

Final Report

Summary Report

City of Windsor
Truck Route Study

Date

July 14, 2025

Prepared for

The City of Windsor

Prepared by

Arcadis Professional Services
(Canada) Inc.

in association with
David Kriger Consultants Inc.
and GLPi



 **ARCADIS**

Table of Contents

1.	Introduction	1
1.1.	Addressing Windsor’s Unique Goods Movement Challenges	1
1.2.	About This Document	2
1.3.	Study Process Overview	3
1.4.	Windsor’s Current Truck Route Network	4
2.	Factors Driving Windsor Trucking Activity	7
2.1.	Population in Windsor and Area	7
2.2.	Windsor’s Economy and Industry	7
2.2.1.	Major Industries and Trucking Activity Generators	8
3.	Strategic Framework	12
3.1.	Truck Route Network Principles	12
3.2.	Truck Route Network Objectives and Criteria	14
4.	Engagement	15
4.1.	Engagement Activities	15
4.2.	Community and Stakeholder Input	16
5.	Truck Route Network Development Summary	18
5.1.	Step 1: Select Candidate Road Segments for Assessment	18
5.2.	Step 2: Evaluate Individual Candidate Road Segments	18
5.3.	Step 3: Create a Draft Truck Route Network	23
5.3.1.	Draft Option 1: Simple Network	24
5.3.2.	Draft Option 2: Dual-Tier Network	24
5.3.3.	Preferred Network Selection	25
5.4.	Step 4: Address Network Issues and Apply Mitigations	25
5.5.	Step 5: Finalize the Recommended Truck Route Network	25
6.	Truck Route Network Refinement and Phasing	28
6.1.	Secondary Route / Local Delivery Route Specification	28
6.1.1.	Closely Spaced Axles as “Single Axles”	30
6.2.	Long-Term Truck Route Network	31

6.3.	Near-Term Truck Route Network	31
7.	Network Challenges and Mitigating Measures	38
7.1.	Reducing the Potential Negative Impacts of Truck Traffic	38
7.1.1.	Increasing Pedestrian Crossing Safety	38
7.1.2.	Increased Separation between Motorized Traffic and Cyclists and/or Pedestrians	39
7.2.	Addressing Truck Route Operational Challenges	41
7.3.	Identified Issues/Concerns on Newly Designated Truck Route Segments	43
7.4.	Identified Issues/Concerns for Current Truck Route Network Roadways	45
7.5.	Longer-Term Improvements for Consideration	47
8.	Truck Route Network Implementation	48
8.1.	Assess for and Implement Mitigating Measures	48
8.2.	Signage	48
8.2.1.	Confirm Local Delivery Route Signage	48
8.2.2.	Road Signage Plan	49
8.3.	Traffic By-Law Update	49
8.4.	Education and Enforcement	51
8.5.	Monitoring	52
9.	Supporting Strategies	54
9.1.	Multimodal Network Planning and Operations	54
9.1.1.	Functional Road Classification Review	54
9.1.2.	Truck Route Prioritization in Road Maintenance	57
9.1.3.	Truck Routes in Complete Streets Guidance	57
9.1.4.	Signal Optimization and Coordination	60
9.2.	Truck Parking	61
9.2.1.	Parking Provision	61
9.3.	Reducing Environmental Impacts	62
9.3.1.	Parked Vehicle Idling	62
9.4.	Monitoring Truck Traffic and Impacts	62

Final Report
SUMMARY REPORT

9.4.1. Data Collection	62
9.4.2. Gordie Howe International Bridge Traffic Impacts	63
9.5. Communications	64
9.5.1. Communicating Temporary Network Changes	64
9.5.2. Ongoing Stakeholder and Public Engagement	64
9.6. Planning for the Future	65
9.6.1. Planning for Long Combination Vehicles	65
9.6.2. Process for Updating the Truck Route Network	66
9.6.3. Planning for Truck Routes and Bicycle Routes	66
9.6.4. Integrating Trucks into Designs for Planned Road Improvements	67
Appendix A: Refinements to Preferred Network	A.1
Appendix B: Traffic By-Law Amendments	B.1
Appendix C: Designated Truck Routes Listing	C.1

1. Introduction

Truck transportation is a critical component to economic development in the City of Windsor, as well as to meeting the daily needs of its residents. It is important to ensure that trucks can move efficiently and safely to support economic activity and provide essential and valuable services, while also minimizing or managing the negative impacts of truck traffic to help provide a good quality of life for the community.

The City of Windsor (“the City”) Truck Route Study was conducted to review and update the municipal truck route network in light of the changing context, needs and priorities in Windsor.

1.1. Addressing Windsor’s Unique Goods Movement Challenges

Windsor is a vibrant and growing urban municipality. It is home to several unique trucking activity generators that increase both the need for and challenges of managing truck traffic. These include two international border crossings: the Ambassador Bridge, which is the busiest Canada-US international border crossing for trucks, and the Detroit-Windsor Tunnel. These crossings funnel significant long-haul and local truck volumes through the city centre. The Gordie Howe International Bridge (GHIB), scheduled to open in late 2025, should alleviate some of the truck traffic through the city centre, although it will also change existing truck traffic patterns.

Major automotive manufacturers as well as trucking logistics firms are also interspersed within or adjacent to Windsor’s urban realm. These generate significant cross-border truck traffic as well as local flows between facilities and suppliers and traffic to south central Ontario.

As in all urban areas, truck traffic also supports general commercial and economic activity and the valuable services that support quality of life in the city. All told, trucks contribute to Windsor’s economic well-being and competitiveness.

Given community concerns, recent and planned industrial and residential development and the pending opening of the GHIB, there is a need to ensure that the City’s truck route network appropriately serves both current and future conditions.

In developing an updated truck route network for the City of Windsor, the study must address the varied and often competing perspectives of the private sector, residential communities and other citizen groups with respect to goods movement and heavy vehicle traffic, while also aligning with the City's other transportation, land use, climate emergency, economic development, safety and fiscal goals.

1.2. About This Document

This report summarizes the process and recommendations of the Truck Route Study. Further information related to background context, needs, opportunities, technical analysis, network development, and engagement activities and inputs are available in three companion reports:

- Phase 1: Needs and Opportunities;
- Phase 2: Truck Route Network Development; and
- Engagement Summary.

As the culmination of the companion reports listed above, this Truck Route Study Summary document provides a summary of the first two study phases, presents the final recommended truck route network, outlines truck route implementation steps, and provides a series of strategies to support the movement of trucks alongside the priorities of the City and its residents and communities.

Following this introductory section, which also provides an over of the study process and of the City's current truck route network, this report is structured as follows:

- Chapter 2 provides a brief overview of **factors driving Windsor's trucking activity**;
- Chapter 3 outlines the **strategic framework** developed for and used throughout this study;
- Chapter 4 outlines the **engagement** that was conducted with stakeholders and the public throughout the Truck Route Study;
- Chapter 5 summarizes the **truck route network development process** leading to the **recommended truck route network**;
- Chapter 6 describes **network refinement and phasing**;
- Chapter 7 outlines location-specific **mitigating measures** or improvements to help manage the truck-related impacts on other road users, or to

respond to truck route operational challenges;

- Chapter 8 outlines **truck route implementation** steps; and
- Chapter 9 describes the **supporting strategies** to complement the truck route network and enhance its effectiveness.

1.3. Study Process Overview

The City of Windsor Truck Route Study includes the following consecutive phases:

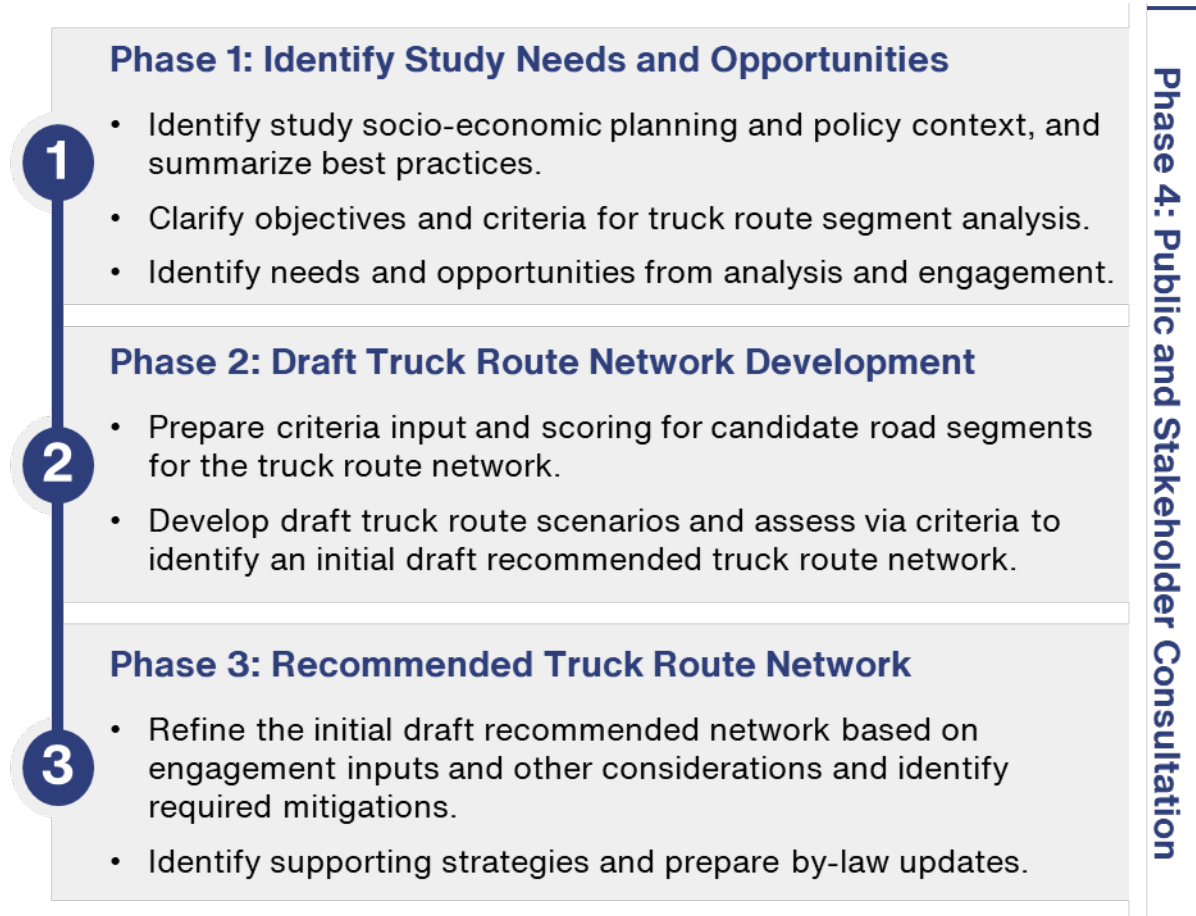
- Phase 1: Identify Study Needs and Opportunities;
- Phase 2: Draft Truck Route Network Development; and
- Phase 3: Recommended Truck Route Network.

Phase 4: Consultation and Communications was undertaken concurrently with the first three phases. Two rounds of engagement, corresponding to Phase 1 and Phase 2 of the Truck Route Study, feature customized consultation and engagement activities. Exhibit 1.1 summarizes these study phases.

The Truck Route Study was initiated in July 2023, with completion anticipated by Summer 2025.

Recommendations of the Truck Route Study reflect changes within the existing roadway rights-of-way and are Environmental Assessment (EA)-Exempt. More-extensive changes would require an EA study. The study process was, however, informed by the Municipal Class Environmental Assessment (MCEA) process.

Exhibit 1.1: Study Process Overview



1.4. Windsor’s Current Truck Route Network

Defining truck route networks is common practice among Canadian municipalities to guide and manage trucking activity, providing truck drivers with a cohesive network of suitable roads for accessing freight generators while avoiding the infiltration of truck through traffic into residential and other sensitive areas.

A map of the current City of Windsor truck route network under review is shown as Exhibit 1.2. The City currently has a designated 251-kilometre (centre-line) truck route network that spans much of the municipality.

Windsor’s truck route network is governed by Part IX of Traffic By-law 9148 (1987, last amended in January 2018)¹, which defines the truck route network, subject to

¹ City of Windsor. <<https://www.citywindsor.ca/cityhall/By-laws-Online/Documents/9148-traffic-by-law.pdf>> Accessed September 2023.

seasonal reduced load limits. In the by-law, “trucks” that must use the truck route network are those vehicles with 4,500 kg or more gross vehicle weight or registered gross weight – this is the truck route weight threshold used by most Canadian municipalities.

The Windsor traffic by-law states the following:

- No truck shall be operated on any highway in the City of Windsor other than the highways set out in its truck route network “when properly worded or marked signs have been erected and are on display”.
- Trucks are allowed to use other roads only as the shortest access and egress between their origin/destination and the designated truck route.
- The only roads trucks are allowed to park along are designated truck route roads.

Vehicles exempted from being required to use the truck route network are as follows:

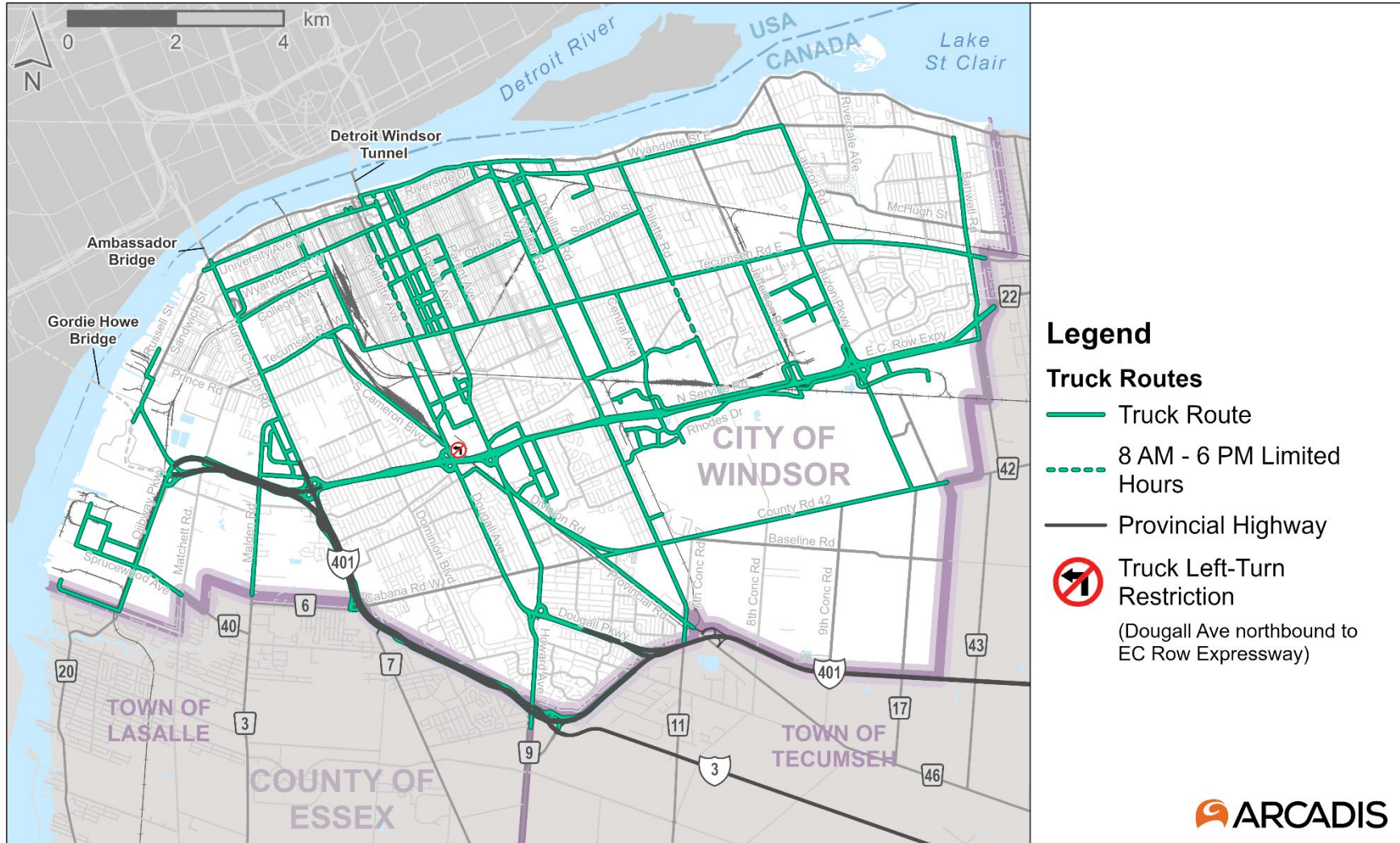
- City of Windsor vehicles;
- emergency vehicles;
- public transit vehicles;
- coal and oil trucks on delivery;
- privately owned commercial vehicles proceed to and from the residence of the owners; and
- any vehicles taking the most direct route between the truck route network and the pick-up/drop-off or service location.

Most truck routes are available at all times, with truck traffic allowable only between 8 a.m. and 6 p.m. on a small number of designated truck route segments.

The truck route network also includes a left-turn restriction applicable only to trucks (Dougall Avenue northbound to EC Row Expressway).

- As noted in the by-law, the truck route network must have properly worded and marked signs on display to be in effect. (Signage is discussed in Section 8.1.)

Exhibit 1.2: Existing City of Windsor Truck Route Network



2. Factors Driving Windsor Trucking Activity

Key drivers of trucking activity in the City of Windsor include the need to move goods between local and nearby businesses and to and from broader markets, and the local population's needs for consumer goods and provision of services.

The Windsor Truck Route Study's Phase 1 Needs and Opportunities report provides valuable context about the city's socio-economic context, its economy and industry, and its City's broader and multi-modal transportation network connectivity and characteristics. A few selected highlights are provided below.

2.1. Population in Windsor and Area

The City of Windsor is a single-tier municipality and major international border city. With a population of 229,660 (2021 Census), Windsor is the cultural and economic engine of the broader Windsor-Essex region. The Essex Census Division, comprising the City of Windsor and County of Essex, is projected to grow from a combined population of 422,860 in 2021 to 594,160 in 2046², an increase of over 40% over the 25-year period.

Directly across the Detroit River from Windsor is the City of Detroit, Michigan, home to 620,376 people in the city and 4,345,761 people in the metropolitan region (2022 US Census Bureau). Together, the Detroit-Windsor area is the largest cross-border conurbation in North America, and serves as a critical commercial goods movement gateway.

2.2. Windsor's Economy and Industry

Windsor's strategic location on the Canada-United States border and proximity to major markets has positioned the city as an important transportation hub and strong manufacturing centre. The Windsor-Detroit truck crossings carry in total about one-third of Canada's total value in road trade with the United States³ -

² Government of Ontario. Population Projections. <<https://data.ontario.ca/dataset/population-projections>>. Accessed September 2023.

³ Government of Ontario (2015). *Highway 401 Section of the New Rt. Hon. Herb Grey Parkway Now Complete*. <<https://news.ontario.ca/en/release/35009/highway-401-section-of-the-new-rt-hon-herb-gray-parkway-now-complete>> Accessed September 2023

these include Ambassador Bridge, the Detroit-Windsor Tunnel, and until recently the Detroit-Windsor Truck Ferry.

Windsor has grown to house the largest automotive cluster in Canada, including supporting manufacturing operations for Detroit factories. Other important economic generators in Windsor include tourism attractions, most notably Caesars Windsor, a major employer and one of the largest casinos in Canada.

It is especially important that the truck route network provide connectivity to the City's industrial and commercial land use zoning designations, shown in Exhibit 2.1. Among the major employment areas are the following:

- In the west end of Windsor, the industrial area and Windsor Port in the Ojibway and Sandwich planning districts, including the West Windsor Dock;
- The lands north of Windsor International Airport and flanking either side of the CN and CPKC rail corridor, comprising the planning districts of Walker Farm, Fontainbleu and Forest Glade;
- Underdeveloped agricultural lands at the southern periphery of Windsor, known as Sandwich South and previously annexed by the City in 2003 from the Town of Tecumseh, which are now designated as a Future Employment Area as per the City of Windsor Official Plan.

Regional commercial centres, business parks and institutional areas are also key generators of truck traffic bringing consumer-based goods and supporting service provision, and are also important areas to consider in truck route network development.

2.2.1. Major Industries and Trucking Activity Generators

Major generators of trucking activity are distributed across various employment areas across the city. The auto manufacturing industry represents the primary sector for truck traffic, while other manufacturing and services also play key roles.

Of particular note, Windsor's position as Canada's automotive capital is further supported by the new Stellantis-LG Energy Solution electric vehicle (EV) lithium-ion battery plant, now called NextStar Energy. Anticipated to generate 2,500 jobs

when it opens in 2024⁴, the new manufacturing facility is currently under construction southwest of the EC Row Expressway and Banwell Road.

Exhibit 2.2 shows the locations of 13 of the most significant trucking activity generators in Windsor and vicinity. Most of these locations are also among the largest employers based on number of employees⁵. The locations noted are as follows:

1. **Stellantis** – automotive assembly, 4,600 employees;
2. **NextStar Energy** – electric vehicle battery plant, 2,500 employees (future);
3. **Hiram Walker and Sons** – distillery, 430 employees;
4. **Ford Motor Company** – auto engine manufacturing, 1,900 employees;
5. **AP Plasman Corp. (Build a Mold)** – plastics product manufacturing, 950 employees;
6. **Southwestern Sales Corporation Ltd.** – East Windsor Dock and West Windsor Dock (two locations) – bulk aggregates and shipping services – less than 100 employees;
7. **Integram Windsor Seating** – auto parts manufacturing, 900 employees;
8. **Valiant TMS** – intelligent machinery manufacturing, 900 employees;
9. **TRQSS Inc** – auto part manufacturing, 800 employees;
10. **Anchor Danly** – steel fabricator, 800 employees;
11. **Vistaprint** – printing services, 760 employees (Municipality of Lakeshore);
12. **NARMCO Group** – auto parts manufacturing, 600 employees; and
13. **Catalent Inc.** – pharma manufacturing, 500 employees.

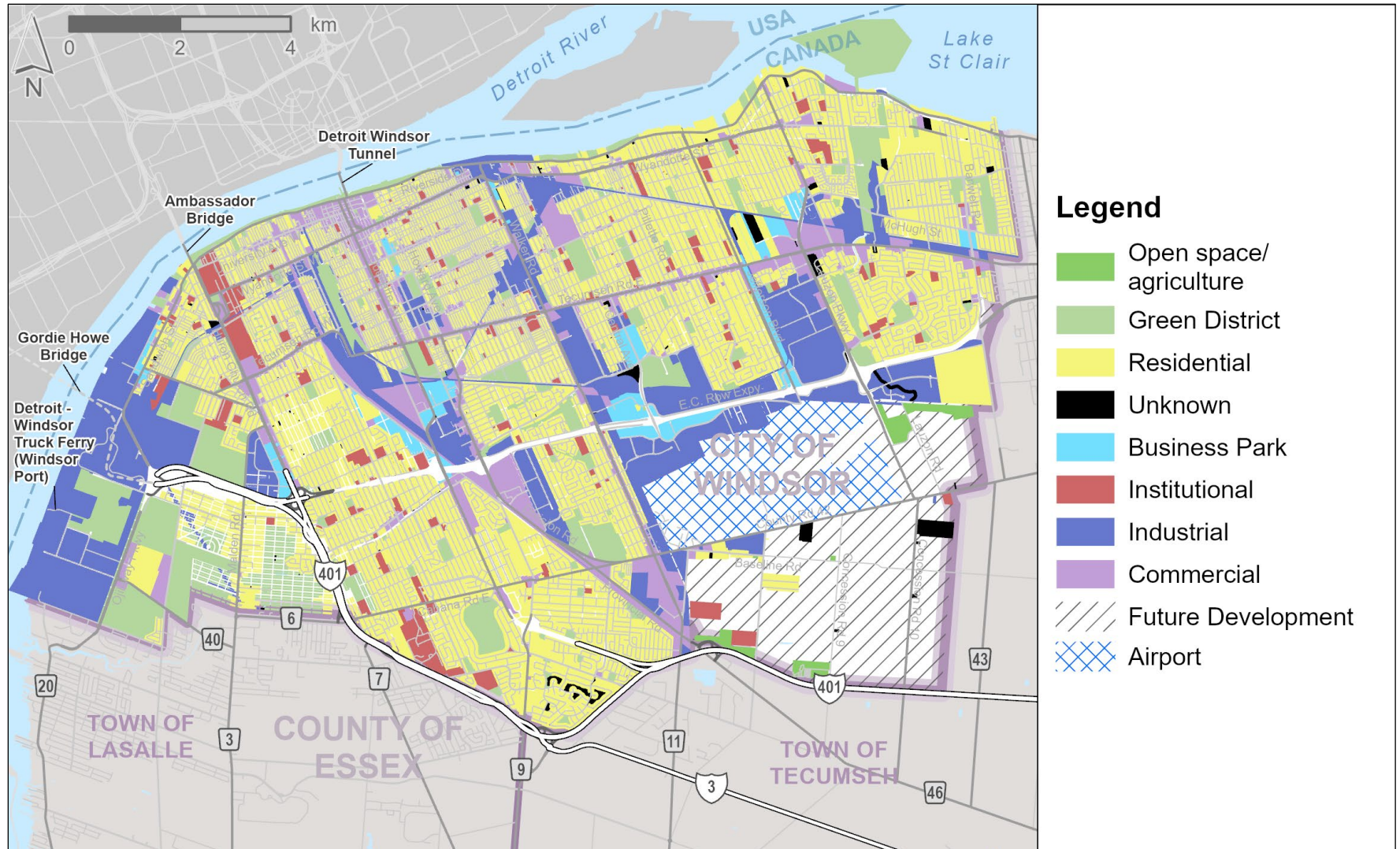
Caesars Windsor is not shown in the exhibit. While it is one of the largest single employers in Windsor (2,100 employees), it does not generate trucking activity, with the exception of consumer-based goods and service provision.

Exhibit 2.2 also shows the locations of four City public works facilities that also generate trucking activity.

⁴ CBC News (2023). *New deal for Windsor EV battery plant worth \$15B in tax breaks, Ontario minister says.* <<https://www.cbc.ca/news/canada/windsor/deal-struck-battery-plant-windsor-stellantis-ig-solution-1.6861649>> Accessed September 2023.

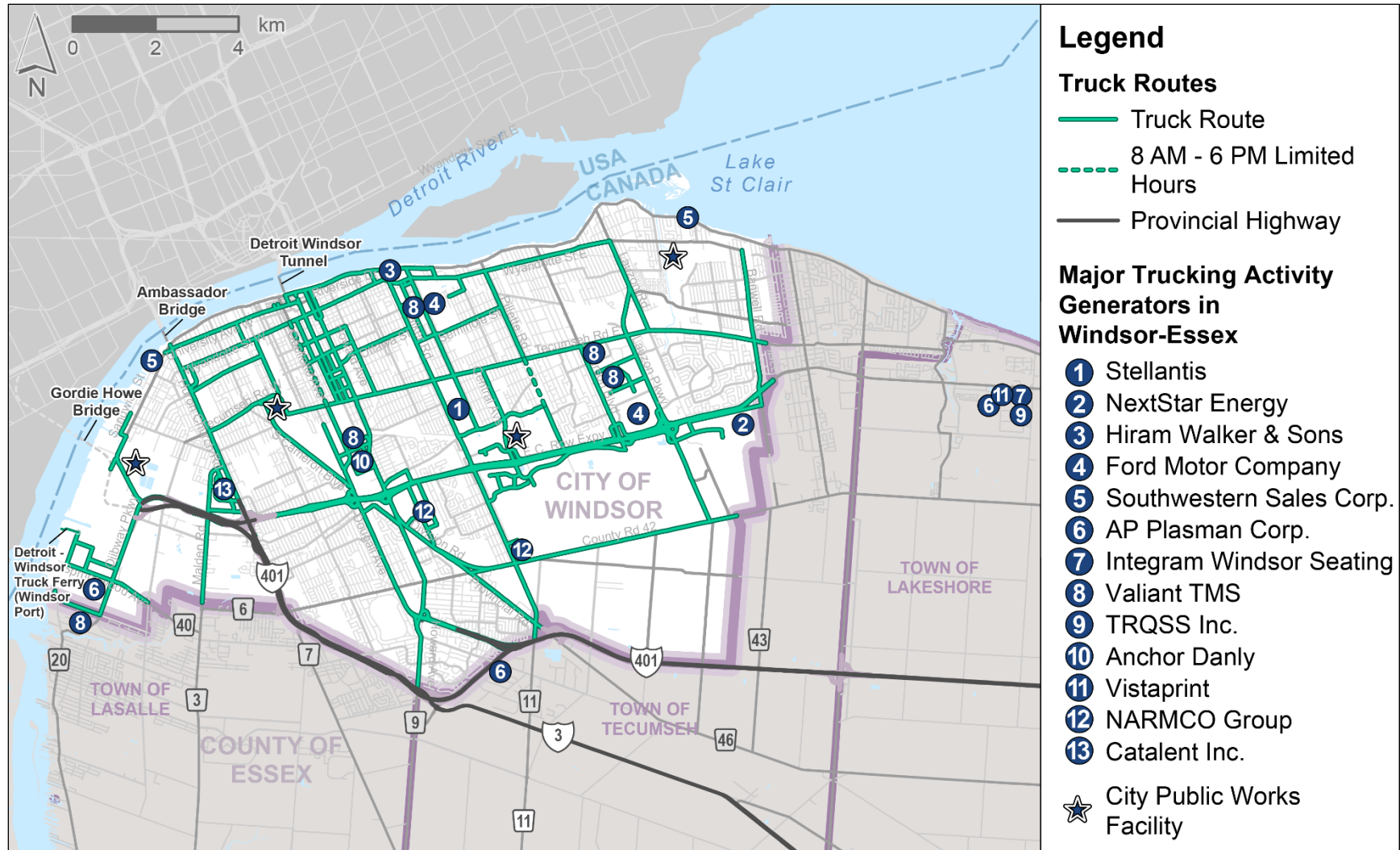
⁵ Invest Windsor Essex (2022). *Top Employers.* <<https://www.investwindsor-essex.com/en/site-selection-and-data/top-employers.aspx>> Accessed September 2023.

Exhibit 2.1: City of Windsor Land Use Map



Map data source: City of Windsor (land parcel data retrieved July 2023 from Windsor's Open Data Catalogue)

Exhibit 2.2: Major Trucking Activity Generators in Windsor-Essex



Construction is also underway of the new Windsor Amazon Fulfillment Centre, a 300,000 square foot facility located at Central Avenue and Plymouth Drive. The facility was expected open in 2024 and create 300 permanent full- and part-time jobs⁶. It opened in fall 2025 with approximately 70 employees⁷.

Immediately south of the City of Windsor boundary between Highways 3 and 401, the Oldcastle business park in the Town of Tecumseh is a significant industrial/employment zone and is home to busy commercial truck stops/service centres.

A few kilometres east of Windsor, the Patillo/Advance planning area in the Municipality of Lakeshore is also a major industrial/employment zone connected to the truck route network in Windsor via County Road 22/EC Row Expressway.

3. Strategic Framework

The strategic framework for the study includes two types of elements: principles and objectives. These are outlined below.

This framework was developed in Phase 1 of the study and presented in draft to the public and stakeholders for review and input as part of the first round of engagement.

3.1. Truck Route Network Principles

The following six truck route network principles guided the study process and informed the truck route network objectives and related criteria.



Support Safety Outcomes

- Focus truck routes on higher-order road classes (e.g. arterials instead of local roads).
- Reduce opportunities for conflicts with vulnerable road users (or apply appropriate design mitigations).

⁶ CBC News (2023). *Windsor's Amazon delivery station expected to open in about 1 year and bring 300 jobs*. August 23. <<https://www.cbc.ca/news/canada/windsor/windsor-amazone-station-1.6944981>> Accessed February 2024.

⁷ CBC News (2025). *Unifor says Amazon workers in Windsor, Ont., have expressed interest in unionizing*. January 25. <<https://www.cbc.ca/news/canada/windsor/unifor-amazon-windsor-1.7439463>> Accessed June 2025.



**Support
Environmental
and Public
Health**

- Reduce the negative impact of truck operations to improve environmental and public health outcomes, e.g. reduce overall vehicle-kilometres travelled.
- Avoid simply moving a truck routing issue from one place to another to create similar impacts.



**Provide a
Connected
Truck Route
Network**

- Ensure truck route connectivity between the higher-order transportation network and major truck trip generators.
- Provide one or more truck route connections at each Hwy 401 interchange where feasible.



**Design for
Reliability and
Redundancy**

- Redundancy in the truck route network (back-up or detour routes) can ensure that goods can continue to move safely in the event of road closures on main truck routes.
- Ensure that the Province's designated network of Emergency Detour Routes on City roads is suitable to manage increased truck volumes in the event of highway traffic incidents.



**Simplify
Enforcement
Requirements**

- Avoid excessive travel times for goods movement.
- Clearly identify and communicate the truck route network.
- Avoid truck route "spurs" that do not allow legal truck turn-arounds.



Plan for Consistency and Adaptability

- Develop a clear and transparent truck route assessment framework that can be updated for future conditions.

The above principles inform or are embedded in the truck route network objectives and criteria below, as well as in network connectivity guidelines (Section 5.3).

3.2. Truck Route Network Objectives and Criteria

The two key objectives and associated criteria are summarized as follows:



Optimize Goods Movement Efficiency and Connectivity

1. Prioritize higher functional road classes.
2. Prioritize higher-capacity roads.
3. Prioritize roads with higher truck volumes.



Maintain Community Livability and Integrity

1. Prioritize routes that run alongside appropriate adjacent land uses.
2. Prioritize routes with lower pedestrian and cyclist volumes.
3. Prioritize routes that do not require sharing road space with the cycling network.

These objectives and criteria formed the structure for a scoring scheme to assess the general suitability of individual candidate road segments for inclusion in Windsor's truck route network (Section 5.2).

Note that the above do not identify **safety** as a separate objective or criterion. Increasing safety is a common pursuit across both objectives and is a Truck Route Study principle. Increasing safety is inherent in some of the criteria above. Moreover, mitigating measures are noted (Section 6) to improve safety.

Also not included in the above criteria are indicators of **equity** such as the prevalence of low-income households along a road segment or the prevalence of vulnerable age cohorts living along the corridor (younger than 18 years and older than 65 years). These correlate with the criterion of prioritizing routes that run

alongside appropriate adjacent land uses. Moreover, the available data do not allow the necessary measurement at the level of precision needed to apply to specific road segments, and are subject to change over time.

4. Engagement

Effective and open engagement throughout the study process was essential to conducting the Truck Route Network study in a way that meaningfully responded to community needs and priorities and reflects residents' and stakeholders' collective vision for the future of Windsor.

A summary of the public and stakeholder engagement activities and input received as part of two rounds of engagement is provided below. A detailed account is provided separately in the study's [Engagement Summary](#) report.

4.1. Engagement Activities

Several engagement activities were held throughout the study across two rounds of engagement and included a range of audiences including members of the public, City staff, as well as representatives from neighboring municipalities and other governments, goods movement community stakeholders, and business community stakeholders and agency stakeholders.

Study information and updates were provided on a **study web page** (letstalk.citywindsor.ca/truck-route-study) throughout the study process.

Round 1 Engagement (October 2023) focused on developing an understanding of the truck route related needs, issues and priorities in Windsor across different agencies, organizations and communities. This round consisted of the following activities:

- Public Information Centre 1 was the first of two rounds of in-person drop-in events conducted throughout the Truck Route Study and was hosted at the WFCU Centre and at the University of Windsor CAW Student Centre Commons. To allow for asynchronous participation, the study web page also featured project display boards, a Public Opinion Survey and interactive map activity to solicit feedback from members of the public. Participation included the submission of surveys from 31 respondents, as well as six location-based comments on the interactive map.

- Goods Movement Community Meeting 1 was held virtually with a cross-section of representatives related to goods movement (freight and logistics, businesses, associations).
- Business Community Meeting 1 was held virtually with representatives from several Business Improvement Areas (BIA) in Windsor.
- A Municipal/Governmental meeting was held with representatives of adjacent municipal governments and the Ontario Ministry of Transportation.

Round 2 Engagement (April and May 2024) presented the draft truck route network options, and asked the public and stakeholders to provide input to help inform network refinements and the final recommended network. Round 2 Engagement consisted of the following activities:

- Public Information Centre 2 was the second of two rounds of in-person drop-in events and was hosted at the Windsor Public Library John Muir Branch and the WFCU Centre. To broaden opportunities for members of the public and interested stakeholders to engage, a virtual version of the display boards was posted online. In addition to the input received from the in-person event—where dozens of members of the public attended and provided invaluable input to the project team—a Public Opinion Survey solicited information and received 20 submissions.
- Goods Movement Community Meeting 2 was held virtually and included representation similar to the first goods movement community meeting.
- Business Community Meeting 2 was held virtually and included representation similar to the first business community meeting.
- An Advisory Group meeting was held virtually and included participants from both public and private organizations and represented a range of perspectives, opinions and concerns.

4.2. Community and Stakeholder Input

The above engagement activities provided valuable opportunities for the study team to learn about the truck route-related experiences, concerns and priorities for a range of audiences.

General themes heard throughout the study's engagement activities included the following:

- There is a need to keep motorized traffic including trucks separated from cyclists and pedestrians to the extent possible for the safety of all road users;
- Safer pedestrian crossings are needed across roadways with trucks and busy traffic;
- Truck traffic impacts on adjacent land uses include noise and vibrations;
- Some intersections require improvements to allow for safer truck turns;
- Congestion and delays on key city traffic arteries result in trucks using routes that are not on the truck route network;
- Efficient connections as well as redundant routes are needed to ensure that goods can be transported to and from manufacturers, markets, border crossings, etc.
- While the opening of the Gordie Howe international bridge is expected to alleviate some traffic problems in Windsor, there are also concerns and uncertainty about whether new traffic impacts will result in west Windsor.

Input from members of the public and stakeholders throughout the Truck Route Study supplemented the technical analysis that led to the recommended truck route network, and also informed the development of mitigating measures and supporting strategies.

Many of the concerns, issues and suggestions brought forward during truck route study engagement have implications beyond the truck route network itself.

They also provide valuable insights for the City to consider for other traffic operations and transportation planning initiatives.

5. Truck Route Network Development Summary

The Truck Route Study developed and applied a methodical and transparent five-step truck route network development process:

- Step 1: Select candidate road segments for assessment;
- Step 2: Evaluate individual candidate road segments;
- Step 3: Create a draft truck route network;
- Step 4: Address network issues and identify mitigations; and
- Step 5: Finalize the recommended truck route network.

This section provides an overview of each step, focusing on purpose and outcomes. Steps 1 through 3 were presented in more detail in the [Phase 2: Draft Truck Route Network Development](#) report.

5.1. Step 1: Select Candidate Road Segments for Assessment

Candidate existing or planned City-owned roadways identified for assessment and potential inclusion in the truck route network included the following:

- All Class 1 Arterial, Class 2 Arterial, Class 1 Collector, Class 2 Collector, Scenic Drive or Local Commercial-Industrial roadways; and
- Local Residential roadways that are part of the City's current Truck Route Network and/or are currently already being used by significant volumes of trucks.

None of the above roadways were identified to have geometric design or structural limitations that would limit truck use, such as insufficient clearance beneath an overpass, or bridges not being able to carry the weight of trucks.

5.2. Step 2: Evaluate Individual Candidate Road Segments

Step 2 involved assessing candidate road segments for their general suitability for inclusion in the truck route network.

A scoring scheme was developed based on the study's strategic framework (Section 0), specifically the two objectives and their related criteria:

- Objective 1: Optimize Goods Movement Efficiency – with criteria based on functional road class, roadway capacity, and truck traffic volumes; and
- Objective 2: Maintain Community Livability and Integrity – with criteria based on land use, pedestrian and cyclist volumes, and the City's cycling network.

A scoring scheme was developed for individual criteria to reflect the relative importance of each criterion relative to others within each objective, and equal weighting was applied to the two objectives. The scoring scheme was applied on a roadway segment-by-segment, and scoring results were translated into map-based visual representations, as follows:

- Objective 1 scoring results are shown in Exhibit 5.1;
- Objective 2 scoring results are shown in Exhibit 5.2; and
- Combined scoring results across both objectives are shown in Exhibit 5.3.

As the scoring scheme considered the characteristics of each roadway segment in isolation, scoring results were used as an indicative tool only to inform the development of the preliminary truck route network alternatives. Broader connectivity considerations and location-specific context were applied in Step 3, described subsequently.

Exhibit 5.1: Scoring Results for Objective 1: Optimize Goods Movement and Efficiency

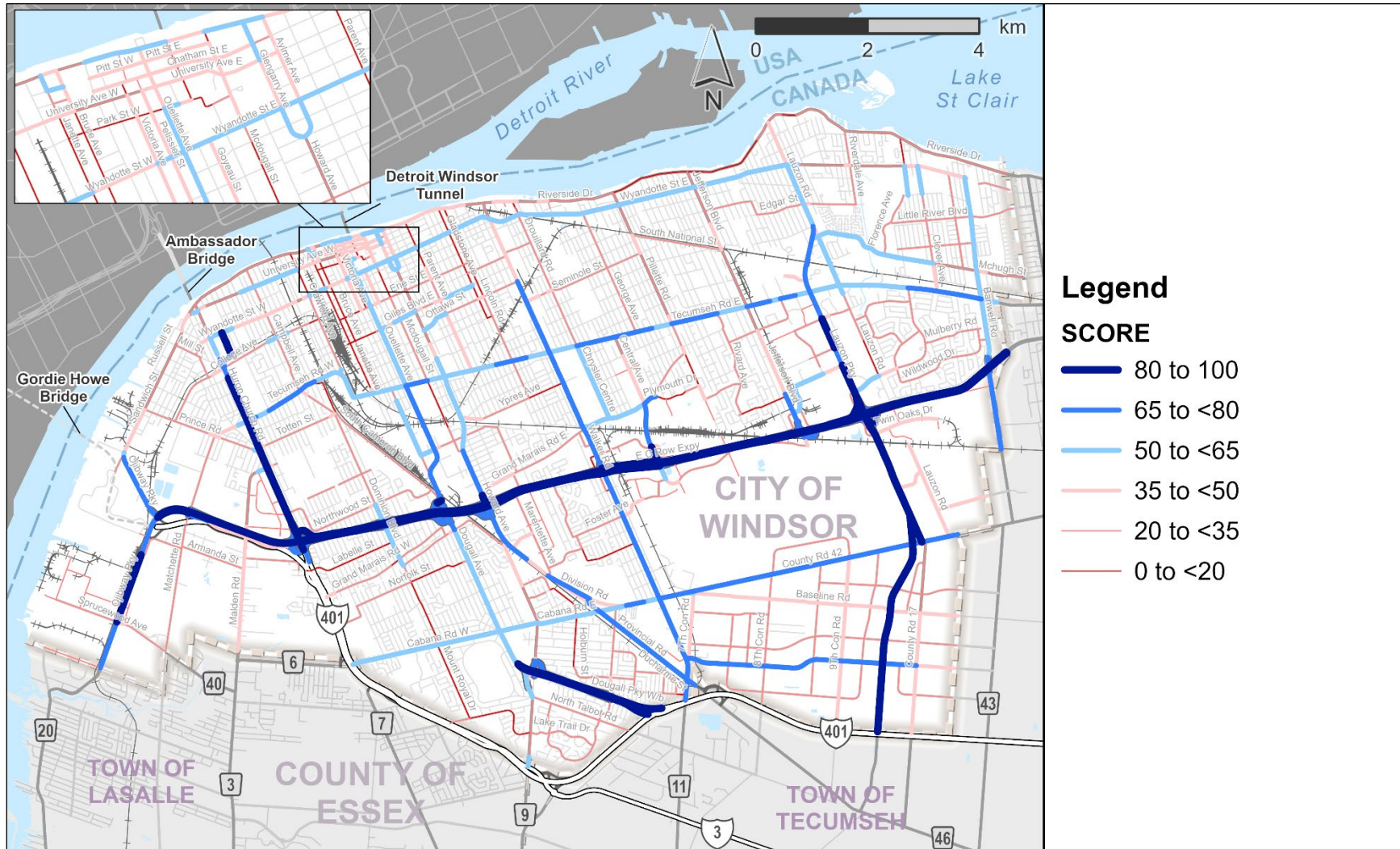


Exhibit 5.2: Scoring Results for Objective 2: Maintain Community Livability and Integrity

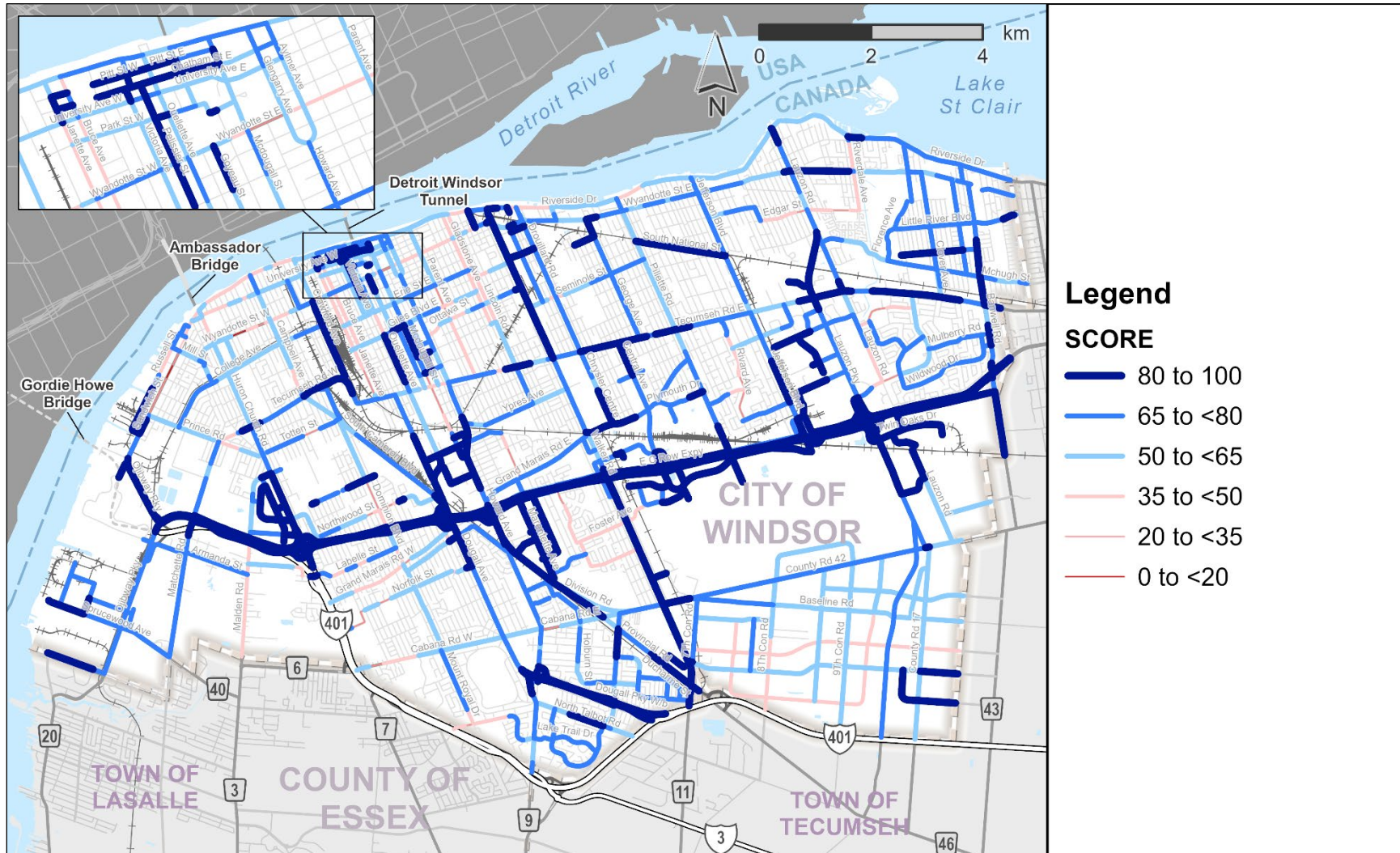
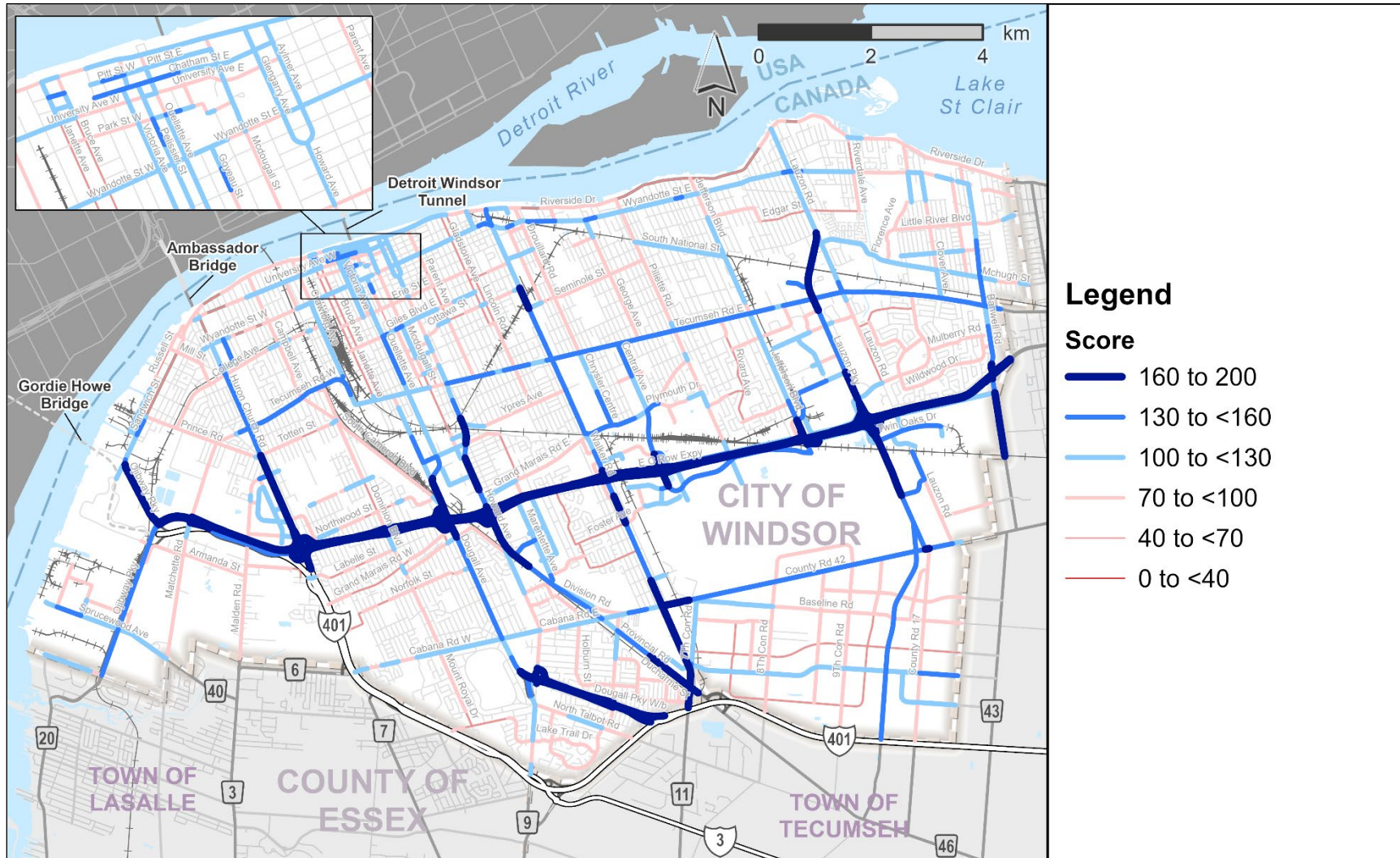


Exhibit 5.3: Combined Scoring Results for Objectives 1 and 2



5.3. Step 3: Create a Draft Truck Route Network

In developing draft alternative truck route networks,

Priority is given to candidate road segments with a higher combined score in Step 2—ideally over 100—while also observing the following connectivity guidelines:

1. Each **provincial highway interchange** has a direct truck route connection.
2. Each **international border crossing** has a direct truck route connection.
3. **Intermodal freight terminals** (marine port, airport or truck-rail transfer yards) have a direct truck route connection.
4. Each **upper-tier road in Essex County** suitable for heavy trucks has a truck route connection at the Essex-Windsor boundary; conversely, the Windsor truck route network does not “dead-end” on any connecting roads within Essex County that are not suitable for trucks.
5. Key **trucking activity origins and destinations** are connected without the need for excessive detours; appropriate connectivity is provided between/among other major truck activity generators—manufacturing plants, industrial sites, commercial areas, etc.—while also providing appropriate connectivity to the transportation connections identified in connectivity guidelines 1 through 4.

Factors to consider in determining the most appropriate connecting routes include the segment-by-segment evaluation results of Step 2, travel times, and route reliability.

6. Truck route **redundancy is provided**, i.e. there is more than one possible way to travel between key trucking activity origins and destinations in the event of a traffic incident, construction, etc. requiring closure of one of the routes.
7. The network **avoids “spurs” or “dead-ends”**—to the extent possible, each segment will connect to another truck route or have a feasible, legal means of turning back once on any truck route segment.
8. Ensure that the resulting truck route network has a **reasonable density**. The aim is to avoid gaps that otherwise would encourage trucks to inappropriately cut through local roads or to overload limited designated truck routes.

The appropriate truck route density may vary depending on the spacing and suitability of other nearby roadways for truck travel.

Additional context-specific considerations were also considered in developing complete and connected truck route networks, for example the size and suitability of intersections where truck turning movements would be required.

The two draft alternatives are described below.

5.3.1. Draft Option 1: Simple Network

Shown in Exhibit 5.4, this draft network option designated a single-tier truck route network which all commercial vehicles over a gross registered vehicle weight (GRVW) of 4,500 kilograms—regardless of size, weight or number of axles—are required to use.

Because of concerns about heavy trucks cutting through communities and roadways that are not well suited to truck traffic, some gaps remain in this network to continue to discourage this cut-through traffic. A few routes are designated as limited-hours (daytime only) routes to reduce impacts on adjacent communities.

5.3.2. Draft Option 2: Dual-Tier Network

Recognizing that different sizes of trucks have different degrees of impacts on roadways and on adjacent communities, the second option, shown in Exhibit 5.5, has two tiers of truck routes that are differentiated based on vehicle size:

- **Primary Truck Routes** permit all trucks (i.e. over 4,500 kilograms GRVW), as in Option 1. These ideally are on higher-order roadways best designed for moving heavy traffic.
- **Local Delivery Routes** (presented as **Secondary Routes** during engagement) are designated for and restricted to smaller trucks based on a maximum number of axles; larger trucks are to use the secondary routes only for making local deliveries in the area and not for cut-through travel. Larger trucks are to use Local Delivery Routes after leaving the primary truck network and until the closest point to their origin or destination, barring physical roadway constraints.

The dual-tier network seeks to provide adequate network connectivity while attempting to better balance the needs and priorities of local communities and the goods movement industry. A Local Delivery Route designation would keep larger

trucks away from areas where there is a concern for potential cut-through trips along less-suitable roadways, while still allowing smaller trucks and providing guidance for them to keep to the more appropriate roadways.

5.3.3. Preferred Network Selection

The dual-tier truck route network Option 2 was carried forward as the preferred network and the basis for developing a more refined recommended network. Option 2 more comprehensively responds to concerns by the goods movement industry about connectivity gaps, while also responding to local community concerns about inappropriate cut-through truck traffic and the resulting potential negative impacts. The two-tier network provides greater network coverage and greater general guidance for truck traffic.

Because a dual-tier truck route network approach is not yet in common use in Ontario, it was especially important to first gauge the acceptance of this approach by stakeholders and the public. Draft truck route network Option 2 did receive general support among members of the public and stakeholders during the second round of engagement, with some location-specific concerns.

5.4. Step 4: Address Network Issues and Apply Mitigations

Refinements to the preferred network in response to engagement inputs and additional considerations are outlined in Section 6.

Location-specific mitigating measures are also important to help to respond to concerns with the recommended truck route network. These are outlined in Section 7.

5.5. Step 5: Finalize the Recommended Truck Route Network

The final step in the network development process is to make additional recommendations toward finalizing and operationalizing the recommended truck route network. These include the following steps, outlined in the indicated chapters of this document:

- Identifying truck route implementation phasing (Chapter 6);
- Outlining implementation considerations (Chapter 8); and
- Listing supporting strategies (Chapter 9).

Exhibit 5.4: DRAFT Option 1: Simple Network (Single-Tier)

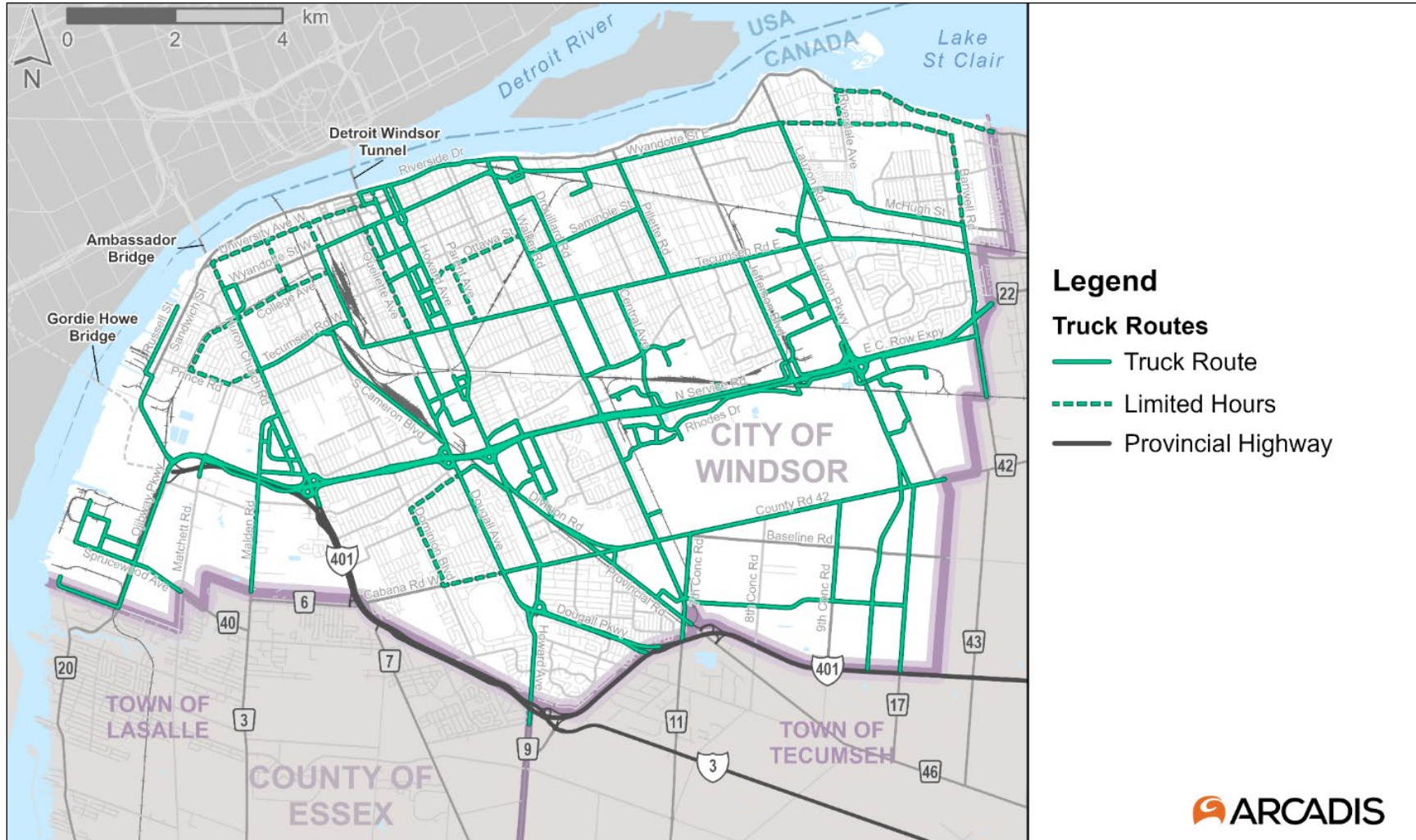
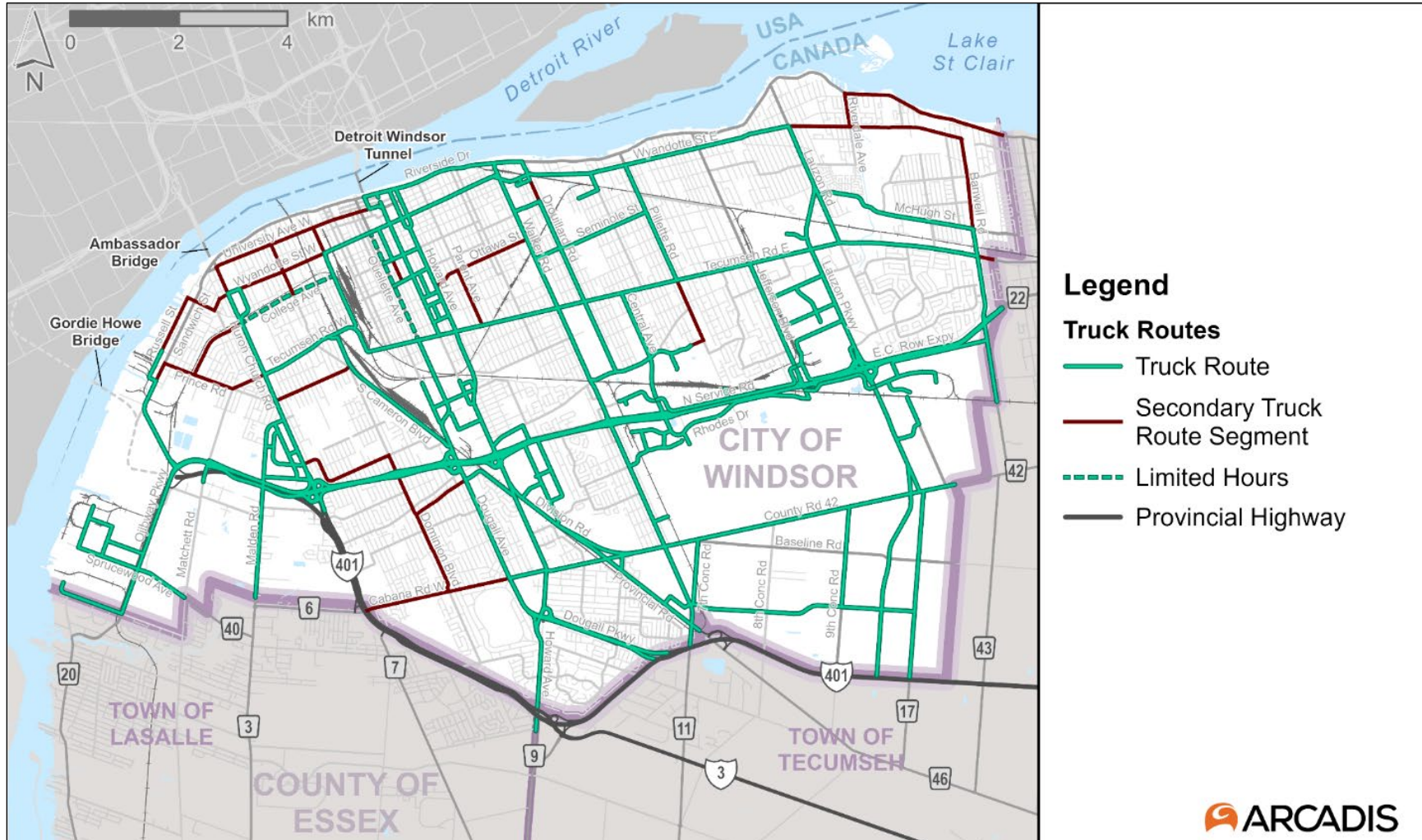


Exhibit 5.5: DRAFT Option 2: Dual-Tier Network



6. Truck Route Network Refinement and Phasing

This section provides additional specificity as to the vehicles permitted on Secondary Truck Routes, or “Local Delivery Routes”.

It also outlines both a long-term truck route network and a near-term truck route – the latter can be implemented after assessing for and implementing needed mitigating measures, where these are anticipated to be feasible to implement in the near term.

These built on draft network option 2 and were further specified and refined based on round 2 engagement inputs and additional technical considerations.

6.1. Secondary Route / Local Delivery Route Specification

For specifying smaller trucks sizes suitable for Local Delivery Routes, a truck’s number of axles is much more readily identifiable and therefore enforceable than other measures such as a truck weight or length.

After reviewing inputs from stakeholders, member of the public, and City staff, and considering the potential impacts and the connectivity needs of different vehicle sizes, a 3-axle maximum was determined to be most appropriate size threshold for Local Delivery Routes.

Residents and local business improvement area representatives noted that transport truck combinations and dump trucks are the key vehicle types of concern for cutting through local communities along less-appropriate routes. These vehicles typically have 4 axles or more. The desire is to keep these vehicles on Primary Truck Routes, while still allowing them to use the Local Delivery Routes to guide their travel to and from their local origins/destinations.

Exhibit 6.1 provides examples of trucks by number of axles, and summarizes how they are to use the two categories of designated truck routes. Note that all trucks can deviate from the designated truck route networks to take the shortest-distance path between the truck route network and their final trip origin or destination.

Exhibit 6.1: Examples of Permitted Trucks along Designated Truck Routes

Permitted on both **Primary Routes** and **Local Delivery Routes**:

2-axle trucks:



3-axle trucks:



Permitted on **Primary Routes**;

(where feasible, use Local Delivery Routes upon leaving the Primary Route to travel to ultimate origin or destination):

Trucks with 4 or more axles:



6.1.1. Closely Spaced Axles as “Single Axles”

For consistency with the Ontario *Highway Traffic Act, RSO 1990* (HTA), Section 114⁸, two axles spaced no more than one metre apart on a vehicle (typically on a small trailer) should also be considered to be a “single axle”, i.e. for determining allowable weight limits. Two very closely spaced axles tend to have tires that are smaller than standard truck tires and can only carry a load equivalent only to a typical truck’s single axle. In the example shown in Exhibit 6.2, the two closely spaced axles with smaller wheels on the trailer can be considered to be a “single axle” and the vehicle would be considered a 3-axle truck for purposes of the HTA as well as the City’s traffic bylaw and eligibility to use the designated Local Delivery Routes.

Exhibit 6.2: Example of “Single Axle” Trailer with Axles



⁸ <<https://www.ontario.ca/laws/statute/90h08#Bk213>> Part VIII Weight, section 114, Accessed June 2024:

“single axle” means one or more axles whose centres are included between two parallel transverse vertical planes one metre apart; (“essieu simple”)

Guidance is also provided in *Vehicle Weight and Dimension Limits Guidebook* (MTO, January 2024), <https://ontruck.org/wp-content/uploads/2024-Ontario-VWD-Public-Guidebook_public.pdf>.

Accessed June 2024

6.2. Long-Term Truck Route Network

Refinements were made to network Option 2 as the preferred network to better respond to the issues and priorities heard from different stakeholder groups and from members of the public during round 2 engagement. It also took into account findings from additional review of the network, considering network connectivity, redundancy, and operational and neighbourhood-level considerations and constraints.

A list of these network modifications is included as Appendix A.

The resulting recommended long-term network is shown as Exhibit 6.3, together with the turning and height restrictions for trucks along the route.

This long-term network includes planned roadway construction or major improvements (e.g. widening). The long-term network would only be fully implemented once these road network changes are in place.

6.3. Near-Term Truck Route Network

A recommended near-term truck route network is shown as Exhibit 6.4, together with the turning and height restrictions for trucks along the route. This network is anticipated to be implementable within the next five years.

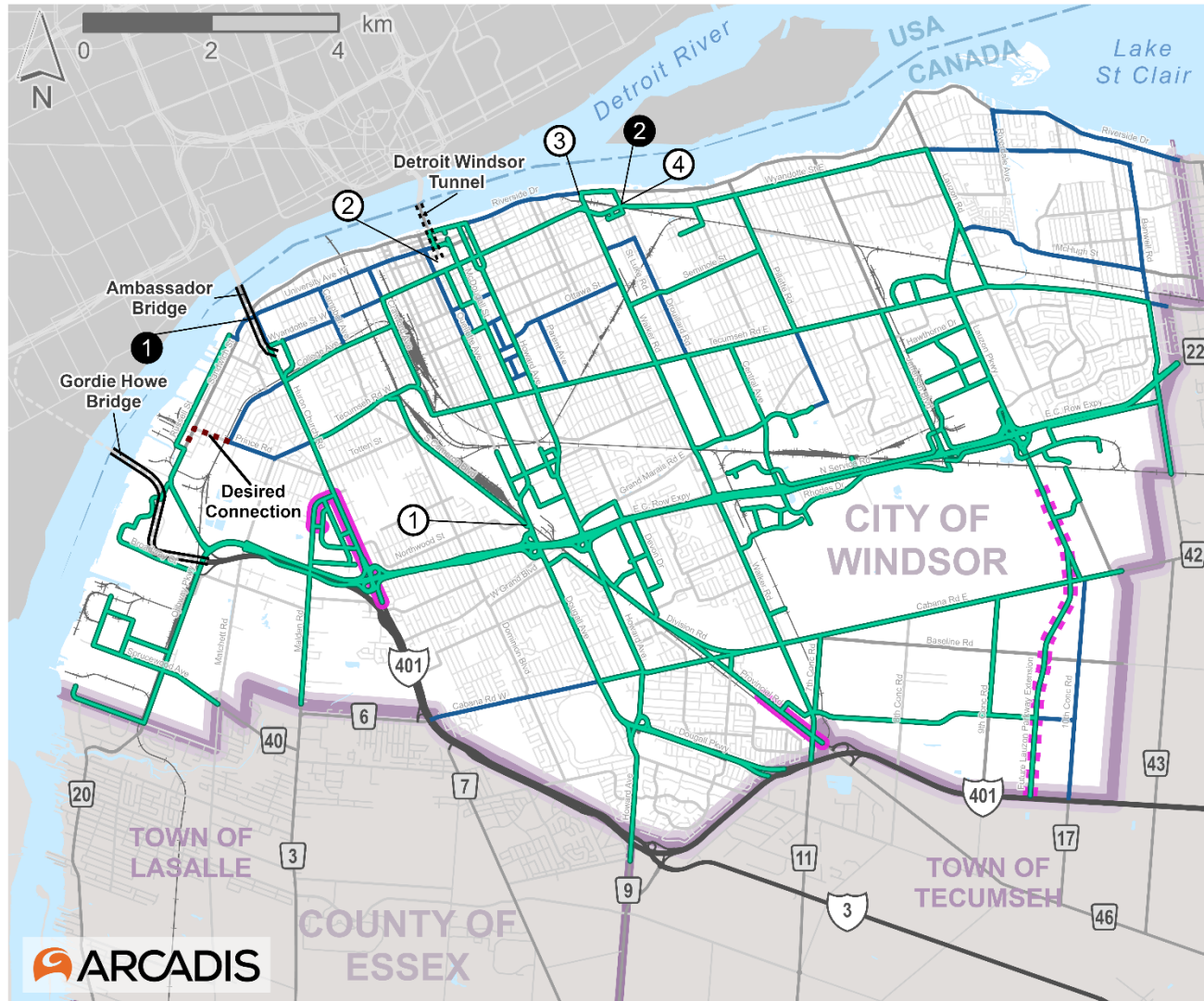
Exhibit 6.5 shows how the near-term truck route network compares to the current truck route network in terms of additions, omissions and changes in truck route designations.

Exhibit 6.6 shows the additional changes beyond the near-term network that would complete the implementation of the long-term network.

Unlike the long-term truck route network, the near-term network includes only existing City of Windsor roadways and is implementable upon the following:

- City Council adoption of the truck route study recommendations;
- Implementation of selected mitigating measures, further described below and in Section 7.3; and
- Other implementation steps as outlined in Chapter 8.

Exhibit 6.3: Recommended Long-Term Truck Route Network



Truck Routes

- Primary Truck Route
- Local Delivery Route
- Municipal LCV Route
- - - Opportunity For Future Municipal LCV Route
- Provincial Highway

Turning Limitations

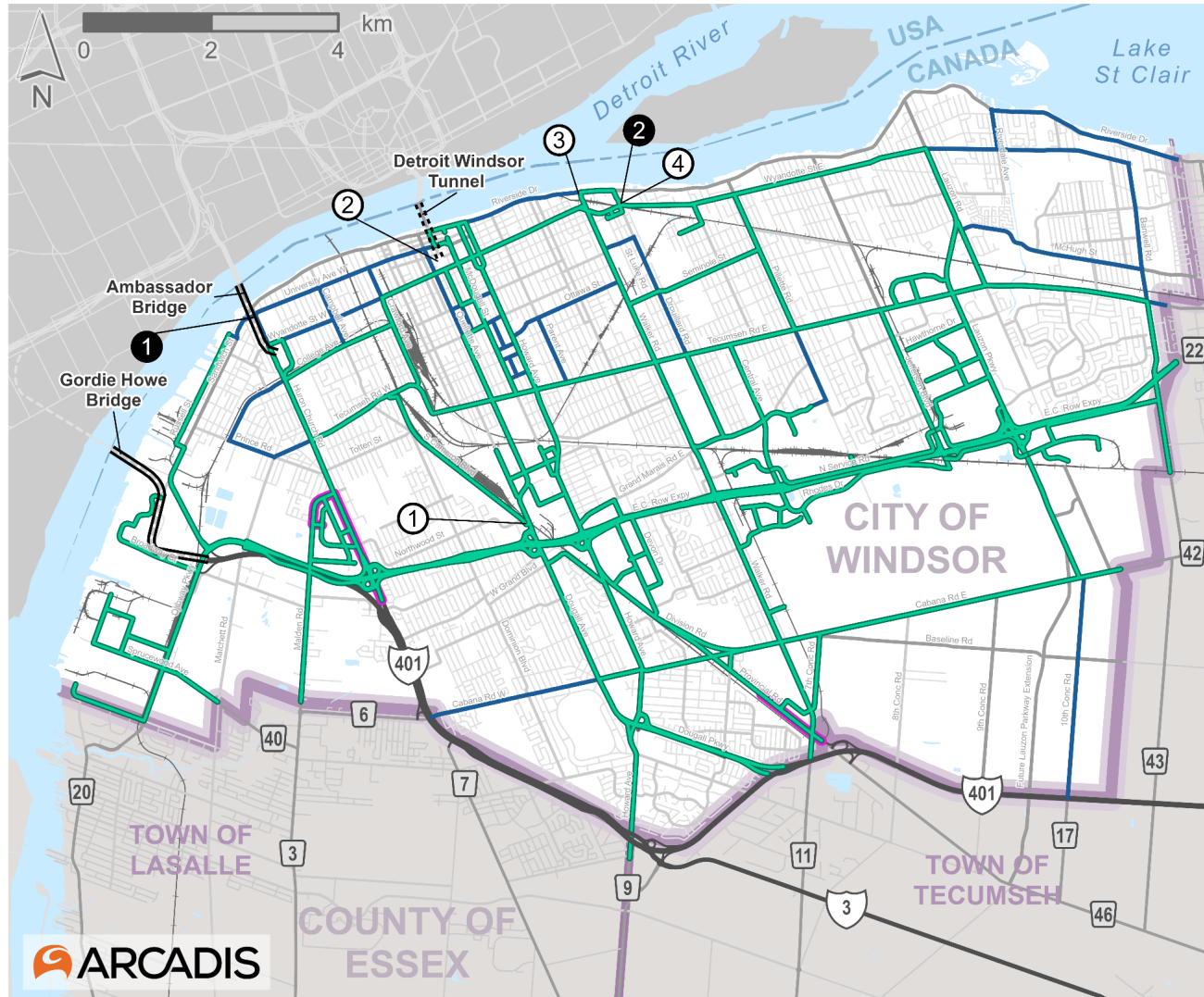
- ① Sandwich St/University Ave single-lane roundabout
No left turns permitted for all vehicles from Wyandotte St to Drouillard Rd northbound and southbound.
- ② Geometric constraints prohibit trucks from turning right from eastbound Wyandotte St to Drouillard Rd.

Height Limitations

- ① Dougall Ave: Rail underpass north of S Cameron Blvd 4.3 m clearance
- ② Detroit Windsor Tunnel: 3.8 m clearance
- ③ Walker Rd: Underpass south of Riverside Dr 4.5 m clearance
- ④ Wyandotte St/Drouillard Rd: Rail underpass 4.1 m clearance



Exhibit 6.4: Recommended Near-Term Truck Route Network (within 5 Years)



Truck Routes

- Primary Truck Route
- Local Delivery Route
- Municipal LCV Route
- Provincial Highway

Turning Limitations

- ① Sandwich St/University Ave single-lane roundabout
No left turns permitted for all vehicles from Wyandotte St to Drouillard Rd northbound and southbound.
- ② Geometric constraints prohibit trucks from turning right from eastbound Wyandotte St to Drouillard Rd.

Height Limitations

- ① Dougall Ave: Rail underpass north of S Cameron Blvd 4.3 m clearance
- ② Detroit Windsor Tunnel: 3.8 m clearance
- ③ Walker Rd: Underpass south of Riverside Dr 4.5 m clearance
- ④ Wyandotte St/Drouillard Rd: Rail underpass 4.1 m clearance

Exhibit 6.5: Near-Term Truck Route Network (within 5 Years) – Changes Relative to Current Network

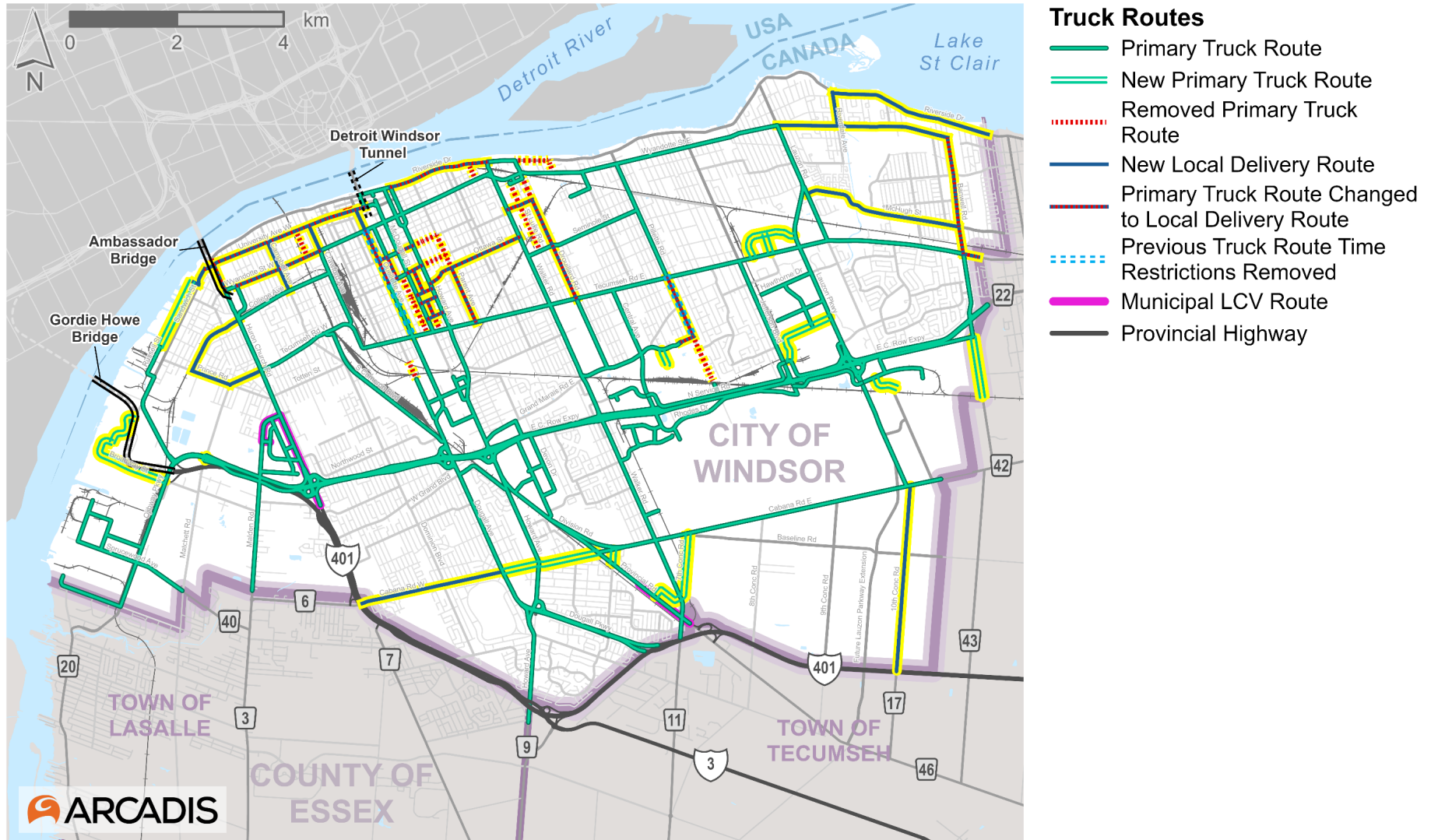
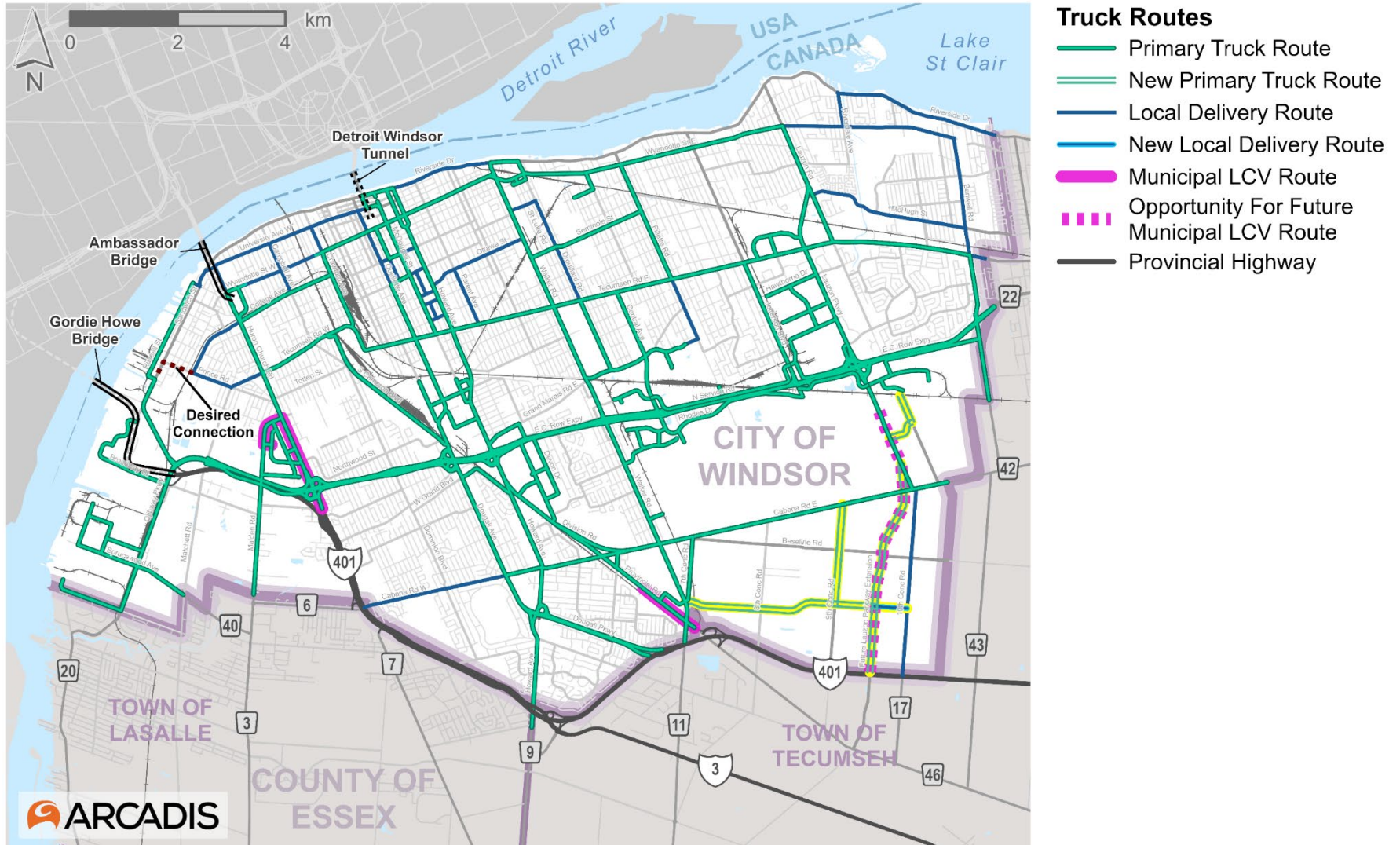


Exhibit 6.6: Long-Term Truck Route Network – Changes Relative to Near-Term Network



Included in the near-term network are the following new roadways:

- Broadway Street and Sandwich Street south of Ojibway Parkway, built for connectivity to Gordie Howe Bridge, are currently under federal jurisdiction and will be designated as Primary Truck Routes upon transfer to the City of Windsor after completion of the Gordie Howe International Bridge; and
- The westerly and southerly extension of Catherine Street to Tecumseh Road East, as well as construction of Roseville Gardens Road from Catherine Street to Tecumseh Road East, both serving commercial/industrial development.

The near-term truck route network includes some roadway locations where potential safety and/or operations concerns were identified. **For these locations, the required mitigations before adding a new truck route designation are anticipated to be implementable in the near term.**

Before implementing **McHugh Street** as a Local Delivery Route, it is strongly recommended to address concerns noted by area residents about the need for additional protected pedestrian crossing opportunities across McHugh Street before this designation. This may require more significant measures such as adding a new pedestrian crosswalk or traffic signals.

While **Wyandotte Street West** is designated as a Local Delivery Route in the near-term network, it is recommended that the Primary Truck Route designation be retained between Patricia Road and Crawford Avenue until the following two conditions are met:

- The Gordie Howe Bridge is opened (currently anticipated in late 2025), as Wyandotte Street West currently provides a degree of needed redundancy for access to/from Ambassador Bridge; and
- The planned major reconstruction of parallel University Avenue to the north is completed, as construction will increase vehicular traffic on Wyandotte.

As was shown in Exhibit 6.6, the long-term network will include the following additional segments as Primary Truck Routes:

- Lauzon Parkway Extension to Highway 401; this is also an opportunity for future designated Long-Combination Vehicle (LCV) route;
- Per Sandwich South Master Servicing Plan (2023): Southeast Windsor new east-west arterial roadway (continuing east of the Lauzon Parkway as

Final Report
SUMMARY REPORT

Local Delivery Route) and Concession Road 9 after planned improvements;
and

- Service Road connecting northeasterly after development/road improvements.

7. Network Challenges and Mitigating Measures

While trucks support economic activity and help provide valuable services, their large size and heavy weight create challenges on designated truck routes in terms of potential negative impacts of truck routes on other road users, and in term of operational challenges for trucks in motion.

A comprehensive safety and operational review of roadways with a current or recommended truck route network designation was beyond the scope of the Windsor Truck Route Study. However, the study identified several locations of concern based on engagement input and preliminary technical analysis that should be assessed by the City and addressed through appropriate mitigating measures. Based on best practices, several potential mitigating measures for the City to consider for addressing these concerns and challenges are outlined below.

The implementation of any of the potential mitigating measures below must be predicated by understanding the needs and concerns at each location and consideration of potential alternative measures and their associated benefits and costs, as well as detailed planning, priority setting and budgeting.

7.1. Reducing the Potential Negative Impacts of Truck Traffic

Potential negative impacts of truck routes on adjacent land uses or on other road users can be mitigated by measures outlined below. While these measures are especially important on the truck route network, they can also be applicable on other City of Windsor roadways as well.

7.1.1. Increasing Pedestrian Crossing Safety

A common concern heard during study engagement is the need for safer pedestrian crossings along truck route networks – and for increased protection from vehicular traffic in general.

There are several intersections on the current or recommended truck route network where improvements to increase pedestrian safety can be made.

Applying line painting on the roadways to highlight pedestrian crossing pathways is an effective measure to increase visibility. This gives pedestrians greater presence in the intersection, and provides clarity for not only pedestrians but also

motorized vehicle drivers and cyclists as to where the pedestrians will be crossing to reduce the potential for conflicts. Similarly, adding **stop bars** to indicate where motorized vehicles should stop to allow enough space for pedestrians also provides important guidance.

Adding or modifying intersection controls (stop signs, protected pedestrian crossings, or intersection traffic signal controls) may be warranted in some cases to provide pedestrians sufficient safe opportunities for crossing. Common practice is to determine whether the warrant is met for adding intersection controls based on current motorized traffic volumes and pedestrian crossing volumes, whereas pedestrian “desire lines” (indicating where pedestrians would cross more often if a safer crossing were available) should also be considered. Other factors to consider include visibility of approaching motorized traffic and pedestrians, and travel speeds. The spacing of intersection controls or protected pedestrian crossings should also be informed by the roadway’s functional road classification – e.g. it can be expected that a roadway with a “local” road designation is interrupted by stop signs or other intersection controls more frequently than collector roadways or arterial roadways.

7.1.2. Increased Separation between Motorized Traffic and Cyclists and/or Pedestrians

Where vulnerable road users such as pedestrians and cyclists share roadway space with truck traffic – or significant volumes of any motorized vehicles – a sufficient degree of separation between is desired to decrease the potential for conflicts and collisions between these modes. This was a consistent theme heard from both goods movement community stakeholders and Windsor residents during Windsor Truck Route Study engagement.

To **increase cyclist-traffic separation** along truck routes, it may be feasible to move the cycling route away from the designated truck route to a parallel roadway while still maintaining cycling network connectivity. Where cycling routes and truck routes do share the same roadways, there are various means to provide increased separation between modes, two of which are shown in Exhibit 7.1. The Ontario Traffic Manual (OTM) Book 18 – Cycling Facilities (2021) provides additional guidance on implementing cycling facilities (routes) with increased separation from adjacent traffic when needed.

Exhibit 7.1: Examples of Increasing Cyclist-Traffic Separation



Mountable curb separating a one-way cycle track – Waterloo, Ontario
(Arcadis photo)



Cycling protected intersection with a corner refuge island – London, Ontario
(Arcadis photo)

Filling sidewalk gaps along truck routes, ensuring a complete and connected walkway between pedestrian origins and destinations, is also important for pedestrian safety and comfort.

Larger pedestrian refuge spaces at intersections may also be important along truck route networks. Intersection examples with adequate space allocated for all road users are shown in Section 6.2.

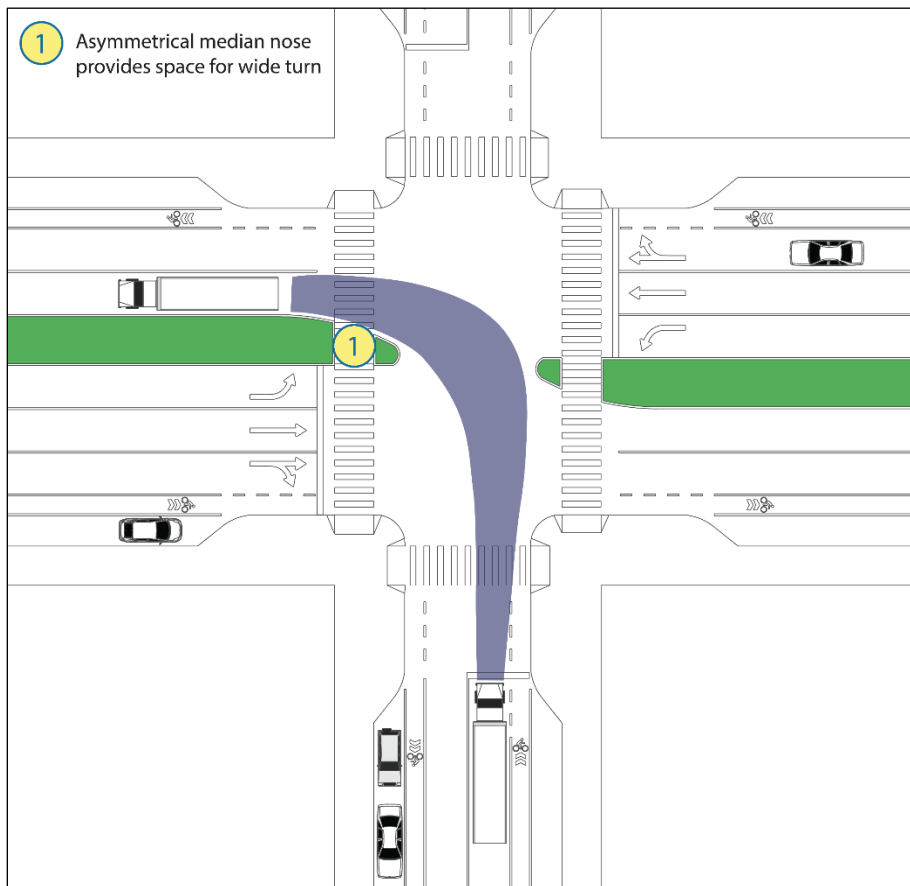
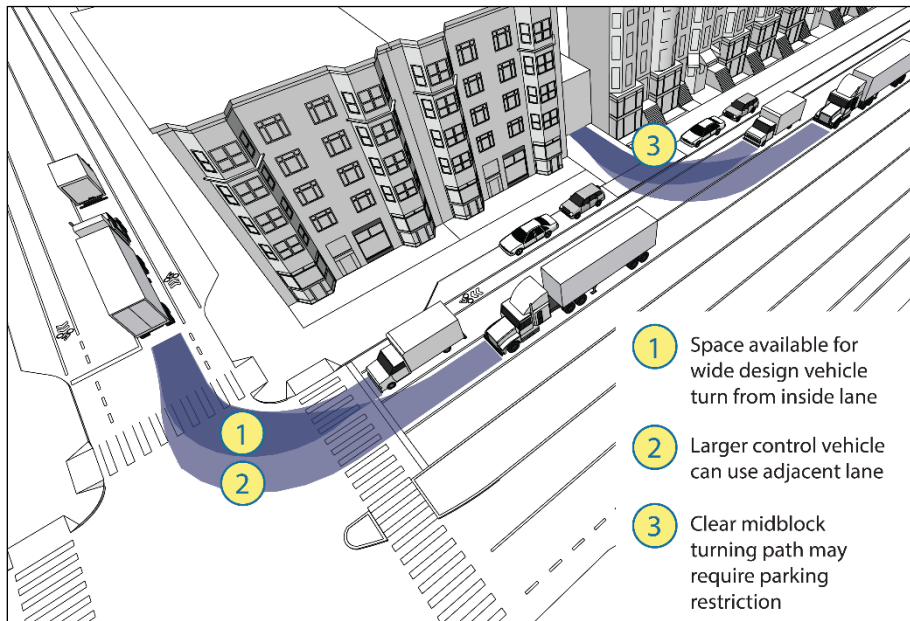
7.2. Addressing Truck Route Operational Challenges

City roadways along the truck route network should be designed to accommodate the wider turning movements of trucks, while also accommodating pedestrians, cyclists, drivers and turning trucks along city streets. Two examples of intersection designs that achieve this are shown as Exhibit 7.2.

Truck route operational challenges can be addressed for trucks with the benefit of increased clarity for truck movements for all road users, with measures such as the following:

- **Intersection improvements or modifications** such as moving stop bars back to better accommodate wider truck movements, or adding, modifying or extending turning bays;
- Where road geometry or other factors do not allow for truck movements, **turning restrictions** should be explicitly stated through signage and on truck route network mapping.
- **Traffic signal timing changes** (i.e. coordinated signals on major roads to reduce travel delays and encourage truck traffic to use the intended routes, or adding/ revising left-turn signal phases);
- Providing a connected truck route network, or where truck route “dead ends” are unavoidable, **providing a clear and safe means for trucks to turn back** without using non-designated routes.

Exhibit 7.2: Examples of Multi-Modal Intersection Designs Accommodating Trucks



Complete Streets Considerations for Freight and Emergency Vehicle Operations (NYSERDA, 2018)

7.3. Identified Issues/Concerns on Newly Designated Truck Route Segments

The near-term network includes a number of newly designated Primary and Local Delivery Route truck route segments that are anticipated to result in some amount of additional truck traffic on these roadways. A number of potential areas of safety and/or operational concern for the City to include in its assessment are listed in Exhibit 7.3 and include a summary of identified concerns together with potential mitigations. **It is anticipated that the City’s resulting mitigating measures will be feasible to implement in the short term, and in some cases are already underway.**

Note that the locations with concerns listed below are not necessarily a comprehensive list.

Exhibit 7.3: Safety/Operational Issues/Concerns for Assessment Along Newly Designated Truck Route Segments

Location	Issues/Concerns for Assessment and Potential Mitigating Measures
West Windsor	
Intersection of Russell Street and Brock Street	Measures to improve pedestrian safety may be needed such as intersection controls (e.g. three-way stop control), together with pavement markings, given the intersections role as a connection in the active transportation system as well as the presence of young pedestrians in the vicinity of the adjacent school.
Intersection of Russell Street and Mill Street	Increase pedestrian safety, e.g. implement clear pavement markings to give increased visibility to pedestrian crossing paths, and add stop bars.
Intersection of Detroit Street and Sandwich Street	Evaluate the need for operational and safety improvements, e.g. clear pavement markings for pedestrian crossing pathways are likely needed at minimum.
Prince Road between College Avenue and Tecumseh Road West	Sidewalks are provided on one side of Prince Road, and pedestrians have access to Mic Mac Park on the opposite side of the roadway. In the longer-term, the City may assess the need to fill in this sidewalk gap for continuous sidewalk connectivity along both sides of the roadway.

Location	Issues/Concerns for Assessment and Potential Mitigating Measures
Intersection of Prince Road and College Avenue	Increase pedestrian crossing safety measures are likely needed, e.g. clear pedestrian pavement markings along College Avenue, and a safe crossing opportunity to connect pedestrians to the bus stop on Prince Road.
East Windsor	
Riverdale Avenue between Riverside Drive and Wyandotte Street	Riverdale Avenue is currently a signed bike route: cyclists share the same lanes as motorized traffic. Increased separation of cyclists from truck traffic should be implemented, e.g. through increasing separation of cyclists from motorized traffic on Riverdale Avenue, or reallocating the cycling route to a parallel route such as Bertha Avenue or Greendale Drive via Cedarview Drive.
Wyandotte Street between Greendale Drive and Bellagio Drive	This section includes non-buffered bike lanes, and should be assessed for the need to increase separation of cyclists from vehicular traffic.
Intersection of Wyandotte Street and Banwell Road	<p>This intersection currently does not require vehicles approaching eastbound on Wyandotte Street to stop before continuing on Banwell. (Vehicles approaching northbound on Banwell do have a stop sign.) The adequacy of this means of intersection control from the perspective of pedestrian safety should be reviewed.</p> <p>It is expected that pedestrian pathway pavement markings at this intersection would also provide a safety benefit.</p>
McHugh Street	The need for additional protected pedestrian crossing opportunities across McHugh Street was voiced by area residents, e.g. at Florence Avenue or Cypress Avenue, to better connect The Village of Aspen Lake retirement residence and McHugh Park Public Parking on the south side to Avery Jackson Memorial Pond on the north side, as well as to access transit stops on the north or south sides of McHugh Street. It is recommended to address pedestrian crossing concerns before designation as a truck route.

7.4. Identified Issues/Concerns for Current Truck Route Network Roadways

For roadways that are already designated as part of the current truck route network and are recommended to remain as such, identified location-specific concerns and potential mitigating measures are listed in Exhibit 7.4.

These concerns do not necessarily represent a comprehensive list and other locations may have similar issues.

Exhibit 7.4: Potential Mitigating Measures for Existing Truck Route Segments

Location	Issues/Concerns for Assessment and Potential Mitigating Measures
West Windsor	
Malden Road	Malden Road has a signed cycling route only. Increased protection for cyclists is likely needed, or consider moving signed route to Matchett Road or other parallel route.
Central Windsor	
Dougall Avenue northbound ramp to westbound EC Row Expressway	The existing northbound left-turn restriction for trucks is anticipated to no longer be needed, and any benefit provided by the turn restriction is anticipated to be further reduced when the Gordie Howe Bridge is opened (diverting a portion of trucks from Huron Church Road and Ambassador Bridge) and when Provincial/Division road improvements are complete (making this a more attractive alternative to Dougall Avenue for a portion of bypassing truck traffic). Pending the GHIB opening and the road improvements, there may be a need to review trucking operations at this location and enhance the intersection capacity (e.g., with an extended left turn lane on Dougall Avenue, changes to signal timing, etc.)
Dougall Avenue north of Eugenie Street West	The “dead-end” at the north end of this truck route segment could result in trucks not being able to safely turn back if needed. Provide a feasible and legal turn-around space for trucks at this point if feasible, and implement signage warning of dead-end route in advance at key decision points (i.e. at Eugenie Street).

Final Report
SUMMARY REPORT

Location	Issues/Concerns for Assessment and Potential Mitigating Measures
Elsmere Avenue between Grand Marais Road and North Service Road	Installation of sidewalks to improve safety of pedestrians is likely needed, especially given the nearby multi-unit residences along this street.
Cabana Road between Division Road and Walker Road	Ensure cycling network continuity between existing cycling facilities along Cabana Road at Division Road and planned multi-use trail along Cabana Road East (County Road 42). Increased separation may increase cyclist safety and comfort.
Intersection of Walker Road and Seminole Street	Truck turning challenges can be addressed by moving the stop bar back on Walker Road, facilitate truck turning movements eastbound to Seminole Street.
Intersection of Wyandotte Street and Drouillard Road	<p>Geometric constraints prohibit certain vehicle turning movements, which should be made clear and explicit to road users via roadway signage. (These restrictions are noted on the recommended truck route network maps, Exhibit 6.3 and Exhibit 6.4).</p> <p>No left turns are permitted for all traffic from Wyandotte Street to Douillard Road both northbound and southbound, and a regulatory sign is posted at the intersection.</p> <p>In addition, geometric constraints would prohibit trucks from turning right from eastbound Wyandotte Street to Drouillard Road, but this restriction is not formalized. Regulatory signage in advance of this intersection would help truck drivers to make legal turns at key decision points (e.g. Wyandotte Street at Pillette Road and at Walker Road).</p>
Pillette Road, Seminole Street	Pillette Road and Seminole Street have bike lanes buffered with pavement markings. Increase physical separation (e.g. bollards or curbs, or add grade separation with cycle track) can reduce the potential for conflicts between trucks and cyclists.

Location	Issues/Concerns for Assessment and Potential Mitigating Measures
Jefferson Boulevard, north of Tecumseh Road (<i>not on designated truck route network</i>)	Jefferson Boulevard is not on the recommended truck route network, but to limit cut-through truck traffic, ensure efficient timing of traffic signals on parallel Pillette Road and other truck routes.
Jefferson Boulevard, south of Tecumseh Road	Jefferson Blvd has standard bike lanes only. Increased separation, e.g. through buffered bike lanes or physical separation, may be warranted.
East Windsor	
Intersection of Banwell Road and Little River Boulevard	Increased pedestrian crossing safety measures are expected to be needed at this intersection, especially as Banwell Road is a busy arterial roadway with very limited protected crossing opportunities for pedestrians. At minimum, this may include adding clear pavement markings to highlight pedestrian crossing pathways. These measures will also serve to increase pedestrian connectivity between neighbourhoods, as well as connect Elizabeth Kishkon Park with East Riverdale Park.

7.5. Longer-Term Improvements for Consideration

The recommended long-term network, shown previously as Exhibit 6.3, shows a “desired connection” (i.e. Local Delivery Route) in West Windsor along Prince Road and Sandwich Street. Although recent improvements at the intersection of Sandwich Street and Prince Road have made it easier for buses and trucks to turn right from eastbound Sandwich Street to Prince Road and have increased visibility at the intersection, additional operational and visibility/safety improvements may be needed to make this intersection more suitable to be included in the truck route until the longer term. However, there is also the potential for this segment of Prince Road to result in significant and undesired levels of “cut-through” truck traffic between international border crossings, something that can be better assessed once the traffic impacts and patterns related to Gordie Howe Bridge are better understood.

8. Truck Route Network Implementation

This section outlines considerations for truck route implementation including implementing mitigating measures, determining signage, updating the traffic by-law, education and enforcement, and monitoring.

8.1. Assess for and Implement Mitigating Measures

For road segments that will be newly designated as part of the primary or secondary truck route network and that were not part of the truck route network previously, it is recommended that locations identified as potentially needing mitigating measures (Section 7.3) be assessed by the City to determine whether mitigating measures are needed, and to implement these in advance of newly designating a roadway as part of the truck route network. This will avoid having pre-existing road network concerns being further exacerbated by increased truck traffic. It is anticipated that any needed mitigating measures for the near-term truck route network will be feasible to implement in the short-term, but should more extensive improvements be needed, a portion of the truck route network may need to be phased in later after such mitigating measures are applied.

8.2. Signage

The City's Traffic By-Law 9148 notes that trucks must use the truck route network "when properly worded or marked signs have been erected and are on display".

Truck route signage plays a critical role in implementing the truck route network. Prohibitive ("no trucks") signage is enforceable under Ontario's Highway Traffic Act and the main method municipalities use to direct trucks by indicating specific roadways that trucks are not permitted to use. Windsor and other municipalities also use permissive truck route signage at routing decision points to direct truck drivers onto designated routes. The Primary Truck Route will continue to use the standard prohibitive and permissive truck route signage.

8.2.1. Confirm Local Delivery Route Signage

Because Local Delivery Routes are not yet in common use in Ontario, there is a need to develop and confirm the signage to be put in place for these routes. Exhibit 8.1 shows an example of potential Local Delivery Route signage, informed

by municipal truck route signage guidance provided by the Ministry of Transportation in Quebec and signage in place in the City of Hamilton. Specifics of this signage should be confirmed by City of Windsor staff with local enforcement authorities.

8.2.2. Road Signage Plan

Before implementing the recommended truck route network, the City is recommended to develop a comprehensive road signage plan. This will include both prohibited and permissive Primary Truck Route signage at key decision points, additional prohibitive signage where needed, and Local Delivery Route signage.

It will also include signage prohibiting turning movements for heavy trucks where intersection geometric design constraints or other factors prohibit turns. It will also provide warnings for trucks for truck route “dead ends” or turn prohibitions ahead.

Exhibit 8.1: Sample Local Delivery Route Signage



8.3. Traffic By-Law Update

The existing truck route network is governed by the City’s Traffic By-Law 9148, which regulates traffic within the city. The relevant text can be found in Appendix B with the recommended changes to Part IX (Truck Routes) as outlined below to account for the dual-tier road network.

Added text is marked in teal font below.

Insert new sub-section 33(2):

The truck route network has two components, a Primary Network and a Local Delivery Network.

Revise the first paragraph of current sub-section 33(2) as follows:

When properly worded or marked signs have been erected and are on display, no vehicle having a gross vehicle weight rating or registered gross weight of four thousand five hundred kilograms (4,500 kg.) or more shall be operated on any highway in the City of Windsor other than the highways set out in Schedule "H" hereof **as the Primary Network**, provided however – **(amended B/L 402-2001, Nov.5/2001)(deleted and replaced B/L 15-2009, Jan.26/09**

Revise sub-section 33(2) (a) as follows:

(i) such deviation shall be made at a point on one of the said truck routes nearest by road where the service is performed, **for which purpose the designated Local Delivery Network shall be considered as part of the Primary Network**, and –

(ii) on completion of the conduct of such business, such vehicle shall return by the shortest route to the nearest established truck route, **for which purpose the designated Local Delivery Network shall be considered as part of the Primary Network**.

Insert new sub-section 33(2) ©, comprising the following paragraphs:

(c) **Except as specified in sub-section 33 (a), the Local Delivery Network shall be used only by trucks that have three axles or less.**

In keeping with the Ontario Highway Traffic Act, Section 114, two axles spaced no more than one metre apart can also be considered to be a “single axle” for purposes of eligibility for using the Local Delivery Network for non-local travel.

The Local Delivery Network shall be identified with the appropriate signage distinguishing it from the Primary Network.

Appendix C includes an updated Schedule “H”, which lists the recommended designated road sections. The schedule focuses on the short-term network. Further updates can be made as additional road segments are designated. It will also be appropriate to add turn prohibitions and note geometric constraints, such as roundabouts, as appropriate. In addition, the by-law update should note the two existing long combination routes and, as they are designated, emergency routes.

8.4. Education and Enforcement

There will be a need to disseminate information about the new truck route network and the updated by-law to several audiences.

Emergency services and enforcement. Formal training should be provided for staff of the Windsor Police Service, MTO's Windsor District Enforcement office, other Windsor emergency services, parking and by-law officers, and other relevant City staff (e.g. traffic operations). This training could be achieved through one or more focused webinars.

Public. The public should be informed via customized notices on the City's website, as well through social media and traditional media. Maps showing the new routes, an explanation of the signage, a link to the by-law, City contacts for further information and, potentially, a link to this report (as background) should be posted on the City's website. Tailored descriptive articles or postings could be used for the social media, along with links to the maps, signage, by-law, City contacts and, if desired, the report. Media interviews with City staff could also be prepared, along with the map and references for additional information.

Council and other area politicians. Briefings should be prepared for Councilors and their staff, along with links to the aforementioned website, social media and traditional media references. Other area politicians would also benefit from briefings, including Provincial, Federal, neighbouring municipalities and First Nations.

Industry stakeholders. Drivers, dispatchers and industry (freight generators) require targeted outreach. The focus should be on providing information (using the aforementioned City website as well as social and traditional media) to educate users of the truck route network. The City could start by reaching out to the stakeholders assembled for this study (industry, industry associations, Business Improvement Area representatives and so on) to alert them and to ask them to disseminate an information package to their members (a compilation of the aforementioned maps and supporting information). The City could also reach out to the owners and operators of the border crossings (including the Blue Water Bridge), truck fleet owners, couriers, hotels and rest areas frequented by truckers (e.g. along Huron Church Road and ONroute stops), refueling stations, truck maintenance shops, truck and trailer dealers, truck parking and similar entities that cater to the trucking industry. In conjunction with MTO, consideration could

also be given to distributing a pamphlet about the truck route network when truck drivers seek or renew their licenses to operate heavy vehicles,

To follow up on this initial educational, awareness and informational outreach, the Windsor Police Service should conduct an enforcement blitz. The focus of the first blitz would be less on enforcement and fines, but more to use warnings as a means to promote awareness and compliance, while also compiling insights and data on monitoring (see next discussion). Periodic follow-up blitzes could focus on stricter enforcement.

8.5. Monitoring

While the new truck route network largely corresponds to truck drivers' current patterns, inevitably some changes in drivers' route choices will be required and some unexpected changes in traffic patterns may result. It will be important to take the following monitoring actions:

- Monitor compliance, which also indicates truckers' understanding of the network and the ease/clarity of the ability for the Windsor Police to enforce its use;
- Monitor traffic cameras to assess changes in the incidence of red-light running incidents, and monitor automated speed detectors to assess changes in truck speeding (where these exist);
- Monitor the use of the delivery network, especially compliance with the weight/ axle restriction and use of this delivery network by heavy vehicles for the first/ last kilometre segments of their itineraries (and avoidance of local streets);
- Look for unintended and unexpected traffic problems;
- Monitor collisions involving trucks, looking at changes in the frequency and severity of collisions and the responses required from emergency services; and
- Monitor delays to trucks at rail crossings, to see if the new truck route network has enabled reductions in delays at these locations.

It may be necessary to make minor changes to the truck route network, make operational changes (e.g. adding signs at specific locations or changing signal

Final Report
SUMMARY REPORT

timings), deploy additional mitigating measures, or distribute educational material to drivers.

9. Supporting Strategies

A designated truck route network is one critical aspect of managing the movement of trucks in the City of Windsor. However, additional supporting strategies can also complement the truck route network, and can strengthen general traffic operations and longer-term transportation planning. These strategies are outlined below, grouped as follows:

- Multimodal network planning and operations;
- Truck parking;
- Reducing environmental impacts;
- Monitoring truck traffic and impacts;
- Communications; and
- Planning for the future.

9.1. Multimodal Network Planning and Operations

Multimodal network planning involves developing and managing transportation systems that integrate different modes of transportation with the goal of creating a seamless, safe and efficient network for different road users.

9.1.1. Functional Road Classification Review

Recommendation: Conduct a comprehensive review and update to the functional road classification for the City’s municipal road network to ensure designations appropriately reflect the intended role of each roadway. The role of each roadway in terms of its local characteristics as well as its part of the City’s broader transportation system must be considered. The resulting updated functional road classifications will serve as a stronger basis to guide the City in making consistent transportation and land use access decisions.

Considerations

A functional road classification framework establishes a hierarchy of streets based on each roadway’s context and the degree to which the roadway prioritizes traffic movement vs. land access needs.

In line with the Transportation Association of Canada's (TAC's) Geometric Design Guide for Canadian Roads (2017), a roadway's service function can range from higher-order freeways and major arterials that give a high priority to traffic movement and therefore a lower priority on local property access (driveways); to lower-order collector roads, local roads and public lanes that have a decreasing focus on traffic movement and an increasing priority on local property access.

Exhibit 9.1 shows the functional road classification system as currently applied to municipal roadways in the City's Official Plan (2012). Additional information and description of the road classes are provided in the **Phase 1: Needs and Opportunities** report.

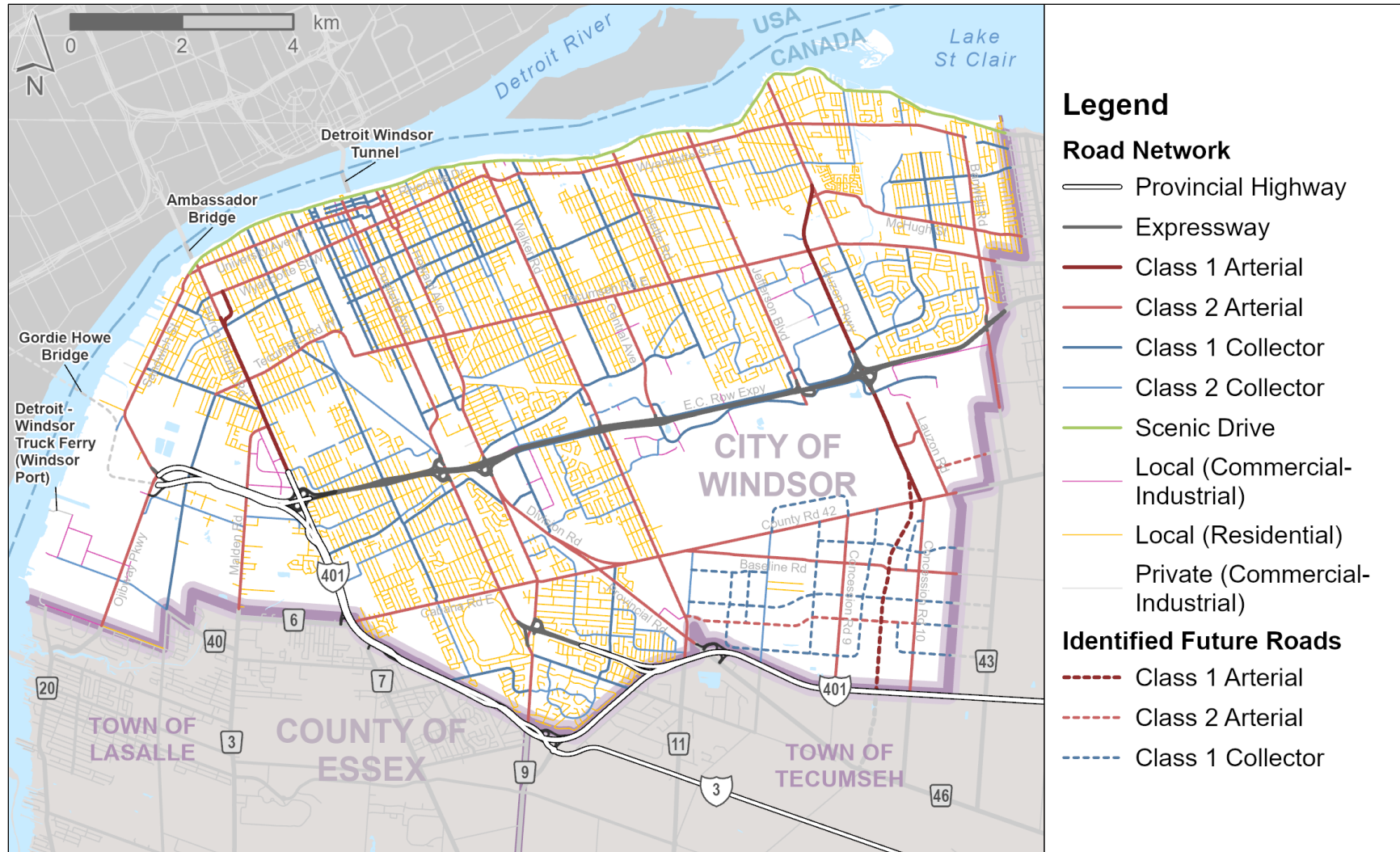
As noted in the truck route network development process, the truck route network should prioritize higher-order roadways, as these have characteristics more suitable for carrying truck volumes safely and efficiently. However, during the course of the Truck Route Study, various roadways were noted to have functional road classifications that did not appear to be in line with current road characteristics or with the intended use of the roadway, indicating the need for functional road classification review.

For example, some roadways currently designated as arterial or collector roadways have characteristics of residential streets and are very similar to nearby roadways that are designated as local residential, and it may be appropriate to change these to lower-order roadways. In other cases, local communities including Business Improvement Areas wish to shift the priority of selected higher-order roadways from moving traffic to local access (e.g. Sandwich Street, in particular between Prince Road and Rosedale Avenue, which is currently designated as an arterial roadway).

Conversely, it may also be appropriate to redesignate selected roadways that carry higher volumes of traffic than expected based on their functional road classification to higher-order roadways.

The functional road classification review would be based on factors such as traffic characteristics, roadway width and design characteristics, network connectivity, the frequency of property access to adjacent land uses, and the role of the roadway as part of the recommended truck route network.

Exhibit 9.1: Current City of Windsor Functional Road Classification



9.1.2. Truck Route Prioritization in Road Maintenance

Recommendation: Ensure that roadways designated as truck routes are prioritized in road repair and maintenance, cleaning and winter snow and ice removal, and continue to integrate these needs into the capital planning program or operations budgeting.

Considerations

Road maintenance is a critical component to the City's transportation network that involves investments into managing and repairing roadway infrastructure to help ensure roadway safety, functionality and prolonged lifespan. Key components of road maintenance include routine maintenance (street cleaning, sweeping, pothole repair), preventative maintenance (e.g. crack sealing) to prevent deterioration, corrective maintenance to address significant issues or structures deficiencies, and winter maintenance (snow removal and ice treatment).

In addition to maintaining the functionality, comfort and safety of roadways, regular road maintenance also helps to minimize noise, vibration and dust impacts on sensitive areas and other road users along designated truck routes (a recurring theme voiced by members of the public as well as stakeholders throughout the study process).

While the City of Windsor already prioritizes Arterial and Collectors roadways as part of their road maintenance program, additional roadways on the Truck Route Networks beyond those with Arterial or Collector roadways should be similarly prioritized.

Routine monitoring of road conditions and a timely maintenance process should be prioritized for roadways designated as truck routes to ensure the integrity of road infrastructure and the health and safety of impacted drivers and communities.

9.1.3. Truck Routes in Complete Streets Guidance

Recommendation: To support the success of the City's Complete Streets strategy, and to mitigate unresolved or new challenges along its streets, it is recommended that goods movement be explicitly considered and incorporated into the scheme.

Considerations

“Complete Streets” are roads that are built with the needs of all road users in mind—people who walk, use mobility aids, cycle, take transit, use a personal automobile, and carry commercial goods or support essential services.

Complete Streets improve the comfort and accessibility of all road users by promoting corridor designs and operations that provide a safe and desirable environment for all, especially cyclists and pedestrians. All travel modes are integrated into a seamless multi-modal transportation system, providing people with feasible and attractive travel choices. Some municipalities have adopted design guidelines and policies that are to be applied to new corridors and to retrofits of existing corridors. Despite the increasing demand for freight movement by trucks in both rural and urban areas, trucks are often not considered in the planning, design, operation and management of roadways.

A Windsor Complete Streets Policy is currently under development to help direct city-building and roads projects with consideration for multi-modal mobility options. Focus areas include vehicle speeds, vulnerable road users, high injury corridors, signalized intersections, mid-block pedestrian crossings, and design standards/best practices.

Complete Streets policy and design guidelines should consider the treatment and operational needs of critical service vehicles to help better accommodate trucks safely and efficiently while also balancing the needs and accessibility of other road users. This includes consideration for different factors, including the following:

- Lane widths (including limitations imposed by curb extensions in preventing site access) and turning radii, noting that wider lanes/roadways and increased curb radii more efficiently accommodate trucks but can also increase vulnerable road user exposure and risk to conflict;
- Curbside space management (loading zones and other considerations for pick-up and delivery logistics for courier traffic as well as larger trucks);
- Parking considerations;
- Maneuverability of intersections and roundabouts; and
- Building in ways to minimize and avoid conflicts between vulnerable road users (especially cyclists) and trucks.

Experience elsewhere demonstrates the importance of accommodating deliveries and through movements, regardless of the context or location for a Complete

Streets implementation. For example, to accommodate an important, high-volume loading area on a busy downtown corridor, one city reconfigured a planned bicycle path to provide the necessary supply of on-street loading spaces while maintaining a safe cycling environment.

The New York State Energy Research and Development Authority's *Complete Streets Considerations for Freight and Emergency Vehicle Operations (2019)*⁹ is a valuable reference for incorporating heavy vehicles into Complete Streets design. The guide addresses designs that are appropriate for roadway context, accommodation of large vehicle turns, conflict reduction between trucks and cyclists/pedestrians, and adequacy of loading, parking and delivery space, among other topics. The guide makes the critical point that, absent these considerations, a planned Complete Streets scheme might not achieve its objectives for the safe movement of corridor users. Note that design and operations must both be considered to make a Complete Streets corridor work for all users.

When planning a Complete Streets policy or implementation, it is also important to provide direct, targeted consultation with goods movement industry and businesses. The experience is that their needs might not otherwise be anticipated, and retrofits might be needed to address them. In this way, these corridor users can offer specific requirements, help them plan for how their loading operations might have to change, and gain their buy-in for planned improvements¹⁰.

As part of the Complete Streets strategy or a separate initiative, guidelines should be developed for turning radii to inform the design, operations and locations of enhanced intersections.¹¹

⁹ A Conway et al., *Complete Streets Considerations for Freight and Emergency Vehicle Operations*, New York State Energy Research and Development Authority, Albany, NY, 2019.

¹⁰ Kriger, D. and Seera, M., *Complete Streets and Goods Movement: The Canadian Experience*, *ITE Journal*, November 2020.

¹¹ While different contexts require different intersection treatments, several reports offer turning radii guidance references that could be adapted for Windsor. The (United States) National Association of City Transportation Officials (NACTO's) *Urban Street Design Guide* is a widely used standard. The City of Toronto's 2017 *Curb Radii Guideline* is a pioneering Canadian source for updating traditional

9.1.4. Signal Optimization and Coordination

Recommendation: Continue to review and refine signal timings at individual intersections and along key truck corridors, to promote a smoother flow of trucks and other traffic.

Considerations

A common theme expressed during Truck Route Study engagement was that trucks are diverting from designated truck routes to use parallel routes to avoid delays at traffic signals along the designated truck routes.

The City of Windsor, like many municipalities, conducts regular reviews of traffic signal timings to promote smooth and safe traffic flow. Reviews are commonly conducted at individual intersections, to adjust signal timings in response to changes in individual movements. Reviews also are made to assess the progression of traffic along important corridors, and to adjust signal timings along the corridor accordingly.

In many municipalities, only total traffic volumes are considered, without any breakdown by vehicle type. However, it may be appropriate to focus on reviewing and adjusting signal timings at intersections or along corridors that have significant truck volumes – for example, along Huron Church Road. As an example, after input from business, Peel Region reviewed and improved the progressions along specific corridors that served industries and warehouses. By monitoring signal timings over a few years, Peel achieved successive reductions: For example, on one key corridor with high truck volumes, a 22% reduction in flow times was achieved after the first year, with a further 8% reduction achieved in the second year, and another 2% in the third year.

intersection designs for improving the safety of pedestrians and cyclists while responding to the needs of all users. The City of Ottawa's 2021 Protected Intersection Design Guide offers further treatments for providing integrated, multimodal intersection designs. These guides aim to manage truck movements safely through design and operational treatments.

9.2. Truck Parking

9.2.1. Parking Provision

No change is proposed to City of Windsor’s traffic by-law (existing Part IX of Traffic By-law 9148) with respect to permitting trucks to park on-street only alongside roadways designated as truck routes.

No additional off-street or on-street truck parking strategies are recommended at this time. However, the City may need to monitor and review on-street and off-street parking provision in the future.

Truck parking—both on-street and off-street—is a critical component of transportation infrastructure and supports commercial goods movement and logistics operations. Adequate truck parking ensures goods are able travel to and from market reliably, as well as support driver welfare. The effective management of on-street truck parking, in particular, is critical for balancing the needs of truck operators with the overall functionality and safety of urban roadways. Parking challenges due to inappropriately designed spaces, conflicts between different road users, and an insufficient inventory of parking spaces are important considerations of the transportation system that the City of Windsor should be prepared to manage.

Specific issues faced by other municipalities and strategies that could be considered by the City of Windsor include the following:

- Providing an adequate parking supply for *local* independent owners-operators, who need a nightly parking space that is close to their homes and to the customers they serve, such that the vehicles do not disturb neighbouring properties;
- Including a clearly defined designation in the municipal zoning by-law that permits overnight truck and trailer storage in appropriately located areas, to avoid the proliferation of the illegal use of undeveloped properties for large-scale **local** truck and trailer parking that is now experienced in the Greater Toronto Area (and is spreading westward);
- Working with industries to provide temporary on-site or nearby parking as long-haul drivers await their delivery windows, to avoid drivers reaching their hours of service while they wait on the street for entry to the property;

- Allowing on-street truck parking on local streets within designated industrial areas, where the right-of-way, geometries and so on permit; and
- Reviewing off-street truck and trailer parking requirements for warehouses and distribution centres (serving e-commerce deliveries), whose trucking operations can be significantly greater than those associated with ‘traditional’ warehousing.

9.3. Reducing Environmental Impacts

9.3.1. Parked Vehicle Idling

Recommendation: Review the City of Windsor’s idling bylaw (*Anti-Idling By-Law #233-2001 to Prohibit Excessive Idling of Vehicles and Boats*) to consider whether a reduction in the idling limit of 3 continuous minutes is needed.

While truck idling may be required in some situations (e.g. climate control inside the cabin), extended idling has negative impacts including air and noise pollution. The City of Windsor’s “Anti-Idling By-Law #233-2001 to Prohibit Excessive Idling of Vehicles and Boats” (2001 and amended on February 6, 2017 as per By-law 19-2017) restricts commercial motor vehicles from idling for more than three continuous minutes. While idling was not a common concern expressed by members of the public or stakeholders throughout the Truck Route Study, the City may wish to strengthen its anti-idling by-law through increased enforcement or reduced idling times (e.g. Toronto has an idling limit of 1 minute).

9.4. Monitoring Truck Traffic and Impacts

9.4.1. Data Collection

Recommendation: Continue the City’s intersection traffic classification counts and expand the program to include screen line counts along roadway links.

Considerations

A traffic count program involves the systematic collection and analysis of data related to traffic volumes, patterns and characteristics on roadways. The City of Windsor conducts annual traffic classification counts for selected individual intersections. The count program also includes truck, pedestrian and cyclist counts for a number of higher-order roads. The data is used to generate new

insights such as understanding traffic behaviour and roadway capacity, as well as assessing active transportation demand to help the City make informed and evidence-based decisions to improve the transportation network, operations and road safety across Windsor. These traffic counts provided very valuable inputs into truck route network development.

Different methods can be used to conduct traffic counts. The City currently undertakes intersection counts where the flow of vehicles, pedestrians and cyclists turning left, right or going straight through are recorded. The resulting data can then be used to assess intersection performance, signal timing and traffic behaviour to inform design and operational improvements. Screen-line counts involve conducting traffic counts at a specific segment along a roadway to record the total volume of traffic passing that point. The data is then used to estimate total traffic volumes and understand overall traffic patterns to assist in transportation modelling and planning.

9.4.2. Gordie Howe International Bridge Traffic Impacts

Recommendation: Monitor changes in cross-border truck traffic patterns when the Gordie Howe International Bridge opens, and be prepared to refine the truck route network if changes warrant.

Considerations

The Ambassador Bridge is the dominant southwestern Ontario border crossing for trucks today. The future Gordie Howe International Bridge is expected to significantly increase truck crossing capacity at the southwestern Ontario border when it opens in late 2025, when it will become the largest Canada-US port of entry. The new bridge will offer direct connections to the freeway systems on both sides of the border. It also has been designed with a large port-of-entry capacity to process high volumes of trucks expeditiously in both directions. As well, the new bridge will accommodate vehicles carrying dangerous goods—with the closure of the Detroit-Windsor Ferry crossing in 2023, the nearest legal Canada-US crossing for trucks carrying dangerous goods has been the Blue Water Bridge in Sarnia.

Nonetheless, even with these planned capabilities, the split of truck traffic, as well as passenger vehicle traffic, between the Ambassador Bridge and the new bridge remains unknown – hence the role of Huron Church Road as a major cross-border access, and more generally truck traffic patterns across the broader municipal road network, is also unknown. Understanding the traffic impacts of the new

bridge to the operations of the transportation system as well as to local communities will be important to ensuring that the needs of the goods movement industry are balanced alongside community priorities and the needs of local residents and road users.

During Truck Route Study engagement, residents and representatives from Sandwich Towne area in particular were concerned about the potential for additional cut-through traffic in accessing the Gordie Howe Bridge, even though the main access route is intended to be Ojibway Parkway. This area should be a particular focus in monitoring Gordie Howe Bridge traffic impacts.

9.5. Communications

9.5.1. Communicating Temporary Network Changes

Recommendation: Continue to implement electronic means to communicate route changes and other emergency messages to drivers and dispatchers via Ontario 511, and explore other means of providing targeted and timely information.

Considerations

The City of Windsor currently provides real-time roadway operations information to Ontario's 511 service to support timely communications to road users.

In other truck route and goods movement studies, industry stakeholders have expressed the need for the improved communication of immediate and temporary network changes that arise from road construction, emergency detours, weather, etc. Key needs are for **targeted communication** (reaching drivers and dispatchers directly), **timely communication** (specifically, electronic communications on media used by truckers), and **updated protocols** with whom to communicate, how often, and so on.

9.5.2. Ongoing Stakeholder and Public Engagement

Recommendation: Consider setting up an ongoing forum among goods movement stakeholders to anticipate and address issues as they emerge and to provide a forum to get industry comments on planned transportation initiatives.

Considerations

Many municipalities across North America have set up goods movement forums, which are typically made up of municipal and industry stakeholders. Successful Canadian examples include Metro Vancouver, Calgary, Peel Region and Montreal. These forums proactively identify and address issues before they become problematic, identify priorities, serve as venues to exchange information, serve as a forum to vet new ideas and develop partnerships for future initiatives, and support research, pilot tests of new technologies and data collection.

The forum also provides a means of reaching the stakeholder community to solicit input on planned infrastructure, policy and regulatory initiatives.

9.6. Planning for the Future

9.6.1. Planning for Long Combination Vehicles

Recommendation: Incorporate the needs for long combination vehicles into corridor and land use plans at likely candidate locations.

Considerations

The demand for long combination vehicles (LCVs) is growing among manufacturers and distributors across Canada. It is not uncommon for changes to be required along designated LCV routes—for example, relocating traffic signal poles at intersections to provide the necessary clearances.

To date, the City has approved two LCV routes, serving specific sites at 1885 Brunet Drive and 1790 Provincial Road.

The planned extension of Lauzon Parkway to connect via a new interchange at Highway 401 provides an important economic opportunity to add Lauzon Parkway as an additional LCV route, should the parkway corridor's planned land uses indicate the potential for LCV-capable industrial sites within 5 kilometres of Highway 401. It is less costly overall to incorporate LCV-appropriate elements into roadway design from the outset instead of implementing expensive retrofits to existing routes.

Existing LCV routes and the identified future opportunity LCV route along Lauzon parkway are shown on the recommend truck route map in Exhibit 6.3.

As new industries come to Windsor and existing industries expand their operations, more requests for additional LCV routes can be anticipated. It may be appropriate to identify potential industrial lands that would be suitable for LCV use, and proactively update the connecting roadways that would be used to access Highway 401. In this way, roadway and intersection upgrades (such as ensuring the appropriate vertical and horizontal clearances) could be introduced when the connecting roads are upgraded, widened or extended. These needs also would inform planned intersection improvements, to ensure that LCVs can manoeuvre the intersections safely. Similarly, site plan approvals could mandate the need for LCV coupling/decoupling space and other amenities on site and at the site access.

These proactive measures also signal the availability of LCV-ready industrial locations to potential investors, at locations that also meet the City's transportation, land use and economic development plans and policies.

9.6.2. Process for Updating the Truck Route Network

Recommendation: Establish a process for regularly reviewing and updating the truck route network.

Considerations

To avoid ad hoc decisions on requests for changing the truck route, some municipalities have established set processes to review changes. This approach ensures that proposed changes are reviewed objectively so that Council is fully informed of the implications. For example, the City of Ottawa reviews its truck route network annually. The Region of Waterloo uses set criteria to evaluate requests for changes. The Truck Route Study used a transparent and structured approach for the current truck route update that can be used as the basis for regular review.

9.6.3. Planning for Truck Routes and Bicycle Routes

Recommendation: Set up a protocol for assessing the designation of truck routes and bicycles routes, to avoid conflicts and “either-or” choices.

Considerations

There can often be competing demands for locating truck routes and bicycle routes on the same corridors. While the designation of each of the two types of routes is based on sound analysis, a protocol may be needed to assess and accommodate competing needs. In this way, the needs of both stakeholder communities can be accommodated. For example, it may be appropriate to shift a planned bicycle route to a nearby parallel local street, while leaving the truck route on the arterial.

9.6.4. Integrating Trucks into Designs for Planned Road Improvements

Recommendation: Review the process for incorporating trucks into planned road and intersection alternatives.

Considerations

While the City has well-established road and intersection design standards, there may be multiple alternatives for a planned improvement. For example, roundabouts should be avoided (or designed to accommodate) trucks on roads that functionally are meant to carry large volumes of trucks. Planned improvements or extensions on corridors that connect to Highway 401, such as the Lauzon Parkway extension, should be designed to accommodate heavy vehicles with the appropriate treatments in place to ensure the safety of cyclists, pedestrians and other corridor users.

Appendix A: Refinements to Preferred Network

The following changes were made to truck route network designation changes were made to the recommended network compared to the draft Option 2 network that was presented as part of round 2 engagement, ordered approximately west to east:

- **Future Municipal Roads: Broadway Street and Sandwich Street south of Ojibway Parkway:** These currently federal roadways will be designated as Primary Truck Routes upon transfer to the City of Windsor with the completion of the Gordie Howe International Bridge.
- **Mill Street and Wyandotte Street:** The Local Delivery Route connection between Russell Street and Huron Church Road was redesignated in response to operational concerns (i.e. turning trucks difficulty) and potential safety concerns (i.e. potential for conflict between trucks and vulnerable road users), especially at the intersection of Mill Street and Sandwich Street. **Detroit Street** and **Sandwich Street** were instead designated as Local Delivery Routes.
- **Russell Street:** The Primary Truck Route section north of Watkins Street was extended farther northeast to Detroit Street to create a more direct connection to Windsor Port and other industries from the west to provide more explicit guidance to access these industries by larger trucks from the west side, helping to mitigate cut-through traffic along Sandwich Street. This section of Russell Street had been designated as Local Delivery Route under network Option 2.
- **Prince Road and Sandwich Street:** The Local Delivery Route connection along Prince Road north of College Street, and along Sandwich Street from Chappell Ave to Prince Road was removed from the recommended network due to concerns about trucking movements and visibility at the Prince Road and Sandwich Street intersection. As part of the Sandwich Street Reconstruction Environmental Assessment (2020), conducted as part of Gordie Howe International Bridge implementation, a truck turning analysis had been identified as a requirement for the Prince Road-Sandwich Street intersection. The results of this truck turning analysis are not available, and as Sandwich Street improvements are already underway, additional improvements are not considered feasible in the foreseeable future. This

truck route connection is therefore now instead shown as a desired Local Delivery Route.

- **College Avenue:** College Avenue between Huron Church Road and Crawford Avenue is currently part of the truck route. Option 2 had this section as a Primary Route with limited hours. The limited hours designation was changed to Primary Route to provide adequate network density and redundancy, especially as a redundant connection in the vicinity of Ambassador Bridge.
- **Totten Street:** Totten Street was removed as a Local Delivery Route due to concerns over the impact of potential cut-through traffic on sensitive land uses including a school, park and houses along the roadway. A parallel truck route along Tecumseh Road is considered to provide adequate network connectivity.
- **Northwood Street, Dominion Boulevard and West Grand Boulevard:** This network of Local Delivery Routes was originally considered to help provide direction for trucks on local delivery in the neighbourhood. However, these roadways were removed due to concerns over sensitive land uses and potential for cut-through traffic between Cabana Road and Huron Church Road.
- **Ouellette Avenue:**
 - **North of Giles Boulevard:** Ouellette Avenue between Wyandotte Street and Giles Boulevard, previously a Primary Route with limited hours, was changed to a Local Delivery Route, as this seems to be a more targeted way to respond to concerns about heavy trucks cutting through this business improvement area, while still allowing smaller trucks and providing guidance and connectivity for drivers on local delivery. The Local Delivery Route designation was also extended northerly to Riverside Drive.
 - **South of Giles Boulevard:** Ouellette Avenue between Giles Boulevard and Tecumseh Road, previously a Primary Route with limited hours, was changed to a Primary Route to help simplify the network – otherwise this would be the only limited-hours Primary Route. This also maintains adequate connectivity for trucks travelling toward the Downtown and the relatively small volume of trucks that use the Detroit Windsor Tunnel. There was also concern about having too

many large trucks diverting to parallel roadways Howard Avenue and McDougall Street if this section were to be designated a Local Delivery Route like the section north of Giles Boulevard.

- The following roadways between McDougall Street and Howard Avenue in central Windsor are currently Primary Truck Routes, and are now recommended to be Local Delivery Routes:
 - **Erie Street**
 - **Giles Boulevard**
 - **Ellis Street**
 - **Shepherd Street East**
 - **Hanna Street East**
 - **Mercer Street** between Giles Boulevard East and Ellis Street East, and between Shepherd Street East and Hanna Street East
- **Riverside Drive:** The Primary Truck Route designation was changed to Local Delivery Route between Aylmer Avenue and Walker Road to support the future vision of Riverside Drive as an important scenic corridor. There was not seen to be a need to have this route serve connect larger vehicles.
- **Drouillard Road:** The draft Local Delivery Route designation on Drouillard Road was removed between Edna Street and Richmond Street to support place-making and traffic calming efforts of the BIA and City, and to remove the potential for conflict between trucks and growing pedestrian and cyclist traffic. The Local Delivery Route designation was retained on Drouillard south of Richmond Street and along Richmond Street to provide guidance so that local trucks do not use less-appropriate east-west residential roads to connect from Walker Road.
- **Catherine Street** westerly extension to Tecumseh Road East and **Rosehill Gardens** between Catherine Street and Tecumseh Road East: Upon completion, these roads will be designated as Primary Truck Routes.
- **McHugh Street and Banwell Road:** The Primary Truck Route designation was changed to Local Delivery Route on McHugh Street from Lauzon Road to Tecumseh Road, and on Banwell Road south of McHugh Street. This was done to limit potential for cut-through trips by heavy trucks, while still providing guidance for smaller vehicles and local deliveries. Very little demand was evident for heavy trucks to use this route.

- **10th Concession Road:** This is no longer recommended to be changed to a Primary Truck Route in the future, but is recommended to be a Local Delivery Route in both the near and long term, along with the new arterial roadway between the future Lauzon Parkway and 10th Concession Road.

Appendix B: Traffic By-Law Amendments

Additions to the bylaw are indicated in *teal* font.

PART I INTERPRETATION

1. In this by-law:

...

(b) **Commercial Motor Vehicle** means any motor vehicle having permanently attached therefore a truck or delivery body, and includes ambulances, hearses, casket wagons, fire apparatus, police patrols, motor buses, and tractors used for hauling purposes on the highway and any vehicle bearing commercial license plates;

...

PART IX TRUCK ROUTES

33. (1) The highways set out in Schedule "H" to this by-law are hereby designated as "TRUCK ROUTES". *The truck route network has two components, a Primary Network and a Local Delivery Network.*

(2) When properly worded or marked signs have been erected and are on display, no vehicle having a gross vehicle weight rating or registered gross weight of four thousand five hundred kilograms (4,500 kg.) or more shall be operated on any highway in the City of Windsor other than the highways set out in Schedule "H" hereof *as the Primary Network*, provided however – **(amended B/L 402-2001, Nov.5/2001)(deleted and replaced B/L 15-2009, Jan.26/09)**

(a) that any commercial vehicle may be operated on any highway in the City of Windsor for the purpose of delivering or receiving, loading or unloading of goods, wares or merchandise, or in proceeding to or from a garage or other premise for the housing or repair of such motor vehicle and provided that -

(i) such deviation shall be made at a point on one of the said *Primary* truck routes nearest by road where the service is performed, *for which purpose the designated Local Delivery Network shall be considered as part of the Primary Network*, and -

(ii) on completion of the conduct of such business, such vehicle shall return by the shortest route to the nearest established truck route, for which purpose the designated Local Delivery Network shall be considered as part of the Primary Network.

(b) Such vehicles shall not be parked at any time on any highway or portion of highway other than the highways set out in Schedule "H" to this by-law.

(c) Except as specified in sub-section 33 (a), the Local Delivery Network shall be used only by trucks that have three axles or less.

In keeping with the Ontario Highway Traffic Act, Section 114, two axles spaced no more than one metre apart can also be considered to be a "single axle" for purposes of eligibility for using the Local Delivery Network for non-local travel.

The Local Delivery Network shall be identified with the appropriate signage distinguishing it from the Primary Network.

(3) The provisions of sub-section 2 of this section shall not apply to vehicles owned by the Corporation or to emergency vehicles, vehicles of a public transit system or to coal and oil trucks on delivery, or to a privately-owned commercial vehicle proceeding to and from the residence of the owner. **(substituted B/L 10790, Sept. 9/91)**

(4) (a) When authorized Signs have been erected and are on display, the provisions of Subsections 1, 2, 3 and 4 of Section 122 of the Highway Traffic Act, R.S.O. 1990, c. H.8, as amended from time to time, apply to the Highways named in Column 1 of Schedule "S" to this by-law, from the location or Highway named and/or described in Column 3 of the said Schedule, for the period from the 1st day of March to the 30th day of April, both dates inclusive, in each and every year.

(b) If deemed necessary by the Executive Director of Operations, or any successor thereof, the period of the load restriction in Section 33(4)(a) may be extended to commence from the 1st day of February. **(Section 4(a) and (b) added B/L 347-2003, Oct. 20/03)**

33(4) (a) When authorized signs have been erected and are on display, the provisions of Subsections 1,2,3 and 4 of Section 122 of The Highway Traffic Act, R.S.O. 1990, c.H8 as amended from time to time, apply to the Highways named in Column 1 of Schedule "S" to this by-law, from the location or Highway named and/or described in Column 3 of the said Schedule, for the

period from the 1st day of March to the 30th day of April, both dates inclusive, each and every year **(ADDED B/L 2-2014 JANUARY 6, 2014)**

34. (1) **(repealed B/L 11574, Sept. 20/93)**

(2) **(substituted B/L 9475, Aug. 2/88; repealed B/L 12149, Mar. 20/95)**

(3) The provisions of Sub-section (2) of this section shall not apply to vehicles owned by the Corporation or Transit Windsor.

(4) **(added B/L 9540, Sept. 26/88; deleted B/L 402-2001, Nov.5/2001)**

(5) **(added B/L 9669, Jan. 23/89; repealed B/L 11658, Dec.6/93)**

Appendix C: Designated Truck Routes Listing

The City shall review the amendments below, which reflect the **near-term recommended truck route network**, before implementation. The City shall also provide the appropriate amendment annotations.

Deletions are marked in red strikethrough font (~~sample~~), and additions in teal font (sample).

Designated Truck Routes – to replace listing of highways set out in Schedule "H" of Part IX of Traffic By-law 9148.

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
7th Concession	Cabana Road East	Walker		Primary
10th Concession	Cabana Road East	South City limit		Local Delivery
Airport	Walker	C & O Railway	At all times	Primary
Albert	Wyandotte	Edna	At all times	Primary
Ambassador Drive (amended B/L 11534, Aug. 3/93)	Malden Road	Continental Avenue	At all times	Primary
Anchor Drive (added B/L 13197, Dec.15/97)	Twin Oaks Drive	East limit thereof	At all times	Primary
Aylmer	Riverside	Cataraqui	At all times	Primary
Banwell Road (added B/L 44-2000, Feb.7/2000)	DELETED - B/L 347-2003, OCT. 20/03			
Banwell Road (added B/L 347-2003, Oct.20/03)	E. C. Row Expressway	Wyandotte Street	At all times	

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
	(a) South City limit	Tecumseh		Primary
	(b) Tecumseh	Wyandotte		Local Delivery
Broadway	deleted B/L 11311, Jan. 25/93			
Bruce	(deleted B/L 12523, Apr.22/96)			
Bruce Avenue (ADDED B/L 178-2016 NOV 21/16)	University Avenue	Riverside Drive West	Coach Canada Only At all times Nov 29-Dec 11/2016	
Brunet	Malden	Industrial	At all times	Primary
Cabana	Provincial	Division	At all times	
	(a) Huron Church	Dougall		Local Delivery
	(b) Dougall	East City limit		Primary
Campbell	University	College		Primary
Cantelon	Lauzon Parkway	west limit of	At all times	Primary
Cantelon				
Caron	(deleted B/L 12523, Apr.22/96)			
Catherine	Lauzon Parkway	Tecumseh Road East		Primary
Central	(a) (deleted B/L 11695, Jan.17/94)			
	(b) Tecumseh	Rhodes	At all times	Primary

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
Chappus	Sandwich	Water	At all times	
Chappell (added B/L 80-1999, Mar.22/99)	Sandwich	Russell	At all times	Primary
Chatham	(deleted B/L 12523, Apr.22/96)			
Cherry Blossom Drive(ADDED B/L 28-105 MAR 23/15)	Ironwood Drive	Sprucewood Drive	At all times	Primary
Chrysler Centre	Tecumseh	Grand Marais	At all times	Primary
Church	(deleted B/L 12523, Apr.22/96)			
College (deleted & added B/L 288-2004, Aug. 30/04) (DELETED BY LAW 146-2014 AUG 25/14)	Huron Church Road	125 metres west of Wellington Avenue	At all times	
College Avenue (ADDED BY LAW 146-2014 AUG 25/14)	(a) Huron Church Road	Crawford Avenue	At all times	Primary
	(b) Prince	Huron Church		Local Delivery
Continental	Malden	Huron Church	At all times	Primary
County Road 42 (added B/L 347-2003, Oct. 20/03)	187 metres east of Riberdy Road	East City limit	At all times	Primary
Crawford	(a) University	Wyandotte		Local Delivery
	(b) Wyandotte	Tecumseh (s)	At all times	Primary
Detroit	Russell	Sandwich		Local Delivery

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
Devon	E.C.Row	Foster	At all times	Primary
Devonshire	Riverside	Wyandotte	At all times	
Deziel Drive	Rhodes	C & O Railway	At all times	Primary
Division	Howard	G & O Railway	At all times	
Division	Howard	Cabana		Primary
Dodge	Plymouth	southerly		Primary
Dougall Avenue	(a) (deleted B/L 12523, Apr.22/96)			
	(b) deleted B/L 9476, Aug. 2/88			
	(c) deleted B/L 11-1999, Jan.18/99)			
	(d) Canadian Pacific Railway (added B/L 11-1999, Jan.18/99)	Dougall Parkway	At all times.	
Dougall Avenue	Essex Terminal Railway	Dougall Parkway		Primary
Dougall Parkway (added B/L 11-1999, Jan.18/99)	(a) Dougall Avenue	Sixth Concession Road	At all times	Primary
Doty	Howard	Holden	At all times	Primary
Drouillard	Riverside	Tecumseh	At all times	
	(a) Riverside	Edna		Primary
	(b) Richmond	Tecumseh		Local Delivery

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
E. C. Row Avenue (added B/L 16-2005, Jan. 24/05)	Anchor Drive	Banwell Road	At all times	
E. C. Row North Service Road (deleted B/L 16-2005, Jan. 24/05)	Lauzon Parkway	Walker	At all times	
E. C. Row South Service Road (deleted B/L 16-2005, Jan. 24/05)	Walker	East City limit	At all times	
E. C. Row Expressway (added B/L 12987, June 16/97)	Ojibway Parkway	East City limit	At all times	
E. C. Row Expressway	Huron Church	East City limit		Primary
Edinborough	Ouellette	Howard	At all times	Primary
Edna	St. Luke Albert	Drouillard	At all times	Primary
Ellis	Windsor McDougall	Howard	At all times	Local Delivery
Elsmere	Grand Marais	E. C. Row	At all times	Primary
Erie	Ouellette	Parent	At all times	
	(a) Ouellette	Goyeau		Local Delivery
	(b) Goyeau	McDougall		Primary
	(c) McDougall	Howard		Local Delivery
Essex Way	Quality Way	Lauzon Parkway		Primary
Eugenie	Dougall	Howard	At all times	Primary

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
Ferry	(deleted B/L 12523, Apr.22/96)			
Foster	Marentette	Devon	At all times	Primary
Foster Avenue (added B/L 16-2005, Jan. 24/05)	Walker Road	Kautex Drive	At all times	Primary
George	Wyandotte	Ontario	At all times	Primary
Giles	Ouellette	Parent	At all times	
	(a) Ouellette	McDougall		Primary
	(b) McDougall	Howard		Local Delivery
Glengarry	Riverside	Cataraqui	At all times	Primary
Goyeau (DELETED BY LAW 146-2014 AUG 25/14)	Riverside	Giles	At all times	
Goyeau (ADDED BY LAW 146-2014)	(a) Riverside Drive East	University Avenue East	At all times	Primary
Goyeau (ADDED BY LAW 146-2014)	Wyandotte Street East	Giles Boulevard East	At all times	
Goyeau	(b) Wyandotte Street East	Erie		Primary
	(c) Erie	Giles		Local Delivery
Grand Marais	(a) Walker	Central	At all times	Primary
	(b) Howard	Elsmere	At all times	Primary
Hanna	Windsor McDougall	Howard	At all times	Local Delivery
Hawthorne	Lauzon Parkway	C.N.R. Industrial Spur	At all times	Primary
Highway 2				

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
(extension) (deleted B/L 306-1999, Oct.18/99)				
Holden	McDougall	Doty	At all times	Primary
Howard	Cataraqui	Highway 3	At all times	Primary
Huron Church	Riverside	South City limit	At all times	
	(a) University	Wyandotte		Local Delivery
	(b) Wyandotte	South City limit		Primary
Industrial Drive (amended B/L 11534, Aug. 3/93)	Ambassador Drive	Huron Church Road	At all times	Primary
Ironwood Drive (ADDED B/L 28-2015 MAR 23/15)	Maplewood Drive	Cherry Blossom Drive	At all times	Primary
Janette	(deleted B/L 12523, Apr.22/96)			
Jefferson	Tecumseh	South City limit	At all times	
	Tecumseh	Rhodes		Primary
Kautex Drive (added B/L 16-2005, Jan. 24/05)	Deziel Drive	St. Etienne Boulevard	At all times	Primary
Kew Drive (added B/L 16-2005, Jan. 24/05)	Hawthorne	Essex way (private)	At all times	Primary
Kew (deleted B/L 16-2005, Jan. 24/05)	Hawthorne	Forest Glade	At all times	

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
Lauzon (inserted B/L I0608, Mar.25/9I)	Wyandotte	Tecumseh	At all times	Primary
Lauzon Road(ADDED B/L 178—2016 NOV 21/16)	Wyandotte Street East	Riverside Drive East	Coach-Canada Only At all time Nov 29-Dec 11/2016	
Lauzon Line	Lauzon Parkway	Lauzon Road		Primary
Lauzon Parkway(deleted B/L 16-2005, Jan. 24/05)	Lauzon	South City limit	At all times	
Lauzon Parkway (added B/L 347-2003, Oct. 20/03)	Lauzon Road	County Road 42	At all times	
Lauzon Parkway	Lauzon Road	Cabana		Primary
Legacy Park	Provincial	Walker		Primary
Malden	Huron Church	South City limit	At all times	Primary
Mannheim Way (added B/L I0608, Mar. 25/9I)	Deziel Drive	St. Etienne Boulevard	At all times	Primary
Maplewood Drive (added B/L 16-2005, Jan. 24/05)	Sprucewood Avenue	Ironwood Drive	At all times	
	Sprucewood Avenue	Essex Terminal Railway Industrial Spur		Primary
Marentette	E. C. Row	Division	At all times	Primary

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
McDougall	(a) Riverside	Tecumseh	At all times	Primary
	(b) C.P.R. tracks	Howard	At all times	
	(b) CPKC south tracks	Howard		Primary
McHugh Street (ADDED B/L 178-2016 NOV 21/16)	Lauzon Road	To a point 518 metres east of Lauzon Road Banwell	Coach Canada Only At all times Nov 29-Dec 11/2016	Local Delivery
Mercer	(a) deleted B/L 12385, Nov.14/95)			
	(b) Giles	Ellis	At all times	Local Delivery
Mercer	(c) Shepherd (inserted B/L 9919, Aug. 28/89; amended B/L 10296, May 28/90)	Tecumseh	At all times	
	(c) Shepherd	Hannah		Local Delivery
Morton	Ojibway Parkway	Front	At all times	
	Ojibway Parkway	Old Front Road		Primary
Munich	Twin Oaks	southeasterly		Primary
North Service Road (added B/L 16-2005, Jan. 24/05)	Central Avenue	Jefferson Boulevard	At all times	Primary
South Service Road (added B/L	Jefferson Boulevard	Lauzon Parkway	At all times	Primary

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
16-2005, Jan. 24/05)				
Ojibway Parkway	Sandwich	Morton	At all times	Primary
Ontario	Central	George	At all times	Primary
Ottawa	Howard	Walker	At all times	Local Delivery
Ouellette	(a) Wyandotte	Tecumseh	Daily -- 8 AM to 6 PM only	
	(a) University	Giles		Local Delivery
(inserted B/L 12021, Nov.7/94, MTO approval Dec.20/94)	(amended B/L 12286, Aug.14/95, MTO approval Oct.3/95)			
	(b) Tecumseh	Edinborough	At all times	
	(b) Giles	Edinborough		Primary
Ouellette Place	Ouellette	Dougall	At all times	Primary
Parent	Erie	Tecumseh	At all times	
	Ottawa	Tecumseh		Local Delivery
Patricia Road (added B/L 299-2005, Dec.19/05)	Huron Church	Wyandotte Street West	At all times	Primary
Pelissier	Chatham	University	At all times	
Pilette	(a) Wyandotte	Tecumseh	At all times	Primary
	(b) Tecumseh	Plymouth	daily 8 AM to 6 PM only	Local Delivery
	(c) Plymouth	E. G. Row	At all times	
	(c) CPKC tracks	North Service Road		Primary
Pitt	(amended B/L 12385,			

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
	Nov.14/95)(deleted B/L 12523, Apr.22/96)			
Plymouth	Central	Pillette	At all times	
	Central	Roundabout at Syncreon entrance		Primary
	Roundabout at Syncreon entrance	Pillette		Local Delivery
Peole	Ambassador	Huron Church	At all times	
Pool	Ambassador	easterly		Primary
Prince	College	Tecumseh		Local Delivery
Provincial	Division	C & O Railway	At all times	Primary
Quality Way (added B/L 16-2005, Jan. 24/05)	Jefferson Boulevard	Lauzon Parkway	At all times	Primary
Rhodes Drive (added B/L 16-2005, Jan. 24/05)	Central Avenue	Jefferson Boulevard	At all times	Primary
Rhodes(deleted B/L 16-2005, Jan. 24/05)	Central	Pillette	At all times	
Richmond	Walker	Drouillard	At all times	Local Delivery
Riverdale	Riverside	Wyandotte		Local Delivery
Riverside (amended B/L 12523, Apr.22/96)	Goyeau	Strabane	At all times	
Riverside Drive East (ADDED B/L 178-2016 NOV 21/16)	Strabane Avenue	Lauzon Road	Goach Canada Only At all times	

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
			Nov 29-Dec 11/2016	
Riverside Drive West (ADDED B/L 178-2016 NOV 21/16)	Huron Church Road	Ouellette Avenue	Goach Canada Only At all times Nov 29-Dec 11/16	
Riverside	(a) Goyeau	Aylmer		Primary
	(b) Aylmer	Walker		Local Delivery
	(c) Walker	Drouillard		Primary
	(d) Riverdale	East City limit		Local Delivery
Roseville Gardens	Catherine	Tecumseh		Primary
Russell (added B/L 80-1999, Mar.22/99)	Chappell	Watkins	At all times	
	Chappell	Detroit		Primary
Sandwich	(a) deleted B/L 959I, November 7, 1988			
	(b) deleted B/L 80-1999, Mar.22/99			
Sandwich (added B/L 80-1999, Mar.22/99)	Chappell	Broadway	At all times	Primary
Seminole	Walker	Pillette	At all times	Primary
Service	Lauzon Parkway	Lauzon Road		Primary
Shepherd	Windsor	Howard	At all times	
	McDougall	Howard		Local Delivery

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
South Cameron	(a) Tecumseh	Dougall	At all times	Primary
	(b) West Grand	Howard	At all times	Primary
Sprucewood Avenue (added B/L 16-2005, Jan. 24/05)	Maplewood Drive	Matchette Road	At all times	Primary
Sprucewood (deleted B/L 16-2005, Jan. 24/05)	Ojibway Parkway	Matchette	At all times	
St. Etienne Blvd. (added B/L 10608, Mar. 25/91)(deleted B/L 16-2005, Jan. 24/05)	Deziel Drive	cul-de-sac	At all times	
St. Etienne Boulevard (added B/L 16-2005, Jan. 24/05)	Kautex Drive	Cul-de-sac	At all times	Primary
St. Luke	Wyandotte	Seminole	At all times	
Star Way (added B/L 10608, Mar. 25/91)	Temple Drive	southerly	At all times	Primary
Strabane	Riverside	Wyandotte	At all times	
Sydney	Devon	Division	At all times	Primary
Tecumseh	Huron Church	East City limit	At all times	
	(a) Prince	Huron Church		Local Delivery
	(b) Huron Church	Banwell		Primary
	(c) Banwell	East City limit		Local Delivery
Temple Drive (added B/L 10608, Mar. 25/91)	Central Avenue	westerly to cul-de-sac	At all times	Primary

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
Third Concession (deleted B/L 306-1999, Oct.18/99)				
Tuscarora Street(ADDED B/L 178-2016 NOV 21/16)	Glengarry Avenue	Aylmer Avenue	Goach-Canada Only At all times Nov 29-Dec 11/16	
Tuscarora Street(ADDED B/L 178-2016 NOV 21/16)	Goyeau Street	Ouellette Avenue	Goach-Canada Only At all times Nov 29-Dec 11/16	
Twin Oaks Drive (added B/L 13197, Dec.15/97)	Lauzon Parkway	East limit thereof	At all times	Primary
University (amended B/L 12523, Apr.22/96)	(a) Sandwich	Goyeau	At all times	Local Delivery
	(b) Goyeau	McDougall		Primary
Valtec Way (added B/L 13197, Dec.15/97)	E. C. Row Expressway	Twin Oaks Drive	At all times.	
Valtec Court	Twin Oaks Drive	southerly		Primary
Victoria	Chatham	University	At all times	
Walker	Riverside	South City limit	At all times	Primary
Weaver (ADDED B/L 28-2015 MAR 23/15)	Cherry Blossom Drive	Ojibway Parkway	At all times	Primary

Final Report
SUMMARY REPORT

Column 1	Column 2		Column 3	Column 3
Street	From	To	Period in Effect	Route Type
Wellington (deleted & added B/L 288-2004, Aug-30/04)	University Avenue West	Wyandotte Street West	At all times	
West Grand	Dougall	South Cameron	At all times	Primary
Windsor	(a) deleted B/L 306-1999, Oct.18/99)			
	(b) deleted B/L 306-1999, Oct.18/99)			
	(e) Giles	Tecumseh	At all times	
Wheelton Drive (added B/L 162005, Jan. 24/05)	Rhodes Drive	Cul-de-sac	At all times	Primary
Wheelton (deleted B/L 16-2005, Jan. 24/05)	Rhodes	South City limit	At all times	
Wyandotte Street	Huron Church	Lauzon Rd	At all times	
Wyandotte Street	(a) Huron Church	Patricia		Primary
	(b) Patricia	Crawford		Local Delivery
	(c) Crawford	Lauzon Rd		Primary
	(d) Lauzon Rd	Banwell		Local Delivery
Wyandotte Place	Wyandotte	Walker	At all times	Primary