. Based on peak hour traffic data at intersections along Queen Street, traffic volumes are estimated to be in the range of 8,000-11,500 vehicles per day, indicating that unbuffered or buffered bike lanes are not the most suitable bikeway facility for Queen Street.

Further to this, Queen Street is a designated Full Time Truck Route. TAC also indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour) protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

The proposed buffered/unbuffered bike lane treatments are not suitable for Queen Street.

2.2.17.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under constrained environments and for short distances of up to 100 metres. Further narrowing of the vehicles lanes to increase the width of the bike lanes is not feasible.

TAC recommends a lower limit of 1.8 metres for a buffered lane width, with 1.5 metres as the practical lower limit and a minimum 0.3 metre buffer. The proposed 1.5 metre bike lane with a 0.5 metre buffer (total of 2.0 metres) will exceed the practical lower limit but not quite meet the recommended lower limit of 2.1 metres (1.8 metre bike lane with 0.3 metre buffer).

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2.2.17.5 Vehicle Lane Width

Queen Street is a designated Full Time Truck Route. The proposed 3.2-metre-wide travel lanes in Section B are not suitable for a truck route.

2.2.17.6 Feasibility and Impacts

The proposed cross section does not include suitable vehicle lane widths for a truck route or suitable for a bikeway facility and should not be implemented. The cross section would also result in the removal of all left turn lanes along the corridor which would have a significant impact on operations. The provision of a wider and/or more suitable bikeway facility on Queen Street cannot be provided without major reconstruction of Queen Street and impacts to utility poles. If maintained as part of the network, the Queen Street corridor would need to be re-evaluated to include a suitable bikeway facility and adequate lane widths.

The Queen Street corridor is parallel to Prince Street where cycling infrastructure is also proposed. As a two-way corridor with no on-street parking, it would be preferable for Queen Street to remain as the main east-west route in the downtown for vehicles and Prince Street could be re-imagined as a primary route for active transportation and a destination street where vehicles are a secondary consideration.

2.2.18 Robie Street

2.2.18.1 Existing Cross Section

Figure 33 illustrates the existing cross section on Robie Street. While not specified in the report, given that a two-lane cross section is shown, it is expected that this is meant to represent the segment between Juniper Street and Elm Street. West of Juniper Street, Robie has a four-lane cross section. It is noted that there is a short segment where there is no sidewalk on the south side of the street between Juniper Street and George Street. Utility poles are located in the buffers on both sides of the street.

EXISTING STREET SECTION

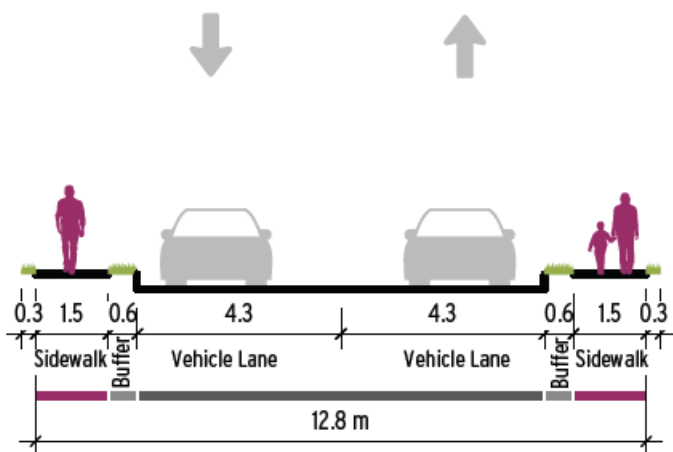


Figure 33: Robie Street, Existing Cross Section

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2.2.18.2 Proposed Cross Section

Figure 34 illustrates the proposed cross section on Robie Street. The existing sidewalks are maintained the existing buffers are widened by reducing the vehicle lane widths to 3.3 metres.

PROPOSED STREET SECTION

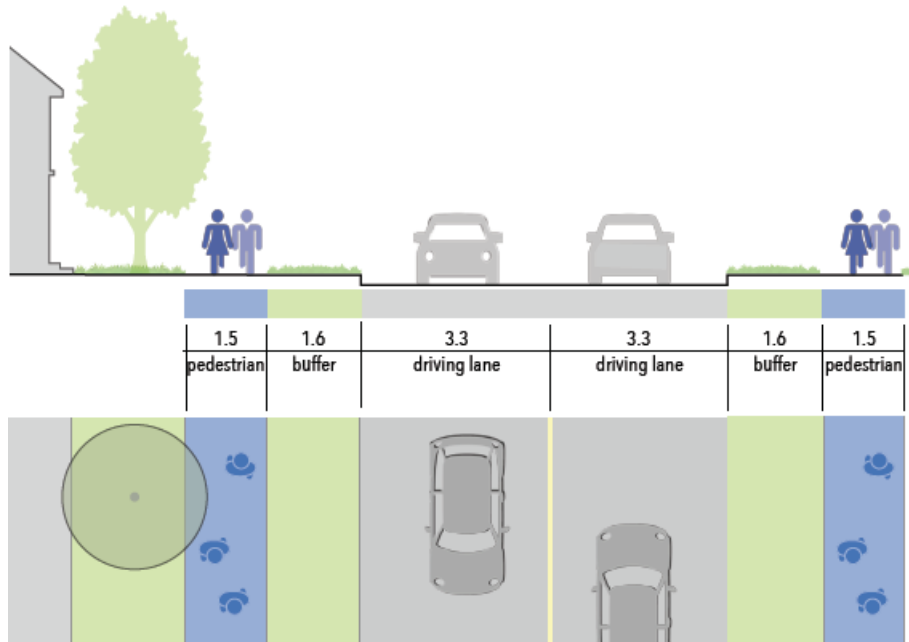


Figure 34: Robie Street, Proposed Cross Section

2.2.18.3 Bikeway Facility Type

No bikeway facilities are proposed.

2.2.18.4 Vehicle Lane Width

Robie Street is a designated Full Time Truck Route between the west Town boundary and Juniper Street, and a Daytime Truck Route (7:00 am to 8:00 pm) between Juniper Street and Nova Drive. The proposed 3.3-metre-wide travel lanes inclusive of gutter are not suitable for a designated truck route. A minimum lane width of 3.7 metres inclusive of gutter is required to accommodate heavy vehicles. The required lane width could be accommodated by reducing the buffer.

2.2.18.5 Feasibility and Impacts

The proposed cross section requires street reconstruction to move the curb and increase buffer space. To maintain minimum vehicle lane widths suitable for truck traffic, the buffers could only be increased to 1.2 metres or less, resulting in a gain of 0.6 metres. While the proposed cross section is considered feasible, it provides limited improvements to the pedestrian environment and does not include any cycling infrastructure. The proposed cross section should not be implemented.

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2.2.19 Treaty Trail and Truro Heights Road

2.2.19.1 Existing Cross Section

Figure 35 illustrates the existing cross section on Treaty Trail and Truro Heights Road. The existing sidewalk is located on the west side of the street on Treaty Trail and Truro Heights Road from Treaty Trail to Franklin Drive. North of Franklin Drive, the sidewalk is located on the east side of the street. On Treaty Trail, there are light poles located in the buffer on the west side. Utility poles are set back behind the shoulder and behind the sidewalk on Truro Heights Road.

EXISTING STREET SECTION

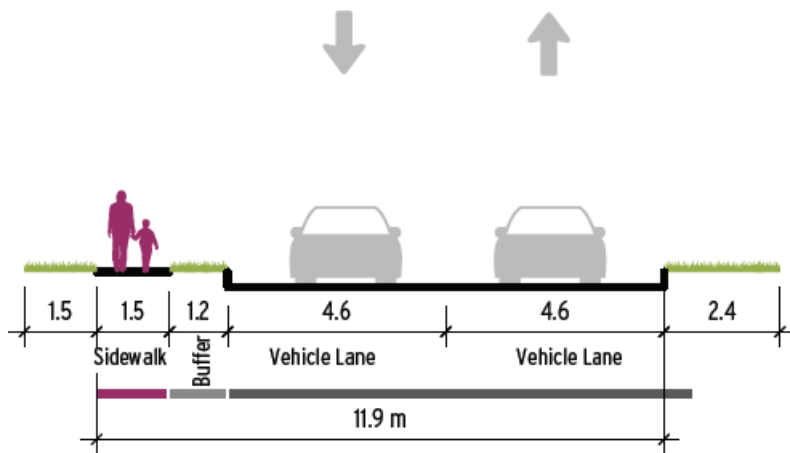


Figure 35: Treaty Trail & Truro Heights Road, Existing Cross Section

2.2.19.2 Proposed Cross Section

Figure 36 illustrates the proposed cross section on Treaty Trail and Truro Heights Road. The existing sidewalk is removed and replaced with a 3.0-metre-wide multi-use pathway with buffer. No changes are made to the vehicle lanes to accommodate the multi-use pathway, the multi-use pathway is accommodated through additional space within the right-of-way behind the existing sidewalk.

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PROPOSED STREET SECTION

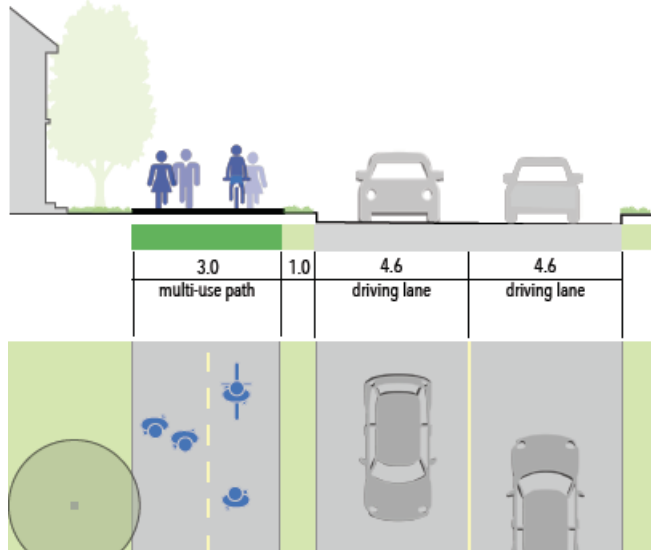


Figure 36: Treaty Trail & Truro Heights Road, Proposed Cross Section

2.2.19.3 Bikeway Facility Type

No volume data is available for Treaty Trail or Truro Heights Road. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.2.19.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.19.5 Vehicle Lane Width

No changes are proposed to the vehicle lane widths. Existing lanes widths of 4.6 metres exceed the TAC practical upper limit. Consideration could be given to reducing lane widths to reduce vehicle speeds and increase space used for active transportation such as the provision of sidewalk on the opposite site of the road. Reducing lane widths would require street reconstruction.

2.2.19.6 Feasibility and Impacts

The proposed cross section is considered feasible along Treaty Trail with minimal impacts to utility poles or property. A retaining wall may be required along the Cineplex property. Where it transitions to Truro Heights Road, just before Clinton Drive, there is a significant grade behind the guiderail, which would make widening behind the sidewalk challenging. Beyond this, the majority of Truro Heights Road is outside of the Town boundary. In addition, to connect Treaty Trail to the south would require a cycling connection at the highway interchange owned by the Province. The use of this corridor as a cycling facility is highly dependent on the completion of these connections which are outside of the Town's control.

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2.2.20 Wade Road

2.2.20.1 Existing Cross Section

Figure 37 illustrates the existing cross section on Wade Road. It is noted that there is an existing sidewalk on the west side of the street between Kent Building Supplies and McClures Mills Road. This segment, which represents approximately half of the street, has curb and gutter on both sides of the street instead of shoulders, and has a 3-lane cross section. Utility poles are located in the buffer or behind the shoulder on the west side of the street.

EXISTING STREET SECTION

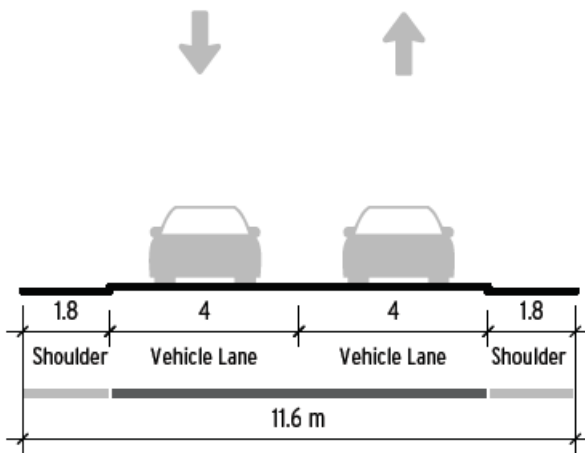


Figure 37: Wade Road, Existing Cross Section

2.2.20.2 Proposed Cross Section

Figure 38 illustrates the proposed cross section on Wade Road. A 3.2-metre-wide bidirectional protected bikeway with a 1.0-metre-wide delineator is provided. The report does not specify on which side of Wade Road the protected bikeway is proposed; however, it is likely to be on east side of the street to minimize impacts to utility poles. The proposed cross section does not include any pedestrian facilities, however, while the cross section clearly illustrates bike lanes, the text in the report mentions a multi-use pathway. It is unclear if the cross section or description is correct.

The additional space required for the bike lane is accommodated by reducing the vehicle lane widths to 3.5 metres and additional space within the right-of-way behind the existing shoulder. It is noted that approximately half of Wade Road has curb and gutter instead of shoulders.

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PROPOSED STREET SECTION

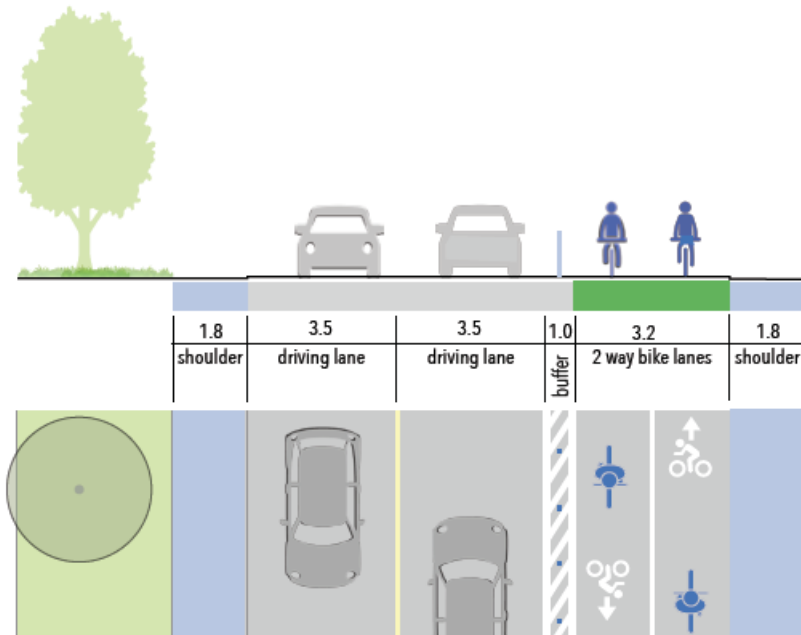


Figure 38: Wade Road, Proposed Cross Section

2.2.20.3 Bikeway Facility Type

Based on peak hour traffic data at the intersection of Wade Road and McClures Mills Road, traffic volumes are estimated to be in the range of 8,500 vehicles per day. Wade Road is also a designated as a Full Time Truck Route. Protected bike lanes or bike path/multi-use path are suitable bikeway facilities for Wade Road.

2.2.20.4 Bikeway Width

The proposed 3.2-metre-wide bidirectional protected bikeway with a 1.0-metre-wide delineator exceeds the TAC recommended lower limit.

2.2.20.5 Vehicle Lane Width

The proposed 3.5-metre-wide travel lanes are suitable for a truck route on the segment where there is no curb and gutter. On the segment where there is curb and gutter, a minimum lane width of 3.7 metres inclusive of gutter is required to accommodate heavy vehicles.

2.2.20.6 Feasibility and Impacts

There is existing curb and gutter along half of Wade Road instead of shoulders. The curbed section is located within the Town boundary, while the section with shoulders is in the Municipality of the County of Colchester. Street reconstruction is required to accommodate the proposed cross section on the Town portion of the street. Along the curbed section, the bidirectional bikeway would be likely be a raised bikeway. However, it could be changed to a multi-use pathway to maintain a pedestrian connection through the remainder of Wade Road where there is no sidewalk. Otherwise, sidewalk on the opposing

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side would need to be extended to Lower Truro Road. Minimal impacts to utilities are expected. Near the intersection with McClures Mills Road, there are poles, a fire hydrant, guide rail and an underground tank close to the edge of the street. There are two receiving lane at the intersection with the curbside lane terminating at the EHS driveway, however, there is no dual left or dual through lanes requiring a second receiving lane and the configuration maintains a yield condition for the right turn channel. The removal of this short receiving lane should be considered to minimize impacts to the above noted objects.

While the proposed active transportation infrastructure on Wade Road is intended to provide a connection to the Cobequid Trail, there is no existing or proposed connection between Wade Road and the trail which is located off road on the opposing side of Lower Truro Road and separated by a buffer of trees. To access the Cobequid Trail, users on Wade Road would need to travel along Lower Truro Road for approximately 200 metres and cross the road to access the nearest trail crossing along an industrial driveway. There are no sidewalks and limited shoulder width on Lower Truro Road. A direct connection to the Cobequid Trail through the woods opposite of Wade Road should be considered. Alternatively, upgrades to this section of Lower Truro Road would be required to provide a connection.

Wade Road could be an important connection between McClures Mills Road and Cobequid Trail. However, the use of this corridor as a cycling facility is highly dependent on the completion of the connections to the Cobequid Trail which is outside of the Town's control.

2.2.21 Walker Street

2.2.21.1 Existing Cross Section

Figure 39 illustrates the existing cross section on Walker Street. It is noted that the segment between Prince Street and McMullen Street has a four-lane cross section and turning lanes are provided at the intersection with Queen Street. Utility poles are located in the buffer on the east side of the street.

EXISTING STREET SECTION

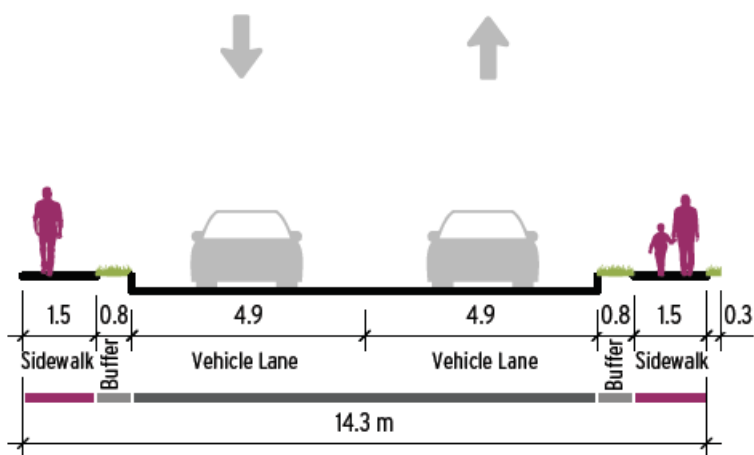


Figure 39: Walker Street, Existing Cross Section

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2.2.21.2 Proposed Cross Section

Figure 40 illustrates the proposed cross section on Walker Street. The existing sidewalks and buffers are maintained and 1.5-metre-wide, unbuffered bike lanes are provided within the existing pavement width by reducing the vehicle lane widths to 3.4 metres.

PROPOSED STREET SECTION

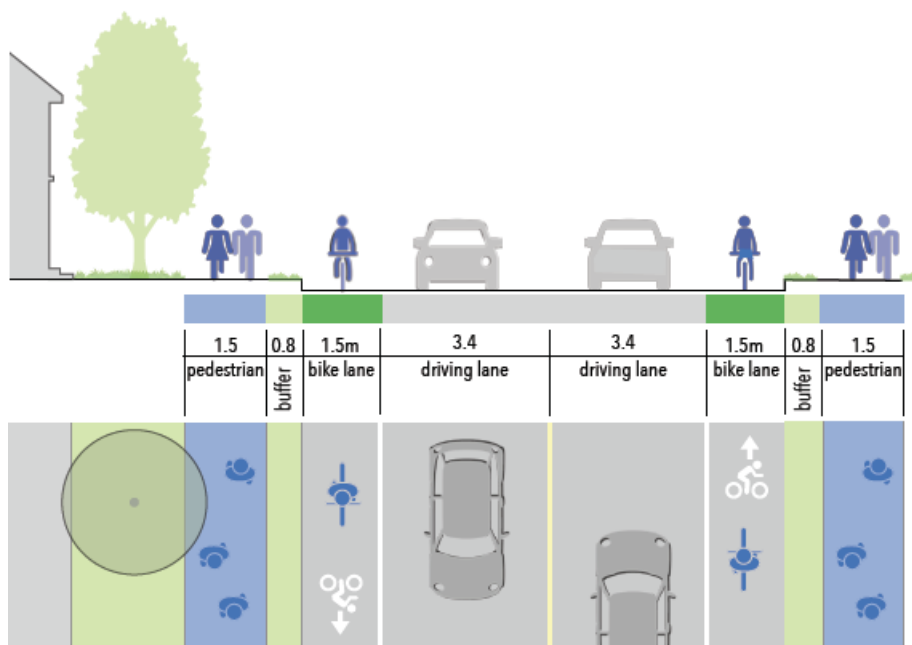


Figure 40: Walker Street, Proposed Cross Section

2.2.21.3 Bikeway Facility Type

TAC indicates that on roadways with vehicles speeds greater than 30 km/h and up to 50 km/h, cyclists should be separated from vehicles by a painted line at minimum, however, where vehicles volumes exceed 4,000 vehicles per day, protected bike lanes or bike path/multi-use path are more suitable than bike lanes. Based on peak hour traffic data at intersections along Walker Street, traffic volumes are estimated to be in the range of 8,500-12,500 vehicles per day, indicating that unbuffered bike lanes are not the most suitable bikeway facility for Walker Street.

Further to this, Walker Street is a designated Full Time Truck Route. TAC also indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour), protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

The proposed unbuffered bike lane treatment is not suitable for Walker Street.

2.2.21.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered bike lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under

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constrained environments and for short distances of up to 100 metres. Further narrowing of the vehicle lanes to increase the width of the bike lanes is not feasible.

2.2.21.5 Vehicle Lane Width

The proposed 3.4-metre-wide travel lanes exclusive of gutter are suitable for a truck route.

2.2.21.6 Feasibility and Impacts

The proposed cross section does not include a suitable bikeway facility and should not be implemented. The cross section would also result in the removal of turning lanes at intersections along the corridor which could have a significant impact on operations. The provision of a wider and/or more suitable bikeway facility on Walker Street cannot be provided without major reconstruction of Walker Street and impacts to vehicle lanes. Impacts to operations should be evaluated.

If maintained as part of the network, the Walker Street corridor would need to be re-evaluated to include a suitable bikeway facility.

Walker Street could be an important regional connection to Bible Hill. However, the use of this corridor as a cycling facility is highly dependent on the completion of an active transportation crossing across the Salmon River Bridge which is outside of the Town's control.

2.2.22 William Barnhill Drive

2.2.22.1 Existing Cross Section

Figure 41 illustrates the existing cross section on William Barnhill Drive. No vehicle lane widths or shoulders widths are included. The existing pavement width is approximately 11.0 metres. It is noted that the cross section includes unpaved shoulders between Willow Street and Industrial Avenue and curb and gutter between Industrial Avenue and Young Street.

Utility poles are located behind the shoulder on the north or south side of the street near Willow Street, and on the south side for approximately 250 metres east of Industrial Avenue to a residential development. There are no utility poles between Crossley Avenue and Industrial Avenue and between the residential development and Young Street.

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EXISTING STREET SECTION

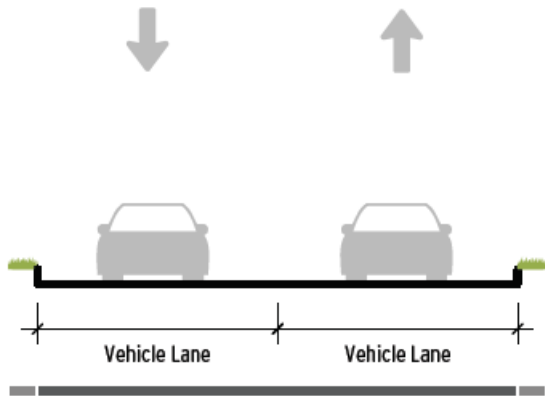


Figure 41: William Barnhill Drive, Existing Cross Section

2.2.22.2 Proposed Cross Section

Figure 42 illustrates the proposed cross section on William Barnhill Drive. A 3.6-metre-wide multi-use pathway with buffer is provided on the south side of the street. No changes to the vehicle lane widths are proposed. The additional space required for the multi-use pathway is accommodated by additional space within the right-of-way behind the existing shoulder or curb.

PROPOSED STREET SECTION

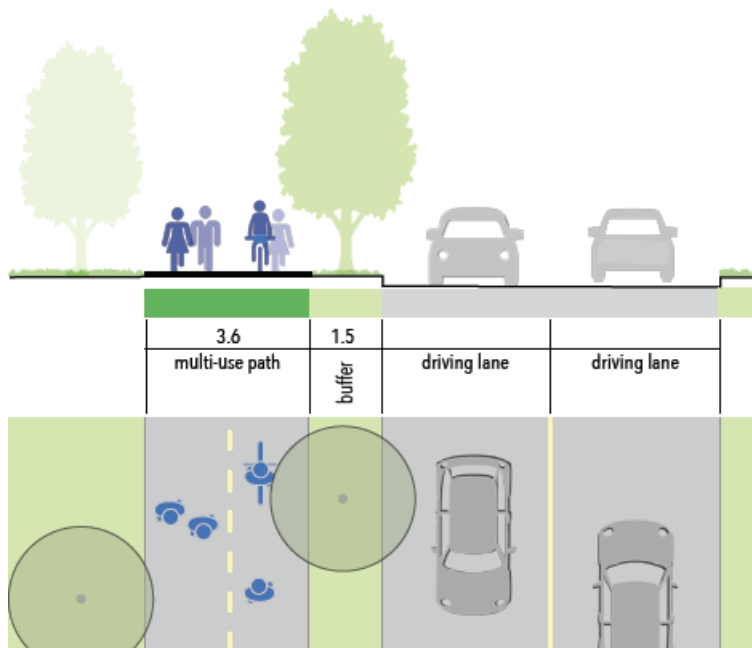


Figure 42: William Barnhill Drive, Proposed Cross Section

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2.2.22.3 Bikeway Facility Type

No volume data is available for William Barnhill Drive. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.2.22.4 Bikeway Width

The proposed 3.6-metre-wide multi-use pathway exceeds the TAC recommended lower limit.

2.2.22.5 Vehicle Lane Width

No changes are proposed to the vehicle lane widths. Existing lanes widths of over 5.0 metres exceed the TAC practical upper limit. Consideration could be given to reducing lane widths to reduce vehicle speeds. Reducing lane widths would require street reconstruction.

2.2.22.6 Feasibility and Impacts

The proposed cross section can be constructed without reconstructing the street and with minimal impacts to utilities and/or property. There is a culvert located to the east of the intersection with Industrial Avenue, which would be impacted by the proposed pathway.

The William Barnhill Drive route is intended to provide a connection from Willow Street to the Railyard Mountain Bike Park, however, there is very little development along the corridor which could result in low usage of the corridor compared to alternate east-west connections such as Glenwood Drive.

It is noted that there are some sections of William Barnhill Drive with significant grades that may prove challenging to the average cyclist. Grades of less than 4% are ideal for cyclists but grades up to 8% may be used where necessary. Many cyclists will need to dismount if the grade exceeds 8%. A grade exceeding 8% is expected for a length of approximately 300 metres to the east of Industrial Avenue. While steep grades are observed, the primary users of this route would likely be mountain bikers travelling to/from the Railyard who will likely be more comfortable with steep grades than the average cyclist.

2.2.23 Willow Street

2.2.23.1 Section A: Between Prince Street and Arthur Street

2.2.23.1.1 Existing Cross Section

Figure 43 illustrates the existing cross section on Willow Street between Prince Street and Arthur Street (Section A). Utility poles are located in the buffer on the east side of the street. It is noted that this cross section is present for 175 metres beyond Arthur Street to where the Cobequid Trail intersects with Willow Street.

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EXISTING STREET SECTION

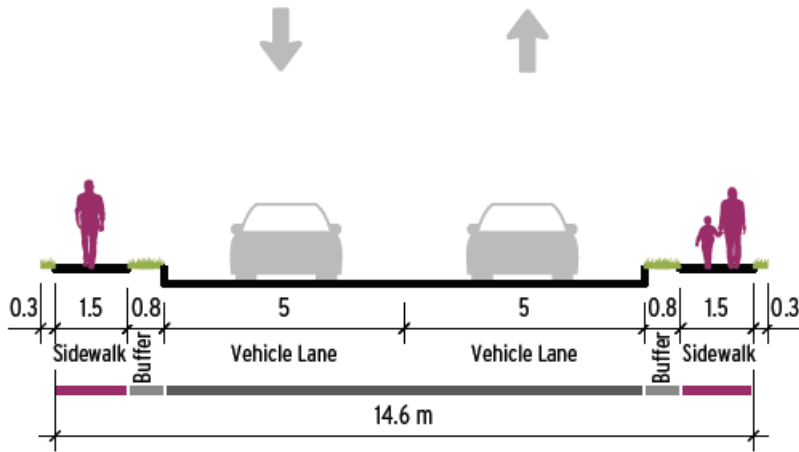


Figure 43: Willow Street Section A, Existing Cross Section

2.2.23.1.2 Proposed Cross Section

Figure 44 illustrates the proposed cross section on Willow Street. The existing sidewalk on the east side is maintained and the sidewalk on the west side is replaced with a 3.0-metre-wide multi-use pathway with buffer. The additional space required for the multi-use pathway is accommodated by reducing the vehicle lane widths to 3.5 metres.

PROPOSED STREET SECTION

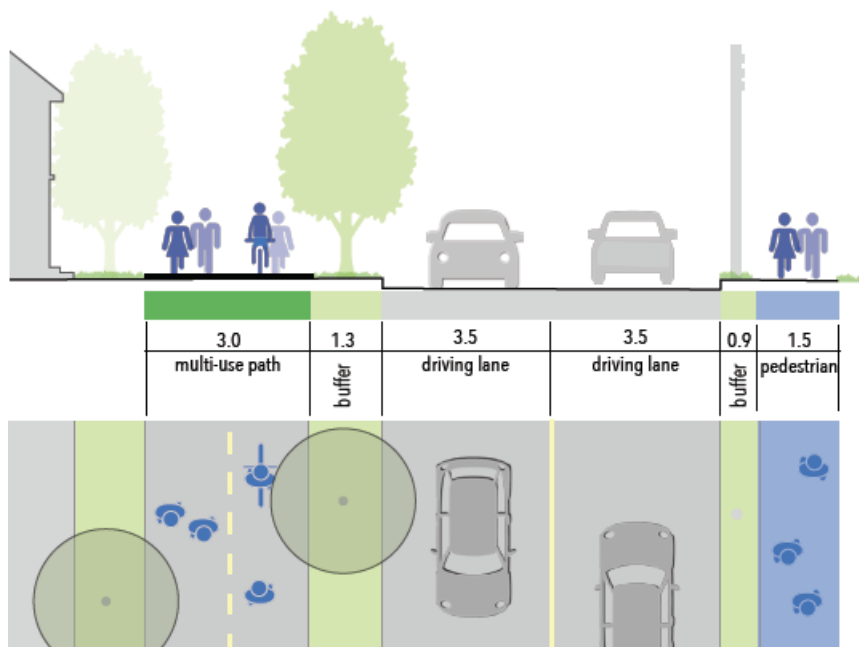


Figure 44: Willow Street Section A, Proposed Cross Section

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2.2.23.1.3 Bikeway Facility Type

Based on peak hour traffic data at intersections along this segment of Willow Street, traffic volumes are estimated to be in the range of 9,000-11,000 vehicles per day. Willow Street is also a designated Full Time Truck Route. The proposed multi-use pathway is a suitable bikeway facility for Willow Street.

2.2.23.1.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.23.1.5 Vehicle Lane Width

The proposed 3.5-metre-wide travel lanes inclusive of gutter are not suitable for a designated truck route. A minimum lane width of 3.7 metres inclusive of gutter is required to accommodate heavy vehicles. The required lane widths could be accommodated by reducing the buffer width adjacent to the multi-use pathway.

2.2.23.1.6 Feasibility and Impacts

The proposed cross section is considered feasible with minor changes to the buffer width to accommodate suitable vehicle lane widths. Maintaining the existing sidewalk and buffer minimizes impacts to utilities. Minimal impacts are expected along the corridor except for the intersections with Prince, Victoria Street and Arthur Street where turning lanes exist.

There is little to no right-of-way behind the sidewalk on the west side, where the pathway is proposed, at intersections where turning lanes exist. Accommodating suitable lane widths for a truck route may be challenging without property acquisition or the removal of turning lanes. Detailed survey data would be required to confirm. There will also be some impacts to traffic signal infrastructure at Arthur Street.

2.2.23.2 Section B: Between Arthur Street and Millbrook

2.2.23.2.1 Existing Cross Section

Figure 45 illustrates the existing cross section on Willow Street between Arthur Street and Millbrook (Section B). The cross section does not match actual conditions along the majority of the corridor. There is existing sidewalk on one or both sides of Willow Street between Arthur Street and Glenwood Drive, and on the west side between Blakeney Drive and Rachel Lane (Town boundary). The illustrated cross section with shoulders on both sides of the street is only observed between Glenwood Drive and Blakeney Drive (this was to William Barnhill Drive when the report was prepared in 2023 – new sidewalk has been installed since).

Utility poles are located in the buffers on one or both sides of the street between Arthur Street and Glenwood Drive. South of Glenwood Drive, utility poles are located behind the sidewalk or shoulder on both sides of the street.

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EXISTING STREET SECTION

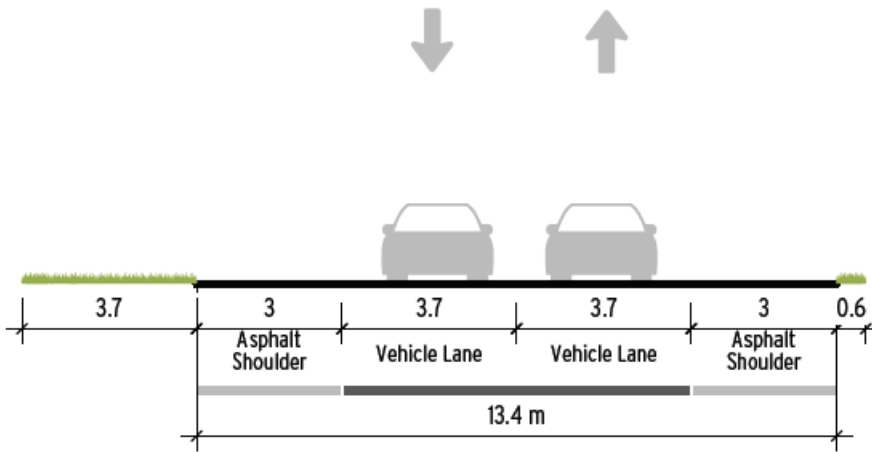


Figure 45: Willow Street Section B, Existing Cross Section

2.2.23.2.2 Proposed Cross Section

Figure 46 illustrates the proposed cross section on Willow Street. The existing sidewalk on the west side (present along most of the corridor) is replaced with a 3.0-metre-wide multi-use pathway with buffer and a new sidewalk is provided on the east side (no existing sidewalk along most of the corridor). The additional space required for the multi-use pathway is accommodated by reducing the vehicle lane widths to 3.3 metres and removing or reducing shoulder widths. It is noted the cross section is flipped compared to Section A. The pathway is intended to be on the west side along the entire corridor.

PROPOSED STREET SECTION

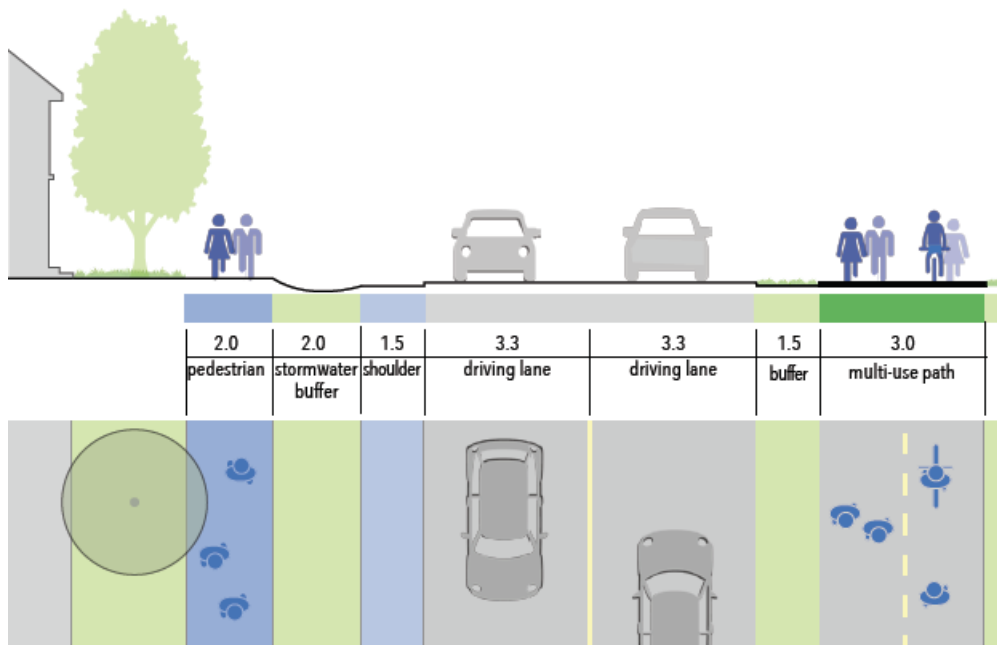


Figure 46: Willow Street Section B, Proposed Cross Section

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2.2.23.2.3 Bikeway Facility Type

Based on peak hour traffic data at intersections along this segment of Willow Street, traffic volumes are estimated to be in the range of 13,500-17,000 vehicles per day. Willow Street is also a designated Full Time Truck Route. The proposed multi-use pathway is a suitable bikeway facility for Willow Street.

2.2.23.2.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.2.23.2.5 Vehicle Lane Width

The proposed curbside vehicle lane width of 3.3 metres inclusive of gutter is not suitable for a designated truck route. A minimum lane width of 3.7 metres inclusive of gutter is required to accommodate heavy vehicles.

2.2.23.2.6 Feasibility and Impacts

While the multi-use pathway on the west side provides continuity with Section A, this requires replacing existing sidewalk on the west side and adding new sidewalk on the opposing side where none exists. Utility poles in the existing sidewalk buffer between Arthur Street and Glenwood Drive would have to be relocated. The multi-use pathway could be transitioned from the east side of the street to the west side at the existing Cobequid Trail crossing to minimize impacts to existing sidewalk infrastructure and utility poles and reduce the quantity of new sidewalk to be constructed.

Immediately south of the Cobequid Trail crossing, there is a steep upgrade in the terrain beyond the edge of pavement for approximately 150 metres. A retaining wall may be required along this segment.

There may also be some impacts to utility poles or travel lanes between McClures Mills Road and Glenwood Drive where there are two existing southbound travel lanes. It is noted that the new roundabout has only a single exit lane and the road flares to two lanes beyond the exit. The centre lane terminates into a left turn lane at Glenwood Drive. Consideration could be given to eliminating the centre lane and only providing left turn lanes at intersections where they are warranted.

South of Glenwood Drive, there is a wide shoulder on the west side of the right of way that would accommodate a multi-use pathway with minimal impact to utility poles and/or property. Where sidewalk has been installed along Willow Street, it includes curb and gutter. The proposed cross section should include curb and gutter on both sides of the street.

2.2.24 Young Street

2.2.24.1 Existing Cross Section

Figure 47 illustrates the existing cross section on Young Street between Prince Street and Glenwood Drive (Section A). It is noted that there is only sidewalk on the east side between Fairview Drive and Glenwood Drive. Utility poles are located in the buffers on both sides of the street.

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Figure 48 illustrates the existing cross section on Young Street between Glenwood Drive and the Railyard Entrance (Section B). The existing sidewalk is located on the east side of the street. It is noted that there is sidewalk on both sides between Glenwood Drive and the Parkland Estates Retirement Residence. Utility poles are located in the buffer on the east side of the street.

EXISTING STREET SECTION

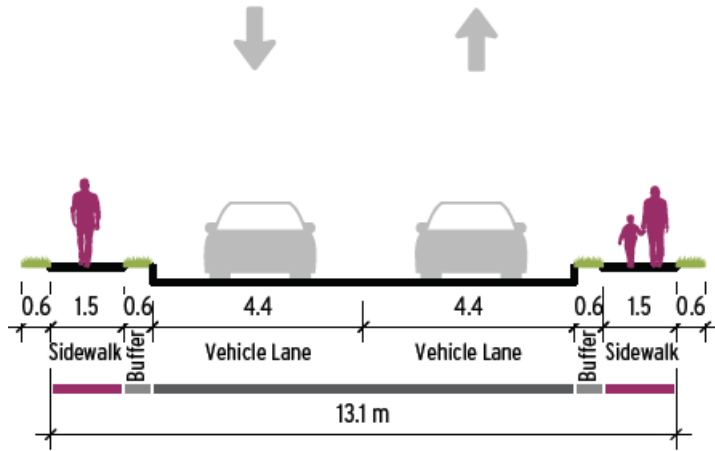


Figure 47: Young Street Section A, Existing Cross Section

EXISTING STREET SECTION

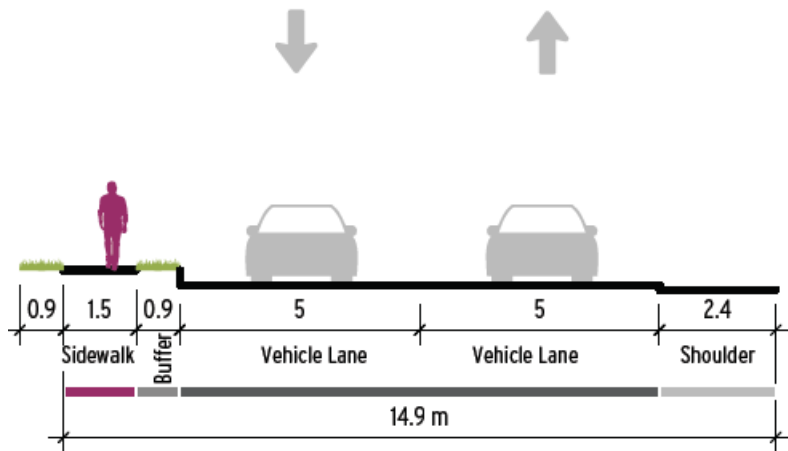


Figure 48: Young Street Section B, Existing Cross Section

2.2.24.2 Proposed Cross Section

Figure 49 and Figure 50 illustrate the proposed cross sections on Young Street. The existing sidewalks and buffers are maintained and shared lane markings are added to the street.

Truro Active Transportation Network Review

PROPOSED STREET SECTION

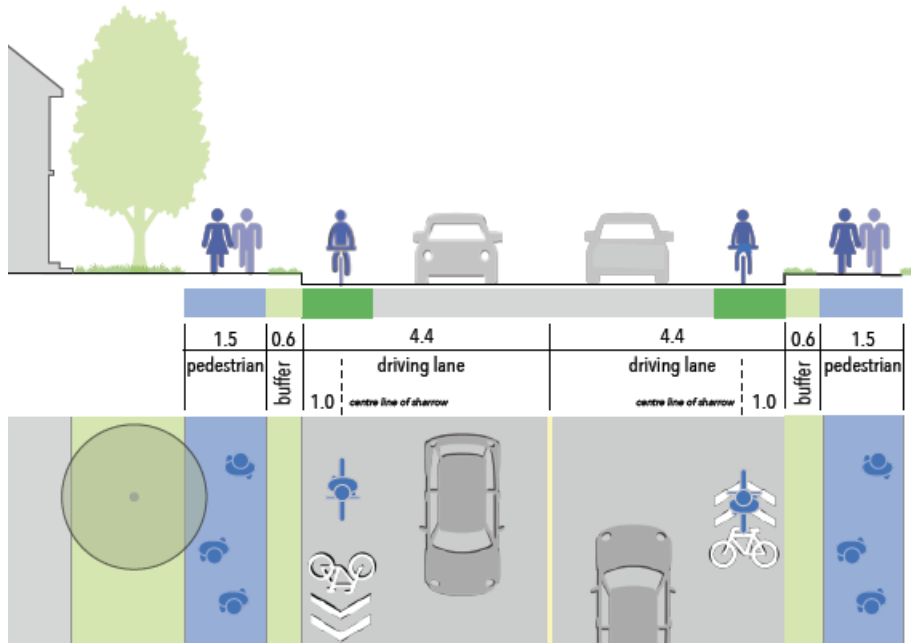


Figure 49: Young Street Section A, Proposed Cross Section

PROPOSED STREET SECTION

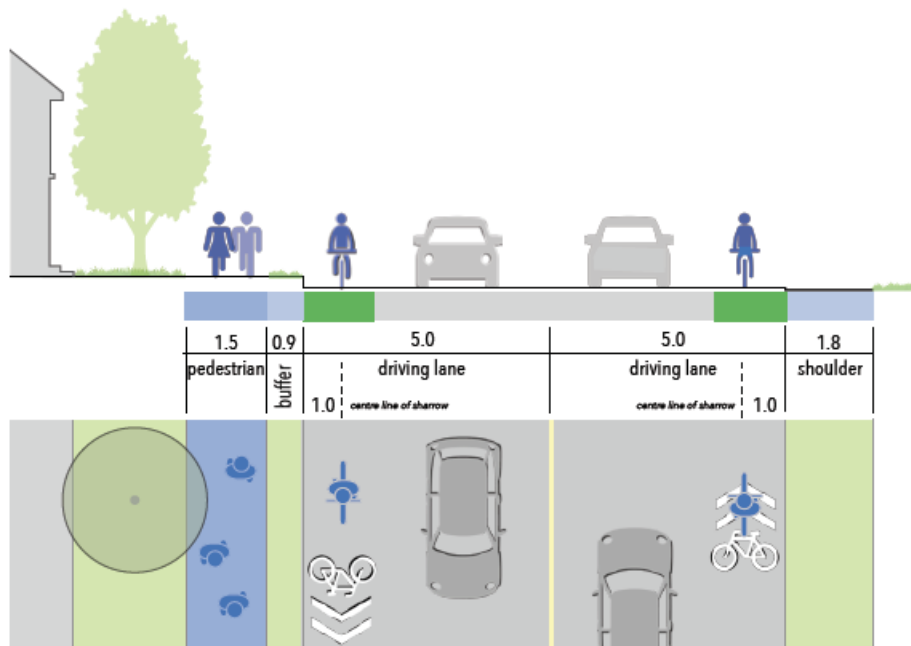


Figure 50: Young Street Section B, Proposed Cross Section

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2.2.24.3 Bikeway Facility Type

A shared roadway/lane treatment is only suitable if daily volumes are less than 1,000 vehicles per day and speeds are less than or equal to 40 km/h. Based on peak hour traffic data at intersections along Young Street, traffic volumes are estimated to be in the range of 3,500-6,000 vehicles per day in Section A, indicating that shared lanes are not the most suitable bikeway facility for Young Street. No volume data is available for Section B.

Further to this, Young Street is a designated Daytime Truck Route (7:00 am to 8:00 pm) south of Esplanade Street. TAC also indicates that if there is more than a negligible volume of heavy vehicles on a street (≥ 10 heavy vehicles in the peak hour) protected bike lanes or bike path/multi-use path should be used instead of bike lanes.

The proposed shared lane treatment is not suitable for Young Street.

2.2.24.4 Bikeway Width

The proposed 4.4-metre-wide shared lanes in Section A exceed the TAC recommended lower limit of 4.3 metres for side-by-side operation. The proposed 5.0-metre-wide shared lanes in Section B slightly exceed the TAC recommended upper limit of 4.9 metres for side-by-side operation.

2.2.24.5 Vehicle Lane Width

No changes are proposed to the existing vehicle lanes.

2.2.24.6 Feasibility and Impacts

The proposed cross section does not include a suitable bikeway facility and should not be implemented. The provision of a wider and/or more suitable bikeway facility on Young Street cannot be provided without major reconstruction of Young Street and impacts to utility poles.

If maintained as part of the network, the Young Street corridor would need to be re-evaluated to include a suitable bikeway facility.

2.3 URBAN DESTINATION STREETS

The *Active Transportation Plan's* network plan includes two urban destination streets that support Truro's cultural and economic environments. These streets are to be reconfigured as multi-modal destination streets.

2.3.1 Inglis Place

2.3.1.1 Existing Cross Section

Figure 51 illustrates the existing cross section on Inglis Place. Inglis Place is a one-way street with one lane travelling in the northbound direction. Decorative streetlights and trees are located in the buffers on both sides of the street.

Truro Active Transportation Network Review

EXISTING STREET SECTION

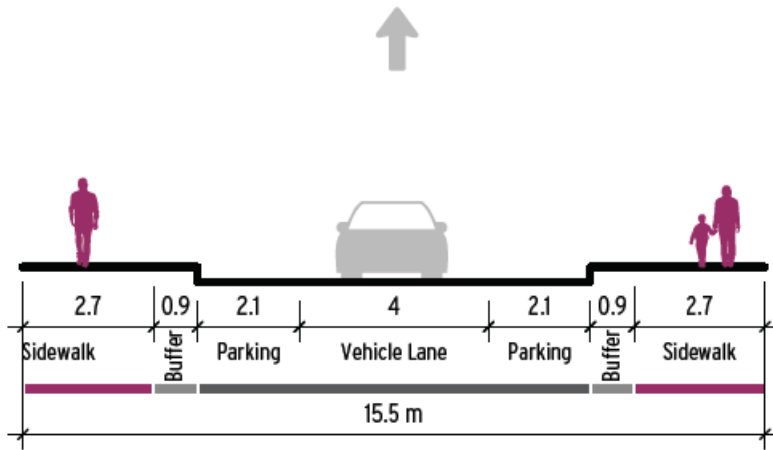


Figure 51: Inglis Place, Existing Cross Section

2.3.1.2 Proposed Cross Section

Figure 52 illustrates the proposed cross section on Inglis Place. The existing sidewalks and buffers are maintained, and a 2.7-metre-wide multi-use pathway is provided on the east side of Inglis Place. The multi-use pathway is accommodated by removing the on-street parking lane and reducing the vehicle lane width to 3.4 metres.

PROPOSED STREET SECTION

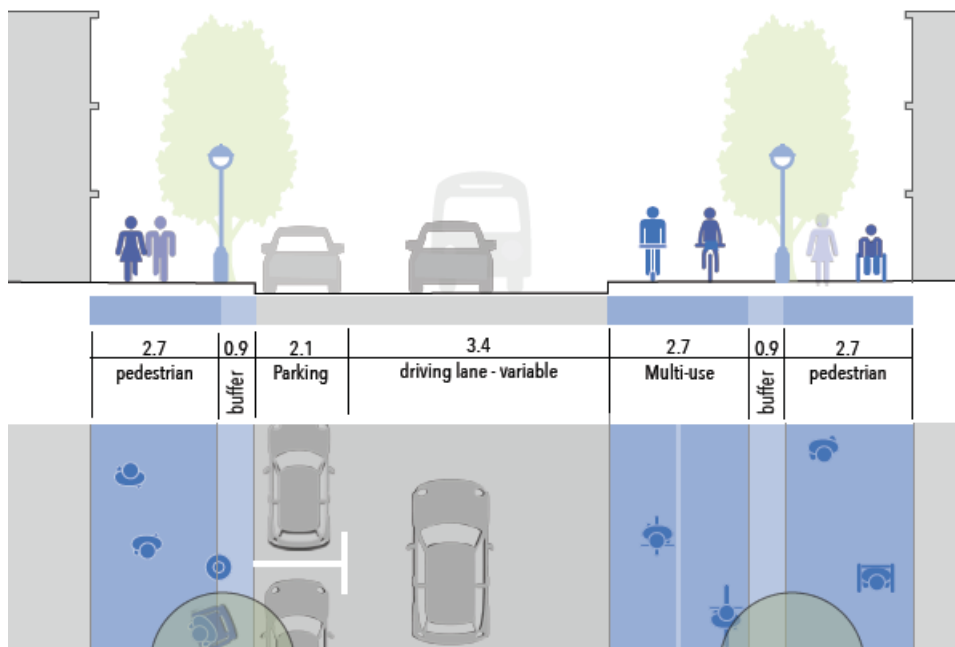


Figure 52: Inglis Place, Proposed Cross Section

Truro Active Transportation Network Review

2.3.1.3 Bikeway Facility Type

No volume data is available for Inglis Place. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.3.1.4 Bikeway Facility Width

The proposed 2.7-meter-wide multi-use pathway meets the practical lower limit width from TAC guidelines of 2.7 metres. However, this is below the recommended lower limit of 3.0 meters.

2.3.1.5 Vehicle Lane Width

The proposed 3.4-metre-wide travel lane is the minimum lane width required to accommodate a minimum lane width of 3.0 metres plus gutter. While this meets the TAC recommended lower limit, it may be perceived as narrow if adjacent to a narrow parking lane.

2.3.1.6 Parking Lane Width

The existing 2.1-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

2.3.1.7 Feasibility and Impacts

While including cycling infrastructure would make Inglis Place a truly multi-modal destination street, the removal of on-street parking in a downtown area with high turnover businesses will likely receive some opposition, however, some trade-offs are necessary to accommodate active transportation. Even with the removal of parking on one side, the proposed cross section results in a narrow parking lane, a narrow travel lane and a narrow multi-use pathway. The proposed cross section should not be implemented.

While Inglis Place may be a candidate for a shared roadway treatment, because it is one-way northbound, cyclists could only access Inglis Place from Esplanade Street. However, there is no proposed cycling infrastructure on Esplanade Street. With a two-way cycling facility, Inglis Place could be accessed from the proposed multi-use pathway on Prince Street. The provision of a suitable two-way cycling facility with adequate vehicle and parking lane widths would likely impact sidewalk and decorative street lighting on one side.

2.3.2 Prince Street (Destination Street)

2.3.2.1 Existing Cross Section

Figure 53 illustrates the existing cross section on Prince Street between Willow Street/Court Street and Walker Street. While the cross section indicates two lanes with two-way traffic, this segment of Prince Street is one-way with both lanes travelling in the eastbound direction. It is noted that there is a short segment (approximately 40 metres) between Lorne Street and Young Street which does allow two-way travel between the two offset legs of the signalized intersection. Utility poles are located in the buffer on the north side of the street and decorative streetlights are located in the buffer on the south side of the street.

Truro Active Transportation Network Review

EXISTING STREET SECTION

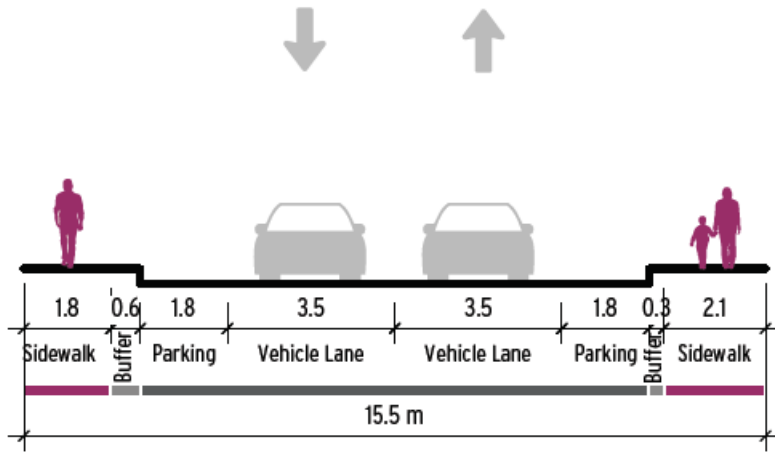


Figure 53: Prince Street, Existing Cross Section

2.3.2.2 Proposed Cross Section

Figure 54 illustrates the proposed cross section on Prince Street. The existing sidewalk and buffer on one side are maintained and the existing sidewalk is maintained on the opposing side of the street with a widened public space including an amenity zone (widened buffer) and a multi-use pathway is provided on the opposing side. The additional space required for increased public realm and the multi-use pathway is accommodated by removing a vehicle lane and a parking lane.

The report does not specify which on side of Prince Street the multi-pathway is proposed. The wider sidewalk with the narrower buffer with the existing decorative street lighting shown adjacent to the multi-use pathway in the cross section are located on the south side of the street. However, the direction of the travel lane and renderings included in the report show the pathway on the north side of Prince Street.

It is noted that the existing cross section includes a right-of-width of 15.5 metres, however, the proposed cross section measurement results in a total width of 16.4 metres. The existing right-of-way is as narrow as 15 metres.

Truro Active Transportation Network Review

PROPOSED STREET SECTION

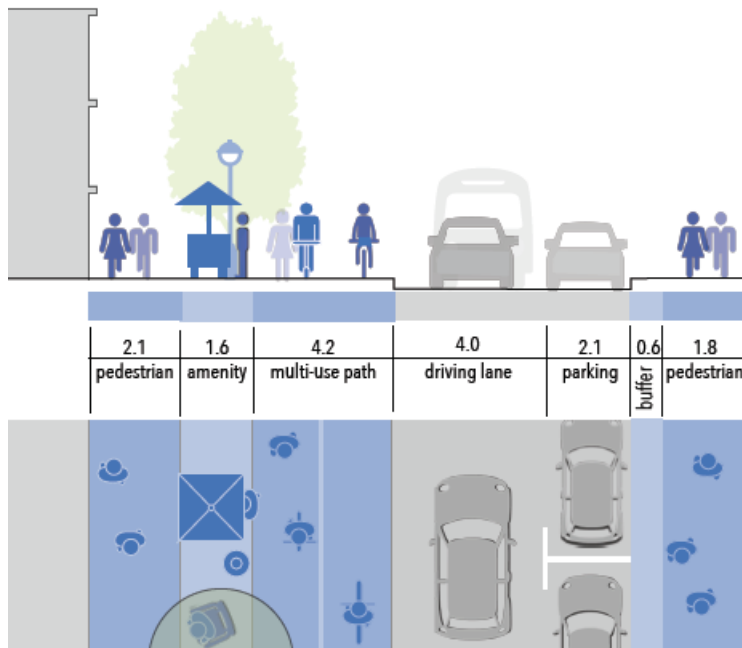


Figure 54: Prince Street, Proposed Cross Section

2.3.2.3 Bikeway Facility Type

Based on peak hour traffic data at intersections along this segment of Prince Street, traffic volumes are estimated to be in the range of 4,500 to 6,500 vehicles per day. Prince Street is also designated Nighttime Truck Route (6:00 pm to 8:00 am) between Court Street and Walker Street. A multi-use pathway a suitable bikeway facility for Prince Street.

2.3.2.4 Bikeway Facility Width

The proposed 4.2-metre-wide multi-use pathway exceeds the TAC recommended lower limit of 3.0 metres.

2.3.2.5 Vehicle Lane Width

The proposed 4.0-metre-wide travel lane is suitable for a truck route.

2.3.2.6 Parking Lane Width

The proposed 2.1-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

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2.3.2.7 Feasibility and Impacts

The plan envisions this segment of Prince Street as a destination with a widened pedestrian realm. The provision of a multi-use pathway in addition to sidewalks will facilitate through travel on a busy pedestrian street. The Prince Street corridor on either end of this segment is proposed to be regional routes forming an important east-west corridor in the active transportation network. Continuity for cyclists will be important on the various segments of Prince Street.

The proposed cross section dimensions exceed the typical right-of-way available along the majority of the corridor. The cross section would need to be modified to fit within the right-of-way and also accommodate a suitable parking lane width and this would likely result in the removal of the amenity space.

The proposed removal of a vehicle lane is not a significant concern from a capacity perspective. With narrow parking lanes on both sides of the street and the existing lane widths, the existing corridor does not function as a two-lane street.

The removal of on-street parking in a downtown area with high turnover businesses will likely receive some opposition, however, some trade offs are necessary to accommodate active transportation and change the character of the street to a destination space. The provision of an improved pedestrian realm could encourage users to park at off-street locations and walk along Prince Street to their destination. It is also noted that some businesses implement sidewalk cafes or patios during summer months utilizing the adjacent parking lane to divert pedestrians. This will no longer be possible for businesses at the locations where parking would be removed.

At the intersection with Walker Street, there are three turning lanes, each dedicated to a separate turning movement with no on-street parking. The removal of one or more lanes will likely be required to accommodate the proposed multi-use pathway. The lower volume right turn could be combined in a shared through/right lane.

2.4 NEIGHBOURHOOD STREET ROUTES

The *Active Transportation Plan's* network plan includes 11 neighbourhood street routes which provide connectivity to important in-neighbourhood destinations or to the regional network.

It is noted that there are a number of additional neighbourhood street routes illustrated in the *Active Transportation Plan's* Figure 7 Neighbourhood Routes, which are not described in the report and for which no infrastructure recommendations are included. These include:

- Abbey Avenue,
- Cobequid Drive,
- Cook Street (between Young Street and Slack Street),
- Douglas Street (between Slack Street and Exhibition Street),
- East End Cross Road,
- Exhibition Street (between Lansdoon Place and Douglas Street),
- James Street,
- Lansdoon Place (between Exhibition Street and Rosewyn Place),
- Lower Truro Road,
- Rosewyn Place, and
- Slack Street.

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2.4.1 Aberdeen Street

2.4.1.1 Existing Cross Section

Figure 55 illustrates the existing cross section on Aberdeen Street. Utility poles are located in the buffer on the east side of the street between Prince Street and Brunswick Street and in the buffers on both sides of the street between Brunswick Street and the school driveway.

EXISTING STREET SECTION

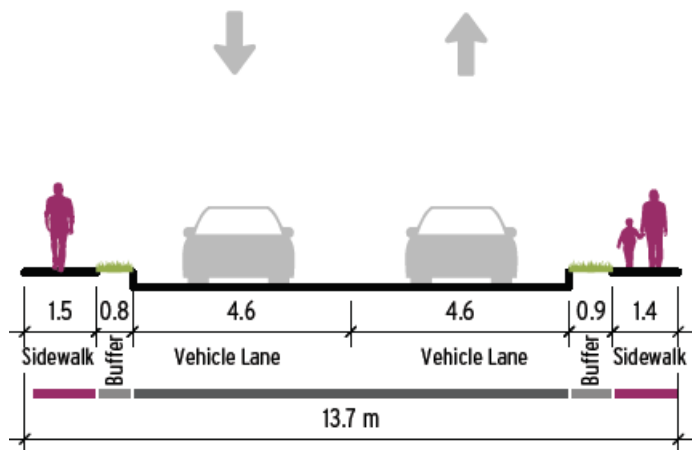


Figure 55: Aberdeen Street, Existing Cross Section

2.4.1.2 Proposed Cross Section

Figure 56 illustrates the proposed cross section on Aberdeen Street. The existing sidewalk and buffer are maintained and shared lane markings are added to the street.

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PROPOSED STREET SECTION

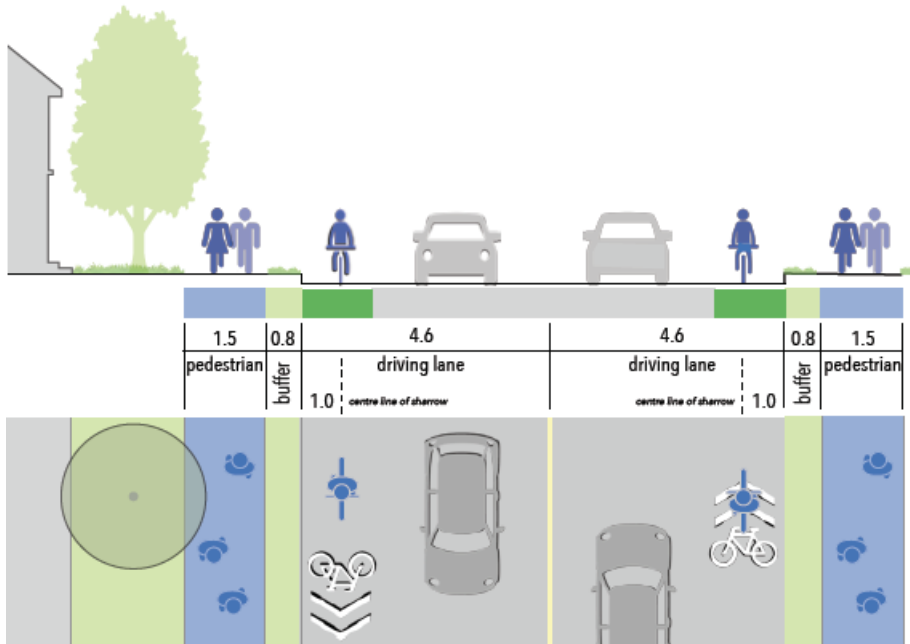


Figure 56: Aberdeen Street, Proposed Cross Section

2.4.1.3 Bikeway Facility Type

No volume data is available for Aberdeen Street. A shared roadway/lane treatment is suitable if daily volumes are less than 1,000 vehicles per day and speeds are less than or equal to 40 km/h. Given the length of Aberdeen Street and its primarily residential nature, volumes are expected to be less than 1,000 vehicles per day. The proposed shared lane treatment is likely suitable for Aberdeen Street.

2.4.1.4 Bikeway Width

The proposed 4.6-metre-wide shared lanes exceeds the TAC recommended lower limit of 4.3 metres for side-by-side operation.

2.4.1.5 Vehicle Lane Width

No changes are proposed to the existing vehicle lanes.

2.4.1.6 Feasibility and Impacts

The proposed cross section is considered feasible and can be implemented with the simple addition of pavement markings.

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2.4.2 Brooks Lane

2.4.2.1 Existing Cross Section

Figure 57 illustrates the existing cross section on Brooks Lane. Utility poles are primarily located in the buffer on the north side of the street. Based on the network plan, Brooks Lane appears to include the segment of Abenaki Road from Brooks Lane to the Abenaki Road Connector.

EXISTING STREET SECTION

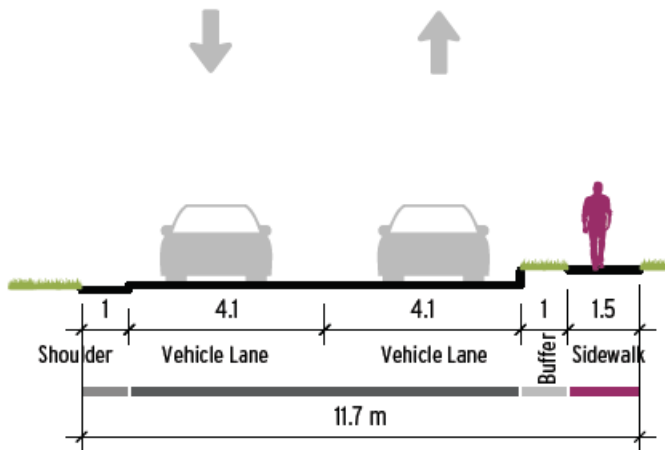


Figure 57: Brooks Lane, Existing Cross Section

2.4.2.2 Proposed Cross Section

Figure 58 illustrates the proposed cross section on Brooks Lane. The existing sidewalk and buffer are maintained and 1.5-metre-wide, unbuffered bike lanes are provided. The additional space required for the bike lanes is accommodated by reducing the vehicle lane widths to 3.0 metres and removing the existing shoulder.

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PROPOSED STREET SECTION

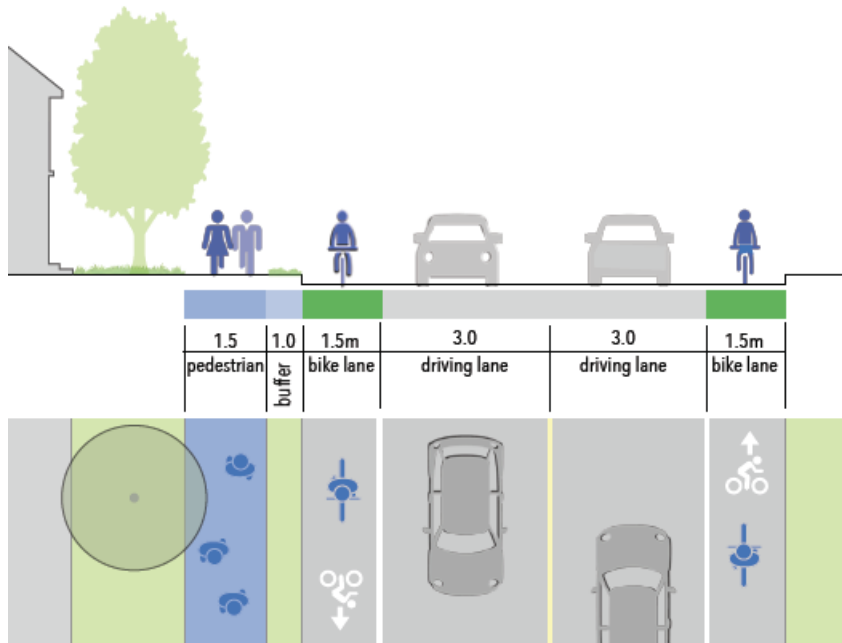


Figure 58: Brooks Lane, Proposed Cross Section

2.4.2.3 Bikeway Facility Type

No volume data is available for Brooks Lane. An unbuffered bike lane treatment is only suitable if daily volumes are less than 4,000 vehicles per day and speeds are less than or equal to 50 km/h.

Volume and operating speed data is required to confirm if the proposed unbuffered bike lane treatment is suitable on Brooks Lane.

2.4.2.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered bike lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under constrained environments and for short distances of up to 100 metres.

2.4.2.5 Vehicle Lane Width

The proposed 3.0-metre-wide travel lanes meet the TAC recommended lower limit.

2.4.2.6 Feasibility and Impacts

Volume and operating speed data is required to confirm if the proposed unbuffered bike lane treatment is suitable on Brooks Lane. If suitable, the proposed cross section can be implemented with modifications to the road shoulder to widen the pavement width. There are some sections with steep grades beyond the existing shoulder where guiderail exist and infilling may be required. Bike lanes will also impact rail signal infrastructure at the at-grade rail crossing.

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2.4.3 Brunswick Street

2.4.3.1 Existing Cross Section

Figure 59 illustrates the existing cross section on Brunswick Street. It is noted that there are existing unbuffered bike lanes between Young Street and Ross Street.

Utility poles are located in the buffers on both sides of the street between Young Street and Palmer Street, and in the buffer on the north side of the street between Palmer Street and the Town boundary.

EXISTING STREET SECTION

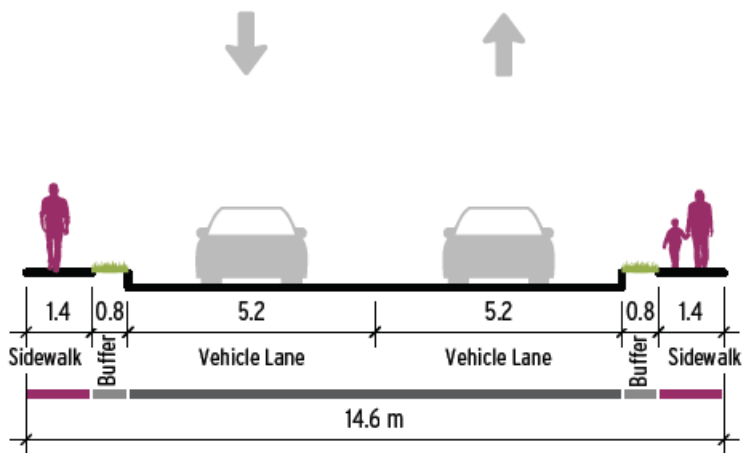


Figure 59: Brunswick Street, Existing Cross Section

2.4.3.2 Proposed Cross Section

Figure 60 illustrates the proposed cross section on Brunswick Street. The existing sidewalk and buffer on one side of the street are removed and replaced with a 3.0-meter-wide multi-use pathway with buffer, existing sidewalk and buffer on the opposing side of the street are maintained and a new on-street parking lane is provided. The report does not specify on which side of Brunswick Street the multi-use pathway is proposed. The additional space required for the multi-use pathway and parking lane is accommodated by reducing the vehicle lane widths to 3.3 metres.

Truro Active Transportation Network Review

PROPOSED STREET SECTION

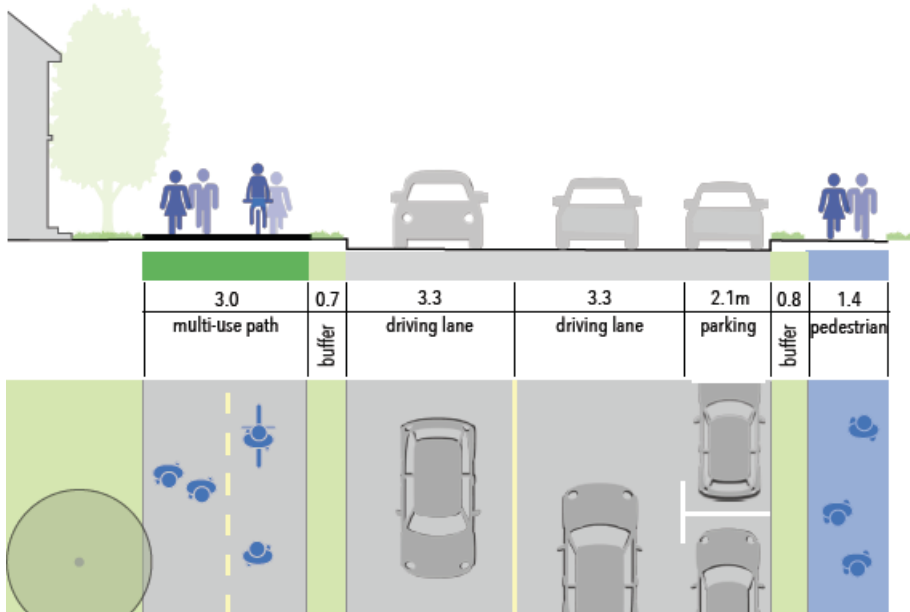


Figure 60: Brunswick Street, Proposed Cross Section

2.4.3.3 Bikeway Facility Type

A 7-day speed and volume count collected by the Town on East Brunswick Street indicates that traffic volumes are in the range of 1,580 vehicles per day and operating speeds are around 53 km/h. The multi-use pathway is a suitable treatment for Brunswick Street.

2.4.3.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.4.3.5 Vehicle Lane Width

The proposed vehicle lane width of 3.3 metres inclusive of gutter adjacent to the multi-pathway is not suitable. A minimum lane width of 3.4 metres is required to accommodate a minimum lane width of 3.0 metres plus gutter.

2.4.3.6 Parking Lane Width

The proposed 2.1-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

2.4.3.7 Feasibility and Impacts

The proposed cross section does not include suitable travel lane and parking lane widths and would require modification. This would likely result in the removal of the on-street parking lane.

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The proposed cross section requires the relocation of utility poles between Young Street and Palmer Street where utility poles exist on both sides. Utility poles are located on the north side of the street between Palmer Street and the Town boundary. The multi-use pathway should be located on the south side of Brunswick Street to minimize utility poles relocations along the corridor.

Without the proposed segment of the Wabanaki Trail between King Street and downtown envisioned in the Plan, an alternative east-west connection between the Cobequid Trail/Willow Street and downtown will be required. The east-west connection could be made via the Arthur Street/Esplanade Street or Charles Street/Brunswick Street. The two alternative corridors are further discussed in Section 3.1.

If maintained as part of the network, the Brunswick Street corridor would need to be re-evaluated to include suitable vehicle lane widths.

2.4.4 Burnyeat Street

2.4.4.1 Existing Cross Section

Figure 61 illustrates the existing cross section on Burnyeat Street. It is noted that while the existing cross section shows sidewalks on both sides, sidewalks only exist for a short segment between Brunswick Street and Adam Street.

Utility poles are located in the buffer on the east side of the street between Brunswick Street and Adam Street. South of Adam Street, there are no utilities poles within the street right-of-way.

EXISTING STREET SECTION

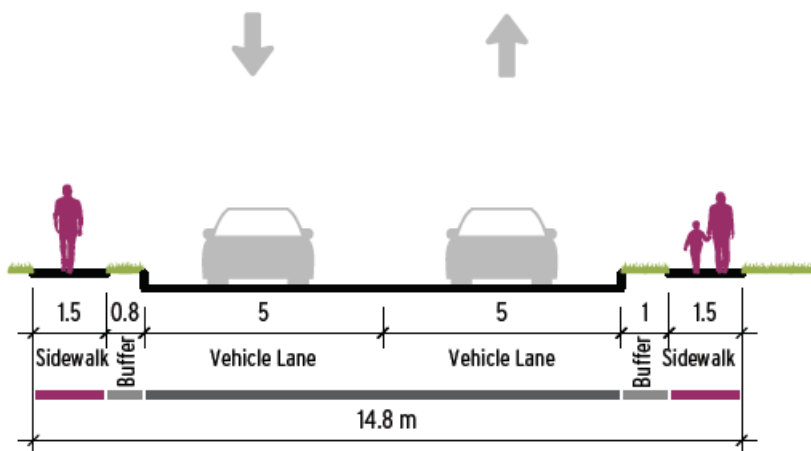


Figure 61: Burnyeat Street, Existing Cross Section

2.4.4.2 Proposed Cross Section

Figure 62 illustrates the proposed cross section on Burnyeat Street. The proposed cross section includes widening of the street to provide shared lane markings and on-street parking, with new sidewalk and buffers on both sides.

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PROPOSED STREET SECTION

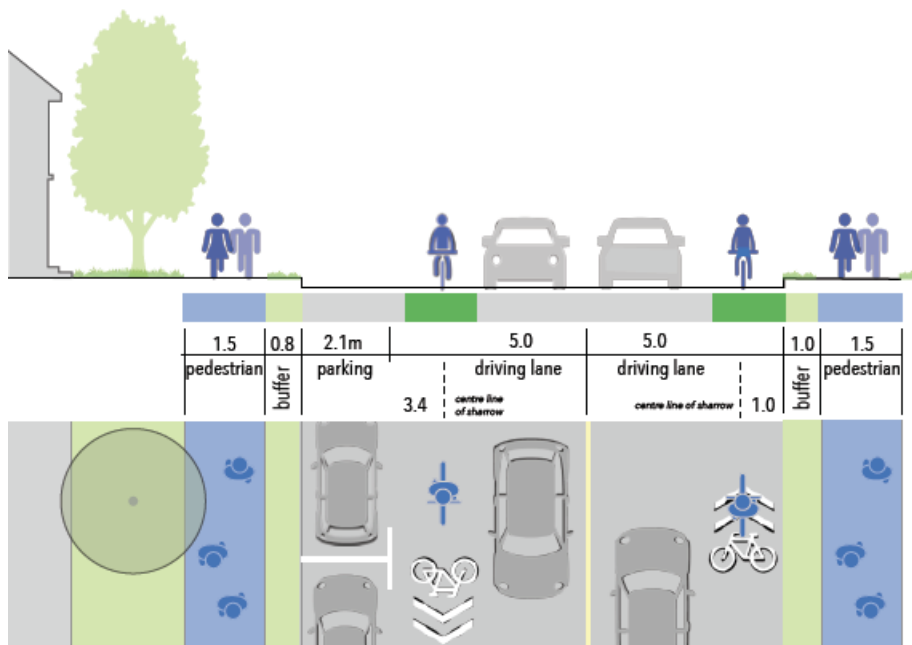


Figure 62: Burnyeat Street, Proposed Cross Section

2.4.4.3 Bikeway Facility Type

No volume data is available for Burnyeat Street. A shared roadway/lane treatment is suitable if daily volumes are less than 1,000 vehicles per day and speeds are less than or equal to 40 km/h. Given the length of Burnyeat Street and its primarily residential nature, volumes are expected to be less than 1,000 vehicles per day. The proposed shared lane treatment is suitable for Burnyeat Street if lower speeds are observed.

Volume and operating speed data is required to confirm if the proposed shared lane treatment is suitable on Burnyeat Street.

2.4.4.4 Bikeway Width

The proposed 5.0-metre-wide shared lanes slightly exceed the TAC recommended upper limit of 4.9 metres for side-by-side operation. If lane widths exceed 4.9 metres, TAC recommends using a bike lane instead. 1.8-metre-wide unbuffered bike lanes could fit within the existing pavement width with 3.2-metre-wide travel lanes. The provision of bike lanes would result in the loss of on-street parking where it is currently permitted. The existing pavement width would need to be confirmed along the entire length of the corridor.

2.4.4.5 Vehicle Lane Width

No changes are proposed to the existing vehicle lanes.

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2.4.4.6 Parking Lane Width

The proposed 2.1-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

2.4.4.7 Feasibility and Impacts

The proposed cross section includes widening to provide shared lanes and maintain on-street parking. This would impact utility poles between Brunswick Street and Adam Street and also impact private property.

It is noted that there are some sections of Burnyeat Street with significant grades that may prove challenging to the average cyclist. Grades of less than 4% are ideal for cyclists but grades up to 8% may be used where necessary. Many cyclists will need to dismount if the grade exceeds 8%. Grades exceeding 8% are expected on approximately 75% of the corridor.

The proposed cross section is not recommended as it requires street reconstruction but provides limited improvements to cycling infrastructure.

2.4.5 Charles Street

2.4.5.1 Existing Cross Section

Figure 63 illustrates the existing cross section on Charles Street. Utility poles are located in the buffer on the north side of the street between Dominion Street and Shannon Drive. East of Shannon Drive to Young Street, utility poles are located in the buffer on the south side of the street. On-street parking is permitted.

EXISTING STREET SECTION

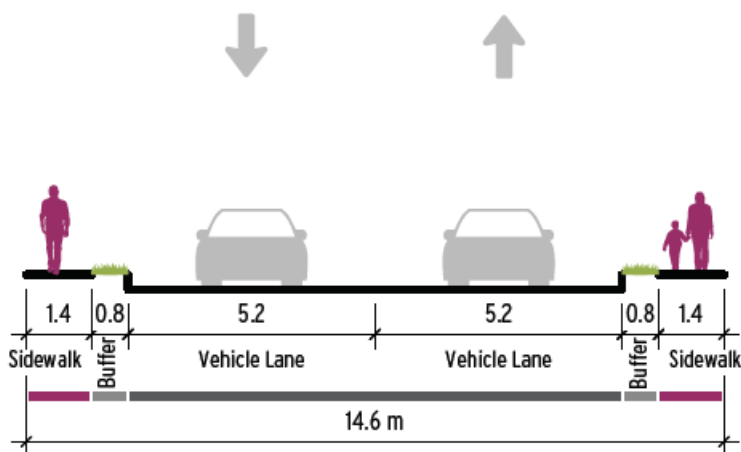


Figure 63: Charles Street, Existing Cross Section

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2.4.5.2 Proposed Cross Section

Figure 64 illustrates the proposed cross section on Charles Street. The existing sidewalk and buffer on one side of the street are removed and replaced with a 3.0-meter-wide multi-use pathway with buffer, existing sidewalk and buffer on the opposing side of the street are maintained and a new on-street parking lane is provided. The report does not specify on which side of Charles Street the multi-pathway is proposed. The additional space required for the multi-use pathway and parking lane is accommodated by reducing the vehicle lane widths to 3.3 metres.

PROPOSED STREET SECTION

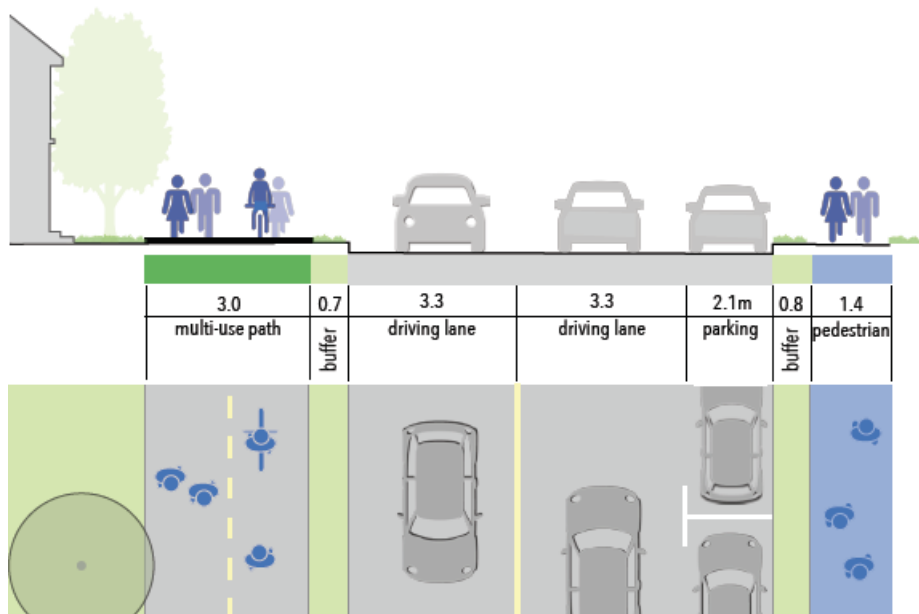


Figure 64: Charles Street, Proposed Cross Section

2.4.5.3 Bikeway Facility Type

No volume data is available for Charles Street. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.4.5.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.4.5.5 Vehicle Lane Width

The proposed vehicle lane width of 3.3 metres inclusive of gutter adjacent to the multi-pathway is not suitable. A minimum lane width of 3.4 metres is required to accommodate a minimum lane width of 3.0 metres plus gutter.

Truro Active Transportation Network Review

2.4.5.6 Parking Lane Width

The proposed 2.1-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

2.4.5.7 Feasibility and Impacts

The proposed cross section does not include suitable travel lane and parking lane widths and would require modification. This would likely result in the removal of the on-street parking lane.

The proposed cross section requires minor street reconstruction, including new curb work, but is expected to have minor impacts to utilities and/or property. Utility poles are primarily located on the north side of Charles Street, there are only a few poles on the south side closer to Young Street. The multi-use pathway should be located on the south side of Charles Street to minimize utility poles relocations along the corridor.

Without the proposed segment of the Wabanaki Trail between King Street and Downtown envisioned in the Plan, an alternative east-west connection between the Cobequid Trail/Willow Street and Downtown will be required. The east-west connection could be made via the Arthur Street/Esplanade Street or Charles Street/Brunswick Street. The two alternative corridors are further discussed in Section 3.1.

If maintained as part of the network, the Charles Street corridor would need to be re-evaluated to include suitable vehicle lane widths.

2.4.6 Curtis Drive

2.4.6.1 Existing Cross Section

Figure 65 illustrates the existing cross section on Curtis Drive. The existing sidewalk is located on the east side of the street. Utility poles are located on the west side of the street between Glenwood Drive and Abbey Avenue. Between Abbey Avenue and Upham Drive, utility poles are primarily located on the west side of the street with a few poles located in the buffer on the east side of the street. South of Upham Drive, utility poles are located in the buffer on the east side of the street.

Truro Active Transportation Network Review

EXISTING STREET SECTION

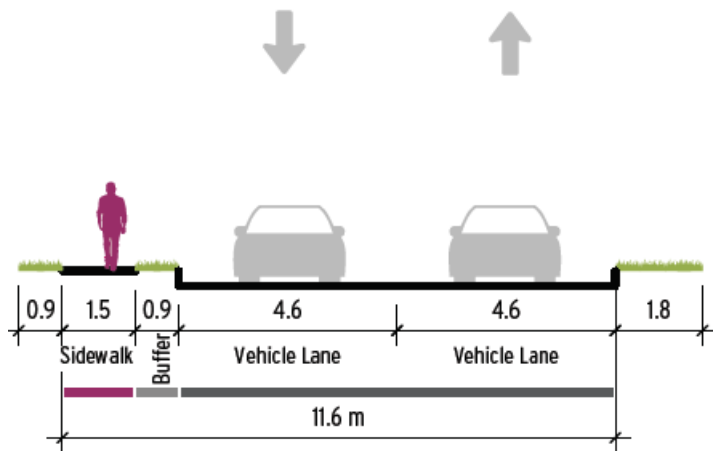


Figure 65: Curtis Drive, Existing Cross Section

2.4.6.2 Proposed Cross Section

Figure 66 illustrates the proposed cross section on Curtis Drive. The existing sidewalk and buffer are removed and replaced with a 3.0-metre-wide multi-use pathway with buffer. The additional space required for the multi-use pathway is accommodated by reducing the vehicle lane widths to 3.3 metres.

PROPOSED STREET SECTION

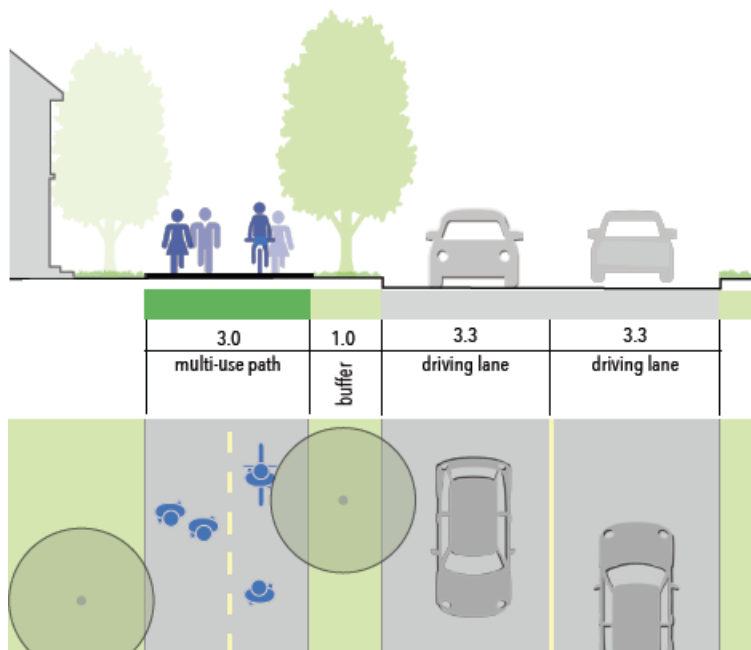


Figure 66: Curtis Drive, Proposed Cross Section

Truro Active Transportation Network Review

2.4.6.3 Bikeway Facility Type

No volume data is available for Curtis Drive. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.4.6.4 Bikeway Width

The proposed 3.0-metre-wide multi-use pathway meets the TAC recommended lower limit.

2.4.6.5 Vehicle Lane Width

The proposed vehicle lane width of 3.3 metres inclusive of gutter is not suitable. A minimum lane width of 3.4 metres is required to accommodate a minimum lane width of 3.0 metres plus gutter. Suitable lane widths can be accommodated with minor changes to the cross section.

2.4.6.6 Feasibility and Impacts

The proposed cross section with minor modifications to provide adequate travel lane widths is considered suitable for Curtis Drive. The implementation will require minor street reconstruction including new curb work but is expected to have minor impacts to utilities and/or property. Replacing the existing sidewalk and buffer on the east side minimizes impacts to utility poles located on the west side along most of the corridor. There will be some minor impacts to a few utility poles in the buffer on the east side, south of Abbey Avenue.

2.4.7 Harris Avenue

2.4.7.1 Existing Cross Section

Figure 67 illustrates the existing cross section on Harris Avenue. Utility poles are located in the buffer on the east side of the street.

EXISTING STREET SECTION

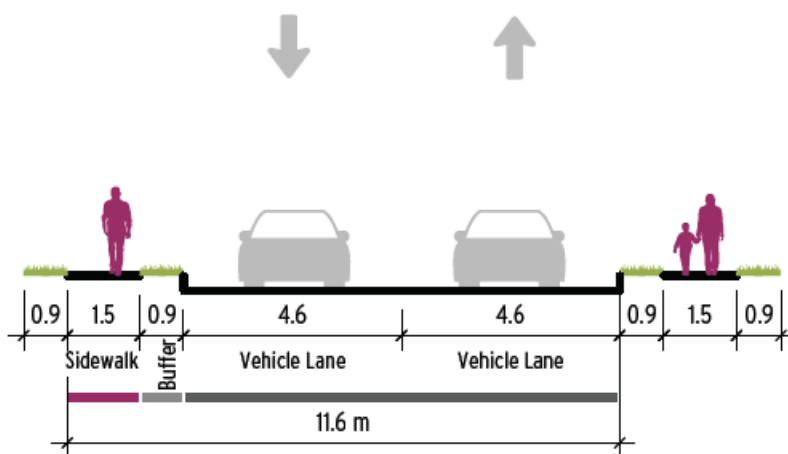


Figure 67: Harris Avenue, Existing Cross Section

Truro Active Transportation Network Review

2.4.7.2 Proposed Cross Section

Figure 68 illustrates the proposed cross section on Harris Avenue. The sidewalk and buffer on the west side are removed and replaced with a multi-use pathway.

It is noted that the proposed cross section does not match the description in the report. It is unclear if the cross section or description is correct. While the cross section illustrates a 3.5-metre-wide multi-use pathway, the text in the report describes a 3.0-metre-wide multi-use pathway. While not shown on the cross section, the report does state that the sidewalk and buffer on the east side are maintained. The cross section illustrates a parking lane; however, the text description does not make any mention of parking.

PROPOSED STREET SECTION

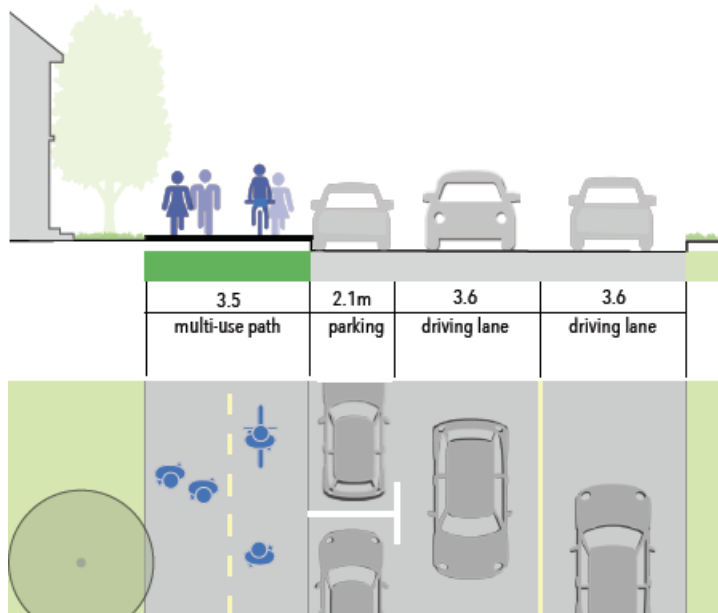


Figure 68: Harris Avenue, Proposed Cross Section

2.4.7.3 Bikeway Facility Type

No volume data is available for Harris Avenue. However, a multi-use pathway is a suitable treatment for all vehicle volumes and speeds.

2.4.7.4 Bikeway Width

The proposed 3.0 or 3.5-metre-wide multi-use pathway meets or exceeds the TAC recommended lower limit.

2.4.7.5 Vehicle Lane Width

The proposed 3.6-metre-wide travel lanes are suitable.

Truro Active Transportation Network Review

2.4.7.6 Parking Lane Width

The proposed 2.1-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

2.4.7.7 Feasibility and Impacts

The proposed cross section with some modifications could be considered suitable for Harris Avenue. The implementation will require minor street reconstruction including new curb work but is expected to have minor impacts to utilities and/or property. Maintaining existing sidewalk and buffer on the east side minimizes impacts to utility poles.

However, while this route is intended as a link between Glenwood Drive and the Truro Elementary School, new cycling infrastructure would be required on Abbey Avenue to connect to the school. This short corridor forms a parallel route with Curtis Drive, which provides a better link between Glenwood Drive and the Truro Elementary School with the school having direct frontage on Curtis Drive.

2.4.8 Lyman Street

2.4.8.1 Existing Cross Section

Figure 69 illustrates the existing cross section on Lyman Street. It is noted that while the existing cross section shows sidewalks on both sides, sidewalks only exist for a short segment between Brunswick Street and Adam Street.

Utility poles are located in the buffer on the west side of the street between Brunswick Street and Adam Street and behind the curb south of Adam Street where the sidewalk terminates.

EXISTING STREET SECTION

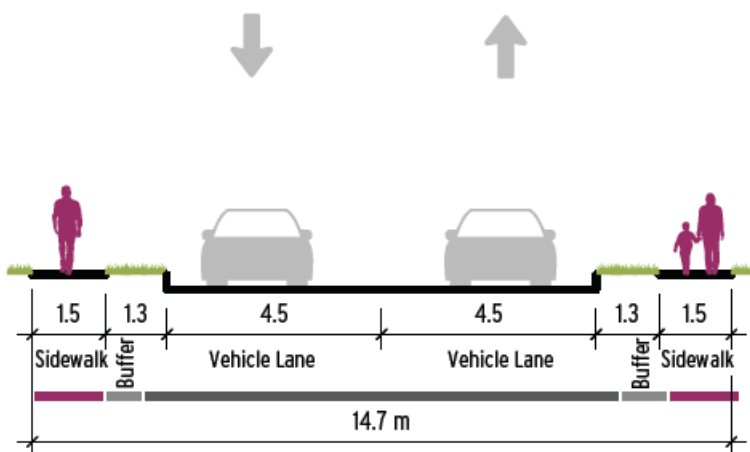


Figure 69: Lyman Street, Existing Cross Section

Truro Active Transportation Network Review

2.4.8.2 Proposed Cross Section

Figure 70 illustrates the proposed cross section on Lyman Street. The existing sidewalks and buffers are maintained and extended where they do not exist and shared lane markings are added to the street.

PROPOSED STREET SECTION

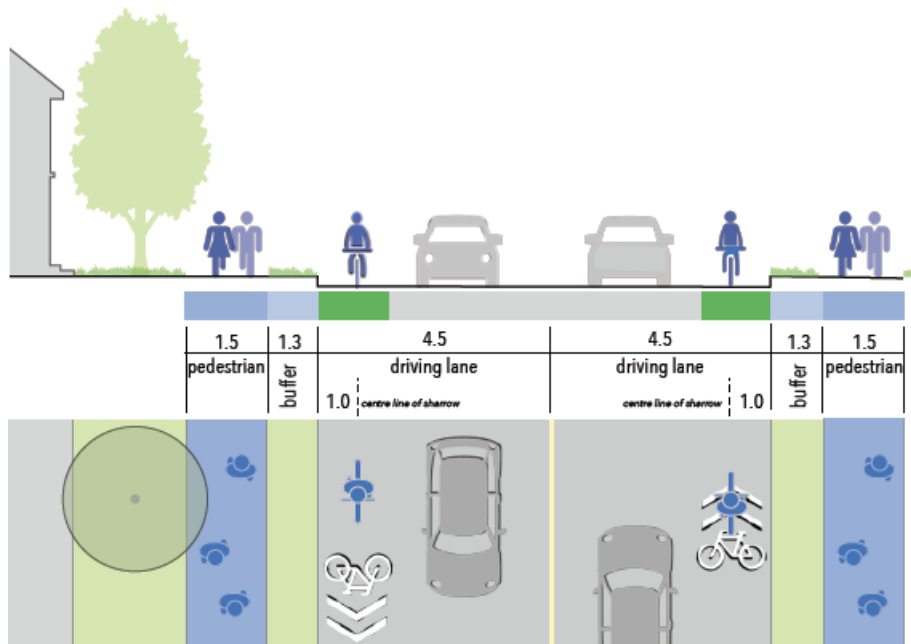


Figure 70: Lyman Street, Proposed Cross Section

2.4.8.3 Bikeway Facility Type

No volume data is available for Lyman Street. A shared roadway/lane treatment is suitable if daily volumes are less than 1,000 vehicles per day and speeds are less than or equal to 40 km/h. Given the length of Lyman Street and its primarily residential nature, volumes are expected to be less than 1,000 vehicles per day. The proposed shared lane treatment would be suitable for Lyman Street if lower speeds are observed.

Volume and operating speed data is required to confirm if the proposed shared lane treatment is suitable on Lyman Street.

2.4.8.4 Bikeway Width

The proposed 4.5-metre-wide shared lanes exceeds the TAC recommended lower limit of 4.3 metres for side-by-side operation.

2.4.8.5 Vehicle Lane Width

No changes are proposed to the existing vehicle lanes.

Truro Active Transportation Network Review

2.4.8.6 Feasibility and Impacts

Volume and operating speed data is required to confirm if the proposed shared lane treatment is suitable on Lyman Street. If the treatment is considered suitable based on speed and volume, the proposed cross section can be implemented with the simple addition of pavement markings.

It is noted that there are some sections of Lyman Street with significant grades that may prove challenging to the average cyclist. Grades of less than 4% are ideal for cyclists but grades up to 8% may be used where necessary. Many cyclists will need to dismount if the grade exceeds 8%. A grade of approximately 7% is expected along multiple sections.

2.4.9 Pleasant Street

2.4.9.1 Existing Cross Section

Figure 71 illustrates the existing cross section on Pleasant Street south of MacDonald Street (Section A). The existing sidewalk is located on the east side of the street. Utility poles are located in the buffer on the east side of the street.

Figure 72 illustrates the existing cross section on Pleasant Street between Prince Street and MacDonald Street (Section B). Utility poles are located in the buffers on both sides between Prince Street and Charles Street and on the east side of the street south of Charles Street.

It is noted that the existing travel lanes are not as wide as illustrated in the cross section along the majority of the corridor. Pavement widths ranging from 7.0 to 8.5 metres were measured.

EXISTING STREET SECTION A

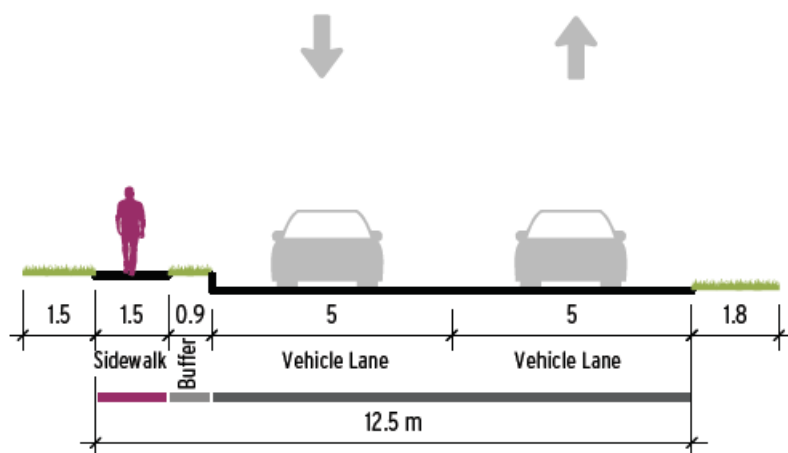


Figure 71: Pleasant Street Section A, Existing Cross Section

Truro Active Transportation Network Review

EXISTING STREET SECTION B

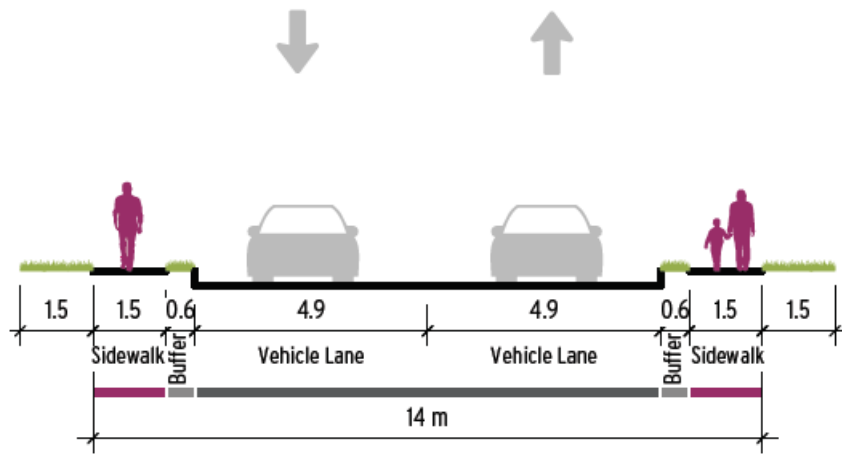


Figure 72: Pleasant Street Section B, Existing Cross Section

2.4.9.2 Proposed Cross Section

Figure 73 illustrates the proposed cross section on Pleasant Street south of MacDonald Street (Section A). The existing sidewalk and buffer are maintained and 1.5-metre-wide, unbuffered bike lanes are provided within the existing pavement width by reducing the vehicle lane widths to 3.5 metres.

Figure 74 illustrates the proposed cross section on Pleasant Street between Prince Street and MacDonald Street (Section B). The existing sidewalk and buffer are maintained on both sides and 1.5-metre-wide, unbuffered bike lanes are provided within the existing pavement width by reducing the vehicle lane widths to 3.4 metres.

Based on measured pavement widths, there is insufficient room to accommodate bike lanes within the existing pavement width.

Truro Active Transportation Network Review

PROPOSED STREET SECTION A

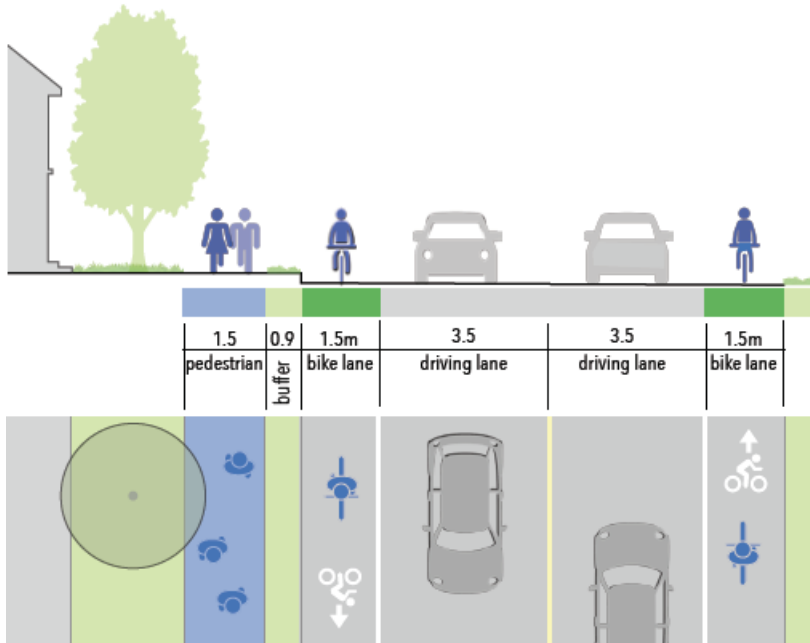


Figure 73: Pleasant Street Section A, Proposed Cross Section

PROPOSED STREET SECTION B

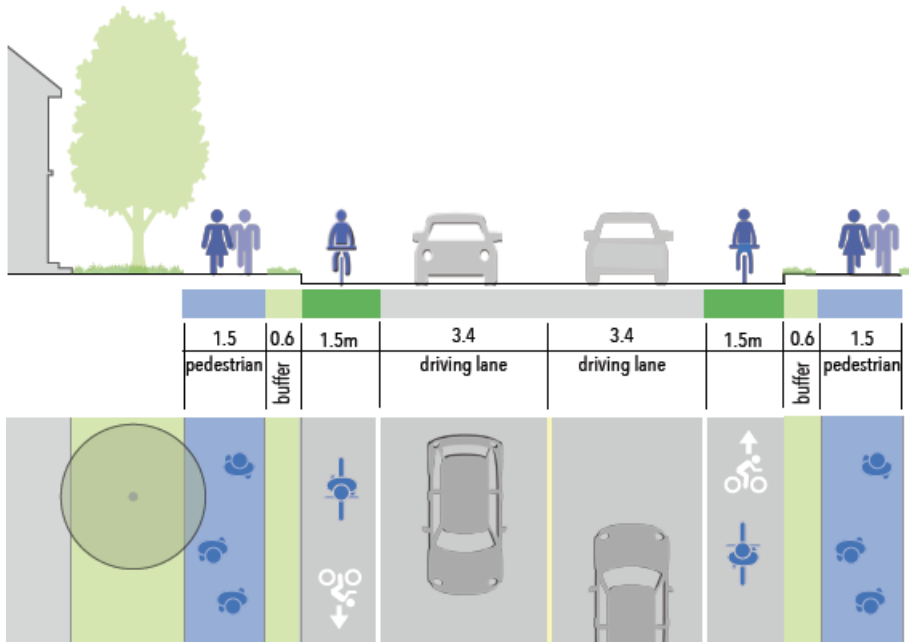


Figure 74: Pleasant Street Section B, Proposed Cross Section

Truro Active Transportation Network Review

2.4.9.3 Bikeway Facility Type

A 7-day speed and volume count collected by the Town on Pleasant Street indicates that traffic volumes are in the range of 1,250 vehicles per day and operating speeds are around 60 km/h. For vehicle speeds greater than 50 km/h, cyclists should be separated from vehicles by a physical barrier such as protected bike lanes or bike path/multi-use path.

The proposed unbuffered bike lane treatment is not suitable for Pleasant Street.

2.4.9.4 Bikeway and Vehicle Lane Width

The proposed 1.5-metre-wide unbuffered bike lanes cannot be accommodated within the existing pavement width while maintaining a minimum travel lane width of 3.0 metres.

2.4.9.5 Feasibility and Impacts

The proposed cross section is not feasible based on measured pavement widths. The provision of a wider and/or more suitable bikeway facility on Pleasant Street cannot be provided without major reconstruction of Pleasant Street and potential impacts to utility poles.

It is noted that there are some sections of Pleasant Street with significant grades that may prove challenging to the average cyclist. Grades of less than 4% are ideal for cyclists but grades up to 8% may be used where necessary. Many cyclists will need to dismount if the grade exceeds 8%. A grade of around 8% is expected for a length of approximately 870 metres along the 2.2-kilometer corridor.

If maintained as part of the network, the Pleasant Street corridor would need to be re-evaluated to include a suitable bikeway facility and vehicle lane widths.

2.4.10 Upham Drive

2.4.10.1 Existing Cross Section

Upham Drive consists of two separate street segments: one from Willow Street to Richie Barnhill Drive, and Cobequid Drive to Pleasant Street. The two segments are separated by approximately 140 metres. The segment ending at Pleasant Street is connected to Young Street by a narrow, paved trail segment known as Gero Walkway.

Figure 75 illustrates the existing cross section on Upham Drive. It is noted that while the existing cross section shows no sidewalks, a sidewalk exists on the south side of Upham Drive for a short segment between Curtis Drive and Richie Barnhill Drive.

Utility poles are primarily located behind the curb on the north side of the street between Willow Street and Curtis Drive with a number of guy or connection poles on the south side of the street. Between Curtis Drive and Richie Barnhill Drive, utility poles are located in the buffer on the south side of the street. On the segment between Cobequid Drive and Pleasant Street, utility poles are located on the north side of the street.

Truro Active Transportation Network Review

EXISTING STREET SECTION

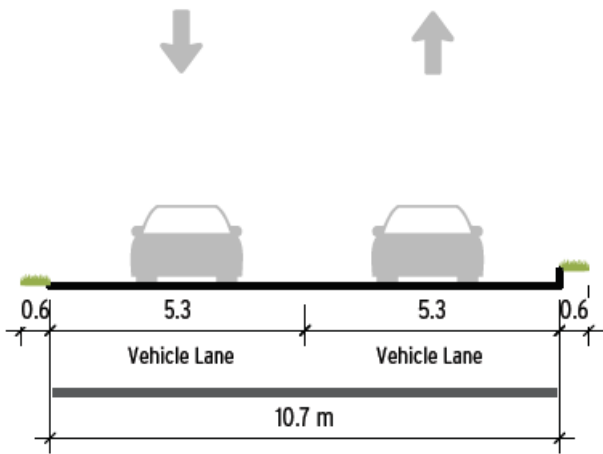


Figure 75: Upham Drive, Existing Cross Section

2.4.10.2 Proposed Cross Section

Figure 76 illustrates the proposed cross section on Upham Drive. Unbuffered bike lanes are provided within the existing pavement width by reducing the vehicle lane widths to 3.7 metres. The proposed cross section does not include any pedestrian facilities.

PROPOSED STREET SECTION

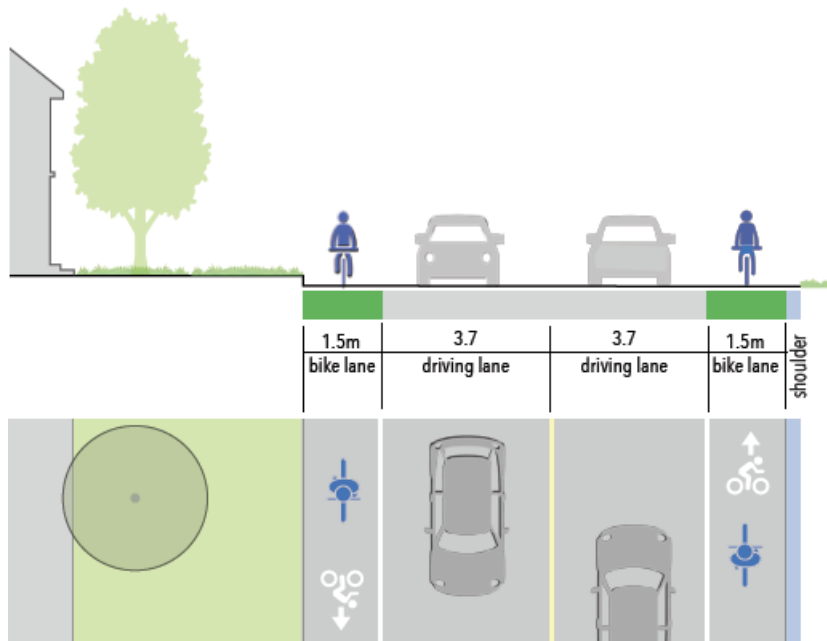


Figure 76: Upham Drive, Proposed Cross Section

Truro Active Transportation Network Review

2.4.10.3 Bikeway Facility Type

No volume data is available for Upham Drive. While Upham Drive is not a designated truck route, the industrial land uses on the segment between Willow Street and Industrial Drive are expected to generate a significant volume of heavy vehicles.

For volumes less than 4,000 vehicles per day, unbuffered or buffered bike lanes would be suitable bikeway facilities for Upham Drive east of Industrial Avenue. Volumes in the residential segments are expected to be below 4,000 vehicles per day.

On the industrial segment between Willow Street and Industrial Avenue, protected bike lanes or bike path/multi-use path may be preferable, depending on volumes. Volume and operating speed data is required to confirm if the unbuffered bike lane treatment is suitable on Upham Drive in the industrial segment.

2.4.10.4 Bikeway Width

TAC recommends a lower limit of 1.8 metres for an unbuffered bike lane width, with 1.5 metres as the practical lower limit. However, bike lanes between 1.5 and 1.8 metres in width should only be used under constrained environments and for short distances of up to 100 metres. Vehicle lane widths could be narrowed to accommodate wider bike lanes.

2.4.10.5 Vehicle Lane Width

The proposed 3.7-metre-wide travel lanes are suitable.

2.4.10.6 Feasibility and Impacts

The proposed cross section does not include any pedestrian infrastructure. While the right-of-way may not be sufficient to include bike lanes and sidewalk, the possibility to provide a multi-use pathway could be investigated. The proposed cross section includes 3.7 metres wide travel lanes which could be narrowed in the residential sections where the right-of-way is generally narrower. Wider lanes could be maintained in the industrial area where the right-of-way is wider. This route, combined with the proposed Curtis Drive route, would provide a connection between Truro Elementary School and Truro Middle School.

While not mentioned in the report, Gero Walkway is a narrow, paved trail connection to Young Street which is not suitable for shared use by pedestrians and cyclists. The 140-metre-long trail would need to be upgraded to a multi-use pathway. Further to this, the Upham Drive corridor can only provide network connectivity if a trail connection is provided to connect the two segments of Upham Drive. A trail would need to be provided over the distance of 140 metres, however, a grade of approximately 14% is observed in the area between the two street segments. This grade would require almost all cyclists to dismount. It would be difficult to provide a facility such as switch backs within the existing right of way to make the route more accessible to cyclists.

The Upham Drive corridor will form a parallel route with both the Glenwood Drive and William Barnhill Drive corridors. Due to the challenges associated with constructing a connection with a grade suitable to the average cyclist between the two road segments, Upham Drive is considered less of a priority.

Truro Active Transportation Network Review

2.4.11 Wood Street

2.4.11.1 Existing Cross Section

Figure 77 illustrates the existing cross section on Wood Street. It is noted that while the existing cross section shows sidewalks on both sides of the street, there is a short segment between Centennial Drive and the end of the street where there is only sidewalk on the east side of the street.

Utility poles are located in the buffer on the west side of the street between Prince Street and Alice Street and in the buffer on the east side between Alice Street and the end of the street.

EXISTING STREET SECTION

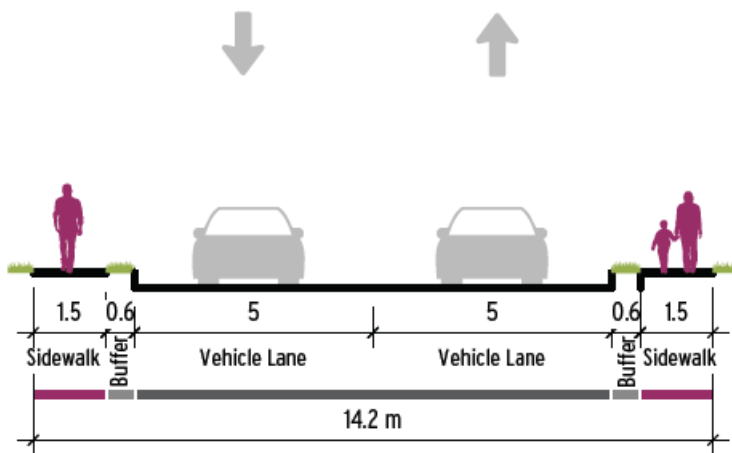


Figure 77: Wood Street, Existing Cross Section

2.4.11.2 Proposed Cross Section

Figure 78 illustrates the proposed cross section on Wood Street. The existing sidewalks and buffers are maintained and extended where they do not exist. Shared lane markings are added to the street and on-street parking is retained.

The dimensions between the existing and proposed cross section do not match. The pavement is narrowed in the proposed cross section by 1.2 metres and one of the buffers is widened by 0.4 metres which would impact existing sidewalks and utility poles. It is unclear if the cross section was simply meant to maintain existing sidewalks and buffers, however, the text implies street reconstruction.

Truro Active Transportation Network Review

PROPOSED STREET SECTION

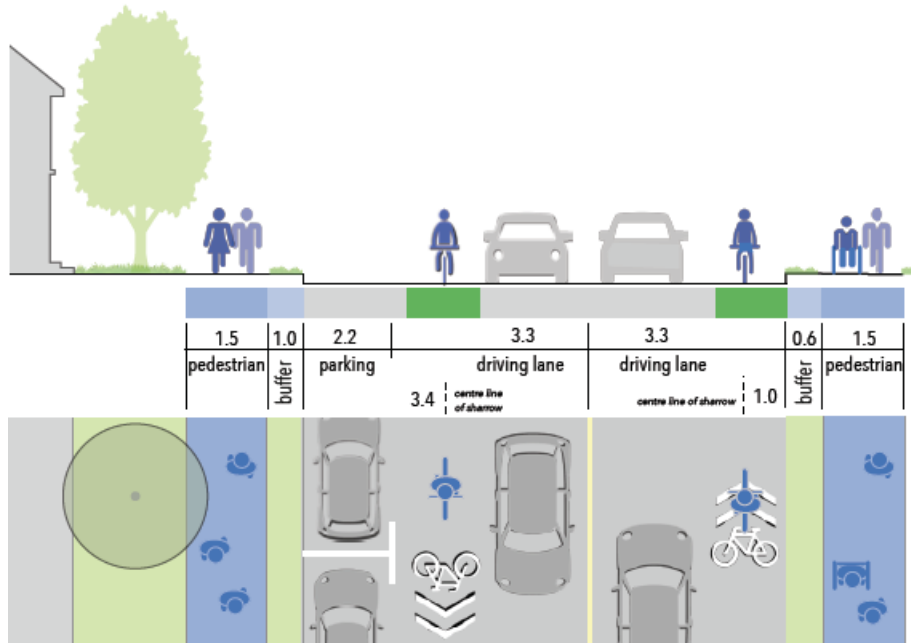


Figure 78: Wood Street, Proposed Cross Section

2.4.11.3 Bikeway Facility Type

No volume data is available for Wood Street. A shared roadway/lane treatment is suitable if daily volumes are less than 1,000 vehicles per day and speeds are less than or equal to 40 km/h. Given the length of Wood Street and its primarily residential nature, volumes are expected to be less than 1,000 vehicles per day. The proposed shared lane treatment is suitable for Wood Street if lower speeds are observed.

Volume and operating speed data is required to confirm if the proposed shared lane treatment is suitable on Wood Street.

2.4.11.4 Bikeway Width

The proposed 3.3-metre-wide shared lanes are not suitable for side-by-side operations as depicted in the proposed cross section. With marked parking, the shared lane would need to be designed for single file operation. For lane-widths less than 4.3 metres, vehicles cannot pass a cyclist without encroaching into adjacent lanes. Sharrows are placed in the centre of the lane to encourage cyclist to take the full lane.

2.4.11.5 Vehicle Lane Width

The proposed curbside vehicle lane width of 3.3 metres inclusive of gutter is not suitable. A minimum lane width of 3.4 metres is required to accommodate a minimum lane width of 3.0 metres plus gutter.

Truro Active Transportation Network Review

2.4.11.6 Parking Lane Width

The proposed 2.2-meter-wide parking lane does not meet the TAC recommended minimum width of 2.4 meters.

2.4.11.7 Feasibility and Impacts

The proposed cross section is unclear due to inconsistencies between the text and the cross section making it difficult to evaluate. It appears that street reconstruction is recommended to narrow the roadway and add a shared lane treatment, resulting in inadequate lane widths. Shared lanes could be added within the existing pavement width eliminating the need for street reconstruction. Volume and operating speed data is required to confirm if the proposed shared lane treatment is suitable on Wood Street.

However, the majority of Wood Street has significant grades that may prove challenging to the average cyclist. Grades of less than 4% are ideal for cyclists but grades up to 8% may be used where necessary. Many cyclists will need to dismount if the grade exceeds 8%. Grades close to or exceeding 8% are expected on approximately 65% of the corridor.

The proposed cross section is not recommended as it requires street reconstruction but provides limited improvements to cycling infrastructure.

2.5 SUMMARY

Table 4 summarizes the review of the proposed active transportation routes.

Table 4: Summary of Review

Route	Proposed Facility	Summary
<i>Regional Trails</i>		
Wabanaki Trail	Multi-use trail	Most of the proposed trail corridor follows an active rail corridor. Not a feasible trail corridor.
Salmon River Trail	Multi-use trail	Dependent on the completion of regional connections which are outside of the Town's control.
Marshland Trail	Multi-use trail	Dependent on the completion of regional connections which are outside of the Town's control.
<i>Regional Street Routes</i>		
Arthur Street	Unbuffered bike lanes	Not a suitable cycling facility.
Elm Street	Shared lanes	Not a suitable cycling facility.
Esplanade Street	Widened sidewalks	Does not include a cycling facility. Cross section does not include suitable vehicle lane widths for a truck route or suitable parking lane widths. Not recommended.
Glenwood Drive	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to accommodate suitable vehicle lane widths. Requires minor street reconstruction with low impact to utilities.
Industrial Avenue	Unbuffered bike lanes	Volume and speed data required to confirm if cycling facility is suitable. Does not include pedestrian infrastructure. Parallel corridor close to Willow Street. Dependent on feasibility of Kaulback Street connection to Cobequid Trail. Not recommended.

Truro Active Transportation Network Review

Route	Proposed Facility	Summary
Kaulback Street	Multi-use pathway	Suitable cycling facility. Very limited right-of-way and various constraints along corridor. Property and survey data would be required to review feasibility and modify cross section. Parallel corridor close to Willow Street which provides better cycling and pedestrian connectivity. Not recommended.
Lorne Street	Multi-use pathway	Suitable cycling facility. Does not require street reconstruction. Some impacts to property are expected south of North Street.
Marshland Drive	Multi-use pathway	Suitable cycling facility. Minor modifications to the cross section are recommended to move the pathway behind the existing ditch where possible to minimize impacts to ditches and utilities.
McClures Mills Road	Multi-use pathway	Suitable cycling facility. Does not require street reconstruction on most of the corridor. Trees in buffer may be impacted. Street will need to be narrowed between James Street and Willow Street. Existing ditch could be impacted near Highway 102 if pathway follows the street corridor. The possibility of routing the pathway through the Rath Eastlink Community Centre site should be investigated.
Park Street	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to reflect curb and gutter. Requires street reconstruction and some impacts to mature trees and property are expected.
Prince Street E (Walker to Munroe)	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to accommodate suitable vehicle lane widths. Requires minor street reconstruction with low impact to utilities. New barriers required on bridge.
Prince Street E (East of Munroe)	Unbuffered bike lanes	Not a suitable cycling facility. Cross section does not include suitable vehicle lane widths for a truck route.
Prince Street W (Juniper to Willow)	Unbuffered bike lanes	Not a suitable cycling facility. Cross section does not include suitable vehicle lane widths for a truck route.
Queen Street	Unbuffered/buffered bike lanes	Not a suitable cycling facility. Cross section does not include suitable vehicle lane widths for a truck route. Requires the removal of turning lanes along entire corridor.
Robie Street	Widened buffers	Requires street reconstruction for minimal improvements to the pedestrian environment and no cycling infrastructure. Not recommended.
Treaty Trail & Truro Heights Road	Multi-use pathway	Suitable cycling facility. Does not require street reconstruction on Treaty Trail. Low impact to utilities and/or property. May be challenging to widen behind guiderail near Clinton Drive. The Truro Heights Road corridor is outside of Town limits.

Truro Active Transportation Network Review

Route	Proposed Facility	Summary
Wade Road	Protected bi-directional bikeway	Suitable cycling facility, however, a multi-use pathway could be considered instead of a bikeway. Modifications to proposed cross section are required to reflect existing sidewalk, curb and gutter. A connection on Lower Truro Road would be required to connect to the Cobequid Trail. A portion of corridor is outside of Town limits.
Walker Street	Unbuffered bike lanes	Not a suitable cycling facility. Would require the removal of vehicle lanes at intersections. Impact to operations would need to be evaluated to determine an appropriate cross section.
William Barnhill Drive	Multi-use pathway	Suitable cycling facility. Does not require street reconstruction. Low impact to utilities.
Willow Street	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to accommodate suitable vehicle lane widths. Requires street reconstruction and some impact to utilities and property are expected.
Young Street	Shared lanes	Not a suitable cycling facility.
<i>Urban Destination Streets</i>		
Inglis Place	Multi-use pathway	Requires removal of parking on one side. Cross section does not include a suitable parking lane width and includes a narrow vehicle lane and narrow multi-use pathway. Not recommended.
Prince Street (Willow to Walker)	Multi-use pathway	Suitable cycling facility. Cross section requires modification to fit within right-of-way. Requires the removal on one vehicle lane and one parking lane.
<i>Neighbourhood Street Routes</i>		
Aberdeen Street	Shared Lanes	Suitable cycling facility. Low cost.
Brooks Lane	Unbuffered bike lanes	Volume and speed data required to confirm if cycling facility is suitable. Requires road widening.
Brunswick Street	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to accommodate suitable vehicle lane widths. Requires major reconstruction and impacts to utility poles.
Burnyeat Street	Shared Lanes	Volume and speed data required to confirm if cycling facility is suitable. Grades exceed 8% over more than half of the corridor. Requires street reconstruction but not expected to provide a significant benefit. Not recommended.
Charles Street	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to accommodate suitable vehicle lane widths. Requires major street reconstruction and impacts to utility poles.
Curtis Drive	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to accommodate suitable vehicle lane widths. Requires minor street reconstruction with low impact to utilities.

Truro Active Transportation Network Review

Route	Proposed Facility	Summary
Harris Avenue	Multi-use pathway	Suitable cycling facility. Modifications to proposed cross section are required to accommodate suitable vehicle lane widths. Requires minor street reconstruction with low impact to utilities. Requires additional connection to school. Curtis Drive provides a better connection than Harris Avenue.
Lyman Street	Shared lanes	Volume and speed data required to confirm if cycling facility is suitable. Low cost. Challenging grades (6- <8%) are present along the corridor.
Pleasant Street	Unbuffered bike lanes	Not a suitable cycling facility and not feasible based on existing pavement widths. Major street reconstruction and impacts to utility poles will be required to provide a suitable facility. Grades exceed 8% over close to half of the corridor.
Upham Drive	Unbuffered bike lanes	Volume and speed data required to confirm if cycling facility is suitable in industrial area. Does not include pedestrian infrastructure, a multi-use pathway could be considered instead. Requires upgrades to Gero Walk and a new trail connection between two street segments. Grade of 14% between two street segments will make it challenging to provide a connection suitable to the average cyclist.
Wood Street	Shared lanes	Volume and speed data required to confirm if cycling facility is suitable. Grades reach or exceed 8% over more than half of the corridor. Requires street reconstruction for a limited improvement to cycling infrastructure. Not recommended.

3 EVALUATION OF PARRALEL CORRIDORS

The *Active Transportation Plan's* proposed network includes a number of parallel corridors and while multiple routes increase connectivity and provide more direct routes, when implementing a network in a community with little to no cycling connectivity it may not be feasible to invest in the construction of multiple parallel corridors. Parallel corridors were evaluated to identify which corridors should be prioritized.

3.1 ARTHUR STREET/ESPLANADE STREET VS CHARLES STREET/BRUNSWICK STREET

Arthur Street/Esplanade Street or Charles Street/Brunswick Street are two parallel east-west corridors on which a suitable bikeway facility cannot be provided without major reconstruction and impacts to utility poles. However, without the proposed segment of the Wabanaki Trail between King Street and Downtown envisioned in the *Active Transportation Plan*, an alternative east-west connection between the Cobequid Trail/Willow Street and Downtown will be required via one of the two corridors. The corridors were evaluated to identify which corridor should be considered. Table 5 provides a brief comparison of the two routes summarizing some of the key characteristics of each route.

The Charles Street/Brunswick Street corridor can provide similar connectivity to the Arthur Street/Esplanade Street corridor by providing a connection to the Cobequid Trail through the King Street

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Community Garden and a connection to Prince Street East using Cottage Street. A connection on Walker Street would be required to connect the Arthur Street/Esplanade Street corridor to Prince Street East. This would require major reconstruction of Walker Street and impacts to vehicle lanes.

The Charles Street/Brunswick Street corridor also provides an east-west corridor south of the railway corridor connecting multiple residential areas. This would likely be desirable to provide network connectivity even if the Arthur Street/Esplanade Street corridor is constructed. The Charles Street/Brunswick Street corridor is a lower volume corridor and not designated as a truck route.

The Charles Street/Brunswick Street corridor is considered a better east-west connection but must incorporate a formalized trail connection to the Cobequid Trail through the King Street Community Garden and a connection to Prince Street East through Cottage Street.

Table 5 Comparison of Arthur/Esplanade Street and Charles/Brunswick Street Route Alternatives

Characteristics	Arthur/Esplanade Street	Charles/Brunswick Street
Proposed Infrastructure	Multi-use pathway	Multi-use pathway
Truck Route	Full time truck route	No
Potential Network Connectivity	Willow Street Prince Street (via Walker) Pleasant Street or Young Street	Willow Street (via Cobequid Trail) Prince Street (via Cottage Street) Pleasant Street or Young Street
Destinations	NSCC Truro Centre Shopping Mall	NSCC (via Cobequid Trail) Victoria Park École Acadienne de Truro
Grade	Relatively flat	Relatively flat
Street Reconstruction	Major	Major
Utility Impacts	Approx. 30 utility poles	Approx. 23 utility poles
Property Impacts	Low	Low
Parking Impacts	Yes, on Esplanade Street	Yes

3.2 YOUNG STREET VS PLEASANT STREET

Young Street and Pleasant Street are two parallel north-south corridors on which a suitable bikeway facility cannot be provided without major reconstruction and impacts to utility poles. At least one of the two corridors will be required to provide north-south connectivity through residential areas west of Victoria Park. The corridors were evaluated to identify which corridor should be considered. Table 6 provides a brief comparison of the two routes summarizing some of the key characteristics of each route.

Young Street provides better network connectivity and more direct access to key destinations in the area. Young Street also facilitates a more direct connection to Lorne Street in the downtown area and its location further to the east provides a more central connection. Grades on Young Street are less challenging but are present over a longer distance.

While the Young Street route may have a higher impact to utility poles, it is considered a better north-south connection.

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Table 6: Comparison of Pleasant Street and Young Street Routes

Characteristics	Young Street	Pleasant Street
Proposed Infrastructure	Multi-use pathway	Multi-use pathway
Truck Route	Daytime truck route	No
Potential Network Connectivity	Prince Street Lorne Street Charles/Brunswick Streets William Barn Hill Drive	Prince Street Charles/Brunswick Streets
Destinations	Truro Middle School Victoria Park Douglas Street Recreation Centre Truro Centre Shopping Mall	Truro Middle School (via Gero Walkway) Victoria Park (via Gero Walkway)
Grade	6% for 1310 metres	8% for 870 metres
Street Reconstruction	Major	Major
Utility Impacts	Approx. 37 utility poles	Approx. 13 utility poles
Property Impacts	Low	Low

3.3 GLENWOOD DRIVE VS WILLIAM BARNHILL DRIVE

Glenwood Drive and William Barnhill Drive are two parallel east-west corridors in the southern portion of the Town that have been identified as feasible. While both corridors should be included in the long-term network, the corridors were evaluated to identify which corridor should be prioritized. Table 7 provides a brief comparison of the two routes summarizing some of the key characteristics of each route.

In general, both routes are comparable, providing similar level of connectivity and low construction impacts. Glenwood Drive has less distance with challenging grades but requires more construction effort than William Barnhill Drive.

While the William Barnhill Drive route may be an easy connection to complete and would provide a connection from Willow Street to the Railyard Mountain Bike Park, there is very little development along or near the corridor which could result in low usage of the corridor especially if other connecting routes are not yet constructed. Glenwood Drive should be prioritized over William Barnhill Drive as it will serve a more densely populated area and could enable future neighbourhood connections to the Truro Elementary School.

Table 7: Comparison of Glenwood Drive and William Barnhill Drive Routes

Characteristics	Glenwood Drive	William Barnhill Drive
Proposed Infrastructure	Multi-use pathway	Multi-use pathway
Truck Route	Yes	Yes
Potential Network Connectivity	Willow Street Young Street or Pleasant Street	Willow Street Young Street
Destinations	Truro Business Park Victoria Park	Truro Business Park Victoria Park The Railyard Mountain Bike Park
Grade	6 to <8% for 200 metres ≥8% for 150 metres	6 to <8% for 400 metres ≥8% for 300 metres
Street Reconstruction	Minor	None
Utility Impacts	Low	Low
Property Impacts	Low	Low

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4 REVISED NETWORK PLAN

A revised plan was developed identifying a core network of routes to provide a base level of active transportation connectivity throughout the Town. Given the significant investment required to implement an active transportation network, the network was paired back to prioritize key east-west and north-south routes to form the spine of the Town's network.

The network focuses on prioritizing key connections within the Town, recognizing that a number of the recommendations included in the *Active Transportation Plan* involve regional connections which include challenges and constraints outside of the Town's control. While the core plan focusses primarily on routes connecting areas within the Town, the majority of these routes were identified as Regional Routes in the *Active Transportation Plan* and will enable future regional connectivity. Once the core network is implemented, additional regional routes and neighbourhood routes can be implemented to connect to and expand the network.

4.1 PROPOSED CORE NETWORK ROUTES

The proposed core network is illustrated in Figure 79. A full-size drawing is included in **Appendix A**. The proposed network includes three core north-south routes and five core east-west route.

North-South Routes

- Willow Street
- Lorne Street
- Young Street

East-West Routes

- Marshland Drive
- Prince Street
- McClures Mills Road
- Glenwood Drive
- Charles Street/Brunswick Street

A number of additional street routes or off-road trail connections are also included to link some of the core routes or existing trails. These include:

- Trail connection between Marshland Drive and Juniper Street,
- Juniper Street,
- Cottage Street, and
- Trail connection through the King Street Community Garden.

The proposed routes are discussed in the following sections. Typical cross sections were developed for each route to illustrate the proposed infrastructure. Where the right-of-way varies along the length of a corridor, the lower end of the right-of-way was used to developed cross section.

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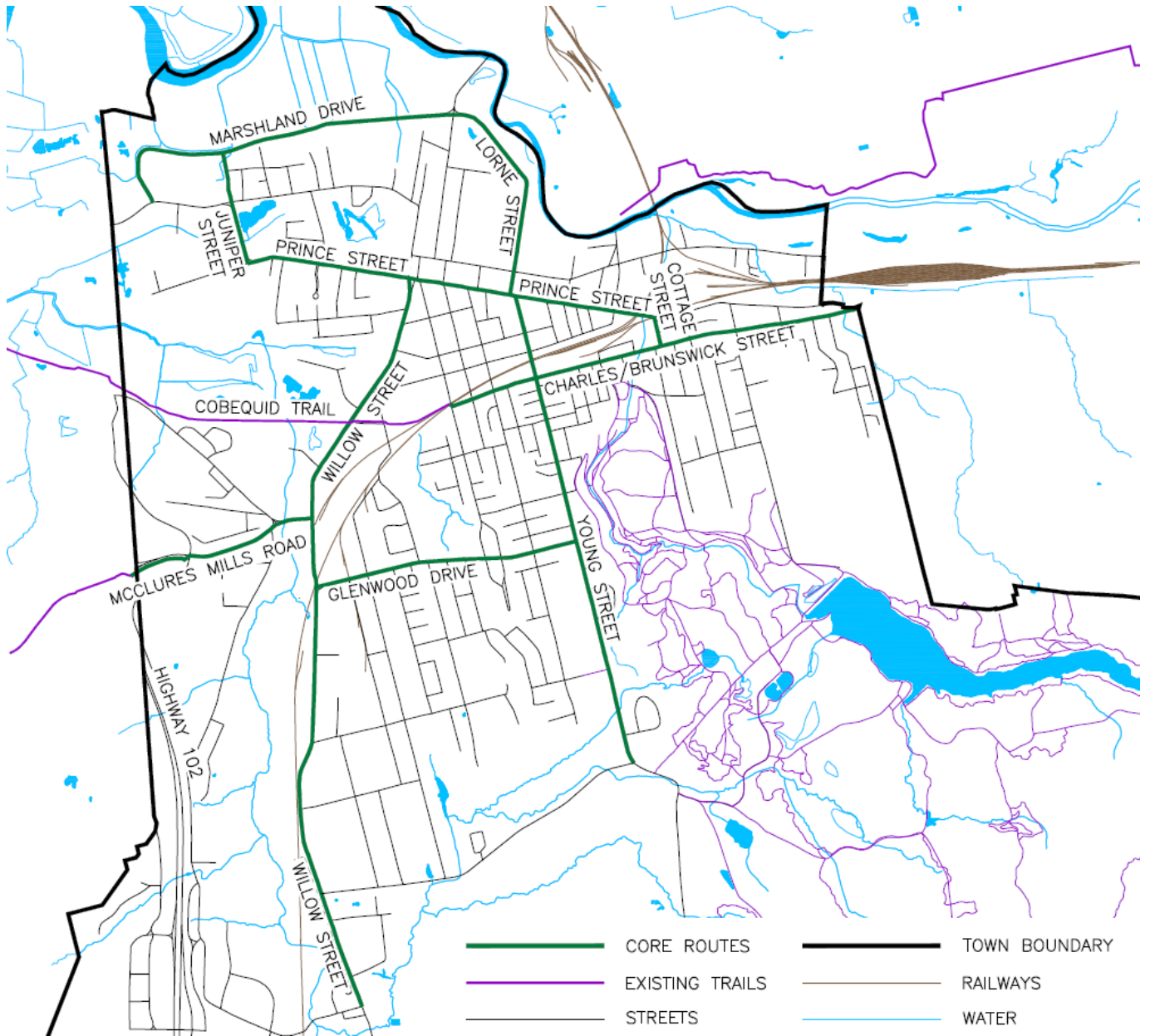


Figure 79: Proposed Core Network Routes

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4.1.1 Willow Street

The Willow Street route will provide the major north-south connection through the Town, extending from Downtown Truro (Prince Street route) to Millbrook near the south Town boundary. Most east-west core routes will be connected to the Willow Street route as well as the existing Cobequid Trail. The route will connect several commercial and residential areas as well as the Truro Business Park. Three cross sections were developed to reflect the various segments of Willow Street with different lane configurations.

Figure 80 illustrates the revised cross section on Willow Street between Prince Street and the Cobequid Trail. A 3.0-metre-wide multi-use pathway is provided on the west side of the street. On this segment, the multi-use pathway is accommodated by removing the existing sidewalk and curb and gutter and narrowing the vehicle through lanes to 3.4 metres and turning lanes to 3.0 meters. The reduced through lane widths are exclusive of gutter and suitable for a truck route. New curb and gutter will be required along the west side. The existing sidewalk and buffer on the east side are maintained, allowing for minimal impacts to utility poles. Traffic signal poles at the intersection with Arthur Street will need to be relocated.

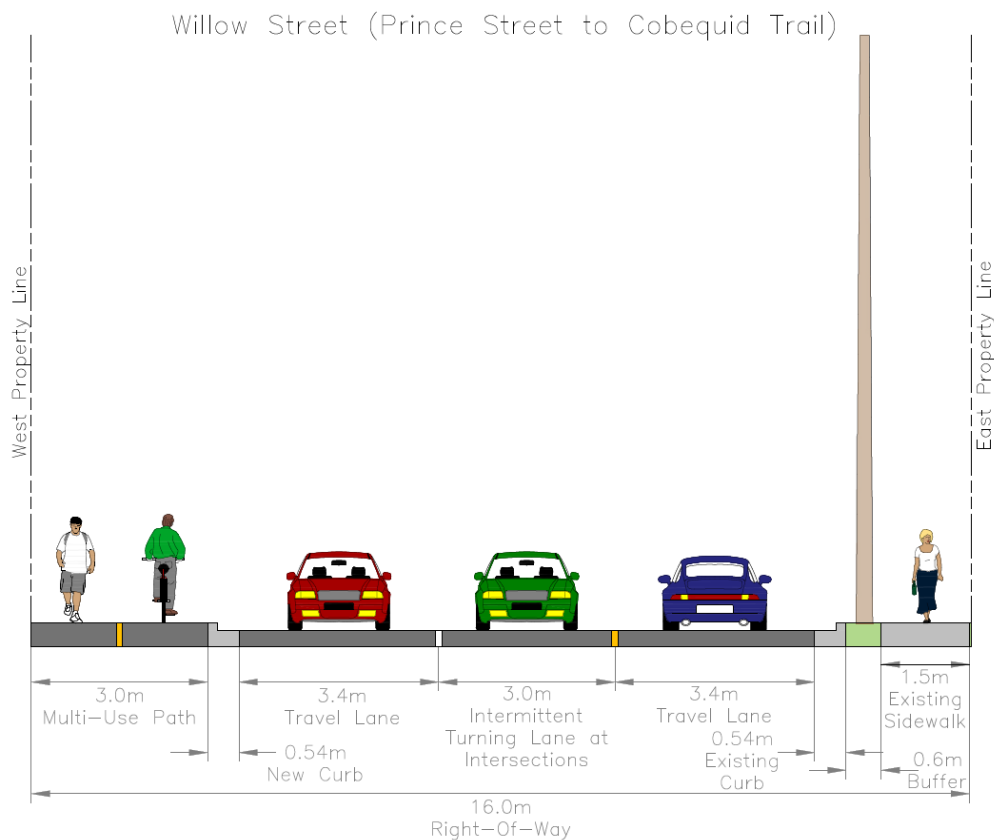


Figure 80: Willow Street between Prince Street and the Cobequid Trail, Revised Cross Section

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South of the Cobequid Trail, it is recommended that the multi-use pathway be transitioned to the east side to minimize impacts to utility poles and existing sidewalks. A pedestrian-activated crossing should be considered at the existing Cobequid Trail crossing on Willow Street.

Figure 81 illustrates the revised cross section on Willow Street between the Cobequid Trail and Glenwood Drive. On this segment, the multi-use pathway is accommodated removing the existing curb and gutter and narrowing the vehicle lanes to 3.4 metres. The multi-use pathway will be located between the street and the utility poles. The existing sidewalk and buffer on the west side are maintained, allowing for minimal impacts to utility poles. New sidewalk is to be provided on the west side where there is an existing gap between McClures Mills Road and Glenwood Drive.

Further investigation will be required to determine how the pathway will be incorporated into the new roundabout at McClures Mills Road.

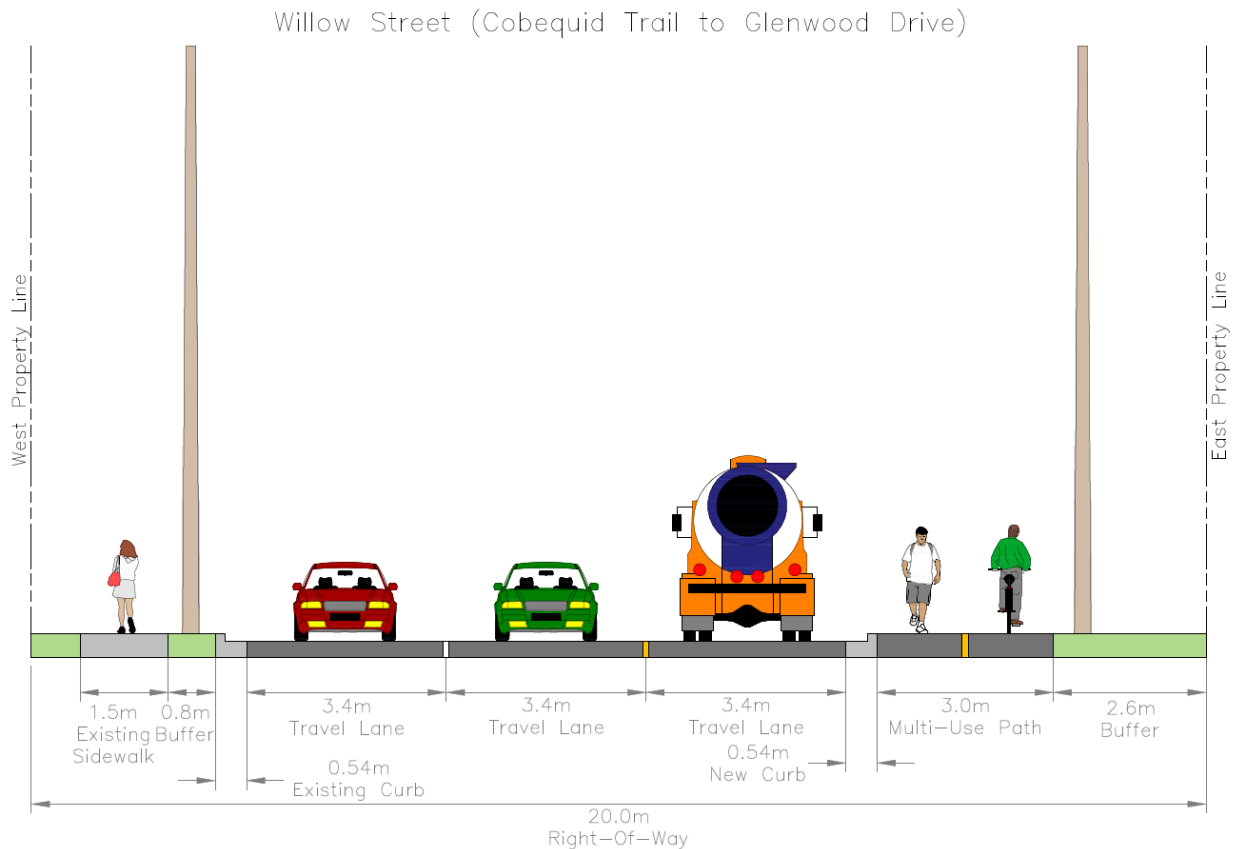


Figure 81: Willow Street between the Cobequid Trail and Glenwood Drive, Revised Cross Section

Figure 82 illustrates the revised cross section on Willow Street between Glenwood Drive and Brooks Lane. On this segment, the multi-use pathway is accommodated by using the road shoulder and an unused portion of the right-of-way. The multi-use pathway will be located between the street and the utility poles. New curb and gutter will be required on the east side of the street. There is existing sidewalk on the west side along a portion of the corridor. Where there is none, new sidewalk is to be provided to ensure a continuous sidewalk connection. This will include some new curb and gutter on the west side.

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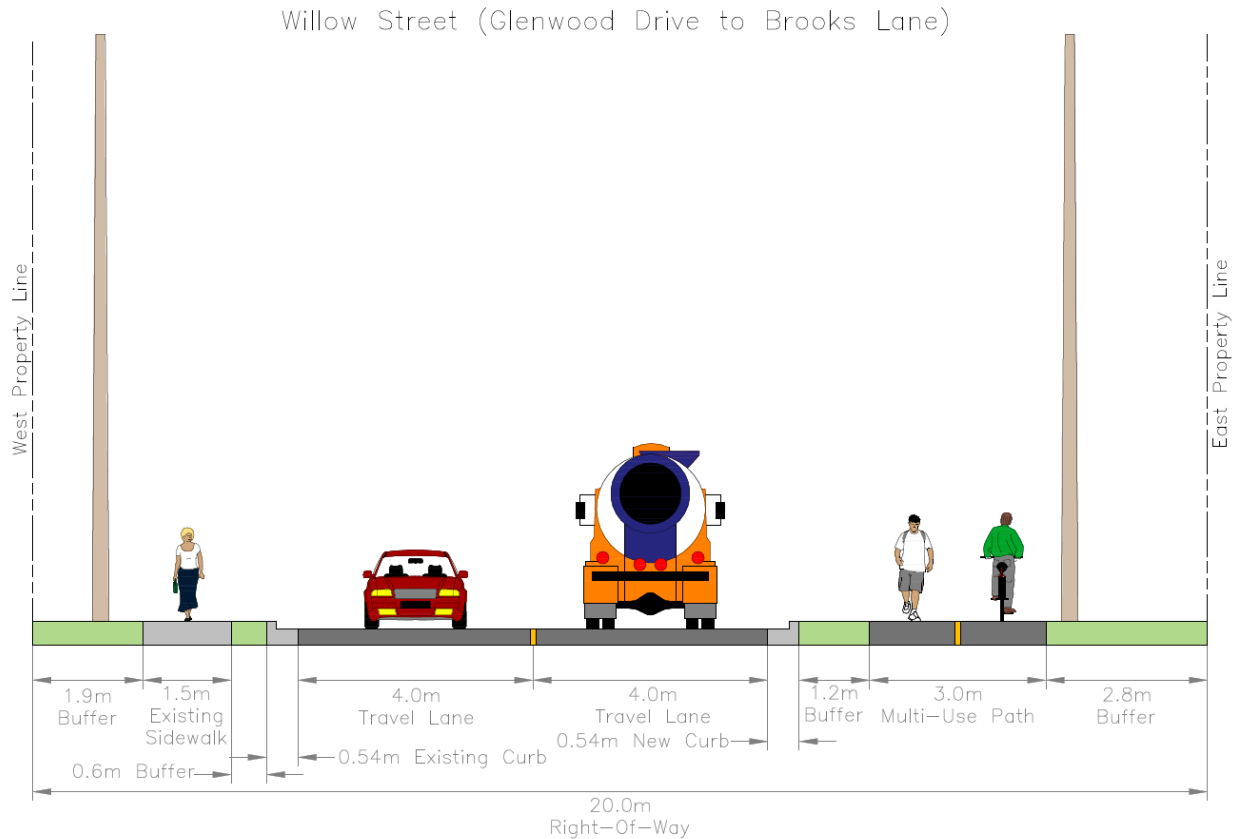


Figure 82: Willow Street between Glenwood Drive and Brooks Lane, Revised Cross Section

4.1.2 Lorne Street

The Lorne Street route will provide a connection between Downtown Truro (Prince Street route) and the Marshland Drive route. This route will connect to important destinations such as the Cobequid Educational Centre and recreational facilities and allow for future connectivity to potential future routes such as the Salmon River Trail and a regional connection to Bible Hill via Park Street. There is also the potential for future active transportation connections through the redevelopment of the Stanfield’s site.

Figure 83 illustrates the revised cross section on Lorne Street between Park Street and North Street. A 3.0-metre-wide multi-use pathway is provided on the south/west side of the street. Between Park Street and North Street, the multi-use pathway is accommodated within existing space in the right-of-way with no impacts to the existing travel lanes. Minimal impacts to utilities are expected, however, a culvert and portion of ditch may be impacted near the Tim Horton’s Soccer Pitch driveway.

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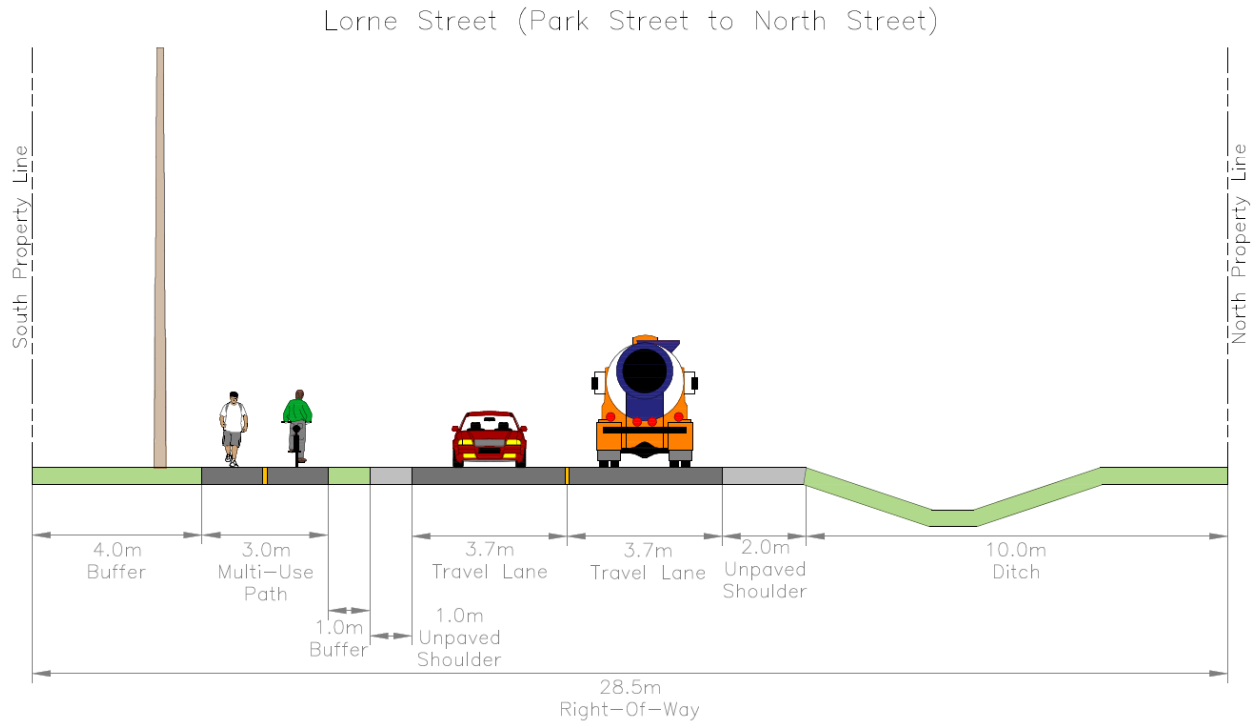


Figure 83: Lorne Street between North Street and Park Street, Revised Cross Section

Figure 84 illustrates the revised cross section on Lorne Street between North Street and Prince Street. The 3.0-metre-wide multi-use pathway continues on the west side of the street. Between North Street and Prince Street, the multi-use pathway is accommodated by removing the existing sidewalk and using additional space in the right of way behind the existing sidewalk. The existing buffer is maintained, allowing for minimal impacts to utility poles. The construction of the multi-use pathway will not impact the existing curb and gutter and pavement. Existing on-street parking for the Cobequid Education Centre is also retained.

There may be some minor impacts to private property primarily along the southern portion of the corridor. Detailed survey data will be required to confirm that there are any impacts to private property.

It is noted that the Town owns property on the west side of the right-of-way between North Street and Park Street. Between Queen Street and North Street, most of the property on the west side is owned by the Town or the Chignecto-Central Regional Centre for Education.

Crossrides should be implemented at the signalized intersection with Queen Street and at the signalized intersection with Prince Street to facilitate the connection to the proposed multi-use pathway on the south side of Prince Street. Traffic signal poles at these intersections will need to be relocated. A pedestrian-activated crossing should also be considered at the intersection with Park Street to facilitate the connection to the proposed multi-use pathway on Marshland Drive.

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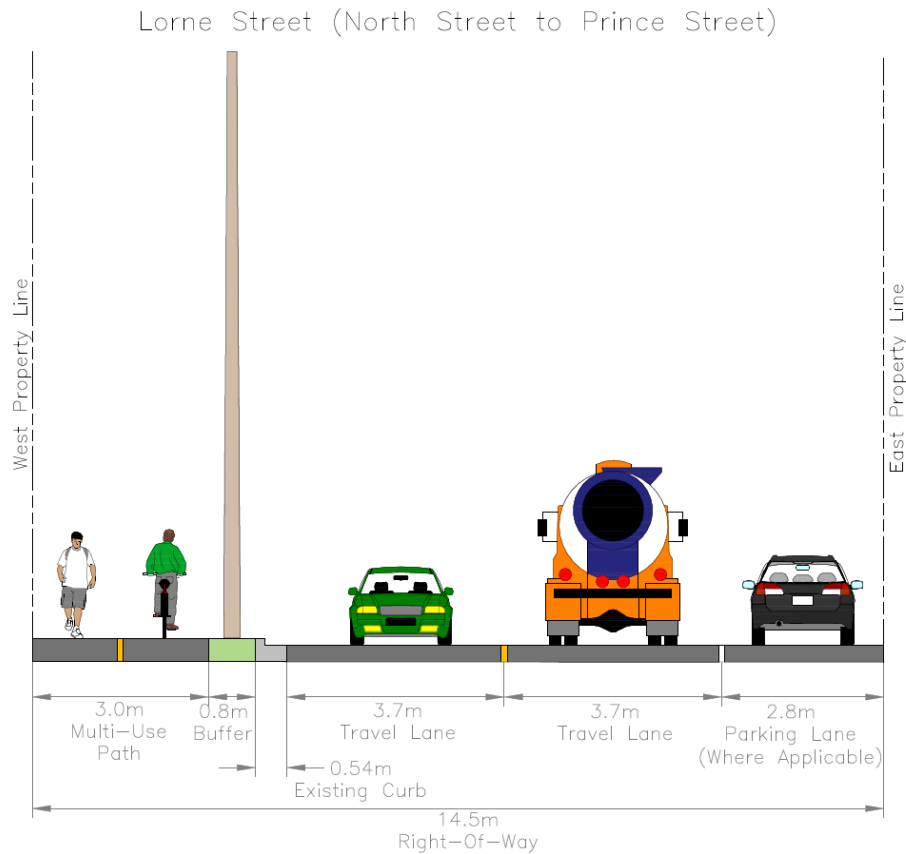


Figure 84: Lorne Street between Prince Street and North Street, Revised Cross Section

4.1.3 Young Street

The Young Street route will provide a secondary north-south connection through the Town, extending from Downtown Truro (Prince Street route) to The Railyard Mountain Bike Park. The route will connect to important destinations such as Victoria Park, The Railyard, Truro Middle School and connect several residential areas.

Figure 85 illustrates the revised cross section on Young Street between Prince Street and Arthur Street/Esplanade Street. A 3.0-metre-wide multi-use pathway is provided on the east side of the street. The multi-use pathway is accommodated by removing the existing sidewalk, curb and gutter and utility poles and narrowing the vehicle lanes to 3.0 metres. Curb and gutter on the east side will be replaced along the entire segment.

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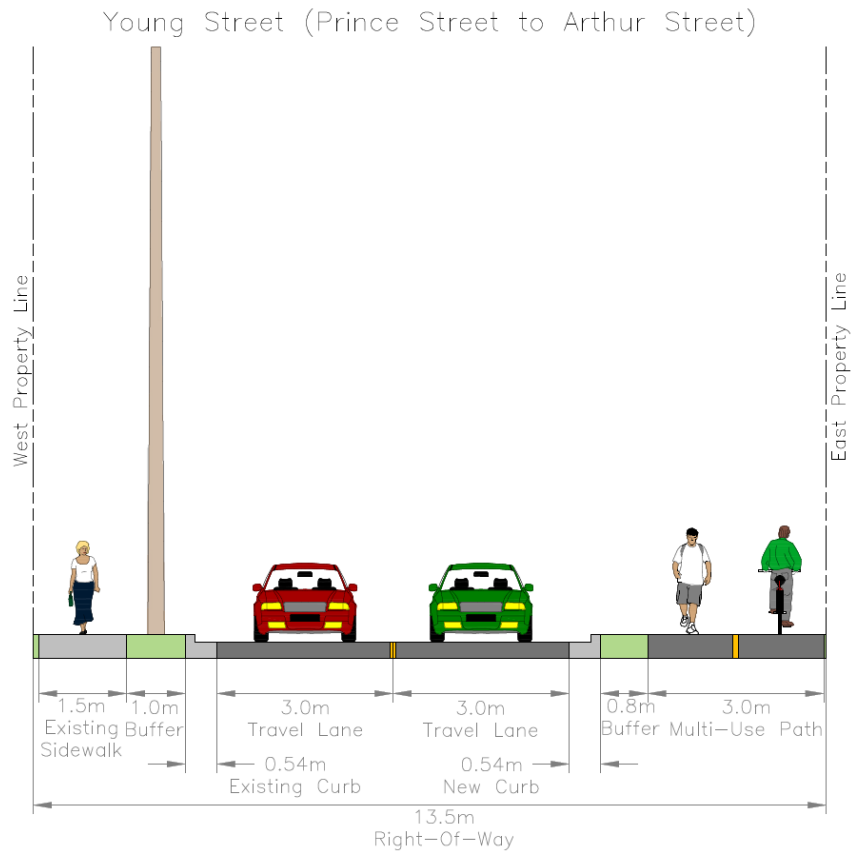


Figure 85: Young Street between Prince Street and Arthur Street, Revised Cross Section

South of Arthur Street/Esplanade Street, Young Street is a designated truck route, where a minimum lane width of 3.4 metres, exclusive of gutter width, is required. Figure 86 illustrates the revised cross section on Young Street between Arthur Street/Esplanade Street and Glenwood Drive. Curb and gutter on the east side will be replaced along the entire segment.

On both segments, the existing sidewalk and buffer on the west side are maintained, allowing for no impacts to utility poles on the that side of the street. While utility poles on the east side of the street will need to be removed, these poles are primarily used for communications cables. Power lines are located on the utility poles on the west side which will not be impacted. Utility companies should be consulted to determine if communications lines could be relocated to the existing poles on the west side.

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Figure 86: Young Street between Arthur Street and Glenwood Drive, Revised Cross Section

Figure 87 illustrates the revised cross section on Young Street between Glenwood Drive and William Barnhill Drive. On this segment, there are no utility poles on the west side of Young Street, it is recommended that the pathway be transitioned to the west side at Glenwood Drive to minimize impacts to utility poles. Sidewalk and curb and gutter will need to be removed where it exists closer to Glenwood Drive. The existing sidewalk and buffer on the east side are maintained, allowing for minimal impacts to utility poles on this segment.

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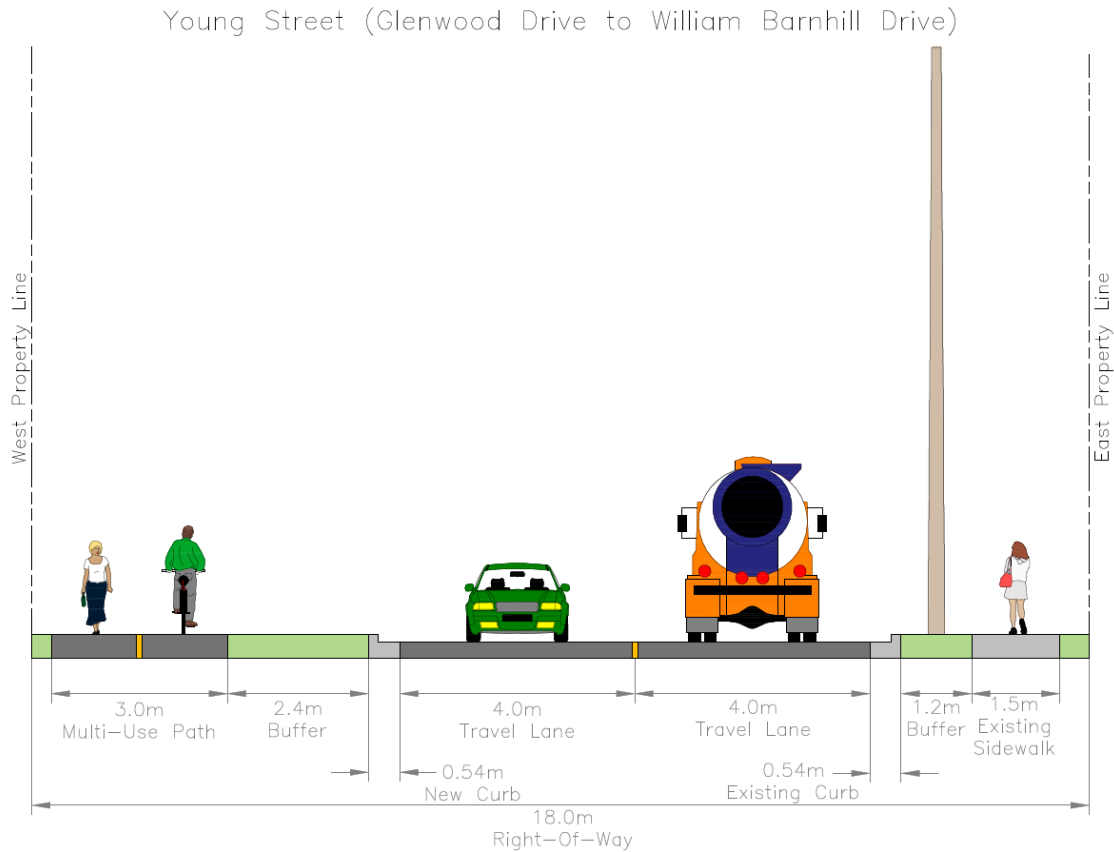


Figure 87: Young Street between Glenwood Drive and William Barnhill Drive, Revised Cross Section

4.1.4 Marshland Drive

The Marshland Drive route will provide a connection between the Lorne Street route and the Hub Shopping Centre Mall. This route will allow for future connectivity to potential regional routes such as the Marshland Trail link to the Fundy Interpretive Centre and the bridge crossing to Central Onslow at the former Boardlanding Bridge and a regional connection to Bible Hill via Park Street.

Figure 88 illustrates the revised cross section on Marshland Drive. A 3.0-metre-wide multi-use pathway is provided on the south side of the street. The multi-use pathway is located behind the existing ditch and utility poles, allowing for minimal impacts to the existing street and utilities.

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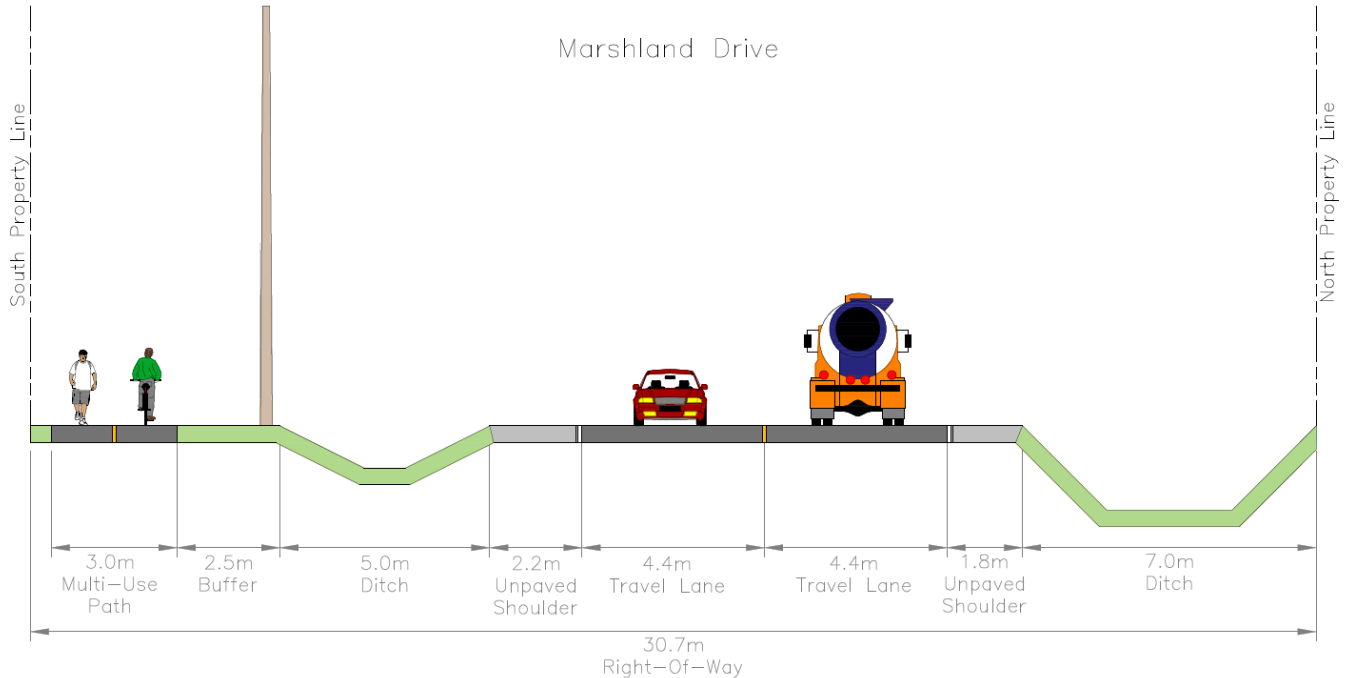


Figure 88: Marshland Drive, Revised Cross Section

4.1.5 Prince Street

The Prince Street route will provide the major east-west connection through the central portion of Truro and provide a connection to Downtown Truro.

The Prince Street corridor was previously defined as three segments in the *Active Transportation Plan*:

- Prince Street West: between Juniper Street and Willow Street,
- Prince Street Destination: between Willow Street and Walker Street, and
- Prince Street East: east of Walker Street.

A 3.0-metre-wide multi-use pathway is proposed on the south side of the street along the entire length of Prince Street. The south side was selected to minimize impacts to utility poles. However, it is recommended that a more in-depth evaluation of the corridor be completed at the preliminary design stage based on detailed survey data allowing for a more comprehensive comparison of the impacts of constructing the pathway on the north or south side. It is noted that the south side receives more shade where buildings are present and this may impact snow accumulation.

4.1.5.1 Prince Street (West)

Figure 89 illustrates the revised cross section on Prince Street (West) between Juniper Street and Willow Street. A 3.0-metre-wide multi-use pathway is provided on the south side of the street. The multi-use pathway is accommodated by removing the existing sidewalk, removing utility poles and narrowing the vehicle lanes to 3.4 metres. The proposed lane widths are exclusive of gutter and are suitable for a truck route. Curb and gutter on the south side will be replaced along the entire length of the street.

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The existing sidewalk and buffer on the north side are maintained, allowing for no impacts to utility poles on that side of the street. While utility poles on the south side of the street need to be removed, these poles are primarily used for communications cables. Power lines are located on the utility poles on the north side which will not be impacted. Utility companies should be consulted to determine if communications lines could be relocated to the existing poles on the north side.

Traffic signal poles at the intersection with Willow Street will need to be relocated to accommodate the pathway and a crossside. Minor impacts to property may be required to maintain turning lanes at the intersection. Detailed survey data will be required to confirm.

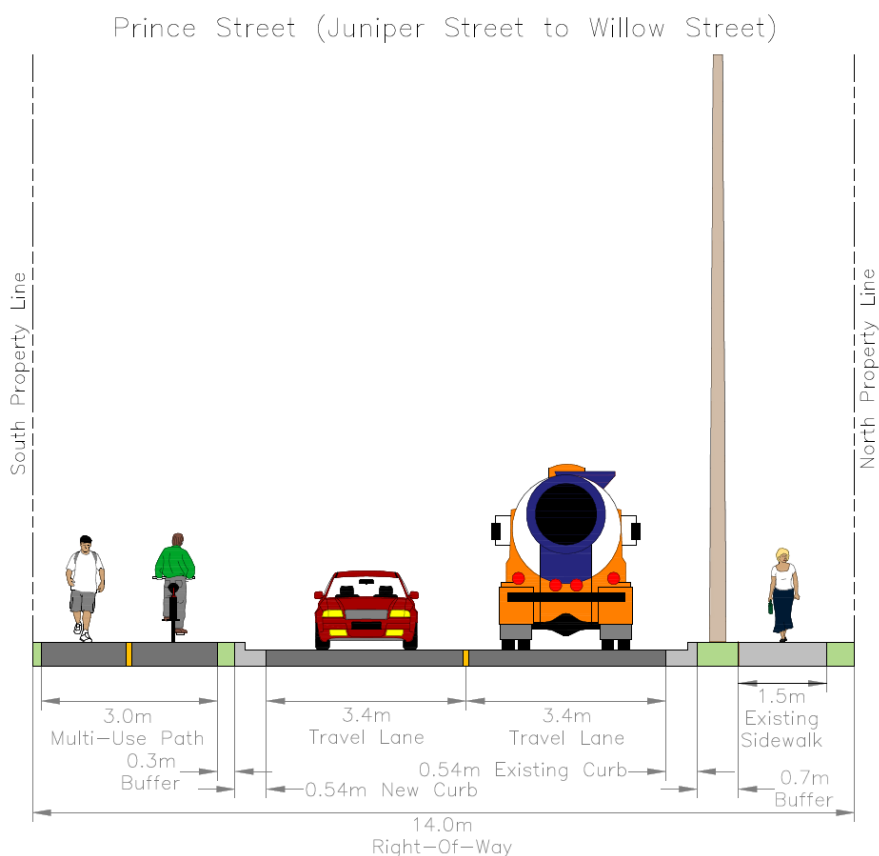


Figure 89: Prince Street between Juniper Street and Willow Street, Revised Cross Section

4.1.5.2 Golf Street/ Smith Avenue

The Golf Street and Smith Avenue corridor was investigated as an alternative to the Prince Street (West) corridor to avoid cost associated with utility poles removals along this segment of Prince Street.

A shared roadway/lane treatment is suitable if daily volumes are less than 1,000 vehicles per day and speeds are less than or equal to 40 km/h. A 7-day speed and volume count collected by the Town on Smith Avenue indicates that traffic volumes are in the range of 1,550 vehicles per day and operating speeds are around 51 km/h. Volumes and speeds on Golf Street between Prince Street and Smith Avenue are expected to be similar to those observed on Smith Avenue.

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While volumes and speeds on Philip Street and Golf Street north of Prince Street are likely suitable for shared use facilities, volumes and speed on Smith Avenue and Golf Street south of Prince Street are above the recommended thresholds for shared use.

The existing pavement width is less than 9.0 metres indicating that unbuffered bike lanes could not be provided without road widening. On Smith Avenue where there is curb and gutter on both sides, this would require street reconstruction.

The provision of dedicated cycling facilities on Golf Street/Smith Avenue would also impact on-street parking. On-street parking on Golf Street is often used by patrons of the Truro Golf and County Club when the off-street parking lot is full.

The Golf Street/Smith Avenue route also increases the distance between Marshland Drive and the Prince Street and Willow Street intersection by 0.6 kilometres, making it a less attractive east-west connection. Given that the reconstruction of Golf Street/Smith Avenue would be required to accommodate cycling infrastructure, it is recommended that the investment be made to provide infrastructure on Prince Street.

4.1.5.3 Prince Street (Destination)

Figure 90 illustrates the revised cross section on Prince Street (Destination) between Willow Street and Walker Street. A 3.0-metre-wide multi-use pathway is provided on the south side of the street ensuring continuity along the Prince Street corridor. The multi-use pathway is accommodated by removing a travel lane and a parking lane and narrowing the vehicle lane to 3.0 metres. Curb and gutter on the south side will be replaced along the entire length of the street segment. The existing sidewalk and buffers on both sides are maintained, allowing for minimal impacts to utility poles and decorative lighting.

It is noted that the vehicle lane width will be insufficient for a truck route, it is recommended that the Town's Truck Route By-Law be modified to remove this segment of Prince Street as a designated truck route. Trucks can be routed through Queen Street instead; which will support the vision of making Prince Street a destination street as opposed to a through corridor. No cycling infrastructure is proposed for Queen Street as it is envisioned that the Queen Street corridor would be the primary corridor for vehicles and trucks travelling through the Downtown area while Prince Street would be the primary corridor for active transportation and vehicles visiting the area.

Traffic signal poles at the intersection with Walker Street will need to be relocated to accommodate the pathway and a crossside. At this intersection, there are three turning lanes, each dedicated to a separate turning movement with no on-street parking. The removal of one or more lanes will likely be required to accommodate the proposed multi-use pathway. The lower volume right turn could be combined in a shared through/right lane.

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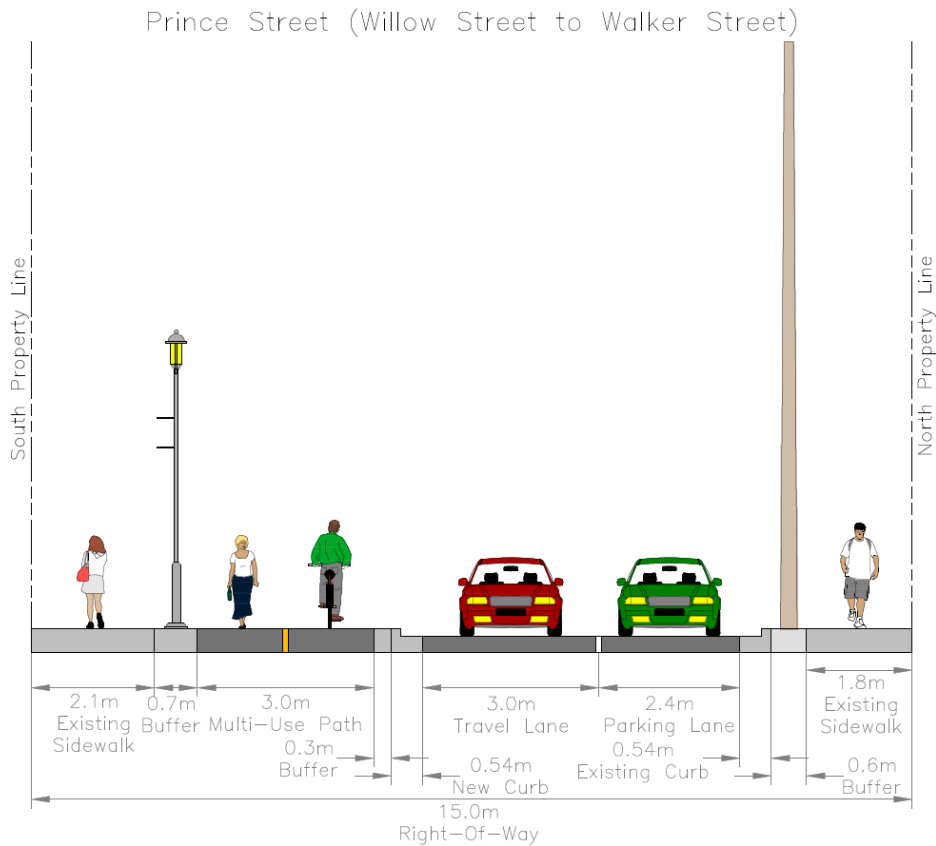


Figure 90: Prince Street between Willow Street and Walker Street, Revised Cross Section

4.1.5.4 Prince Street (Destination) Alternative

The possibility to maintain two parking lanes was investigated. The existing sidewalk would need to be removed on one side impacting, either decorative poles if the pathway is located on the south side or utility poles if the pathway is located on the north side.

The right of way on this segment of Prince Street varies from approximately 15.0 metres to 17.0 metres. The right-of-way is generally narrower between Forrester Street and Walker Street. In constrained areas, the multi-use pathway width may need to be reduced from 3.0 metres or parking on one side may need to be removed. A minimum buffer of 0.5 metres is required between the property line and the multi-use pathway, however, where buildings exist along the property line and doors swing open into the right-of-way, a wider buffer will be required.

It may be possible to maintain two lanes of parking along portions of this segment of Prince Street. Detailed survey data will be required to confirm. A trade-off to maintaining the second parking lane will be greater impacts to utilities.

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4.1.5.5 Prince Street (East)

Figure 91 illustrates the revised cross section on Prince Street (East) between Walker Street and Munroe Street/Cottage Street. A 3.0-metre-wide multi-use pathway is provided on the south side of the street ensuring continuity along the Prince Street corridor. The multi-use pathway is accommodated by removing the existing sidewalk, curb and gutter and narrowing the vehicle lanes to 3.6 metres. The proposed lane widths are exclusive of gutter and are suitable for a truck route. Curb and gutter on the south side will be replaced along the entire length of the street segment. The existing sidewalk and buffer on the north side are maintained, allowing for no impacts to utility poles on that side of the street. There will be impacts to approximately three utility poles on the south side.

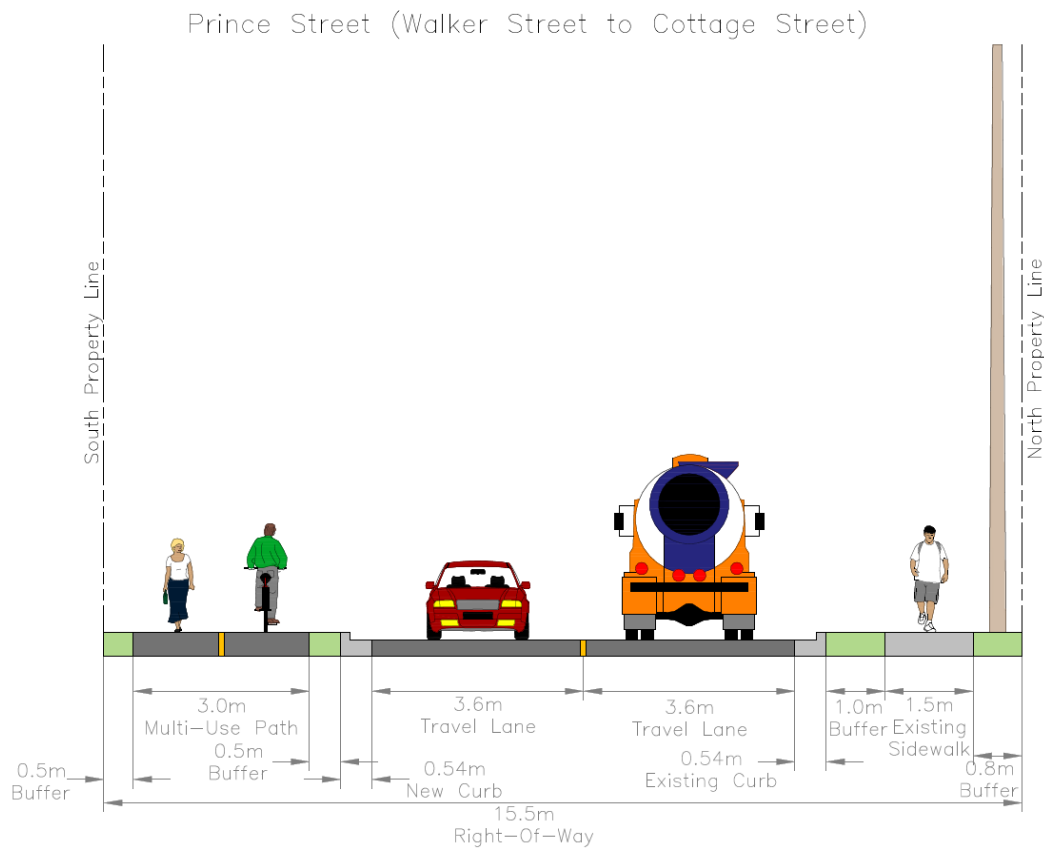


Figure 91: Prince Street between Walker Street and Cottage Street, Revised Cross Section

4.1.5.6 Cottage Street Connection

While the *Active Transportation Plan* extended the Prince Street route east of Munroe Street/Cottage Street, it is recommended that the route end at Cottage Street. Continuing infrastructure on Prince Street east of Munroe would form a closely-spaced parallel corridor with Brunswick Street. Instead, the multi-use pathway should be continued on Cottage Street to form a connection with Brunswick Street.

Cottage Street is a short street that connects the east section of Prince Street to Brunswick Street. A multi-use pathway can be incorporated into the existing cross section without impacting any utility poles or private property.

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Figure 92 illustrates the proposed cross section on Cottage Street. A 3.0-metre-wide multi-use pathway is provided on the west side of the street. The multi-use pathway is accommodated by narrowing the vehicle lanes to 3.0 metres. New curb and gutter will be required on west side along the entire length of the street. The existing sidewalk and buffer on the east side are maintained, allowing for no impacts to utility poles. The barrier on the bridge will need to be modified to a suitable height for cyclists.

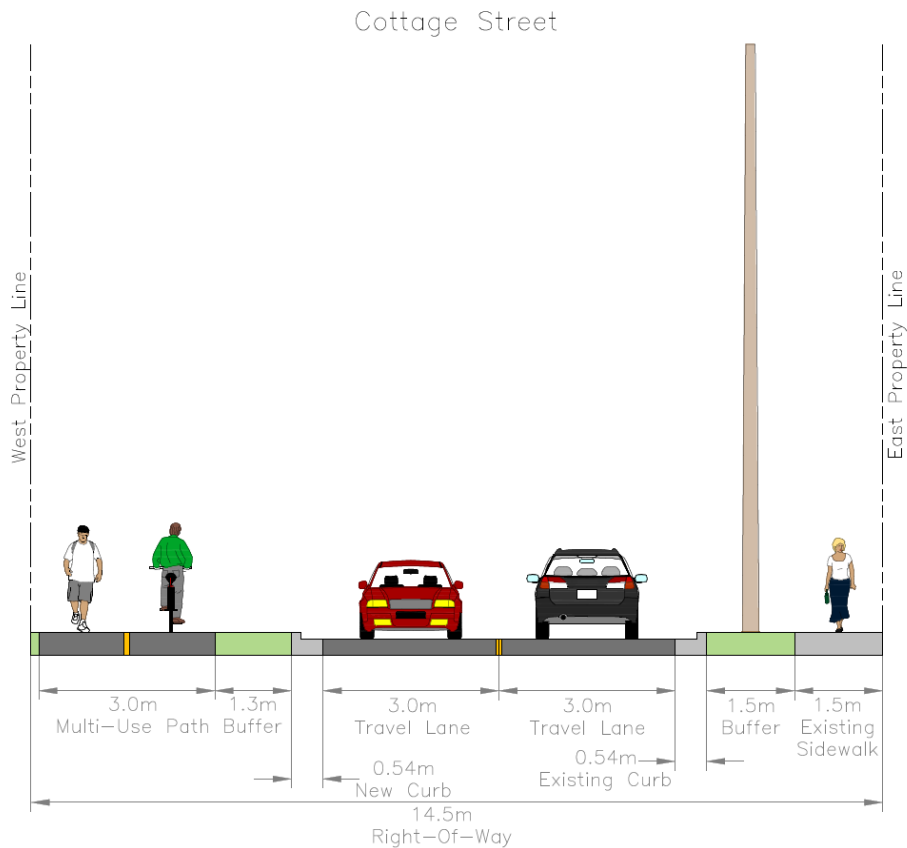


Figure 92: Cottage Street, Proposed Cross Section

4.1.5.7 Juniper Street Connection

Juniper Street is a short street that connects the west section of Prince Street to Robie Street. A multi-use pathway can be incorporated into the existing cross section without impacting any utility poles or private property.

Figure 93 illustrates the proposed cross section on Juniper Street. A 3.0-metre-wide multi-use pathway is provided on the east side of the street. The multi-use pathway is accommodated by narrowing the vehicle lanes to 3.4 metres. The proposed lane widths are exclusive of gutter and are suitable for a truck route. Curb and gutter on the east side will be replaced along the entire length of the street. A small section of existing sidewalk on the east side near Robie Street will need to be removed. The existing sidewalk and buffer on the west side are maintained, allowing for no impacts to utility poles.

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It is expected that the existing tuning lanes at Robie Street and Prince Street can be maintained. However, the right turn channel at the Prince Street intersection should be removed and parking along the frontage of Fletcher’s Restaurant, which currently backs onto the right turn channel, should be reconfigured.

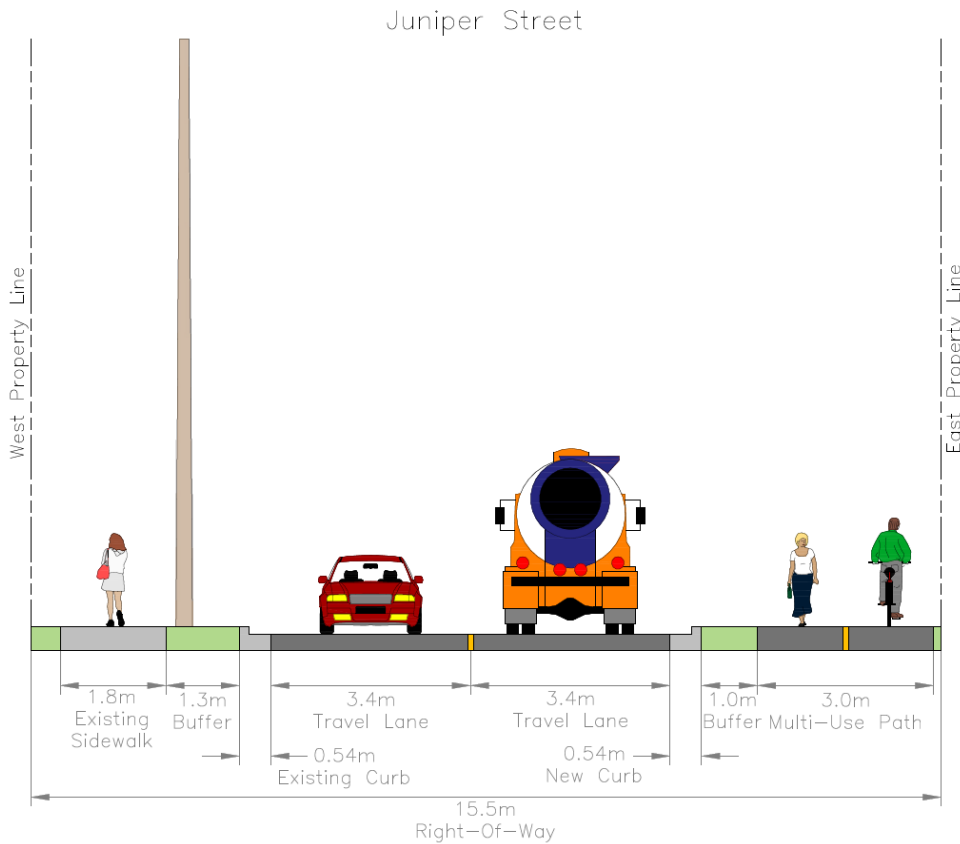


Figure 93: Juniper Street, Proposed Cross Section

To complete the connection between the Prince Street route and the Marshland Drive route, a trail connection between Robie Street and Marshland Drive will need to be provided. Figure 94 illustrates the location of the proposed trail connection.

The Town owns the property behind the Stuart Kia (PID 20241436), Town-owned properties are shown in yellow in Figure 94. An easement or property acquisition would be required to provide the trail connection through the Kia property. This would impact parking on the Kia site. A portion of the Town-owned property could potentially be used to replace the lost parking spaces.

This route will include trail crossings at the intersections with Robie Street and Prince Street. Both of these intersections are currently configured as all-way stop-controlled.

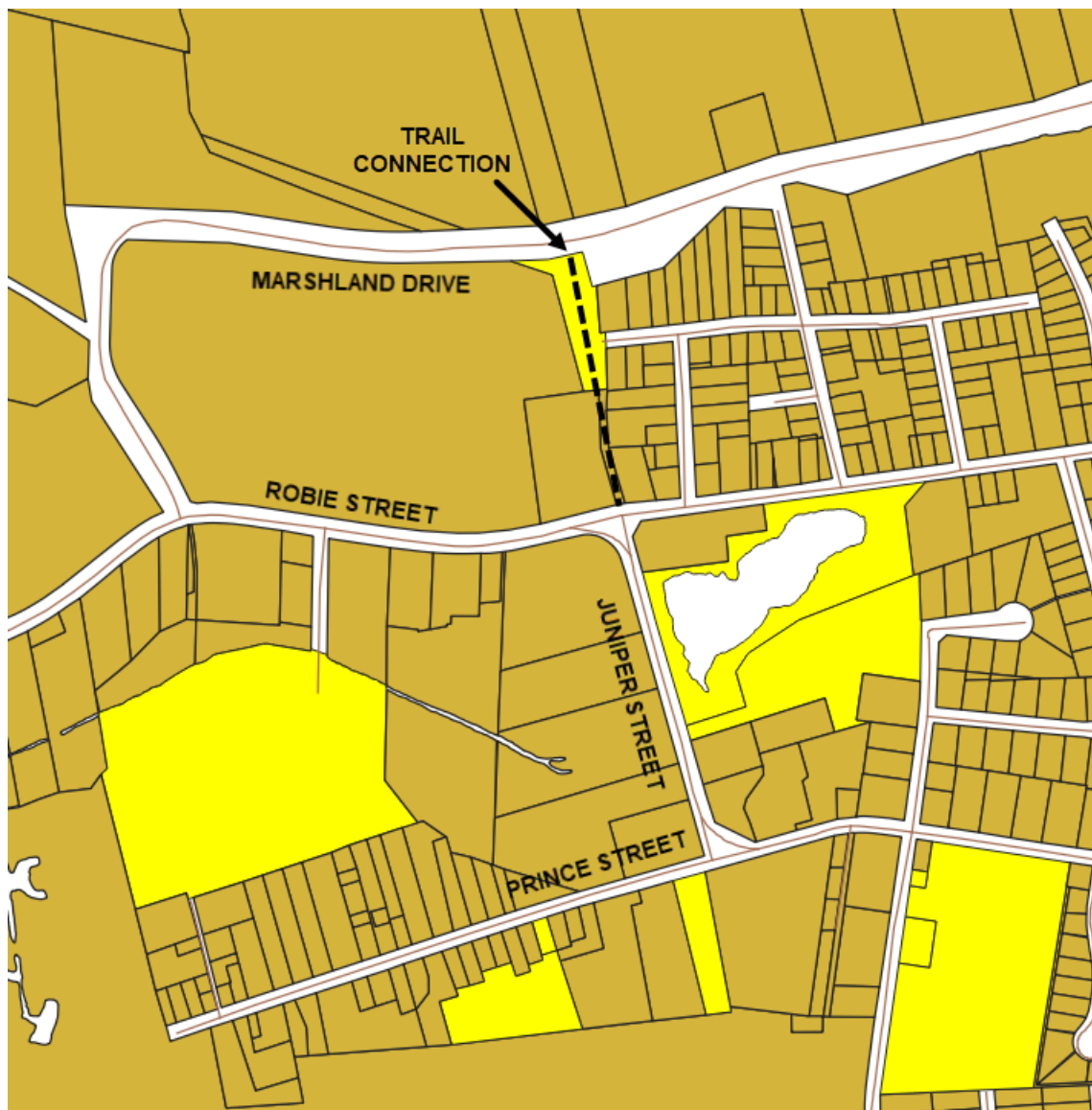


Figure 94: Proposed Trail Connection between Robie Street and Marshland Drive

4.1.6 Charles Street/Brunswick Street

The Charles Street/Brunswick Street route will provide a connection between the Cobequid Trail and Prince Street east of Downtown. The route will connect to important destinations such as Victoria Park, Tim Hortons Skate Park and connect several residential areas. The route will also support potential future neighbourhood connections to the Douglas Street Recreation Centre and École Acadienne de Truro.

The proposed route includes a trail connection between the termination of the existing Cobequid Trail on King Street and Charles Street through the King Street Community Garden. A formal multi-use pathway connection should be provided through the Town-owned property and designed to ensure appropriate buffer space between the pathway and garden areas to ensure gardening activities do not encroach on the multi-use pathway.

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Figure 95 illustrates the revised cross section on Charles Street and Brunswick Street. A 3.0-metre-wide multi-use pathway is provided on the south side of the street. The multi-use pathway is accommodated by removing the existing sidewalk and narrowing the vehicle lanes to 3.5 metres.

Curb and gutter on the south side will be replaced along the entire length of the street. The existing sidewalk and buffer on the north side are maintained, allowing for no impacts to utility poles on that side of the street. Existing utility poles on the south side will need to be removed between Shannon Drive and Palmer Street.

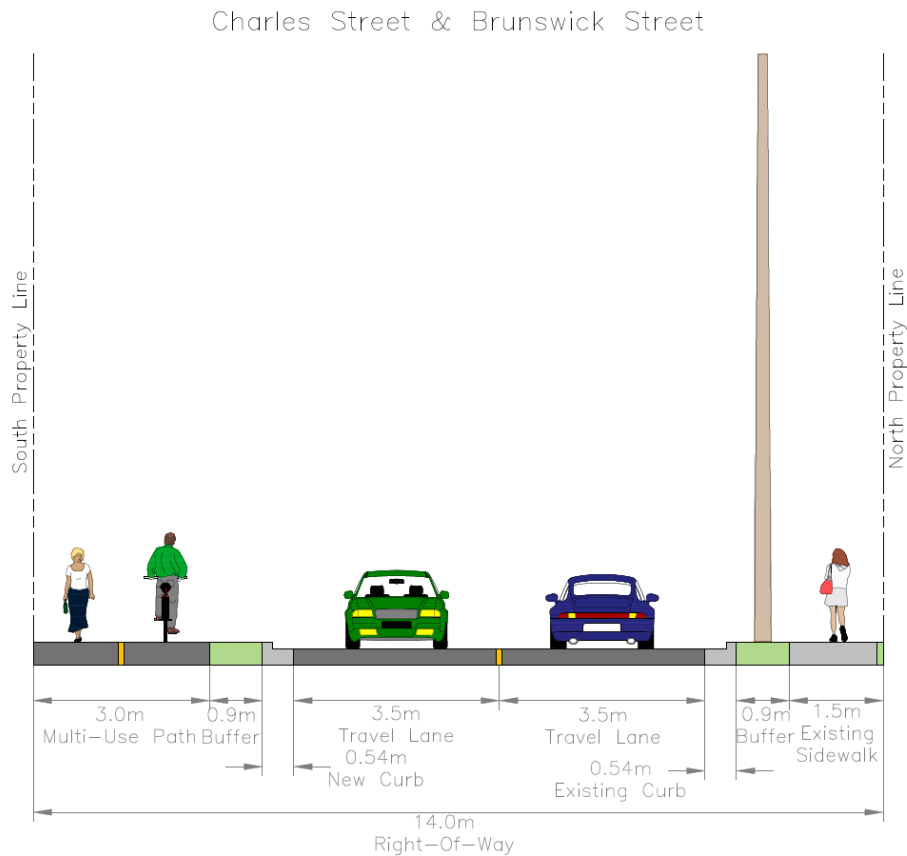


Figure 95: Charles/Brunswick Street, Revised Cross Section

4.1.7 McClures Mills Road

The McClures Mills Road route will provide an east-west connection from Willow Street to the Rath Eastlink Community Center and complete a regional connection to Truro Heights by connecting to the existing pathway on Truro Heights Road and at the Highway 102 interchange. This route will allow for future neighbourhood connections to important nearby destinations such as the Colchester East Hants Health Centre and commercial areas on Wade Road.

Figure 96 illustrates the revised cross section on McClures Mills Road. A 3.0-metre-wide multi-use pathway is provided on the south side of the street. Between Highway 102 and James Street, the multi-use pathway is accommodated by removing the existing sidewalk and narrowing the existing buffer. Existing curb, gutter and travel lanes will not be impacted.

Truro Active Transportation Network Review

Between James Street and the new roundabout, where the existing buffer is narrow, curb and gutter will need to be removed and vehicle lanes narrowed and/or turning lanes removed. As previously discussed in Section 2.2.13.6, further investigation is required along this segment.

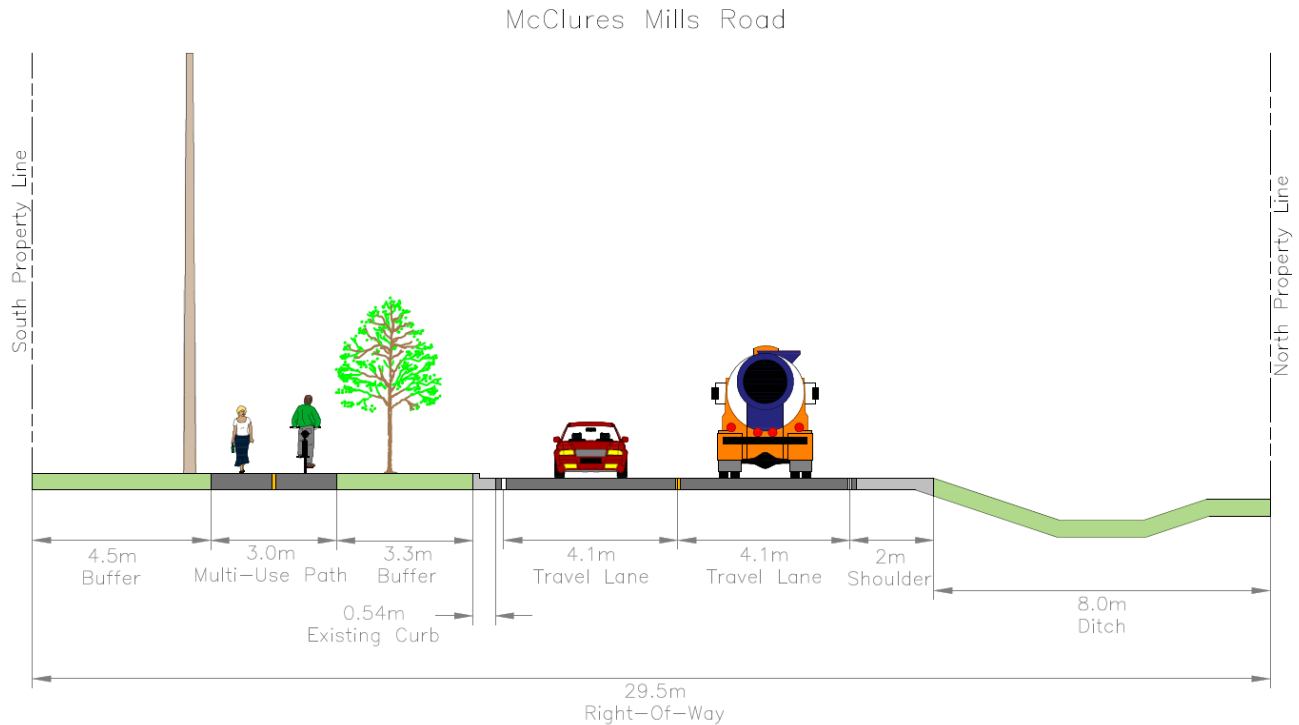


Figure 96: McClures Mills Road, Revised Cross Section

4.1.8 Glenwood Drive

The Glenwood Drive route will provide an east-west connection between the two main north-south routes, Willow Street and Young Street. This route will connect residential areas to these routes and their key destinations and allow for future neighbourhood connections to the Truro Elementary School.

Figure 97 illustrates the revised cross section on Glenwood Drive. A 3.0-metre-wide multi-use pathway is provided on the north side of the street. The multi-use pathway is accommodated by removing the existing sidewalk and narrowing the vehicle lanes to 3.4 metres. The proposed lane widths are exclusive of gutter and are suitable for a truck route. Curb and gutter on the north side will be replaced along the entire length of the street. The existing sidewalk and buffer on the south side are maintained, allowing for minimal impacts to utility poles.

Truro Active Transportation Network Review

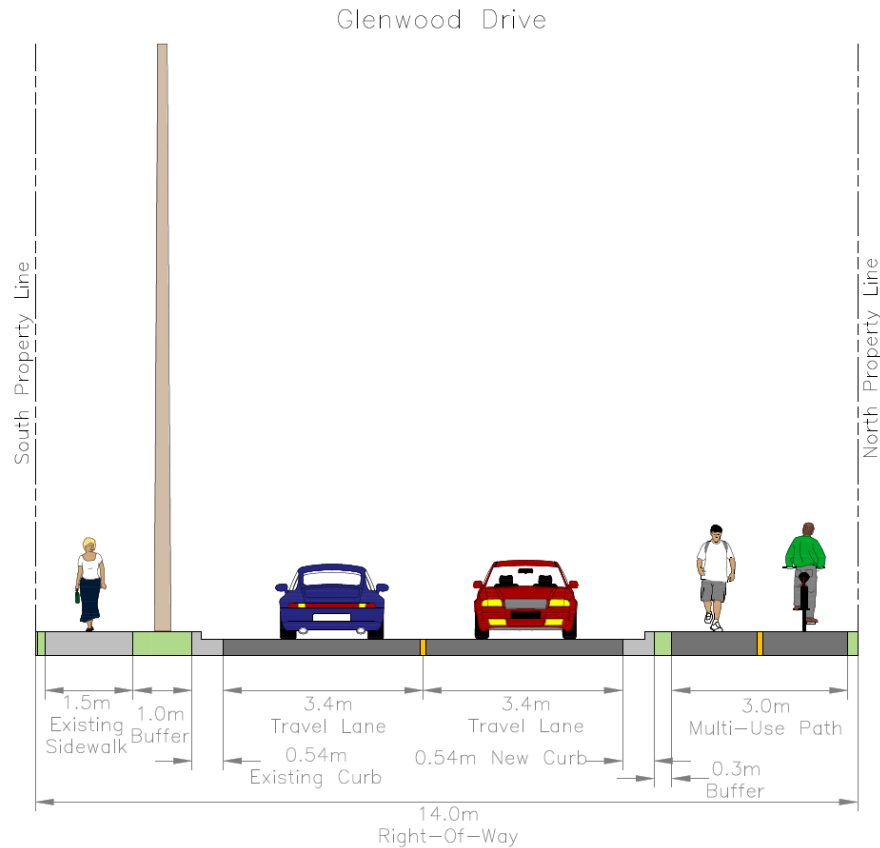


Figure 97: Glenwood Drive, Revised Cross Section

4.2 COST ESTIMATES

High-level construction cost estimates were developed for the proposed core network routes. It is important to note that it is very challenging to accurately capture costs based on conceptual cross sections alone. The preliminary design of improvements should be completed to refine the cost estimates before using the cost estimates for capital works budgets.

These estimated costs were prepared on the basis of Harbourside's experience and professional judgment, however, Harbourside has no control over the cost or availability of labor, equipment and/or materials, market conditions or a contractor's method of pricing and cannot express or imply any guarantee that the actual cost of the work will not vary from this estimate. Table 8 summarizes the estimated unit costs used to develop the cost estimates.

Truro Active Transportation Network Review

Table 8: Estimated Unit Costs

Item	Estimated Unit Cost
Removal of sidewalk	\$130/m ²
Removal of curb and gutter	\$60/m
Removal of asphalt	\$10/m ²
Installation of 1.5-metre-wide sidewalk	\$115/m ²
Installation of curb and gutter	\$300/m
Installation of 3.0-metre-wide asphalt multi-use pathway	\$250/m on-street or \$300/m off-street
Relocation of traffic signals pole	\$20,000/pole
Relocation of decorative street lighting poles	\$4,000/pole
Modification to stormwater management system	\$100/m
New stormwater management system	\$1,000/m

Table 9 summarizes the estimated cost for each of the proposed routes. No allowances were made for inflation, engineering, property acquisitions, excessive unsuitable material, utility pole relocations or harmonized sales tax (HST). Costs include a 30% contingency. The breakdown of costs for each route are included in **Appendix B**. The quantities set out are estimated only and are not to be taken as final quantities. Total costs to implement the core network are expected to exceed \$18.5M.

Table 9: Estimated Construction Costs

Route / Segment	Length (km)		Estimated Construction Cost	
Willow Street				
Prince Street to Cobequid Trail	0.9	4.3	\$ 724,100.00	\$ 4,756,100.00
Cobequid Trail to Glenwood Drive	1.0		\$ 1,062,800.00	
Glenwood Drive to Brooks Lane	2.4		\$ 2,969,200.00	
Lorne Street				
Park Street to North Street	0.5	1.2	\$ 195,000.00	\$ 669,500.00
North Street to Prince Street	0.7		\$ 474,500.00	
Young Street				
Prince Street to Arthur Street	0.3	2.5	\$ 416,400.00	\$ 3,713,600.00
Arthur Street to Glenwood Drive	1.0		\$ 1,297,400.00	
Glenwood Drive to William Barnhill Drive	1.2		\$ 1,999,800.00	
Marshland Drive	2.1		\$ 819,000.00	
Prince Street				
Juniper Street to Willow Street	0.9	2.4	\$ 1,132,300.00	\$ 2,683,900.00
Willow Street to Walker Street	1.2		\$ 1,168,700.00	
Walker Street to Cottage Street	0.3		\$ 382,900.00	
Cottage Street	0.2		\$ 202,800.00	
Juniper Street	0.7		\$ 512,200.00	
Charles Street/Brunswick Street	2.4		\$ 2,682,600.00	
McClures Mills Road	1.1		\$ 728,000.00	
Glenwood Drive	1.5		\$ 1,810,300.00	
Total	18.4		\$ 18,578,000.00	
Prince Street Alternative (two on-street parking lanes between Willow Street and Walker Street)				
Juniper Street to Willow Street	0.9	2.4	\$ 1,132,300.00	\$ 3,395,000.00
Willow Street to Walker Street	1.2		\$ 1,879,800.00	
Walker Street to Cottage Street	0.3		\$ 382,900.00	
Alternative Total	18.4		\$ 19,289,100.00	

Truro Active Transportation Network Review

5 PHASING PLAN

The phasing plan includes recommendations for the short (0-5 years), medium (5-10 years) and long term (10+years) horizon.

The phasing plan was developed to ensure connectivity in the network as it is developed. However, should streets be considered for reconstruction as part of the capital works budget the proposed infrastructure should be implemented at that time regardless of network connectivity.

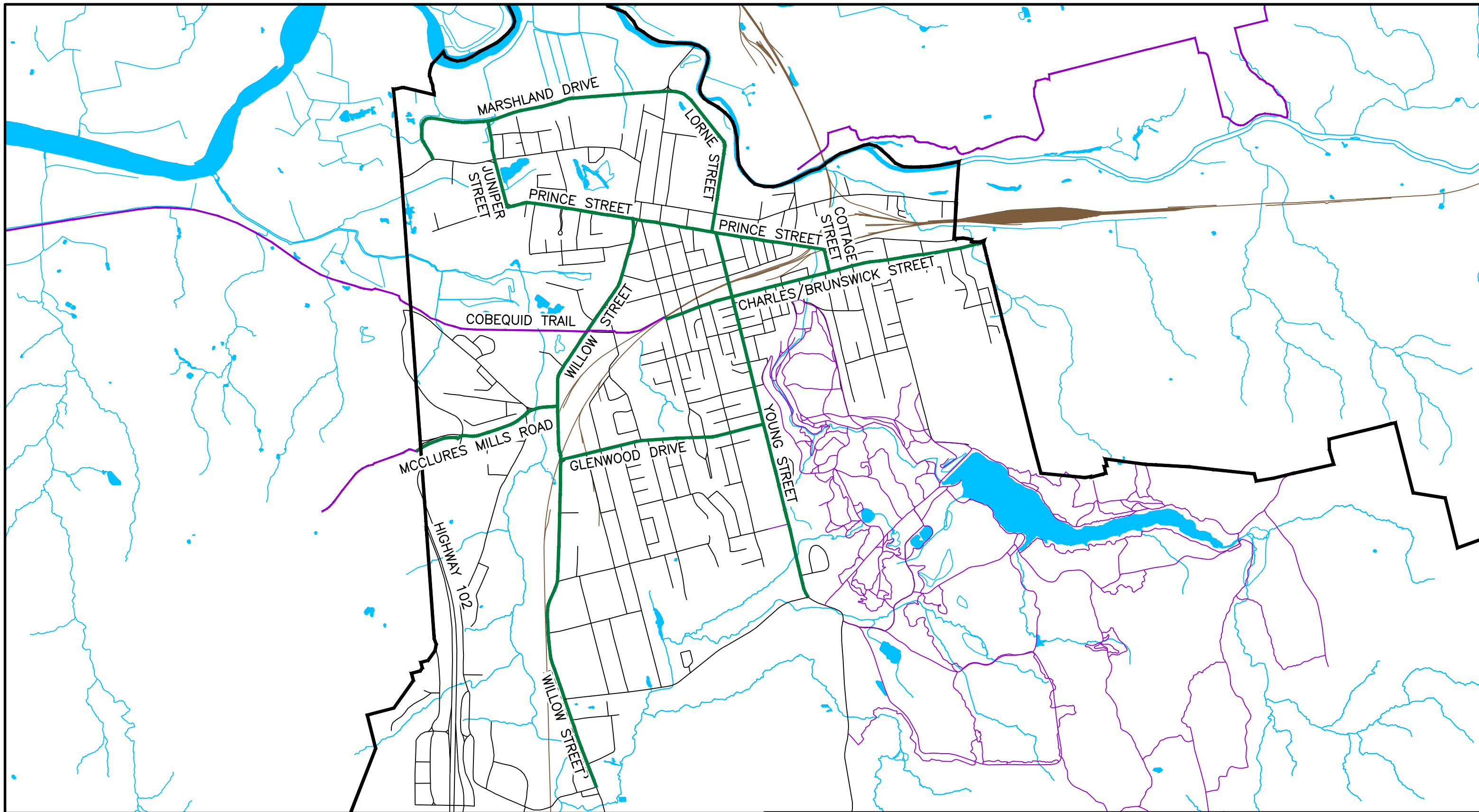
The short-term priorities will form a loop around the core, the network will then be extended outwards from this loop with the medium- and long-term priorities. Table 10 summarizes the proposed phasing plan.

Table 10: Phasing Plan

Horizon	Route	Length (km)	Cost Estimate	Horizon Total
Short	Charles Street/Brunswick Street	2.4	\$ 2,682,600.00	\$ 5,830,600.00
	Willow Street: Prince Street to Cobequid Trail	0.9	\$ 724,100.00	
	Prince Street: Willow Street to Cottage Street	1.5	\$ 1,551,600.00	
	Cottage Street	0.2	\$ 202,800.00	
	Lorne Street	1.2	\$ 669,500.00	
Medium	Young Street: Prince Street to Glenwood Drive	1.3	\$ 1,713,800.00	\$ 6,133,900.00
	Marshland Drive	2.1	\$ 819,000.00	
	Willow Street: Cobequid Trail to Glenwood Drive	1.0	\$ 1,062,800.00	
	McClures Mills Road	1.1	\$ 728,000.00	
	Glenwood Drive	1.5	\$ 1,810,300.00	
Long	Prince Street: Juniper Street to Willow Street	0.9	\$ 1,132,300.00	\$ 6,613,500.00
	Juniper Street	0.7	\$ 512,200.00	
	Willow Street: Glenwood Drive to Brooks Lane	2.4	\$ 2,969,200.00	
	Young Street: Glenwood Drive to William Barnhill Drive	1.2	\$ 1,999,800.00	
Total		18.4		\$ 18,578,000.00

APPENDIX A – Active Transportation Network Map





- CORE ROUTES
- EXISTING TRAILS
- STREETS
- TOWN BOUNDARY
- RAILWAYS
- WATER

Scale 1:100,000	Date FEBRUARY 4, 2025	Drawn S. GILLIES	Designed F. ALLAIRE	Checked M. MacDONALD	Approved M. MacDONALD	Contract 242057
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ACTIVE TRANSPORTATION NETWORK

PROPOSED CORE ROUTES
TRURO, NOVA SCOTIA

SKETCH No.
CSK - 01

APPENDIX B – Cost Estimates



ITEM	DESCRIPTION	UNIT	UNIT PRICE	QNTY.	COST
Willow Street (Prince to Cobequid Trail)					
1	Multi-Use Pathway	m	\$ 250.00	900	\$ 225,000.00
2	Sidewalk Removal	m ²	\$ 130.00	1,400	\$ 182,000.00
3	Traffic Signal Pole Relocation	ea.	\$ 20,000.00	3	\$ 60,000.00
4	Stormwater Modifications	m	\$ 100.00	900	\$ 90,000.00
5	Utility Pole Relocation	ea.		2	**Cost not included
Sub-Total					\$ 557,000.00
Contingency (30%)					\$ 167,100.00
TOTAL COST (excl. HST)					\$ 724,100.00
Willow Street (Cobequid Trail to Glenwood Drive)					
1	Multi-Use Pathway	m	\$ 250.00	1,000	\$ 250,000.00
2	Curb and Gutter	m	\$ 300.00	1,200	\$ 360,000.00
3	Curb and Gutter Removal	m	\$ 60.00	600	\$ 36,000.00
4	Concrete Sidewalk - 100mm Thick	m ²	\$ 115.00	300	\$ 34,500.00
5	Asphalt Removal	m ²	\$ 10.00	3,700	\$ 37,000.00
6	Stormwater Modifications	m	\$ 100.00	1,000	\$ 100,000.00
7	Railway Signal Relocation	ea.		1	**Cost not included
Sub-Total					\$ 817,500.00
Contingency (30%)					\$ 245,300.00
TOTAL COST (excl. HST)					\$ 1,062,800.00
Willow Street (Glenwood Drive to Brooks Lane)					
1	Multi-Use Pathway	m	\$ 250.00	2,400	\$ 600,000.00
2	Curb and Gutter	m	\$ 300.00	3,600	\$ 1,080,000.00
3	Curb and Gutter Removal	m	\$ 60.00	500	\$ 30,000.00
4	Concrete Sidewalk - 100mm Thick	m ²	\$ 115.00	1,800	\$ 207,000.00
5	Asphalt Removal	m ²	\$ 10.00	700	\$ 7,000.00
6	Stormwater Modifications	m	\$ 100.00	3,600	\$ 360,000.00
7	Utility Pole Relocation	ea.		2	**Cost not included
Sub-Total					\$ 2,284,000.00
Contingency (30%)					\$ 685,200.00
TOTAL COST (excl. HST)					\$ 2,969,200.00
WILLOW STREET TOTAL (excl. HST)					\$ 4,756,100.00
Lorne Street (Between Park Street and North Street)					
1	Multi-Use Pathway	m	\$ 300.00	500	\$ 150,000.00
Sub-Total					\$ 150,000.00
Contingency (30%)					\$ 45,000.00
TOTAL COST (excl. HST)					\$ 195,000.00
Lorne Street (Between North Street and Prince Street)					
1	Multi-Use Pathway	m	\$ 250.00	700	\$ 175,000.00
2	Sidewalk Removal	m ²	\$ 130.00	1,000	\$ 130,000.00
3	Traffic Signal Pole Relocation	ea.	\$ 20,000.00	3	\$ 60,000.00
4	Utility Pole Relocation	ea.		3	**Cost not included
Sub-Total					\$ 365,000.00
Contingency (30%)					\$ 109,500.00
TOTAL COST (excl. HST)					\$ 474,500.00
LORNE STREET TOTAL (excl. HST)					\$ 669,500.00

ITEM	DESCRIPTION	UNIT	UNIT PRICE	QNTY.	COST
Young Street (Prince Street to Arthur Street)					
1	Multi-Use Pathway	m	\$ 250.00	350	\$ 87,500.00
2	Curb and Gutter	m	\$ 300.00	350	\$ 105,000.00
3	Curb and Gutter Removal	m	\$ 60.00	350	\$ 21,000.00
4	Sidewalk Removal	m ²	\$ 130.00	525	\$ 68,250.00
5	Asphalt Removal	m ²	\$ 10.00	350	\$ 3,500.00
6	Stormwater Modifications	m	\$ 100.00	350	\$ 35,000.00
7	Utility Pole Relocation	ea.		10	**Cost not included
8	Railway Signal Relocation	ea.		1	**Cost not included
Sub-Total					\$ 320,250.00
Contingency (30%)					\$ 96,100.00
TOTAL COST (excl. HST)					\$ 416,400.00
Young Street (Arthur Street to Glenwood Drive)					
1	Multi-Use Pathway	m	\$ 250.00	1,100	\$ 275,000.00
2	Curb and Gutter	m	\$ 300.00	1,100	\$ 330,000.00
3	Curb and Gutter Removal	m	\$ 60.00	1,100	\$ 66,000.00
4	Sidewalk Removal	m ²	\$ 130.00	1,600	\$ 208,000.00
5	Asphalt Removal	m ²	\$ 10.00	900	\$ 9,000.00
6	Stormwater Modifications	m	\$ 100.00	1,100	\$ 110,000.00
7	Utility Pole Relocation	ea.		27	**Cost not included
Sub-Total					\$ 998,000.00
Contingency (30%)					\$ 299,400.00
TOTAL COST (excl. HST)					\$ 1,297,400.00
Young Street (Glenwood Drive to William Barnhill Drive)					
1	Multi-Use Pathway	m	\$ 250.00	1,200	\$ 300,000.00
2	Curb and Gutter	m	\$ 300.00	950	\$ 285,000.00
3	Curb and Gutter Removal	m	\$ 60.00	100	\$ 6,000.00
4	Sidewalk Removal	m ²	\$ 130.00	525	\$ 68,250.00
5	Asphalt Removal	m ²	\$ 10.00	1,900	\$ 19,000.00
6	Stormwater Modifications	m	\$ 100.00	100	\$ 10,000.00
7	New Stormwater	m	\$ 1,000.00	850	\$ 850,000.00
Sub-Total					\$ 1,538,250.00
Contingency (30%)					\$ 461,500.00
TOTAL COST (excl. HST)					\$ 1,999,800.00
YOUNG STREET TOTAL (excl. HST)					\$ 3,713,600.00
Marshland Drive					
1	Multi-Use Pathway	m	\$ 300.00	2,100.00	\$ 630,000.00
Sub-Total					\$ 630,000.00
Contingency (30%)					\$ 189,000.00
TOTAL COST (excl. HST)					\$ 819,000.00

ITEM	DESCRIPTION	UNIT	UNIT PRICE	QNTY.	COST
Prince Street (Juniper Street to Willow Street)					
1	Multi-Use Pathway	m	\$ 250.00	900	\$ 225,000.00
2	Curb and Gutter	m	\$ 300.00	900	\$ 270,000.00
3	Curb and Gutter Removal	m	\$ 60.00	900	\$ 54,000.00
4	Sidewalk Removal	m ²	\$ 130.00	1,400	\$ 182,000.00
5	Asphalt Removal	m ²	\$ 10.00	1,000	\$ 10,000.00
6	Stormwater Modifications	m	\$ 100.00	900	\$ 90,000.00
7	Traffic Signal Pole Relocation	ea.	\$ 20,000.00	2	\$ 40,000.00
8	Utility Pole Relocation	ea.		23	**Cost not included
Sub-Total					\$ 871,000.00
Contingency (30%)					\$ 261,300.00
TOTAL COST (excl. HST)					\$ 1,132,300.00
Prince Street (Willow Street to Walker Street)					
1	Multi-Use Pathway	m	\$ 250.00	1,200	\$ 300,000.00
2	Curb and Gutter	m	\$ 300.00	1,200	\$ 360,000.00
3	Curb and Gutter Removal	m	\$ 60.00	1,200	\$ 72,000.00
4	Asphalt Removal	m ²	\$ 10.00	4,700	\$ 47,000.00
5	Stormwater Modifications	m	\$ 100.00	1,200	\$ 120,000.00
Sub-Total					\$ 899,000.00
Contingency (30%)					\$ 269,700.00
TOTAL COST (excl. HST)					\$ 1,168,700.00
Prince Street (Walker Street to Cottage Street)					
1	Multi-Use Pathway	m	\$ 250.00	300	\$ 75,000.00
2	Curb and Gutter	m	\$ 300.00	300	\$ 90,000.00
3	Curb and Gutter Removal	m	\$ 60.00	300	\$ 18,000.00
4	Sidewalk Removal	m ²	\$ 130.00	450	\$ 58,500.00
5	Asphalt Removal	m ²	\$ 10.00	300	\$ 3,000.00
6	Stormwater Modifications	m	\$ 100.00	300	\$ 30,000.00
7	Traffic Signal Pole Relocation	ea.	\$ 20,000.00	1	\$ 20,000.00
8	Utility Pole Relocation	ea.		2	**Cost not included
Sub-Total					\$ 294,500.00
Contingency (30%)					\$ 88,400.00
TOTAL COST (excl. HST)					\$ 382,900.00
PRINCE STREET TOTAL (excl. HST)					\$ 2,683,900.00

ITEM	DESCRIPTION	UNIT	UNIT PRICE	QNTY.	COST
Prince Street Alternative (Willow Street to Walker Street)					
1	Multi-Use Pathway	m	\$ 250.00	1,200	\$ 300,000.00
2	Curb and Gutter	m	\$ 300.00	1,200	\$ 360,000.00
3	Curb and Gutter Removal	m	\$ 60.00	1,200	\$ 72,000.00
4	Sidewalk Removal	m ²	\$ 130.00	3,000	\$ 390,000.00
5	Asphalt Removal	m ²	\$ 10.00	2,000	\$ 20,000.00
6	Stormwater Modifications	m	\$ 100.00	1,200	\$ 120,000.00
7	Decorative Street Light Relocation	ea.	\$ 4,000.00	21	\$ 84,000.00
8	Traffic Signal Pole Relocation	ea.	\$ 20,000.00	5	\$ 100,000.00
9	Utility Pole Relocation	ea.		4	**Cost not included
Sub-Total					\$ 1,446,000.00
Contingency (30%)					\$ 433,800.00
TOTAL COST (excl. HST)					\$ 1,879,800.00
PRINCE STREET ALTERNATIVE TOTAL (excl. HST)					\$ 3,395,000.00
Cottage Street					
1	Multi-Use Pathway	m	\$ 250.00	200	\$ 50,000.00
2	Curb and Gutter	m	\$ 300.00	200	\$ 60,000.00
3	Curb and Gutter Removal	m	\$ 60.00	100	\$ 6,000.00
4	Sidewalk Removal	m ²	\$ 130.00	100	\$ 13,000.00
5	Asphalt Removal	m ²	\$ 10.00	700	\$ 7,000.00
6	Stormwater Modifications	m	\$ 100.00	200	\$ 20,000.00
Sub-Total					\$ 156,000.00
Contingency (30%)					\$ 46,800.00
TOTAL COST (excl. HST)					\$ 202,800.00
Juniper Street					
1	Multi-Use Pathway	m	\$ 250.00	400	\$ 100,000.00
2	Curb and Gutter	m	\$ 300.00	400	\$ 120,000.00
3	Curb and Gutter Removal	m	\$ 60.00	200	\$ 12,000.00
4	Sidewalk Removal	m ²	\$ 130.00	100	\$ 13,000.00
5	Asphalt Removal	m ²	\$ 10.00	1,500	\$ 15,000.00
6	Stormwater Modifications	m	\$ 100.00	400	\$ 40,000.00
Sub-Total					\$ 300,000.00
Contingency (30%)					\$ 90,000.00
TOTAL COST (excl. HST)					\$ 390,000.00
Juniper Street Trail Connection					
1	Multi-Use Pathway	m	\$ 300.00	300	\$ 90,000.00
2	Asphalt Removal	m ²	\$ 10.00	400	\$ 4,000.00
Sub-Total					\$ 94,000.00
Contingency (30%)					\$ 28,200.00
TOTAL COST (excl. HST)					\$ 122,200.00
JUNIPER STREET TOTAL (excl. HST)					\$ 512,200.00

ITEM	DESCRIPTION	UNIT	UNIT PRICE	QNTY.	COST
Charles & Brunswick Street					
1	Multi-Use Pathway	m	\$ 250.00	2,200	\$ 550,000.00
2	Curb and Gutter	m	\$ 300.00	2,200	\$ 660,000.00
3	Curb and Gutter Removal	m	\$ 60.00	2,100	\$ 126,000.00
4	Sidewalk Removal	m ²	\$ 130.00	3,150	\$ 409,500.00
5	Asphalt Removal	m ²	\$ 10.00	3,800	\$ 38,000.00
6	Stormwater Modifications	m	\$ 100.00	2,200	\$ 220,000.00
7	Utility Pole Relocation	ea.		23	**Cost not included
8	Community Garden Trail	m	\$ 300.00	200	\$ 60,000.00
Sub-Total					\$ 2,063,500.00
Contingency (30%)					\$ 619,100.00
TOTAL COST (excl. HST)					\$ 2,682,600.00
McClures Mills Road					
1	Multi-Use Pathway	m	\$ 250.00	1,100	\$ 275,000.00
2	Curb and Gutter	m	\$ 300.00	300	\$ 90,000.00
3	Curb and Gutter Removal	m	\$ 60.00	300	\$ 18,000.00
4	Sidewalk Removal	m ²	\$ 130.00	1,100	\$ 143,000.00
5	Asphalt Removal	m ²	\$ 10.00	400	\$ 4,000.00
6	Stormwater Modifications	m	\$ 100.00	300	\$ 30,000.00
Sub-Total					\$ 560,000.00
Contingency (30%)					\$ 168,000.00
TOTAL COST (excl. HST)					\$ 728,000.00
Glenwood Drive					
1	Multi-Use Pathway	m	\$ 250.00	1,500	\$ 375,000.00
2	Curb and Gutter	m	\$ 300.00	1,500	\$ 450,000.00
3	Curb and Gutter Removal	m	\$ 60.00	1,500	\$ 90,000.00
4	Sidewalk Removal	m ²	\$ 130.00	2,250	\$ 292,500.00
5	Asphalt Removal	m ²	\$ 10.00	3,500	\$ 35,000.00
6	Stormwater Modifications	m	\$ 100.00	1,500	\$ 150,000.00
7	Utility Pole Relocation	ea.		4	**Cost not included
Sub-Total					\$ 1,392,500.00
Contingency (30%)					\$ 417,800.00
TOTAL COST (excl. HST)					\$ 1,810,300.00



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