

## **5.0 DESCRIPTION OF THE RECOMMENDED SOLUTION(S)**

### **5.1 Roadway and Active Transportation Design**

#### St. David's Road

The preferred solution for the reconstruction of St. David's Road from Collier Road / Burleigh Hill Drive to Townline Road West is to install an off-road multi-use path, with an urbanized cross section (curb and gutter). The typical cross-section for the St. David's Road preferred alternative solution is shown in Figure 5.7.

The cross section of the new roadway will be comprised of two vehicle lanes (3.75m wide), 2.0m wide boulevards and a 3.0m wide multi-use path on the south side of the road, and 2.0m wide boulevard and 1.5m wide sidewalks on the north side of the road. The total width of the proposed cross-section of St. David's Road is 17.0m.

This cross-section provides sufficient vehicle lane width to accommodate vehicles on the roadway and creates separation between the pedestrian and cyclist facilities and the roadway.

The 1.50m wide sidewalks on the west side of the road will support pedestrian use and can accommodate accessible modes of transport, in accordance with AODA standards. Cyclists and pedestrians will also be able to utilize the 3.0m multi-use path on the south side of the road. Cyclists will no longer be required to travel within the designated vehicle lane with this option. This new multi-use path will connect with the planned multi-use paths along St. David's Road west of Burleigh Hill Drive, and along Townline Road West, to the existing multi-use path along Front Street.

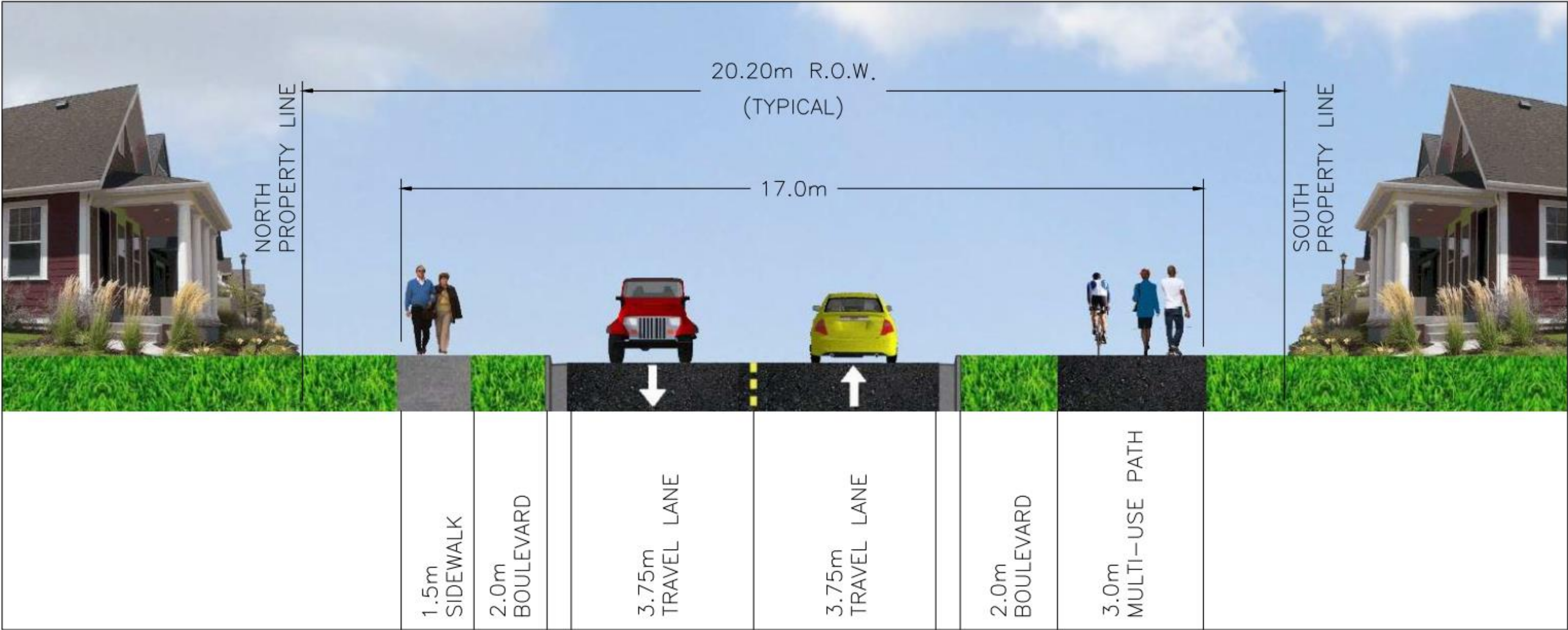


Figure 5.7 – Typical Section (St. David's Road Preferred Solution)

### Townline Road West

The preferred solution for the reconstruction of Townline Road West from St. David Street West to the existing east limit is to install an off-road multi-use path with an urbanized cross section (curb and gutter). The typical cross-section for the Townline Road West preferred alternative solution is shown in Figure 5.8.

The cross section of the new roadway will be comprised of two vehicle lanes (3.25 m wide) and, on-road parking along the south side of the corridor (2.5m wide), varying width boulevards and a 3.0m wide multi-use path on the south side of the road, and 1.5m wide boulevard and 1.5m wide sidewalks on the north side of the road (1.8m sidewalks applied in areas without boulevard). The total width of the proposed cross-section of Townline Road West is 17.0m. Where required, and feasible to implement, impacts to existing parking

This cross-section provides sufficient vehicle lane width to accommodate vehicles on the roadway, accommodates the requirements for on-road parking, and creates separation between the pedestrian and cyclist facilities and the roadway.

The 1.50m wide sidewalks on the west side of the road will support pedestrian use and can accommodate accessible modes of transport, in accordance with AODA standards. Cyclists and pedestrians will also be able to utilize the 3.0m multi-use path on the south side of the road. Cyclists will no longer be required to travel within the designated vehicle lane with this option. This new multi-use path will connect with the planned multi-use paths along St. David's Road to the existing multi-use trail along Front Street, creating a continuous, accessible multi-use path throughout the corridor.

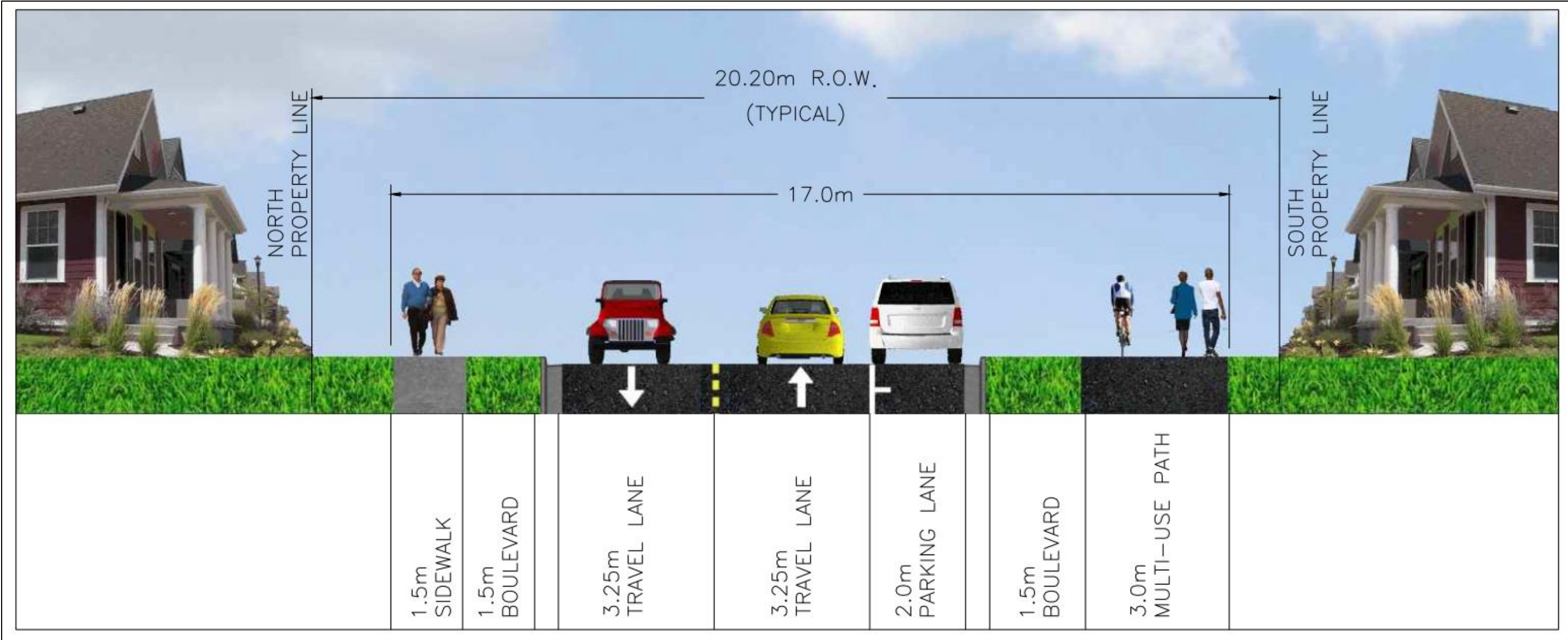


Figure 5.8 – Typical Section (Townline Road West Preferred Solution)



### St. David's Road & Townline Road West Intersection

The preferred solution for the St. David's Road & Townline Road West intersection is to realign St. David Street West to create a 4-legged intersection, at a 90° angle with St. David's Road / Townline Road West as shown in Figure 5.9.

The proposed 4-legged intersection configuration would provide drivers, cyclists, and pedestrians with an improved degree of familiarity and safety. The intersection will become a 4-way (all way) stop controlled intersection. The multi-use path and sidewalk will be marked with designated crossings, further improving pedestrian and cyclist safety through the intersection. Re-aligning St. David Street West to create a 90° 4-legged intersection is also anticipated to eliminate the ongoing shortcutting through the existing commercial development parking lot travelling between Lesson Street and Whyte Ave N, thereby reducing conflict with traffic, cyclists and pedestrians.

The proposed re-alignment would enhance the area at the south-western quadrant of the intersection by providing additional open space and a small parkette.



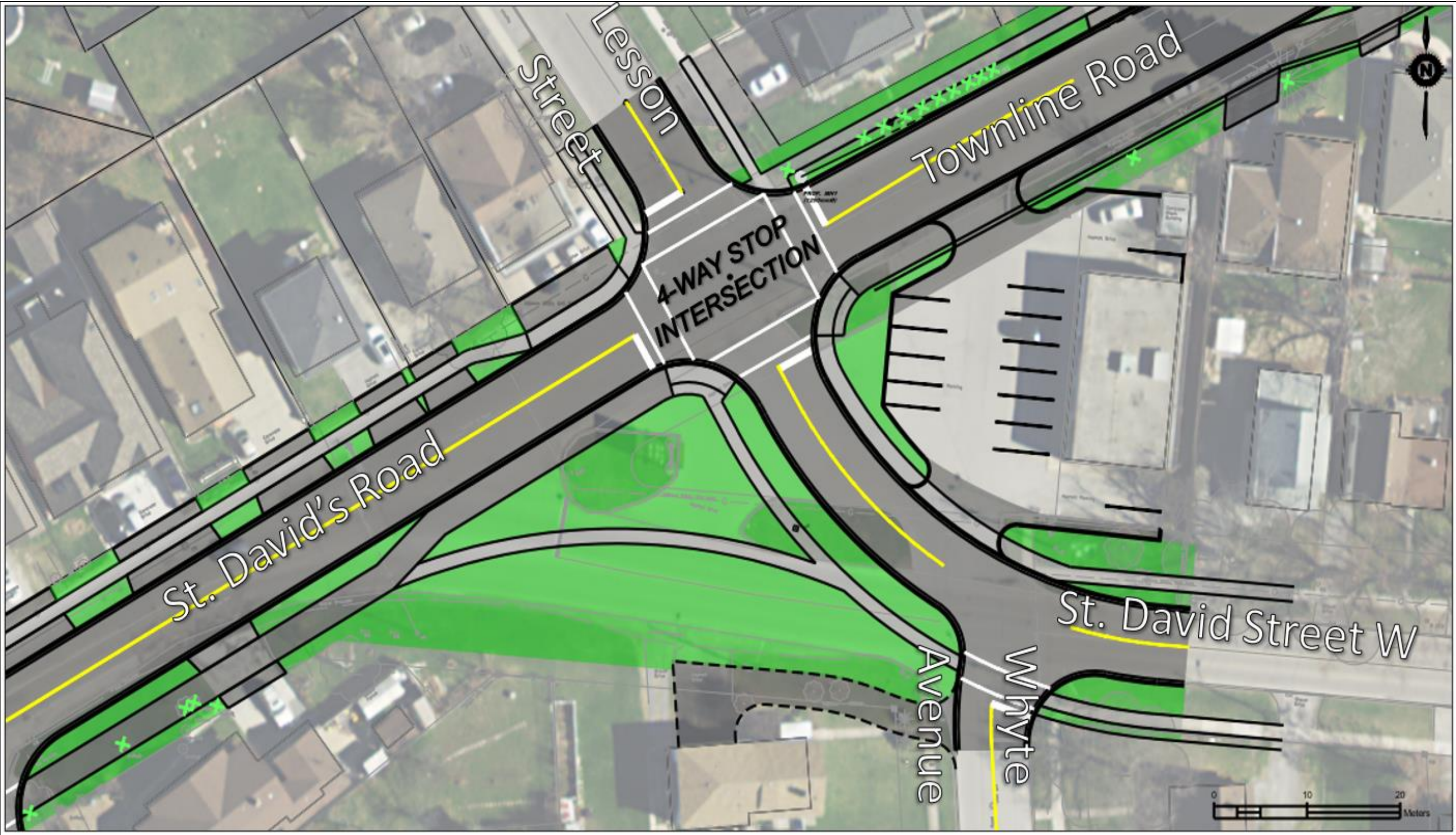


Figure 5.9 – St. David's Road & Townline Road West Intersection Preferred Solution



### Townline Road West Extension

The preferred solution is to extend Townline Road West to the east, from its existing eastern limit, to tie into Front Street North / Ormond Street North as shown in Figure 5.10.

The Townline Road West extension will provide vehicles travelling from St. David's Road / Townline Road West a direct connection, improving network connectivity to the northeast portion of Thorold. In addition to improved vehicle connectivity, the proposed extension will also provide greater connectivity and safety for pedestrians and cyclists from the extension of the proposed multi-use path west of the study area (currently under construction) with connections directly to the existing multi-use path on Front Street North, connecting southerly to downtown Thorold, and ultimately to the Welland Canal Parkway Trail.

The extension of Townline Road West will provide an alternative route for commercial truck traffic generated at the east end of the corridor (Big Red Distribution Centre), which currently utilize Townline Road West exclusively. The new connection to Front Street North, Merritt Street / Ormond Street North will provide more direct routes connecting to roadways that are more appropriate for accommodating commercial vehicles. Townline Road West could also be considered for truck prohibition as a result of the provision of this alternate point of access. The connection will also provide additional network connectivity resulting in enhanced emergency services (EMS) routing opportunities. With the extension of Townline Road West, the one-way portion of Front Street between Merritt Street North and Townline Road East will be eliminated, and Front Street will be realigned to tie-into the extended Townline Road, improving intersection geometrics, sightlines, and safety. Left and right-turn lanes onto Townline Road West will be incorporated into the roadway as required.

These modifications will result in a simplified configuration, which reduces the complexity of driver decisions and introduces a more standard intersection configuration with simplified traffic control. This simplified geometry will provide enhanced operations and safety, and clarity with respect to vehicle right-of-way. The traffic signal also provides pedestrian and cyclist priority crossing the Merritt Street / Ormond Street and Townline Road East.



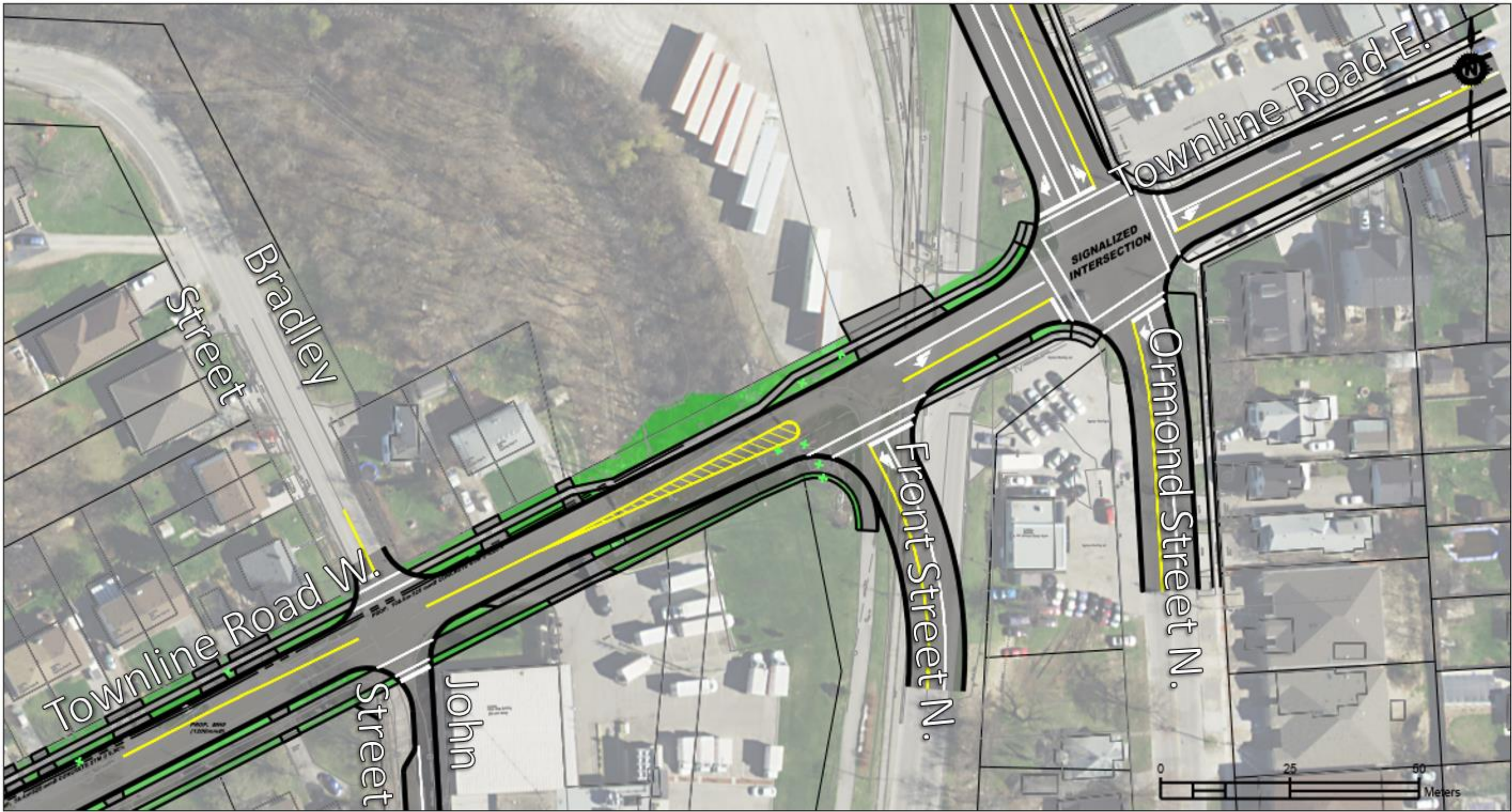


Figure 5.10 –Townline Road West Extension Preferred Solution



### Active Transportation Connectivity

The preferred solution for active transportation network connectivity is to connect to the Welland Canal Parkway Trail via Townline Road to Front Street north / Ormond Street North as shown in Figure 5.11.

This connection will utilize the recommended multi-use path along Townline Road West described above and consistent with the City of Thorold Transportation Master Plan to connect directly to the existing multi-use path along Front Street North. This solution enhances active transportation connectivity, utilizes some existing facilities reducing cost and property impacts, and provides improved connectivity to the Merritt Trail, and the future planned cycling connections along Leeson Street, Mountain Street, St. David Street West and Ormond Street North.

Upon completion of the planned multi-use path along Regent Street, Townline Road West and St. David's Road, a continuous multi-use path between key locations such as the Welland Canal, Downtown Thorold, the Merritt Trail, and Brock University will significantly improve pedestrian and cyclist connectivity throughout the area.





Figure 5.11– Active Transportation Connectivity Preferred Solution



## 5.2. Municipal Services

The proposed improvements to the municipal services are shown in greater detail on the preferred design drawings found in **Appendix 6**.

### Storm Sewer

The study recommendations include improvements to the drainage and stormwater management infrastructure in the study area, including the introduction of a new storm sewer along Townline Road West. The new storm sewer would be approximately 613m long, consisting of storm sewer pipes between 300mm dia. and 525mm dia. Stormwater runoff would be collected by a series of new catchbasins connected to the proposed storm sewer. The new storm sewer is recommended to connect and drain into the existing box culvert conveying the second Welland Canal under Townline Road West (NPCA regulated watercourse).

### Watermain

Watermain replacement at two locations is proposed; The first location is the replacement of approximately 215m of 150mm dia. watermain with 300mm dia. PVC watermain from Collier Road / Burleigh Hill Drive to Allanburg Road. The second location is the replacement of approximately 470m of 400mm dia. PVC watermain from Collier Road / Burleigh Hill Drive to just west of Water Street. These replacements will include the replacement of all related appurtenances, such as fire hydrants as well as service connections to the residential properties. No other water related upgrades are anticipated.

The preliminary proposed alignments of these watermains are shown in the preferred design plan and profile drawings in **Appendix 6**. It should be noted that this will maintain the current arrangement where the St. Catharines side of the roadway (north) is serviced by City of St. Catharines owned watermains, and the Thorold side of the roadway (south) is serviced by City of Thorold owned watermains, except for a section from Queen Street North to Front Street North, where both sides are service by St. Catharines owned watermains.

### Sanitary Sewer

It is assumed at this time that no sanitary sewer improvements are required, as it is understood that the Cities are currently satisfied with the condition and capacity of the sewers. Regardless, it is recommended that the current condition of the sanitary sewers be confirmed during the detailed design phase.

### 5.3. Construction Staging and Estimated Timing

Due to the size of the overall project, as well as timeline constraints and other technical requirements, including the need to relocate utility poles along Townline Road West, the roadway reconstruction and other associated infrastructure improvements are to be completed in two phases.

It is recommended that construction along St. David's Road (Phase 1) is initiated in Summer 2021 whilst utility relocations are being completed along Townline Road West, prior to construction commencing on Townline Road West (Phase 2) in Fall 2021.

The anticipated timeline for the proposed works is outlined in the table below.

**Table 5.8 – Preliminary Timing Summary**

<b>ACTIVITY</b>	<b>TIMING</b>
Detailed Design	December 2020 – April 2021
Utility Relocations	July 2021 – July 2022
St. David's Road Reconstruction	Spring 2021 – Summer 2021
Townline Road West Reconstruction	Fall 2021 – Summer 2022
<b>Construction Completion</b>	<b>July 2022</b>

### 5.4. Preliminary Cost Estimate & Cost Sharing Agreement

The estimated preliminary costs to complete the works is provided in Table 5.9. Where required, cost sharing agreements between the City of St. Catharines and City of Thorold will need to be confirmed during detailed design.

**Table 5.9 - Cost Estimate Summary**

<b>Items</b>	<b>Total Cost</b>
Total Construction	\$6,676,468.00
Utility Relocation and Property	\$1,175,000.00
Engineering and Geotechnical Testing	\$767,794.00
Contingency	\$667,647.00
<b>TOTAL before HST</b>	<b>\$9,286,909.00</b>