Comprehensive Transportation Master Plan

Town of Kingsville

August 2022
Final Report

Town of Kingsville
Prepared by:

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Executive Summary

The Kingsville Comprehensive Transportation Master Plan (CTMP) provides multi-modal transportation investments and a strategy to implement these to accommodate forecasted growth in the Town to the year 2037. The CTMP was prepared following the Municipal Class Environmental Assessment (MCEA) process for master plans, addressing Phase 1 (problem / opportunity statement), and Phase 2 (assessment of alternatives), and included two rounds of consultation with multiple stakeholders and the public.

The vision for the CTMP, which addresses Phase 1 of the MCEA process is:

> The Town of Kingsville provides a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability, while accommodating future growth and development.

To address Phase 2 of the MCEA process (assessment of alternatives), road network analysis was conducted for three scenarios for the 2037 horizon year:

1. Do Nothing (no further investment in the Town's transportation network);
2. Widening of key east-west and north-south roads;
3. Multi-modal strategy with by-pass options for east-west travel.

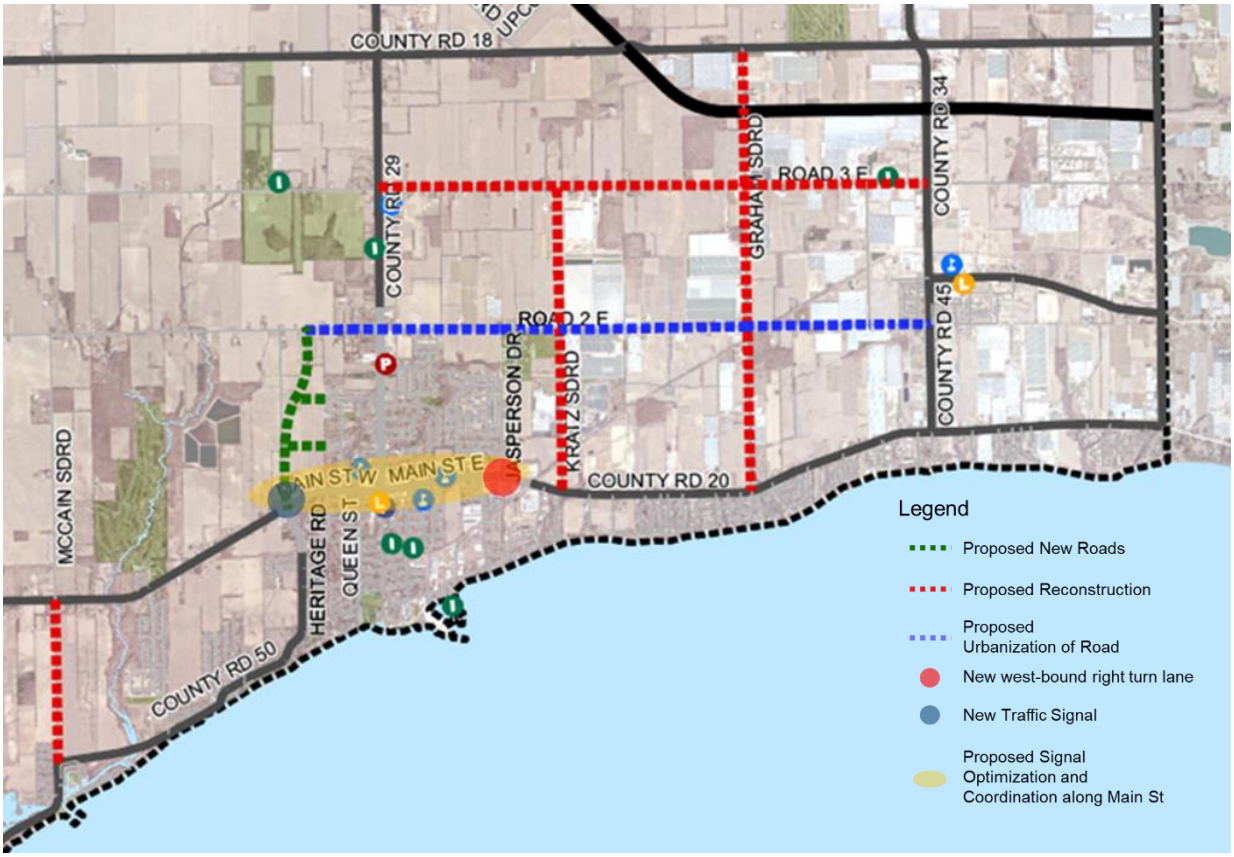
The analysis of the Do Nothing scenario showed that some improvements should be made to accommodate future growth. Through consultation and preliminary analysis, it was determined that an option of widening Main Street through the Town or widening Division Street North could require land acquisition and would alter the community feel and would be detrimental to the Town. The focus then shifted to providing alternatives to Main Street for east-west vehicle travel. A series of preliminary recommendations was taken to the public, stakeholders, and Council and the Alternative 3 was selected as the preferred alternative.

Two rounds of consultation and engagement were held to inform the CTMP. The first round, held from June through September 2021 and included a series of online meetings, an online public open house, and online engagement through the project webpage, was to discuss challenges and opportunities and confirm the vision statement. The second round, held in May – June 2022, included an in-person public open house and online engagement through the project webpage, to discuss and refine proposed improvements to the multi-modal transportation network. The major themes that emerged through the project engagement activities included:

- Create a multi-modal transportation system that provides options for all users;
- Improve traffic flow and increase efficiency for people travelling to key destinations;
- Accommodate and consider future growth and development when making decisions for the transportation network;
- Improve connectivity to other communities, between transportation and key land uses, and for active transportation users;
- Promote sustainability within the Town's transportation system; and
- Introduce measures to help calm traffic and improve roadway safety.

The preferred alternative includes improvements to Road 2, Road 3, Kratz Road, and Graham Sideroad, and the construction of an extension of Heritage Road between Main Street West and Road 2 West to create a by-pass. The preferred scenario also includes additional road network improvements and a comprehensive active transportation network that leverages what Essex County has planned through its County-wide Active Transportation System (CWATS). The recommended road network map to accommodate growth to the year 2037 is shown in **Figure ES-1** and the recommended active transportation network map is shown in **Figure ES-2**. These networks are supported by an implementation plan that provides phasing and costing of the improvements.

Figure ES-1. Recommended Road Network Map to Accommodate Growth to the Year 2037



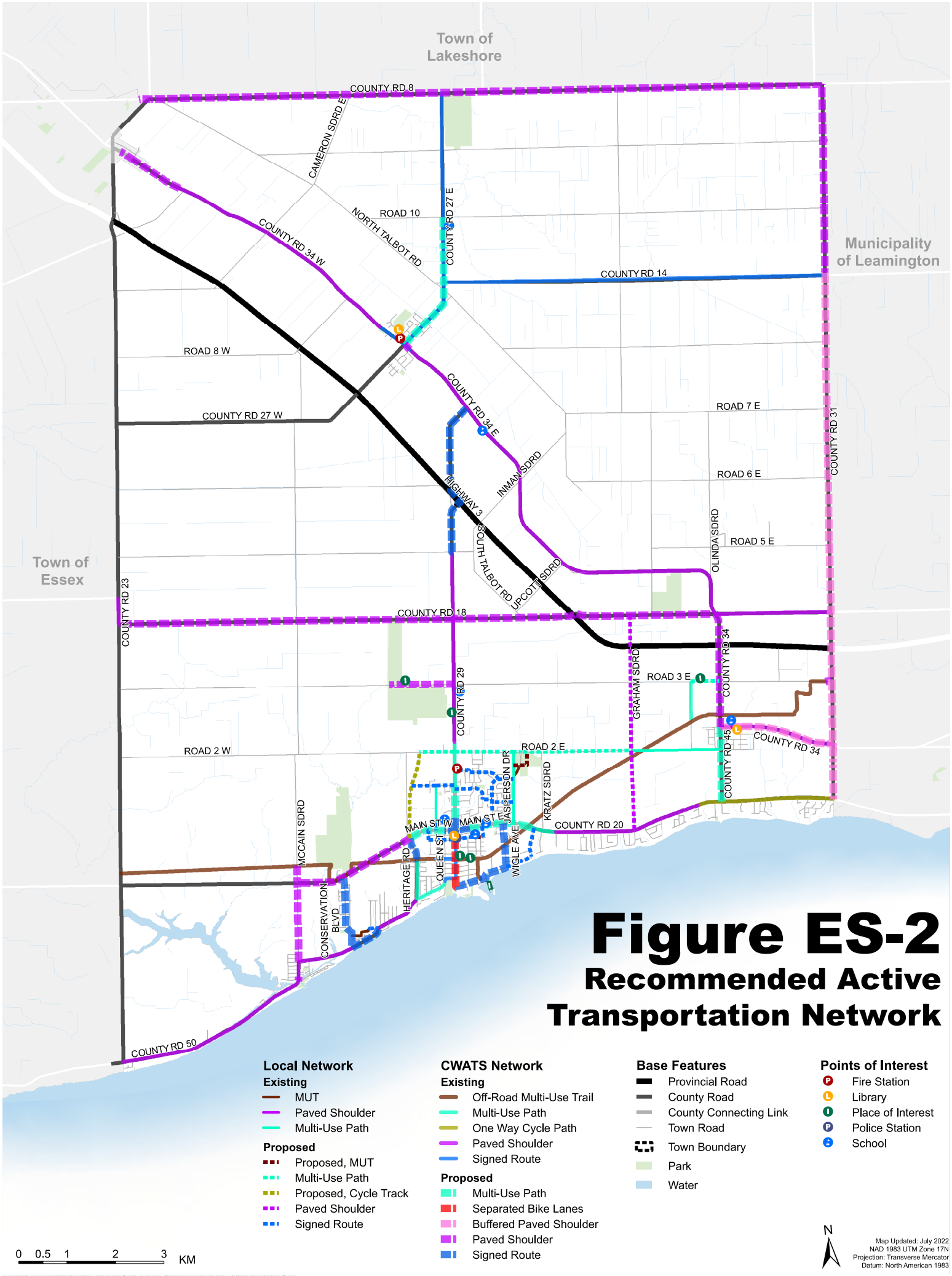


Figure ES-2
Recommended Active Transportation Network

Local Network

Existing
- MUT
- Paved Shoulder
- Multi-Use Path

Proposed
- Proposed, MUT
- Multi-Use Path
- Proposed, Cycle Track
- Paved Shoulder
- Signed Route

CWATS Network

Existing
- Off-Road Multi-Use Trail
- Multi-Use Path
- One Way Cycle Path
- Paved Shoulder
- Signed Route

Proposed
- Multi-Use Path
- Separated Bike Lanes
- Buffered Paved Shoulder
- Paved Shoulder
- Signed Route

Base Features
- Provincial Road
- County Road
- County Connecting Link
- Town Road
- Town Boundary
- Park
- Water

Points of Interest
- Fire Station
- Library
- Place of Interest
- Police Station
- School

0 0.5 1 2 3 KM

N

Map Updated: July 2022
NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983

The preferred alternative is supported by an implementation plan that provides short-, medium-, and long-term phasing as well as high level costing of the active transportation and road network infrastructure recommendations.

A summary of the multi-modal recommendations included in the CTMP includes:

Active Transportation

To enhance the walking and cycling network to accommodate future growth, the Town should adopt the following recommendations:

1. Adopt in principle the proposed active transportation network illustrated in **Figure ES-2**;
2. Continue coordination with the County of Essex to implement the CWATS Master Plan recommendations and to continue to build partnerships with local advocacy groups;
3. Reference should be made to OTM Book 18: Cycling Facilities and OTM Book 15: Pedestrian Crossings to inform and guide the design and implementation of cycling and in-boulevard facilities, and future pedestrian crossings, respectively;
4. Apply the network phasing and implementation strategy recommended in the CTMP for building out the active transportation network, and incorporate as part of the annual capital budget review process;
5. Continue to identify new opportunities to implement AT routes / facilities in conjunction with capital infrastructure projects to achieve economies of scale and cost savings;
6. Consider providing sidewalks on at least one side of all local roads and on both sides for all collector and arterial roads in the urban areas;
7. Integrate AT with transit by providing connections to future transit stops and provide AT-supportive infrastructure, such as bike parking at or in close proximity to transit stops;
8. Continue to work through the CWATS Committee, the Windsor-Essex County Health Unit, and other partners to implement a supportive Education and Outreach Strategy;

Transit

The following recommendations are presented for transit to address future growth in the Town:

1. Liaise with the Municipality of Leamington to determine if the Leamington to Windsor Route 42 grant can be extended, with the route altered to travel on Main Street East and Division Road North to provide better access to Kingsville.
2. Continue to support the transit services provided by South Essex Community Council.
3. Consider partnering with taxi services or ride hail services (if available) to provide on-demand transit.

Roads

Road network improvements recommended to address future growth include:

1. New roadway link (Heritage Road extension) connecting Main Street W and Road 2 W which runs parallel to Division Road and provides alternative to the northbound and eastbound from Main Street W and Heritage Road intersection traffic and Main Street E and Kratz Road intersection traffic to bypass Mains Street and Division Road downtown traffic.
2. Signalization of Main Street W and Heritage Road intersection.
3. Removal of push button pedestrian crossing signal to the east of Santos Drive on Main Street and signalization of the Main Street and Santos Drive intersection.
4. Provision of Westbound right turn lane at Main Street and Jasperson Drive.
5. Urbanization of Road 2 from proposed Heritage Road connection to County Road 45.
6. Reconstruction of Kratz Road from Main Street (County Road 20) to Road 2 E to strengthen the pavement.
7. Construction of a new extension of Kratz Road from Road 2 E to Road 3 E.
8. Reconstruction of Graham Side Road from Seacliff Drive (County Road 20) to County Road 18 to strengthen the pavement.
9. Reconstruction of Road 3 from County Road 29 to County Road 34 to strengthen the pavement.
10. Reconstruction of McCain Side Road from County Road 50 to County Road 20 to strengthen the pavement.
11. Signal optimization and coordination of the signalized intersections along Main Street between Heritage Road and Kingsville Marketplace Driveway.
12. Suggest truck routes for the trucks accessing the port. The trucks accessing the port from the east of Kingsville from County Road 20 could be routed through Wigle Avenue, whereas the trucks from the west of Kingsville could be routed from Division Street (existing route) and the alternative route through Harold Cull Drive and Heritage Road.
13. Consider opportunities for access management along Main Street East between the Chrysler Greenway Trail and Jasperson Drive.
14. If new development occurs:
    a. Extend Jasperson Drive south to provide rear access to properties along Main Street East; and
    b. Extend Applewood Road east to Kratz Road, and provide a road connection from the Applewood Road extension to the Kingsville Marketplace shopping centre.

Goods Movement

The goods movement recommendations are summarized as:

1. Improve Road 2, Road 3, Kratz Road, and Graham Sideroad to create truck by-pass options for Main Street.
2. Construct the extension of Heritage Drive between Main Street West and Road 2 West to complete the by-pass
3. Suggest Wigle Street as the primary access to the port, especially for truck traffic to or from the east; and
4. If truck traffic continues to be a problem in the downtown, explore a route to and from the west that uses Harold Cull Drive, recognizing that improvements might need to be made at intersections on this route to facilitate truck turning movements.

1 Introduction: What is a Transportation Master Plan?

1.1 Understanding the Transportation Master Plan

1.1.1 Study Purpose

The Town of Kingsville's Comprehensive Transportation Master Plan (CTMP) provides a long-term framework for the continued development of the Town's multi-modal transportation system. This framework provides guidance to enhance accessibility, quality of life, and connections across the Town to accommodate the Town's forecasted growth. The TMP defines the Town's 15-year vision and outlines corresponding transportation infrastructure and policy recommendations that will bring this vision to life.

The TMP reviews and provides recommendations for topics including:

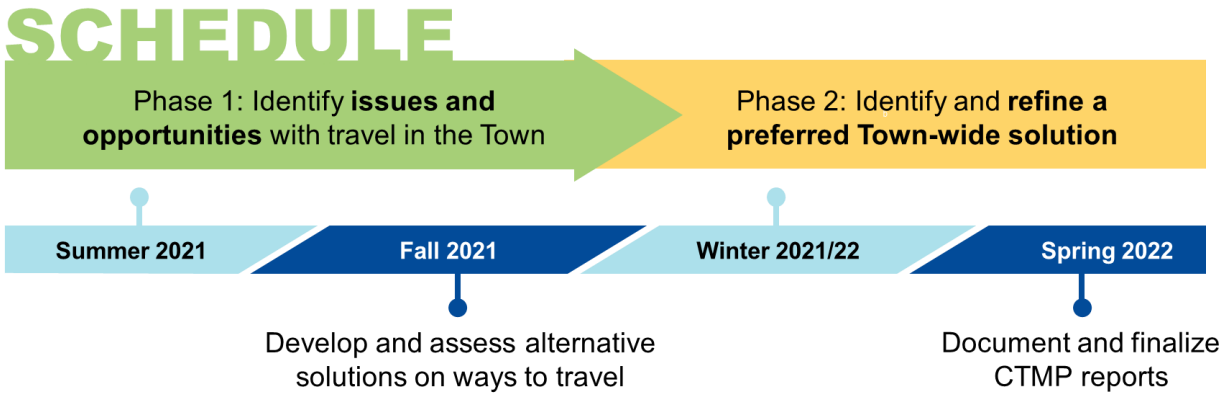
- Development of a connected active transportation network;
- Enhancement of public transportation services;
- Efficient east-west goods movement strategies;
- Road network improvements to reduce congestion; and
- Future Ready policies.

A TMP should typically undergo an update about every five years to ensure that it continues to reflect the vision and objectives of the Town.

1.1.2 TMP Process

The Town's CTMP was developed using the Municipal Class Environmental Assessment (MCEA) process. As summarized in **Figure 1**, the MCEA process was completed in two phases. During Phase 1, the existing transportation network was analyzed to identify issues and opportunities. Public consultations during this phase ensured that key stakeholders, the public, and Town staff were engaged in the development of the vision. Alternatives were then developed to address the needs of the Town. Phase 2 identified and refined the selected alternative based on public consultation and further analysis. By completing the requirements of MCEA Phase 1 and Phase 2, the Town is able to start implementing Schedule A/A+ and B projects (subject to screening), as well as continue to Phase 3 for Schedule C projects to assess the design alternatives for the recommended projects.

Figure 1. TMP Timeline



1.2 About the Comprehensive Transportation Master Plan

1.2.1 How to Use this Plan

The CTMP provides the tools, policies, and guidance for Town staff, stakeholders, and the public to understand and contribute towards the future of transportation in Kingsville. The TMP plays many roles in the development of the transportation network. Some of these roles are presented in **Figure 2**.

Figure 2. Roles of a TMP

1.2.2 Report Organization

The TMP is organized as follows…

1 **Introduction: What is a Transportation Master Plan?**

Understanding the purpose of the Comprehensive Transportation Master Plan

2 **Engaging the Town: What Did We Hear?**

Summarizing the feedback heard from key stakeholders, technical agencies, and the public

3 **Setting the Stage: What are the Vision, Goals & Objectives?**

Defining the vision, goals, and objectives as the foundation for the Plan

4 **Existing Conditions: How Do We Move?**

Reviewing background policies and existing network conditions

5 **Multi-Modal Network Assessment: What is Our Future?**

Developing a recommended multi-modal transportation network, including active transportation, transit, roads, and goods movement

6 **Transportation Policies: What Supports the TMP?**

Providing transportation-supportive policies to create a future-ready network

7 **Implementation Strategy: How Do We Make It Happen?**

Phasing and costing the recommendations as an action-plan for the CTMP

8 **Summary of Recommendations: What Did We Find?**

Summarizing the outcomes and findings of the Plan

2 Engaging the Town: What Did We Hear?

2.1 Engagement Overview

Our engagement approach for this project aimed to provide activities that were meaningful, audience-specific, and flexible. A major focus was to create and provide engaging materials to generate support and interest in the project from a range of community members and stakeholders. Through our comprehensive Engagement Strategy, we outlined a variety of tools and tactics to engage with different community members to ensure everyone felt heard throughout the project and to provide multiple avenues for providing input.

Our engagement approach encouraged the community to educate the project team about the existing concerns and opportunities in Kingsville to help the team build a strong understanding of how the transportation system currently operates. Through the information gathered during engagement activities and technical review, the project team was able to develop recommendations that reflected the needs and priorities of Kingsville residents and supported the Town's overall vision for transportation.

By providing information and virtual engagement options on the project website, our team was able to "close the loop" on the project engagement activities, to ensure the community had a strong understanding of how their input was integrated into the final CTMP recommendations.

Overall, the engagement objectives for this project included:

Providing **meaningful** and **audience-specific** opportunities to engage;

Obtaining strong **support and interest** in transportation in Kingsville;

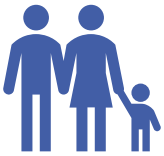
Providing recommendations that reflect **community values and priorities**;

Encouraging **long-lasting relationships** between the Town, residents and key stakeholders; and

Empowering residents to feel **ownership** over the final TMP.

2.1.1 Who Did We Engage With?

Throughout the project, we engaged with a number of audiences, including:



Residents and others who live, work, and spend time in Kingsville and use the transportation system regularly

Key stakeholders who are involved in or have a specific interest in transportation in Kingsville including staff from Essex County and representatives from the Windsor-Essex Health Unit, Ontario Greenhouse Vegetable Growers, Consulate of Mexico in Leamington, Migrant Worker Justice Organizations, Tourism Windsor-Essex, Bike Windsor-Essex, Share the Road Essex County, Essex County Library, members of the development community, and more

Town Staff who are responsible for the implementation, execution, monitoring, evaluation, and reporting of the TMP including representatives from departments like Planning, Engineering, Transportation Planning, and Tourism

Councillors who are responsible for endorsing and supporting the TMP and ensuring the transportation system is meeting the needs of constituents

2.1.2 How Did We Engage?

In order to ensure the various audiences we engaged with had several opportunities and avenues to provide input, we offered the following activities. These activities were advertised using the project website as well as the Town's social media platforms. Members of the public and stakeholders were also able to connect with the project team via email with any additional comments or questions.

ROUND 1

- **Stakeholder Interviews** (June 2021) – A member of the project team hosted interviews with key stakeholders who are involved or interested in transportation in Kingsville. During the interviews, participants were asked to provide insight into Kingsville's existing transportation system, areas of concern and opportunities for improvement, and any additional considerations for the TMP.
- **Council Survey** (June 2021) – An online survey was also sent to members of Council which allowed them to provide high-level input on any transportation concerns, as well as suggestions for improving the transportation system
- **Online Public Survey, Comment Board and Mapping Tool** (June – August 2021) – Several tools were posted on the project website including a survey to provide input on the Plan's vision and objectives, existing travel patterns and choices, and potential enhancements to the Town's transportation system; a comment board to post comments and ask questions about the study; as well as a mapping tool where people could post pins on a map to highlight areas of concern or opportunities for improving transportation at specific locations throughout Kingsville. An example of some of the online feedback received is shown in **Figure 3**.

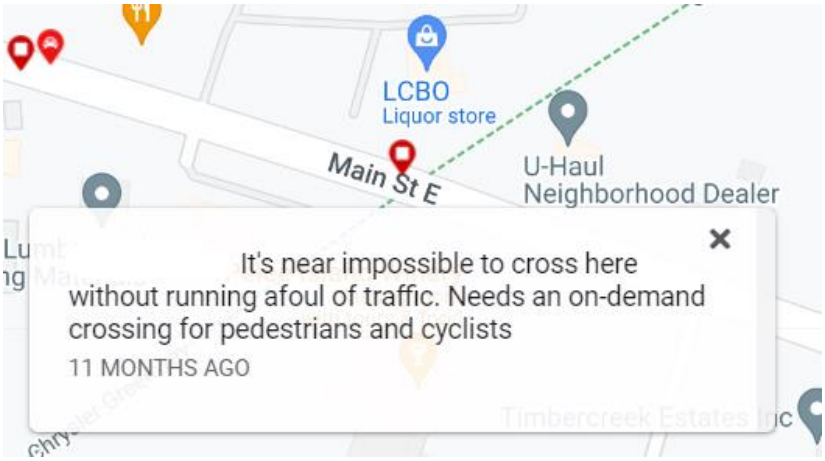
Figure 3. Examples of Comments and Pins from the Online Tools

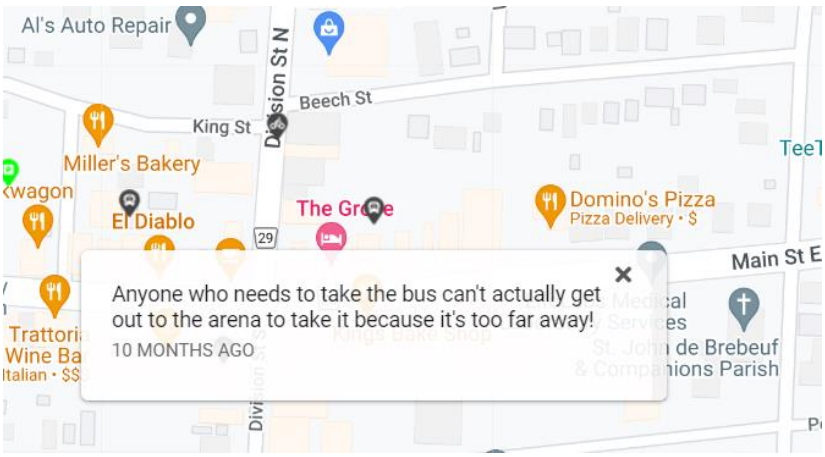
The 3 sets of traffic lights on the east side need to be coordinated – that is the ones at Wigle, Jasperson, and the new McDonalds. Drives me nuts and really slows things down.

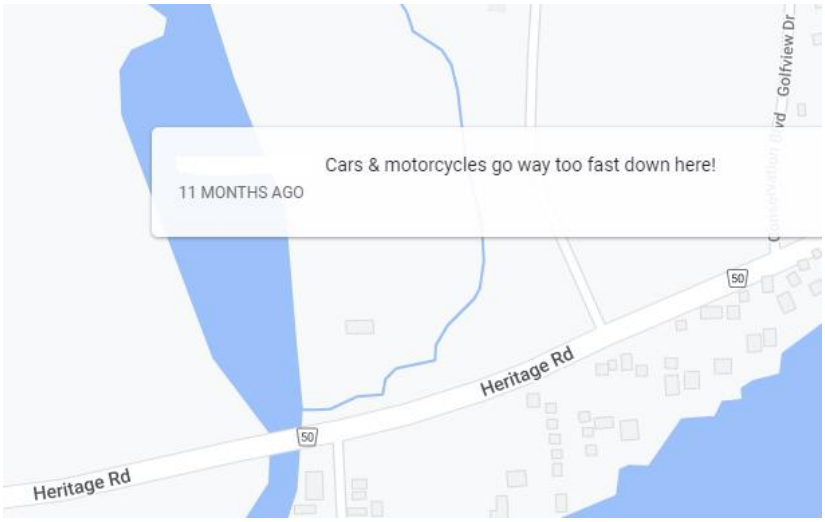
11 months ago 18 AGREE

Kingsville is extremely walkable. With the strong core of main street businesses and a close waterfront, foot traffic is the best way of getting around the town. Of course it could still be improved as vehicle traffic still dominates Main St.

11 months ago 16 AGREE



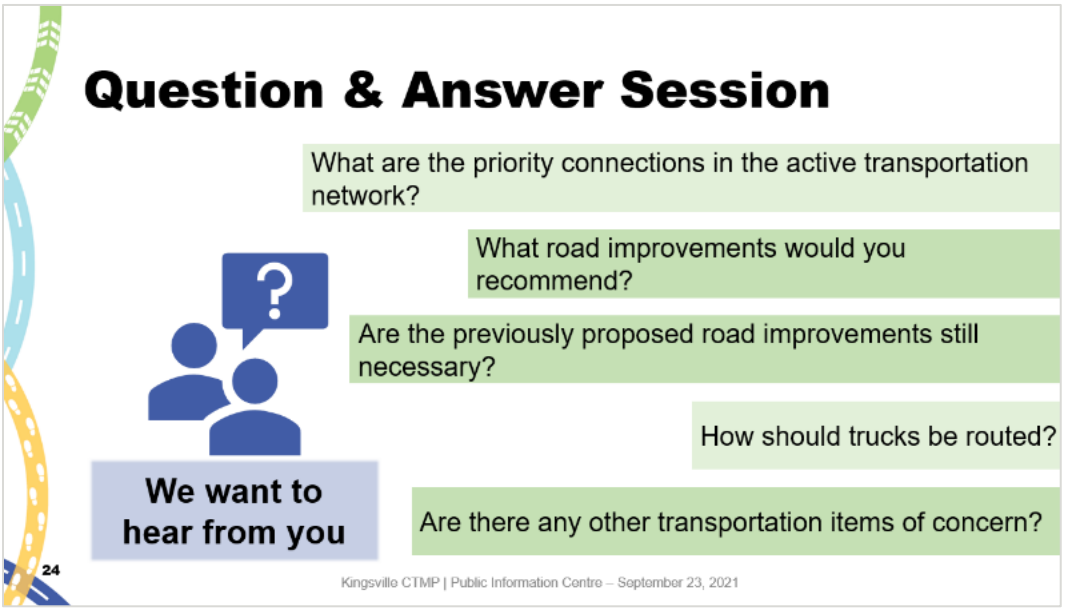




- **Stakeholder Workshop** (June 24, 2021) – local and regional stakeholders participated in a workshop with members of the project team. During the workshop, the project team introduced the study and facilitated an interactive session to gain input on the vision for transportation in Kingsville and existing strengths, weaknesses, opportunities, and threats, as well as highlight potential areas of concern and opportunity. Examples of comments on the vision and opportunities are shown in **Figure 4**.
- **Public Information Centre (PIC) #1** (online on September 23, 2021) – The project team held a virtual public meeting to introduce the project, present any work completed to date, and obtain feedback on transportation in Kingsville. An example of the slides used during the presentation is shown in **Figure 5**. The full deck of PIC#1 slides is provided in **Appendix A**.

Figure 4. Example of Comments from the Interactive Activity During Stakeholder Workshop #1

Figure 5. Slide from PIC #1



ROUND 2

- **Council Presentation** (February 22, 2022) – The Project Team provided an interim update to Council, presenting what had been heard from the public so far, discussing preliminary recommendations, and outlining the remaining work to be done to complete the CTMP.
- **Senior Leadership Meeting** (May 3, 2022) – The Project Team held a meeting with Town senior leadership to review the proposed recommendations prior to taking these to the public.
- **Public Information Centre #2** (online and in-person on May 26, 2022) – The project team held a second open house in-person at the Grovedale Arts & Culture Centre. The slides used at the open house were posted online in advance of the in-person meeting, along with an audio recording describing the information on each of the slides. The slides and public meeting provided an overview of the work completed and draft recommendations for the TMP. Community members could provide input to guide the final TMP report both online and in-person. An example of the slides used in PIC#2 is shown in **Figure 6** and **Figure 7**. The full deck of PIC#2 slides is provided in **Appendix B**.

Figure 6. Slides from PIC #2

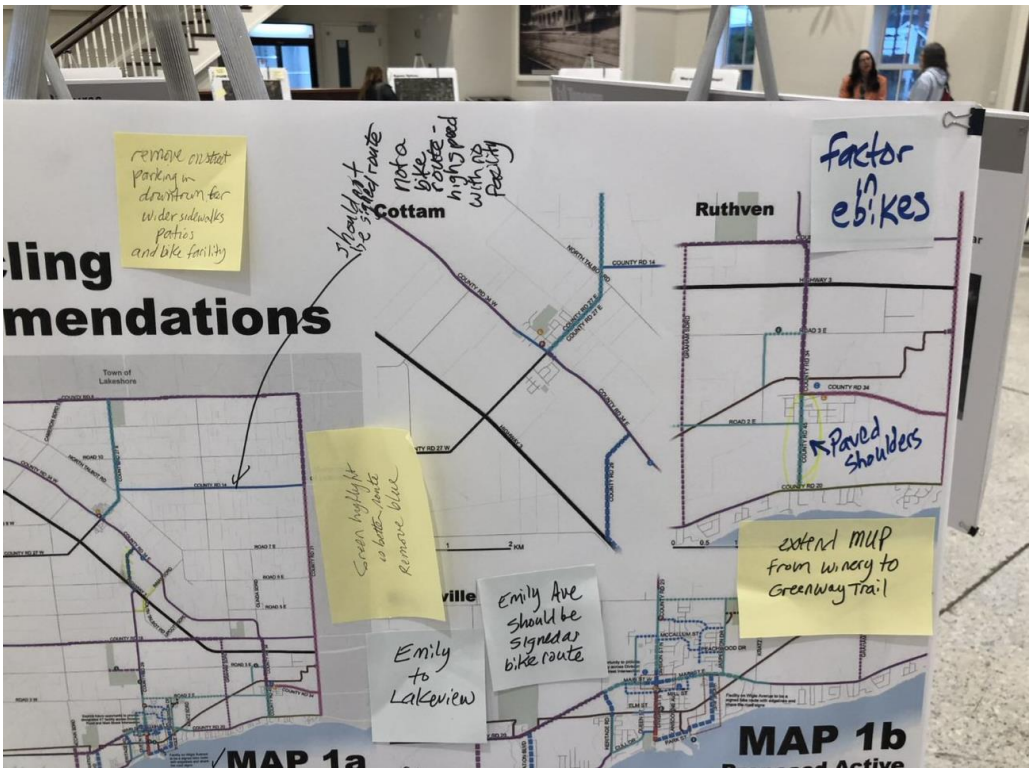


Figure 7. Comments on a Map from the In-Person PIC Event

2.1.3 What We Heard

The input received through the engagement activities has been summarized into six overarching themes. These themes were initially raised in the first round of engagement and were continually brought up as key priorities throughout the project.

The major themes that emerged through the project engagement activities included:

1. **Create a multi-modal transportation system that provides options for all users –** Community members would like to see a transportation system that provides mobility options in addition to the automobile – like cycling, walking, and transit – for people of all ages and abilities. Many residents emphasized a desire to see expanded transit infrastructure and services and improved active transportation facilities that are safe, comfortable, and convenient;

2. **Improve traffic flow and increase efficiency for people travelling to key destinations –** Many concerns were raised over increasing traffic volumes and traffic congestion throughout Kingsville. There is a clear desire to see infrastructure improvements that will improve the flow of traffic and allow people to get around Town more efficiently;

3. **Accommodate and consider future growth and development when making decisions for the transportation network –** As the Town continues to grow, residents would like to ensure that investments into the transportation system consider and accommodate the growing population and influx of new residents;

4. **Improve connectivity to other communities, between transportation and key land uses, and for active transportation users –** Community members would like to see a transportation system that provides connections to key destinations and allows cyclists and pedestrians to get to work, run errands, and visit people without a private automobile;

5. **Promote sustainability within the Town's transportation system –** Residents would like the Town to prioritize transportation infrastructure that promotes a shift towards more sustainable transportation modes like cycling and walking to reduce green-house gas emissions and mitigate the impacts of climate change; and

6. **Introduce measures to help calm traffic and improve roadway safety –** Many residents are concerned about dangerous driving along neighbourhood streets and would like to see measures implemented to help slow traffic and prioritize streets for people walking and cycling.

3 Setting the Stage: What are the Vision, Goals & Objectives?

3.1 Vision Statement

A vision statement is an overarching statement that summarizes the long-term direction for the Town's transportation network. The vision statement also addresses Phase 1 of the MCEA process, which requires a problem / opportunity statement to describe why the project is being undertaken. A working vision statement was developed by reviewing existing policies, incorporating Town staff input, and considering community survey results. This vision was then presented and finalized in the first Public Information Centre. This process ensured that the needs and priorities of the Town staff, key stakeholders, and community members were reflected in the long-term vision statement.

The vision statement is…

> The Town of Kingsville provides a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability, while accommodating future growth and development.

3.2 TMP Goals and Objectives

The vision is supported by several overarching objectives including:

- Proactively plan for **all modes of travel**
- Provide **accessible streets for all ages and abilities** in established and new developments
- Encourage **seamless multi-modal travel and transfers** across different transportation modes
- Support goals for a **vibrant and connected community**
- Promote **active lifestyles**
- **Enhance the quality of life** for people who live, work, and play in the Town

The objectives were accomplished by setting goals for CTMP deliverables, as listed below. These goals provide structure and ensure that the vision and corresponding objectives are encompassed fully within the CTMP.

Review and Assess

- Existing road, active transportation, and transit networks
- Future transportation network needs for short, medium, and long-term planning horizons
- Policies, municipal documents, and existing design standards

Identify

- Gaps, deficiencies, and corresponding solutions to future transportation network
- Impacts and opportunities of emerging technologies
- Policy amendments
- Heavy truck routes

Develop

- Local active transportation routes that consider evolving needs of the Town and promote connectivity between adjacent communities/municipalities
- Active transportation design guidelines
- Implementation plan for capital projects
- Updated policies
- Safety recommendations

4 Existing Conditions: How Do We Move?

4.1 Policy Framework

Kingsville's CTMP is supported by policies at the Federal, Provincial, County and Town level. An overview of the policies and plans that guide transportation in the Town is summarized in this section.

4.1.1 Federal

Federal policies provide high-level guidance for matters across Canada. Key transportation-supportive themes across Federal policies include environmental and economic sustainability, climate change, and the need for providing multiple transportation mode options. These over-arching policies also guide Provincial, County / Regional, and Local policies and strategies. The following documents are a few of the federal policies that encourage enhanced transportation networks:

- **Federal Sustainable Development Act (2008)** establishes a policy precedent for sustainable development at the federal level while encouraging provinces and municipalities to adapt similar strategies that their level of government
- **Strategies for Sustainable Transportation Planning: A Review of Practices and Options (2005)** identifies strategies for reducing environmental impact in transportation, including promotion for sustainable modes of transportation, mixed land uses and complete communities
- **Communities in Motion: Bringing Active Transportation to Life Initiative (2008)** encourages the use of transit and active transportation as more sustainable alternatives to single-occupant vehicles
- **The National Active Transportation Strategy (2021)** establishes a $400 million Active Transportation Fund that is provided by the federal government for municipalities to use for AT projects that will create community connections, improve user experience, assist in a modal shift, and increase equity across the municipal region

Guidance for transportation design is also provided for standards across the country. These include the Transportation Association of Canada (TAC) **Bikeway Traffic Control Guidelines for Canada (2012), Manual of Uniform Traffic Control Devices for Canada (2021)**, and **Geometric Design Guide for Canadian Roads (2020).**

4.1.2 Provincial

Provincial policies, in accordance with Federal policies, provide additional strategic direction on growth and development across Ontario. Federal policies provided precedent for Provincial policies, including those that encourage sustainable, multi-modal travel. Provincial policies provide strategies that encourage sustainable and multi-modal transportation for a cohesive vision for the Province. The following provincial policies were reviewed as part of this TMP:

- **Provincial Policy Statement (2014), A Place to Grow (2020), and the Greenbelt Plan (2017)** guide overarching planning policy guidance for mixed land uses that support diverse transportation options and environmental sustainability
- **Accessibility for Ontarians with Disabilities Act (2005)** provides standards for the appropriate design and location of transportation facilities to ensure that the network is accessible to users of all ages and abilities, which will be incorporated in this TMP through policy recommendations
- **Metrolinx's 2041 Regional Transportation Plan (2018)** provides direction on addressing transportation challenges focused on the Greater Toronto and Hamilton Area (GTHA)

- **#CycleON Action Plan 2.0 (2018)** and **Ontario Trails Strategy (2010)** are two active-transportation supportive policies that will be reflected in the active transportation recommendations in this plan
- Ontario Traffic Manual (OTM) provides specific guidance for the design and implementation of transportation facilities and supportive infrastructure through **Book 18: Cycling Facilities (2021), Book 15: Pedestrian Crossing Treatments (2016)**, and **Book 8: Guide and Information Signs (2010)**

4.1.3 County

As the upper tier municipality, Essex County is bound by Provincial and Federal policies while providing more region-specific guidance to its local municipalities. The following plans outline the goals and objectives for future planning, growth, and development across the County:

- **County of Essex Official Plan (2014)** establishes a long-term policy framework for managing growth and to inform future land-use planning decisions, including the development of strong communities, management of resources and protection of public health and safety. The County's Official Plan includes several policies that support the development of a County-wide active transportation network and encourages the use of best practices when planning, designing, constructing, maintaining, and operating active transportation facilities.
- **Regional Transit Study (2011)** identifies opportunities for a regional transportation system in Essex County, including connections between transit stops and destinations via sidewalks, bridges and cycle routes, and an implementation strategy for transit recommendations
- **County-wide Active Transportation System Master Plan (2012, 2023 update underway)** provides a long-term strategy for the on and off-road cycling and multi-use trail routes. The CWATS network strives to provide for and to champion safe active transportation, linking the County's seven local municipalities and neighbouring municipalities including the City of Windsor and the Municipality of Chatham-Kent.

4.1.4 Local

Town of Kingsville has a number of existing planning policies and plans that establish a vision for the Town and help to guide the future transportation network. Some of the relevant policies and plans at the local level include:

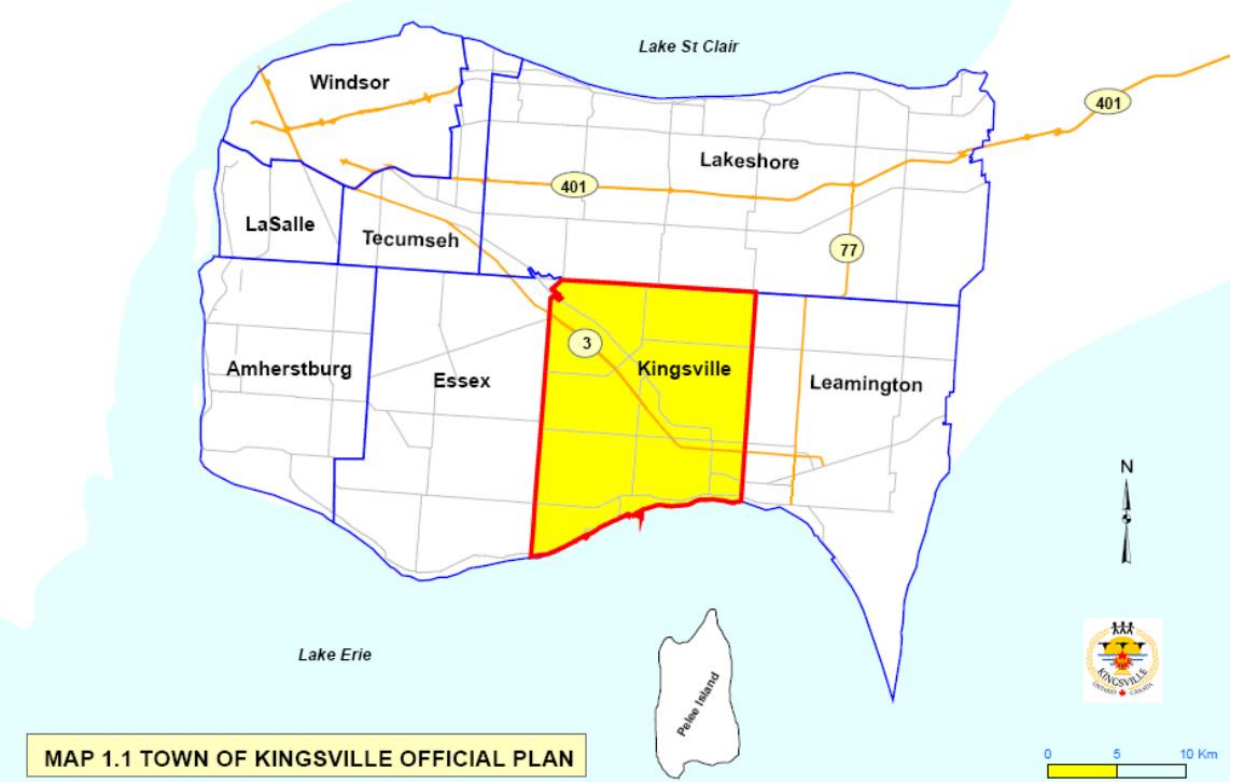
- **Town of Kingsville Official Plan (2012)** provides a number of key objectives to direct growth and support sustainable practices within the community. A key objective that supports complete communities is "to further enhance the Town as a place for living, working and leisure by helping to create a healthy, safe, attractive and convenient environment." The Official Plan references environmental priorities to reduce air pollution and outlines that review of development proposals should have regard for proposals that support and offer active transportation facilities that reduce the use of automobiles.
- **Kingsville Strategic Plan (2017)** provides measurable actions that can be implemented within the term of Council to achieve both short-term and long-term goals, including the key goal for the Town to support active lifestyle opportunities for residents and visitors through making improvements to recreational facilities and opportunities within the Town
- **Kingsville Active Transportation Master Plan (2012)** and **Transportation Master Plan (2012)** set the direction for the Town's future transportation network, including the implementation of road, pedestrian and cycling initiatives. The vision, goals and objectives of both plans are incorporated into the Comprehensive Transportation Master Plan to develop a multi-modal vision.

4.2 Community Profile

4.2.1 Geographic Location

The Town of Kingsville was restructured on January 1, 1999, which combined the Town of Kingsville and Townships of Gosfield North and Gosfield South. The Town of Kingsville is located in the southeast area of Essex County, surrounded by the Town of Lakeshore to the north, Town of Essex to the west, the Municipality of Leamington to the east, and Lake Erie to the south, as shown in *Figure 8*. Kingsville covers an area of approximately 24,660 hectares.

Figure 8. Kingsville Municipal Context



Source: Town of Kingsville Official Plan, 2012

The Town's community structure comprises of Primary Settlement Areas, Secondary Settlement Areas, and Agricultural Area, which is summarized below:

Primary Settlement Area	• Kingsville • Portion of the Lakeshore Residential West
Secondary Settlement Area	• Cottam • Ruthven • Country Village Portion of the Lakeshore Residential West • Lakeshore Residential East • Various un-named Secondary Settlement Areas within the Agricultural Area.

In the Town's Official Plan, Primary Settlement Areas represent urban areas to focus on growth and development. The Plan encourages the development of healthy and sustainable communities through compact urban forms, efficient use of infrastructure, and diversified land uses. Urban development focuses on the Settlement Areas in Kingsville and the eastern portion of the Lakeshore West Residential Area abutting Kingsville.

Secondary Settlement Areas represent small hamlet, village, employment based, or other site-specific settlements. These areas are mainly residential spaces, however there are some areas that contain a mixture of land uses. The policies regarding Secondary Settlement Areas in the Town's Official Plan are targeted towards Cottam, Ruthven, Lakeshore Residential Areas, and smaller designated Employment areas throughout the Town's Agricultural area.

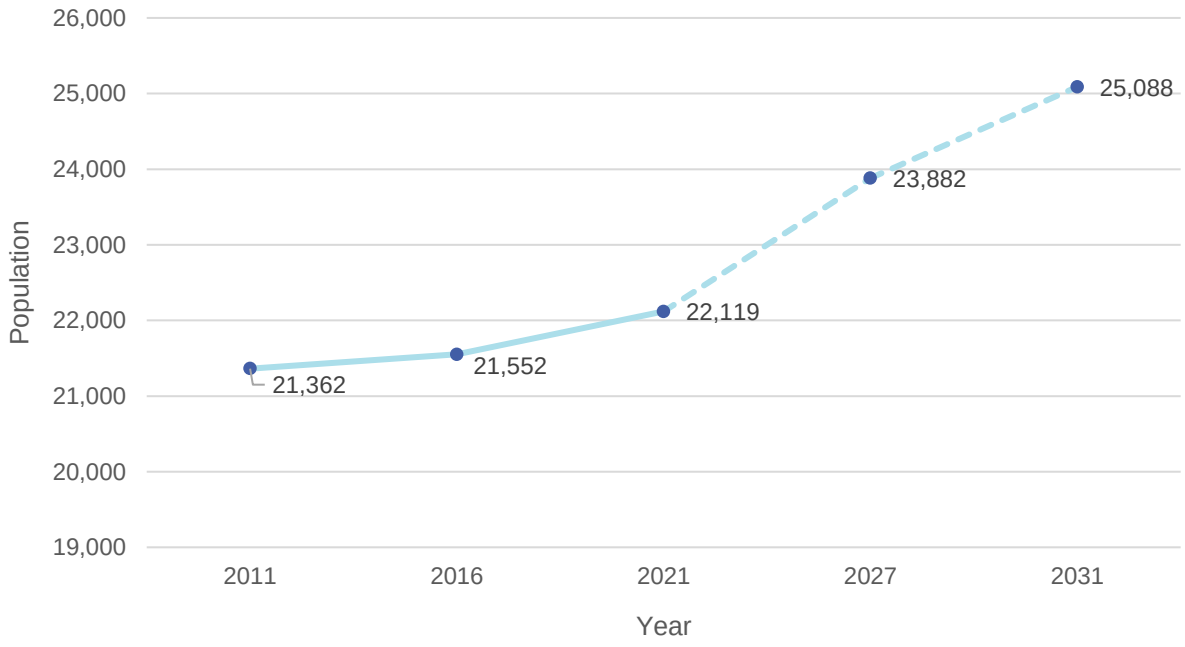
Agriculture is the predominant economic activity in the Town, consisting of over 161 hectares for farming and food production. The Town has diversified agricultural systems covering a broad range of activities including field crop farming, market gardening, and flower and vegetable greenhouse farming. Furthermore, secondary agricultural uses include mushroom farming, livestock farming, and cannabis cultivation.

4.2.2 Population and Employment

The Canadian 2021 Census data indicates that the population of Town of Kingsville is 22,119 persons. In comparison to the 2016 Census data, the population increased from 21,552 persons, an increase of 2.6% over the five-year time period. **Figure 9** illustrates the growth in population from the 2011 to the 2021 Census from 21,362 to 22,119, representing a growth of about 4%. Looking ahead, the Town's population is forecasted to reach 25,088 people by the year 2031. The County of Essex Population and Employment Foundation Report forecasted the employment growth of the Town of Kingsville to reach between 7,930 to 8,450 employees by 2031. This shows an increase of 1,410 to 1,920 employees from 2016.

The Essex County Official Plan provides an existing inventory of residential lands to accommodate the projected growth, which is sufficient to meet the future residential demands up to year 2031. Furthermore, the Town's Official Plan indicates that there are sufficient residential and employment lands up to year 2031. The Town will continue to monitor the supply and availability of designated residential and employment lands and provide reasonable market choice and competition.

Figure 9. Existing and Forecasted Population in the Town of Kingsville, ON (2011-2031)



Source: Statistics Canada, 2021; 5-Year Review – the Town of Kingsville Official Plan, 2020

4.3 Mobility Patterns

Modal split is a useful indicator to understand travel patterns and methods of travel in the Town of Kingsville. The Town's transportation network is comprised of a variety of modes including travel by walking, cycling, transit and car**. Figure 10** shows the distribution of different types of commuting for the employed labour force. According to the commuting data from the 2016 Census of Canada, driving is the predominant mode of transportation in the Town of Kingsville. Private vehicles (car, truck, van, or passenger) contribute to about 95% of all trips in the 2016 census. Of the 95% vehicular travel, about 6% are passengers and 89% are drivers. **Figure 11** illustrates the average travel times that people commute to and from work. The majority of the commute times to and from work is 30 minutes are less.

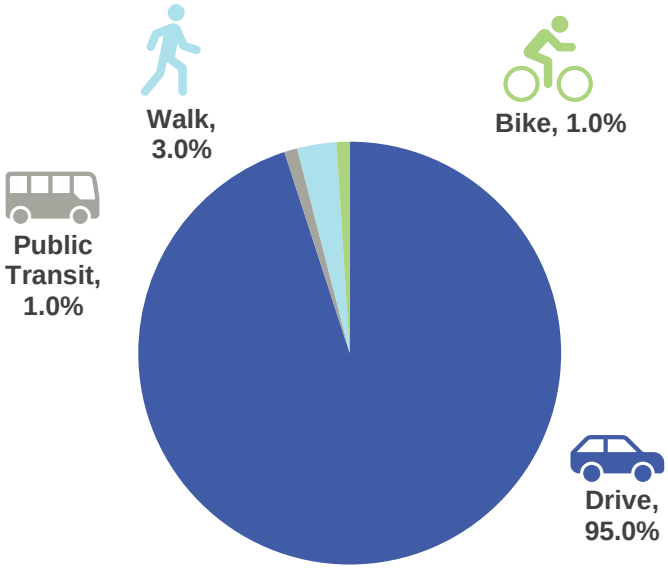


Figure 10. 2016 Census Modal Split

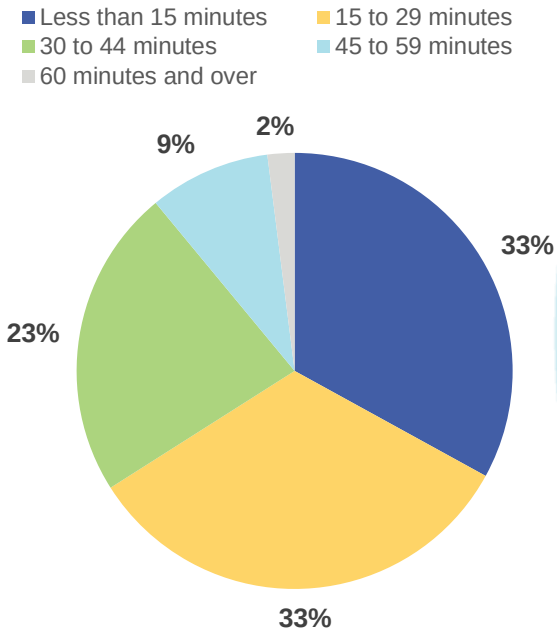


Figure 11. 2016 Census Commute Duration for Labour Force

4.4 Transportation Network Operations

4.4.1 Active Transportation

Active transportation (AT) refers to human-powered transportation such as walking, cycling, using a wheelchair, scootering, and skateboarding. A major component of the TMP is improving and enhancing AT to align with the Town's overall vision of providing a safe and accessible multi-modal transportation network for all users. AT has many benefits for communities, such as:

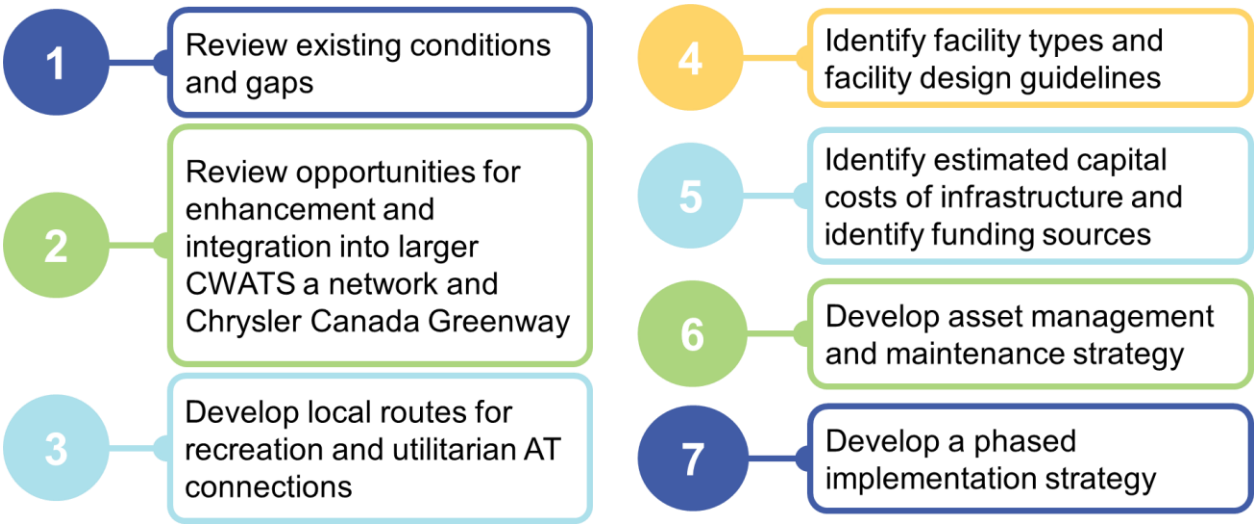
- Providing more cost-effective transportation options for people who do not have access to a private automobile;
- Reducing carbon emissions and mitigating climate change impacts;
- Increasing opportunities for residents to interact with other community members;
- Encouraging community members to live healthy, active lifestyles;
- Promoting community stewardship for protecting natural and cultural resources; and
- Creating more liveable and enjoyable communities for all.

Communities tend to have a variety of active transportation users, each with unique wants and needs for AT. Typically, AT users are categorized by the following types:

- Utilitarian users: people who use AT to get to a specific destination and prefer direct, convenient, and efficient routes;
- Recreational users: people who use AT for enjoyment and recreational purposes (leisure, fitness, sport)
- Tourists: people who use AT to enjoy a community through scenic routes as part of a vacation or experience

Figure 12 provides an overview of the Town's approach to developing effective recommendations to improve AT in Kingsville:

Figure 12. Approach to Active Transportation



What is CWATS?

CWATS refers to the County of Essex's:

County-**W**ide **A**ctive **T**ransportation **S**ystem.

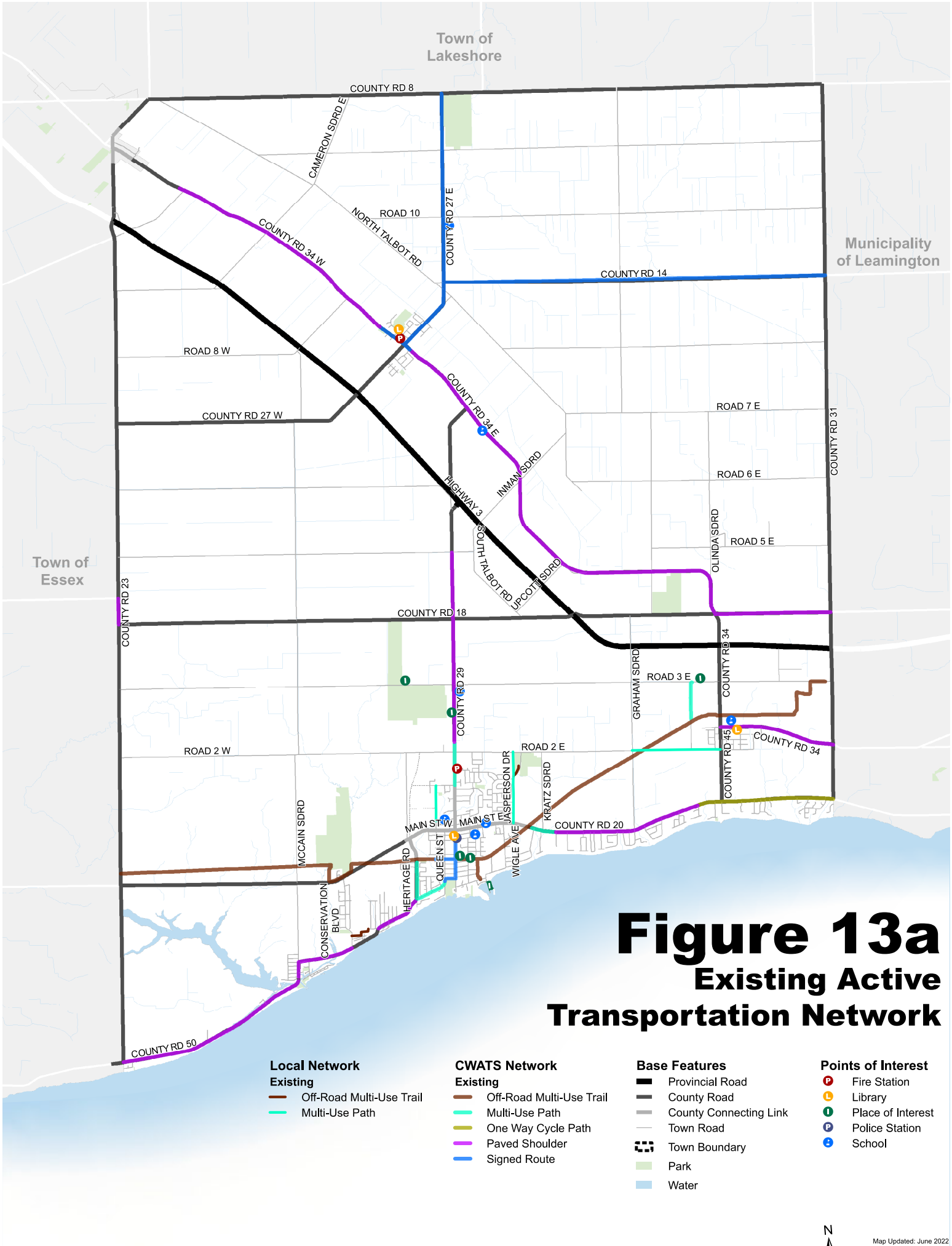
CWATS goes beyond routes and infrastructure. It is part of the County's long-term strategy to promote accessible and sustainable options that will link rural and urban communities. This will also enhance the quality of life for residents and provide active, complete communities that support economic development and tourism.

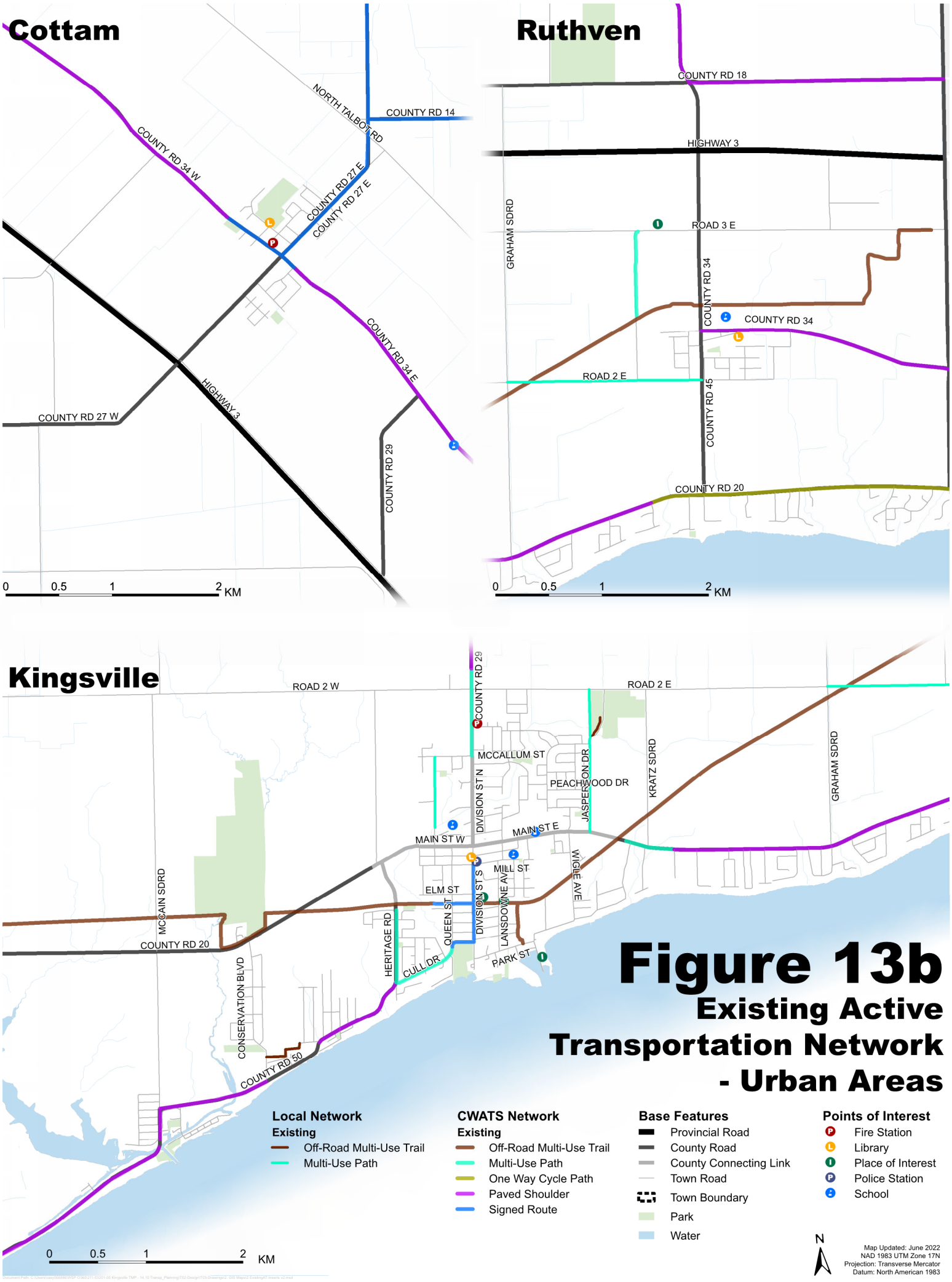
Since the introduction of the CWATS Master Plan in 2012, the Plan has guided County and Town staff and partner agencies to improve conditions for active transportation. The CWATS Master Plan is undergoing a 2023 update to incorporate changes that provide additional guidance on the planning and design of active transportation infrastructure.

The County's active transportation network, also known as the CWATS network, is a key component of the existing active transportation network. The active transportation routes within Kingsville are identified as a local route or a CWATS route. A summary of the existing AT network is summarized in **Table 1** and mapped in **Figure 13.**

Table 1. Summary of Existing Active Transportation Routes

Facility Type	Length (KM)		
	Non-CWATS Network	CWATS Network	Total
Off-Road Multi-Use Trail	0.3	16.8	**17.1**
Multi-Use Path	4.0	3.7	**7.7**
One-Way Cycle Path	-	2.8	**2.8**
Paved Shoulder	-	34.0	**34**
Signed Route	-	15.6	**15.6**
Sidewalks	56.3	-	**56.3**
Total	**60.6**	**72.9**	**133.5**


Town of Lakeshore
Municipality of Leamington
Town of Essex
COUNTY RD 8
CAMERON SDRD E
COUNTY RD 27 E
ROAD 10
NORTH TALBOT RD
COUNTY RD 34 W
COUNTY RD 14
ROAD 8 W
COUNTY RD 27 W
COUNTY RD 34 E
ROAD 7 E
COUNTY RD 31
INMAN SDRD
ROAD 6 E
HIGHWAY 3
SOUTH TALBOT RD
UPCOTT SDRD
OLINDA SDRD
ROAD 5 E
COUNTY RD 23
COUNTY RD 18
COUNTY RD 29
GRAHAM SDRD
ROAD 3 E
COUNTY RD 34
ROAD 2 W
ROAD 2 E
COUNTY RD 45
JASPERSON DR
KRATZ SDRD
MCCAIN SDRD
MAIN ST W
MAIN ST E
COUNTY RD 20
QUEEN ST
WIGLE AVE
HERITAGE RD
CONSERVATION BLVD
COUNTY RD 50
Figure 13a
Existing Active Transportation Network
Local Network
Existing
Off-Road Multi-Use Trail
Multi-Use Path
CWATS Network
Existing
Off-Road Multi-Use Trail
Multi-Use Path
One Way Cycle Path
Paved Shoulder
Signed Route
Base Features
Provincial Road
County Road
County Connecting Link
Town Road
Town Boundary
Park
Water
Points of Interest
Fire Station
Library
Place of Interest
Police Station
School
0 0.5 1 2 3 KM
N
Map Updated: June 2022
NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983

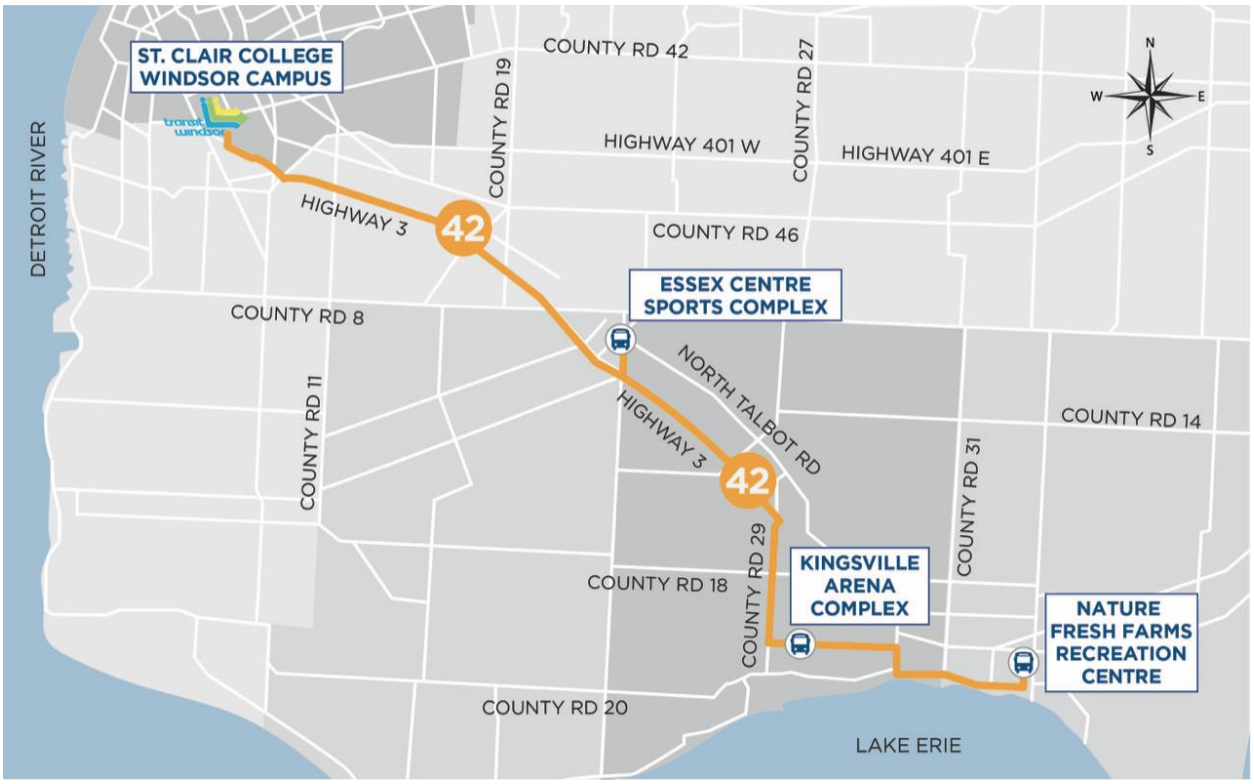

Cottam
NORTH TALBOT RD
COUNTY RD 14
COUNTY RD 34 W
COUNTY RD 27 E
COUNTY RD 27 E
COUNTY RD 34 E
HIGHWAY 3
COUNTY RD 27 W
COUNTY RD 29
0 0.5 1 2 KM
Ruthven
COUNTY RD 18
HIGHWAY 3
GRAHAM SDRD
ROAD 3 E
COUNTY RD 34
COUNTY RD 34
ROAD 2 E
COUNTY RD 45
COUNTY RD 20
0 0.5 1 2 KM
Kingsville
ROAD 2 W
ROAD 2 E
COUNTY RD 29
MCCALLUM ST
PEACHWOOD DR
JASPER ON DR
KRATZ SDRD
GRAHAM SDRD
DIVISION ST N
MAIN ST W
MAIN ST E
MILL ST
ELM ST
DIVISION ST S
LANSDOWNE AVE
WIGLE AVE
MCCAIN SDRD
COUNTY RD 20
QUEEN ST
HERITAGE RD
CULL DR
PARK ST
CONSERVATION BLVD
COUNTY RD 50
0 0.5 1 2 KM
Figure 13b
Existing Active Transportation Network - Urban Areas
Local Network
Existing
Off-Road Multi-Use Trail
Multi-Use Path
CWATS Network
Existing
Off-Road Multi-Use Trail
Multi-Use Path
One Way Cycle Path
Paved Shoulder
Signed Route
Base Features
Provincial Road
County Road
County Connecting Link
Town Road
Town Boundary
Park
Water
Points of Interest
Fire Station
Library
Place of Interest
Police Station
School
N
Map Updated: June 2022
NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983

4.4.2 Transit

Kingsville does not have an internal conventional transit system, though an intercity route and a specialized transit service is provided.

The Leamington to Windsor bus route (LTW Transit Route 42) is administered by the Municipality of Leamington and provides intercommunity services with stops in Kingsville and Essex. Service is provided three times daily on weekdays and twice on Saturdays along a fixed route, as displayed in **Figure 14.** The bus route does not travel through central Kingsville, with service provided to the Kingsville Arena only. The fare is $10 per one-way ride, $15 for same day round-trip service.

Figure 14. LTW Transit Route



South Essex Community Council provides door-to-door transportation to Windsor and around Essex County, including local service throughout Leamington, Kingsville, and Wheatley to support mobility. Travel requires pre-booking and is available to eligible persons only.

4.4.3 Roads

The road network in the Town of Kingsville consists of a provincial highway, County roads, and Town roads. Within the urbanized area of Kingsville, the roads are further identified as major arterials, minor arterials, major collector, and local roads. The hierarchy of arterial, collector and local roads which determine the design and function of the roadway. This serves as a guide regarding traffic movement, vehicular volume, and property access in accordance with other transportation systems. The roadway classifications are described as:

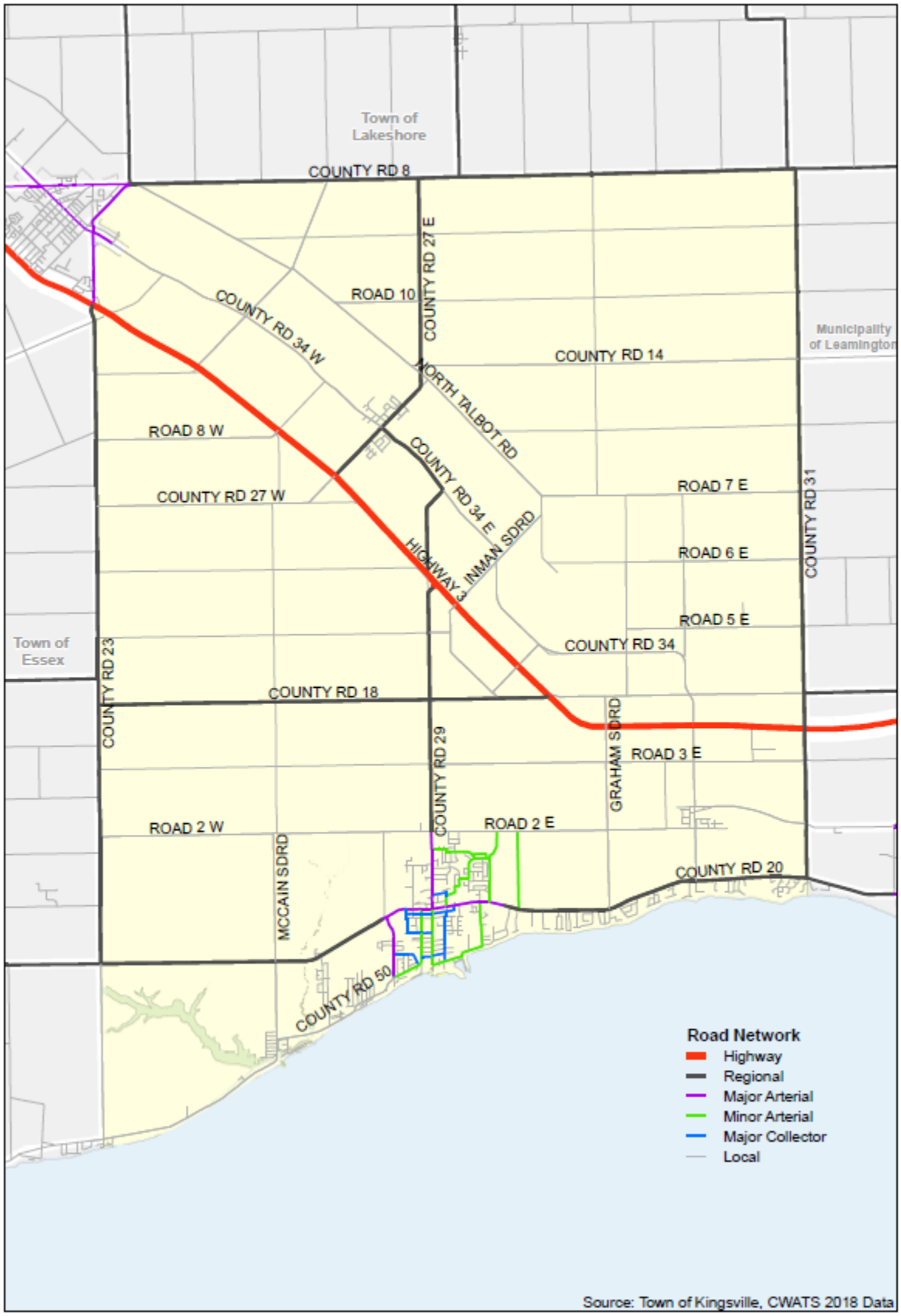
- Arterial: provide for high volume passenger and commercial traffic, including major public transportation, and provides for inter-urban travel.
- Collector: provide for moderate amounts of traffic volumes between local and arterial roads. Road speeds are low to moderate, providing access to individual properties. Collector roads can be further classified into major and minor collectors.
- Local: provide direct access to residential areas and other abutting land uses. Speeds and volumes are low.

All the roadway network in the study area are two lane roadways with some roadway segments on Main Street and Division Road within the urbanized area having an additional centre two way left turn lane.

Highway 3, the provincial highway that runs east-west through the Town connects the municipalities of Leamington and Essex. Highway 3 provides regional connections to Windsor area in the west and reaches across the province to the Niagara Falls area to the east. Highway 3 is currently a two-lane roadway. County roads 20, 18, 29, and 27 in the Town serve as important regional roadways that provide connectivity to the built-up areas within the study area and access to Highway 3. The County roads 23, 8, and 31 along the boundary of the Town provide connections to different regions in Essex County. County Road 20 is an east-west corridor and is called as Main Street through the Town of Kingsville's urbanized area. Main Street is classified as Major Arterial providing access to various commercial and retail areas. The southern portion of County Road 29 (Division Rd) is classified as Major Arterial along with Heritage Road (County Road 50). The urbanized area of Town of Kingsville also has road network that is classified as minor arterial, and major collector providing access to commercial and residential areas.

Figure 15 shows the existing roadway network in the study area.

Figure 15. Existing Roadway Network



4.4.3.1 *EXISTING TRAFFIC CONDITIONS*

Six signalized and 13 unsignalized (minor street stop controlled) intersections were studied for existing conditions as part of the CTMP. The existing turning movement counts (TMCs) were obtained for the weekday a.m. and p.m. peak periods including the signal timing plans at the signalized intersections. Under normal circumstances, traffic counts that are more than two years old for existing conditions would benefit from new traffic data. However, given the irregular traffic volumes experienced due to the COVID-19 global pandemic, new TMCs would not reflect typical traffic conditions that were experienced pre-pandemic. The data used for the traffic analyses were the best available data at the time of this report. It is expected that new data could be collected to support development-specific applications.

A summary of the intersection control type and TMC collection dates are provided in **Table 2**. The TMCs were collected in three separate years including 2018, 2019 and 2021, as well as during different seasons. The TMC data at the study intersections are provided in **Appendix C-1** and the signal timing plans are provided in **Appendix C-2**.

Figure 16 and **Figure 17** shows the study intersections location and control type, and geometrical configuration of the study intersections, respectively.

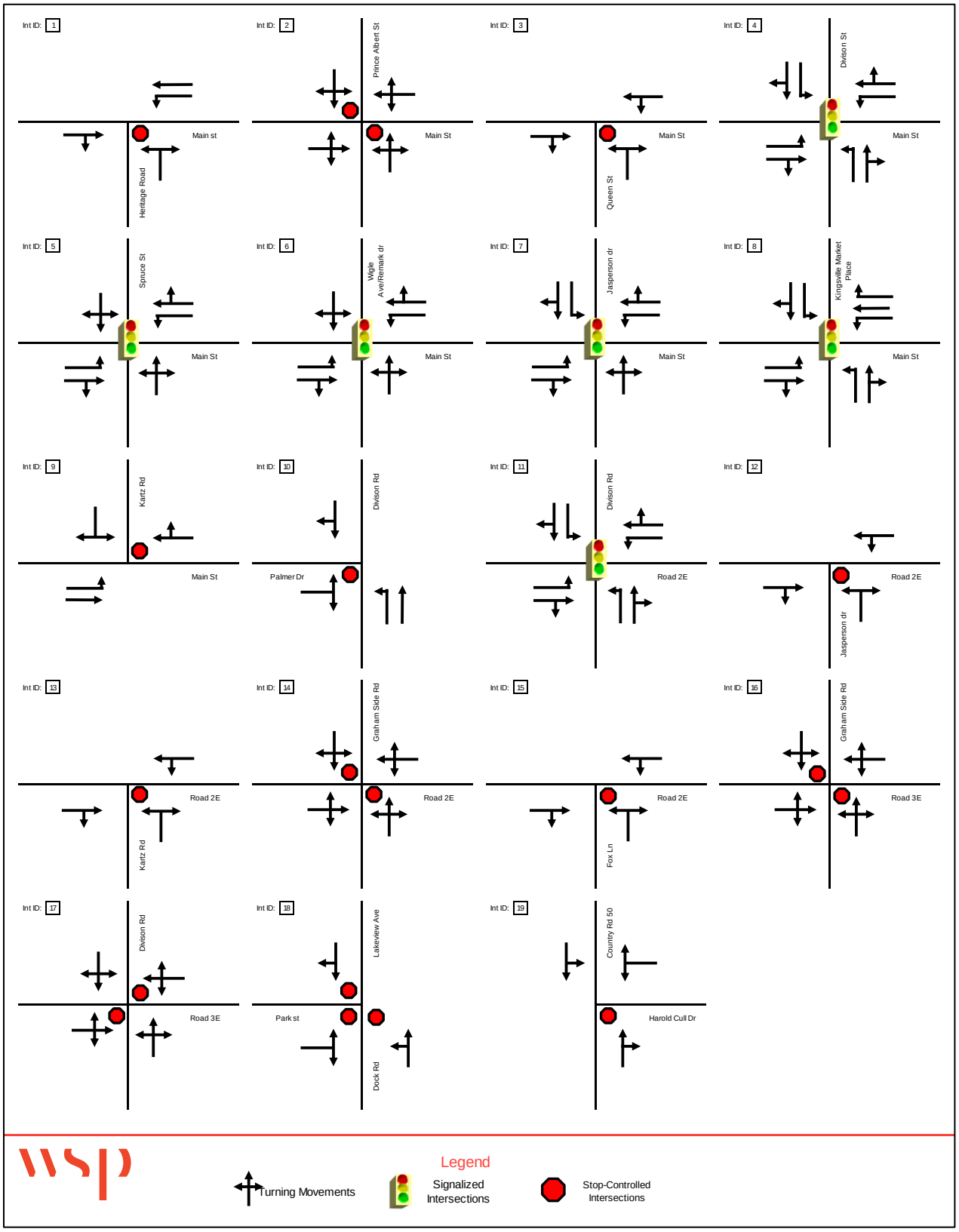
Table 2. Study Intersections Control Type and Traffic Count Date

No.	Intersection	Control Type	TMC Count Date
1	County Rd 20W & Heritage Rd	Stop Controlled	July 24, 2019
2	County Rd 20W & Prince Albert St	Stop Controlled	July 23, 2019
3	Main St & Queen St	Stop Controlled	September 22, 2021
4	Main St & Division St	Signalized	March 24, 2021
5	Main St & Spruce St	Signalized	March 25, 2021
6	Main St & Wigle Ave & Remark Dr	Signalized	March 30, 2021
7	Main St & Jasperson Dr	Signalized	March 31, 2021
8	Main St E & Kingsville Market Place (east of Jasperson Dr)	Signalized	April 01, 2021
9	County Rd 20 & Kratz Rd	Stop Controlled	September 22, 2021
10	Division St & Palmer Dr	Stop Controlled	July 25, 2019
11	Road 2E & Division St	Signalized	July 25, 2019
12	Road 2E & Jasperson Dr	Stop Controlled	September 22, 2021
13	Road 2E & Kratz Rd	Stop Controlled	September 22, 2021
14	Road 2E & Graham Side Rd	Stop Controlled	September 22, 2021

No.	Intersection	Control Type	TMC Count Date
15	Road 2W & Fox Ln (Private Ln)	Stop Controlled	September 22, 2021
16	Road 3E & Graham Side Rd	Stop Controlled	October 30, 2018
17	Division Rd & Road 3E	Stop Controlled	October 30, 2018
18	Dock Rd & Park St & Lakeview Ave	Stop Controlled	September 22, 2021
19	County Rd 50 & Harold Cull Dr	Stop Controlled	September 22, 2021

Figure 16. Study Intersections Location and Control Type

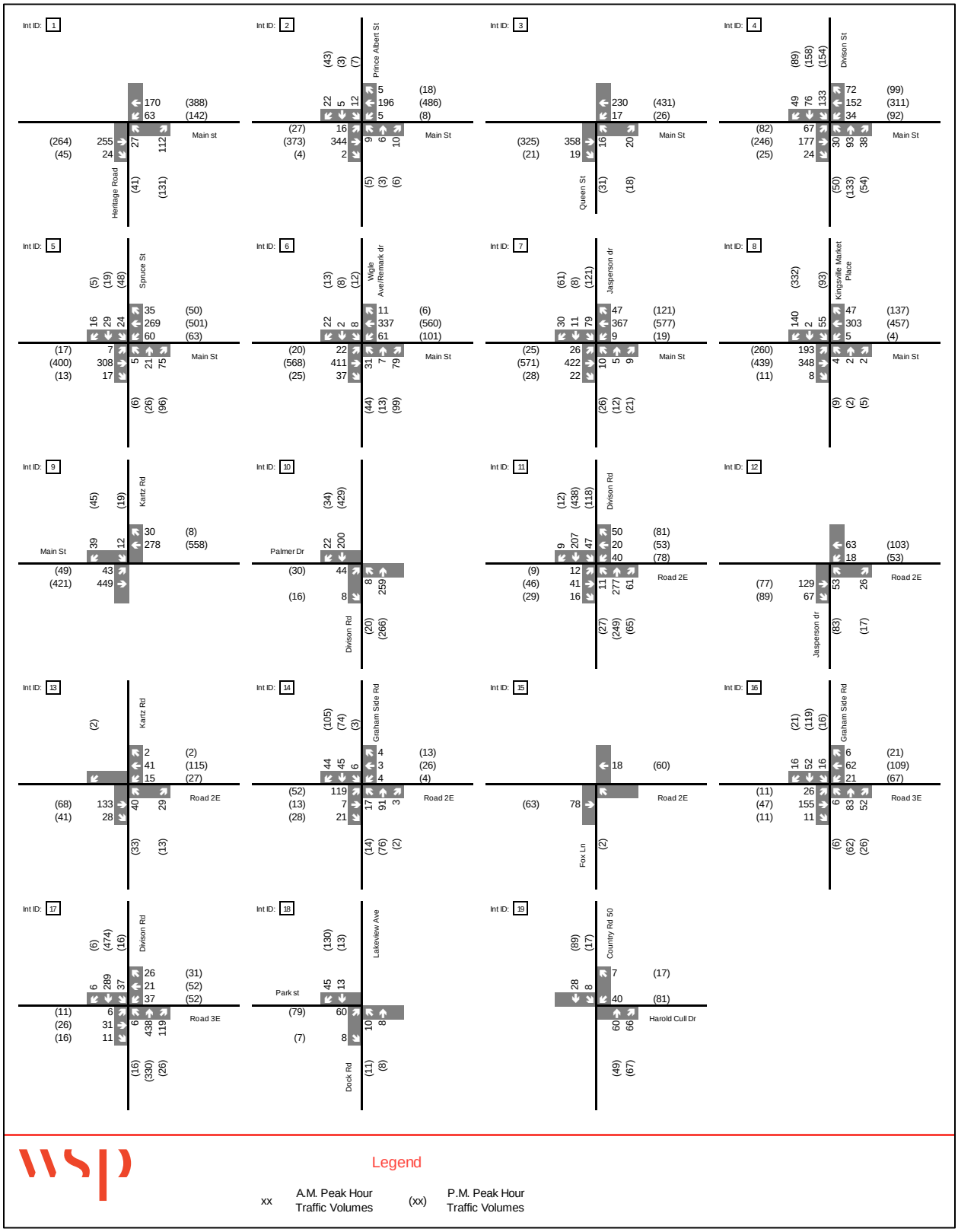
Figure 17. Study Intersections Geometrical Lane Configurations



TRAFFIC VOLUME DEVELOPMENT

A growth rate of 1 percent per year was applied to the respective year counts to represent year 2022 traffic volumes. **Figure 18** shows the existing traffic volumes at the study intersections.

Figure 18. Existing Traffic Volumes



INTERSECTION CAPACITY ANALYSIS

The traffic operational analysis was conducted using the Synchro version 11 software. The intersection capacity analysis is based on Highway Capacity Manual (HCM) delay and level of service (LOS) criteria. LOS is a measure of driver discomfort and frustration, fuel consumption, and lost travel time defined in terms of delay. The LOS categories and delay criteria for signalized and unsignalized intersections are summarized in **Table 3** and defined in **Appendix D**. The v/c ratio, delay, 95th percentile queues and LOS are reported using the Synchro reports and the overall intersection v/c is reported using the HCM 2000 report, since it is not provided by Synchro report.

Table 3. Level of Service Criteria (based on HCM Methodology)

Level Of Service (LOS)	Average Control Delay (seconds / vehicle)	
	Signalized	Unsignalized
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

The intersection capacity analysis includes a summary of the overall intersection and critical movements (reaching capacity with V/C between 0.8 and 0.99, and at or over capacity with V/C greater than or equal to 1) with a focus on performance measures such as LOS, v/c ratios and delay. The overall intersection delay and LOS, and the critical movements at the intersection are summarized in **Table 4**. Detailed Synchro output sheets (HCM 2000 and Timing Report) for the existing conditions are included in **Appendix E**.

Table 4. Intersection Capacity Analysis – Existing Conditions

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS	Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS
1. County Rd 20W & Heritage Rd	SSSC	NB-LR (0.24) B (12)		NB-LR (0.40) C (18)	
2. County Rd 20W & Prince Albert St	TWSC	NB-LTR (0.05) SB-LTR (0.07) B (13)		NB-LTR (0.05) SB-LTR (0.12) C (18)	
3. Main St & Queen St	SSSC	NB-LR (0.08) B (13)		NB-LR (0.14) C (16)	

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS	Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS
4. Main St & Division St	Signal	Overall 0.40 B (16)		Overall 0.52 B (18)	
5. Main St & Spruce St	Signal	Overall 0.34 B (11)		Overall 0.44 B (12)	
6. Main St & Wigle Ave & Remark Dr	Signal	Overall 0.49 B (17)		Overall 0.57 B (18)	
7. Main St & Jasperson Dr	Signal	Overall 0.45 B (17)		Overall 0.77 C (33)	WBT (0.97) D
8. Main St E & Kingsville Market Place (east of Jasperson Dr)	Signal	Overall 0.38 B (13)		Overall 0.62 C (24)	
9. County Rd 20 & Kratz Rd	SSSC	SB-LR (0.11) B (13)		SB-LR (0.21) C (19)	
10. Division St & Palmer Dr	SSSC	EB-LR (0.08) B (11)		EB-LR (0.09) B (12)	
11. Road 2E & Division St	Signal	Overall 0.35 B (16)		Overall 0.44 C (20)	
12. Road 2E & Jasperson Dr	SSSC	NB-LR (0.12) B (11)		NB-LR (0.17) B (12)	
13. Road 2E & Kratz Rd	SSSC	NB-LR (0.09) B (10)		NB-LR (0.07) B (10)	
14. Road 2E & Graham Side Rd	TWSC	NB-LTR (0.22) SB-LTR (0.15) B (13)		NB-LTR (0.16) SB-LTR (0.24) B (12)	
15. Road 2W & Fox Ln (Private Ln)	SSSC	NB-LR (0.00) A (0)		NB-LR (0.00) A (9)	
16. Road 3E & Graham Side Rd	TWSC	NB-LTR (0.24) SB-LTR (0.16) B (13)		NB-LTR (0.17) SB-LTR (0.30) B (14)	

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS	Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS
17. Division Rd & Road 3E	TWSC	EB-LTR (0.20) WB-LTR (0.35) D (26)		EB-LTR (0.22) WB-LTR (0.57) E (36)	
18. Dock Rd & Park St & Lakeview Ave**	TWSC	EB-LR (0.09) NB-LT (0.02) SB-TR (0.06) A (8)		EB-LR (0.11) NB-LT (0.03) SB-TR (0.15) A (8)	
19. County Rd 50 & Harold Cull Dr	SSSC	WB-LR (0.06) A (10)		WB-LR (0.13) B (10)	

SSSC – Side Street Stop Control
TWSC – Two Way Stop Control
LOS at TWSC has been provided for the critical approach.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; L= left; T = through; R = right
Overall intersection v/c from HCM 2000 methodology.
*** - analysed as All-Way Stop Controlled intersection for conservative analysis, since it was not a typical TWSC.*
Bolded results represent overall intersections or movements that are over capacity.

The results show that all the intersections and their movements are operating at LOS D or better except for the westbound approach at Division Road and Road 3E intersection which would operate at LOS E. All the intersection movements were within capacity (V/C of less than 1) and the westbound through movement at Main Street and Jasperson Drive was nearing capacity with a v/c ratio of 0.97.

QUEUEING ANALYSIS

The queueing results from the Synchro model were summarized for the intersections studied that have exclusive movements with storage lanes to determine whether the available storage lengths can accommodate the existing queues. The available storage lengths for exclusive turn lanes were measured as the lane width from the stop bar to the start of the taper. A summary of the 95th percentile queues are provided in **Table 5**.

Table 5. Intersection Queueing Analysis – Existing Conditions

Intersection	Turning Movement	Available Storage Lengths (M)	95th Percentile Queue (M)	
			A.M. Peak Hour	P.M. Peak Hour
4. Main St & Division St	EBL	30	13	17
	WBL	25	4	10
	NBL	20	9	13
	SBL	40	23	27
5. Main St & Spruce St	EBL	15	2	3
	WBL	30	8	9
6. Main St & Wigle Ave & Remark Dr	EBL	60	3	3
	WBL	60	11	10
7. Main St & Jasperson Dr	EBL	35	1	1
	WBL	32	4	6
	SBL	19.5	**20**	**29**
8. Main St E & Kingsville Market Place (east of Jasperson Dr)	EBL	27	**40**	**#83**
	WBL	80	1	2
	WBR	34	2	6
11. Road 2E & Division St	EBL	30	5	4
	WBL	63	10	17
	NBL	55	3	6
	SBL	50	9	19

Note: # - Volume for the 95th percentile cycle exceeds capacity; Red results represent movements exceeding storage length

All the movements with storage lanes at the study intersections had 95th percentile queues within the available storage lengths, except for the southbound left turn movement at Main Street & Jasperson Drive intersection and eastbound left movement at Main St E & Kingsville Market Place (east of Jasperson Dr) intersection. Queues for all movements can be found in the Synchro output sheets, included in **Appendix E** of the report.

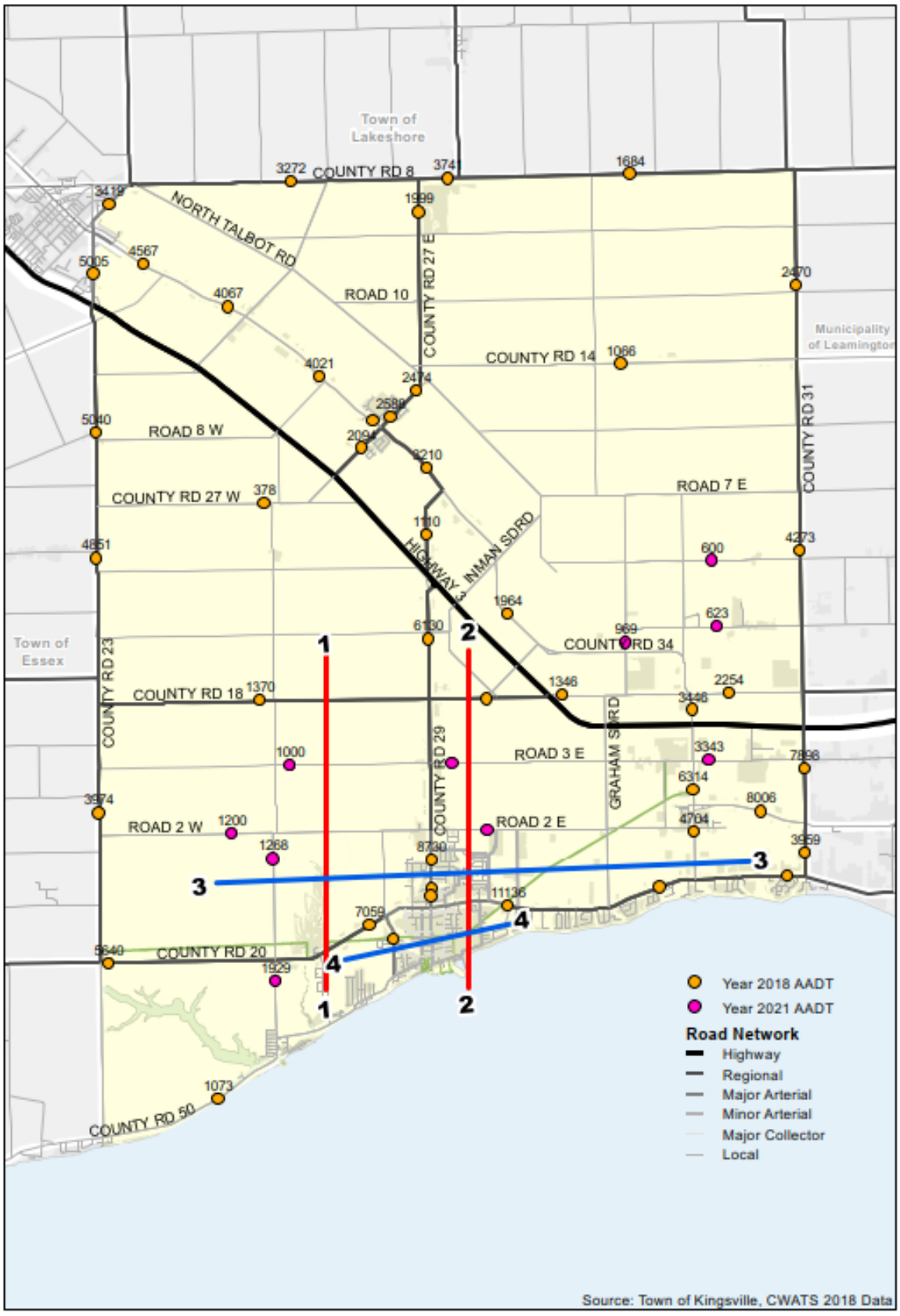
SCREENLINE ANALYSIS

A screenline analysis is useful for transportation planning purposes as it measures the available capacity for north-south and east-west direction of travel and identifies whether there is enough capacity in the system to accommodate the existing and forecast traffic volumes.

Two N-S screenlines (1 & 2) were considered, one to the east and other to the west of Division Street to evaluate the available existing roadway infrastructure capacity for E-W movements in Kingsville. Two E-W screenlines (3 & 4), one to the north of Main St and the other to the South of Main St to evaluate the available existing roadway infrastructure capacity for the N-S movements in Kingsville. The screenlines used for existing and future scenarios are depicted in **Figure 19.**

To set the existing conditions for the road network analysis, the weekday PM peak hour volumes were computed from the existing available traffic volume data of Annual Average Daily Traffic (AADT) from year 2018 and year 2021 at the locations where peak hour count data was not available. The PM peak hour volumes were considered to be 10 percent of the AADT based on computed peak hour percentages of AADT from similar intersections in the study area. Road capacity was calculated based on road class hierarchy, as established by the Standard Capacity of Roadways ITE Transportation Planning Handbook (2nd edition).

Figure 19. Screenline Locations



The screenline volume to capacity (v/c) road network analysis was conducted for the Existing Conditions. **Table 6** summarize the assessment based on the aggregate volume and capacity indexes along the respective screenlines and corresponding directions. The volume to capacity ranges were classified following industry standards:

- At or over road capacity, equivalent to high congestion, yielding a volume to capacity (v/c) ratio greater than or equal to 1.
- Reaching road capacity, equivalent to moderate congestion, yielding a volume to capacity (v/c) ratio between 0.8 and 0.99.
- Available road capacity, equivalent to free-flow conditions or low congestion, yielding a volume to capacity (v/c) ratio between 0 and 0.79.

Screenline analysis for the 2022 existing conditions as shown in **Table 6** suggests the overall network and all locations along the screenlines are operating at near free-flow conditions with available capacity. The overall network volume to capacity (v/c) ratio in all directions is 0.23. The screenline #2 shows the highest v/c (0.30 and 0.36) and if individual road links are examined more closely across this axis this screenline had the highest V/C of 0.74 along both the eastbound and westbound traffic flow at Main Street E. Higher volumes on Main Street have been reported by the public, observed in site visits, and confirmed by the data. The analysis was completed for the p.m. peak hour in order to analyze the highest peak volume of the day.

Table 6. Screenline Analysis – Existing Conditions PM Peak Hour

Screenline	Location	Direction	Volume	Capacity	Volume to Capacity Ratio
Screenline - 1	Parallel to west of Division St	EB	550	3,400	0.16
		WB	747	3,400	0.22
Screenline - 2	Parallel to east of Division St	EB	1,033	3,400	0.30
		WB	1,212	3,400	0.36
Screenline - 3	Parallel to north of County Rd 20	NB	873	4,800	0.18
		SB	1,203	4,800	0.25
Screenline - 4	Parallel to south of County Rd 20	NB	614	3,100	0.20
		SB	643	3,100	0.21
Total		**EB/WB**	**3,542**	**13,600**	**0.26**
Total		**NB/SB**	**3,333**	**15,800**	**0.21**
Total		**All Directions**	**6,875**	**29,400**	**0.23**

The assessment of existing traffic conditions at intersections and along screenlines indicates that generally, traffic volumes are within capacity and that there are routes available with spare capacity. Traffic concerns that need to be addressed to accommodate growth will be along the core spine roads of Main Street / County Road 20 and Division Street / County Road 29.

COLLISON ANALYSIS

A 5-year collision data from November 1, 2015, to October 31, 2020, was obtained from the Town of Kingsville. The data consisted of information on time of collision, location, and a statement of collision that contained a brief explanation on how the collision occurred. The collisions in the data included collisions on both the transportation network as well as on the off-road locations such as the collisions that occurred in parking lots and at on-street parking areas.

A total of 1,282 collisions were reported in the study area that included both on-road and off-road incidents during the 5-year period. A spatial analysis of data was conducted by plotting the location of collisions using the x and y coordinate information in the data, to know the hot spot locations in the study area. **Figure 20** shows the locations of collisions and the hot spot locations showing the density of collision incidents.

As shown in **Figure 20**, there is a high concentration of collisions in the vicinity of the following intersections in the study area:

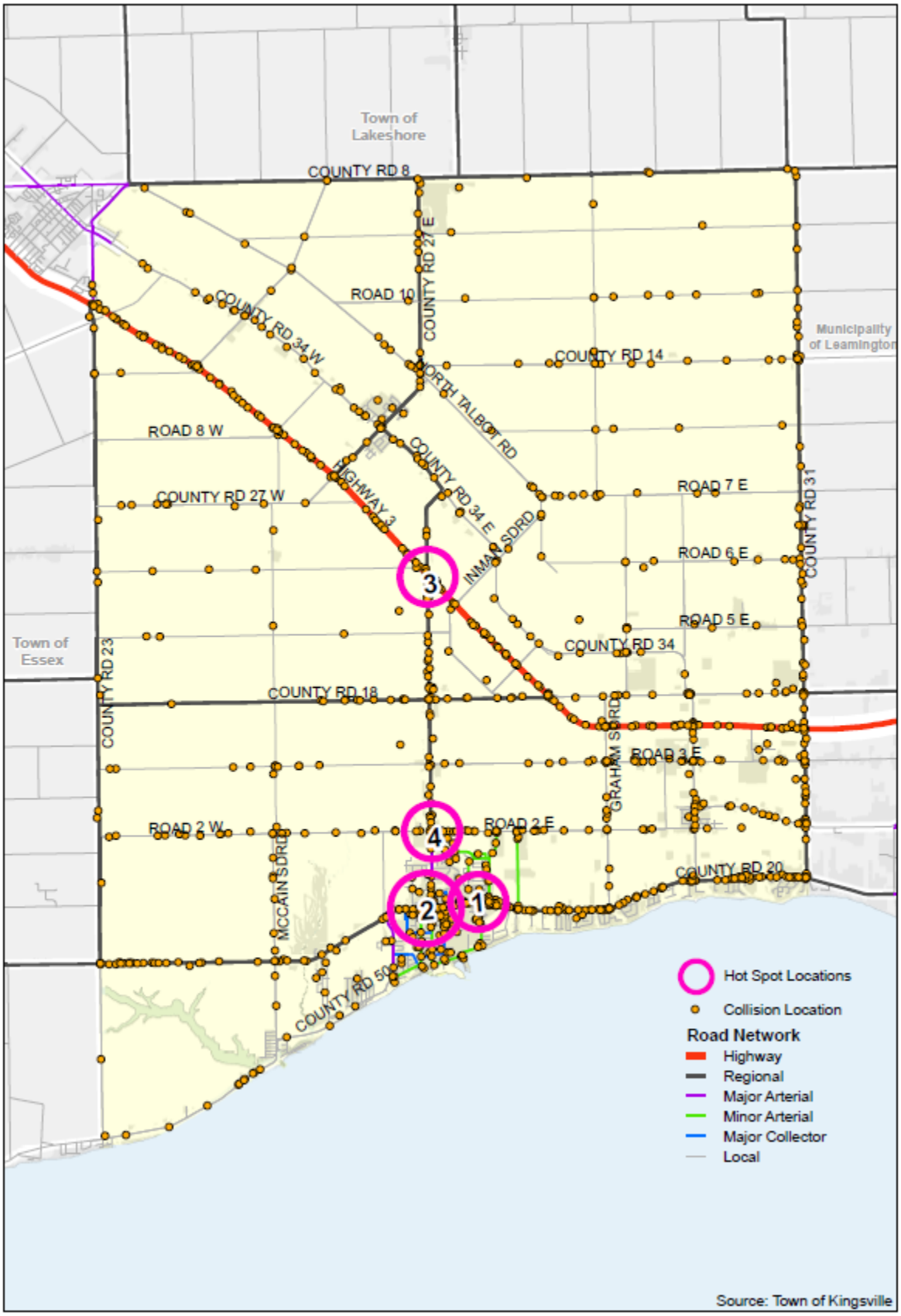
1. Main Street and Jasperson Drive
2. Main Street and Division Street
3. Highway 3 and Division Street/County Road 29
4. Road 2 and Division Street

It is also observed that the following corridors in the study area have the highest number of collisions:

- Highway 3
- Main Street / County Road 20
- County Road 34
- County Road 31
- County Road 29
- Road 2

A cursory review in crash types was performed by going through the collision statements in the data and was found that that most of the collisions are angle type collisions followed by rear-end collisions. The Collison data showed that there were significant number of collisions that involved animals too. Most of the collisions occurred at driveway locations followed by intersection locations in the study area.

Figure 20. Collison Data Points and Hot Spot Locations



4.4.4 Goods Movement

Goods movement is essential to the economy of Kingsville, with trucks and ships transporting agricultural and other products to and from the Town. Goods movement also represents a number of jobs in the transport industry.

Main Street of Kingsville is County Road 20 east and west of town – the main east-west road in this portion of Essex County. It is the main thoroughfare for cars and trucks alike, with no nearby parallel alternative that is built to handle the volume and type of traffic currently experienced.

Division Road is County Road 29 north of town – this is the main north-south road in the Kingsville area and is used as a truck route.

The port in Kingsville is serviced by trucks bringing products to and from it, including the aggregate and different types of sand and gravel that are used in various construction projects. These trucks need to travel through residential areas whatever way they access the port.

There are signs posted on Main Street to use Wigle Street to access the port. Division Street South is another common way for cars and trucks to access the port.

Trucks tend to move slower than passenger vehicles, and tend to be noisier. The challenge with goods movement is recognizing the importance of the industry to so many while mitigating negative impacts. A portion of the CTMP recommendations is focused on ways to support goods movement and maintain the high quality of life in Kingsville.

5 Multi-Modal Network Assessment: What is Our Future?

Technical analysis and consultation with the public and stakeholders have been conducted to identify options and select the preferred solution for the multi-modal transportation network. This chapter addresses active transportation, transit, the road network, and goods movement, providing details of the technical analyses and the recommended infrastructure improvements.

5.1 Active Transportation

As part of the CTMP, the Town has included recommendations for improving and enhancing the Town's active transportation (AT) network. This portion of the Plan provides a foundation for the Town to plan, design, and implement AT infrastructure to help achieve the Town's vision for creating a more accessible and convenient AT network for all users. Various Provincial, County, and Town policies and plans outline the need to support and enhance active modes of travel.

5.1.1 Developing the Active Transportation Network

The Town of Kingsville's future AT network was developed by reviewing both the pedestrian network and the cycling network. The proposed AT network is intended to be used as a roadmap for expanding the existing AT network, including connections within Kingsville and to surrounding communities.

PEDESTRIAN NETWORK

The existing pedestrian network, including sidewalks, multi-use pathways and off-road trails, was reviewed to identify missing links in the sidewalk network. The approximate 56 km of existing sidewalks were mapped to show connections throughout the Town. Within the urban areas, there is generally at least a sidewalk on one side of the road. Moving forward, it is recommended that the Town consider implementing new local roads with a sidewalk on at least one side of the road. New collector and arterial roads in the urban areas of Cottam, Ruthven, and Kingsville should consider implementing sidewalks on both sides of the road.

CYCLING NETWORK

When reviewing the Town's existing cycling network, the Town used the approach outlined in Ontario Traffic Manual Book 18: Cycling Facilities as well as other relevant design guidance and best practices. Overall, the following process was used to review and update the cycling network:

1. Review Existing and Previously Proposed Routes

Spatial data and other relevant transportation information was collected from the Town to inform a database of existing and previously planned AT routes from the County-wide Active Transportation System (CWATS) network and the previous Kingsville Active Transportation Master Plan to gain a more holistic understanding of the AT network in Kingsville.

2. Develop Route Selection Criteria and Identify Missing Links

Using the database of existing and previously planned AT routes, key gaps in the AT network were identified. Through this analysis, as well as feedback received through public and stakeholder consultation, a number of potential candidate routes for the future AT network were explored. Candidate routes were selected based on the recommended route selection criteria outlined in the 2021 Ontario Traffic Manual Book 18: Cycling Facilities and in the draft CWATS Network Plan 2022.

These principles and criteria include:

- **Safety:** provides a comfortable route that strives to reduce the amount of real and perceived risk to users
- **Accessible:** incorporates all ages and abilities design and is accessible from local neighbourhoods
- **Connectivity and Continuous:** links the urban areas, key destinations and connects to other routes by the County or surrounding municipalities
- **Feasible:** aligns with capital investments or existing capital work projects to ensure that proposed routes have a high degree of constructability during the lifespan of the plan
- **Attractive and Scenic:** connects users to destinations and recreational facilities to enhance opportunities for tourism and engagement with natural areas
- **Supports Multi-Modal Needs:** supports the development of a multi-modal transportation system by providing connections to transit facilities and other key destinations

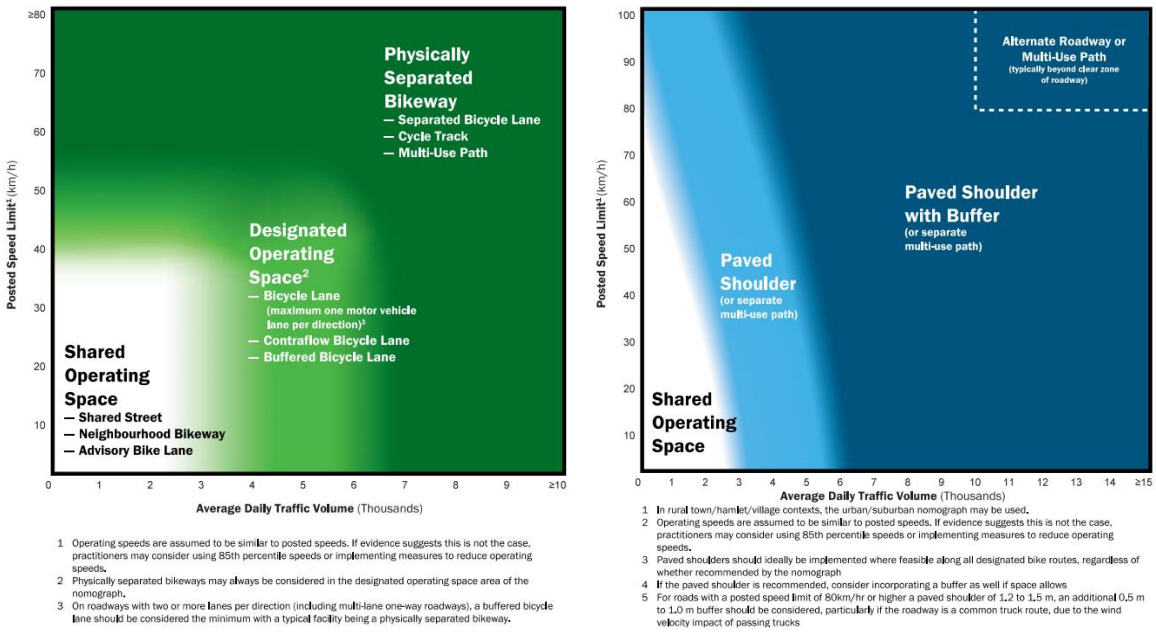
3. Assess and Confirm New Connections

A desktop analysis was completed to assess the candidate routes and determine which routes would help achieve the Town's vision of developing a well-connected and accessible AT network for all users. The analysis involved a more detailed evaluation of existing conditions, roadway widths, land uses, and on-street parking. Through this exercise, a list of preferred routes was created as recommendations for the future AT network.

4. Identify Facility Types

Once the candidate routes were refined, pre-selection nomographs for urban/suburban and rural contexts from OTM Book 18 were used to determine what the recommended facility types should be. It is recommended that the Town review the facility types using updated volume and speed information closer to the time of implementation to confirm the facility types against the recommendations of OTM Book 18.

Figure 21. Desirable Cycling Facility Pre-Selection Nomograph for Urban/Suburban (left) and Rural (right) Contexts



DIVISION STREET CORRIDOR

Division Street is a key corridor that has unique challenges relating to AT. As a result, a more detailed review of potential options for Division Street North and South was conducted to determine a preferred AT facility for the two segments of the corridor.

Division Street North from Palmer Drive to Water Street is a three-lane cross section with one travel lane in each direction and a two-way centre turn lane. The land along this stretch is zoned primarily for residential uses. **Table 7** presents the alternative designs and preferred option for this segment.

Table 7. Assessment of Alternatives for Division Street North from Palmer Drive to Water Street

Alternatives		Preferred Alternative?
Continue Multi-Use Pathway	Connects to existing multi-use path from Road 2 to Palmer Drive Residential driveways may increase the amount of conflict points	✓
Transition to On-Street Bike Lanes	Requires removal of two-way centre left turn lane Speed and volumes on this segment are high and an on-street facility may not be the most comfortable for all ages and abilities	✗
Transition to Uni-Directional Cycle Tracks	Reduces the amount of conflict between cyclists, drivers, and pedestrians May not have enough physical space to accommodate a sidewalk and a cycle track in the right-of-way	✗

It was identified through the analysis that the continuation of the existing multi-use path was the preferred option. The multi-use path option was presented to the public and there were comments made that an on-road facility would reduce the amount of conflict between pedestrians and cyclists on the multi-use path and conflicts with the driveways along Division Street North. After a review of the volumes on this segment, it was determined that the multi-use path alternative would be the most comfortable for all ages and abilities and provided continuity to the existing pathway which ended at Palmer Drive. It is recommended that when Division Street north is being reconstructed, the cross-section of the road should be reviewed to consider uni-directional cycle tracks.

Continuing from Water Street to Mill Street, more commercial uses are included and the cross-section transitions to be two-lanes with on-street parking on both sides of the street. This segment has a narrower boulevard space with additional mature trees that would impact the implementation of a multi-use path. As a downtown cross-section, it is preferred that the on-street parking remain to accommodate economic development and tourism. Therefore this facility will need to transition to a shared lane where there is on-street parking.

Division Street South from Mill Street to Park Street is a two-lane cross section with existing edgelines on both sides of the road. The land uses here include residential, commercial, and education/institutional. **Table 8** presents the alternative designs and preferred option for this segment.

Table 8. Assessment of Alternatives for Division Street South from Mill Street to Park Street

Alternatives		Preferred Alternative?
Keep Existing Signed Route with Edgelines	No changes required Residents have voiced their concerns on safety with cycling on the road in this segment and would like to have a designated facility	✗
Transition to On-Street Separated Bike Lanes (Buffered Bike Lanes)	Existing edgelines can be pushed out to accommodate a 1.5m bike lane with 0.5m painted buffer On-street parking will need to be restricted with the conversion of edgelines to formal bike lanes	✓
Recommend an Alternative Route on Queen Street (Signed Route)	Queen Street provides a quieter, neighbourhood greenway option for users who are not comfortable cycling on-street along Division Street	✗
Recommend an Alternative Route on Lansdowne Avenue (Separated Bike Lanes)	Lansdowne Avenue provides a quieter, neighbourhood route with separated bike lanes as an option for users who are not comfortable cycling on-street along Division Street Requires that on-street parking be prohibited on Lansdowne	✗

It was identified through the analysis that the preferred option for Division Street South is to implement a separated bike lane with a painted horizontal buffer. It was identified through public consultation that there is a challenge with removing on-street parking in front of Kendrick Funeral Home, which uses the space during funeral services. It is recommended that on the approach to the funeral home zone, the bike lane should end and a dashed line for an urban shoulder should continue. This would allow for short-term, curbside parking to service the funeral home. Once past the funeral home zone, the dashed line will become solid, and the bike lane will be formally reintroduced through signage. This approach was reviewed with Town staff.

5. Confirm Recommended Network

As a result of the network development process, an enhanced cycling network was identified. A summary of the routes by type is shown in **Table 9** and mapped in **Figure 22**.

Table 9. Summary of New Proposed Cycling Routes by Facility Type

Facility Type	Existing Length (KM)		Proposed Length (KM)			Total Existing + Proposed
	Non-CWATS Network	CWATS Network	Non-CWATS Network	CWATS Network	Total Proposed	
Off-Road Multi Use Trail	0.3	16.8	0.6	0.0	**0.6**	**17.7**
Multi-Use Path	4.0	3.7	5.0	7.2	**12.2**	**19.9**
Cycle Track	-	2.8	1.8	0.0	**1.8**	**4.6**
Separated Bike Lane	-	-	0.0	0.2	**0.2**	**0.2**
Buffered Paved Shoulder	-	-	0.0	13.3	**13.3**	**13.3**
Paved Shoulder	-	34.0	4.4	39.4	**43.8**	**77.8**
Signed Route	-	15.6	7.4	9.1	**16.5**	**32.1**
Total	**4.3**	**72.9**	**19.2**	**69.2**	**88.4**	**165.6**

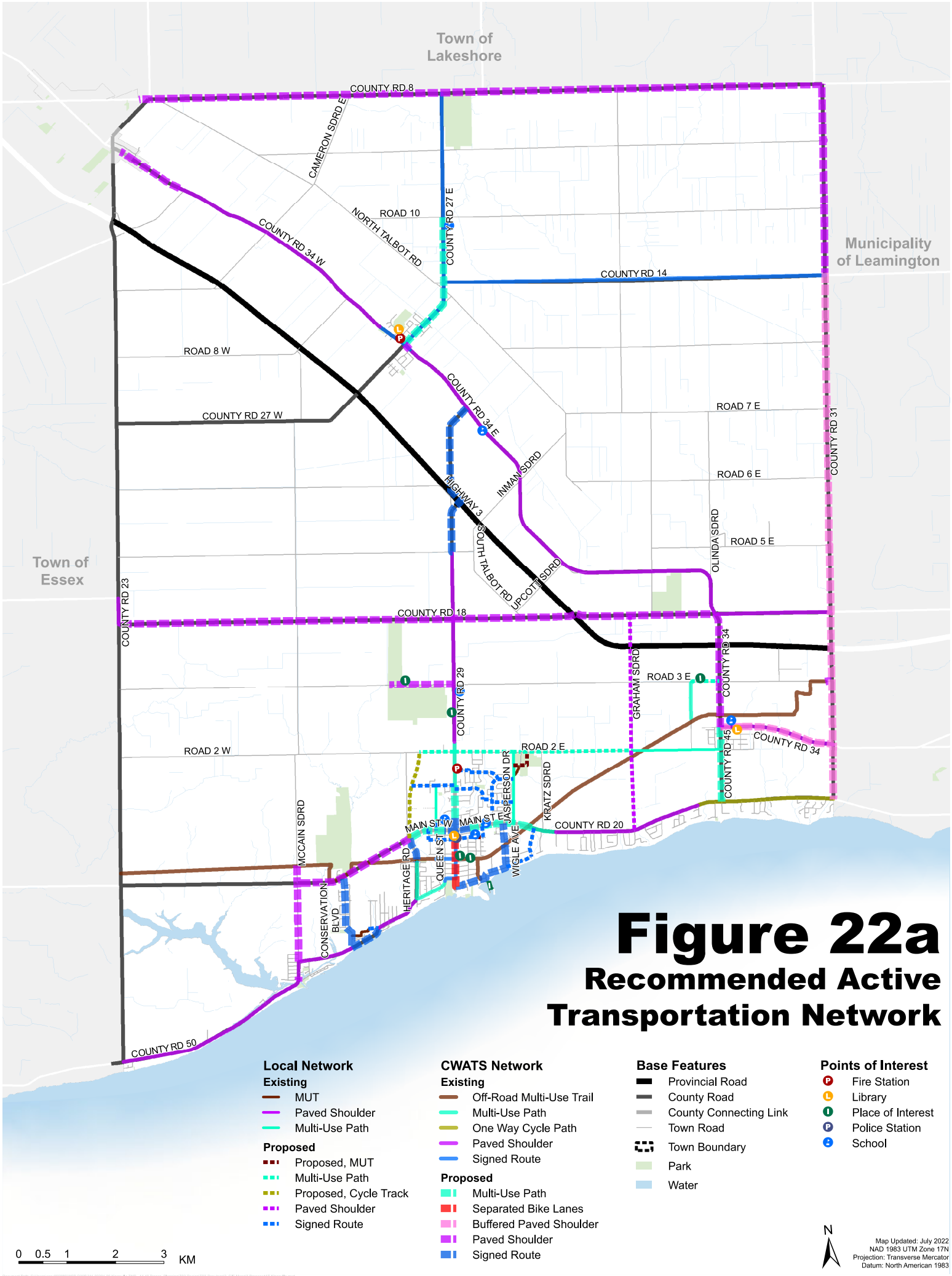


Figure 22a
Recommended Active Transportation Network

Local Network

Existing
- MUT
- Paved Shoulder
- Multi-Use Path

Proposed
- Proposed, MUT
- Multi-Use Path
- Proposed, Cycle Track
- Paved Shoulder
- Signed Route

CWATS Network

Existing
- Off-Road Multi-Use Trail
- Multi-Use Path
- One Way Cycle Path
- Paved Shoulder
- Signed Route

Proposed
- Multi-Use Path
- Separated Bike Lanes
- Buffered Paved Shoulder
- Paved Shoulder
- Signed Route

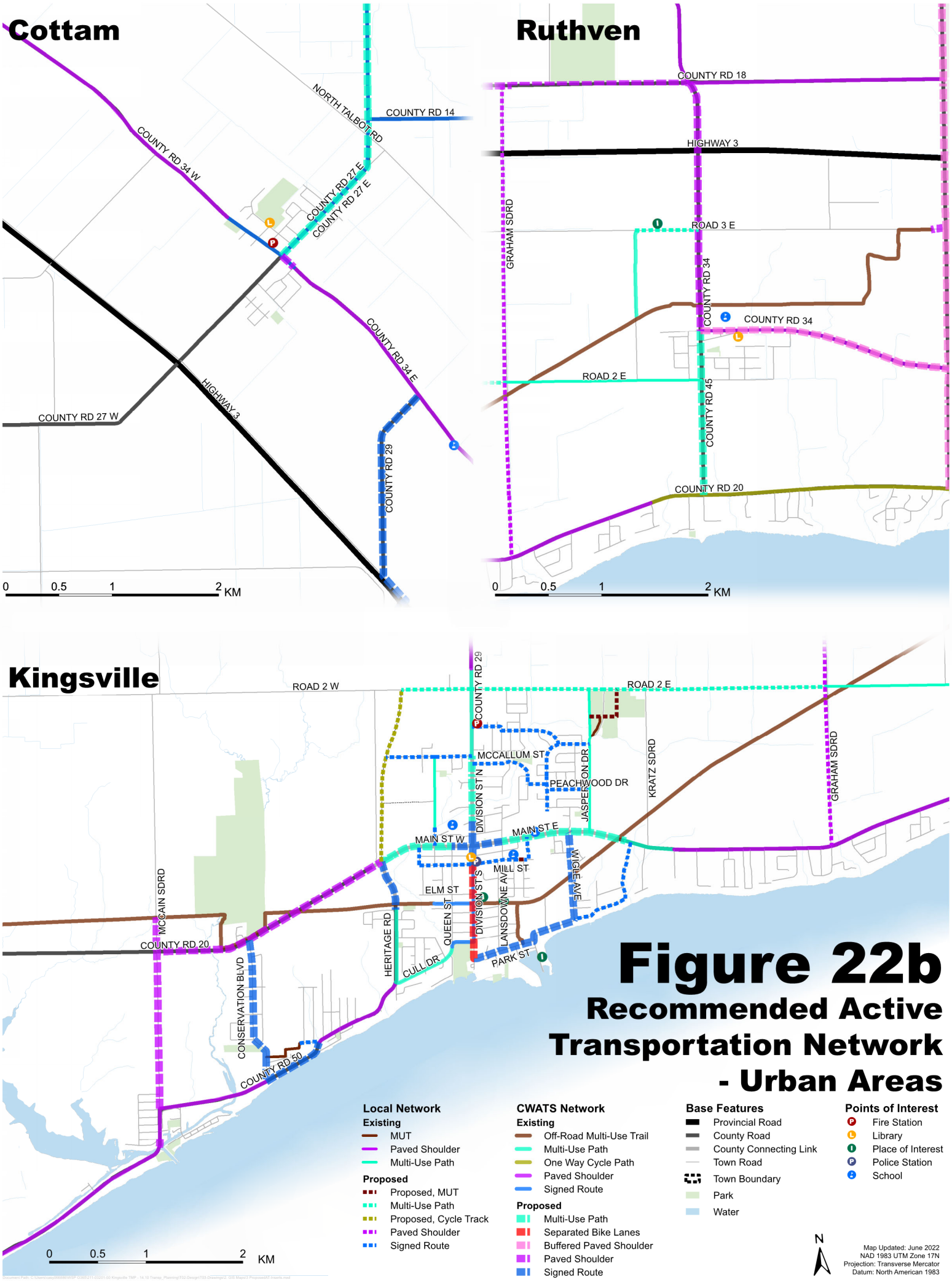
Base Features
- Provincial Road
- County Road
- County Connecting Link
- Town Road
- Town Boundary
- Park
- Water

Points of Interest
- Fire Station
- Library
- Place of Interest
- Police Station
- School

0 0.5 1 2 3 KM

N

Map Updated: July 2022
NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983


Cottam
NORTH TALBOT RD
COUNTY RD 14
COUNTY RD 34 W
COUNTY RD 27 E
COUNTY RD 27 E
COUNTY RD 34 E
HIGHWAY 3
COUNTY RD 27 W
COUNTY RD 29
0 0.5 1 2 KM
Ruthven
COUNTY RD 18
HIGHWAY 3
GRAHAM SDRD
ROAD 3 E
COUNTY RD 34
COUNTY RD 34
ROAD 2 E
COUNTY RD 45
COUNTY RD 20
0 0.5 1 2 KM
Kingsville
ROAD 2 W
COUNTY RD 29
ROAD 2 E
MCCALLUM ST
PEACHWOOD DR
JASPER ON DR
KRATZ SDRD
GRAHAM SDRD
DIVISION ST N
MAIN ST W
MAIN ST E
MILL ST
ELM ST
DIVISION ST S
WIGLE AVE
LANSDOWNE AVE
QUEEN ST
HERITAGE RD
CULL DR
PARK ST
MCCAIN SDRD
COUNTY RD 20
CONSERVATION BLVD
COUNTY RD 50
0 0.5 1 2 KM
Figure 22b
Recommended Active Transportation Network - Urban Areas
Local Network
Existing
MUT
Paved Shoulder
Multi-Use Path
Proposed
Proposed, MUT
Multi-Use Path
Proposed, Cycle Track
Paved Shoulder
Signed Route
CWATS Network
Existing
Off-Road Multi-Use Trail
Multi-Use Path
One Way Cycle Path
Paved Shoulder
Signed Route
Proposed
Multi-Use Path
Separated Bike Lanes
Buffered Paved Shoulder
Paved Shoulder
Signed Route
Base Features
Provincial Road
County Road
County Connecting Link
Town Road
Town Boundary
Park
Water
Points of Interest
Fire Station
Library
Place of Interest
Police Station
School
N
Map Updated: June 2022
NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983

5.1.2 Designing the Active Transportation Network

There are a number of existing guidelines and resources that should be referenced as the Town moves forward with the planning, design, and implementation of the recommended active transportation network, including:

- Ontario Traffic Manual (OMT) Book 18: Cycling Facilities
- Ontario Traffic Manual (OTM) Book 15: Pedestrian Crossing Treatments
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
- National Association of City Transportation Officials (NACTO) Urban Street Design Guide
- Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads
- Transportation Association of Canada (TAC) Bikeway Traffic Control Guideline for Canada
- Ministry of Transportation Ontario (MTO) Bikeway Design Guidelines
- Accessibility for Ontarians with Disabilities Act – Built Environment Standards
- Town of Kingsville Development Manual

5.1.3 Integrating Active Transportation into a Multi-Modal Transportation Network

It is important to integrate active transportation infrastructure with the overall multi-modal transportation strategy in order to create a cohesive network that is considered safe, equitable and accessible for users of all ages and abilities. Strategies for integration and support for AT include:

- Building multi-modal infrastructure that form the transportation network and fill in missing links for different users;
- Educating, promoting, and conducting outreach to bring awareness to AT routes and the benefits, such as through active and safe routes to school programs;
- Regularly reviewing pedestrian crossing locations to identify if upgrades are required to a pedestrian crossover with flashing lights;
- Integrating the existing and planned AT network with existing and future transit infrastructure;
- Providing bike parking and other AT-supportive infrastructure at municipal buildings and key points of interest; and
- Reviewing micromobility and understanding its implications.

5.1.4 Active Transportation Recommendations

Developing a network of active transportation facilities is vital to a sustainable transportation culture in the Town of Kingsville. To create the recommended pedestrian and cycling network, the Town should adopt the following recommendations:

1. Adopt in principle the proposed active transportation network illustrated in **Figure 22**;
2. Continue coordination with the County of Essex to implement the CWATS Master Plan recommendations and to continue to build partnerships with local advocacy groups;
3. Reference should be made to OTM Book 18: Cycling Facilities and OTM Book 15: Pedestrian Crossings to inform and guide the design and implementation of cycling and in-boulevard facilities, and future pedestrian crossings, respectively;
4. Apply the network phasing and implementation strategy recommended in the CTMP for building out the active transportation network, and incorporate as part of the annual capital budget review process;
5. Continue to identify new opportunities to implement AT routes / facilities in conjunction with capital infrastructure projects to achieve economies of scale and cost savings;
6. Consider providing sidewalks on at least one side of all local roads and on both sides for all collector and arterial roads in the urban areas;

7 Integrate AT with transit by providing connections to future transit stops and provide AT-supportive infrastructure, such as bike parking at or in close proximity to transit stops;
8 Continue to work through the CWATS Committee, the Windsor-Essex County Health Unit, and other partners to implement a supportive Education and Outreach Strategy;

5.2 Transit

The community is currently served by Leamington-To-Windsor Transit Route 42, an intermunicipal service with connections from Kingsville Arena to Leamington and Windsor. Additionally, a mobility-oriented on-demand service functions in the community, operated by South Essex Community Council.

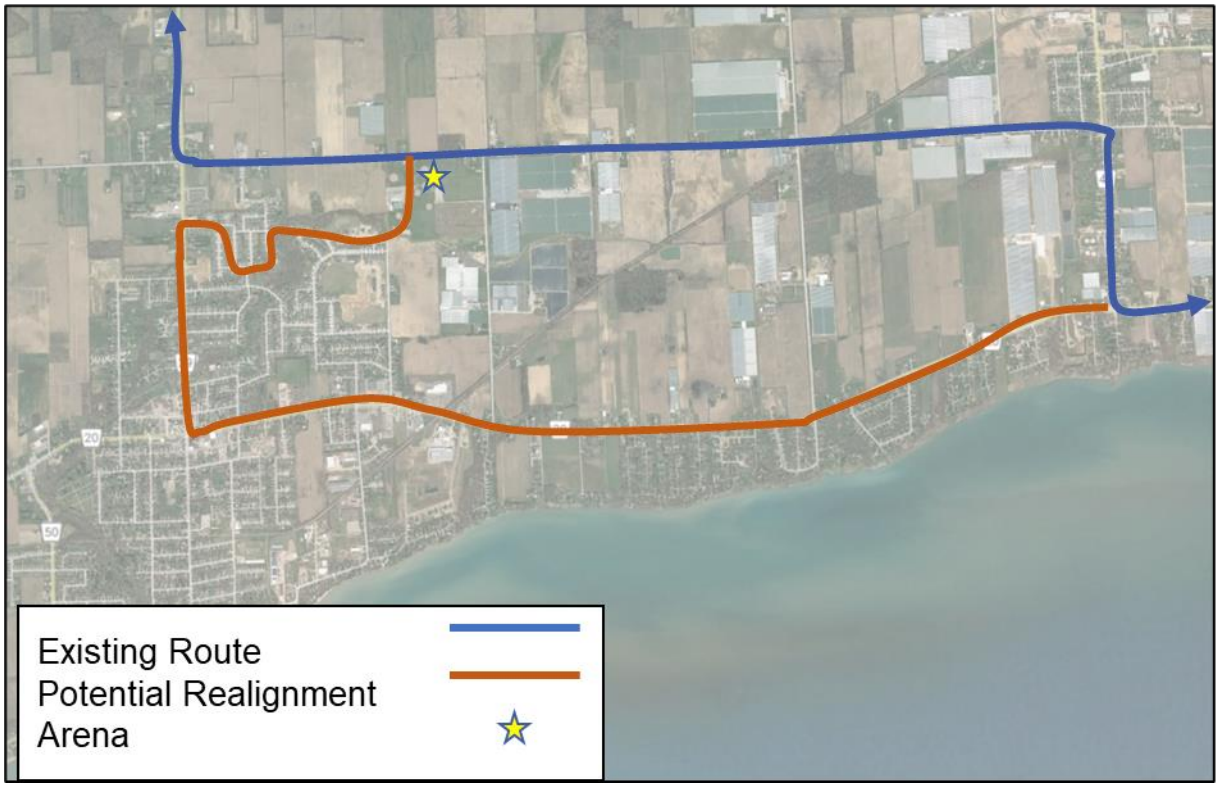
Key challenges to transit include:

- Existing routing of Windsor-Leamington bus route does not service most of Kingsville; Kingsville customers need to drive or catch a ride to the arena to use transit
  - Service is limited to 3 trips daily, which does not support most trip purposes
- South Essex Community Council on-demand system requires pre-registration and is available to eligible persons only

In the short-term, it is recommended that Kingsville liaise with the Municipality of Leamington (who administers the Leamington to Windsor Transit Route 42) to see if the grant funding the transit can be extended or renewed. If so, the Town could seek to modify the route to serve Main Street and Division Street, which would be expected to garner higher ridership than the current route that stops only at the Kingsville Arena Complex. The possible modification is shown in **Figure 23**. The feasibility of this route should be confirmed at the time of implementation to review if turning radii at intersections are navigable by the type of bus that would be operating on this route. The Town presently contributes annually to the South Essex Community Council's on-demand system. The Town should continue to be involved with that program to meet the needs of those passengers in Kingsville.

If the Town wishes to further enhance transit, the Town should consider partnering with local taxi providers or ride-hail services (if available) to improve local on-demand transit service within urban Kingsville. Taxi or ride-hailing services provide a more flexible method of providing on-demand services without the need for larger vehicles and can be subsidized for point-to-point travel within urban Kingsville based on a model employed in other Canadian communities, such as Innisfil, Ontario. Customers would pay a 'transit fare' for shared taxi or ride-hail services between defined locations within urban Kingsville, with the municipality subsidizing the remainder of the cost.

Figure 23. Possible Route Modification to Leamington-to-Windsor Route 42



5.3 Roads

This section discusses the future traffic volumes in the Town and analyzes the future roadway needs to provide a safer and efficient transportation network for the community. A comprehensive approach was adopted to consider the following objectives for the Town's road network:

- Promote alternative modes of travel;
- Provide alternative connections to relieve east-west and north-south corridors for Main Street and Division Street, respectively;
- Enhance connectivity to the new development areas in Town; and
- Suggest alternative truck routes for accessing the port.

Three alternative future scenarios to the year 2037 were developed: one Do Nothing scenario and two alternative scenarios. The Do Nothing scenario considers future growth in population and employment but no further improvements to the existing transportation network as the base scenario. The two alternatives (#2 and #3) include options for expanding collector and arterial roads, and new roadway links to accommodate future growth and to divert traffic from the Main Street and Division Street. The alternative options were developed by studying the previously identified candidate roads, the inputs received during the consultation phases, through consultation with Town staff, and technical analysis. The assessments were conducted to select the preferred alternative.

Three road network scenarios were analyzed before arriving at the preferred future alternative. The identification and analysis of these networks meets Phase 2 "alternatives assessment" of the MCEA process for master plans. The three alternative roadway network scenarios are:

1. Do Nothing: existing road network, no expansion of arterial/collector roads;
2. Scenario #2: Roadway improvements proposed based on the Do Nothing analysis results; and
3. Scenario #3: Improvements based on providing alternative route for through trucks and passenger traffic to reduce the congestion along Main Street and Division Street.

The three scenarios are detailed in **Table 10**.

Table 10. Roadway Network Improvements by Alternative

Alternative	Road Network Improvements
2037 Alternative 1 (Do-Nothing)	This scenario assumes that the existing network of collector and arterial roads will be maintained as it is currently until the year 2037.
2037 Alternative 2	This scenario assumes the existing network of collector and arterial roads with additional construction of the following projects: • Widening of Main Street existing lanes from Heritage Road to Kratz Road along eastbound and westbound direction to increase capacity. • Widening of Division Road North existing lanes from Main Street to Road 2 along northbound and southbound direction to increase capacity.
2037 Alternative 3 (Preferred Build out)	This scenario assumes the existing network of collector and arterial roads with additional construction of the following projects: • New roadway link (Heritage Road extension) connecting Main Street W and Road 2 W which runs parallel to Division Road and provides alternative to the northbound and eastbound from Main Street W and Heritage Road intersection traffic and Main Street E and Kratz Road intersection traffic to bypass Mains Street and Division Road downtown traffic. • Signalization of Main Street W and Heritage Road intersection and provision of an eastbound left turn lane with a storage length of 20 meters. • Removal of push button pedestrian crossing signal to the east of Santos Drive on Main Street and signalization of the Main Street and Santos Drive intersection. • Provision of Westbound right turn lane at Main Street and Jasperson Drive. • Urbanization of Road 2 from proposed Heritage Road connection to County Road 45. • Reconstruction of Kratz Road from Main Street (County Road 20) to Road 2 E to strengthen the pavement. • Construction of a new extension of Kratz Road from Road 2 E to Road 3 E. • Reconstruction of Graham Side Road from Seacliff Drive (County Road 20) to County Road 18 to strengthen the pavement. • Reconstruction of Road 3 from County Road 29 to County Road 34 to strengthen the pavement. • Reconstruction of McCain Side Road from County Road 50 to County Road 20 to strengthen the pavement. • Signal optimization and coordination of the signalized intersections along Main Street between Heritage Road and Kingsville Marketplace Driveway. • Suggest truck routes for the trucks accessing the port. The trucks accessing the port from the east of Kingsville from County Road 20 could be routed through Wigle Avenue, whereas the trucks from the west of Kingsville could be routed from Division Street (existing route) and the alternative route through Harold Cull Drive and Heritage Road.

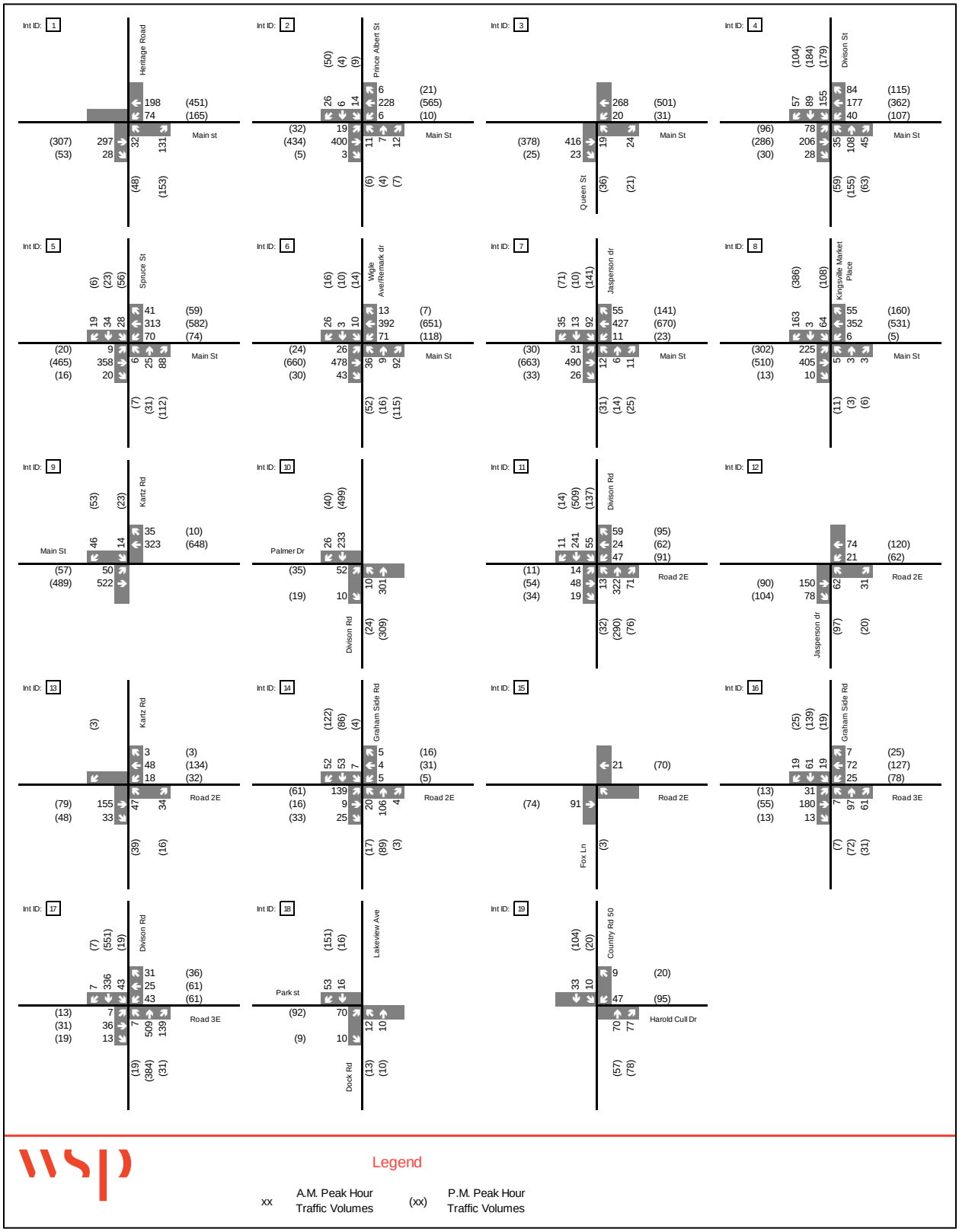
Alternative	Road Network Improvements
	• Consider opportunities for access management along Main Street East between the Chrysler Greenway Trail and Jasperson Drive. • If new development occurs: — Extend Jasperson Drive south to provide rear access to properties along Main Street East; and — Extend Applewood Road east to Kratz Road, and provide a road connection from the Applewood Road extension to the Kingsville Marketplace shopping centre.

5.3.1 Alternative 1 - Do Nothing

TRAFFIC VOLUME DEVELOPMENT

The future traffic volumes were developed using a growth rate of 1% to the existing traffic volumes to represent year 2037 traffic volumes. **Figure 24** shows the future year 2037 traffic volumes.

Figure 24. Alternative 1 - Year 2037 Traffic Volumes



INTERSECTION CAPACITY ANALYSIS

The intersection capacity analysis for the future conditions 2037 are presented in **Table 11**. Like existing conditions, a summary of the overall intersection and critical movements (reaching capacity with V/C between 0.8 and 0.99, and at or over capacity with V/C greater than or equal to 1) are noted with a focus on performance measures such as LOS, v/c ratios and delay. It should be noted that all signal timing plans were optimized for both splits and cycle lengths. Detailed Synchro output sheets are provided in **Appendix F**.

Table 11. Intersection Capacity Analysis – Alternative 1 Operation Conditions

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS	Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS
1. County Rd 20W & Heritage Rd	SSSC	NB-LTR (0.33) SB-LTR (0.00) B (15)		NB-LTR (0.61) SB-LTR (0.00) D (30)	
2. County Rd 20W & Prince Albert St	TWSC	NB-LTR (0.07) SB-LTR (0.10) B (15)		NB-LTR (0.07) SB-LTR (0.18) C (22)	
3. Main St & Queen St	SSSC	NB-LR (0.10) B (14)		NB-LR (0.20) C (19)	
4. Main St & Division St	Signal	Overall 0.49 B (18)		Overall 0.63 C (20)	
5. Main St & Spruce St	Signal	Overall 0.42 B (10)		Overall 0.51 B (13)	
6. Main St & Wigle Ave & Remark Dr	Signal	Overall 0.59 B (16)		Overall 0.70 C (20)	
7. Main St & Jasperson Dr	Signal	Overall 0.52 B (12)		Overall 0.86 C (29)	WBT (0.96) D
8. Main St E & Kingsville Market Place (east of Jasperson Dr)	Signal	Overall 0.52 A (11)		Overall 0.77 C (26)	
9. County Rd 20 & Kratz Rd	SSSC	SB-LR (0.14) B (14)		SB-LR (0.31) C (24)	
10. Division St & Palmer Dr	SSSC	EB-LR (0.11) B (13)		EB-LR (0.11) B (13)	
11. Road 2E & Division St	Signal	Overall 0.41 B (19)		Overall 0.51 C (25)	

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS	Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS
12. Road 2E & Jasperson Dr	SSSC	NB-LR (0.14) B (11)		NB-LR (0.21) B (13)	
13. Road 2E & Kratz Rd	SSSC	NB-LR (0.12) B (10)		NB-LR (0.08) B (11)	
14. Road 2E & Graham Side Rd	TWSC	NB-LTR (0.28) SB-LTR (0.19) B (15)		NB-LTR (0.20) SB-LTR (0.29) B (13)	
15. Road 2W & Fox Ln (Private Ln)	SSSC	NB-LR (0.00) A (0)		NB-LR (0.00) A (10)	
16. Road 3E & Graham Side Rd	TWSC	NB-LTR (0.30) SB-LTR (0.21) B (14)		NB-LTR (0.22) SB-LTR (0.39) C (17)	
17. Division Rd & Road 3E	TWSC	EB-LTR (0.30) WB-LTR (0.55) E (43)		EB-LTR (0.34) WB-LTR (0.87) F (85)	WB (0.87) F
18. Dock Rd & Park St & Lakeview Ave**	TWSC	EB-LR (0.10) NB-LT (0.03) SB-TR (0.08) A (8)		EB-LR (0.14) NB-LT (0.03) SB-TR (0.18) A (8)	
19. County Rd 50 & Harold Cull Dr	SSSC	WB-LR (0.07) A (10)		WB-LR (0.17) B (11)	

SSSC – Side Street Stop Control
TWSC – Two Way Stop Control
LOS at TWSC has been provided for the critical approach.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; L= left; T = through; R = right
Overall intersection v/c from HCM 2000 methodology.
*** - analysed as All-Way Stop Controlled intersection for conservative analysis, since it was not a typical TWSC.*
Bolded results represent overall intersections or movements that are over capacity.

Under future Alternative 1 conditions, all the intersections and their movements would operate at LOS D or better except for the westbound approach at Division Road and Road 3E intersection which would operate at LOS E and F during AM and PM peak hour conditions, respectively. All the intersections and its movements are expected to operate within capacity during peak hour conditions. The following intersections and its movements would operate near to the capacity:

- The Main Street and Jasperson Road intersection and its westbound through movement would operate near to capacity with a V/C ratio of 0.86 and 0.96, respectively during PM peak hour conditions; and
- The Division Road and Road 3 E intersection's westbound stop-controlled approach would operate near to the capacity with V/C ratio of 0.87 during PM peak hour conditions.

QUEUEING ANALYSIS

The queueing results from the Synchro model were also summarized for exclusive movements with storage lanes to determine whether the currently available storage lengths can accommodate the forecasted future volume queues. A summary of the 95th percentile queues are provided in **Table 12**; movements with 95th percentile queues forecasted to exceed the available storage lengths are highlighted in red. Queues for all movements can be found in the Synchro output sheets, which are provided in **Appendix F**.

Table 12. Intersection Queueing Analysis – Alternative 1

Intersection	Turning Movement	Available Storage Lengths (M)	95th Percentile Queue (M)	
			A.M. Peak Hour	P.M. Peak Hour
4. Main St & Division St	EBL	30	15	20
	WBL	25	5	11
	NBL	20	10	14
	SBL	40	24	27
5. Main St & Spruce St	EBL	15	2	4
	WBL	30	9	10
6. Main St & Wigle Ave & Remark Dr	EBL	60	4	4
	WBL	60	3	13
7. Main St & Jasperson Dr	EBL	35	1	4
	WBL	32	3	5
	SBL	19.5	**26**	**37**
8. Main St E & Kingsville Market Place (east of Jasperson Dr)	EBL	27	**31**	**#62**
	WBL	80	1	2
	WBR	34	3	12
11. Road 2E & Division St	EBL	30	5	4
	WBL	63	11	21
	NBL	55	4	6
	SBL	50	11	20

Note:
 # - Volume for the 95th percentile cycle exceeds capacity.
Red results represent movements exceeding storage length.

Under future conditions, the 95th percentile queues at Main Street and Jasperson Drive intersection's southbound left turning movement and Main Street E and Kingsville Market Place (east of Jasperson Drive) intersection's eastbound left turning movement are expected to exceed the available storage lengths during a.m. and p.m. peak hour conditions.

SCREEN LINE ANALYSIS

Alternative 1 (Do-Nothing) forecasts an increment in trip volumes across the whole road network to the year 2037 to reflect population and employment growth, but with the capacity of the network essentially staying as-is. This exercise was done to validate whether the existing road network had enough capacity to accommodate future forecasted volumes.

The results of screenline analysis (using the same screenline locations as shown in **Figure 19** of Alternative 1 as shown in **Table 13** suggest that while v/c aggregate ratios increase across screenlines, the road network still has sufficient capacity with an overall volume to capacity ratio of 0.27 in all directions. The screenline #2 shows the highest v/c (0.35 and 0.40) and if individual road links are examined more closely across this axis this screenline had the highest V/C of 0.83 along both the eastbound and westbound traffic flow at Main Street E. The screenline #3 shows the second highest screenline with a v/c of 0.29 in the southbound direction and if individual road links are examined more closely across this axis this screenline had the highest V/C of 0.64 along southbound traffic flow at Division Street N. This suggests that if travel behavior remains unchanged until 2037, these two corridors will likely experience congestion and vehicle delays during the p.m. peak hour conditions.

Table 13. Screenline Analysis – Alternative 1 PM Peak Hour

Screenline	Location	Direction	Volume	Capacity	Volume to Capacity Ratio
Screenline - 1	Parallel to west of Division St	EB	638	3,400	0.19
		WB	869	3,400	0.26
Screenline - 2	Parallel to east of Division St	EB	1,188	3,400	0.35
		WB	1,352	3,400	0.40
Screenline - 3	Parallel to north of County Rd 20	NB	1,015	4,800	0.21
		SB	1,397	4,800	0.29
Screenline - 4	Parallel to south of County Rd 20	NB	713	3,100	0.23
		SB	747	3,100	0.24
Total		**EB/WB**	**4,047**	**13,600**	**0.30**
Total		**NB/SB**	**3,872**	**15,800**	**0.25**
Total		**All Directions**	**7,919**	**29,400**	**0.27**

5.3.2 Alternative 2 – With Roadway Improvements

The assessment of Alternative 1 indicated that the heaviest traveled routes are County Road 20 / Main Street for east-west traffic and Division Road North for north-south traffic. An alternative was considered to widen these two roads to increase capacity to accommodate future volumes. It was quickly recognized that doing so would alter the fabric of the community and encourage vehicle movements on these streets. Choosing this option would not embrace the vision and objectives set out for the CTMP and would bring on consequences for land acquisition along these corridors that would be unacceptable.

Widening the major thoroughfares through the community was dismissed as a viable alternative. The focus shifted to providing alternative routes for vehicle traffic to traverse the town and providing sustainable infrastructure in the form of expanding the cycling network to help shift trips away from automobiles to more sustainable modes.

5.3.3 Alternative 3 – By-pass Routes

Recognizing that some road network improvements are needed but not wanting to alter the community fabric with road widening through the community's core, Alternative 3 was developed to include the roadway improvements as identified in **Table 10.** **Figure 25** shows the various roadway improvement projects under preferred build out Alternative 3.

Figure 25. Roadway Improvements – Alternative 3

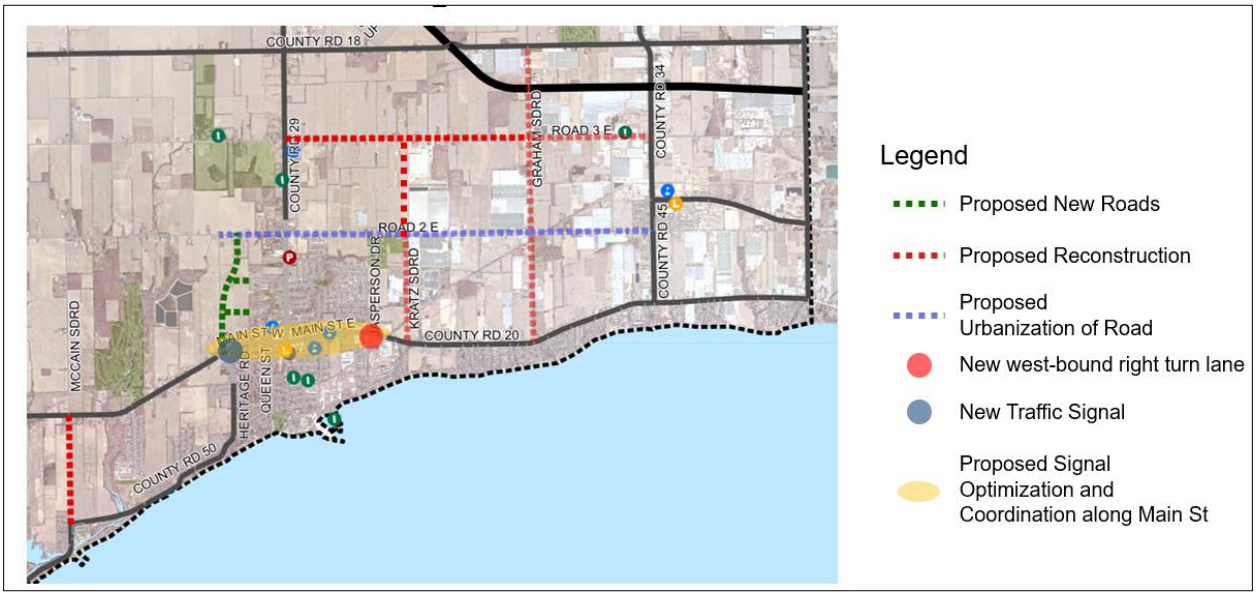
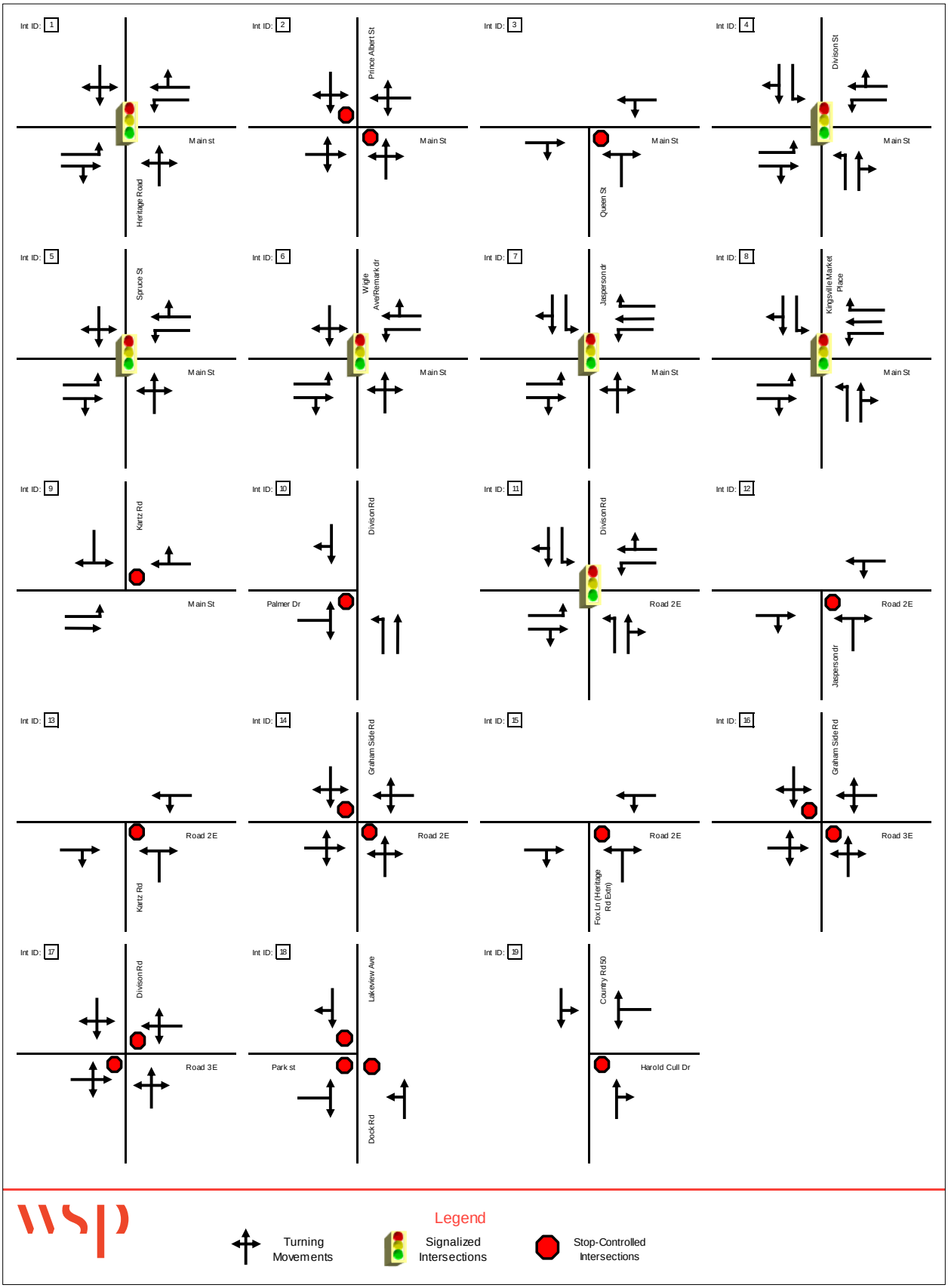


Figure 26. Study Intersections Geometrical Lane Configurations – Alternative 3



FUTURE TRAFFIC VOLUMES – 2037 WITH BY-PASS

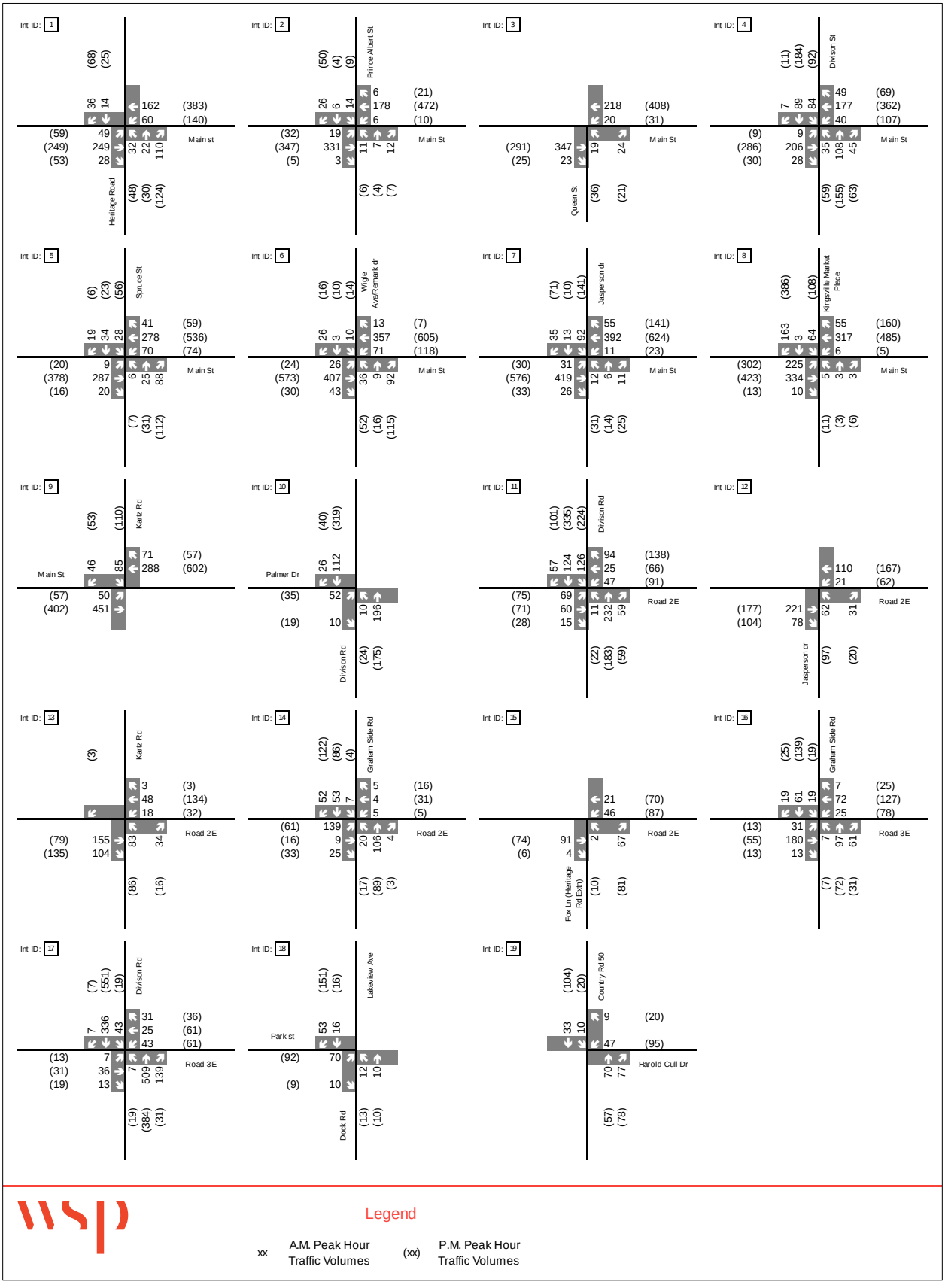
The Alternative 3 volumes were developed using the Alternative 1 Year 2037 volumes and were updated to reflect the new roadway link (Heritage Road extension) connecting Main Street W and Road 2 W which runs parallel to Division Road and provides alternative to the northbound and eastbound from Main Street W and Heritage Road intersection traffic and Main Street E and Kratz Road intersection traffic to bypass Mains Street and Division Road downtown traffic.

The traffic volumes that would by-pass the Main Street and Division Street N downtown traffic in the year 2037 conditions were based on the following;

- The average travel time saving for the northbound traffic from Main Street W and Heritage Road intersection in using Heritage Road Extension route compared to the Main Street and Division Street downtown route was estimated based on the average distance and speed and delay at the intersection from synchro outputs.
- Similarly, the average travel time saving for the northbound traffic from County Road 20 and Kratz Road intersection in using Kratz Road (reconstructed) route compared to the Main Street and Division Street downtown route was estimated based on the average distance and speed and delay at the intersection from synchro outputs.
- The traffic volumes heading to the north using the Division Street from Main Street downtown area from Main Street W and Heritage Road intersection and from County Road 20 and Kratz Road were estimated based on the developed Year 2037 Alternative 1 volumes and these volumes were by-passed to use the Heritage Road Extension route for traffic from Main Street W and Heritage Road intersection and Kratz Road (reconstructed) route for traffic from County Road 20 and Kratz Road intersection.

Figure 27 shows the Alternative 3 volumes with by-passed traffic.

Figure 27. Alternative 3 - Year 2037 Traffic Volumes



INTERSECTION CAPACITY ANALYSIS

The intersection capacity analysis for the Alternative 3 future conditions – 2037 are presented in **Table 14**. Like future conditions - 2037, a summary of the overall intersection and critical movements (reaching capacity with V/C between 0.8 and 0.99, and at or over capacity with V/C greater than or equal to 1) are noted with a focus on performance measures such as LOS, v/c ratios and delay. It should be noted that all signal timing plans were optimized and coordinated along Main Street corridor between Heritage Road and Jasperson Drive. Detailed Synchro output sheets are provided in **Appendix G**.

Table 14. Intersection Capacity Analysis – Alternative 3

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS	Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS
1. County Rd 20W & Heritage Rd	Signal	Overall 0.27 A (10)		Overall 0.37 B (11)	
2. County Rd 20W & Prince Albert St	TWSC	NB-LTR (0.06) SB-LTR (0.08) B (13)		NB-LTR (0.06) SB-LTR (0.15) C (18)	
3. Main St & Queen St	SSSC	NB-LR (0.09) B (13)		NB-LR (0.15) C (15)	
4. Main St & Division St	Signal	Overall 0.42 B (19)		Overall 0.50 B (20)	
5. Main St & Spruce St	Signal	Overall 0.38 B (15)		Overall 0.47 A (12)	
6. Main St & Wigle Ave & Remark Dr	Signal	Overall 0.55 B (12)		Overall 0.66 B (13)	
7. Main St & Jasperson Dr	Signal	Overall 0.46 B (10)		Overall 0.66 B (12)	
8. Main St E & Kingsville Market Place (east of Jasperson Dr)	Signal	Overall 0.45 B (10)		Overall 0.59 C (24)	
9. County Rd 20 & Kratz Rd	SSSC	SB-LR (0.43) C (24)		SB-LR (0.83) F (72)	
10. Division St & Palmer Dr	SSSC	EB-LR (0.09) B (10)		EB-LR (0.09) B (11)	
11. Road 2E & Division St	Signal	Overall 0.38 B (19)		Overall 0.48 C (22)	
12. Road 2E & Jasperson Dr	SSSC	NB-LR (0.17) B (12)		NB-LR (0.25) B (15)	
13. Road 2E & Kratz Rd	SSSC	NB-LR (0.18) B (11)		NB-LR (0.17) B (12)	

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS	Overall V/C LOS (Delay in Seconds)	Critical Movement (V/C) LOS
14. Road 2E & Graham Side Rd	TWSC	NB-LTR (0.28) SB-LTR (0.19) B (15)		NB-LTR (0.20) SB-LTR (0.29) B (13)	
15. Road 2W & Fox Ln (Private Ln)	SSSC	NB-LR (0.08) A (9)		NB-LR (0.11) A (10)	
16. Road 3E & Graham Side Rd	TWSC	NB-LTR (0.30) SB-LTR (0.21) B (14)		NB-LTR (0.22) SB-LTR (0.39) C (17)	
17. Division Rd & Road 3E	TWSC	EB-LTR (0.30) WB-LTR (0.55) E (43)		EB-LTR (0.34) WB-LTR (0.87) F (85)	WB (0.87) F
18. Dock Rd & Park St & Lakeview Ave**	TWSC	EB-LR (0.10) NB-LT (0.03) SB-TR (0.08) A (8)		EB-LR (0.14) NB-LT (0.03) SB-TR (0.18) A (8)	
19. County Rd 50 & Harold Cull Dr	SSSC	WB-LR (0.07) A (10)		WB-LR (0.17) B (11)	

SSSC – Side Street Stop Control
TWSC – Two Way Stop Control
LOS at TWSC has been provided for the critical approach.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; L= left; T = through; R = right
Overall intersection v/c from HCM 2000 methodology.
Bolded results represent overall intersections or movements that are over capacity
*** - analysed as All-Way Stop Controlled intersection for conservative analysis, since it was not a typical TWSC.*
Bolded results represent overall intersections or movements that are over capacity.

Under future Alternative 3 conditions, all the intersections and their movements would operate at LOS D or better except for the Southbound stop-controlled approach of the Kratz Road and County Road 20 intersection which would operate at LOS F during PM peak hour conditions and westbound stop-controlled approach of Division Road and Road 3E intersection which would operate at LOS E and F during AM and PM peak hour conditions, respectively. All the intersections and its movements are expected to operate within capacity during peak hour conditions. The following intersections and its movements would operate near to the capacity:

- The Division Road and Road 3 E intersection's westbound stop-controlled approach would operate near to the capacity with V/C ratio of 0.87 during PM peak hour conditions.

The Southbound stop-controlled approach of Kratz Road and County Road 20 intersection and westbound stop-controlled approach of Division Road and Road 3E intersection would operate at LOS F in future 2037 conditions, however the V/C ratio at these stop-controlled approaches are well within capacity and these intersections need to be monitored for signalization in future.

QUEUEING ANALYSIS

The queueing results from the Synchro model were also summarized for exclusive movements with storage lanes to determine whether the currently available storage lengths coupled with the recommended improvements from future conditions can accommodate the Alternative 3 future conditions 2037 with by-pass scenario queues. A summary of the 95th percentile queues are provided in **Table 15.** Movements with 95th percentile queues forecasted to exceed the available storage lengths are highlighted in red. Queues for all movements can be found in the Synchro output sheets, which are provided in **Appendix G**.

Table 15. Intersection Queueing Analysis – Alternative 3

Intersection	Turning Movement	Available Storage Lengths (M)	95th Percentile Queue (M)	
			A.M. Peak Hour	P.M. Peak Hour
1. County Rd 20W & Heritage Rd	EBL	20	6	8
	WBL	90	7	17
4. Main St & Division St	EBL	30	4	4
	WBL	25	8	5
	NBL	20	11	17
	SBL	40	13	21
5. Main St & Spruce St	EBL	15	2	6
	WBL	30	5	2
6. Main St & Wigle Ave & Remark Dr	EBL	60	3	4
	WBL	60	5	6
7. Main St & Jasperson Dr	EBL	35	2	1
	WBL	32	3	3
	SBL	19.5	**25**	**43**
8. Main St E & Kingsville Market Place (east of Jasperson Dr)	EBL	27	23	**45**
	WBL	80	1	3
	WBR	34	2	14
11. Road 2E & Division St	EBL	30	15	18
	WBL	63	11	21
	NBL	55	1	5
	SBL	50	20	33

Note:
 # - Volume for the 95th percentile cycle exceeds capacity.
Red results represent movements exceeding storage length.

Under future Alternative 3 conditions, the 95th percentile queues at Main Street and Jasperson Drive intersection's southbound left turning movement and Main Street E and Kingsville Market Place (east of Jasperson Drive) intersection's eastbound left turning movement during p.m. peak hour conditions are expected to exceed the available storage lengths. Compared to Alternative 1 the queue lengths at Main Street E and Kingsville Market Place reduces significantly and AM queue lengths would be within the available storage lengths.

SCREEN LINE ANALYSIS

The screenline analysis results of Alternative #3 as shown in **Table 16** shows increased capacity in the Town's network with lower v/c ratios across most screenlines when compared to the Do-Nothing (Alternative #1) counterpart.

As this scenario assumes that northbound traffic will shift to the by-pass routes of Heritage Extension and reconstructed Kratz Road. Screenline # 2 and # 3 show considerable capacity and volume to capacity ratio improvement when compared to Alternative #1 with overall volume to capacity ratio of 0.24 (0.27 in Alternative 1) in all directions. Trips that are redistributed to enter Heritage Road Extension route from Main Street W and Heritage Road intersection (Road 2 W and Division Road) and enter Kratz Road from County Road 20 and Kratz Road intersection (Road 2 E and Division Road) suggest that proposed road capacity improvements are adequate to meet future demand and relieve congestion from existing corridors like Main Street corridor and Division Road N. The new travel patterns reflecting a shift of trip volumes to the by-pass routes show the Main Street link on Screenline #2's v/c reduces from 0.83 to 0.74 in eastbound direction and 0.83 to 0.78 in the westbound direction; where as, the Division Street N link on Screenline #3's v/c reduces from 0.40 to 0.27 in northbound direction and 0.64 to 0.46 in the southbound direction compared to Do Nothing (Alternative #1) counterpart; which is a good reduction in volumes on the Main Street and Division Street N corridors in downtown area and still would have additional capacity should vehicle volumes increase.

Table 16. Screenline Analysis – Alternative 3 PM Peak Hour

Screenline	Location	Direction	Volume	Capacity	Volume to Capacity Ratio
Screenline - 1	Parallel to west of Division St	EB	631	3,400	0.19
		WB	863	3,400	0.25
Screenline – 2*	Parallel to east of Division St	EB	1,188	4,000	0.30
		WB	1,352	4,000	0.34
Screenline – 3**	Parallel to north of County Rd 20	NB	1,015	6,100	0.17
		SB	1,397	6,100	0.23
Screenline - 4	Parallel to south of County Rd 20	NB	713	3,100	0.23
		SB	747	3,100	0.24
Total		**EB/WB**	**4,034**	**14,800**	**0.27**
Total		**NB/SB**	**3,872**	**18,400**	**0.21**
Total		**All Directions**	**7,906**	**33,200**	**0.24**

Note:

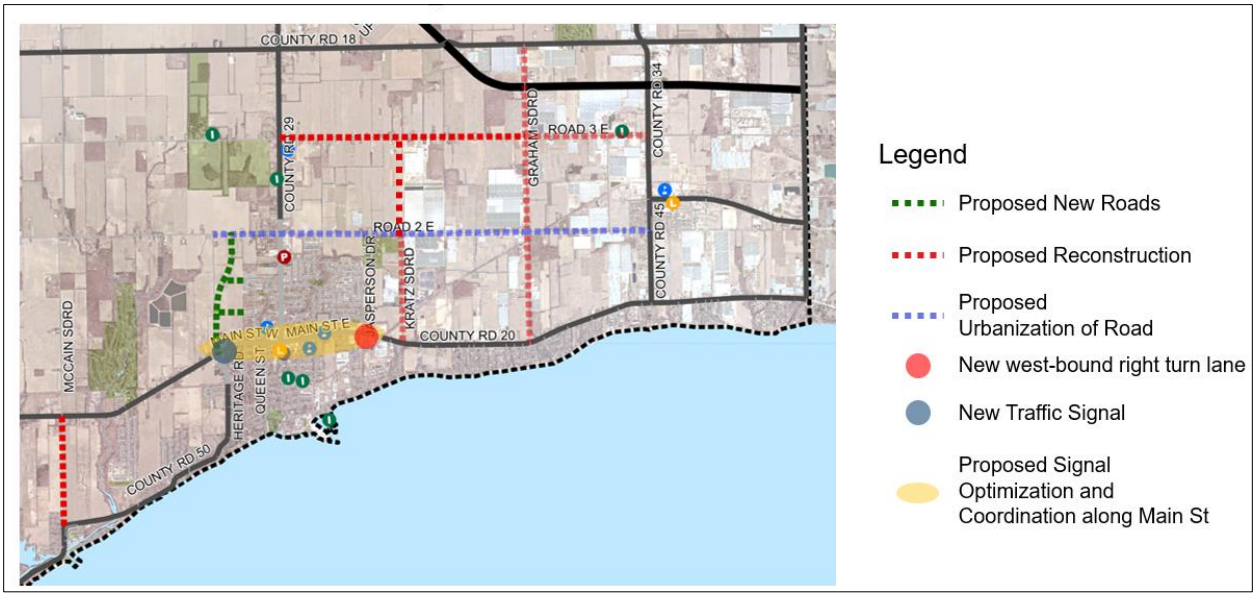
**- Capacity of Road 2 and Road 3 increases due to proposed urbanization and reconstruction.*

***- Additional capacity from Heritage Road Extension and capacity of Kratz Riad increases due to reconstruction.*

5.3.4 Recommended Alternative

Alternative 3 is recommended as the most appropriate road network alternative to address the forecasted growth. Coupled with the active transportation and transit recommendations, this Alternative provides a multi-modal framework to move people and goods. It supports the goods movement industry but also preserves and enhances the downtown for people. The recommended road network improvements included in Alternative 3 are shown in **Figure 28**.

Figure 28. Preferred Alternative Recommended Road Network Improvements

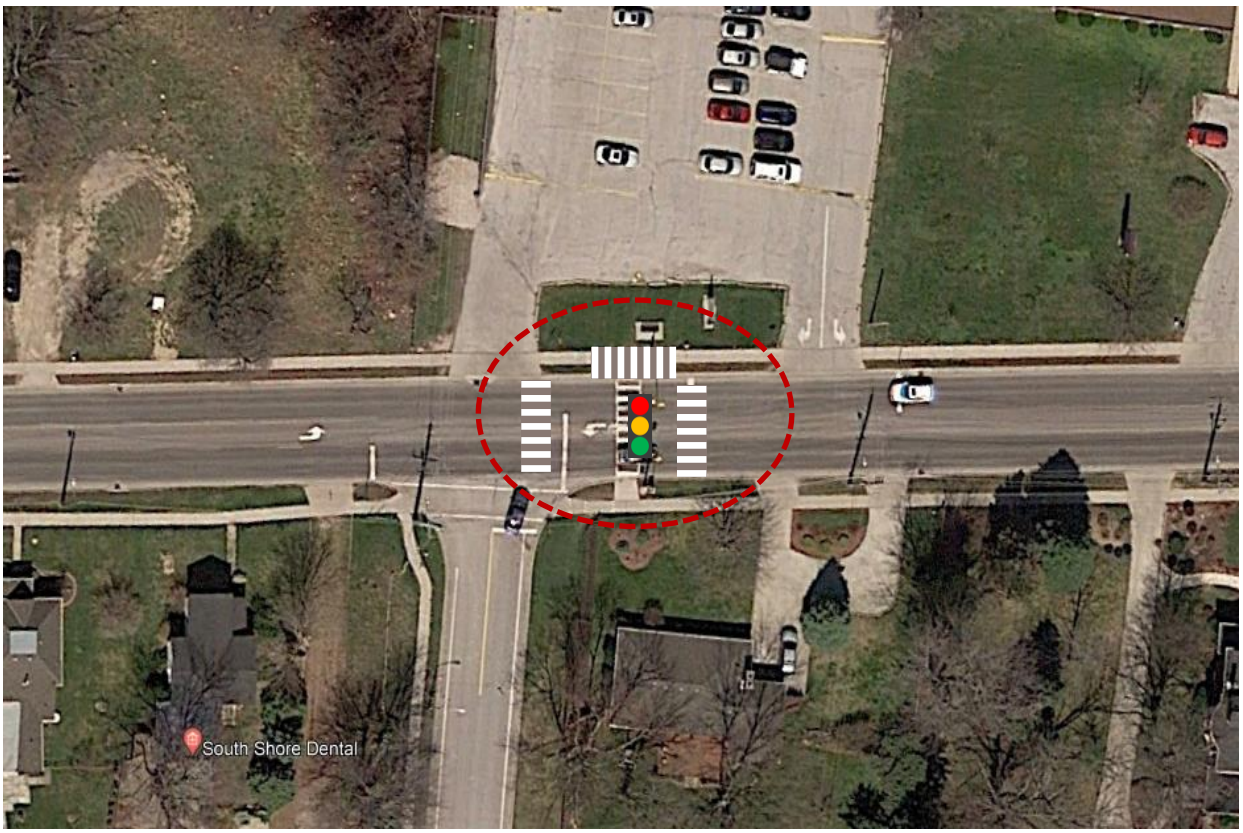


5.4 Other Road Network Recommendations

5.4.1 Santos Drive Intersection with Main Street East

There is an existing pedestrian push button signal on Main Street East just east of Santos Drive. This push button is to facilitate pedestrian crossing of Main Street East, primarily for students access the high school on the north side of the street. The high school is being relocated, which draws into question the need for a pedestrian push button here. The CTMP recommends that the pedestrian push button be shifted slightly west and repurposed as a signalized intersection at Santos Drive. This would still allow a controlled pedestrian crossing as the high school is expected to be redeveloped and there still is expected to be pedestrian demand to cross Main Street East. The signal would also indicate to westbound drivers that they are entering a more urban environment as they approach the centre of the downtown. The signal relocation and the new cross walks are indicated on **Figure 29**.

Figure 29. Pedestrian Push Button Relocation to Santos Drive

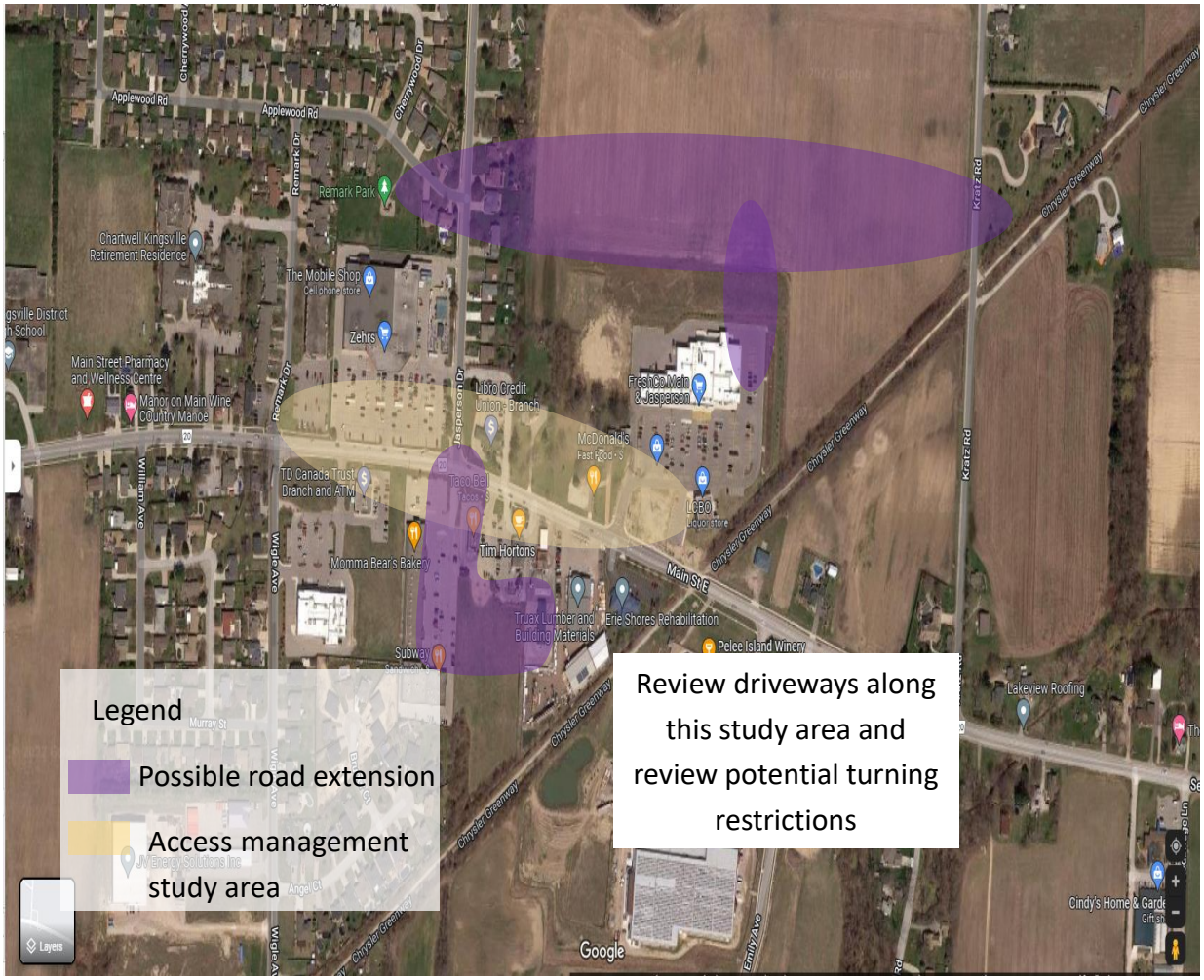


5.4.2 Access Management Along Main Street East

A concern voiced by the public, stakeholders, and Town staff has been traffic congestion along Main Street, particularly Main Street East. The stretch of Main Street East between the Chrysler Greenway Trail on the east and Jasperson Drive on the west can be congested during peak periods. Rather than widen Main Street East to accommodate more vehicles, access management should be reviewed, and alternative accesses considered to reduce the number of vehicles turning into and out of businesses along this stretch of road. If future development were to occur, there could be a possibility to extend Jasperson Drive south and in the process provide rear access to properties along Main Street East. This may enable one or more of the access driveways on Main Street East to be closed, reducing the number of turning vehicles into and out of these businesses and reducing the friction and congestion along this corridor. Likewise, a possible extension of Applewood Road to Kratz Road would provide an opportunity to construct a rear access to the Kingsville Marketplace shopping plaza. Doing so would enable southbound traffic on Jasperson Drive to access the shopping plaza without having to travel on Main Street East. This would remove these vehicles from Main Street East and help ease congestion.

As properties develop or redevelop along this corridor, the Town should look for opportunities through development applications and site plan reviews to manage the access by consolidating accesses or providing alternative accesses that do not require driveways on Main Street East. Access management considerations are indicated conceptually in **Figure 30**.

Figure 30. Access Management Considerations Along Main Street East



5.5 Goods Movement

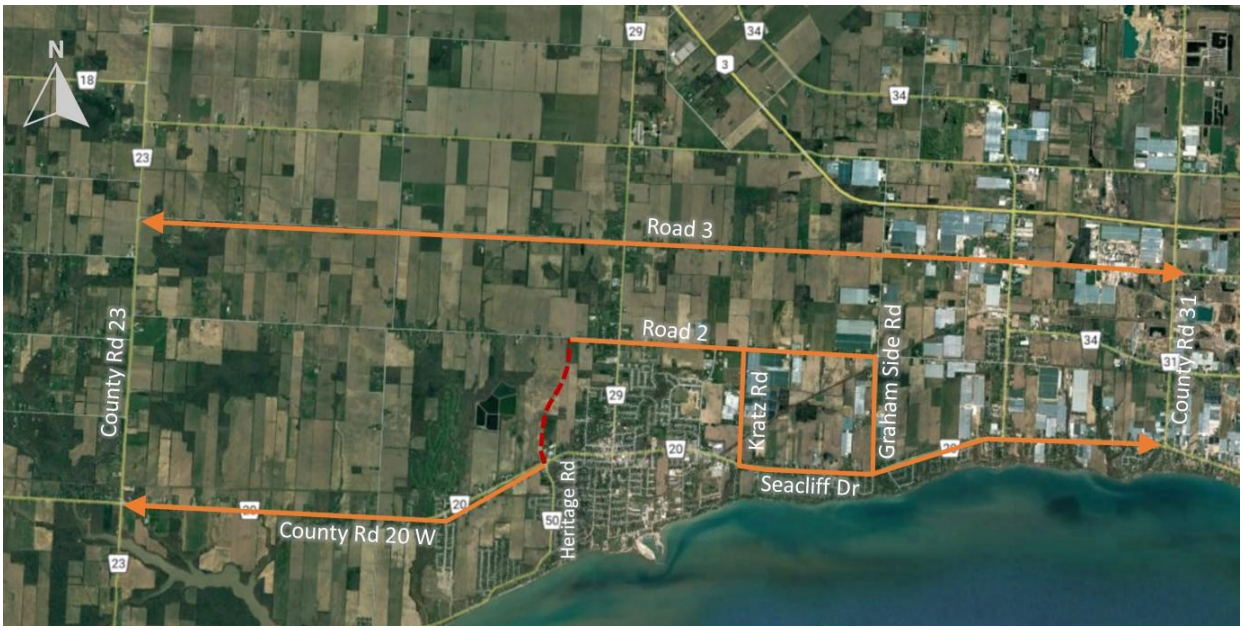
The two main elements explored in the CTMP for goods movement were:

- How to move goods east-west through town, avoiding Main Street if feasible; and, related,
- How to move goods to a from the port, avoiding the Main Street at Division Street intersection, if appropriate.

5.5.1 East-West Movement of Goods

Road 2 and Road 3 have been identified as potential east-west alternatives to County Road 20 / Main Street for trucks travelling through Kingsville. Kratz Road and Graham Sideroad were identified for improvements to help support this strategy. The new construction of the Heritage Road extension from Main Street West to Road 2 West also is important to complete the potential by-pass of the downtown for trucks. Truck by-pass options for downtown of Kingsville are indicated conceptually in **Figure 31.**

Figure 31. Truck By-pass Options for Downtown Kingsville



5.5.2 Truck Traffic to and from the Port

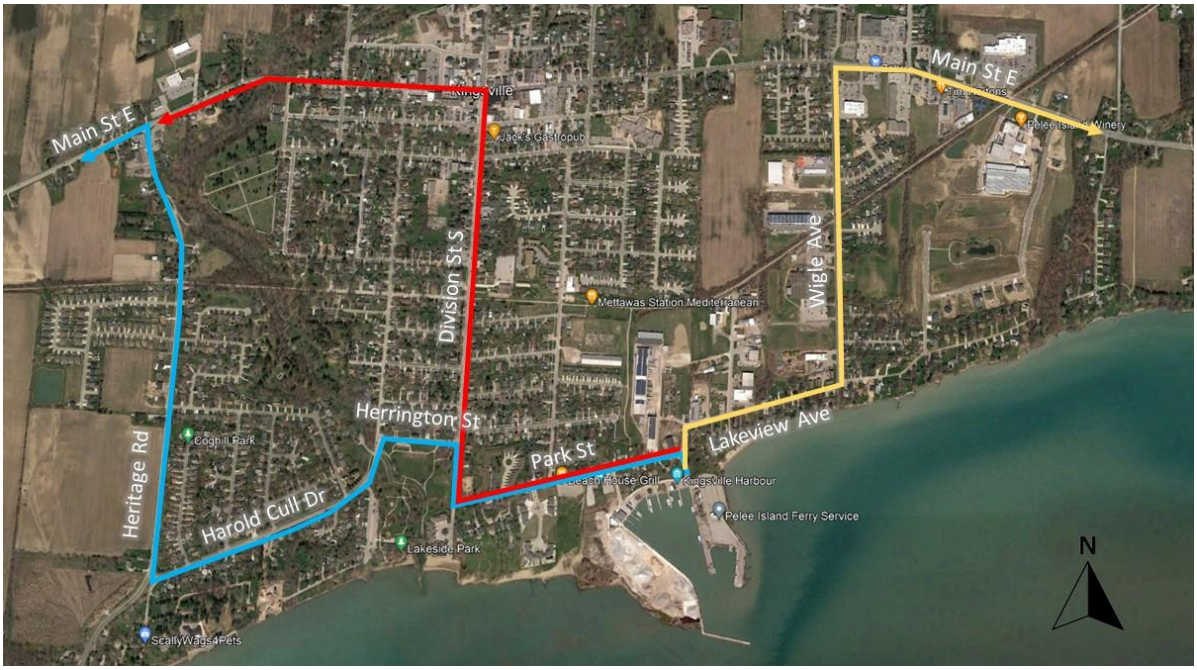
A second goods movement concern has been truck traffic to and from the port. There is no way to completely avoid truck travel through residential neighbourhoods and access the port. One desire has been to limit truck movements through the Main Street and Division Street intersection. Options for truck travel to and from the port are shown on **Figure 32**. These include:

- **Wigle Street:** There presently are signs on Main Street East directing traffic to the port via Wigle Street. This route travels by some commercial development and some residential development, although less than the other two options.
- **Division Street South:** This is a commonly used truck route today. It requires truck traffic to travel through the centre of town, which is seen as undesirable. This route travels by primarily residential land uses. With the CTMP recommendation for bike lanes on Division Street South, this route would become less compatible with truck traffic.
- **Harold Cull Drive:** This route avoids the centre of town but does travel through primarily residential areas and travels on three sides of Lakeside Park. The sharp curve for westbound to northbound traffic at Harold Cull Drive and Heritage Road may need to be addressed to enable all types of trucks to manoeuvre this turn.

Public feedback was mixed regarding the truck route options and none were seen as most desirable. With no perfect solution, the recommendation is for the Town to continue monitoring truck traffic and further explore the following option in the future:

- Use Wigle Street as the primary access to the port, especially for truck traffic to or from the east; and
- If truck traffic continues to be a problem in the downtown, explore a route to and from the west that uses Harold Cull Drive, recognizing that improvements might need to be made at intersections on this route to facilitate truck turning movements.

Figure 32. Truck Access to the Port



6 Transportation Policies: What Supports the TMP?

6.1 The Complete Streets Approach

Complete Streets are streets that are planned, designed, constructed, operated, and maintained for all transportation modes as well as users of all ages and abilities. The overarching concept of Complete Streets focuses on place-making and connected communities, thereby promoting more sustainable modes of travel versus emphasising single-use automobile. In the past, streets were designed primarily for auto-mobility and automobile safety, with limited regard for resiliency towards future change, livability of the streets, and multi-modal mobility. Complete Streets seeks to address this imbalance.

By introducing the Complete Streets approach in Kingsville, the Town is intending to:

1. Clarify the intended use of local streets;
2. Improve the overall transportation safety and health of the community;
3. Promote sustainable travel choices by providing mechanisms that encourage multi-modal choices and access to those choices;
4. Encourage more comprehensive capital programming planning and budgeting;
5. Develop a stronger knit community, encourage greater livability and quality of life;
6. Increase local economic development through the lens of place-making; and
7. Improve the Town of Kingsville resiliency to adapt to future change, including climate change.

A Complete Streets policy can be considered for all types of projects at any given stage. The policies detailed in this section are intended to guide the Town with the design and retrofits of existing infrastructure or the construction of new infrastructure. Examples of how the complete streets policies can be applied throughout the Town's network are illustrated in a sample of cross-section drawings shown in **Figure 33**. The guiding elements ensure all road users are familiar with roadway features and facilities to accommodate for their needs, regardless of their choice of travel.

Complete Streets policies follow the National Complete Street Coalition, a leading association that developed the 10 elements of Complete Streets and has been adapted by Complete Streets for Canada. The elements detailed in **Table 17.** Elements of a Complete Streets Policy will guide the Town with planning and design processes that create equitable and context-sensitive transportation networks.

Table 17. Elements of a Complete Streets Policy

Guiding Element		Description
Vision		
1.	Embodies a Community Vision	Establish a motivating community vision, objectives, and purpose for implementing Complete Streets elements.
Core Commitments		
2.	Defines All Users and Modes	Specify and provide equal consideration to people of all ages and abilities, as well as all modes of travel, especially walking, cycling, riding transit, on wheelchairs or scooters, driving trucks, buses, and automobiles.
3.	Applies to All Projects and Phases	Recognize that opportunities of application to new and retrofit transportation projects are subject to the

Guiding Element		Description
		policy, including design, planning, construction, maintenance, and operations.
4.	Identifies Clear, Accountable Exceptions	Account for any appropriate exemptions due to legislative, topographical, technical, cost-benefit limitations or other exemptions that are specified and approved by a high-level official.
5.	Encourages Network Connectivity and Integration	Promote continuous integration of different modes in a comprehensive and connected street network.
Best Practices		
6.	Adoptable by All Agencies and Jurisdictions	Establish an approach that can be adopted and understood by all departments and other agencies that may be involved in the process.
7.	Utilizes Latest Design Guidelines	Draw from the use of the latest and best design criteria and guidelines while recognizing the need for flexibility to balance user needs.
8.	Acknowledges Context Sensitive Solutions	Consider the current and planned context, buildings, land use and transportation needs to recommend planning and design solutions that are to be adapted.
9.	Defines Performance Standards with Measurable Outcomes	Establishes qualitative or quantitative performance indicators to evaluate and monitor policy impacts over time.
Implementation		
10.	Proposes Specific Implementation Steps	List specific steps and identify a timeline for implementing Complete Streets.

The Complete Streets Policy for Kingsville is in adaptation of these 10 guiding elements.

Vision

The vision for Kingsville complete streets policy is that everyone can access a safe multi-modal transportation network that enhances community connections, increased efficiency of movement, and prioritizes sustainability.

Defines All Users and Modes

The roadway functions will differ depending on the road classification. Arterial roads are designed to move people and goods at larger volumes at higher speeds compared to local roads, which are designed for providing access to properties and destinations. Depending on the roadway function, the design will be planned for the appropriate users and modes. During the planning stage for new and updating existing roadways, all road users should be considered that align with the overall network for connectivity and space availability for on the roadway. Facilities should be free of barriers for pedestrians, cyclists, transit riders and drivers as well as children, seniors, and those with disabilities to ensure safety, reliability, and convenience.

Applies to All Projects and Phases

The Complete Streets approach will be considered at all stages of a project that may require physical changes to the road and for maintenance and operational updates. The Town will develop a process to integrate Complete Streets elements to allow for designs that accommodate all road users and for efficiency and cost saving purposes. Connectivity of facilities such as gaps and transition between facilities at intersections should be especially reviewed for retrofitting and upgrading existing roadways. For roadways intersecting with County Roads, Town staff will work with the County to implement a consistent policy element that carries seamlessly throughout the network. Roads constructed solely by developers will also adhere to this policy and be constructed with special attention to vulnerable road users.

Identifies Clear, Accountable Exceptions

The Complete Streets Policy is intended for all road and streetscape projects within the practical, technical, and financial boundaries. While the Complete Streets Policy will be considered for all relevant opportunities, there may be exceptions that may hinder its full applicability. The following exceptions will be granted with an approval from the Town:

- Where there may be negative impacts to the natural environment and topographical limitations exist
- The benefit or the expected outcome cannot be justified by the use and the overall implementation cost of Complete Streets elements
- When emergency vehicle services and maintenance operations are compromised; and
- The existing travel demand or the future needs are not supported.

Encourages Network Connectivity and Integration

The Complete Streets Policy encourages facility and network connection by providing seamless transitions between multiple travel modes. To support pedestrians, the policy encourages to plan for a continuous sidewalk network. To support cyclists, either for recreational or commuting, the policy encourages connection between on-road bike routes to trails as well as key destinations like schools, libraries, community centres and the Downtown. The end-of-trip infrastructure such as bike parking will be planned to support accessibility needs and to encourage higher non-motor vehicle trips at popular destinations and at transition points like Kingsville Arena Complex and Lakeside Park. Streetscaping elements should be designed and placed to prioritize the mobility of pedestrians, cyclists, wheelchairs, and scooters.

BEST PRACTICES

Adoptable by All Agencies and Jurisdictions

The Complete Streets Policy will be reviewed by the Town's departments to review impacts to their operations. External stakeholders will be informed and consulted, as appropriate.

Utilizes Latest Design Guidelines

The Town's policies, by-laws, standards, and guidelines will be used in combination with the latest industry's best practices when designing for Kingsville streets. The following are recommended design guidelines used in best practices in Canada:

- Transportation Association of Canada – Geometric Design Guide for Canadian Roads (2017)
- The Province of Ontario – Ontario Regulation 191/11 Integrated Accessibility Standards (2016)
- Transportation Association of Canada – Manual of Uniform Traffic Control Devices for Canada (2021)
- The Ministry of Transportation Ontario - Ontario Traffic Manual Book 15 Pedestrian Crossing Treatments (2016)
- The Ministry of Transportation Ontario - Ontario Traffic Manual Book 18 Cycling Facilities (2021)

Acknowledges Context Sensitive Solutions

The Complete Streets Policy notes that every project will have location-specific concerns and needs. With the same vision, to enhance mobility experience for all people, the recommendations may differ depending on the location. There are many factors that are considered: land use, demographics, topography, available width, travel demand, operating speed, road capacity, resident concerns, future plans, maintenance requirements and other geographical and technical circumstances. The following considerations should be followed: supported road users, potentially excluded road users, impacts to the parallel roadways, and road network impact after implementation.

Defines Performance Standards with Measurable Outcomes

Once a Complete Streets project is implemented, regular monitoring and evaluation by Town staff will be scheduled to gauge how well the street operates as a complete street. A set of evaluation criteria are used to understand future needs and the performance of complete streets elements. Suitable evaluation criteria are included in **Table 18**.

Table 18. Evaluation Criteria for a Complete Street

Network-wide	Project-specific
• Ratio of travel choice (mode split) • Number, type, and severity of any collisions • Total km of cycling facilities and trails by facility types • Total km of sidewalks built, widened, and repaired • Number of new projects with Complete Streets elements incorporated • Number of safety improvements projects • Number of AODA accommodations implemented and updated	• 85th percentile vehicle travel speed • Number of end-of-trip facilities installed • Number of streetscaping elements such as trees planted and streetlights installed • Number of safety improvements projects • Number of AODA accommodations implemented and updated

The Town will confirm measurable criteria that aligns with the goals and objectives of the CTMP, the Official Plan, and the overall strategic direction of community development. From there, thresholds for the criteria to monitor success and rate of implementation will be developed. An audit of existing infrastructure in queue for capital works, future road improvements being considered in capital budgets, and policy frameworks would provide an appropriate starting point for developing a measuring and monitoring tool.

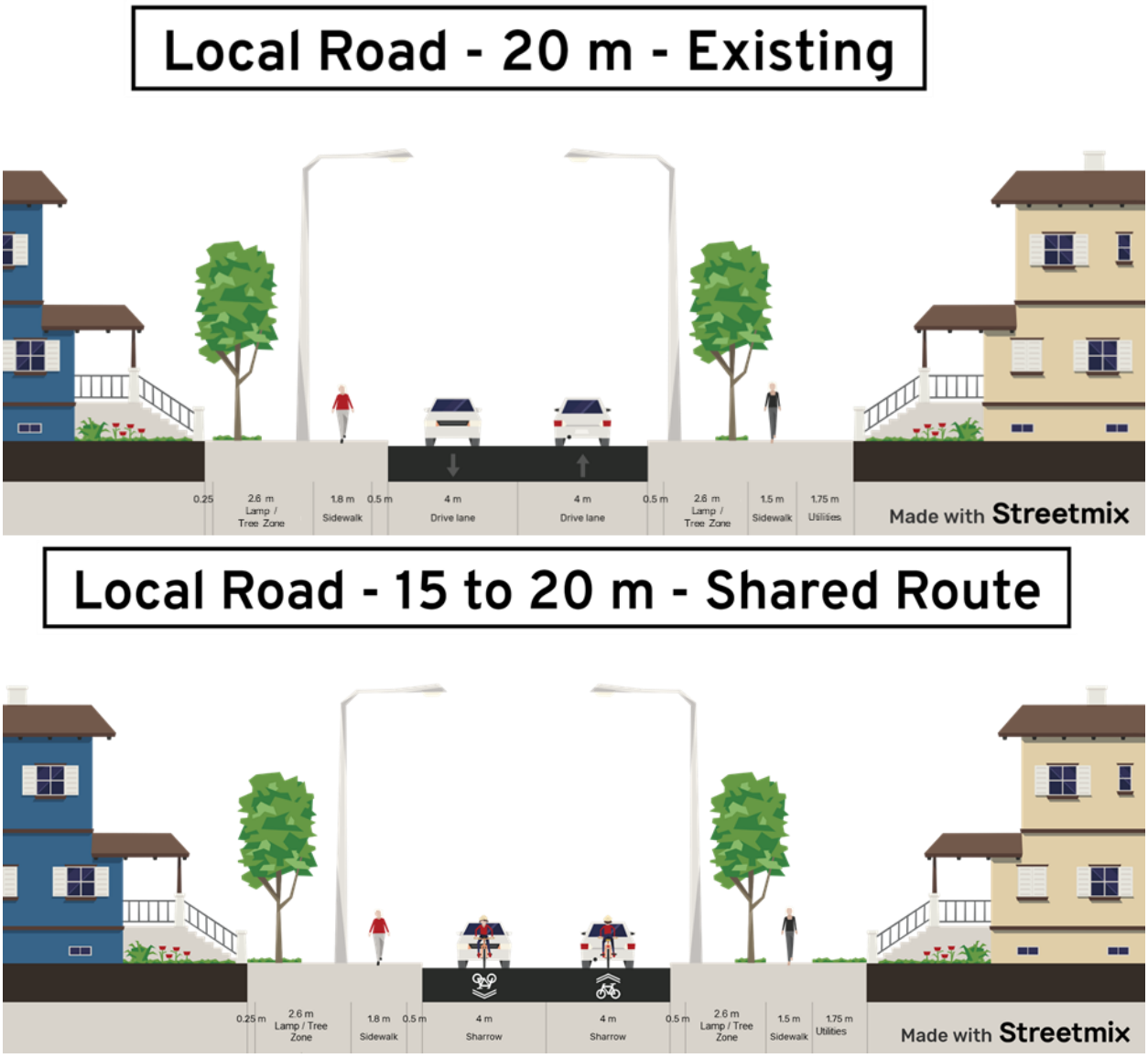
IMPLEMENTATION

Propose Specific Implementation Steps

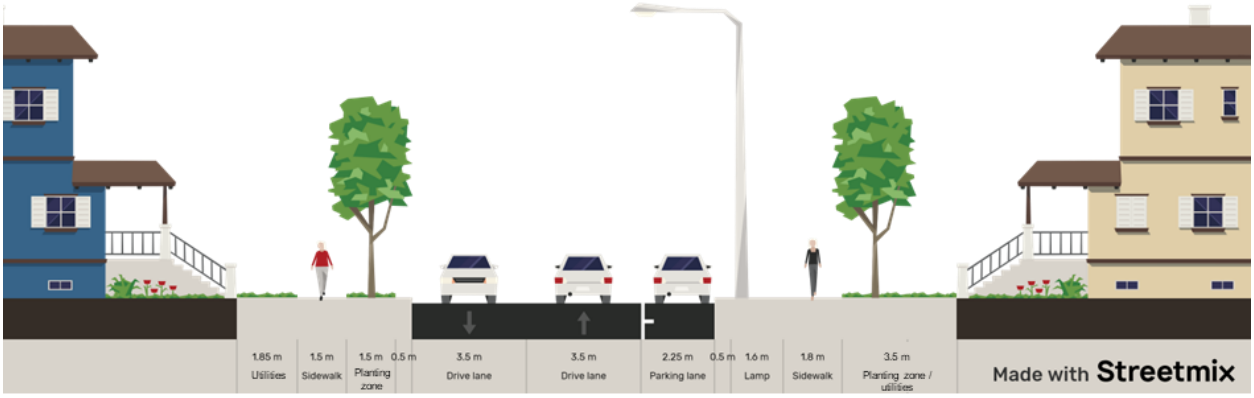
There are series of next steps to follow in order to achieve a full cycle of designing and implementing Complete Streets. The following action items are for the Town of Kingsville to consider and determine how to best move forward with promoting the application of its Complete Streets Policy:

1. Gather input from appropriate Town departments and staff to confirm and incorporate the Complete Streets Policy as part of its best practices
2. Consider developing an internal working committee of Town staff involved with the delivery, operations, and maintenance of the street network to help ensure construction and maintenance of complete streets
3. Consider existing design standards against the Complete Streets principles and determine where changes may be required to support with implementation. The CTMP provides proposed enhancements to the Town's design guidelines, as shown in **Figure 33**
4. Review ongoing projects and new projects to implement Complete Streets elements
5. Support and provide education opportunities for Town staff for staff development and training through workshops and seminars
6. Develop a measuring and monitoring tool to evaluate implementation of complete streets elements

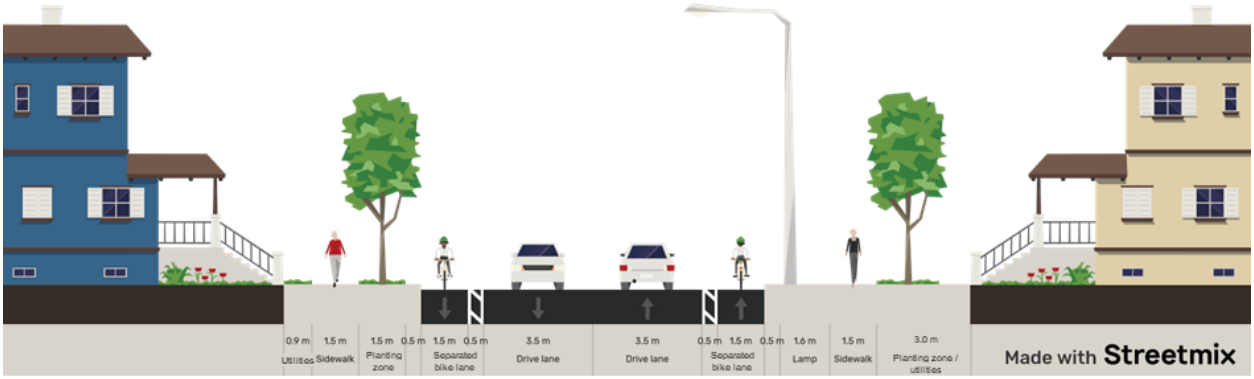
Figure 33. Proposed Cross-Sections and Implementation of the Complete Streets Policy Framework



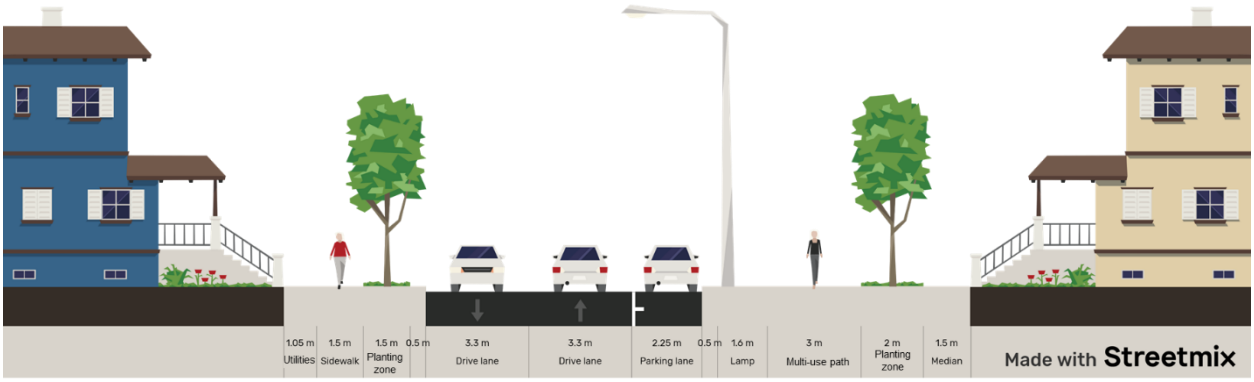
Collector Road - 22 m - Existing



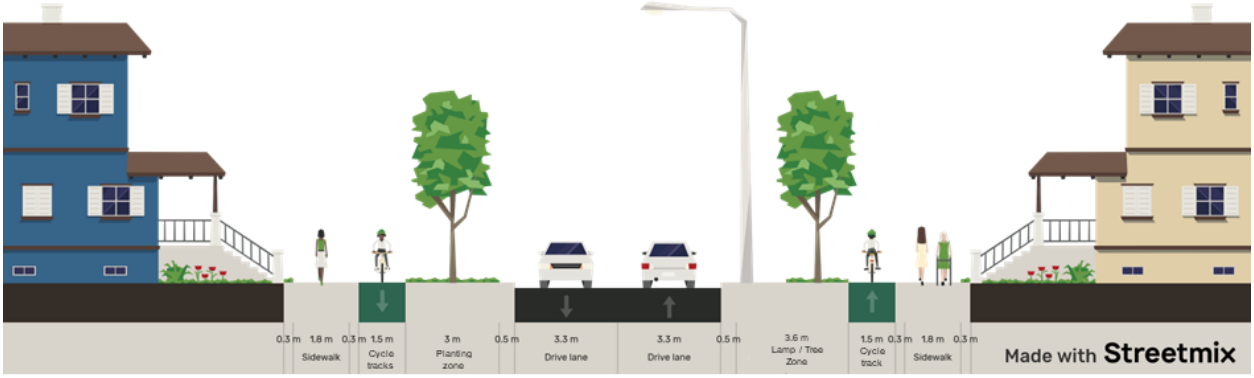
Collector Road - 22 m - Bike Lanes



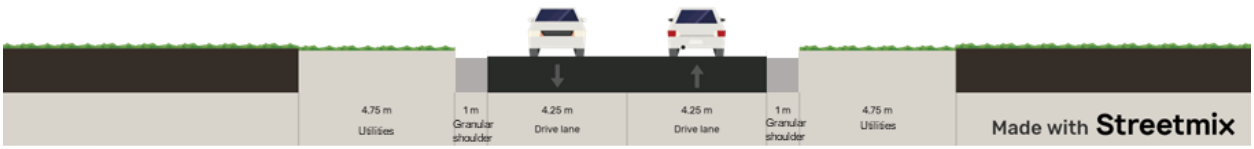
Collector Road - 22 m - MUP on One Side



Collector Road - 22 m - Cycle Tracks



Semi-Urban - 20 m - Existing



Semi-Urban - 20 m - Paved Shoulders

6.2 Connected and Autonomous Vehicles

Connected and Autonomous vehicles (AVs), also known as driverless cars, have the ability to reshape mobility in the Town of Kingsville. Introducing autonomous vehicles as part of the Town's mobility strategy is an opportunity to extend the liberties associated with personalized mobility to persons without driver's licenses, including but not limited to youth under age 16, people with cognitive or physical disabilities, and those who feel uncomfortable behind the wheel. From a safety perspective, autonomous vehicles also have the potential to reduce the 106,000 fatal and personal injury collisions that occur across Canada each year, 90% of which are caused by human error.

Maximizing vehicle usage by encouraging adoption of AVs reduces the need for parking. More recent studies suggest that the same levels of auto-mobility enjoyed today can theoretically be provided with only 10% of the vehicles on the road today if vehicles were held in common. Freeing up parking to such a degree presents opportunities for the municipality and private landowners to reallocate parking lanes, redevelop parking lots and densify the urban core in an effort to accommodate growth and achieve complete communities.

Looking into the future of mobility, the Town will look at automated vehicles in tandem with connected vehicles as a means to achieve the highest level of vehicle automation and vehicle safety. Connected Vehicle technology is designed to improve awareness of the driver with communication sensors, cameras, and radars. Connected vehicle technology use wireless forms of communication to enable flow of data that provide information to the driver, while allowing the vehicle to communicate with nearby drivers and the overall network.

As part of a future-ready mandate, the Town of Kingsville can introduce a series of actions and policies in support of introducing autonomous vehicles as a mobility option. They include:

- Undertaking a strategic study to examine the implications of driverless vehicle technology in Kingsville focusing on accessibility, safety, mobility, parking demand, transit, and land-use.
- **Implementation of smart signalization and a connected vehicle program**. Smart signals and connected vehicles are a feature where that connect a vehicle with other vehicles, transportation infrastructure such as signals, and its occupants. This feature can be accessed via smartphone apps that are setup at the start of a trip and will notify the occupant if the vehicle is approaching a red light or communicating sudden breaks to prevent collisions.
- **Align regulatory and legislative framework with** Transport Canada's Motor Vehicle Safety Act.
- **Strengthening Engagement and Collaboration** with all levels of government to obtain latest information and data to inform effective decision-making suited to the mobility needs of Kingsville.
- **Continuing to build on research to** improve municipal policy framework and regulatory processes as new information and technological developments become available.

7 Implementation Strategy: How Do We Make It Happen?

The implementation strategy is key to actioning the Comprehensive Transportation Master Plan. This section will outline the phasing strategy and high-level cost estimates for implementing the recommendations in this Plan. The implementation strategy should be used as a guide for the Town in constructing future transportation projects and as a guide to ensure that financial resources are realistically allocated over the next 15 years.

7.1 Implementation and Phasing

The CTMP recommended multi-modal infrastructure project are recommended for implementation in three phases:

- **Short-Term:** generally the next five years
- **Medium-Term:** generally six to 10 years
- **Long-Term:** generally 11 to 15 years

7.1.1 Active Transportation

Figure 34 maps the active transportation recommendations phased in the three horizons. A summary of lengths is provided in **Table 19**.

Table 19. Summary of the AT Facilities by Phase

Facility	Short-Term Length (KM)	Medium-Term Length (KM)	Long-Term Length (KM)	Total Length (KM)
Off-Road Trail	**0.1**	**0.5**	**0.0**	**0.6**
Multi-Use Path	**5.0**	**6.4**	**0.8**	**12.2**
Cycle Track	**1.8**	**0.0**	**0.0**	**1.8**
Separated Bike Lane	**0.2**	**0.0**	**0.0**	**0.2**
Buffered Paved Shoulder	**10.9**	**0.0**	**2.4**	**13.3**
Paved Shoulder	**32.9**	**2.3**	**8.6**	**43.8**
Signed Route	**13.9**	**1.1**	**1.5**	**16.5**
Total	**64.8**	**10.3**	**13.3**	**88.4**

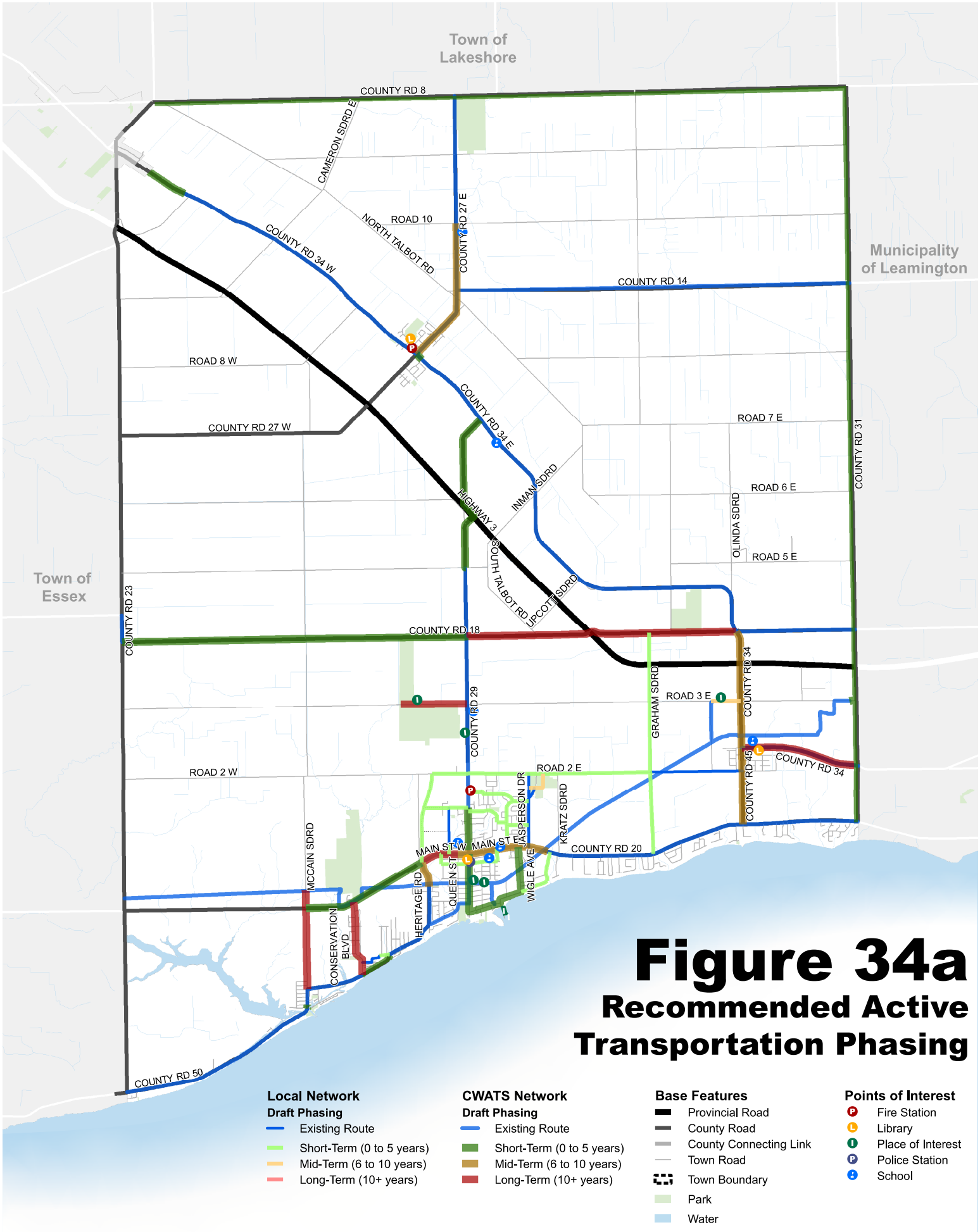


Figure 34a
Recommended Active Transportation Phasing

Local Network
Draft Phasing
- Existing Route
- Short-Term (0 to 5 years)
- Mid-Term (6 to 10 years)
- Long-Term (10+ years)

CWATS Network
Draft Phasing
- Existing Route
- Short-Term (0 to 5 years)
- Mid-Term (6 to 10 years)
- Long-Term (10+ years)

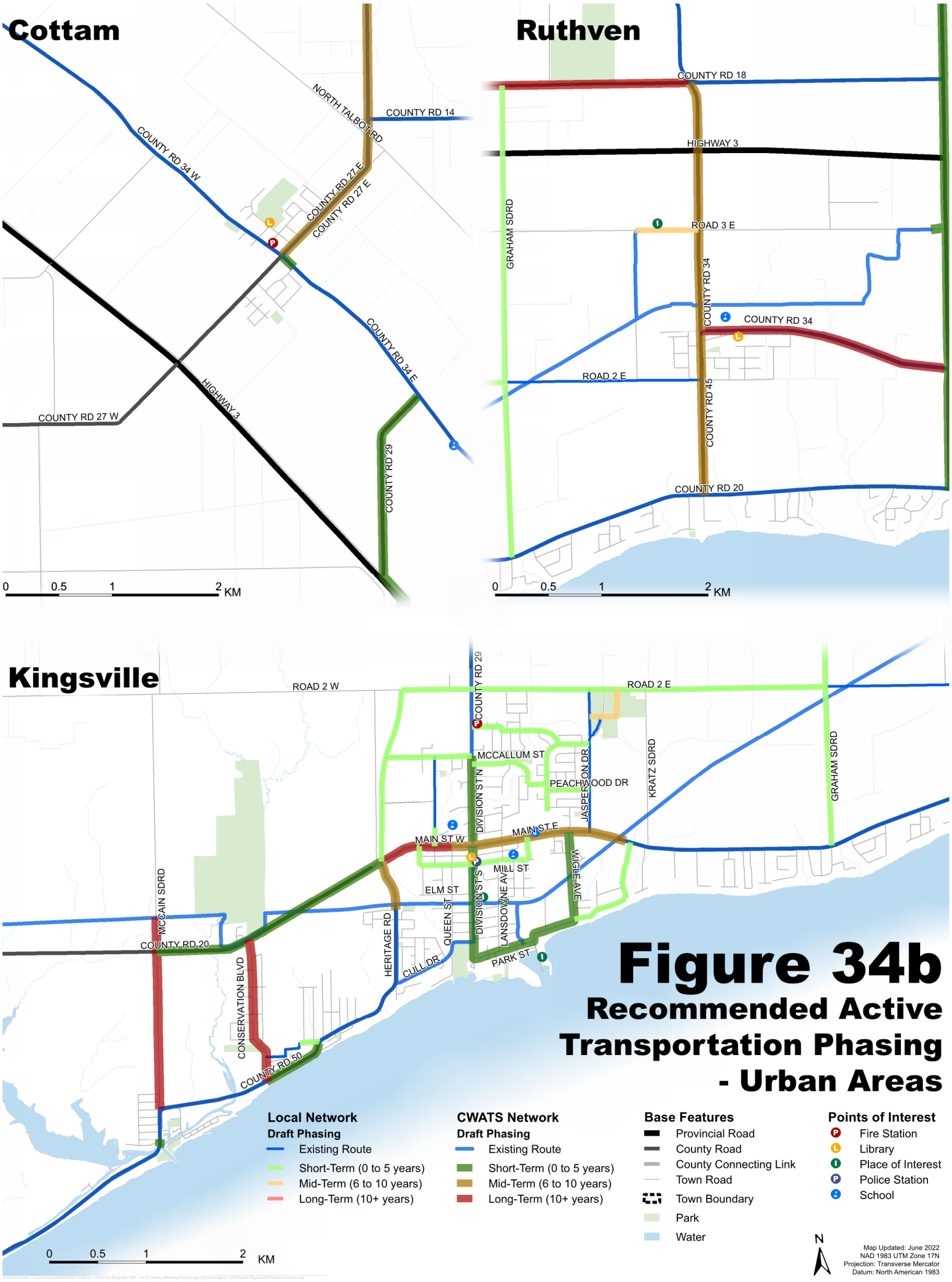
Base Features
- Provincial Road
- County Road
- County Connecting Link
- Town Road
- Town Boundary
- Park
- Water

Points of Interest
- Fire Station
- Library
- Place of Interest
- Police Station
- School

0 0.5 1 2 3 KM

N

Map Updated: June 2022
NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983


Cottam
NORTH TALBOT RD
COUNTY RD 14
COUNTY RD 34 W
COUNTY RD 27 E
COUNTY RD 27 E
COUNTY RD 34 E
HIGHWAY 3
COUNTY RD 27 W
COUNTY RD 29
0 0.5 1 2 KM
Ruthven
COUNTY RD 18
HIGHWAY 3
GRAHAM SDRD
ROAD 3 E
COUNTY RD 34
COUNTY RD 34
ROAD 2 E
COUNTY RD 45
COUNTY RD 20
0 0.5 1 2 KM
Kingsville
ROAD 2 W
ROAD 2 E
COUNTY RD 29
MCCALLUM ST
PEACHWOOD DR
JASPER ON DR
KRATZ SDRD
GRAHAM SDRD
DIVISION ST N
MAIN ST W
MAIN ST E
MILL ST
MCCAIN SDRD
ELM ST
DIVISION ST S
LANSDOWNE AVE
WIGLE AVE
QUEEN ST
HERITAGE RD
CULL DR
PARK ST
COUNTY RD 20
CONSERVATION BLVD
COUNTY RD 50
0 0.5 1 2 KM
Figure 34b
Recommended Active Transportation Phasing - Urban Areas
Local Network
Draft Phasing
Existing Route
Short-Term (0 to 5 years)
Mid-Term (6 to 10 years)
Long-Term (10+ years)
CWATS Network
Draft Phasing
Existing Route
Short-Term (0 to 5 years)
Mid-Term (6 to 10 years)
Long-Term (10+ years)
Base Features
Provincial Road
County Road
County Connecting Link
Town Road
Town Boundary
Park
Water
Points of Interest
Fire Station
Library
Place of Interest
Police Station
School
N
Map Updated: June 2022
NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983

7.1.2 Road Network

The recommended road network improvements have been distributed amongst the short, medium, and long-term phases. The road improvements are outlined in **Table 20**, and the intersection improvements are outlined in **Table 22**.

As seen in **Table 20**, majority of the road improvements are classified as "Reconstruction". The "Reconstruction" improvement type consists of both reconstruction and urbanization projects. The remaining projects are classified as "New Construction" improvement type, indicating a proposed new road. The intersection improvements in **Table 22** include upgrades such as implementation of a traffic signal and addition of a right-turn lane. The recommended road network phasing is illustrated on **Figure 35**.

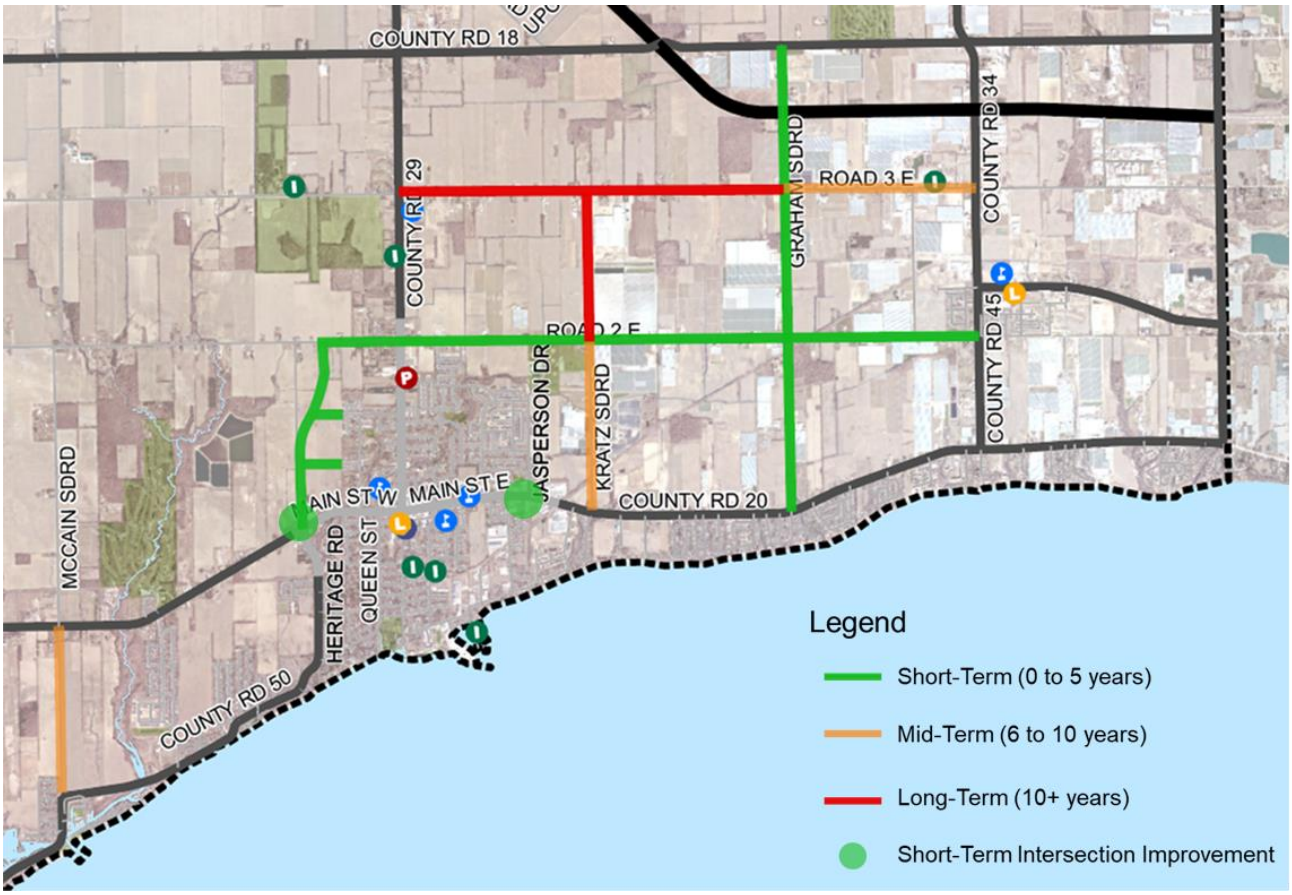
Table 20. Summary of Proposed Road Improvements

Road Segment	From	To	Improvement Type	Phase
Graham Sdrd	County Rd 18	County Rd 20	Reconstruction	Short-Term
Road 2 E	County Rd 45	County Rd 29	Reconstruction	Short-Term
Heritage Road Extension	Road 2 W	County Rd 20 W	New Construction	Short-Term
O'Halloran St	O'Halloran St	Heritage Road Extension	New Construction	Short-Term
Palmer Dr	Palmer Dr	Heritage Road Extension	New Construction	Short-Term
Kratz Rd	Road 2 E	County Rd 20 E	Reconstruction	Medium-Term
Road 2 W	County Rd 29	Heritage Road Extension	Reconstruction	Medium-Term
McCain Sdrd	Main St W	County Rd 50	Reconstruction	Medium-Term
Road 3 E	Graham Sdrd	County Rd 34	Reconstruction	Medium-Term
Road 3 E	County Rd 29	Graham Sdrd	Reconstruction	Long-Term
Kratz Rd	Road 3 E	Road 2 E	Reconstruction	Long-Term

Table 21. Summary of Proposed Intersection Improvements

Road 1	Road 2	Type	Phase
County Rd 20	Jasperson Dr	Intersection Improvements	Short-Term
Heritage Rd	Main St W	Intersection Improvements	Short-Term

Figure 35. Road Network Improvement Phasing



7.2 Costing

High level costs to construct active transportation and road network improvements are provided in this section. These costs will need to be reconfirmed in the detailed design stage as the projects move toward construction.

7.2.1 Active Transportation

High-level costs were developed for the multi-modal transportation network recommendations. These costs are based on unit prices in 2022 dollars. General assumptions for the costing of the network are:

- Unit prices are intended to be used for functional design purposes as they only include the installation of facilities and do not include additional studies and applicable taxes, which are considered additional;
- Costs reflect construction costs of active transportation routes and do not include the cost of design and approvals, property acquisitions, signal modifications, underground utility relocations (water, wastewater, stormwater), major roadside draining works, or costs associated with site-specific projects such as bridges, railway crossings, retaining walls, and stairways, unless otherwise noted;
- For new road constructions, active transportation costs have been included in the road section;
- Typical environmental conditions and topography is assumed; and
- Further detailed studies will also need to be completed in coordination with relevant agencies where required to ensure alignments meet required policies.

An estimated cost to implement the Town's active transportation network has been developed to help inform future decision making. It is recognized that the level of effort to implement an active transportation route will vary on a project-by-project basis, and some projects could require additional work compared to other projects included in cost estimates. The County has a cost sharing strategy as part of the CWATS network. The cost-sharing agreement between the Town of Kingsville and County of Essex as outlined in the 2012 CWATS Master Plan is summarized in **Table 22**.

Table 22. CWATS Cost Sharing Options

Table 7-3: Active Transportation Facilities – Implementation Budget Cost Sharing Options

Facility Type	County of Essex Share	Local Municipality Share	ERCA Share
On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road in a Rural Area	100%	0%	0%
On Street Bike Lanes / Paved Shoulder / Multi-use Trail with or without separation/ Context Sensitive Solution - on a County Road, in an Urban Area	40%	60%	0%
On Street Bike Lanes / Paved Shoulder / Multi-use Trail with or without separation/ Context Sensitive Solution - on a Local Road anywhere.	0%	100%	0%
Signed Routes - anywhere on the AT Network	100%	0%	0%
Sidewalks - anywhere on the AT Network	0%	100%	0%
Multi-Use Trails - outside of County and/or Local Right-of-way	0%	0%	100%
Multi-Use Trails - outside of County and/or Local Right-of-way and owned by Municipality	0%	100%	0%

Note: Cost sharing is applied to the design, construction and maintenance of facilities. However, the maintenance of multi-use trails on County Roads within urban areas is the responsibility of the host municipality.

Source: County of Essex County-Wide Active Transportation Master Plan (2012)

Table 23 outlines the estimated costs to build the Town's overall active transportation network and **Table 24** to **Table 26** identify the costs by horizon. The costs for facilities on new road constructions are included in **Section 7.2.2** with the road's costs.

Table 23. Summary of Kingsville Active Transportation by Facility Type

	Non-CWATS Network		CWATS Network Local Cost Share		Subtotal Non-CWATS Network + CWATS Network Local Cost Share	CWATS Network County Cost Share in Local Municipality	Total Non-CWATS Network + CWATS Network Local Cost Share + CWATS Network County Cost Share in Local Municipality	
Facility	KM	$	KM	$	$	$	KM	$
Off-Road Trail	0.6	$312,000	0.0	$ -	**$312,000**	$ -	**0.6**	**$312,000**
Multi-Use Path	5.0	$2,528,000	7.2	$2,202,000	**$4,730,000**	$1,467,000	**12.2**	**$6,197,000**
Cycle Track	1.8	$ -	0.0	$ -	**$ -**	$ -	**1.8**	**$ -**
Separated Bike Lane	0.0	$ -	0.2	$7,000	**$7,000**	$5,000	**0.2**	**$12,000**
Buffered Paved Shoulder	0.0	$ -	13.3	$204,000	**$204,000**	$2,444,000	**13.3**	**$2,648,000**
Paved Shoulder	4.4	$1,197,000	39.4	$1,343,000	**$2,540,000**	$6,899,000	**43.8**	**$9,439,000**
Signed Route	7.4	$13,000	9.1	$3,000	**$16,000**	$23,000	**16.5**	**$39,000**
Total	**19.2**	**$4,000,000**	**69.2**	**$3,759,000**	**$7,759,000**	**$10,838,000**	**88.4**	**$18,647,000**

Table 24. Summary of Short-Term Active Transportation by Facility Type

	Non-CWATS Network		CWATS Network Local Cost Share		Subtotal Non-CWATS Network + CWATS Network Local Cost Share	CWATS Network County Cost Share in Local Municipality	Total Non-CWATS Network + CWATS Network Local Cost Share + CWATS Network County Cost Share in Local Municipality	
Facility	KM	$	KM	$	$	$	KM	$
Off-Road Trail	0.1	$28,000	0.0	$ -	**$28,000**	$ -	**0.1**	**$28,000**
Multi-Use Path	4.4	$2,225,000	0.6	$206,000	**$2,431,000**	$137,000	**5.0**	**$2,568,000**
Cycle Track	1.8	$ -	0.0	$ -	**$ -**	$ -	**1.8**	**$ -**
Separated Bike Lane	0.0	$ -	0.2	$7,000	**$7,000**	$5,000	**0.2**	**$12,000**
Buffered Paved Shoulder	0.0	$ -	10.9	$112,000	**$112,000**	$1,732,000	**10.9**	**$1,844,000**
Paved Shoulder	4.4	$1,197,000	28.5	$490,000	**$1,687,000**	$4,800,000	**32.9**	**$6,487,000**
Signed Route	7.4	$ 13,000	6.5	$ -	**$13,000**	$21,000	**13.9**	**$34,000**
Total	**18.1**	**$3,463,000**	**46.7**	**$815,000**	**$4,278,000**	**$6,695,000**	**64.8**	**$10,973,000**

Table 25. Summary of Medium-Term Active Transportation by Facility Type

	Non-CWATS Network		CWATS Network Local Cost Share		Subtotal Non-CWATS Network + CWATS Network Local Cost Share	CWATS Network County Cost Share in Local Municipality	Total Non-CWATS Network + CWATS Network Local Cost Share + CWATS Network County Cost Share in Local Municipality	
Facility	KM	$	KM	$	$	$	KM	$
Off-Road Trail	0.5	$284,000	0.0	$ -	**$284,000**	$ -	**0.5**	**$284,000**
Multi-Use Path	0.6	$303,000	5.8	$1,763,000	**$2,066,000**	$1,175,000	**6.4**	**$3,241,000**
Cycle Track	0.0	$ -	0.0	$ -	**$ -**	$ -	**0.0**	**$ -**
Separated Bike Lane	0.0	$ -	0.0	$ -	**$ -**	$ -	**0.0**	**$ -**
Buffered Paved Shoulder	0.0	$ -	0.0	$ -	**$ -**	$ -	**0.0**	**$ -**
Paved Shoulder	0.0	$ -	2.3	$ -	**$ -**	$ 633,000	**2.3**	**$633,000**
Signed Route	0.0	$ -	1.1	$ -	**$ -**	$ 2,000	**1.1**	**$2,000**
Total	**1.1**	**$537,000**	**9.2**	**$1,763,000**	**$2,300,000**	**$1,810,000**	**10.3**	**$4,160,000**

Table 26. Summary of Long-Term Active Transportation by Facility Type

	Non-CWATS Network		CWATS Network Local Cost Share		Subtotal Non-CWATS Network + CWATS Network Local Cost Share	CWATS Network County Cost Share in Local Municipality	Total Non-CWATS Network + CWATS Network Local Cost Share + CWATS Network County Cost Share in Local Municipality	
Facility	KM	$	KM	$	$	$	KM	$
Off-Road Trail	0.0	$ -	0.0	$ -	**$ -**	$ -	**0.0**	**$ -**
Multi-Use Path	0.0	$ -	0.8	$233,000	**$233,000**	$155,000	**0.8**	**$388,000**
Cycle Track	0.0	$ -	0.0	$ -	**$ -**	$ -	**0.0**	**$ -**
Separated Bike Lane	0.0	$ -	0.0	$ -	**$ -**	$ -	**0.0**	**$ -**
Buffered Paved Shoulder	0.0	$ -	2.4	$92,000	**$92,000**	$712,000	**2.4**	**$804,000**
Paved Shoulder	0.0	$ -	8.6	$853,000	**$853,000**	$1,466,000	**8.6**	**$2,319,000**
Signed Route	0.0	$ -	1.5	$3,000	**$3,000**	$ -	**1.5**	**$3,000**
Total	**0.0**	**$ -**	**13.3**	**$1,181,000**	**$1,181,000**	**$2,333,000**	**13.3**	**$3,514,000**

7.2.2 Road Network

The estimated construction costs of road improvement projects outlined in **Section 7.1.2** are summarized in **Table 27** for the road segments and **Table 28** for the intersection improvements. These costs have been estimated based on typical unit construction costs for TMP work conducted in other municipalities in Ontario. Costs are generally inclusive of excavation, removals, and construction. Other costs such as property acquisition or design have not been included. The specific construction cost for each project should be confirmed prior to construction following the completion of the detailed design.

Table 27. Summary of Roadway Improvement Costs

Road Segment	From	To	Length (km)	AT Facility Cost ($)	Road Facility Cost ($)	Total Segment Cost ($)
Graham Sideroad	County Road 18	County Road 20	4.5	$ -	$11,700,000	$11,700,000
Road 2 E	County Road 45	County Road 29	5.5	$ -	$14,400,000	$14,400,000
Heritage Road Extension	Road 2 W	County Road 20 W	1.8	$1,000,000	$4,900,000	$5,900,000
O'Halloran Street	O'Halloran Street	Heritage Road Extension	0.4	$ -	$1,100,000	$1,200,000
Palmer Drive	Palmer Drive	Heritage Road Extension	0.2	$900	$600,000	$600,000
Kratz Road	Road 2 E	County Road 20 E	1.7	$ -	$4,400,000	$4,400,000
Road 2 W	County Road 29	Heritage Road Extension	1.0	$ -	$2,700,000	$2,700,000
McCain Sideroad	Main Street W	County Road 50	1.6	$ -	$4,200,000	$4,200,000
Road 3 E	Graham Sideroad	County Road 34	1.9	$ -	$4,900,000	$4,900,000
Road 3 E	County Road 29	Graham Sideroad	3.7	$ -	$9,600,000	$9,600,000
Kratz Rd	Road 3 E	Road 2 E	1.4	$ -	$3,700,000	$3,700,000
TOTAL			**24.0**	**$1,000,000**	**$62,300,000**	**$63,300,000**

Table 28. Summary of Intersection Improvement Costs

Road 1	Road 2	Cost ($)
County Rd 20	Jasperson Dr	$345,000
Heritage Rd	Main St W	$345,000
TOTAL		**$690,000**

7.3 Monitoring the Plan: How Do We Measure Progress?

Regular monitoring using performance indicators help measure the impact and success of the CTMP. These key indicators are based on the desired benefits and the alignment to the vision statement, goals, and objectives of the plan. Monitoring progress will help guide decision making and resource allocation as well as provide the opportunity to refine and update the CTMP in the future.

A data collection framework was developed to serve as a blueprint for monitoring the list of multi-modal indicators. **Table 29** identifies some of the key indicators that can be used. This list is separated by mode of transportation and includes the source of the data required and the frequency for data collection.

It is recommended that the progress be reviewed first to establish a baseline of historic performance and evaluate the available data, and then periodically reviewing the indicators to monitor changes over time.

Table 29. Multi-modal Data Collection Framework with Key Indicators

#	Mode	Indicator	Unit	Data Source	Frequency
1	Active Transportation	Total kilometres of on-road and off-road cycling facilities and sidewalks	KM	Town of Kingsville Essex County	Every 2 years
2	Active Transportation	Number of existing and new bicycle end-trip facilities (bike parking)	Unit Frequency	Town of Kingsville Essex County	Every 2 years
3	Transit	Ridership	Ridership	Town of Kingsville Essex County	Every year
4	Car	Total lane kilometres of new, repaved or newly-treated roads	Lane km	Town of Kingsville Essex County	Every 3 years
5	Car	Screenline analysis (volume/capacity)	A.M. peak volume / capacity	Town of Kingsville Essex County	Every 5 years
6	All modes	Number of collisions	Unit Frequency	Ontario Provincial Police	Every year
7	All modes	Modal split (commuting)	Percentage of trips	Town of Kingsville Essex County	Every 5 years

8 Summary of Recommendations: What Did We Find?

8.1 Summary of Recommendations

8.1.1 Active Transportation

To enhance the walking and cycling network to accommodate future growth, the Town should adopt the following recommendations:

1. Adopt in principle the proposed active transportation network illustrated in **Figure 22**;
2. Continue coordination with the County of Essex to implement the CWATS Master Plan recommendations and to continue to build partnerships with local advocacy groups;
3. Reference should be made to OTM Book 18: Cycling Facilities and OTM Book 15: Pedestrian Crossings to inform and guide the design and implementation of cycling and in-boulevard facilities, and future pedestrian crossings, respectively;
4. Apply the network phasing and implementation strategy recommended in the CTMP for building out the active transportation network, and incorporate as part of the annual capital budget review process;
5. Continue to identify new opportunities to implement AT routes / facilities in conjunction with capital infrastructure projects to achieve economies of scale and cost savings;
6. Consider providing sidewalks on at least one side of all local roads and on both sides for all collector and arterial roads in the urban areas;
7. Integrate AT with transit by providing connections to future transit stops and provide AT-supportive infrastructure, such as bike parking at or in close proximity to transit stops;
8. Continue to work through the CWATS Committee, the Windsor-Essex County Health Unit, and other partners to implement a supportive Education and Outreach Strategy;

8.1.2 Transit

The following recommendations are presented for transit to address future growth in the Town:

1. Liaise with the Municipality of Leamington to determine if the Leamington to Windsor Route 42 grant can be extended, with the route altered to travel on Main Street East and Division Road North to provide better access to Kingsville.
2. Continue to support the transit services provided by South Essex Community Council.
3. Consider partnering with taxi services or ride hail services (if available) to provide on-demand transit.

8.1.3 Roads

Road network improvements recommended to address future growth include:

1. New roadway link (Heritage Road extension) connecting Main Street W and Road 2 W which runs parallel to Division Road and provides alternative to the northbound and eastbound from Main Street W and Heritage Road intersection traffic and Main Street E and Kratz Road intersection traffic to bypass Mains Street and Division Road downtown traffic.
2. Signalization of Main Street W and Heritage Road intersection.
3. Removal of push button pedestrian crossing signal to the east of Santos Drive on Main Street and signalization of the Main Street and Santos Drive intersection.
4. Provision of Westbound right turn lane at Main Street and Jasperson Drive.
5. Urbanization of Road 2 from proposed Heritage Road connection to County Road 45.
6. Reconstruction of Kratz Road from Main Street (County Road 20) to Road 2 E to strengthen the pavement.
7. Construction of a new extension of Kratz Road from Road 2 E to Road 3 E.
8. Reconstruction of Graham Side Road from Seacliff Drive (County Road 20) to County Road 18 to strengthen the pavement.
9. Reconstruction of Road 3 from County Road 29 to County Road 34 to strengthen the pavement.
10. Reconstruction of McCain Side Road from County Road 50 to County Road 20 to strengthen the pavement.
11. Signal optimization and coordination of the signalized intersections along Main Street between Heritage Road and Kingsville Marketplace Driveway.
12. Suggest truck routes for the trucks accessing the port. The trucks accessing the port from the east of Kingsville from County Road 20 could be routed through Wigle Avenue, whereas the trucks from the west of Kingsville could be routed from Division Street (existing route) and the alternative route through Harold Cull Drive and Heritage Road.
13. Consider opportunities for access management along Main Street East between the Chrysler Greenway Trail and Jasperson Drive.
14. If new development occurs:
    a. Extend Jasperson Drive south to provide rear access to properties along Main Street East; and
    b. Extend Applewood Road east to Kratz Road, and provide a road connection from the Applewood Road extension to the Kingsville Marketplace shopping centre.

8.1.4 Goods Movement

The goods movement recommendations are summarized as:

1. Improve Road 2, Road 3, Kratz Road, and Graham Sideroad to create truck by-pass options for Main Street.
2. Construct the extension of Heritage Drive between Main Street West and Road 2 West to complete the by-pass
3. Suggest Wigle Street as the primary access to the port, especially for truck traffic to or from the east; and
4. If truck traffic continues to be a problem in the downtown, explore a route to and from the west that uses Harold Cull Drive, recognizing that improvements might need to be made at intersections on this route to facilitate truck turning movements.