City of Guelph

Transportation Master Plan

Final Report

May 2022

DILLON
CONSULTING

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Introduction

Moving Guelph Forward, Guelph's 2022 Transportation Master Plan (TMP) update, lays out how residents and visitors will move through the city over the next three decades. The TMP is a long-range strategic plan that directs how Guelph's future transportation system will be built and operated and establishes policies and programs to guide the delivery of transportation infrastructure and services.

Moving Guelph Forward is …

Community Driven

Moving Guelph Forward was developed through a multi-dimensional collaboration with Guelph's residents and businesses, Guelph's agency partners and neighbouring municipalities, and Guelph's transportation advocacy groups.

Founded on the Goals of Guelph's Strategic Plan

Moving Guelph Forward has been designed to meet the 2019-2023 Strategic Plan goals to "provide our community with easy, accessible movement through trails, paths, roads and corridors to tie the community together and connect Guelph's economy with other regions.

Committed to a Sustainable Core

Sustainability was at the core of ***Moving Guelph Forward***, from both an environmental and financial perspective. The TMP vision promotes the movement of people and goods in a way that minimizes and even reverses transportation impacts on the natural environment.

Future Ready

Moving Guelph Forward establishes the vision for how people and goods will move throughout the city for decades to come in a way that is conscious of the environment and moves Guelph to a future-ready state over the next thirty years.

Moving Guelph Forward was prepared under the Municipal Class Environmental Assessment process. The engagement, technical analysis and background review satisfies Phases 1 and 2 of a class EA study. The final documentation lists a table of all future works that would trigger the Schedule B or C projects and would therefore require additional work as well as public and council touch points before construction.

Engagement

The engagement program provided numerous opportunities for residents and stakeholders from across the city to participate in the project and provide feedback. Through the engagement program, the City was able to educate the community about the future of transportation, anticipated growth Guelph will experience in the future, and what sustainable transportation solutions might look like. The engagement program was aligned with the requirements of the Municipal Class Environmental Assessment in order to collect and integrate meaningful feedback at project decision-making milestones.

The following engagement methods were used to increase the reach and feedback received throughout the project, to reach diverse communities, and collect meaningful feedback.

- **Pre-Engagement Interviews** were held with key project stakeholders to help develop the engagement approach and consultation plan
- An **Online Engagement Hub** at HaveYourSay.Guelph.ca/Transportation was created as the central place to engage with the project online
- A **project email** (transportation@guelph.ca) for direct communication with residents
- Social media spread awareness of the project online using the hashtag **#MovingGuelphForward**
- A **Project Launch Event** inspired the community with a panel discussion on the Future of Transportation in Guelph
- A series of **Moving Guelph Forward videos** were shared online to introduce the TMP
- **Pop-Up Engagements** at local events and in community spaces promoted the project and encouraged participation in the engagement process
- **Bus only lane and protected bike lane demonstration projects** were implemented to physically engage people in concepts temporarily to test ideas and potential solutions explored in the TMP
- A **Complete Streets workshop with Guelph City Council was held** to educate Council about the concept, answer their questions, and gather feedback
- **Workshops were held with City staff** to gather feedback from other departments
- **Stakeholder Meetings were held** with key stakeholder groups, staff from adjacent municipalities, and agencies to gather feedback and input into the plan
- **3 Virtual Open Houses were held** using StoryMaps, an interactive multimedia platform to share information, data, and maps with corresponding **surveys to collect feedback**
- **Community Conversations** were held with community groups from across the city to gather input on the Preferred Solution, the policies and programs and the Implementation Plan

Foundation

The **Vision** represents the desired transportation future and steers the direction of the TMP. The **Values** are the themes that formed the foundation of the final plan. The **Goals** represent long-term high-level outcomes for transportation in Guelph.

The Vision

Transportation in Guelph will be safe, equitable, sustainable, complete, affordable and supportive of land use.

The Values

Safe

Guelph will provide safe transportation networks for people to walk, wheel and use vehicular transportation through all corners of the city.

Equitable

Transportation is geographically equitable – people can complete their trips comfortably and in a reasonable time, regardless of if they own a vehicle, which part of Guelph they are coming from and which part of Guelph they are going to.

Sustainable

Most people travel sustainably, minimizing the negative impacts of their trip on the environment.

Complete

This is possible because the network for each mode of travel is complete, enabling continuous multimodal travel throughout our city.

Affordable

We accomplish these things in a way that is affordable for the user and makes the most financially efficient use of our investments.

Supportive of Land Use

Finally, our transportation network is supportive of land use, meaning that we design our streets to be context-sensitive to support the growth of our community.

The Goals

1. People of all ages and physical ability will be able to travel safely using any transportation mode that they choose;
2. Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them;
3. Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car;
4. The carbon footprint from the transportation sector will aim for net zero by 2050;
5. Guelph's streets, trails and rail networks will align with the City's land use objectives;
6. Investment decisions will be made considering the asset lifecycle costs; and,
7. Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today.

Existing and Planned Conditions

The sustainable approach adopted for the TMP update was driven by mode share rather than corridor capacity. At its core, the TMP sets mode share targets for the future and develops the plan to achieve them. The existing and target 2051 mode shares for Guelph are presented in **Figure ES-1** and **Figure ES-2**.

Figure ES-1: Existing mode shares graph

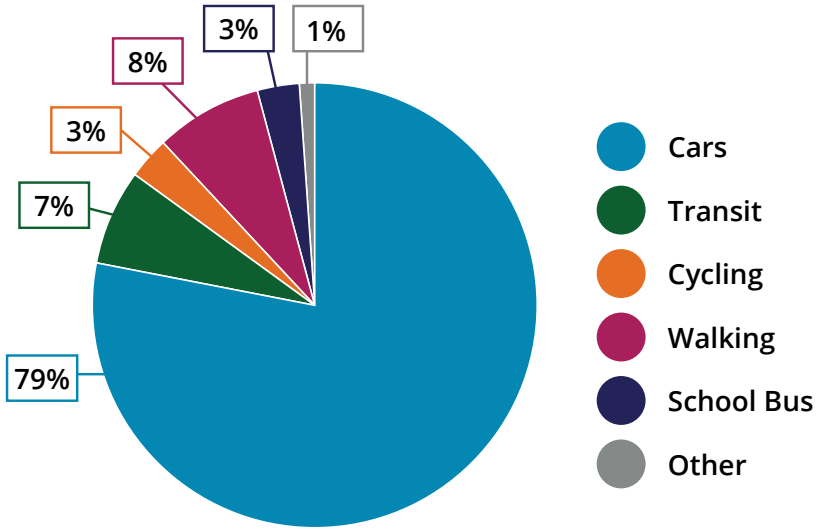
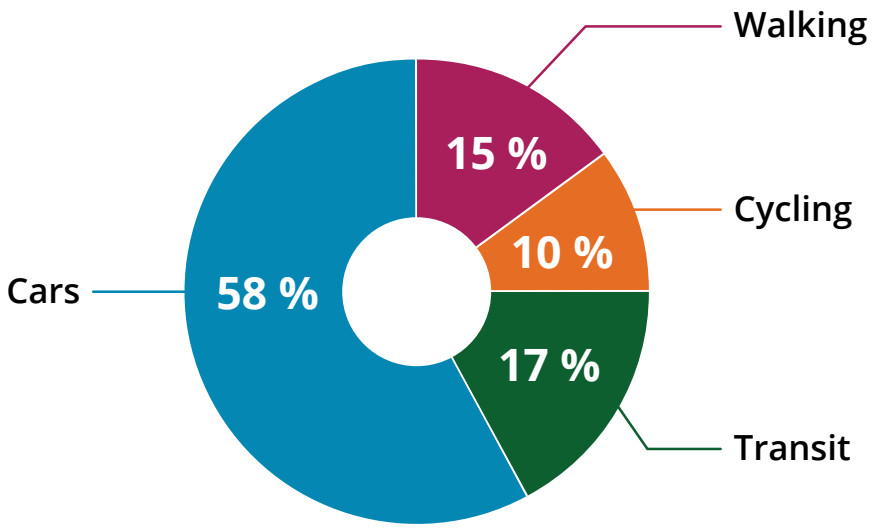


Figure ES-2: 2051 Mode share targets graph



Shifting mode shares towards sustainable modes during peak commuter periods will require a commitment to Complete Streets to improve their Level of Service (LOS) and competitive position. Rebalancing street designs not only improves options for peak hour travel, it also improves the ability to serve demand 24/7 all year round. A Complete Streets foundation, complemented by a strong Transportation Demand Management program, will position Guelph to meet its many TMP Goals.

Problem Statements

The project team listened to public feedback about what was and what was not working well. The project team also reviewed Guelph's current transportation networks, programs and policies and compared them against the seven goals. Places where the existing networks, programs and policies didn't align with these goals were identified as issues to review within this TMP update.

People of all ages and physical ability will be able to travel safely using any transportation mode that they choose

- Guelph's streets need to be designed to serve the needs of a diverse group of people, of all ages and abilities.
- Guelph's streets need to be designed to safely serve all modes of transportation, including walking, cycling and transit.

Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them.

- Guelph needs strong (i.e. fast and direct) transit connections to existing and future jobs.
- Guelph needs more crossings of the rivers, rail lines and highways for people walking and cycling.
- Guelph needs better walking and cycling connections to transit stops and hubs.
- Guelph needs robust strategies, policies and infrastructure to support the efficient movement of goods.

Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car

- Guelph needs to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city.

Guelph's streets, trails and rail networks will align with the City's land use objectives

- Guelph needs to redesign streets in key growth areas to prioritize walking, cycling and transit.
- Road designs need to reflect the priorities of different areas.

The carbon footprint from the transportation sector will aim for net zero by 2050

- Guelph needs to reduce the percentage of trips made by car.
- Guelph needs to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use.
- Guelph needs to tap the unrealized potential for electrification.

Investment decisions will be made considering the asset lifecycle costs

- Guelph needs to account for life-cycle costs in financial decisions on transportation projects.

Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today

- Guelph needs to improve the resiliency of the city's transportation system.
- Guelph needs to better prepare for the future of mobility.

Alternative Solutions

The Preferred Solution was developed using a three step process:

1. Develop Priority Networks for each mode
2. Develop Alternative Solutions
3. Evaluate Alternative Solutions using the EA process and select Preferred Solution

Since the TMP provides a long-term strategic plan with a horizon year of 2051, the selected option - also known as the Preferred Solution - will not be fully actualized until at least 2051.

Priority networks were prepared for the four most common personal transportation modes and for the movement of goods:

1. Pedestrian (including mobility assistance devices) Priority Network;
2. Cycling (including personal micro-mobility devices like e-scooters) Priority Network (the Cycling Spine Network)
3. Transit Priority Network (the Quality Transit Network)
4. Car Priority Network
5. Goods Movement Priority Network (for trucks)

Key elements to maintain network resiliency were also identified. The Priority and Resiliency Networks are shown in **Annex A**.

Priority networks represent a combination of streets (or corridors) for each mode where that mode will receive high-quality infrastructure and/or service. Travel by different modes is still possible along any corridor, whether or not it was part of the priority network (unless otherwise prohibited, such as streets where large trucks are not permitted, for example). However, all modes will not experience the same level of priority on all streets.

There were four Alternative Solutions identified for the TMP that had unique combinations of modal priority network elements:

- **Alternative 1** – Do Nothing
- **Alternative 2** – Sustainability Focus
- **Alternative 3** – Sustainability and Resiliency Focus
- **Alternative 4** – Car Efficiency Focus

Each of the four Alternative Solutions for Guelph's future transportation networks have their advantages and disadvantages. To evaluate them fairly, a set of criteria that align with the TMP **vision**, **values** and **goals** was developed. Alternative 3 was determined to be the Preferred Solution.

Preferred Solution – Sustainability and Resiliency Focus (Alternative 3)

The Preferred Solution is strongly aligned with the sustainability values and goals. It is also aligned with the safety, equity, land use alignment and future resiliency values and goals of the TMP. This option offers better opportunities in the future to adapt to unknowns. The Pedestrian Priority, Cycling Spine, Quality Transit and Resilience Networks will be implemented in Alternative 3. It also partially implements the Goods Movement Priority Network.

The mode share targets are supported by the Preferred Solution. Transportation network resiliency is provided against future challenges and opportunities, such as climate change, emerging mobility technologies, or societal disruptions like the COVID-19 pandemic by extending the four-lane street network to offer flexibility and redundancy. The Preferred Solution improves the safety and experience for all travelers walking, cycling and using transit.

The Preferred Solution helps manage congestion for people who drive by encouraging more people to travel by non-car modes and also widening some roads (note that increased capacity due to long-term widening is expected to be a short-term solution; case studies over the decades have shown that congestion tends to rebound to pre-widening levels due to a concept called "induced demand"). The Alternative also improves the safety and environment of all travelers, particularly the more vulnerable users - people walking, cycling and using transit.

Summary of policy directions

Integrated Planning (Roads)

Build a sustainable and integrated road network

- Implement Complete Streets - new and transform existing
- Prioritize sustainable modes in Quality Transit Network corridors

Actively manage mode share

- Enhance TDM Program
- Finalize neighbourhood mode share targets

Protect new and established neighbourhoods and cultural resources from negative impacts

- Continue to use traffic calming and area traffic management
- Develop Complete Streets solution(s) for mature neighbourhoods

Prioritize energy reduction and minimize environmental impacts

- Promote low or zero emission vehicle technology
- Embed GHG objectives in the development of the TDM plan
- Consider GHG in making all transportation decisions
- Promote and embrace Low Impact road design methods and techniques

Maximize road safety

- Increase visibility of safety considerations in planning, operations and design
- Adopt a Vision Zero Strategy

Enhance and align city parking facilities and services

- Align parking strategy (supply) with mode share and GHG targets
- Update the downtown parking master plan
- Accommodate needs of sustainable modes
- Consider EV charging station needs in parking strategy

Manage congestion

- Prepare a Transportation Systems Management strategy and Action Plan
- Continue to work with MTO, Metrolinx and other partners to advance City's interests

Strategic Road Projects

- Undertake localized widenings and make local connections to respond to a range of needs (safety, transit priority, etc.)

Monitor and Report

- Develop a data collection program to support monitoring of the transportation system
- Prepare scorecard

Align tools and plans with TMP Vision

- Prepare and maintain Mode Plans
- Update existing/ prepare new planning and design Guidelines
- Finalize Charters and prepare Action Plans for key Programs

Pedestrian Policies

Create a complete and connected network

- Prepare pedestrian mode plan
- Prepare guidelines for filling gaps
- Develop the Pedestrian Priority Network

Build a walkable environment

- Enhance the level of service
- Implement Multimodal Level of Service Guidelines
- Implement quality design
- Provide maintenance and management
- Meet or exceed appropriate Municipal Maintenance Standards
- Review the city-wide sidewalk snow plowing strategy
- Ensure regular maintenance and management of the off-road trails

Improve pedestrian safety and promotion

- Administer pedestrian safety programs
- Promote walking as a mode of travel
- Strengthen the Transportation Demand Management program

Future Ready

- Identify innovations and trends for further exploration
- Strengthen the Transportation Demand Management program
- Explore pedestrian safety technologies - advanced driver assistance systems and autonomous vehicles
- Integrate digital technology and infrastructure within the public realm - Digital wayfinding
- Improve data collection

Cycling Policies

Continue to build and maintain a network of quality cycling facilities

- Continue to build the cycling network - Cycling Spine Network
- Implement a Multimodal Level of Service Guidelines
- Design the Cycling Spine Network for all cyclists
- Follow secondary plans (i.e. downtown)
- Update the Cycling Master Plan and Rural AT Strategy
- Maintain cycling facilities
- Update winter/snow maintenance practices

Create attractive intermodal connections

- Provide bicycle parking facilities at key transit nodes
- Add racks on buses
- Explore ways to accommodate intermodal connections at transit stops and stations, such as designated storage/ parking areas or mobility-as-a-service apps

Create attractive trip-end facilities

- Provide public bicycle parking - short and long-term parking
- End-of-trip facilities on private property - Continue to usinge the Zoning Bylaw to establish minimum provisions for on-site bicycle parking

Improve cycling safety and promotion

- Administer cycling safety programs and promote cycling as a mode of travel
- Strengthen the Transportation Demand Management program

Future Ready

- Innovations and trends for further exploration
- Explore micro-mobility options
- Federal and provincial government funding, pilot projects and program opportunities
- Adopt shared mobility services like e-scooters, and e-bikes

Transit Policies

Build and maintain a quality transit network

- Implement the Quality Transit Network
- Continue to improve the transit level of service across the City
- Prioritize active transportation access to transit
- Continue to provide transit access to persons with disabilities
- Strengthen the Transportation Demand Management program

Increase cross boundary transit trips

- Continue to support the development of two-way all-day GO Rail service
- Increase transit trips to adjacent communities

Strengthen the relationship between land use and transit

- Continue to support transit and land use cooperation

Improve transit promotion

- Promote transit as a mode of travel - desirable, affordable, and environmentally sustainable
- More convenient and simpler to understand

Future Ready

- Mobility-as-a-service (MaaS) platforms
- Implement TDM initiatives
- Autonomous transit buses or shuttles
- Monitor post-COVID-19 transit ridership trends

Goods Movement Policies

Prepare a comprehensive goods movement strategy

- Develop a Goods Movement Strategy

Enable efficient goods movement with trucks

- Designate truck routes to serve the industry and protect neighbourhoods
- Follow the OP
- Consider truck needs in road planning, design and construction
- Monitor and consult with large truck and logistics users for mutual benefit

Enable efficient goods movement with rail

- Continue to provide rail service to industrial areas and protect neighbourhoods
- Continue to consider rail supportive land use

Future Ready

- Innovations and trends for further exploration
- New courier network services - cargo bikes
- Curbside management practices and technologies
- Emerging delivery technologies - autonomous vehicles

Key Programs

Each program described in this section provides guidance and strategies that work towards implementing the policies and capital plan of the TMP.

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is a term used to describe a suite of initiatives that aims to reduce traffic, particularly in the commuter peak hours. TDM could include education, marketing and outreach to improve the overall efficiency of the transportation network and influence how, when, and where people travel. These types of initiatives are relatively low-cost and can have a substantial impact on demand. TDM can also apply to developments. Requiring new developments to include elements like bike parking, showers, carsharing spaces, transit stop amenities, and more in new developments can make sustainable transportation options more attractive and convenient for people living or working there. An effective TDM program can reduce congestion and shift more trips to sustainable options like walking, cycling, and taking the bus.

Strategic Transportation Planning

Strategic Transportation Planning was the process of designing the transportation network, facilities, and services to align with the Vision and Goals of the TMP. Strategic Transportation Planning requires a strong understanding of social and economic aspects that impact how, when, and why people move.

Active Transportation

Active transportation modes include walking, cycling, and rolling - modes that primarily use movement to propel people forward. A formal Active Transportation Program supports the mobility needs of a community in a manner that least damages the environment, while also balancing current and future transportation needs.

Transportation Systems Management

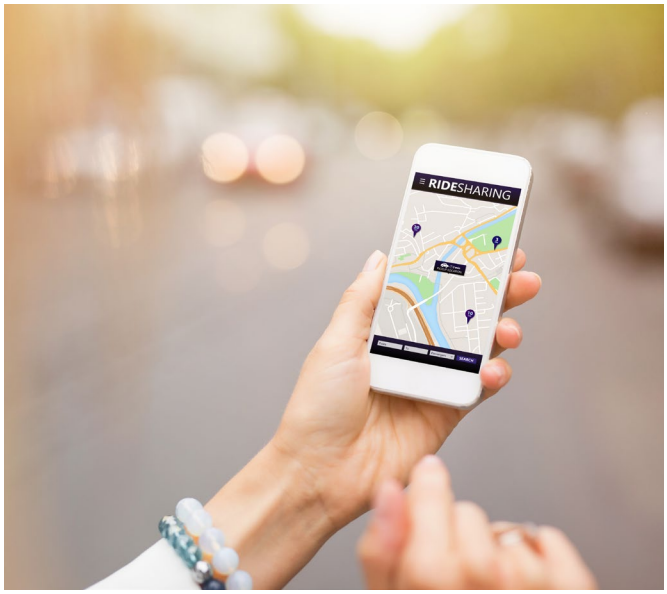
Transportation Systems Management (TSM) uses various low-cost strategies to maintain or reduce travel time, maximize the efficiency of the transportation network, and improve the utilization of existing transportation facilities. This has made travelling through Guelph safer, more convenient, and more efficient. Examples of TSM included higher frequency public transit, eliminating on-street parking to add lanes, and making active transportation more convenient.

Road Safety

Road Safety refers to the strategies, tools, and measures cities can use to prevent collisions resulting in injuries and deaths. Guelph's Community Road Safety Program is currently delivering this program; the TMP recommends formally adopting the Vision Zero label. The framework for this proposed program focuses on four main elements: safe road use, safer speeds, safer roads, and safer vehicles.

Emerging Technology

It is important for the City of Guelph to be position the city to leverage new technologies and services in the best interests of the community and local economy. The goals of this program are to deliver research, analysis, partnerships, testing and pilot projects for new transportation technologies and services. This program would also monitor for potentially disruptive trends and help position the city favourably to avoid negative impacts to the community and economy.



Implementation

Schedule 1 shows the integrated transportation network plan for Guelph. A list of capital projects was identified that implement the preferred strategy. The projects were assigned to either the short term (2022-2031) or long-term (2032 or 2051) horizon, based on current capital planning and the strategic transportation needs. **Table ES-1 and Table ES-2** show the TMP capital projects.

Prioritization

Overall, the approach to the project prioritization follows the same evaluation criteria approach as that used for the system alternatives, where criteria groups were aligned with the TMP values and goals. Each project was evaluated based on the degree of support for each value.

Each project was assigned a score of 15 points based on their ability to address the five (5) criteria. All criteria are scored out of 3 (i.e., 0, 1, 2 or 3), where the higher the score the better the alternative aligns with the objectives of the criteria. The criteria were constructed in such a way as to not over-emphasize the role of any one criteria group.

Table ES-3 shows the priority scores for the TMP capital projects.

Table ES-1: 2022-2031 Projects

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Arkell Road	Gordon Street	Victoria Road S	AAA bikes	A+	A+
Clair Road	Beaver Meadow Dr	Victoria Road S	Widen 2-4 lanes	C	B
College Avenue	Hanlon Expressway	Victoria Road S	AAA Bikes	A+	A+
Edinburgh Road	Willow Road	London Road West	AAA bikes	A+	A+
Edinburgh Road	Kortright Road W	Southcreek Trail N	AAA bikes	A+	A+
Edinburgh Road	Southcreek Trail N	Gordon Street	AAA bikes	A+	A+
Elizabeth Street	Macdonell Street	Arthur Street S	AAA Bikes	A+	A+
Elmira Road	Massey Road	Speedvale Ave W	Urbanization	B/C	A+
Eramosa Road	Woolwich Street	Delhi Street	AAA bikes	A+	A+
Eramosa Road	Delhi Street	Metcalfe Street	AAA bikes	B/C	A+
Eramosa Road	Metcalfe Street	Meyer Drive	AAA bikes	B/C	A+
Eramosa Road	Meyer Drive	Victoria Road N	AAA bikes	B/C	A+
Gordon Street	Waterloo Street	Wellington Street	AAA bikes, Enhanced Pedestrians	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Gordon Street	Wellington Street	Speed River	AAA bikes, Enhanced Pedestrians	A+	A+
Gordon Street	Speed River	James Street	AAA bikes, Enhanced Pedestrians	A+	A+
Gordon Street	James Street	College Avenue	AAA bikes	A+	A+
Gordon Street	College Avenue	South Ring Road	Widen 2-4, Enhanced Pedestrians	C	B
Gordon Street	South Ring Road	Stone Road	AAA bikes, Enhanced Pedestrians	A+	A+
Gordon Street	Stone Road	Edinburgh Road S	AAA Bikes, Enhanced Pedestrians	A+	A+
Gordon Street	Edinburgh Road S	Lowes Road	Widen 4-5	Complete	Complete
Gordon Street	Lowes Road South	Clair Road	AAA bikes, Enhanced Pedestrian	A+	A+
Gordon Street	Clair Road	Gosling Gardens	AAA bikes, Enhanced Pedestrians	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Gordon Street	Gosling Gardens	Maltby Road	Urbanization - AAA bikes	B/C	A+
Grange Road	Victoria Road N	Watson Parkway N	AAA bikes	A+	A+
Laird Road	Downey Road	Few Street	New Roadway	C	C
Maltby Road	Gordon Street	Victoria Road S	Protect for widening 2-4	C	B
MacDonell Street	Norfolk Street	Carden Street	2-lane flexible Street	B/C	A/B
Paisley Road	Elmira Road S	Silvercreek Pkwy N	AAA Bikes, Enhanced Pedestrians	A+	A+
Silvercreek Pkwy	Woodlawn Road	Speedvale Ave W	Urbanization, AAA bikes	B/C	A+
Silvercreek Pkwy	Speedvale Ave W	Willow Road	AAA Bikes, Enhanced Pedestrians	A+	A+
Silvercreek Pkwy	Paisley Road	Waterloo Avenue	New Roadway	C	C
Speedvale Avenue	Elmira Road North	Imperial Road N	Multi-Use Path	A+	A+
Speedvale Avenue	Imperial Road N	Silvercreek Pkwy	Multi-use Path	A+	A+
Speedvale Avenue	Silvercreek Pkwy	Stevenson Street N	Multi-Use Path	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Speedvale Avenue	Stevenson Street N	Victoria Road North	AAA bikes	A+	A+
Stevenson Street	Speedvale Avenue	Emma Street	AAA bikes	A+	A+
Stevenson Street	Emma Street	Eramosa Road	AAA bikes	A+	A+
Stone Road	Hanlon Expressway	Edinburgh Road	AAA bikes	A+	A+
Stone Road	Edinburgh Road	Gordon Street	AAA bikes	A+	A+
Victoria Road	Eramosa River	College Avenue	Urbanization, AAA bikes	B/C	A+
Victoria Road	College Avenue	Stone Road East	Urbanization	n/a	A+
Victoria Road	Stone Road East	MacAlister Blvd	Repaint to create 4 lanes	A+	A+
Victoria Road	MacAlister Blvd	Arkell Road	Repaint to create 4 lanes	A+	A+
Victoria Road	Arkell Road	Clair Road East	Urbanization	B/C	A+
Victoria Road	Clair Road East	Maltby Road	Urbanization	B/C	A+
Watson Parkway	Couling Crescent	Eastview Road	AAA Bikes	A+	A+
Watson Parkway	Eastview Road	Grange Road	AAA Bikes	A+	A+
Watson Parkway	Grange Road	Fleming Road	AAA Bikes	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Watson Parkway	Fleming Road	York Road	AAA Bikes	A+	A+
Woodlawn Road	Nicklin Road	Woolwich Street	Multi Use Path	A+	A+
Woodlawn Road	Woolwich Street	Speed River	AAA bikes	A+/B/C	A+
Woolwich Road	Woodlawn Road	Speedvale Avenue	AAA Bikes, Enhanced Pedestrians	A+	A+
Woolwich Road	London Street	Norwich Street	AAA Bikes, Enhanced Pedestrians	A+	A+
Willow Road	Silvercreek Pkwy N	Dawson Road	AAA Bikes	A+	A+
Wyndham Street N	Woolwich Street	MacDonell Street	AAA Bikes, Enhanced Pedestrians	A+	A+
Wyndham Street S	MacdonellStreet	Wellington ST E	AAA Bikes, Enhanced Pedestrians	A+	A+
York Road	Stevenson Street	Victoria Road	AAA bikes	A+	A+
York Road	Victoria Road	Watson Parkway	Widen 2-4, Multi Use Path	Complete	Complete
York Road	Watson Parkway	Watson Road	Widen 2-4, Multi Use Path	Complete	Complete
Willow Road	Elmira Road	Imperial Road	AAA bikes	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Willow Road	Imperial Road	Silvercreek Pkwy	AAA bikes	A+	A+
Willow Road	Dawson Road	Edinburgh Road	AAA Bikes	A+	A+
Emma Street	Delhi Street	Stevenson Street N	AAA Bikes	A+	A+
Grange Street	Stevenson Street N	Victoria Road N	AAA bikes	A+	A+
Imperial Road	Speedvale Road	Willow Road	AAA bikes	A+	A+
Imperial Road	Willow Road	Paisley Road	AAA bikes	A+	A+
AT crossing 2	Along GJR		New AT bridge over Speed River	Complete	Complete
AT crossing 5	Emma Street	Earl Street	New AT bridge over Speed River	C	A+
Rail Grade Separation	Edinburgh Road	GO Rail line	Road/Rail Grade-Separation at GO Rail Line	C	C

Table ES-2: 2032-2051 Projects

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Arkell Road	Gordon Street	Victoria Road S	Protect for widening 2-4	C	B
Laird Road	Hanlon Exp	Southgate Drive	AAA bikes	A+	A+
Laird Road	Southgate Drive	Clair Road	Widen 2-4, AAA bikes	C	B
Clair Road	Laird Road	230m E of Laird	Widen 2-4, AAA bikes	C	B
Clair Road	230m E of Laird	Gosling Gardens	AAA bikes	A+	A+
Clair Road	Gosling Gardens	Farley Drive	AAA Bikes, Enhanced Pedestrians	A+	A+
Clair Road	Farley Drive	Beaver Meadow Dr	AAA bikes	A+	A+
College Avenue	Hanlon Exp	Edinburgh Road S	Widen 3-4	C	B
College Avenue	Edinburgh Road S	Gordon Street	Widen 2-4	C	B
Edinburgh Road	Wellington Street	Stone Road	AAA Bikes	A+	A+
Edinburgh Road	Stone Road	Ironwood Road	AAA Bikes	A+	A+
Edinburgh Road	Ironwood Road	Kortright Road W	Widen 3-4, AAA bikes	C	B
Elizabeth Street	Arthur Street S	Stevenson St N	AAA Bikes	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Elmira Road	Woodlawn Rd W	Massey Road	Protect for widening 3-4	C	B
Elmira Road	Massey Road	Speedvale Ave W	Protect for widening 3-4	C	B
Elmira Road	Speedvale Ave W	Willow Road	Widen 3-5	C	B
Elmira Road	Willow Road	Paisley Road	Widen 3-5	C	B
Elmira Road	Paisley Road	Stephanie Drive	Protect for widening 3-5	C	B
Elmira Road	Stephanie Drive	Fife Road	Protect for widening 3-5	C	B
Gordon Street	Gosling Gardens	Maltby Road	Widen 2-4	C	B
Laird Road	Few Street	Cooper Street	AAA Bikes	A+	A+
Laird Road	Cooper Street	Hanlon Expressway	AAA Bikes	A+	A+
Maltby Road	Hanlon Expressway	Gordon Street	Protect for widening 2-4	C	B
Paisley Road	West City Limit	Elmira Road South	Urbanization, AAA bikes	B/C	A+
Paisley Road	Silvercreek Pkwy N	East Limits of Road	Widen 2-4, AAA bikes	C	B
Silvercreek Pkwy	Woodlawn Road	Speedvale Ave W	Widen 2-4	C	B

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Silvercreek Pkwy	Speedvale Ave W	Willow Road	Widen 3-4	C	B
Silvercreek Pkwy	Willow Road	Sleeman Park	AAA bikes, Enhanced pedestrian	A+	A+
Silvercreek Pkwy	Sleeman Park	Paisley Road	Widen 4-5, AAA bikes, Enhanced pedestrian	C	B
Speedvale Ave	Eramosa Road	Watson Parkway N	Protect for widening 2-4	C	B
Stevenson Street	Eramosa Road	Bennett Avenue	AAA bikes	A+	A+
Stevenson Street	Bennett Avenue	Grange Street	AAA bikes	A+	A+
Stevenson Street	Grange Street	Elizabeth Street	AAA bikes	A+	A+
Stevenson Street	Elizabeth Street	York Road	AAA bikes	A+	A+
Stone Road	Victoria Road South	Watson Parkway Sh	Widen 2-4, AAA bikes	C	B
Victoria Road	Speedvale Ave E	Hadati Road	Widen 4-5, AAA bikes	C	B
Victoria Road	Hadati Road	Grange Rd N	Widen 4-5, AAA bikes	C	B
Victoria Road	Grand Rd N	Grange Rd S	Widen 4-5, AAA bikes	C	B

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Victoria Road	Grange Rd S	York Street	Widen 4-5, AAA bikes	C	B
Victoria Road	York Road	Eramosa River	Widen 4-5, AAA bikes	C	B
Victoria Road	Eramosa River	College Avenue	Widen 2-4	C	B
Victoria Road	College Avenue	Stone Rd E	Widen 2-4	C	B
Victoria Road	MacAlister Blvd	Arkell Road	Widen 3-4	C	B
Victoria Road	Arkell Road	Clair Road East	Widen 2-4	C	B
Victoria Road	Clair Road East	Maltby Road	Widen 2-4	C	B
Watson Parkway	Speedvale Ave	Couling Crescent	Protect for widening 2-4, AAA bikes	C	B
Watson Parkway	Couling Crescent	Eastview Road	Protect for widening 2-4	C	B
Watson Parkway	Eastview Road	Grange Road	Protect for widening 3-4	C	B
Watson Parkway	Fleming Road	York Road	Protect for widening 3-4	C	B
Watson Parkway	York Road	Stone Road East	Protect for widening 2-4	C	B
Woodlawn Road	Speed River	Victoria Road North	AAA bikes	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Woolwich Road	Speedvale Avenue	London Street	AAA bikes	C	A+
Norfolk Street	Norwich Street	Waterloo Avenue	AAA bikes, Enhanced pedestrian	C	A+
Kortright Road	Scottsdale Drive	Edinburgh Road	AAA bikes	A+	A+
Scottsdale Drive	Stone Road	Kortright Road	AAA bikes	A+	A+
Waterloo Avenue	Edinburgh Road	Norfolk Street	AAA bikes	A+	A+
Imperial Road	Woodlawn Road	Speedvale Avenue	Urbanization, AAA bikes	B/C	A+
Imperial Road	Paisley Road	Wellington Street	AAA bikes	A+	A+
London Road	Edinburgh Road	Norfolk Street	AAA bikes	A+	A+
Waterloo Avenue	Silvercreek Parkway	Edinburgh Road	AAA bikes	A+	A+
AT crossing 1	Arthur Street	Fountain Street	New AT bridge over Speed River	C	A+
AT crossing 4	Waterloo Ave	Royal Rec Trail	New AT bridge over Eramosa River	C	A+
AT crossing 6	Neeve Street		New AT bridge over GO rail	C	A+

Table ES-3: Prioritization of Capital Projects

Ranking	Project Name	Equitable	Complete	Safe	Sustainable	Supportive of Land Uses	Affordable	Project Average Score	Project Total Score
1	Silvercreek Pkwy	Very Good	Very Good	Very Good	Good	Very Good	Good	Very Good	15
2	Gordon St	Very Good	Good	Very Good	Good	Very Good	Good	Very Good	14.5
3	Victoria Rd	Very Good	Good	Very Good	Good	Very Good	Good	Very Good	14
4	Woolwich Rd	Good	Very Good	Very Good	Good	Very Good	Good	Very Good	13.5
5	Clair Rd	Very Good	Very Good	Very Good	Good	Very Good	Poor	Very Good	13
6	Edinburgh Rd	Very Good	Good	Very Good	Fair	Very Good	Good	Very Good	13
7	Woodlawn Rd	Very Good	Good	Very Good	Good	Very Good	Good	Very Good	12
8	Wyndham St N	Good	Very Good	Poor	Very Good	Very Good	Good	Very Good	12
9	Wyndham St S	Good	Very Good	Poor	Very Good	Very Good	Good	Very Good	12
10	Eramosa Rd	Good	Very Good	Very Good	Good	Very Good	Poor	Very Good	11
11	Stone Rd	Very Good	Good	Very Good	Good	Very Good	Poor	Very Good	11
12	College Ave	Very Good	Good	Poor	Good	Very Good	Good	Very Good	11
13	Paisley Rd	Good	Very Good	Poor	Good	Very Good	Good	Very Good	11

Ranking	Project Name	Equitable	Complete	Safe	Sustainable	Supportive of Land Uses	Affordable	Project Average Score	Project Total Score
14	**York Rd**	Very Good	Good	Poor	Good	Very Good	Good	Very Good	11
15	**Scottsdale Dr**	Good	Fair	Very Good	Poor	Very Good	Good	Very Good	10.5
16	**Imperial Rd**	Good	Fair	Very Good	Poor	Very Good	Good	Very Good	10.5
17	**Waterloo Ave**	Very Good	Good	Poor	Fair	Very Good	Good	Good	9.5
18	**Waterloo Ave**	Very Good	Good	Poor	Fair	Very Good	Good	Good	9.5
19	**Speedvale Ave**	Good	Fair	Poor	Good	Very Good	Good	Good	9
20	**Norfolk St**	Good	Very Good	Poor	Good	Very Good	Poor	Good	9
21	**Kortright Rd**	Good	Fair	Very Good	Poor	Good	Poor	Good	8.5
22	**Laird Rd**	Very Good	Good	Poor	Fair	Good	Poor	Good	8
23	**Elimra Rd**	Very Good	Good	Poor	Fair	Very Good	Poor	Good	8
24	**Laird Rd**	Very Good	Good	Poor	Fair	Good	Poor	Good	8
25	**Willow Rd**	Very Good	Good	Poor	Fair	Very Good	Poor	Good	8
26	**Willow Rd**	Very Good	Good	Poor	Fair	Very Good	Poor	Good	8

Ranking	Project Name	Equitable	Complete	Safe	Sustainable	Supportive of Land Uses	Affordable	Project Average Score	Project Total Score
27	**Malty Rd**	Good	Poor	Poor	Fair	Very Good	Good	Good	7.5
28	**London Rd**	Good	Fair	Poor	Poor	Very Good	Good	Good	7.5
29	**Grange St**	Good	Fair	Poor	Poor	Good	Good	Good	6.5
30	**Arkell Rd**	Good	Fair	Fair	Poor	Good	Poor	Good	6.5
31	**Stevenson St**	Good	Fair	Poor	Poor	Very Good	Poor	Good	6
32	**Watson Pkwy**	Good	Poor	Poor	Poor	Very Good	Good	Good	6
33	**Elizabeth St**	Poor	Fair	Poor	Fair	Very Good	Poor	Fair	5
34	**Grange Rd**	Good	Fair	Poor	Poor	Good	Poor	Fair	5
35	**Emma St**	Good	Fair	Poor	Poor	Good	Poor	Fair	5

Policy and Program Actions

A list of capital projects was identified that implement the preferred strategy. The projects were assigned to either the short term (2022-2031) or long-term (2032 or 2051) horizon, based on current capital planning and the strategic transportation needs. **Table ES-4** shows the TMP Policy and Program Actions.

Table ES-4: Policy and Program Actions

Action	Timeframe (years)	
	0 - 5	6 - 10
Prepare | Update Mode Plans		
Pedestrian Master Plan		x
Cycling Master Plan Update	x	
Transit Master Plan Update	x	
Goods Movement Strategy	x	
Trails Master Plan Update		x
Transportation Master Plan Update		x
Downtown Parking Master Plan	x	
Prepare Guidelines		
Complete Streets Design Guidelines	x	
Multimodal Level of Service Guidelines	x	
Transportation Impact Assessment Guideline Update		x
Winter Cycling Network Maintenance Guidelines		x
Programs and Required Actions		
Transportation Demand Management Program		
Develop Action Plan	x	
Strategic Transportation Planning Program		
Develop Terms of Reference for Integrated Transportation Advisory Committee	x	

Action	Timeframe (years)	
	0 - 5	6 - 10
Develop TMP Monitoring Tool	x	
Active Transportation Program		
Incorporate an equity lens into active transportation planning and strategy	x	
Transportation Systems Management Program		
Develop Action Plan		x
Road Safety Program		
formally adopt Vision Zero	x	
Emerging Technology Program		
Develop Action Plan	x	

Schedules

Schedule 1	Recommended Network
Schedule 2	Pedestrian Priority Network
Schedule 3	Cycling Spine Network
Schedule 4	Quality Transit Network
Schedule 5	Existing Goods Movement Network
Schedule 6a	2051 Street Hierarchy
Schedule 6b	Car Priority Network
Schedule 6c	Resiliency Network

1.0 Introduction

1.1 Project Overview

Moving Guelph Forward, Guelph's 2022 Transportation Master Plan (TMP) update, lays out how residents and visitors will move through the city over the next three decades. The TMP is a long-range strategic plan that directs how Guelph's future transportation system will be built and operated and establishes policies and programs to guide the delivery of transportation infrastructure and services.

The last time Guelph updated its long-range transportation plan was in 2005. That plan set a course for transportation in the city up to 2021.

A lot has changed since 2005. For example,

- Guelph's population has grown by more than 20,000 people;
- GO Train service to Toronto from Guelph's Downtown Terminal arrived and continues to be expanded;
- Handheld technologies have been introduced that make information on travel options instantaneously available to the user (i.e., smartphones); and
- New modes of transportation have emerged (i.e., e-scooters) and existing modes have evolved (i.e., e-bikes and electric cars)

Moving Guelph Forward is

Community Driven

Moving Guelph Forward was developed through a multi-dimensional collaboration with Guelph's residents and businesses, Guelph's agency partners and neighbouring municipalities, and Guelph's transportation advocacy groups. The highly interactive approach to engagement used throughout the project resulted in strong participation from all sectors of the community including youth, seniors, representatives of First Nations and Indigenous groups, business, people living in poverty, people living with disabilities, and major institutions such as the University of Guelph.

The TMP update is an evidence-informed and community-backed plan for transportation in Guelph to follow over the next three decades.

Founded on the Goals of Guelph's Strategic Plan

This Master Plan has been designed to meet the 2019-2023 Strategic Plan goals to "provide our community with easy, accessible movement through trails, paths, roads and corridors to tie the community together and connect Guelph's economy with other regions."

The TMP policies and actions not only address social issues such as safety, equity and affordability, but also address environmental and health issues such as climate change and outdoor physical activity, which has proven so critical to maintaining physical and mental health during multiple pandemic lock-downs and restrictive measures between 2020 and 2022. These "stacked benefits" ensure that investments to implement this plan are realizing the highest possible benefit.

Committed to a Sustainable Core

Sustainability was at the core of the TMP update, from both an environmental and financial perspective.

The vision of the TMP aims to promote the movement of people and goods in a way that minimizes and even reverses impacts on the natural environment. The City of Guelph has acknowledged in 2019 that it is in a climate emergency, and *Moving Guelph Forward* plays a crucial role in achieving the City's goal of becoming a net carbon zero community by 2051. The City's transportation networks will support and encourage travel by sustainable modes. The policies and programs encourage sharp increases in the use of sustainable modes and support electrification and innovation in the transportation sector.

To ensure that the City reaches these goals, the TMP provides policies to that aim to move people sustainably in Guelph. The commitment to limiting road widenings for the purpose of increasing car capacity has both minimized the capital cost of the transportation network and directed investments towards projects that increase available travel options and improve service to a broader group of travellers. Without the need for costly widening projects, more space and capital resources will be made available to improve road right-of-ways beyond the curb. This will include the resources to improve the equity of the overall transportation network, maintain or improve the character of existing historic corridors, and enhance the public realm with street trees and other amenities to encourage a sense of community.

Future Ready

The Transportation Master Plan provides the road map that will lead Guelph down the path of developing a transportation network that is future-ready.

Through years of listening and engaging with the community and by applying current technical input, the TMP has proposed a way to prepare Guelph for the future by building:

- A network that improves safety and equity for all residents and transportation modes;
- A network that supports sustainability and directly works to reduce GHGs;
- A network that considers resiliency needs to the unknowns of the future;
- A network that integrates with the future growth and urbanization of Guelph; and
- A network that is affordable compared to a traditional road expansion approach, which is controlled through the pace of budget implementation, and provides improvements to affordable modes of transportation for the community.

Ultimately, the TMP establishes the vision for how people and goods will move throughout the city for decades to come in a way that is conscious of the environment and moves Guelph to a future-ready state over the next thirty years.

1.2 Planning Process

Sustainable Transportation Master Planning Process

Moving Guelph Forward represents an innovative and leading-edge approach to integrated and strategic transportation master planning. It features:

A Vision, Values, and Goals framework that reflects the strategic direction of the community.

This framework is derived from the existing strategic directions of the community. The Vision, Values and Goals (VVG) framework is the foundation of a sustainable TMP, as it is used to align all subsequent decisions to Guelph's core values: the problem statements, the plans mode share objectives, the evaluation criteria for comparing network alternatives, and the method used for prioritizing capital projects.

A commitment to developing a transportation strategy around Complete Streets and increasing sustainable mode share.

Sustainable TMPs, by definition, are rooted in a Complete Streets philosophy and are driven by managing mode share, rather than expanding road capacity for automobiles. The TMP rebalances the transportation network to be more complete and then sets mode share targets to align travel demand with the rebalanced network.

A multi-modal network that acknowledges the competition for right-of-way space and minimizes impacts on natural and urban features.

The TMP network extends the reach of sustainable modes (transit, cycling, and walking) so that they become more accessible to all travelers. The TMP strives to make transit more competitive with the automobile for most trips and improves connections for active mode infrastructure to key destinations and to transit.

A collection of policies and programs that support the shift in mode share.

These are the tools used to shape the transportation demand to fit the vision for Guelph. To be successful, Guelph developed complementary policies and programs to actively manage the many factors affecting mode choice to bring the goals of the TMP to fruition.

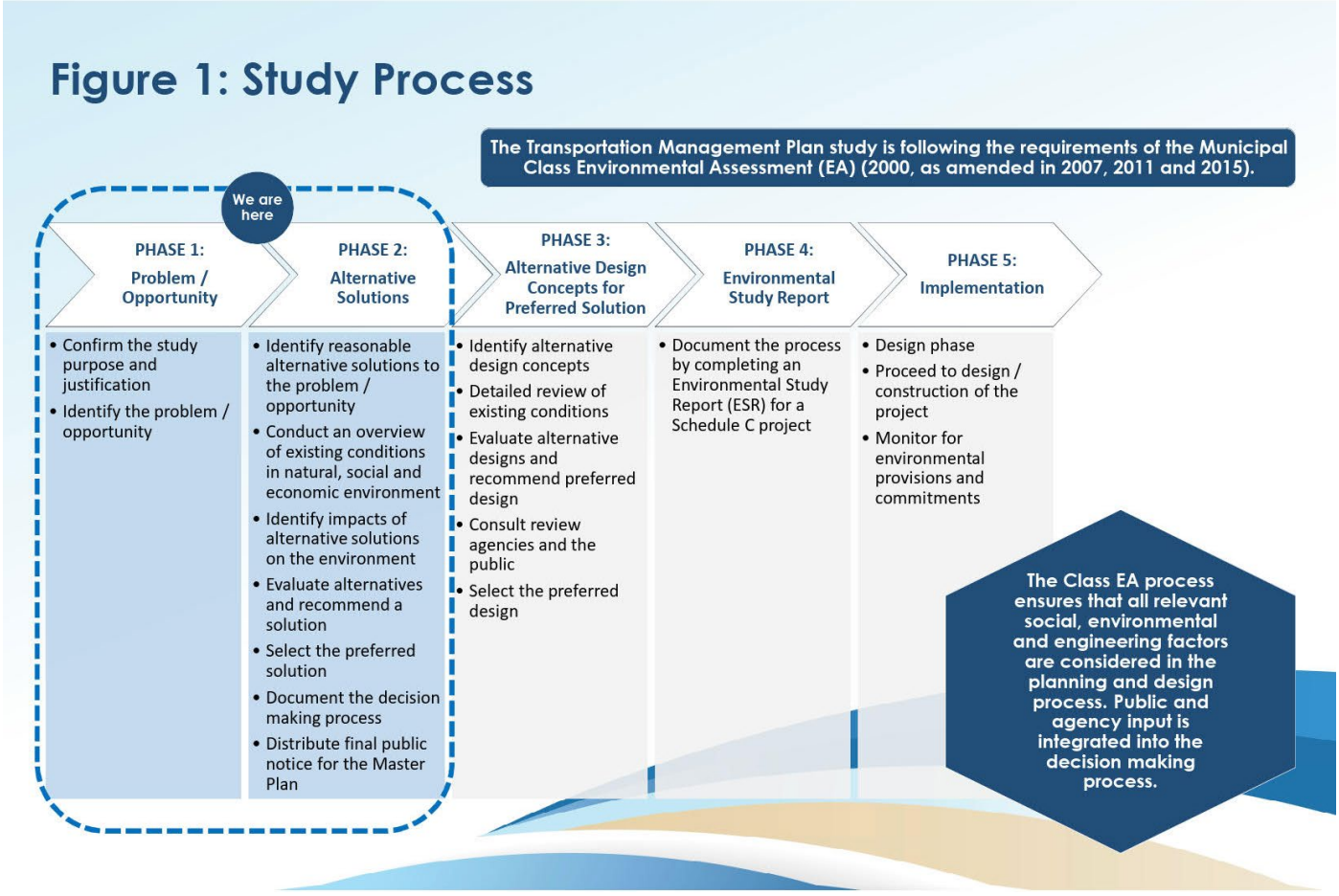
Municipal Class EA Process

Municipal transportation capital projects must meet the requirements of the *Ontario Environmental Assessment (EA) Act.* The Municipal Class EA applies to a group or "class" of municipal projects which occur frequently and have relatively minor and predictable impacts.

These projects are approved under the *EA Act*, as long as they are planned, designed and constructed according to the requirements of the Class EA document.

The Class EA planning and design process is illustrated in **Figure 1**.

Figure 1: Class EA Planning and Design process figure highlights the five phase Class EA process



The specific requirements of the Municipal Class EA depend on the type of project, its complexity and the significance of its environmental impacts. Three categories of projects are identified in the Class EA:

- **Schedule A** projects are the least complex and mostly consist of normal operational and maintenance activities. **Schedule A+** projects, such as streetscaping, localized operational improvements and changes to pavement markings for parking, turning lanes and bike lanes are also pre-approved but the public must be advised. Section A.1.2.2 of the Class EA includes various methods for public notification.
- **Schedule B** projects are more complex and generally include minor expansions to existing facilities. These projects are approved provided they follow Phases 1 and 2 of the Class EA process and are subject to an environmental screening. An example of a Schedule B road project is a new bridge costing less than $2.4M. The construction of a new transit station adjacent to a residential area or environmentally sensitive area is another example of a Schedule B project.
- **Schedule C** projects are the most complex and consist of new facilities or major expansions to existing facilities. These projects must follow all five phases of the Class EA process and require the preparation of an Environmental Study Report (ESR).

Moving Guelph Forward has been prepared under the Municipal Class Environmental Assessment process to ensure that future infrastructure projects meet the minimum criteria to proceed for additional detailed study and engagement. The engagement, technical analysis and background review satisfies Phases 1 and 2 of a class EA study. The final documentation lists a table of all future works that would trigger the Schedule B or C projects and would therefore require additional work as well as public and council touch points before construction.

Master Plans should be reviewed every five (5) years to determine the need for a detailed formal review and/ or updating.

2.0 Engagement

The Guelph Transportation Master Plan (TMP) will shape how people move around the city for the next 30 years. As a result of this, community and stakeholder engagement was critical to understanding how people move around today, along with their perspectives on how we should move around in the future. The engagement program included many different opportunities for residents and stakeholders from across the city to participate in the project and provide feedback. Through the engagement program, the City was also able to educate the community about the future of transportation, anticipated growth Guelph will experience in the future, and what sustainable transportation solutions might look like. The engagement program was aligned with the technical project components in order to collect and integrate meaningful feedback at project decision-making milestones.

Below are key statistics and highlights from the four phases of the engagement process. Refer to the Technical Appendix A1 to A5 for the engagement summaries and the Summary Response table.

2.1 Phase 1: Project Launch

TMP Launch Event (Spring 2019)

The City hosted a "The Future of Transportation in Guelph Panel Discussion" which had an attendance of nearly 200 people. The purpose of the panel was to introduce the project to update the Transportation Master Plan and uncover questions the public had about the future of transportation in Guelph. In this phase, the City also conducted pre-engagement interviews, pop-up engagements, and launched the online engagement page.

Vision and Values Survey (Summer 2019)

A draft vision and TMP values were developed from interpretations of existing policy directions for transportation. A summary of the draft Vision and Values was posted to the City's website and a survey was circulated to collect stakeholder feedback. The survey indicated strong support for the draft Vision and Values and they were adopted.

2.2 Phase 2: Existing Conditions and Strategic Directions

Pop-Up Events and Demonstration Projects (Summer/ Fall 2019)

Feedback was received from the public and key stakeholders which were used to inform the development of the preferred scenario. Nearly 3,000 submissions with over 1,000 comments were received. Below are a few of the key themes that were brought up throughout the engagement process.

- Active modes should be more accessible, safer and complete;
- Improve transit schedule and routes and implement transit priority measures;
- Improve synchronization of traffic lights; and
- Bus and bike-only lane demonstration projects implemented directly in Guelph streets received plenty of feedback from various mode users. The majority of comments were directed towards the need for greater clarity as to how it will impact congestion and safety.

Complete Streets Workshop with City Council (Fall 2019)

City staff engaged with Guelph City Council in a workshop on complete streets to educate them on the concept, answer their questions and gather feedback.

2.3 Phase 3: Preferred Network

Virtual Open House and Survey (Winter 2020/ Spring 2021)

Guelph conducted two online surveys concurrent with the virtual open houses hosted though an interactive website using ESRI Story maps. The surveys were available over the course of one month (November 2020 to December 2020 and January 2021 to February 2021). Approximately 156 participants completed the survey using the City's online engagement platform, HaveYourSay.guelph.ca. Below are the key findings from the survey:

- Overall, participants strongly agreed with the vision statements, goals, and the problem and opportunity statements;
- participants mentioned that transit should be improved as part of the TMP update;
- participants mentioned that safety for vulnerable road users should be a key component of the TMP update;
- participants stated the desire for the TMP to focus on sustainability and voiced support for alternatives that emphasize and advance sustainability;
- participants wanted cars and driving to be an accessible and convenient method of transportation into the future;
- participants would like to see active transportation prioritized and made safer to promote these modes of transportation in the future; and
- participants generally expressed support for Alternative 3 - Sustainability and Resilience Focus.

2.4 Phase 4: Understanding TMP Implementation

Virtual Open House and Survey (Fall 2021)

- Guelph hosted a virtual open house and survey over the duration of one month in October of 2021, conducted stakeholder interviews and community conversations to get feedback on the Preferred Solution: Sustainability and Resilience Option.
- Newsletters were sent to 3,803 recipients and the online engagement hub saw over 300 visitors, with nearly a third contributing their thoughts on the preferred solution.
- Respondents wanted the preferred solution to ensure that active connections were prioritized and a transportation network that supports inter-regional movement for people and goods.
- Respondents stated that they wanted Guelph to continue meaningful engagement and communication for the implementation of road projects.

Overall, the engagement provided strong support for the TMP vision, values and goals.

3.0 Foundation

3.1 Overview

The first step in the planning process was to develop a transportation vision and connected values to guide the development of the Guelph TMP. The **Vision** represents the desired transportation future and steers the direction of the TMP. The **Values** are the themes that formed the foundation of the final plan.

The next step was to establish the TMP Goals. The TMP Goals represent long-term high-level outcomes for transportation in Guelph. The achievement of all the goals would be a state where the vision was reached. As the TMP follows a sustainable Transportation Master Plan approach, the goals will play a key role in the development of the TMP.

The horizon year for the TMP vision is 2051. Therefore, the full achievement of goals may not occur for multiple decades. Additionally, the TMP will be updated at regular intervals as Guelph moves towards the horizon year. These updates will offer opportunities to report on progress towards the goals and opportunities to revise the goals with new knowledge and best practices.

Finally, several key and emerging transportation topics were investigated to establish the preferred strategic directions in these areas for the Guelph TMP update.

3.2 Vision Values and Goals

Vision

The Guelph *Official Plan* and Community Plan have established a vision and related values for transportation in Guelph. In the case of the Community Plan, the Vision and Values are a result of a detailed year-long community engagement process.

The Vision and Values for the TMP update build upon these existing Vision and Values.

The Vision for the Guelph TMP update is stated below.

Transportation in Guelph will be safe, equitable, sustainable, complete, affordable and supportive of land use.

Values

The six values identified in the Vision reflect the community's values – top priorities and core beliefs.

Safe

Guelph will provide safe transportation networks for people to walk, wheel and use vehicular transportation through all corners of the city.

Safe means a transportation network where users of all modes can expect to travel hazard-free and complete trips without fatal or serious injury. In making decisions regarding safety, the most vulnerable users will be prioritized first.

Sustainable

Most people travel sustainably, minimizing the negative impacts of their trip on the environment.

A sustainable transportation network is one that promotes healthy lifestyles and environmental stewardship. To promote healthy lifestyles and environmental sustainability, Guelph will encourage a shift towards active transportation modes (i.e. cycling and walking) and transit. The transportation system will reflect these modal priorities.

Equitable

Transportation is geographically equitable – people can complete their trips comfortably and in a reasonable time, regardless of if they own a vehicle, which part of Guelph they are coming from and which part of Guelph they are going to.

Equitable transportation speaks to a network that provides people with comfort, safety and dignity no matter where in Guelph you live, where you're going and whether or not you own a vehicle.

Complete

This is possible because the network for each mode of travel is complete, enabling continuous multimodal travel throughout our city.

A complete - or a connected - network is one that treats all modes of travel as equal in importance. A complete network also ensures connectivity within and between networks for all modes. This means smooth continuous travel is possible without network gaps for users of any mode and that the transportation system is interconnected and reflects modern forms of mobility,

allowing users to seamlessly transfer between modes for various portions of their trip. In a complete transportation network, all parts of the city are connected via the various modal networks. This enables Guelph to feel that it is one cohesive community rather than separate pieces.

Affordable

We accomplish these things in a way that is affordable for the user and makes the most financially efficient use of our investments.

An affordable transportation network is one where investment decisions are made while keeping in mind the lifecycle costs of the decision. This means that both the capital cost and the ongoing operational or maintenance costs are considered.

Supportive of Land Use

Finally, our transportation network is supportive of land use, meaning that we design our streets to be context-sensitive to support the growth of our community.

A transportation system that's supportive of land use creates context-sensitive transportation links and enables the development of healthy, high- and medium-density, mixed use communities.

Goals

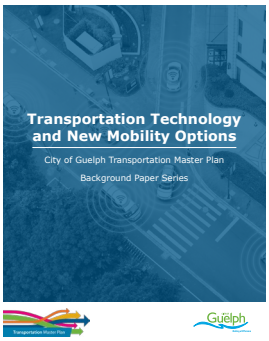
Seven goals were developed for the Guelph TMP to align transportation in Guelph with its values:

1. People of all ages and physical ability will be able to travel safely using any transportation mode that they choose;
2. Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them;
3. Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car;
4. The carbon footprint from the transportation sector will aim for net zero by 2050;
5. Guelph's streets, trails and rail networks will align with the City's land use objectives;
6. Investment decisions will be made considering the asset lifecycle costs; and
7. Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today.

To learn more about how vision and values were developed, please read Appendix B: Vision, Values and Goals.

3.3 Strategic Directions

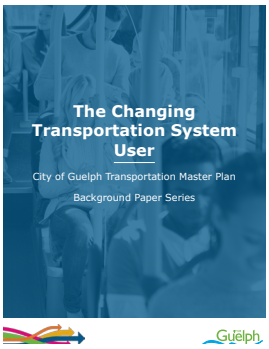
Next, the City explored six key issues affecting transportation to establish the direction of the TMP. They are summarized below in no particular order and can be found in the Appendix C1 to C6 in of this report.



New Mobility

Understanding opportunities and challenges of new mobility was a key part of the TMP update.

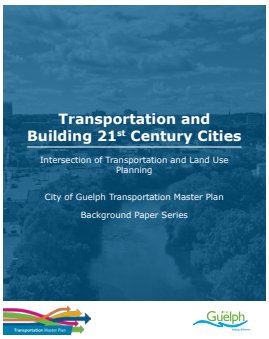
New transportation technologies and emerging forms of mobility are changing how we move and reshaping our cities. These changes generally make life more convenient but their often-disruptive nature can negatively impact transportation networks that are not ready for sudden change.



Changing Travel Habits

In planning for the future, the TMP update considered how changing user habits will affect transportation.

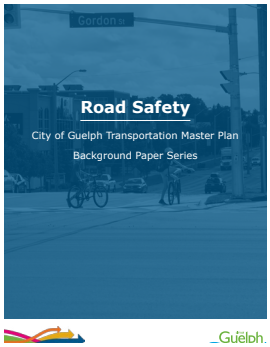
Communities are always evolving. As a result, the needs, desires and values for transportation in communities are also constantly changing. Nobody can know what the future will look like with certainty but ongoing social trends and shifts hint at how people may wish to travel in the future.



Transportation and Land Use

Land use and transportation are intertwined - changes made to one of these aspects of city-building always affects the other.

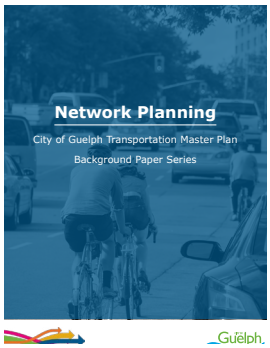
Guelph's land use planning studies and policies support the development of a multimodal transportation system to accommodate future travel demands as the city grows. The TMP sets a long-term mobility strategy that needs to align with the City's planning objectives.



Road Safety

As new best practices and studies emerge, there have been continuous opportunities to further improve road safety in Guelph. That's why road safety is a major theme for the TMP update.

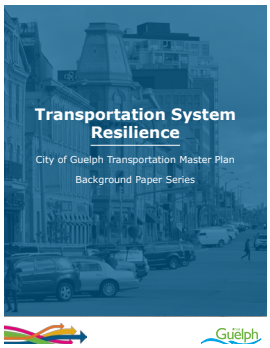
Protecting the safety of road users has always been the core consideration for transportation professionals. Unfortunately, road-related injuries and death continue to be a persistent challenge today.



Network Planning

The TMP update approached network planning based on new trends and best practices to ensure a better transportation system for the future.

Decisions made when planning transportation networks in communities have long-lasting effects. The way that transportation networks were designed, the infrastructure that was prioritized and the user experiences that were considered during city-building decisions decades ago all influence how people make their daily trips today.



Resilience

In light of the global COVID-19 pandemic, ensuring resilience in our transportation system through the TMP is more important than ever.

A resilient transportation system has the ability to adapt and thrive in the face of both short- and long-term disruptions.

4.0 Existing and planned conditions

4.1 Overview

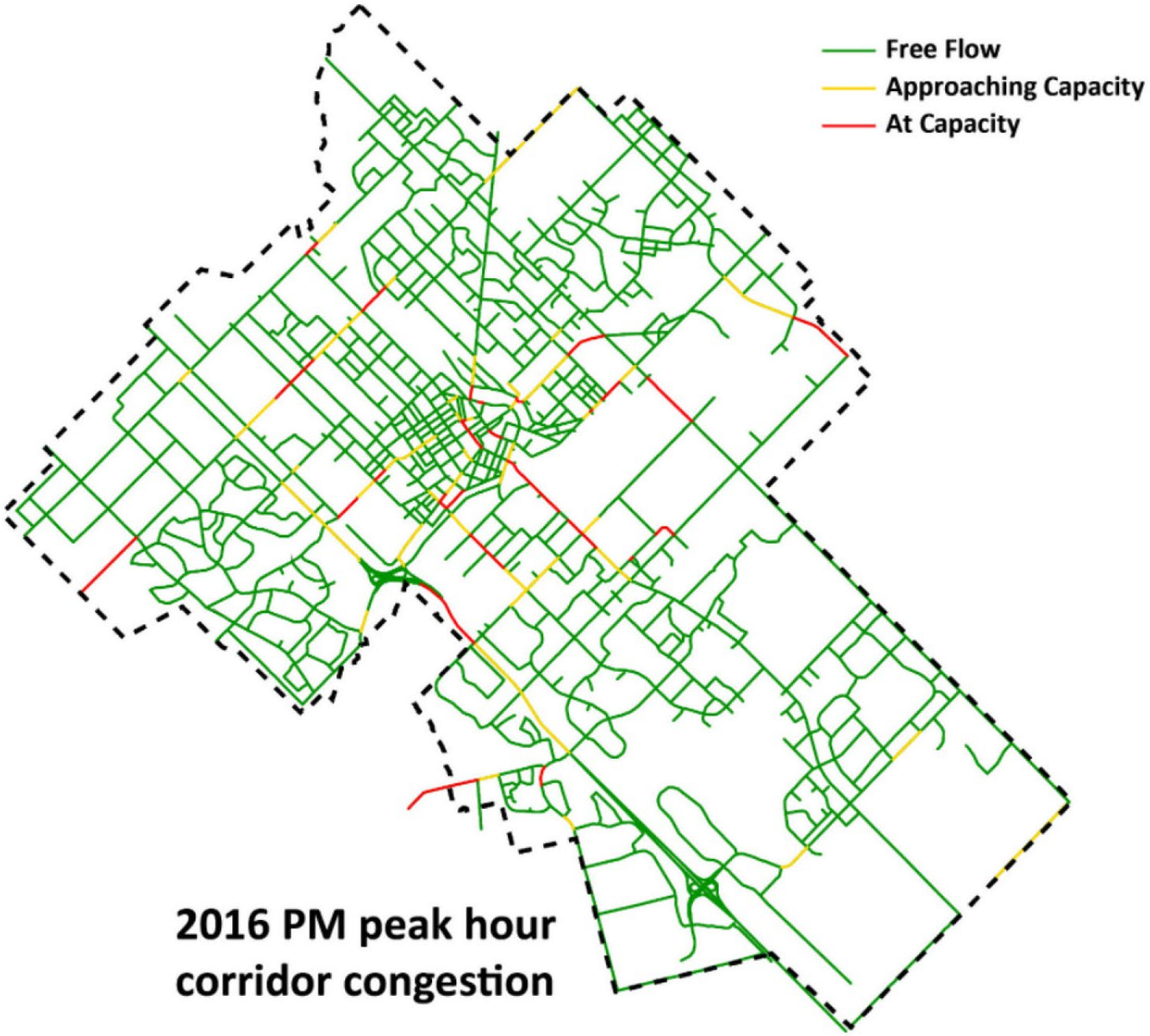
Problem identification (EA Phase 1) begins with a review of the existing travel demands and existing and planned networks to identify key issues and trends. It then requires an assessment of the future mode share targets, given that the Guelph TMP update is using a sustainable TMP approach.

4.2 Existing Travel Demands

Network Congestion

To understand the transportation network, areas of congestion were identified throughout Guelph. Congestion is defined as the decrease in speed and travel time that results from high demand along corridors. The V/C map in **Figure 2** below highlights peak afternoon congestion along corridors in Guelph.

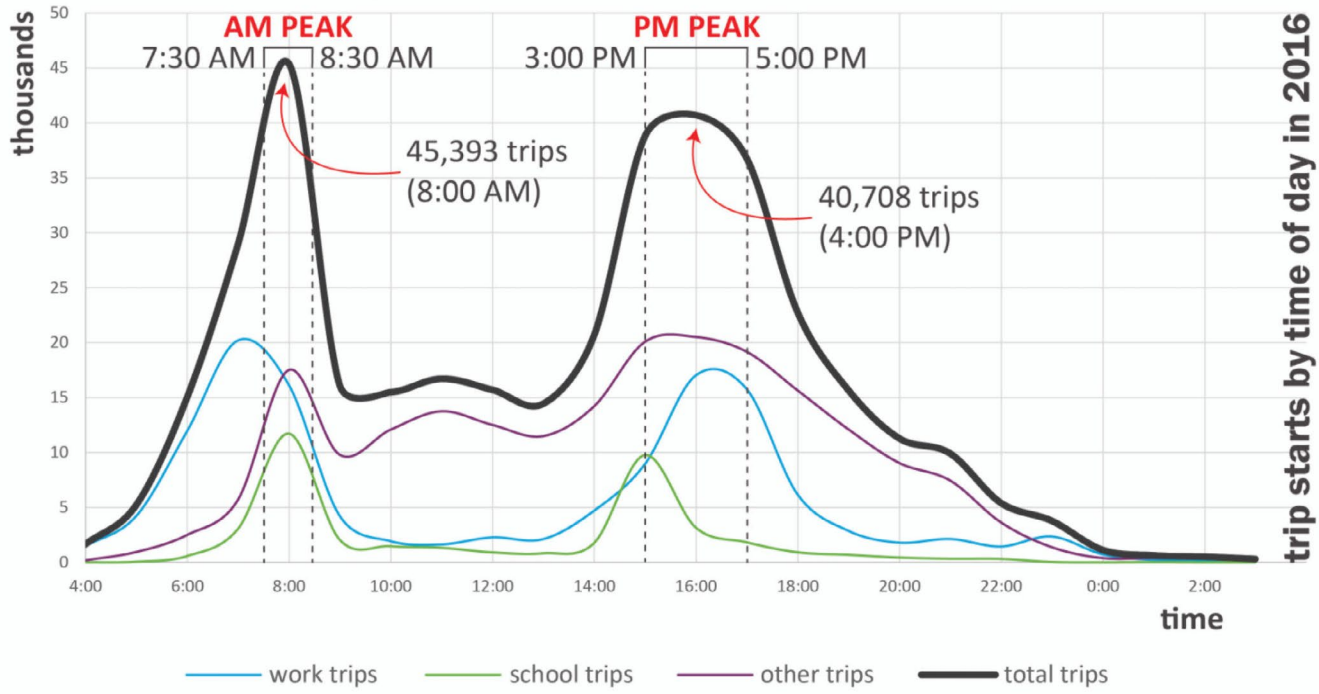
Figure 2: 2016 PM Peak Hour Corridor Congestion Map highlights peak afternoon congestion. Corridors within the core of Guelph were found to be 'At Capacity', whereas corridors outside of the core were either 'Approaching Capacity' or 'Free Flow'.



The V/C map indicates that the majority of corridors which were 'At Capacity' during peak congestion hours were in proximity to major destination areas such as the downtown and the University of Guelph. Additionally, corridors in proximity to the ones functioning 'At Capacity' were all 'Approaching Capacity'.

Many of the corridors that are congested are constrained; they cannot be widened without significant impacts on other mode users and/or the natural and social environment. Periods of peak demand are sharp and do not last beyond the peak commuter hour. **Figure 3** shows that the morning peak takes place over 60 minutes (between 7:30am and 8:30am) and the afternoon peak lasts for 120 minutes (between 3:00pm and 5:00pm).

Figure 3: Volume of time of Day. The graph highlights that corridors are only congested for 10 percent of the time over the period of a week.



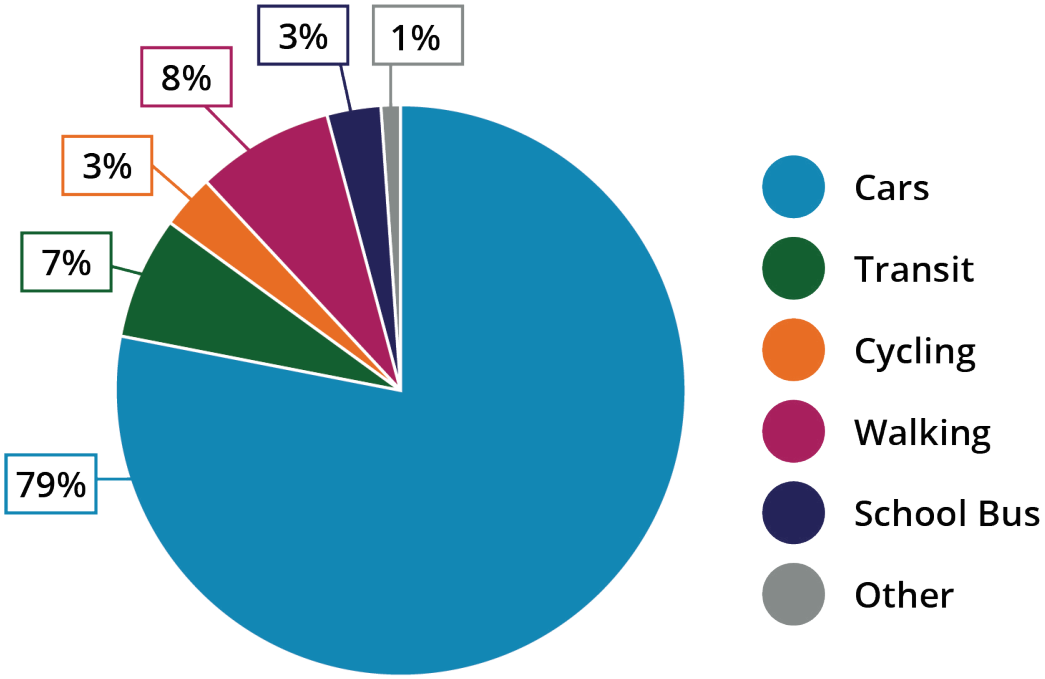
The volume by time of day graph shows that peak periods only represent 15 out of 168 hours in a week, meaning that corridors are only congested for about 10 percent of the time. The graph also shows that auto demand outside of peaks was less than half of peak hourly demand. The need to explore the opportunities to manage congestion by reducing demand is obvious. The direction of the TMP to promote more sustainable modes significantly improves the LOS for the other 90 percent of the time.

Existing Mode Share

In Guelph, 79% of the trips that have an end point in the city are completed by car, which is consistent with conditions found in many North American cities. Walking is the second-most common travel mode (8%), followed by transit (7%) (see **Figure 4**).

It is difficult or impossible for the city to influence external and through trip modes and volumes. Therefore, this TMP focuses on the mode share and traffic statistics for within-Guelph trips only.

Figure 4: All Day Mode Share (2016 TTS). The figure highlights that cars made up 79 percent of mode share, followed by walking with 8 percent mode share.

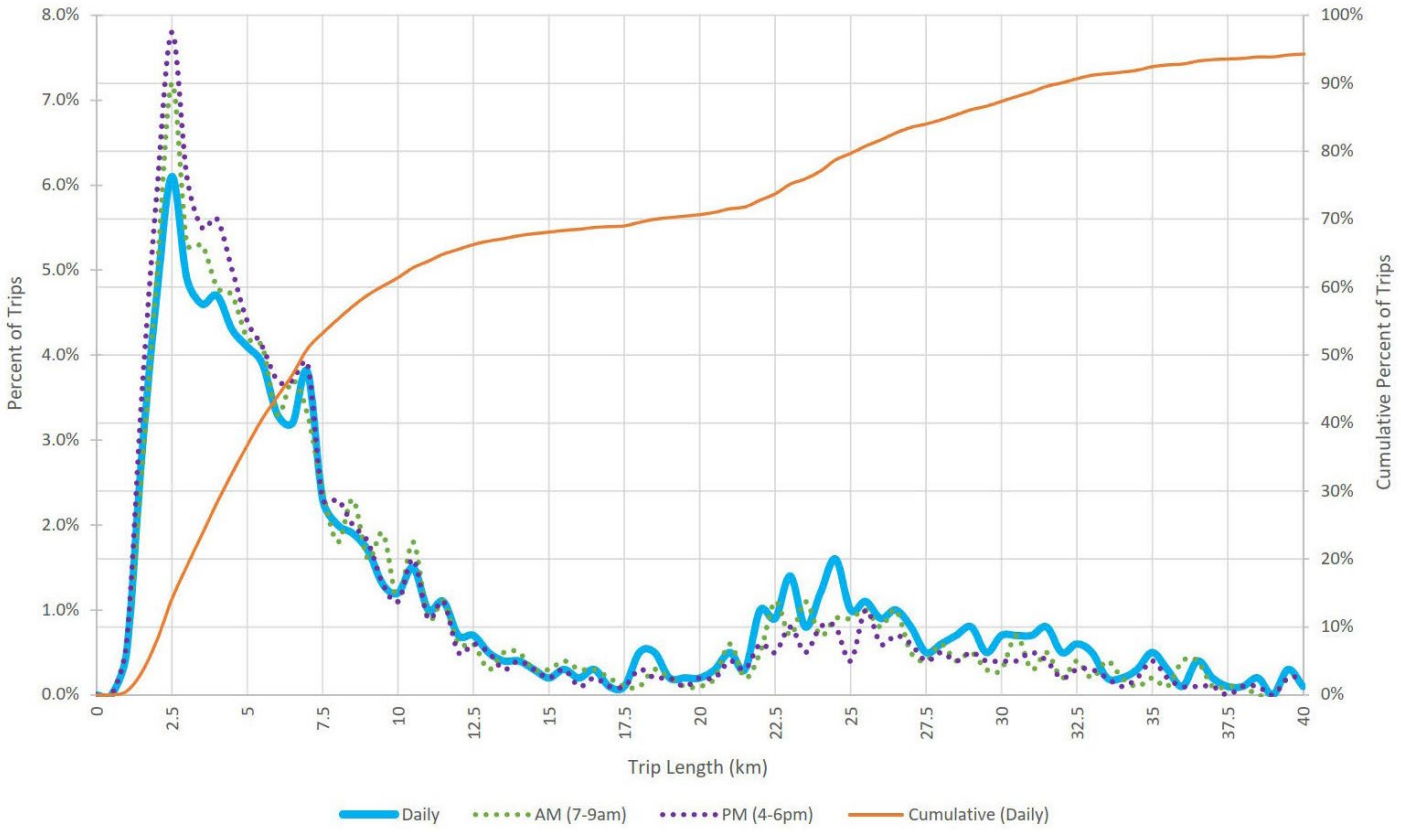


Potential to Change Mode Share

As noted in Section 4.1.2, 79% of existing trips that have an endpoint in Guelph are completed by car. The next step was to understand how far individuals travelled to reach their destinations. Streetlight data[1] allowed for the examination of the trip length for residents in Guelph as a proxy for the potential attractiveness of the various travel modes (see **Figure 5** and **Table 1**).

Approximately 15% of trips in Guelph are less than 2.5km, a distance generally accepted to be a comfortable walk. It was also observed that another 40% of trips in Guelph are between 2.5 and 7.5km, a distance generally accepted to be within the range of a large percentage of cyclists.

Figure 5: Street Light Data - Street Length (percent). The graph highlight that the majority of trips were observed to be less than 7.5 kilometres in distance.



1 https://www.streetlightdata.com/

Table 1: Mode Share Potential by Distance

Mode	AM (7-9am)	PM (4-6pm)	Daily
Walk (0-2.5km)	15%	18%	14%
Cycle (2.5-7.5km)	41%	44%	39%
Transit (7.5-15km)	18%	17%	17%
Drive / Regional Transit (15km+)	26%	21%	29%

In **Table 1** the method applied in calculating the percentages excludes trips with shorter distances from the "higher" modes, which will not necessarily be the case in reality. In reality, cycling would be practical for any trip from 0 to 7.5km in length, transit may be attractive for trips from 0 to 15km, and cars can be used for a trip of any length. Adopting this "cumulative" approach provides a wider window of potential for each mode.

For example, cycling during the AM peak hour could be seen as practical for 41% to 56% (41% + 15%) of Guelph residents based on their current trip lengths, as trips that are of a practical distance for walking could also be accomplished on a bike.

The most dramatic observation from the Guelph trip length profile was the potential for cycling. Whereas the Census and TTS estimate that cycling makes up approximately 1.5-2% of all daily trips, the actual distances travelled by people in Guelph on a daily basis mean that about **40%** of daily trips could potentially be accomplished by cycling. During the peak travel hours, this potential approaches 45%.

Also, of note is that the total percentage of trips under 15 km (which are all trips that can stay completely within Guelph) over the full day was about 75%. This means that under ideal conditions, the maximum sustainable transportation mode share that could be achieved in Guelph is 75%. During the peak hours, this potential reaches about 85%, which is approximately equivalent to the current percentage of people who drive.

The values here, as noted, relate potential mode choice solely to the distance travelled, which is a simplistic view, but shows the significant potential for sustainable modes in Guelph. In reality, many other factors including weather, trip purpose, grades, comfort, physical ability, and personal attitudes play into the final mode choice. These values present the **theoretical maximums** that could be achieved. Placed alongside the mode share targets of the *Official Plan*, these demonstrate the **potential** to achieve or exceed these goals. To tap into this potential, it will be necessary that Guelph remove any barriers over which it has control, which means investment in safe, comfortable, and connected active transportation infrastructure and reliable and convenient transit service.

Discussion

Shifting mode shares during peak commuter periods towards sustainable modes will require a commitment to Complete Streets to improve their Level of Service (LOS) and competitive position. Rebalancing street designs not only improves options for peak hour travel, it also improves the ability to serve demand 24/7 all year round. A Complete Streets foundation, complemented by a strong *Transportation Demand Management* program, will position Guelph to meet its many TMP Goals.

4.3 Existing Networks

Pedestrian networks today

The walking experience is largely influenced by access to appropriate facilities and connectivity. The more pedestrian infrastructure there is, and the more opportunities for crossings (which allow for a more direct route), the more comfortable it is for people who are walking.

There are approximately 821 kilometres (km) of pedestrian facilities (i.e. sidewalks and trails) in Guelph, the vast majority of which are sidewalks. Pedestrian facilities are not equally distributed across the city:

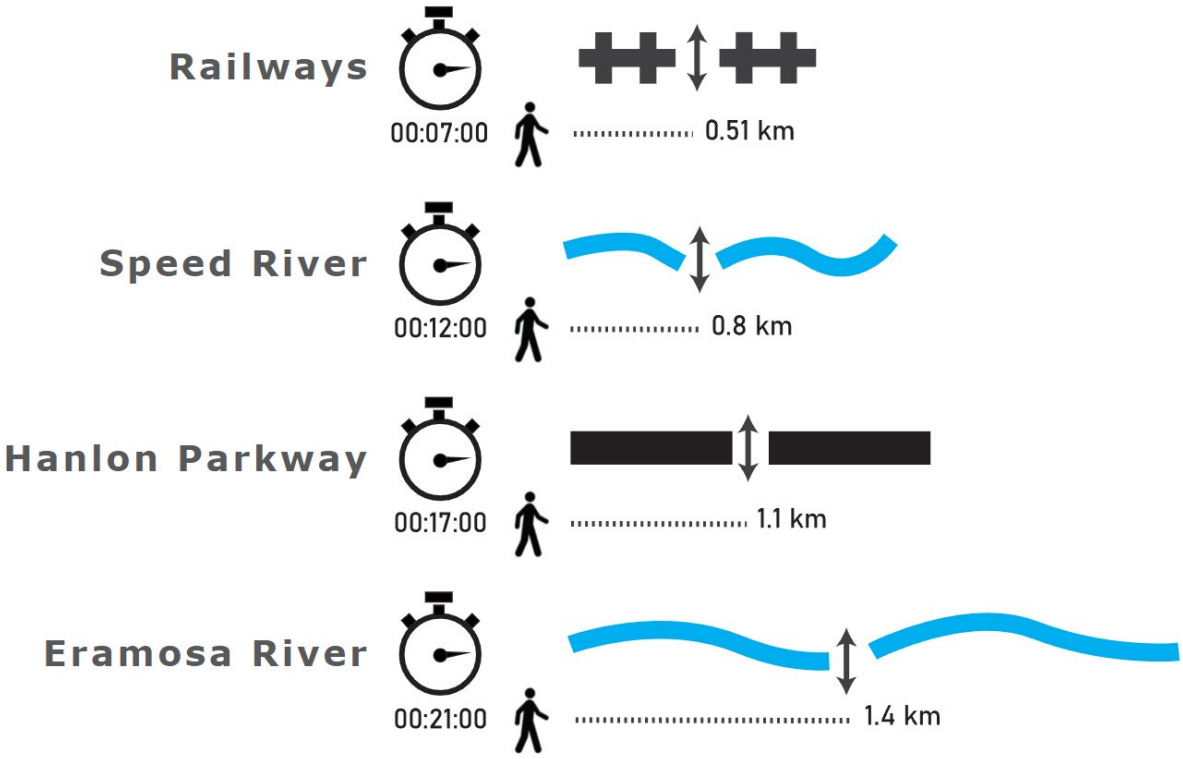
- About 92% (505 km) of streets have at least one sidewalk;
- About 63% of major streets – arterials and collectors – have sidewalks on both sides; and
- About 86% of transit stops are connected to the larger pedestrian network with sidewalks.

Barrier Crossings

Guelph's a city of rivers and rail lines. The Speed and Eramosa Rivers provide significant opportunities for recreation and active transportation travel along the well-established trail networks, add to the beauty of the community and define the character of the city. Guelph's rail lines play a big role in Guelph's economy and the movement of Guelphites. Through the *Guelph Junction Railway* (GJR), Canadian National Railway (CN), Canadian Pacific Railway (CP) and GO rail, Guelph is connected to crucial passenger and freight corridors.

The rivers and rail lines are important landmarks and fixtures of the community. However, they also limit options for pedestrian crossing, can require the construction of expensive infrastructure to cross and may act as long "impassable barriers" that particularly affect north-south travel and east-west travel in the north half of the city.

For pedestrians, the average distance between formal crossings of the…

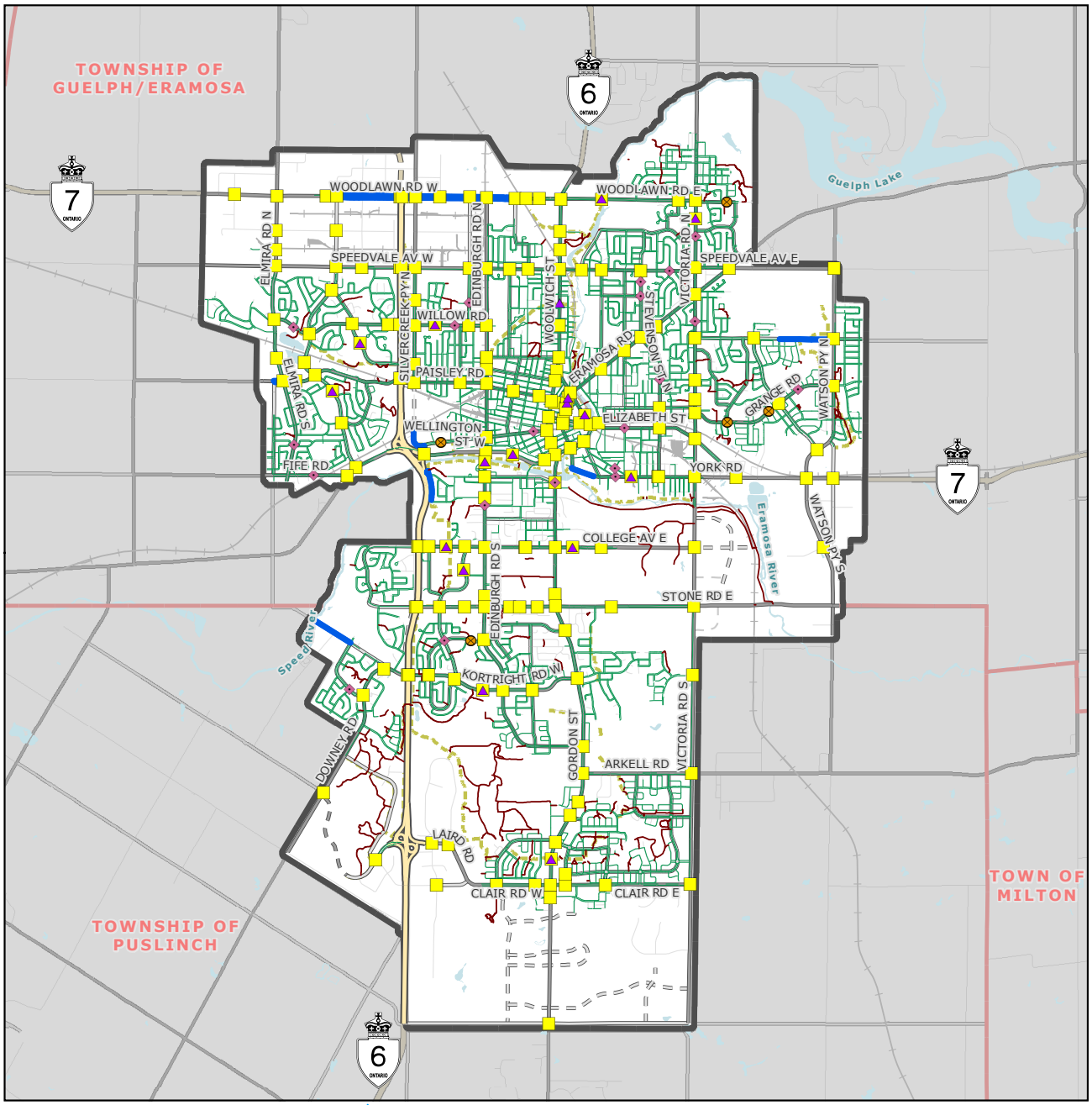


Crossing these physical barriers also poses additional challenges. For instance, crossing the Hanlon Parkway can be very uncomfortable for pedestrians, even at designated crossings, and crossing railways can add even more time to a pedestrian trip if a train is passing by when they reach a crossing.

People walking can also experience challenges in crossing the street. Today, only 10% of intersections where trails cross streets are signalized.

The Existing Pedestrian Network in Guelph is shown in **Figure 6**.

Figure 6: Existing Pedestrian Network. The Map below highlights the location of pedestrian infrastructure such as sidewalk, signalized intersections, off road trails and multi-use paths in the City of Guelph.



Signalized
Sidewalk
Off Road Trail
Multi-Use

PEDESTRIAN CROSSING

Intersection Pedestrian Signal (IPS)
Midblock Pedestrian Signal (MPS)
Pedestrian Crossover

BASE

Municipal Boundaries
Active Transportation Network
Expressway (MTO)
Arterial Road
Collector Road
Local Road

Approved Expressway (MTO) (OP)
Approved Arterial Road (OP)
Approved Collector Road (OP)
Approved Local Road (OP)
Railway and Rail Yard
Waterbody

2022 Transportation Master Plan

Figure 6: Recommended Pedestrian Network

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
KM
0 0.75 1.5

PROJECT: 18-8919
STATUS: DRAFT
DATE: 2022-05-31

FILE LOCATION: E:\Shared drives\SIM\2018\188919 - Guelph TMP\Product\Client\May2022\188919_RecommendedPedestrianNetwork.mxd

Cycling Today

Guelph's cycling facilities fall into the following categories:

41% (53km) are streets with bike lanes right next to car lanes

40% (52km) are off-road bike routes

4% (5km) are in-boulevard multi-use pathways

11% (14km) are signed routes with no additional physical infrastructure for cycling

4% (6km) are streets with buffered bike lanes, which have additional space between cycling and car lanes but no physical barrier

There are approximately 130 centreline km of facilities and streets that have cycling facilities along either one or both sides of the street. Centreline means that the length of a street with cycling facilities on both sides would only be counted once.

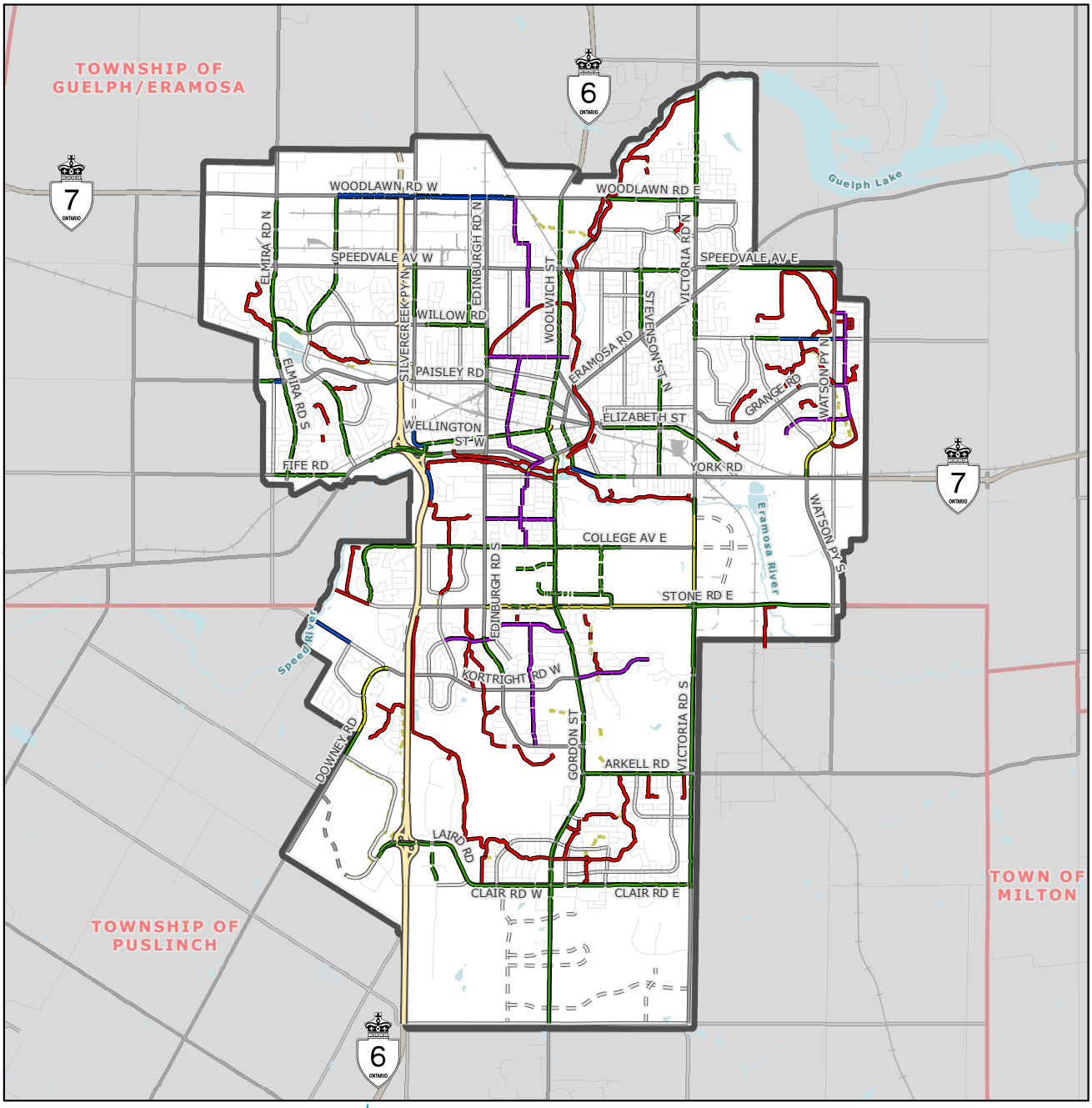
Cycling infrastructure does not have a "one-size-fits-all" approach. For example, local streets in neighbourhoods that do not see large car volumes or high speeds may not register as formally having "cycling facilities" but they may be comfortable for a majority of people to cycle on in their current shared traffic configuration.

Physical separation became more important in environments with many fast-moving cars or trucks. In total, nearly 39% (or 65.6 km) of existing cycling infrastructure physically separates (using a curb, bollard, or other physical barrier) cyclists from vehicles.

The convenience associated with cycling depends on connectivity, just like for walking. Long distances between crossings for streets, rivers and rail lines is a major barrier to cycling. Guelph's physical geography also affects the appeal of cycling. Though much of the city is relatively flat, the widespread presence of small hills – or drumlins - across the city can pose challenges for cycling among less able-bodied travelers.

The Recommended Cycling Network in Guelph is shown **Figure 7**.

Figure 7: Recommended Cycling Network. The map highlights the bicycle infrastructure such as bike lanes and off-road bike routes in the City of Guelph.



Bike Lane
Buffered Bike Lane
Multi-Use
Signed Route
Off-Road Bike Route

BASE
Municipal Boundaries
Active Transportation Network
Expressway (MTO)
Arterial Road
Collector Road
Local Road

Approved Expressway (MTO) (OP)
Approved Arterial Road (OP)
Approved Collector Road (OP)
Approved Local Road (OP)
Railway and Rail Yard
Waterbody

2022 Transportation Master Plan
Figure 7: Recommended Cycling Network

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
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SCALE 1:80,000
KM
0 0.75 1.5

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Transit Today

Guelph Transit provides local bus service in Guelph. Guelph also offers inter-regional transit connections via GO Transit (by bus and train), Greyhound (bus) and Kasper Transportation (bus). Residents of Wellington County also connect to Guelph via the County's on-demand RIDE WELL ridesharing transit service.

Guelph Transit operates 30 fixed routes (seven of which are seasonal routes to the University of Guelph that are only in service from September to April) and a flexible Community Bus service through Downtown Guelph and surrounding areas.

There are currently **568 bus stops** in our transit network, with **82% of them considered "accessible"** (i.e. they have a hard surface and are connected to a sidewalk).

The transit network is largely radial around two hubs. This meant that the majority of the routes pass through, start, and/or end in downtown and the university. The benefit of this approach is that residential areas often get direct connections to some of the most popular employment and education hubs like downtown and the university during the peak periods. However, this approach is not convenient for people who are destined elsewhere. This approach can result in cross-city trips being required to travel through downtown, even if that adds extra travel time to someone who isn't going downtown.

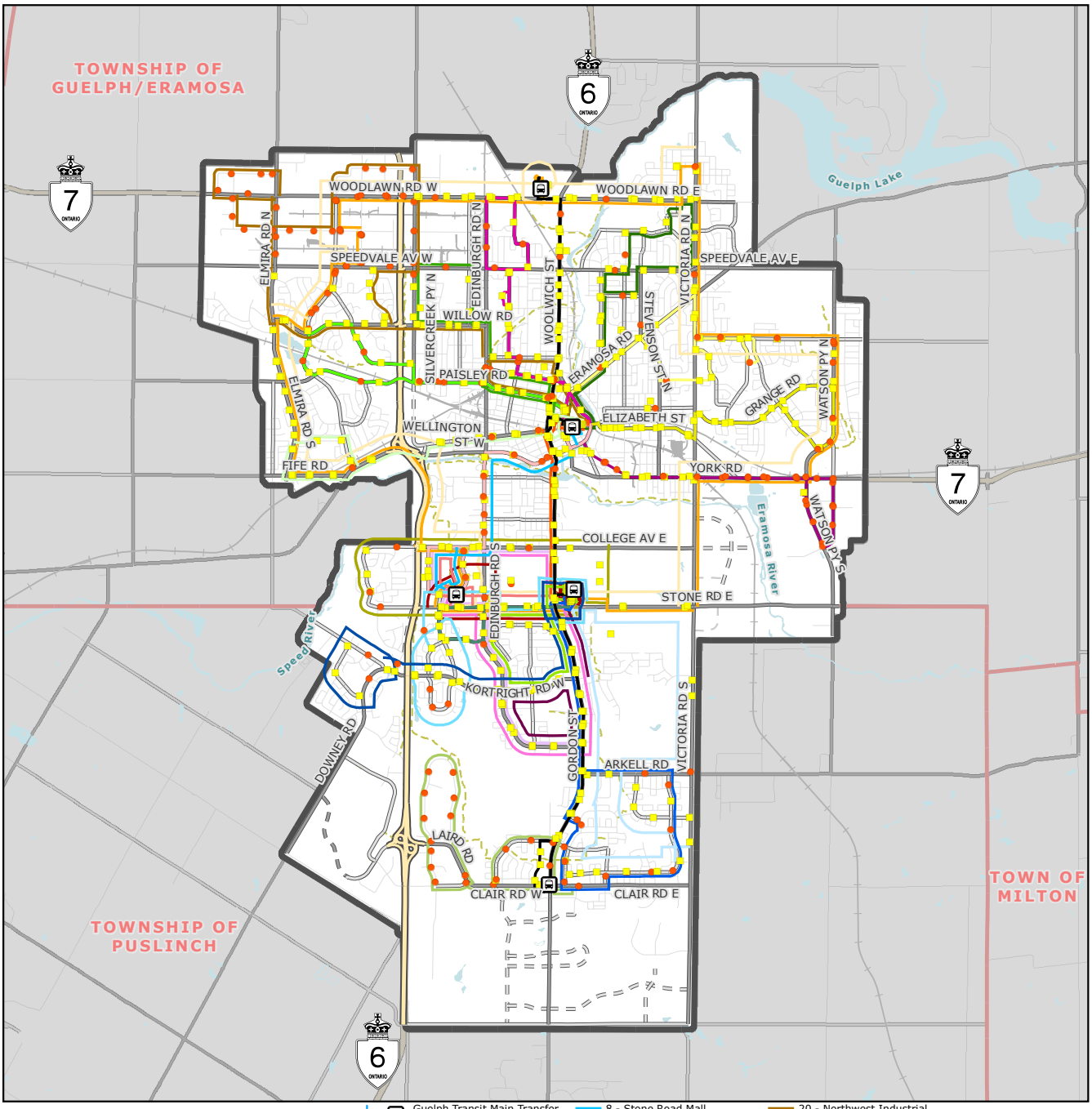
On average, when compared to driving, it takes:

2.3 times
longer to travel by bus from various parts of the city to major retail activity hubs, including Downtown, Woodlawn SmartCentres NC and Clair and Gordon.

2.8 times
longer to travel by various bus from various part of the city to any major activity or employment hub.

The Existing Transit Network in Guelph is shown in **Figure 8**.

Figure 8: Existing Transit Network. The map highlights the location of transit stops and transit routes that operate in the City of Guelph.



Guelph Transit Main Transfer Point
Bus Stop - with hard surface
Bus Stop - without hard surface

GUELPH TRANSIT ROUTES

- 1 - Edinburgh
- 2 - College
- 3 - Westmount
- 4 - York
- 5 -
- 6 - Harvard Ironwood
- 7 - Kortright Downey
- 8 - Stone Road Mall
- 9 - Waterloo
- 10 - Imperial
- 11 - Willow
- 12 - General Hospital
- 13 - Victoria Road Recreation Centre
- 14 -
- 15 - University College
- 16 -
- 17 - Woodlawn Watson
- 18 - Watson Woodlawn
- 20 - Northwest Industrial
- 40 - Scottsdale Express
- 41 - Downtown-University Express
- 50 U - Stone
- 51 U - Janefield
- 52 U -
- 56 U - Colonial
- 57 U - Ironwood
- 58 U -
- 99 - Mainline

2022 Transportation Master Plan

Figure 8: Existing Transit Network

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MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
KM
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FILE LOCATION: E:\Shared drives\SIM\2018\188919 - Guelph TMP\Product\Client\May2022\188919_ExistingTransitNetwork.mxd

Goods Movement Today

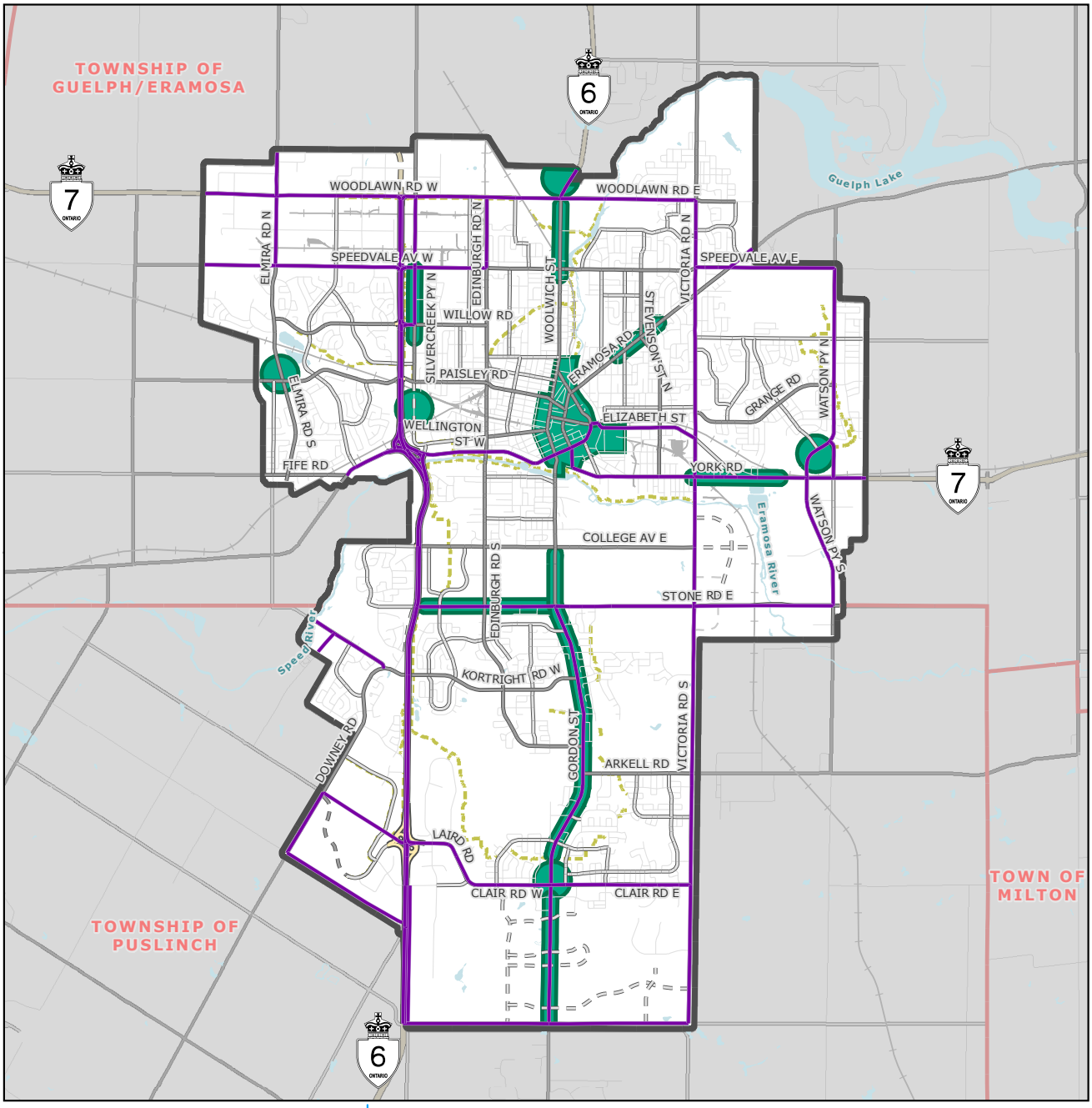
Because of Guelph's location, freight plays a key part of the city's transportation system and economic prosperity. Guelph's location puts it at the heart of the Toronto to Waterloo Region Innovation Corridor, just north of Highway 401, within an hour's drive of three major international airports and within three hours' drive of four Canada-US border crossings. Approximately 40% of North America's population can be made within a day's drive of Guelph. As a result, a lot of freight is moved to and from the industrial parks, with Guelph acting as an origin, stop or destination along the supply chain.

There's a total of approximately 89 km of permissive truck routes in Guelph, with an additional 5 km planned for the future. Two sections of the permissive truck route network only permit trucks between 6:00 am and 8:00 pm daily. Some segments of the truck route network are also subject to spring weight restrictions.

Guelph's connected to both the Canadian Pacific (CP) and Canadian National (CN) rail networks and home to the City-owned *Guelph Junction Railway* (GJR) line.

The Existing Permissive Truck Route Network in Guelph is shown in **Figure 9**.

Figure 9: Existing Permissive Truck Network. The Ideal Mode Priority Network highlights the permissive truck uses with established controls for us in Guelph.



Permissive Truck Routes with Established Controls for Use

Intensification Corridors and Mixed Used Nodes

BASE

- Municipal Boundaries
- Active Transportation Network
- Expressway (MTO)
- Arterial Road
- Collector Road
- Local Road
- Approved Expressway (MTO) (OP)
- Approved Arterial Road (OP)
- Approved Collector Road (OP)
- Approved Local Road (OP)
- Railway and Rail Yard
- Waterbody

2022 Transportation Master Plan

Figure 9: Existing Permissive Truck Network

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MAP DRAWING INFORMATION:
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Roads Today

Guelph's streets define the shape of the city and also occupy much of the developed land. The size of the roadways (along with the speed and volume of the vehicles that use them) also defined how easy it was for people who are not in cars to travel through the city.

With so many local and collector streets, the vast majority (89 percent) of streets in Guelph have posted speed limits of 50 km/h or lower.

Guelph has approximately 550 km of streets:

63% (or 345 km) local streets

Streets that are directly coonected to most residential dwellings

23% (or 124 km) arterial streets

The main spines of a city

12% (or 69 km) collector streets

Streets that connect local streets to the major street system

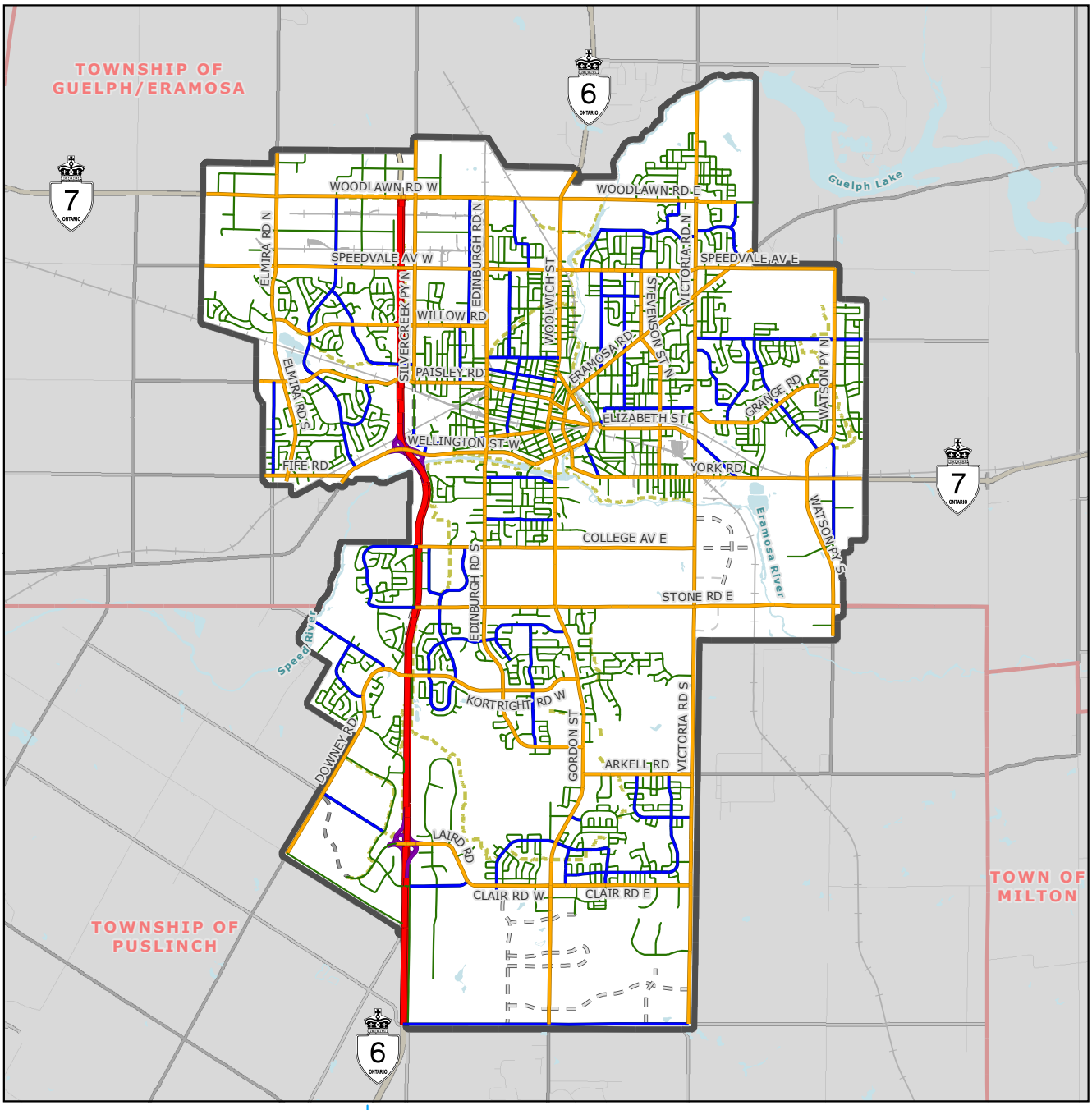
2% (or 11 km) highways

Highways fall under Provincian juridiction

The Recommended Street Classification in Guelph is shown in **Figure 10**.

To learn more about Guelph's Existing Networks please read Appendix E: Existing Networks.

Figure 10: Road Network Street Classification. The map highlights street classifications within the City of Guelph.



STREET CLASSIFICATION
- Expressway / Highway
- Ramp
- Arterial
- Collector
- Local

BASE DATA
- Municipal Boundaries
- Active Transportation Network
- Expressway (MTO)
- Arterial Road
- Collector Road
- Local Road
- Approved Expressway (MTO) (OP)
- Approved Arterial Road (OP)
- Approved Collector Road (OP)
- Approved Local Road (OP)
- Railway and Rail Yard
- Waterbody

2022 Transportation Master Plan
Figure 10: Recommended Street Classification

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
0 0.75 1.5 KM

PROJECT: 18-8919
STATUS: DRAFT
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FILE LOCATION: E:\Shared drives\SIM\2018\188919 - Guelph TMP\Product\Client\May2022\188919_RecommenedStreetClassfication.mxd

4.4 Future Mode Shares

2051 Targets

How people move to, from, and through Guelph's neighbourhoods to achieve the TMP vision for transportation matters. To enable these changes, the City will strive to build networks, develop policies, and implement programs that make non-car modes of travel more comfortable and convenient for all residents, without eliminating access to travel choices or negatively impacting peoples' quality of life. The intended outcome of these changes will be a shift in the overall mode share (the proportion of trips that are made by each mode of travel) from car towards non-car modes.

Where did the mode share targets come from?

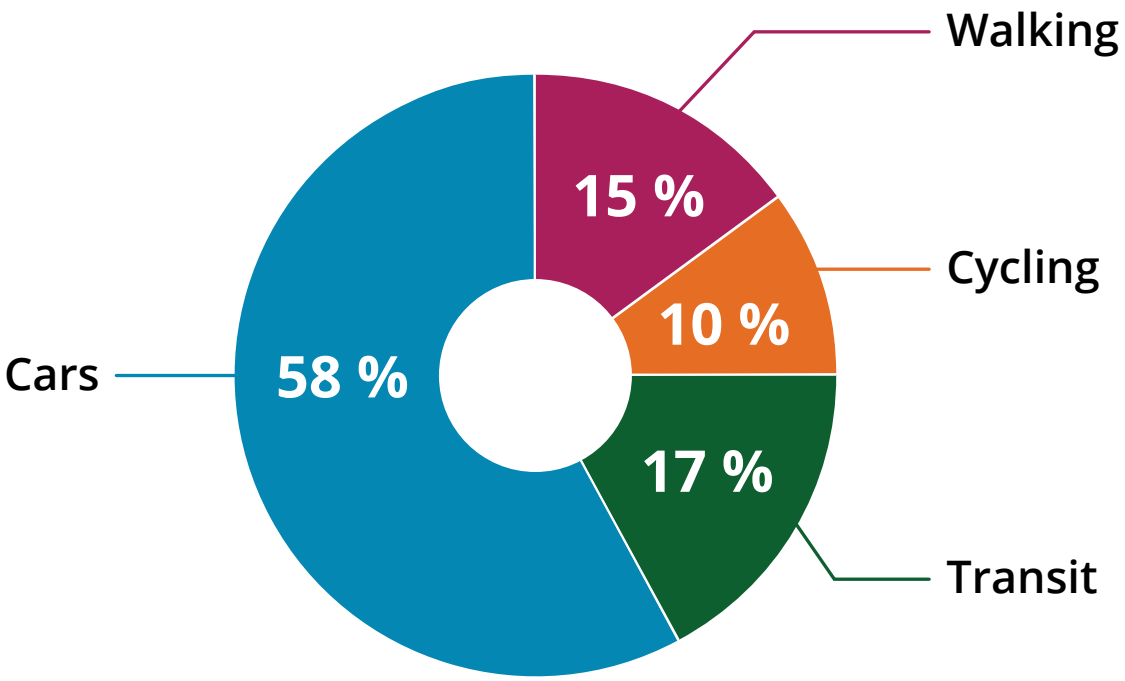
Through the TMP process, long-term mode share targets were developed that were built off the existing mode share targets in the Council-approved Guelph *Official Plan*.

The project team then:

- Reviewed public feedback on the TMP vision, values and goals to gauge support for the proposed TMP direction;
- Reviewed industry standards, trends, and best practices on setting mode share targets from municipalities with similar contexts;
- Analyzed existing trip distances in the community;
- Considered Guelph's existing commitments to becoming a net-zero carbon community by 2050 through the Community Energy Initiative;
- Considered Guelph's existing mode share targets, planning objectives and directions to enable more walkable and transit-supportive communities;
- Analyzed opportunities to best support the integration of first mile and last mile mobility with Metrolinx interregional rail and bus plans in Guelph; and
- Reviewed the characteristics and land use of different parts of Guelph to understand what extent of change is possible in different areas. A review of the characteristics and land uses can be found in Appendix D: Mode Share Profile Memo.

The resulting 2051 mode share targets for Guelph are shown in **Figure 11**:

Figure 11: Proposed 2051 Mode Share Targets for Guelph. The figure highlights the proposed mode share argets for Guelph. The proposed targets include a decrease in car mode share with an increase in transit, walking and cycling.

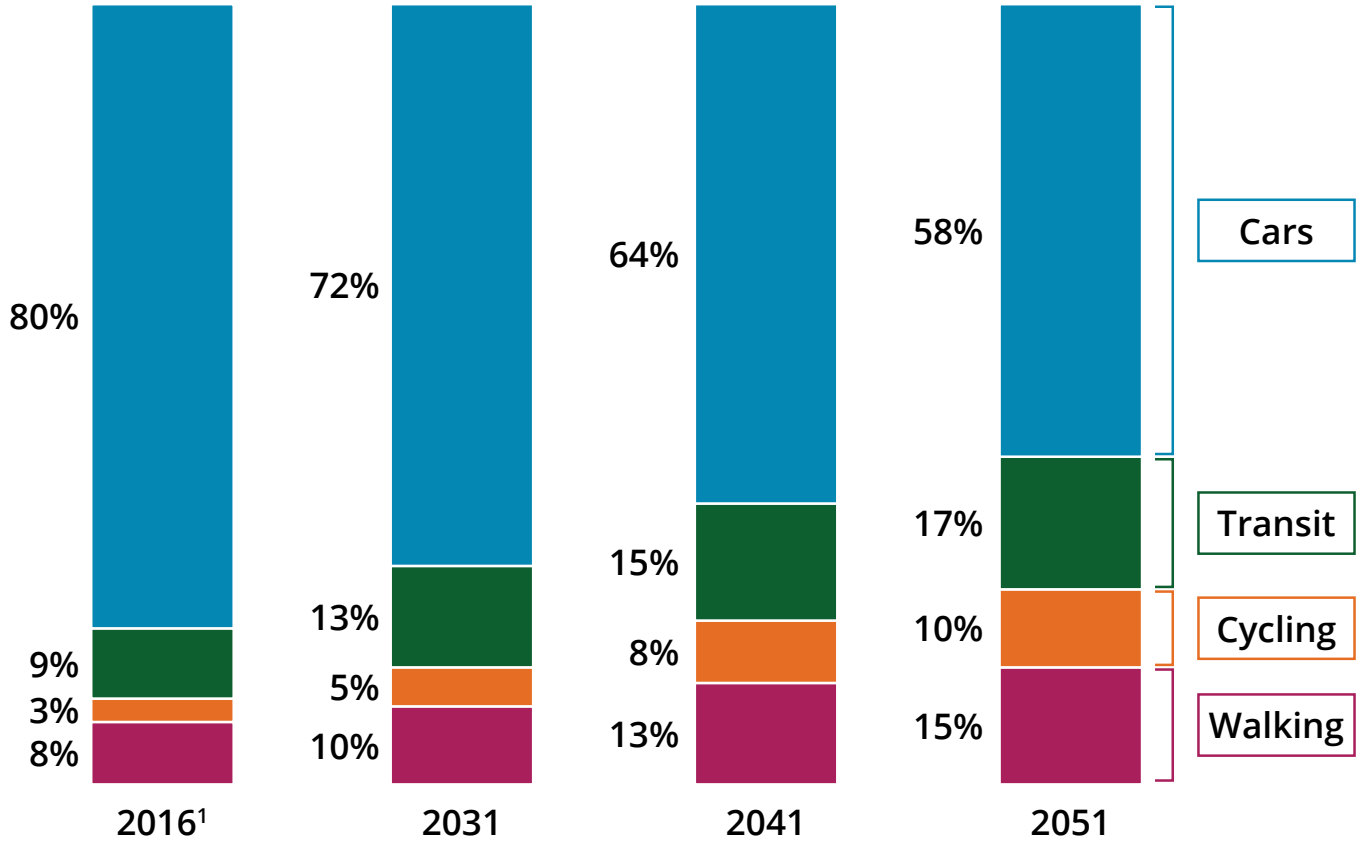


The proposed 2051 mode share targets reflect Guelph's sustainability goals to shift away from vehicle trips. The graph above shows that transit and cycling trips are projected to increase, while car mode share is projected to decrease to 58%.

Interim Mode Share Targets

In order to track the progress towards 2051, the TMP has set milestones which will allow the City to track and evaluate their mode share targets based on changes to emerging technologies and trends over time. The milestones are set in 10-year increments leading up to 2051. The milestones in 2031 and 2041 will provide an opportunity for the City to evaluate the progress to date, and re-assess how the 2051 targets can be met in addition to addressing new and emerging challenges and trends which can be seen in **Figure 12**.

Figure 12: Target Milestone Mode Share Shifts (Daily Trips within Guelph). The graph highlights the mode share milestones that the City of Guelph aims to achieve over 10-year increments.



[1]**Source:** 2016 Transportation Tomorrow Survey (TTS)

5.0 Problems, opportunities and preferred solution

5.1 Overview

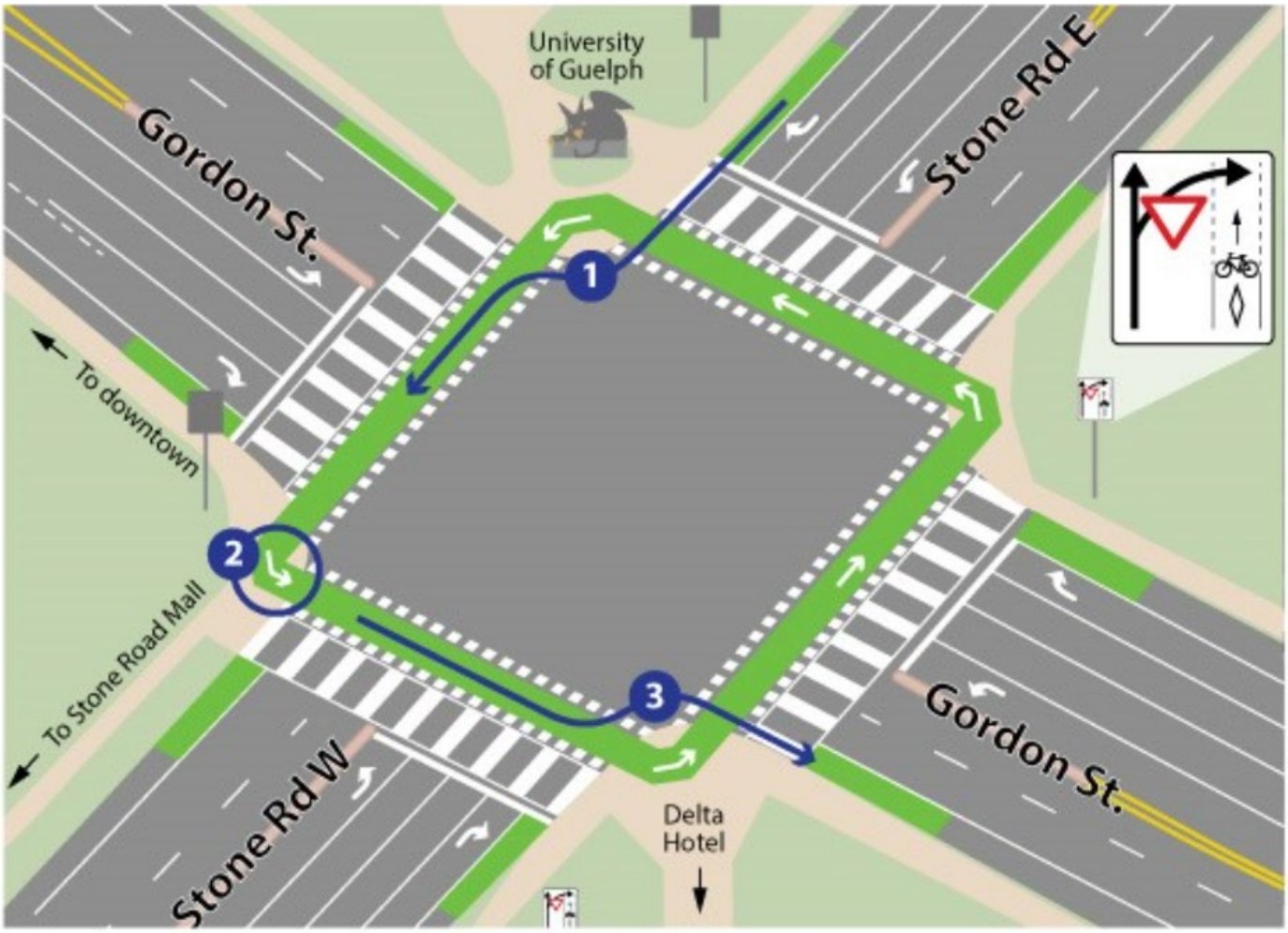
The project team listened to public feedback about what was and what was not working well. The project team also reviewed Guelph's current transportation **networks, programs** and **policies** and compared them against the seven goals. Places where the existing **networks, programs** and **policies** didn't align with these goals were identified as issues to review within this TMP update.

The resulting Problem and Opportunity Statements proposed for the Guelph TMP update are outlined below, with a short description to define each statement. The statements are organized by TMP goal to make it easier to trace the origin of these Problem and Opportunity Statements (refer to **Chapter 3.2** for the TMP Goals).

Goal 1: People of all ages and physical ability will be able to travel safely using any transportation mode that they choose

Guelph's streets need to be designed to serve the needs of a diverse group of people, of all ages and abilities.

Traditional designs for streets and intersections generally considered only the needs of confident cyclists and able-bodied pedestrians. Streets and intersections need to be designed in a way that makes it more comfortable for more people to walk and cycle. The City's planning and design tools and guidelines need to be updated with design approaches that consider the needs of a broader group of people.



Guelph's streets need to be designed to safely serve all modes of transportation, including walking, cycling and transit.

The design of Guelph's street network prioritized making the experience most comfortable and efficient for cars. Other modes of travel are provided for, but not to the same level as cars. Many of Guelph's streets and intersections need to be modified to improve the priority for people walking, cycling and on buses, possibly at the cost of delaying cars if space was limited. The City's planning and design tools and guidelines need to be updated to consider the safety and comfort needs of all modes in their decisions.

Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them

Guelph needs strong (i.e. fast and direct) transit connections to existing and future jobs.

The updated Guelph TMP will make transit a more popular travel choice for people travelling to and from work. The TMP has committed to providing better connections to jobs for people without travel choices. Existing transit network connections to the industrial parks from many neighbourhoods are not fast or direct enough to serve these goals. Strong transit connections to the jobs in the Intensification Corridors and Mixed-Use Nodes will also allow these areas to develop without relying on cars.

Guelph needs more crossings of the rivers, rail lines and highways for people walking and cycling.

The updated Guelph TMP will make walking and cycling a more popular travel choice for people moving between neighbourhoods, including those separated by physical barriers - Guelph's rivers, rail lines and the Hanlon Expressway. Travel by foot or bike is relatively slow and barrier crossings need to be spaced closer to each other to encourage people to walk and bike. The City identified five new river crossings through the *Downtown Secondary Plan* and the *Active Transportation Network Plan.* Additional crossings of the rail lines and the Hanlon Expressway will also need to be identified, particularly as two-way all-day GO Rail service was considered.

Guelph needs better walking and cycling connections to transit stops and hubs.

All transit trips included a walking or cycling connection to and from transit stops. Poor or missing walking and cycling connections can be the barrier that stops people from choosing transit for longer trips. Guelph has recently improved the connections between the walking, cycling and transit networks. However, not all transit stops, stations and transfer hubs are connected with high quality walking and cycling connections.

Guelph needs robust strategies, policies and infrastructure to support the efficient movement of goods.

The movement of goods to, from, and through Guelph has contributed to the city's economic prosperity. Efficient goods movement is important to strengthening the local economy and ensuring a high quality of life, especially with the growing popularity of various delivery services. However, making goods movement more efficient and providing more access to delivery vehicles of different sizes must be balanced with the community's other mobility needs and the broader city-building objectives.

Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car

Guelph needs to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city.

A transit trip between two neighbourhoods will always take longer than a trip by car because buses need to stop frequently to pick up and drop off passengers. Travel times between nearby neighbourhoods in Guelph today are often significantly longer for transit than for cars, despite Guelph being a compact city and most trips in Guelph being quite short. Long travel times by transit have a disproportionate impact on marginalized communities who are often less likely to have access to travel alternatives. The City needs to identify transit priority measures and route designs that reduce transit's travel time disadvantage.

Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050

Guelph needs to reduce the percentage of trips made by car.

The vast majority of trips in Guelph today are completed by car and the number of overall trips completed each year is only going to increase as the population grows. Some of the main ways of meeting the environmental targets for the transportation sector will be to have a significant drop in car use by shifting more trips to walking, cycling and transit and to reduce the overall demand for travel. The City's existing program that supports transportation behavioural changes, the *Transportation Demand Management* program, will need to significantly increase its efforts going forward.

Guelph needs to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use.

The City of Guelph has plans to increase the number of parking stalls downtown from 1,400 to 1,700, while also targeting a significant reduction in downtown car use. The current downtown parking strategy was established based on existing travel behaviours, not the TMP aspirations. The parking strategy will need to be reviewed and updated to better align with the mode share objectives of the TMP update.

Guelph needs to tap the unrealized potential for electrification.

There will always be trips that have to be completed by vehicles including cars, trucks, and buses for a variety of reasons. The GHG impact of these trips can be reduced through a shift away from fossil fuels to power these vehicles. Ongoing efforts by the City to electrify Guelph Transit and City-owned vehicle fleets are steps in the right direction. Additional policies, actions and incentives need to be developed to support and increase the rate of adoption of alternative fuel vehicles in Guelph.

Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives

Guelph needs to redesign streets in key growth areas to prioritize walking, cycling and transit.

The Intensification Corridors and Community Mixed-Use Nodes identified in the City's *Official Plan* are intended to be vibrant areas with increased density and a variety of land uses to support continued growth in Guelph. The density and mix of uses will help generate a lot of short trips that can be completed by walking and cycling. The development form will also encourage transit for longer trips. Intensification will be challenged by growing congestion so street designs in these areas need to enable comfortable travel by walking, cycling, or transit to realize the opportunity that intensification presents.

Road designs need to reflect the priorities of different areas.

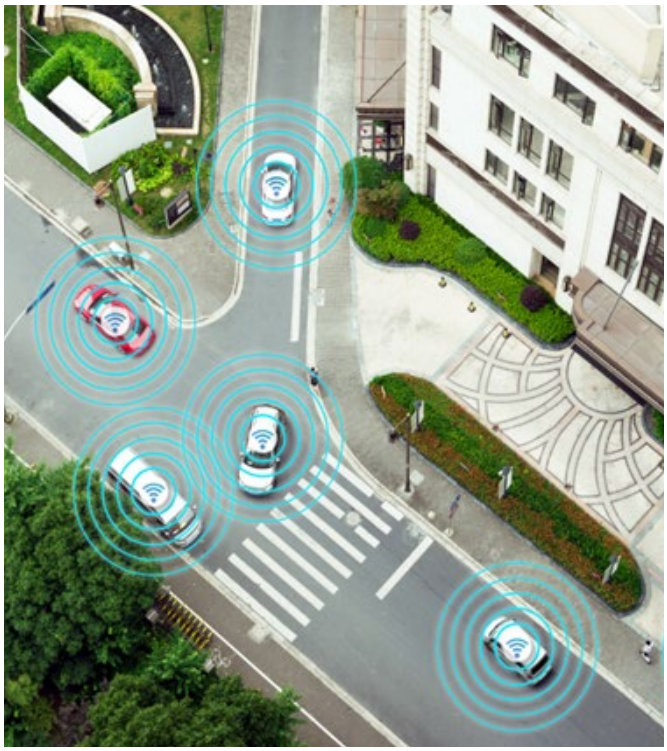
Outside of the downtown, the City's design standards (which guide design decisions) generally classify streets based on the number of vehicles that a street carries per day. This leads to streets within a given traffic volume range looking the same, regardless of whether the different streets run through a low-density residential neighbourhood, an industrial area or a natural heritage feature. Streets in different environments need to be able to prioritize different features. For instance, street trees and benches may be a priority in one setting while enhanced cycling facilities and natural landscapes could be a priority in others. Guelph's street design practices need to be updated to guide discussions around the priorities of different areas.

Goal 6: Investment decisions will be made considering the asset lifecycle costs

Guelph needs to account for life-cycle costs in financial decisions on transportation projects.

Financial decisions for transportation projects have always considered the upfront capital costs of the service or infrastructure. However, they often do not consider the impacts of choices on the long-term costs to operate and maintain the asset over its lifecycle. This has led to decisions that cost less at the start but more over time. Decision-making practices need to be updated to consider the operation and maintenance costs associated with project decisions.

Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today



Guelph needs to improve the resiliency of the city's transportation system.

Reliance on cars and historical approaches to street and network design have left Guelph's transportation system underprepared to adapt to short-term and long-term changes in conditions. Lessons from the COVID-19 pandemic and the ever-increasing impacts of climate change emphasize the need of transportation systems to be more resilient. Resilient systems have diversity (multiple options for travel), redundancy (multiple routes between destinations) and the ability to easily adapt to meet changing conditions. The two-lane streets in Guelph's primary street network leave little opportunity to adapt as conditions change.

Guelph needs to better prepare for the future of mobility.

New modes of travel and innovative transportation technologies are on the horizon. The needs of these new forms of travel will be different from today's needs and they will create both challenges and opportunities for achieving the goals of the TMP. The City needs to ensure there are resources dedicated to monitoring and preparing for emerging modes and transportation technologies.

5.2 Preferred Network

The Preferred Solution was developed using the following planning process:

1. Develop Priority Networks for Modes
2. Develop Alternative Solutions
3. Evaluate Alternative Solutions using the EA process and select Preferred Solution

Since the TMP provides a long-term strategic plan with a horizon year of 2051, the selected option - also known as the Preferred Solution - will not be fully actualized until at least 2051.

Priority Networks

Priority networks were prepared for the four most common personal transportation modes and for the movement of goods:

1. Pedestrian (including mobility assistance devices) Priority Network
2. Cycling (including personal micro-mobility devices like e-scooters) Priority Network (the *Cycling Spine Network*)
3. Transit Priority Network (the Quality Transit Network)
4. Car Priority Network
5. *Goods Movement Priority Network* (for trucks)

Key elements to maintain network resiliency were also identified.

Priority networks represent a combination of streets (or corridors) for each mode where that mode will receive high-quality infrastructure and/or service. Travel by different modes is still possible along any corridor, whether or not it was part of the priority network (unless otherwise prohibited, such as streets where large trucks are not permitted, for example). However, all modes will not experience the same level of priority on all streets.

Pedestrian Priority Network

The Pedestrian Priority Network represents a network of wide sidewalks and high-quality walking environments in areas of highest pedestrian activity in the city. This includes all of the Downtown, the intensification corridors and mixed-use nodes, and Gordon Street through Clair-Maltby. It also has been revised with feedback from the University to include Gordon Street between Stone Road and College Street.

The pedestrian network is designed to support and encourage walking for people of all ages and abilities. It is complemented by the general sidewalk network and Guelph's extensive trail network.

Cycling Priority Network

The Spine Cycling Network is a network of cycling routes with high-quality on-street cycling facilities that connect all areas of the City. These spine routes represent the core of the City's larger cycling network. The Spine Cycling Network will be designed to support and encourage cycling by people of all ages and abilities. The Spine Cycling Network will be complemented by connecting cycling links to key destinations like schools, parks, and areas of high activity.

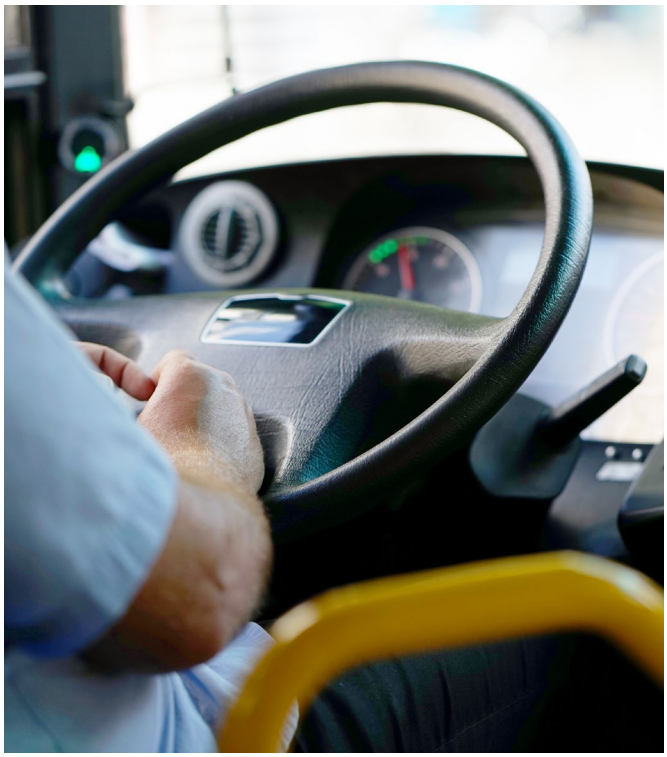
Further details on the development of the Cycling Priority Network can be found in Appendix F1: Cycling Mode Plan Assessment Memo.

Quality Transit Network

The Quality Transit Network is a network of corridors with frequent transit service where improvements have been implemented to improve service and reduce travel delay for buses. The corridors in this priority network are designed to make taking transit more comfortable and more efficient, thus encouraging more people to use transit. The design or operational elements along each corridor that improve transit service would vary depending on the context and the need of that particular street.

The Quality Transit Network is designed to support the City's existing plans for Intensification Corridors and Mixed-Use Nodes by connecting these parts of the city with high-quality transit service, consistent with the Guelph Transit Action Plan.

Further details on the development of the Quality Transit Network can be found in Appendix F2: Transit Mode Plan Assessment Memo.



Car Priority Network

The Car Priority Network is the core network of highways and arterial roads that allow vehicles to travel efficiently. The overall road system in Guelph will also require certain network modifications to improve safety, improve access to developing areas, protect neighbourhoods, and manage congestion. Implementing the car network includes:

- Continuing to coordinate Hanlon improvements with the MTO in order to reduce congestion and improve safety
- Continuing to coordinate improvements where the Metrolinx rail corridor crosses the road network to address safety, connectivity and alleviate congestion
- Continuing with the Community Road Safety Strategy, speed awareness program, traffic calming policy – already the focus of much of city's efforts – continue and expand into other modes
- Advancing the recommended road network for Clair-Maltby and GID planning areas
- Implementing *transportation systems management* program such as signals improvements and localized network improvements

Further details on the development of the Car Priority Network can be found in Appendix F3: Car Mode Plan Assessment Memo.

Goods Movement Priority Network

The *Goods Movement Priority Network* is a network of primary streets that permit truck traffic for more than just local service. It is designed to allow large vehicles to travel through the city efficiently while safely interacting with people who are walking or cycling on the same streets. The *Goods Movement Priority Network* is based on the existing Permissive Truck Routes.

Resilience Network

The **Resiliency Network** identifies key arterial and collector streets that are designed to be flexible by protecting space in the right-of-way for future uses. This offers the transportation network flexibility so that the City can make changes to improve mobility along those streets in response to factors like changing travel patterns/needs, climate change impacts, societal disruptions like COVID-19, new mobility technologies, and more. Since the Resilience Network is focused on future needs, these streets will not require any immediate physical changes.

5.3 Alternative Solutions

Alternative Solutions are the different approaches that the City can take to design the future transportation network to solve the transportation issues identified through the Problem and Opportunity Statements. There were four Alternative Solutions identified for the TMP that had unique combinations of modal priority network elements.

The four Alternative Solutions that were proposed include:

Alternative 1 – Do Nothing

Alternative 2 – Sustainability Focus

Alternative 3 – Sustainability and Resiliency Focus

Alternative 4 – Car Efficiency Focus

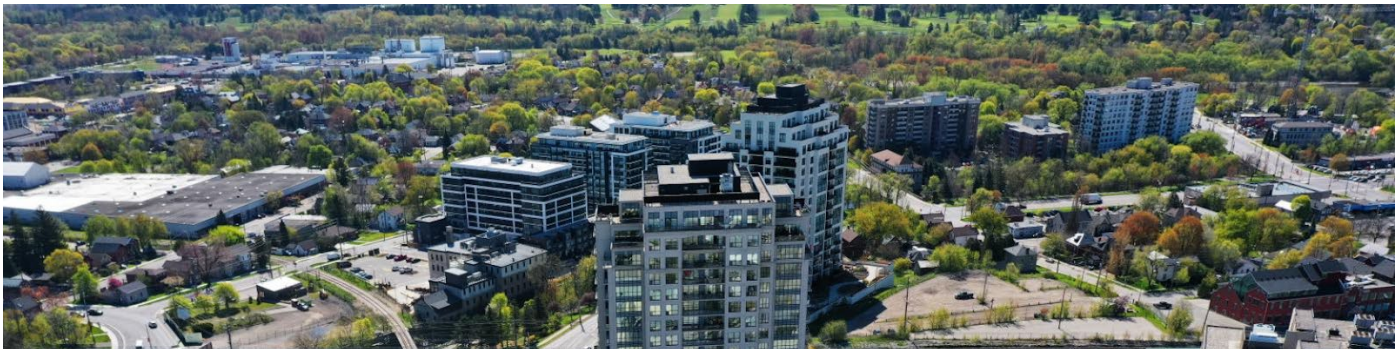
The Priority Network combinations for each Alternative Solution are described in **Table 2** below.

Table 2: Alternative Solutions

	Alternative Solutions			
	Alternative 1 *Do Nothing*	**Alternative 2** *Sustainability*	**Alternative 3** *Sustainability + Resilience*	**Alternative 4** *Car Efficiency*
Pedestrian Priority Network	✓	✓	✓	✓
Cycling Spine Network	✗	✓	✓	✓
Quality Transit Network	✗	✓	✓	–
Goods Movement Priority Network	✓	–	–	✓
Car Priority Network	✗	✗	✗	✓
Resilience Network	✗	✗	✓	✓

Legend:

- ✓ Alternative implements all the elements of the network
- – Alternative implements some of the elements of the network
- ✗ Alternative does not implement the network



5.4 Selection of Preferred Solution

Each of the four Alternative Solutions for Guelph's future transportation networks have their advantages and disadvantages. To evaluate them fairly, a set of criteria that align with the TMP **vision**, **values** and **goals** was developed. The criteria were categorized into three categories of evaluation:

- Natural and Social Environment
- Transportation Environment
- Cost Environment

The evaluation of the four alternatives is outlined in the Alternative Solutions report in Appendix F5 and the Detail Options Evaluation in Appendix G. Alternative 3 was determined to be the Preferred Solution.

Preferred Solution – Sustainability and Resiliency Focus (Alternative 3)

The Pedestrian Priority, Cycling Spine, Quality Transit and Resilience Networks will be implemented in Alternative 3. It also partially implements the *Goods Movement Priority Network*. Together, these pieces comprise the Recommended Network as shown on **Schedule 1 in Annex A**.

The shift in mode share towards sustainable modes of travel are supported by the Preferred Solution. It also adds transportation network resiliency against future challenges and opportunities, such as climate change, emerging mobility technologies, or societal disruptions like the COVID-19 pandemic by extending the four-lane street network to offer flexibility and redundancy. The Preferred Solution improves the safety and experience for all travelers walking, cycling and using transit.

The Preferred Solution helps manage congestion for people who continue to drive by encouraging more people to travel by non-car modes and also widening some roads (note that increased capacity due to long-term widening is expected to be a short-term solution; case studies over the decades have shown that congestion tends to rebound to pre-widening levels due to a concept called "induced demand").The Alternative also improves the safety and environment of all travelers, particularly the more vulnerable users - people walking, cycling and using transit.

The Preferred Solution is strongly aligned with the safety, equity, land use alignment and future resiliency values and goals of the TMP. It is also aligned with sustainability values and goals and offers better opportunities in the future to adapt to unknowns.

Networks and policies

6.1 Walking | Pedestrian

This chapter of the Transportation Master Plan (TMP) presents the networks and policies related to pedestrian movement.

Everyone is a pedestrian at some point in their trip, if only between their bus stop or parking place and their front door. This makes walking or using a mobility device a critical activity, both as a stand-alone mode and as a connection to other modes of transportation. In 2016, the City- wide mode share for walking is 8%. The transportation master plan sets the walking mode share target at 15% by 2051. Achieving this target will require improvements to pedestrian facilities and environments across the city.

Alignment with TMP Goals

Relevant goals that align with the pedestrian policies are:

Goal 1: People of all ages and abilities will be able to travel safely using any transportation mode that they choose

Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them

Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050

Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives

Networks

The Guelph TMP establishes the *Pedestrian Priority Network* (**Schedule 2 in Annex A**) to identify key areas of pedestrian focus in Guelph. The network includes the intensification corridors and community mixed-use nodes identified in Guelph's *Official Plan*. It also includes key connections across travel barriers that were identified in the *Downtown Secondary Plan*, the Active Transportation Network, the Guelph Innovation District Secondary Plan and the Guelph Trail Master Plan.

Policies

1. Create a complete and connected pedestrian network

1.1. Continue to build the pedestrian network

1.1.1. The City will continue to expand the pedestrian network (sidewalks and trails) by using four different approaches, as applicable:

- **a)** As part of new development, through the development review process;
- **b)** As part of street construction and reconstruction projects, through a complete streets design approach;
- **c)** As **retrofit projects**, to fill in "missing links" of the existing pedestrian network; and
- **d)** As other **capital projects**, to construct new connections across key barriers to walking.

1.1.2. During its review of development applications and during street construction and re-construction projects, the City will continue to require street designs that permit for sidewalks on both sides of the street for all streets, with the exception of the following situations:

- **a)** Rear laneways, where no sidewalks will be required;
- **b)** Roads where a rural cross-section is being maintained and paved shoulders are provided;
- **c)** Adjacent to the Natural Heritage System where a trail with a high level of service may be provided instead of a sidewalk; or
- **d)** Cul-de-sacs-with an overall length of 120 metres or less.

In street corridors where the context is appropriate, a multi-use pathway may be used instead of a sidewalk and should be maintained year-round according to prevailing sidewalk winter maintenance standards.

1.1.3. The City will continue to evaluate, identify and prioritize candidate **retrofit projects** (projects that modify and improve existing infrastructure) and

implement them as permitted. Prioritization will align with the overall goals and values established through the TMP.

1.1.4. The City will continue to ensure that pedestrian facilities include:

- **a)** Direct connections to bus stops and other major walking destinations, including the Guelph Central Station, the University of Guelph, strategic growth areas identified in the *Official Plan*, employment areas;
- **b)** Direct connections between the trails and sidewalk network;
- **c)** Direct connections to schools;
- **d)** Connections to link neighbourhoods that are separated by physical barriers, such as the Hanlon Expressway, the rivers, and the rail lines; and
- **e)** Pedestrian connections between subdivisions, cul-de-sacs and developments, where appropriate.

1.1.5. The City will continue to consider the provision of active transportation trails along active and abandoned rail corridors, where appropriate and with appropriate consideration of regulatory safety requirements.

1.1.6. The City will aim to increase the city-wide pedestrian mode share by developing a comprehensive pedestrian master plan that addresses:

- **a)** An implementation strategy to complete the sidewalk network;
- **b)** Consideration of policy updates to improve connectivity and accessibility; and
- **c)** Recommended programs to encourage and promote walking.

2. Build a walkable environment

Building and maintaining an accessible and walkable environment requires attention from multiple activities that the City undertakes, such as zoning, development review, community design plans, road designs and maintenance. It also requires attention to factors such as public spaces, buildings, and transportation infrastructure. This section discusses the elements of enhancing walkability and pedestrian accessibility in Guelph.

2.1. Enhance the level of service

The distance that pedestrians must travel across signalized intersections can be a barrier to walking. Design elements that degrade the pedestrian experience include:

a) Free-flowing channelized right-turn lanes;

b) Large curb radii that might be required for large trucks but enable motor vehicles to turn at higher speeds;

c) Multiple left-turn lanes; and

d) Multiple traffic lanes (whether for through, left or right turn movements).

The following policies enhance the quality of service for pedestrians:

2.1.1. The Pedestrian Priority Network (**Schedule 2 in Annex A**) identifies locations where the City recommends improvements to the pedestrian realm. The use of double left-turn lanes, three or more straight through lanes, separate right-turn lanes, and deceleration/ acceleration lanes should be discouraged in these areas. The City will continue to seek to improve pedestrian levels of service in locations where barriers to walking and/or pedestrian volumes are high.

2.1.2. The City will continuously improve network connectivity and convenience for pedestrians through the design of the transportation network by:

a) Implementing a *Multimodal Level of Service Guidelines* that include safety analysis for links and intersections in accordance with the priority networks recommended by the TMP;

b) Considering pedestrian safety and user needs at roundabouts;

c) Continuing to provide direct connections between the sidewalk and trail networks, creating controlled crossings where the street and trail networks intersect where practical; and

d) Continuing to implement more frequent pedestrian crossings in high activity areas or where distances between a transit stop and a controlled crossing exceeds 500 meters.

2.2. Implement quality design

When spaces are designed with pedestrians in mind, there is greater opportunity for pedestrian activity. The design of pedestrian spaces should be inclusive, intuitive and inviting for all people to use. The pedestrian environment should encourage walking and accommodate users of all abilities. The following policies improve the quality of street and pathway design throughout Guelph:

2.2.1. The City will maintain its commitment to improving the pedestrian design of main streets in mixed use nodes and intensification areas, and in the Downtown core by prioritizing the following design elements:

- **a)** Limiting block sizes;
- **b)** Introducing midblock crossings, where appropriate;
- **c)** Providing buffers between the pedestrian walkways and road;
- **d)** Providing quality street furniture;
- **e)** Including street trees; and
- **f)** Upgrading pedestrian lighting.

2.2.2. The City will design new and transform existing streets and pathways, through road reconstruction or retrofit projects, to be accessible for all pedestrian users, where possible.

2.2.3. The City will develop a process for how, when and where accessibility improvements to existing sidewalks and multi-use paths are identified, prioritized, and funded through the Pedestrian Master Plan.

2.3. Provide maintenance and management

The following policies provide maintenance and management of walking routes to ensure safety and accessibility.

2.3.1. The City will continue to meet or exceed appropriate Municipal Maintenance Standards of surface conditions, width, and lighting on pedestrian facilities.

2.3.2. The City will review the city-wide sidewalk snow plowing strategy along Active Transportation and transit networks both on-road and off-road to improve alignment with the Transportation master plan goals.

2.3.3. To ensure regular maintenance and management of the off-road trails, the City will continue to follow the *Guelph Trails Master Plan* by:

- **a)** Developing well-marked trail wayfinding signage that is easily recognizable, attractive and understandable, and coordinated with other networks in the city as applicable;
- **b)** Monitoring and managing the trail systems;
- **c)** Providing trail connections to surrounding municipalities, regional, provincial, and national trails;
- **d)** Providing access to major points of cultural interest, recreation, employment and school destinations in the City;
- **e)** Improving connection opportunities to other modes of travel (e.g. public transit) with linkages between on-road and off-road routes; and
- **f)** Exploring creative strategies to improve connectivity across major barriers such as arterial roads, the Hanlon Expressway, rivers and railways.

3. Improve pedestrian safety and promotion

This section provides an integrated, holistic review of how the City will work to promote walking and make it safer and more comfortable for pedestrians.

3.1. Administer pedestrian safety programs

Pedestrian safety has been consistently identified as a top priority by the City of Guelph. The 2020 *Community Road Safety Strategy* provides the City with a high-level road safety plan, which includes a broad range of road safety measures and specific traffic calming policies. The following policies are recommended to provide enhanced safety for the pedestrian environment:

3.1.1. The City will continue to implement the *Community Road Safety Strategy* as a tool to improve pedestrian safety city-wide.

3.1.2. The City will require that the pedestrian crossing times be increased at signalized intersections in the Pedestrian Priority Network (**Schedule 2 in Annex A**).

3.2. Promote walking as a mode of travel

3.2.1. The City will continue to promote walking and the use of personal mobility devices as a practical mode of transportation, and as a fitness and recreational activity all year round.

3.2.2. In order to promote and encourage walking and the use of personal mobility devices for more trips, the City will continue to adjust and improve the existing *Transportation Demand Management* program to influence when, where and how people walk around Guelph, including but not limited to:

- **a)** Walk to school programs
- **b)** Supportive materials for new developments
- **c)** Collaborations with employers

4. Future Ready

As new transportation innovations and technologies emerge, the way people and goods move in urban environments will change and disrupt our transportation networks. Anticipating these changes and understanding the challenges and opportunities they present is critical for forecasting what transportation will look like in the future, and enables Guelph to mitigate any negative impacts.

This section outlines innovations and trends in planning for pedestrians that the City should explore, research, anticipate, and/or plan to create a "future-ready" Guelph.

4.1. Innovations and trends for further exploration

4.1.1. Continue to research, investigate, and implement sustainable transportation strategies by building upon pedestrian and TDM initiatives in the Sustainable Transportation program.

4.1.2. Continually monitor pedestrian safety technologies emerging from advanced driver assistance systems and autonomous vehicles, and assess how these can be integrated in road safety and pedestrian policies and plans. For instance, reduced speed limits give drivers the ability to react to their warning systems to avoid accidents and save lives.

4.1.3. Explore the possibilities for integrating digital technology and infrastructure within the public realm to enhance the pedestrian experience and help meet consumer demands for mobile connectivity. For example, digital wayfinding displays or smart street furniture with mobile phone charging.

4.1.4. Improve data collection and analysis to identify changes in pedestrian movement patterns, volumes and safety considerations to inform updates to network planning and design considerations as well as the regulatory framework supporting pedestrian movement. Adjust future mode share targets, as appropriate.

6.2 Cycling

This chapter of the Transportation Master Plan (TMP) presents the policies related to cycling and micro-mobility movement.

Cycling is a popular activity in Guelph that has numerous benefits for both riders and the community which leads to a better quality of life for residents. Its infrastructure can be used by both bikes and **micro-mobility** devices, such as e-scooters, e-bikes, and skateboards. Building capacity for cycling supports cycling and micro-mobility as practical modes of transportation and recreation throughout the city, thus this chapter references and contains policies for both types of mobility.

In 2016, the City-wide mode share for cycling was 3%. The Transportation master plan sets a cycling mode share target of 10% by 2051. Rebalancing the mode share will reduce pressure on the road network. Achieving this mode share will require improvements to the off-road and on-road cycling facilities across Guelph.

Alignment with TMP Goals

Relevant Goals that Align with the Cycling Policies are:

Goal 1: People of all ages and abilities will be able to travel safely using any transportation mode that they choose

Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them

Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050

Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives

Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today

Networks

The Guelph TMP establishes the *Cycling Spine Network* (**Schedule 3 in Annex A**), to identify key corridors for cycling and micro-mobility in Guelph.

Policies

1. Continue to build and maintain a network of quality cycling facilities

1.1. Continue to build the cycling network

The cycling network in Guelph includes facilities on street, within street boulevards, and off- street using multi-use trails in dedicated corridors that are part of the Active Transportation Network. The following policies are recommended to continue the development of the cycling network:

1.1.1. Where the TMP has identified the *Cycling Spine Network*, the City shall give precedence to implementing the recommended facility types of this plan over the 2013 Cycling Master Plan until the Cycling Master Plan is updated.

1.1.2. The City will support the ongoing enhancement of a bicycle network that is well connected and comfortable, serving both commuter and recreational purposes throughout the city by:

a) Implementing a *Multimodal Level of Service Guidelines* that include safety analysis for links and intersections in accordance with the priority networks recommended by the TMP;

b) Providing linkages between intensification areas, and adjacent neighbourhoods;

c) Ensuring connectivity from north to south and east to west;

d) Providing bicycle paths along rail lines, where appropriate and where they conform with safety regulations;

e) Providing direct connections to bus stops and other major cycling destinations, including the University of Guelph, intensification corridors and community mixed-use nodes, Downtown, employment areas and major shopping areas;

f) Providing direct connections between the off-road trail and on-street networks;

g) Providing direct connections to schools; and

h) Providing connections to link neighbourhoods that are separated by physical barriers, such as the Hanlon Expressway, the rivers, and the rail lines.

1.1.3. The City will continue to expand the cycling network through four different approaches:

- **a)** As part of new development, through the development review process;
- **b)** As an update to the Development Engineering Manual and Linear Infrastructure;
- **c)** Design Standards through the development of a *complete Streets Design Guide* As **retrofit projects**, to fill in "missing links" of the existing cycling network; and
- **d)** As **capital projects**, to construct new connections across key barriers to cycling.

1.1.4. The City will design the *Cycling Spine Network* to serve cyclists and other **micro-mobility** users of all ages and abilities. This means that the facilities are designed to feel intuitive and comfortable for anyone from children to seniors, and people who are new to cycling, or may have disabilities and use adaptive bicycle types, and other modes as permitted by local traffic by-law. When implementing the facilities, the City should review the current and planned roadway characteristics and conditions to ensure that the facility being implemented is still appropriate for the context. Current facility selection guidance, such as from the forthcoming OTM Book 18 and the NACTO Designing for All Ages & Abilities Guide, should be considered.

1.1.5. The *Cycling Spine Network* shall be designed to be used by other **micro-mobility** modes as demand grows and as permitted through the Traffic By-Law and Ministry of Transportation regulations.

1.1.6. The City will implement intersection improvements to improve connectivity, user experience and safety, particularly along the *Cycling Spine Network*.

1.1.7. Through updating the Cycling Master Plan, the City will identify network gaps, continue to evaluate, identify and prioritize candidate retrofit projects. Prioritization and implementation will align with the overall goals and values established through the TMP and be refined through the Capital budget process.

1.1.8. The *Downtown Secondary Plan* indicates that it is the City's objective to provide a continuous active transportation trail, interrupted only by streets, along the west side of the river's edge between Royal City Park and Goldie's Mill Park, and on the east side of the river, south of the *Guelph Junction Railway*. The City will acquire land for such purposes through the dedication of parkland at the time of development, public easements or other methods of acquisition including outright purchase. In addition to, or alternatively, the City may incorporate portions of the trail within street rights-of-way.

1.1.9. The City will support connections to and from provincial and regional cycling routes that facilitate opportunities for tourism and travel to, from and through Guelph.

1.1.10. The City will give consideration to planning for and accommodating new and emerging modes of micro-mobility that meet the goals of this plan to be sustainable, human-powered, and affordable.

1.2. Maintain cycling facilities

Proper maintenance of on-street and off-street facilities is fundamental to provide comfortable and safe cycling year-round. Cyclists are more susceptible to surface irregularities; risking injury from cycling over potholes, road cuts and cracks, ice, snow and debris. The following policies are recommended to continue the maintenance of cycling facilities:

1.2.1. The City will continue to maintain infrastructure to provide comfortable and convenient passage for cyclists.

1.2.2. The City will continuously refine and implement design and maintenance standards to improve year-round use of the *Cycling Spine Network* and to reduce the risk of collisions and injuries.

1.2.3. The City will identify a basic winter network within the *Cycling Spine Network* and the Active Transportation Network. The winter-maintained network may be expanded as winter cyclist volumes increase, and as the City builds more separated or buffered cycling facilities.

2. Create attractive intermodal connections

Creating a cycling-friendly city requires facilities to allow people who bike to transfer conveniently to transit. To improve this process, the City will commit to the following policies:

2.2.1. The City will continue to ensure all buses are equipped with bicycle racks.

2.2.2. The City will continue to provide bicycle parking facilities at key transit nodes and transfer points, including continuing to expand long-term and short-term bicycle parking throughout Downtown Guelph.

2.2.3. The City will seek to provide quality cycling connections to access key transit nodes and transfer points through the implementation of the *Cycling Spine Network* or the Cycling Master Plan.

2.2.4. As **micro-mobility** options become more prevalent in Guelph in future, the City will explore ways to accommodate intermodal connections at transit stops and stations, such as designated storage or parking areas or mobility-as-a-service apps.

3. Create attractive trip-end facilities

3.1. Provide public bicycle parking

3.1.1. The City will continue to provide short-term and long-term bicycle parking facilities such as bike racks or bike parking rooms throughout the Downtown and at City-owned properties such as parks museums, libraries and recreational facilities.

3.1.2. The City will consider the needs of short-term and long-term bicycle parking when it updates the Downtown Parking Master Plan.

3.1.3. End-of-trip facilities on private property

3.1.4. The City will use the Zoning Bylaw to establish minimum provisions for on-site bicycle parking and storage of bicycles and other personal transportation devices for new developments.

3.1.5. The City will develop a strategy to address end-of-trip facilities throughout the City at existing developments when it updates the Cycling Master Plan.

4. Improve cycling safety and promotion

4.1. Administer cycling safety programs and promote cycling as a mode of travel

The promotion of cycling is a critical piece to rebalance the cycling mode share across the city.

4.1.1. The City will continue to adjust and improve the existing *Transportation Demand Management* program to influence when, where and how people cycle around Guelph.

4.1.2. The City will continue to promote cycling as a convenient and attractive mode of transportation, and as a fitness and recreational activity, particularly through the cycling safety programs.

4.1.3. The City will enhance the visibility of cycling as a viable mode of transportation by updating the Cycling Master Plan to:

- **a)** Continue to form partnerships and support advocacy groups to enhance cycling;
- **b)** Coordinate programs for local employers that encourage employees and customers to cycle;
- **c)** Continue to collaborate with partners to reinforce road safety messages and practices;
- **d)** Enhance the visibility and wayfinding of the cycling network; and
- **e)** Continue to enhance recognition and influence of the "Bicycle-Friendly Guelph" brand.

4.1.4. The *Cycling Spine Network* (**Schedule 3 in Annex A**) identifies locations where the City wishes to improve the quality of the cycling network to be all ages and abilities friendly. Intersection and corridor design and operations in these areas will seek to prioritize the safety and comfort of people on bikes through the use of a Multi-modal Level of Service guideline.

5. Future Ready

As new mobility innovations and technologies emerge, the way people and goods move in urban environments will change and disrupt our transportation networks. Anticipating these changes and understanding the challenges and opportunities they present is critical for forecasting what transportation will look like in the future and enables Guelph to mitigate any negative impacts.

This section outlines innovations and trends in cycling and micro-mobility that the City should explore, research, anticipate, and/or plan to create a "future-ready" Guelph.

5.1. Innovations and trends for further exploration

5.1.1. Explore micro-mobility options and how they can be accommodated in Guelph's transportation network, including opportunities for intermodal connections at transit stops and stations, impacts on facility designs, and updates to the Traffic By-law to permit new types of vehicles in City roads and rights of way.

5.1.2. Continue to research, investigate, and implement sustainable transportation strategies by building upon cycling and TDM initiatives in the Sustainable Transportation program.

5.1.3. Regularly monitor federal and provincial government funding, pilot projects and program opportunities to assist with investing in cycling and micro mobility technologies and infrastructure.

5.1.4. Evaluate the opportunity to introduce or adopt shared mobility services like e- scooters, and e-bikes in achieving the TMP cycling mode share target.

6.3 Transit

This Chapter of the Transportation Master Plan (TMP) presents the policies related to transit movement.

The Guelph *Official Plan* indicates that the City's transportation system will be planned and managed to offer a balance of transportation choices that reduce reliance upon any single mode, and promote transit, as well as cycling and walking. The 2016 City-wide mode share for transit is 7%. The City of Guelph is targeting to increase transit mode share to 17% by 2051. Rebalancing the mode share will require the City to make transit more attractive than automobile use for an even greater number of residents. Ongoing efforts to improve the availability, reliability, speed, accessibility and comfort of transit service will improve the transit user experience and make transit a more viable transportation choice.

Alignment with TMP Goals

Relevant Goals that align with the Transit Policies are:

Goal 1: People of all ages and abilities will be able to travel safely using any transportation mode that they choose

Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them

Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car

Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050

Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives

Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today

Networks

Transit ridership growth strategies in Guelph will be centered on the *Quality Transit Network* (**Schedule 4 in Annex A**). The *Quality Transit Network* is a network of corridors with frequent transit service where improvements will be implemented to improve service and reduce travel delay for buses. The *Quality Transit Network* will be complemented by the city's larger network of transit routes that will be reviewed through its regular updates to its Transit Master Plan.

Policies

1. Build and maintain a quality transit network

To encourage people to use transit, the network needs to be direct, affordable, accessible, and safe. This section addresses the need for a quality transit network and user experience.

1.1. Implement the Quality Transit Network

1.1.1. The implementation of the Quality Transit Network (**Schedule 4 in Annex A**) shall be staged, with elements of the priority network beyond Stage 1 coming online when and if the need for them emerges, according to the following guidelines:

Stage 1 – Increase frequency of service and/or optimize performance for all routes on the Quality Transit Network.

Stage 2 – Implementation of transit priority measures where buses continue to experience significant delays (more than five minutes late), as defined by Guelph Transit's on-time metric, even with Stage 1 implemented, and subject to environmental assessment studies.

Stage 3 – Conversion of general traffic lanes to dedicated transit lanes (either at peak times or all-day) on existing four-lane streets and/or widening existing two-lane streets to four lanes to create dedicated transit lanes where delay and ridership warrants it according to Guelph Transit performance metrics, subject to environmental assessment studies.

1.1.2. The City will implement frequent transit service in all Quality Transit Network corridors, as per the 2021 Route Review, and beyond 2031 subject to the future Guelph Transit Master Plan.

1.1.3. The City will monitor ridership and performance metrics in all Quality Transit Network corridors and initiate the required planning and design studies for Stage 2 network modifications when conditions demonstrate they are needed.

1.1.4. The City will improve passenger amenities, including shelters, bicycle racks, and seating, in the Quality Transit Network corridors to improve the experience for customers.

1.2. Continue to improve the transit level of service across the City

The following policies are recommended to continue the development of the transit network and align it with the TMP Vision and Goals.

1.2.1. The City will undertake a Transit Master Plan update.

1.2.2. The City will implement an equity lens into regular transit service reviews to ensure that everyone in the community is able to access and use the transit system.

1.2.3. The City will continue to ensure that Guelph Transit services and amenities are accessible, inviting and comfortable places to be.

1.2.4. The City will continue the transition of buses and fleet vehicles to zero tail pipe emissions, and implement infrastructure upgrades required to accomplish this.

1.2.5. The City will continue to study opportunities for *Alternative Service Delivery* and micro-transit in Guelph.

1.2.6. The City will identify if the transit system requires additional maintenance and storage facilities to provide additional service beyond what is planned for the new Operations Campus by 2041.

1.2.7. The City will continue to assess where additional terminals are needed in addition to the planned hub in the Clair Maltby Secondary Plan Area.

1.2.8. The City will continue to follow the direction of the 2019 Transit Business Service Review, which has set a target for 90% of the population to be within 400 metres of service. Otherwise, it is expected that bus stops be provided at regular intervals, generally within 400 metres of every residence and business.

1.3. Prioritize active transportation access to transit

1.3.1. The City will continue to plan for trails, sidewalks, or pathways in appropriate locations to increase pedestrian and cyclist accessibility to transit services.

1.3.2. The City will continue to improve the integration between public transit and active transportation modes through measures such as installing bicycle racks on buses, bicycle parking at transit terminals, and shelters at stops.

1.4. Continue to provide transit access to persons with disabilities

1.4.1. The City will meet or exceed the *Accessibility for Ontarians with Disabilities Act (AODA)* and the *Facility Accessibility Design Manual* for accommodating persons with disabilities within the Guelph Transit system and services.

2. Develop the Guelph Central Station

2.1. Continue to develop the Guelph Central Station

In keeping with the vision for a complete and transit supportive community, Downtown is identified as a *Major Transit Station Area* in Schedule A of the *Official Plan* (July 2021 consolidation), and as designated by the Province of Ontario in *A Place to Grow: Growth plan for the Greater Golden Horseshoe*. The *Major Transit Station Area* supports both inter-city transit service as well as local transit service and functions as the central hub providing connections within and outside the city.

Guelph Transit's main terminal is named Guelph Central Station. It forms part of a central transit hub adjacent to the VIA/ Metrolinx rail station and plays a critical role in implementing the City's Transit Growth Strategy.

2.1.1. The TMP continues to support the *Official Plan* policies that state that the *Major Transit Station Area* will generally be planned and designed to:

- **a)** Achieve increased residential and employment densities that support and ensure the viability of existing and planned transit infrastructure and service;
- **b)** Achieve a mix of residential, office, institutional and commercial development, where appropriate; and
- **c)** Provide access from various transportation modes to the transit facility including consideration of pedestrians, bicycle parking and commuter pick-up/drop-off areas.

2.1.2. The *Downtown Secondary Plan* (*Official Plan* July 2021 consolidation) recommends transit priority measures on Downtown Primary Streets, Downtown Main Streets and in the immediate vicinity of the *Major Transit Station Area*, such as signal priority and queue-jumping lanes.

2.1.3. The City will continue to work with VIA, Metrolinx, inter-city transit providers and other stakeholders to ensure all planned transit functions of the Guelph Central Station are accommodated and coordinated in an efficient manner that supports the broad objective to create an attractive and transit-oriented Downtown.

2.1.4. The City will continue to work with Downtown property owners, employers and residents to capitalize on the Guelph Central Station and monitor any impacts it may have on its immediate surroundings.

2.1.5. The City will investigate the need for a connection linking Neeve Street to Farquhar Street to facilitate vehicular and pedestrian circulation associated with the Guelph Central Station.

2.1.6. The City will determine the role the Guelph Central Station will play in supporting the transition of buses to zero tail-pipe emission vehicles.

3. Increase cross boundary transit trips

In 2021, Guelph offers inter-regional transit connections with GO Transit (by bus and train), Wellington County on-demand RIDE WELL (ridesharing transit service) and Kasper Transportation (bus). This section addresses the opportunity for more transit trips between Guelph and surrounding communities.

3.1. Continue to support the development of two-way all-day GO Rail service

The Metrolinx GO rail service is the primary focus for improving transit service between Guelph and Toronto and Guelph and Kitchener. GO Transit operates trains between Guelph Central Station and Toronto Union Station 20 times a day (as of September December 2021). Metrolinx continues to advance two-way all-day GO service in the near term in the Kitchener corridor, while working towards electrification in the long term, as per the Metrolinx 2041 Regional Transportation Plan.

Forecasts (2041) from the business case suggest that providing two way, all day service in the Kitchener corridor will result in annual boarding's at the Guelph Central Station of approximately 650,000 persons, reflecting at a 128% increase over the 285,000 persons forecasted for the business-as-usual scenario. The improved service is also expected to significantly reduce travel times between Guelph and Union station in Toronto.

Though specific dates for the completion of these studies and the resulting infrastructure expenditure to realize two-way, all-day service are not identified, it is possible that this will be realized in the next 10 years.

Two-way all day GO Service may require closure or safety improvements of a number of existing at-grade crossings to ensure safety for all travellers. Closures of existing at-grade crossings would have a negative impact on active transportation and/or vehicular circulation and access to some downtown neighbourhoods. The level rail crossing transportation study (2022) assesses the requirement for at-grade crossing closures, identifies implications of the closures, and proposes a mitigation strategy to offset the impacts.

3.1.1. The City will continue to work with Metrolinx to advance and support delivery of two- way all-day GO service in the near term in the Kitchener corridor, while working towards electrification in the long term.

3.1.2. The City will continue to provide the Guelph Transit and GO Transit co-fare program, and will participate in future fare integration programs proposed by Metrolinx.

3.1.3. The City will seek to maintain appropriate vehicle, and/or cycling and pedestrian network connectivity across the Metrolinx rail corridor as train frequency and speeds increase.

3.2. Increase transit trips to adjacent communities

3.2.1. The City will continue to encourage and participate in studies and programs leading to the planning and implementation of inter-urban bus and micro transit services that connect Guelph to other nearby urban centres in southwestern Ontario.

3.2.2. The City will complete a study on the feasibility of *Park-and-Ride facilities* to increase the use of transit for trips between Guelph and adjacent communities.

3.2.3. The City will continue to work with involved railway companies and other levels of government to increase the availability of inter-city passenger rail transportation for Guelph.

4. Strengthen the relationship between land use and transit

Guelph is one of the fastest growing cities in Ontario, and is anticipated to grow its population by 50% by 2051. To continue rebalancing the mode share in the future, public transit will need to keep attracting ridership and accommodating for this growth. This section focuses on strengthening the relationship between land use and transit in order to increase the efficiency and attractiveness of transit service.

4.1. Continue to support transit and land use cooperation

Strong transit connections to residential neighbourhoods, and jobs in the intensification corridors and mixed-use nodes (identified in Guelph's *Official Plan*) will allow the City to develop without relying on automobiles. The Guelph *Official Plan* directs the City to ensure the coordination between transportation system planning, land use planning, and transportation investment. The following policies are recommended to strengthen the coordination between transit and land use planning.

4.1.1. The transit service guidelines set walking standards for intensification areas and general areas to ultimately achieve ridership goals. The City will use these guidelines to evaluate the road and trail network by identifying areas that do not achieve these standards.

4.1.2. To ensure that public transit is an attractive, energy efficient and convenient means of travel, the City will continue to follow the *Official Plan* (July 2021 consolidation), which has set the following objectives for the City:

- **a)** Plan for a compact urban form by promoting mixed and transit-supportive land uses, urban intensification, a strong Downtown and urban structure of nodes and corridors as identified on Schedule 1 of the *Official Plan*;
- **b)** Consider public transit as a high priority for transportation infrastructure planning, second only to active transportation;
- **c)** Ensure the creation of a road network that permits reasonable walking distances to and from transit stops for a majority of residences, jobs and other activities in the area;

d) Ensure that the phasing of new development allows for the provision of transit service in the early phases of new development so that using transit is a viable option for the first occupants;

e) Require development proponents to plan for the provision of transit in an integrated and comprehensive manner including the location of transit routes and facilities, where appropriate; and

f) Consider the impacts on transit when planning the locations for higher density housing, commercial and employment centres.

4.1.3. In the review of development applications that involve major traffic generators and of facilities potentially used by transit riders, the City will continue to require the provision of on-site or off-site facilities, such as transit user amenities, integrated mobility options, accessibility accommodations, or road improvements that will facilitate public transit service as appropriate.

4.1.4. The City will work with other levels of government and service providers to ensure that any new community facilities are within existing or planned transit supportive development, and/or within a short walking distance to frequent transit service.

4.1.5. The City will encourage all future development to take the form of *Complete Communities/ Transit Supportive Development*.

4.1.6. The City will place priority on increasing the level of service of existing transit to support intensification areas, and expand transit service to areas which have achieved, or plan to achieve, transit-supportive residential and employment densities, together with a mix of land uses whenever possible.

4.1.7. The City will consider extending frequent transit service to more employment areas as part of the next Transit Master Plan update.

5. Improve transit promotion

The promotion of transit is a critical piece to the rebalancing of mode share across the city. Network improvements and prioritization are very important; but so too is the active management of mode choice through an on-going effort to manage transportation demands. The City of Guelph has an existing *Transportation Demand Management* program that can be leveraged, expanded and strengthened to be the necessary complement to the network strategies.

5.1. Promote transit as a mode of travel

5.1.1. The City will promote transit as a desirable, affordable, and environmentally sustainable mode of transportation. It is a priority to make transit more convenient and simple to understand, through various communication channels and in partnership with school boards, agencies, police services, Wellington County, developers, employers, and community organizations. A key message will be the practicality of transit and its importance to decreasing carbon emissions and improving air quality.

5.1.2. The City will explore opportunities for enhanced trip planning tools to help travelers make multi-modal transportation decisions in real-time.

5.1.3. Through the establishment of an Emerging Transportation Technologies office, the City will explore opportunities for Guelph Transit to leverage new service models or technologies that keep Guelph future-ready and resilient.

6. Future Ready

As new transportation innovations and technologies emerge, the way people and goods move in urban environments will change and disrupt our transportation networks. Anticipating these changes and understanding the challenges and opportunities they present is critical for forecasting what transportation will look like in the future, and enables Guelph to mitigate any negative impacts.

This section outlines innovations and trends in transit that the City should explore, research, anticipate, and/ or plan to create a "future-ready" Guelph.

6.1. Innovations and trends for further exploration

6.1.1. The City will explore the possibility of using mobility-as-a-service (MaaS) platforms to pay for a variety of mobility options available in Guelph.

6.1.2. The City will continue to implement TDM initiatives that promote and support the shift to transit.

6.1.3. The City should monitor and study the opportunities for autonomous transit buses or shuttles in Guelph.

6.1.4. The City should monitor post-COVID-19 transit ridership trends and adjust service forecasts and plans accordingly.

6.4 Goods Movement

This Chapter of the Transportation Master Plan (TMP) presents the policies related to goods movement.

The City recognizes the importance of safe and efficient movement of goods to Guelph's economic livelihood and regional competitiveness. Guelph's goods movement policies consider the connection of Guelph's industries and businesses to the surrounding region and the overall North American freight movement system to facilitate the safe and efficient movement of raw materials and finished products. They also consider the operation of trucks and trains on the Guelph transportation system; looking to offset negative impacts of heavy vehicles on other modes while allowing for the safe delivery and pick up of materials.

Alignment with TMP Goals

Relevant Goals that align with the *Goods Movement strategy* are:

Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050

Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives

Goal 6: Investment decisions will be made considering the asset lifecycle costs

Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today

Networks

The Guelph TMP establishes the *Goods Movement Priority Network* (**Schedule 5 in Annex A**) to identify key areas of pedestrian focus in Guelph. It is designed to allow large vehicles to travel through the city efficiently while safely interacting with people who are walking or cycling on the same streets.

Policies

1. Prepare a comprehensive goods movement strategy

Guelph's freight movement system consists of truck and rail freight operating on facilities owned by multiple parties (City of Guelph, Ministry of Transportation, *Guelph Junction Railway*, Metrolinx, and Canadian National Railway). The City of Guelph does not currently have a comprehensive *Goods Movement Strategy*. The *Goods Movement Priority Network* in the TMP reflects the City's existing permissive truck route network.

1.1. The City will prepare a comprehensive Goods Movement Strategy to reflect the Official Plan policies and to inform:

a) Any required updates to Guelph's permissive truck route network (**Figure 9**);

b) The required design parameters for trucks on Guelph's streets;

c) The role of the *Guelph Junction Railway* in moving freight in Guelph and opportunities to shift goods to rail;

d) The potential impact of emerging technology and modes, including autonomous drone or vehicle services, cargo-bicycles and e-commerce;

e) Consideration of accommodating long-combination vehicles in designated areas

f) Designated delivery hours for key neighbourhood; and,

g) Curbside management controls and strategy.

2. Enable efficient goods movement with trucks

Trucks are the primary local freight transportation option in Guelph. The City maintains a comprehensive truck route system that consists of arterial and collector roads that connect the region to Guelph's industrial and commercial areas. This section will review the movement of goods with trucks in Guelph.

2.1. Designate truck routes to serve the industry and protect neighbourhoods

2.1.1. The City will continue to work with the Province, agencies and transportation service providers to implement the recommendations of the *Official Plan* goods movement policies.

2.1.2. The City will continue to follow the *Official Plan* trucking and goods movement policies, which identifies that the City is responsible for minimizing the impact of trucks upon residential areas by following these policies:

a) Truck routes may be used to direct through truck traffic to avoid certain residential streets. Truck routes, if provided, will be designed to maximize accessibility to commercial and industrial areas of the city;

b) The City will use the Zoning bylaw to manage land uses, activities and home occupations that generate truck traffic;

c) The City will coordinate with the Province, Wellington County and neighbouring municipalities on the planning and design of an efficient goods movement system that minimizes community and traffic impacts; and

d) Truck use will be regulated through a permissive truck route system and regulations, pertaining to heavy trucks, which is contained in the City's Traffic By-law, as amended from time to time.

2.2. Consider truck needs in road planning, design and construction

2.2.1. When constructing or rehabilitating roads, the City will consider trucking needs through the use of appropriate design standards and the inclusion of features such as on-street loading areas and separated cycling and/or **micro-mobility** facilities.

2.2.2. The City will monitor opportunities to enhance the truck route network through road rehabilitation and through enabling the adjustment or removal of seasonal weight restrictions.

2.2.3. On Primary or Downtown Main Streets where blocks do not have secondary access from a Laneway,

Secondary Street or Local Street, the City will continue to address loading within the design of the right of way.

2.3. Monitor and consult with large truck and logistics users for mutual benefit

Accommodating freight in a community requires continuous knowledge sharing from experts in the field. The following policies are recommended for supporting knowledge sharing and innovation.

2.3.1. The City will regularly engage with large truck and logistics users to quantify freight demand characteristics, the use of arterial roads by trucks, and the congestion, noise and safety impacts of truck movements.

2.3.2. The City will encourage the industry to explore goods movement technologies and practices that can reduce community impacts, improve efficiency and enhance regional competitiveness. These could include intermodal terminals that enable a transfer of freight tonnage from road to rail.

3. Enable efficient goods movement with rail

Guelph is connected to crucial freight corridors through the *Guelph Junction Railway*, Canadian National Railway and the Canadian Pacific Railway. This section will review the movement of goods with rail in Guelph.

3.1. Continue to provide rail service to industrial areas and protect neighbourhoods

The City recognizes the need for railway freight transportation within and through the City to be safe, sustainable, and efficient. The following policies are recommended for rail service in Guelph.

3.1.1. The City will continue to minimize road/rail conflict wherever possible. In light of the potential for significant environmental, social and cost impacts associated with grade separating rail and road crossings, the City will follow Transport Canada Grade Separation Assessment Guidelines. The City has identified the potential for a road/rail grade separation at the following locations:

a) At Silvercreek Parkway and Canadian National Railway grade;

b) At Edinburgh Road and the GO rail line; and

c) At the intersections of the *Guelph Junction Railway* with Woodlawn Road and Edinburgh Road.

These locations should be subject to further study to determine if and how grade separation is provided.

3.1.2. The City will continue to facilitate the provision of rail freight service to employment areas, where feasible, including the continued support of the City-owned *Guelph Junction Railway* Company.

3.1.3. Continue to consider rail supportive land use

Land use development near railways can presents incompatibility challenges. This section will review the land use planning procedures when in close proximity to railways.

3.1.4. The City will continue to follow the *Official Plan* when there are proponents of development in proximity to a railway:

a) Must demonstrate, to the satisfaction of the City, that applicable safety requirements can be satisfied;

b) Meet the requirements of the noise and vibration policies of this Plan; and

c) Implement other mitigation and buffering measures such as set-backs, intervening berms and security fencing as may be required as a condition of subdivision approval or other development approval.

3.1.5. Where development cannot reasonably achieve standard safety measures, the City, in consultation with the affected railway, may consider a site-specific risk management approach to meeting safety and security requirements.

3.1.6. While the preliminary review does not indicate a strong potential for passenger rail service on the *Guelph Junction Railway* line, the City supports reviewing the case for passenger rail service in concert with future municipal comprehensive *Official Plan* review.

4. Future Ready

As new transportation innovations and technologies emerge, the way people and goods move in urban environments will change and disrupt our transportation networks. Anticipating these changes and understanding the challenges and opportunities they present is critical for forecasting what transportation will look like in the future and enables Guelph to mitigate any negative impacts. This section outlines innovations and trends in goods movement that the City should explore, research, anticipate, and/or plan to create a "future-ready" Guelph.

4.1. Innovations and trends for further exploration

4.1.1. The City will explore ways to accommodate and support new courier network services that have recently emerged to meet the increasing last-mile home delivery demands, such as cargo bikes.

4.1.2. The City will research effective curbside management practices and technologies to better balance and optimize the rising short-term curb space demands due to the increase of ride hailing services (like Uber), delivery vehicles, curbside pickups and drop-offs, along with transit, accessibility, and vehicle parking.

4.1.3. The City should stay up-to-date on emerging delivery technologies that may appear over the next few decades and their potential impacts, including autonomous transport for both long distance and last-mile deliveries, and large-scale drone deliveries.

6.5 Roads

This Chapter of the Transportation Master Plan (TMP) presents the policies related to the integrated operation of streets and the overall transportation strategy in Guelph.

The 2016 City-wide mode share for cars is 80%. The City of Guelph is targeting to decrease car mode share to 58% by 2051. Adjusting the mode share through various tools and strategies, will help manage congestion pressure on the road network, and improve equity, accessibility, and quality of life for Guelph residents. The following sections provide some of those tools and strategies.

Alignment with TMP Goals

Relevant Goals that align with the roads strategy:

Goal 1: People of all ages and abilities will be able to travel safely using any transportation mode that they choose

Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050

Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives

Goal 6: Investment decisions will be made considering the asset lifecycle costs

Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today

Networks

The 2051 *Road Hierachy* (**Schedule 6a in Annex A**) is the core network of highways and arterial roads that allow vehicles to travel efficiently. This priority network has to support the movement of large volumes of vehicles safely at moderate to high speeds.

The *Car Priority Network* (**Schedule 6a in Annex A**) establishes network modifications required to improve safety, improve access to developing areas, protect neighbourhoods, and manage congestion. Implementing the car mobility improvement network includes:

- Continuing to coordinate Hanlon improvements with the MTO in order to reduce congestion and improve safety
- Continuing to coordinate improvements where the Metrolinx rail corridor crosses the road network to address safety, connectivity and alleviate congestion
- Continuing with the Community Road Safety Strategy, speed awareness program, traffic calming policy – already the focus of much of city's efforts – continue and expand into other modes
- Advancing the recommended road network for Clair-Maltby and GID planning areas
- Implementing *transportation systems management* program such as signals improvements and localized network improvements

The *Resiliency Network* (**Schedule 6c in Annex A**) identifies key arterial and collector streets that are designed to be flexible by protecting space in the right-of-way for future uses. This offers the transportation network flexibility so that the City can make changes to improve mobility along those streets in response to factors like changing travel patterns/needs, climate change impacts, societal disruptions like COVID-19, new mobility technologies, and more.

Since the Resilience Network is focused on future needs, these streets will not require any immediate physical changes. Implementation involves protecting for improvements or widenings of select existing arterial and collector streets through the OP.

Policies

1. Build a sustainable road network

1.1. Create new tools and expand existing ones to promote sustainable transportation modes

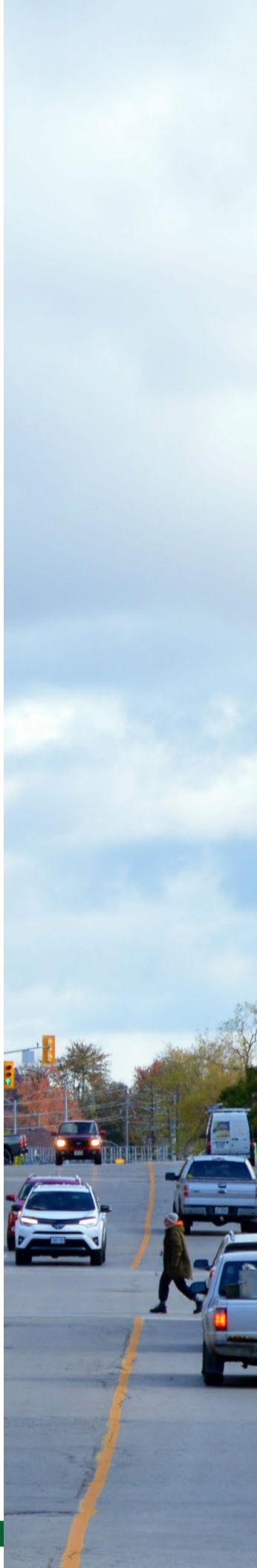
1.1.1. The City will develop a *Complete Streets Design Guide* to inform all future street design. The *Complete Streets Design Guide* will:

a) Continue to reflect the functional street classifications in this plan, as well as the 2014 City of Guelph *Downtown Streetscape Manual* and the 2021 City of Guelph *Official Plan*, and as noted in the proposed Street Hierarchy of this plan (**Schedule 6a in Annex A**)

b) Continue to ensure that the design of roads incorporate streetscape and design elements determined through the road design process that are consistent with the Urban Design policies of existing plans, where appropriate, based on the planned function of the road. The City will continue to be guided by the street, mid-block, intersection, and public transit facilities design guidelines found in the following resources, which will continue to evolve over time. The specific direction on how to design streets will need to be confirmed once the *Complete Streets Design Guide* is complete:

- 2021 City of Guelph *Official Plan*;
- 2015 *Facility Accessibility Design Manual*;
- 2014 City of Guelph *Downtown Streetscape Manual*;
- Development Engineering Manual;
- Linear Infrastructure Standards; and
- Current industry guidelines (e.g. Ontario Traffic Manual, Transportation Association of Canada).

c) Continue to consider road designs that are innovative in terms of multi-modal and environmental considerations which lower environmental impacts and improve sustainability.



d) Be used to update the right-of-way table and intersection improvement table (Table 5.1 and 5.2) in the *Official Plan*

1.1.2. The City will develop a *Multimodal Level of Service Guideline* to guide and inform the decision making during the planning, design, and operations of streets and intersections.

1.2. Ensure the road network and system can accommodate new residents

The population of Guelph is projected to grow by 203,000 residents and 116,000 jobs by 2051. The road network and system will need to be planned intentionally to accommodate this new growth, and with an eye to achieving mode share targets. **Schedule 6b in Annex A** illustrates the car priority network. The following policies recommend how the City will continue to plan for new development.

1.2.1. The City will implement the approved road network concepts outlined in the *Downtown Secondary Plan*, the Guelph Innovation District Secondary Plan and the Clair-Maltby Master Environmental Servicing Plan and Secondary Plan.

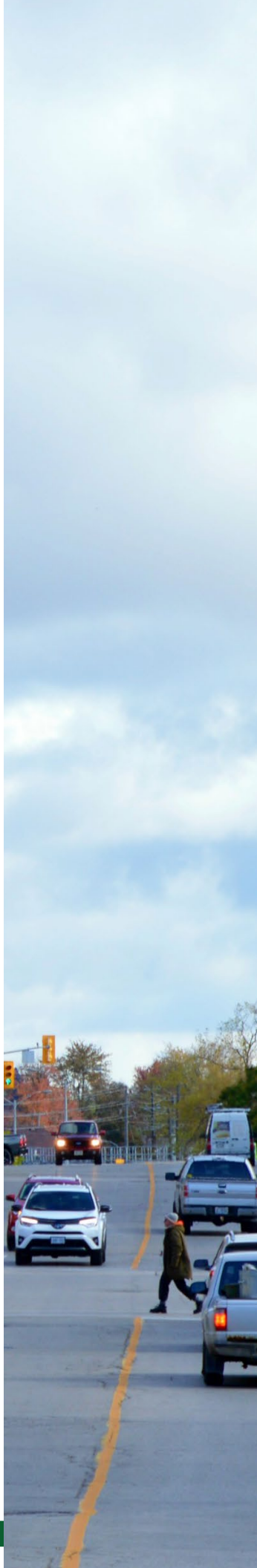
1.2.2. The City will ensure continuity of sidewalks, bicycle facilities and bus routes in new developments as they are being constructed. The road network design will seek to minimize travel distances for pedestrians, cyclists and transit during all development phases.

1.2.3. The City will continue to promote the creation of an arterial-collector grid road system in the undeveloped area of the city, subject to appropriate studies, in order to assist in the dispersion of traffic and to provide appropriate walking distances to transit services on the main roads.

1.2.4. To control future land uses that would increase traffic unnecessarily on the arterial- collector grid and at intersections, the City will continue to:

a) Restrict strip commercial development along arterial roads; and

b) Locate service commercial development in designated areas along only one side of the arterial road.



1.2.5. The City will continue to require the submission of *Transportation Impact Assessment Studies* for development proposals that are considered as significant traffic generators along arterial and collector roads to determine whether the development is consistent with the vision and goals of the Transportation Master Plan.

1.2.6. The City will update its Transportation Impact Study Guidelines to reflect its commitment to multimodal transportation systems planning to include a *Transportation Demand Management* checklist for all development applications.

2. Protect neighbourhoods and cultural resources from undesirable road impacts

2.1. Continue to address adverse impacts of road projects

New road projects can often result in adverse impacts on the natural and cultural heritage of an area. The following policies are recommended to address these impacts.

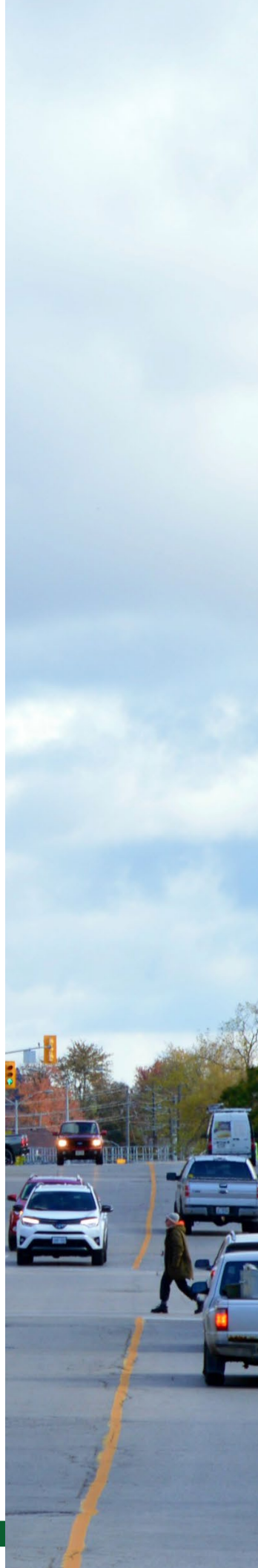
2.1.1. The City will continue to require noise mitigation studies for urban street corridors with identified noise pollution issues.

2.1.2. The City will continue to ensure any impacts on the Natural Heritage System and cultural heritage resources are addressed in the design process for road capital projects in accordance with the provisions of the *Official Plan*.

2.1.3. The City will continue to have regard for and, when necessary, require measures to mitigate any negative impacts on cultural heritage resources, especially the character of landscapes, streetscapes, tree lines, bridges, views and points of scenic interest and the prevailing pattern of settlement when considering the construction of new roads and road improvements, including road re-alignment and road widening.

2.1.4. The City will have regard for best practices or mitigating impact on habitat feeding and migration patterns of wildlife when undertaking capital projects.

2.1.5. The City will consider installation of best practices in **low-impact development** management along road corridors, where appropriate. The Source Water Protection Plan and the Stormwater Management



Master Plan (underway) should be consulted at the onset of all right-of-way construction and re-construction projects for guidance on the appropriateness of **low-impact development** implementation.

3. Maximize road safety for all users

3.1. Increase safety provisions in planning, design, and operational decisions

Without additional preventative road safety measures, undesirable conditions and behaviours can lead to property damage, injury and death. These risks can be mitigated through multidisciplinary road safety strategies. The following policies are recommended to increase safety provisions.

3.1.1. The City Council will formally adopt **Vision Zero** approach to road design, acknowledging that the *Community Road Safety Strategy* forms part of Guelph's **Vision Zero** plan, and will continue to be implemented and updated as necessary.

3.1.2. The City will continue to work with the Ministry of Transportation of Ontario to replace all existing at-grade intersections on the Hanlon Expressway with interchanges, overpasses or underpasses.

3.1.3. The City will develop a city-wide strategy for the planning and design of roundabouts.

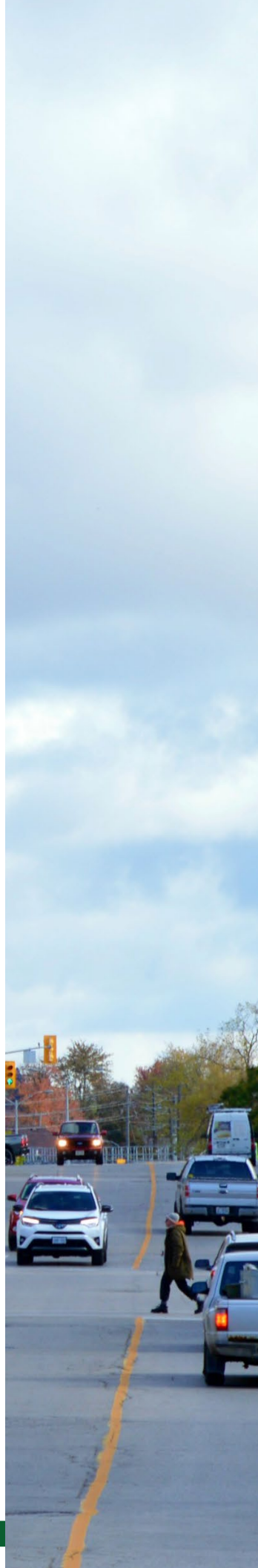
3.1.4. The City will continue to review the need for safety improvements and grade- separations of existing at-grade rail crossings for vehicles and/or active transportation that meet or exceed Transport Canada requirements.

4. Prioritize energy reduction and minimize environmental impacts

4.1. Promote low or zero emission vehicle technology

The transportation sector is one of the largest contributors to greenhouse gas emissions. The following policies are recommended to promote low and zero emission car technology.

4.1.1. The City will explore opportunities to support consumer adoption of low or zero emission vehicles.



4.1.2. The City will review and update the City's Municipal Zero Emissions Vehicle and Transit Fleet Strategy at regular intervals, to keep up to date with emerging technologies and practices.

4.1.3. The City will continuously review the effectiveness of the existing public electric vehicle charging station network and identify needs and opportunities for growth of the network.

4.1.4. Continue to reduce greenhouse gas emissions and energy use

4.1.5. The City will continue to implement urban design and development standards to reduce climate change impacts and enhance climate resiliency for public works and infrastructure including roads, bridges, stormwater systems and energy distribution systems.

4.1.6. The City will continue to aim to source 100% renewable energy for all City facilities and fleet operations by 2050.

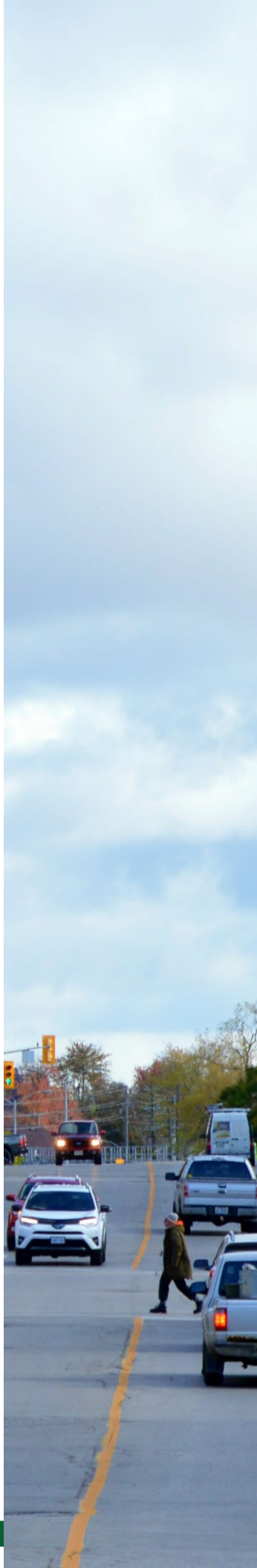
4.1.7. The City will continue to aim to be a net zero carbon community by 2050.

4.1.8. The City will review and update anti-idling bylaws and explore enforcement opportunities.

4.1.9. The City will continue to meet the growing transport requirements while reducing the transportation energy use by 25% or more, using sensitive urban design, effective alternative transport options, and encouraging vehicle efficiencies.

5. Enhance city parking facilities and services

Given the significant costs associated with parking and its influence on mode choice, parking management is increasingly important in municipalities. Effective parking management should strike a balance between supply and demand for various types (e.g. short-term, long-term, and accessible), while limiting the oversupply of parking spaces. Improved parking efficiency can reduce the amount of space needed for parking, providing opportunities to develop more community-oriented spaces and supporting the potential reallocation of on-street parking space for other uses such as active transportation and transit infrastructure. This section addresses the parking needs for Guelph.



5.1. Continue to improve parking conditions and options

Public parking has been identified as an area of interest for the City to explore improving. The following policies are recommended to improve parking conditions and options throughout Guelph.

5.1.1. The City will conduct a review of on-street and off-street parking to ensure the city- wide parking system is in alignment with the goals and objectives of this plan; recommendations of the study will inform future updates to the traffic, parking and zoning bylaws.

5.1.2. The City will periodically review and update the City's Downtown Parking Master Plan to align with the TMP goals to reduce auto mode share.

5.1.3. The City will continue to provide parking to meet the needs of Downtown businesses, residents and visitors.

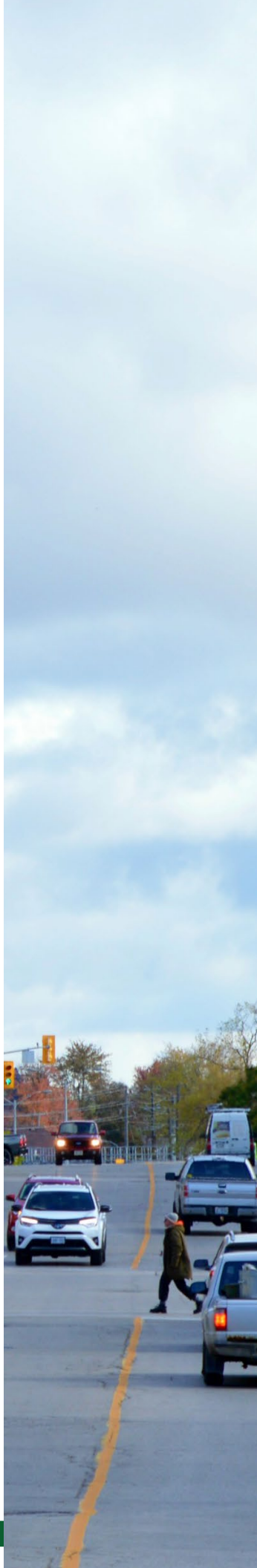
5.1.4. The City will continue to play an active role in the supply of off-street parking Downtown.

5.1.5. The future Downtown Parking Master Plan updates will recommend best practices of on-street parking management that support the goals and proposed network of this plan, including:

- **a)** Compatibility with proposed *Cycling Spine Network* within the Downtown area
- **b)** Consideration for accessibility and transit access needs
- **c)** Supply management that balances existing and projected demand with the mode share target set out by this plan
- **d)** Integrated management of on-street stalls for loading and short-term stopping needs
- **e)** Consideration of temporary stopping stalls to support automated vehicles or ride-share programs
- **f)** Consideration of specialized uses such as electric vehicle or fleet charging locations

5.1.6. The City will continue to specify off-street parking requirements and may establish maximum parking requirements in the Zoning By-law, where appropriate.

5.1.7. The City will continue to enforce that off-street



parking areas and facilities shall be provided through zoning and site plan requirements.

5.1.8. The City will continue to consider cash-in-lieu of required parking in accordance with the *Planning Act*.

5.1.9. The City will continue to follow the 2014 *Downtown Streetscape Manual* and 2021 *Official Plan* for on-street and off-street parking guidelines unless superseded by subsequent council-approved road design studies.

5.1.10. The City may acquire, develop and operate parking facilities outside of the downtown, if necessary.

6. Manage congestion

The Guelph TMP prioritizes rebalancing the existing street network to promote the needs of sustainable transportation modes. This will place pressure on the system; pressure that needs to be actively managed through a *Transportation Systems Management* program.

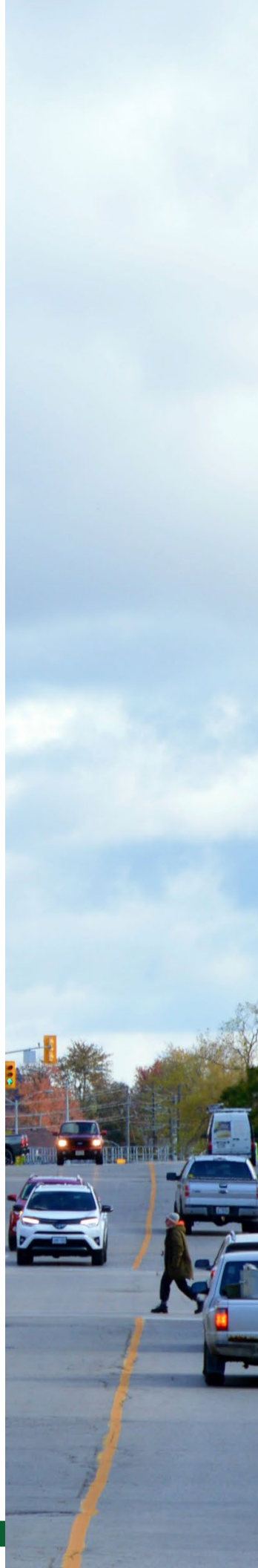
6.1.1. The City will develop a Transportation System Management Strategy and Action Plan. The *Transportation Systems Management* Strategy will consider:

- **a)** Congestion Management
- **b)** Access Management
- **c)** Transit Priority
- **d)** *Intelligent Transportation Systems and smart signals*
- **e)** The City's approach to curbside management
- **f)** Data collection needs/processes and the potential of big data

6.1.2. The City will complete a flex zone/curbside priorities analysis to understand the trade-offs of how land use impacts areas where curb space is limited and sets priority for flex zone use by function.

6.1.3. The City will develop a strategy for smart signal implementation

6.1.4. The City will continue to implement a *Transportation Demand Management* program that influences when, where and how people travel around Guelph by:



a) Developing specific services and programs to deliver *Transportation Demand Management* to the community;

b) Developing branding and marketing to increase public awareness of *Transportation Demand Management*;

c) Increasing collaboration with external partners; and

d) Ensuring that *Transportation Demand Management* is incorporated into relevant programs of the City of Guelph government.

7. Future Ready

Over the last few decades, amidst the rapid evolution of digital technologies and ever improving connectivity, new transportation related innovations have emerged at an unprecedented rate. These innovations are changing how we move, shaking up the transportation sector, and reshaping our cities.

Understanding the changes in how people and goods move in urban environments is critical to forecasting what transportation will look like in the future and knowing what we should plan for. This section discusses a number of new and emerging technology-driven changes to mobility that exist in communities today or are on the horizon.

7.1.1. The City will establish an Emerging Transportation Technologies office to assess new transportation technologies including autonomous vehicles and drone technologies, new modes or services including shared micro-mobility, and data collection opportunities and position the City to respond.

7.1.2. The City will establish a Resilience Network in the *Official Plan* to protect the full width for future spatial needs for a four-lane road cross section, as per **Schedule 6c in Annex A**. The resilience network will be implemented, subject to appropriate technical studies, when it meets the following criteria:

a) It aligns with two or more of the core values of the TMP;

b) It contributes to meeting the mode share target;

c) There is a clear benefit to the community that outweighs the potential impacts of widening the right-of-way; and

d) It meets the goals and policies of the *Official Plan*.

7.1.3. The City will explore and evaluate opportunities for connected mobility and the Internet of Things (IoT) applications in the transportation network, such as dynamic speed limits and dynamic parking pricing.

7.0 Programs

7.1 Programs

Programs are a collection of actions and smaller projects that are organized around a common objective that support the city's pursuit of the TMP goals. The TMP has identified six key programs. An introduction to each program is provided in this chapter. The program charter can be found in **Annex B**.

7.2 Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is a term used to describe a suite of initiatives that aims to reduce traffic, particularly in the commuter peak hours. TDM could include education, marketing and outreach to improve the overall efficiency of the transportation network and influence how, when, and where people travel. These types of initiatives are relatively low-cost and can have a substantial impact on demand. TDM can also apply to developments. Requiring new developments to include elements like bike parking, showers, carsharing spaces, transit stop amenities, and more in new developments can make sustainable transportation options more attractive and convenient for people living or working there. An effective TDM program can reduce congestion and shift more trips to sustainable options like walking, cycling, and taking the bus.

The expansion of Guelph's TDM Program is proposed. The program's mandate will include the following actions:

- Support the TMP's mode share target of 40% by non-auto modes by 2051
- Develop robust TDM guidelines for development application approvals
- Influence the shape of development, develop a TDM checklist for development applications
- Deliver effective communications and marketing about TDM
- Engage with businesses and organizations to encourage the development of TDM programs
- Support the development and maintenance of a Connectivity Index to track the multi-modal connectivity of Guelph's transportation networks
- Develop a comprehensive list of TDM initiatives currently underway in Guelph

7.3 Strategic Transportation Planning

Strategic Transportation Planning was the process of designing the transportation network, facilities, and services to align with the Vision and Goals of the TMP. Strategic Transportation Planning requires a strong understanding of social and economic aspects that impact how, when, and why people move.

To help Guelph achieve the goals and targets of the TMP, it needs a robust and effective Transportation Planning Program.

An expansion of Guelph's Transportation Planning Program is proposed. The program's mandate will include the following actions:

- Confirm and prioritize streets, trails, and routes for improvements in the Capital budget
- Develop a Complete Streets Design Guide (CSDG) to guide all future street design by 2023
- Develop a Multimodal Level of Service (MMLOS) Guideline to evaluate the multimodal performance of streets by 2023
- Maintain the City's Travel Demand Forecasting Model
- Provide an equity lens to transportation planning
- Prepare and maintain the Comprehensive Goods movement strategy
- Support the completion of Environmental Assessments required to implement the TMP road network improvements
- Review development applications to ensure compatibility with the road network and transportation safety regulations and guidelines

7.4 Active Transportation

Active transportation modes include walking, cycling, and rolling-modes that primarily use movement to propel people forward. A formal Active Transportation Program supports the mobility needs of a community in a manner that least damages the environment, while also balancing current and future transportation needs.

An expansion of Guelph's Active Transportation Program is proposed. The program's mandate will include the following actions:

- Increase walking mode share target to 15% by 2051
- Increase cycling mode share target to 10% by 2051
- Design new and transform existing streets and pathways to meet All Ages and Abilities (AAA) standards
- Include consideration of promoting, facilitating and designing for micro-mobility
- Update and implement the Cycling Master Plan, Active Transportation Network and Pedestrian Master Plan
- Increase bicycle parking throughout the downtown and other commercial and employment centres
- Develop a comprehensive list of active transportation initiatives currently underway in the City
- Support efforts to reduce annual community greenhouse gas emissions by 60% from 2007 levels to 7 tonnes of carbon dioxide (equivalent) per capita by 2031
- Support City efforts toward 100% renewable energy for all City facilities and operations by 2050
- Form partnerships and support advocacy groups to enhance cycling
- Fill connectivity gaps within the active transportation network

7.5 Transportation Systems Management

Transportation Systems Management (TSM) uses various low-cost strategies to maintain or reduce travel time, maximize the efficiency of the transportation network, and improve the utilization of existing transportation facilities. This has made travelling through Guelph safer, more convenient, and more efficient. Examples of TSM included higher frequency public transit, eliminating on-street parking to add lanes, and making active transportation more convenient.

Guelph proposed the expansion of Guelph's TSM Program. The program's mandate will include the following actions:

- Manage congestion along roads during peak periods through signal optimization, smart traffic signal technologies and other strategies
- Develop innovative intersection design (such as roundabouts) to reduce delay and emissions
- Support transit priority measures to increase transit service and convenience
- Implement traffic flow improvements on regionally significant roads
- Review (and if necessary, update) the City's downtown parking strategy to support park-and-ride opportunities
- Explore parking regulations and strategies city-wide and update the traffic and parking bylaws accordingly
- accommodate all modes and reduce both delay and emissions by investing in selected capacity improvements to existing major street network operations
- Maintain the traffic bylaw to reflect changes to new infrastructure designs and standards that support active transportation and new technologies in micro-mobility

7.6 Road Safety

Road Safety refers to the strategies, tools, and measures cities can use to prevent collisions resulting in injuries and deaths.

Guelph's Road Safety Program is proposed to be updated. The framework for this proposed program focuses on four main elements: safe road use, safer speeds, safer roads, and safer vehicles. The program's mandate will include the following actions:

- Review and adjust posted speed limits as required to reduce the likelihood of collisions
- Recommend formal Council adoption of Vision Zero
- Improve cooperation, communication and collaboration among stakeholders in existing initiatives and programs
- Collaborate with Active Transportation and TDM on safer road and intersection design practices
- Research and test new and innovative street function and design, and intersection design
- Update and follow the City's Traffic Calming Strategy Support the development of Multimodal Level of Service (MMLOS) Guidelines that include safety analysis for links and intersections

7.7 Emerging Technology

New mobility and technologies that help residents travel continue to grow along with the rapid growth of new digital technologies. The goals of this program are to be a source of research, analysis, partnerships, testing and pilot projects for new transportation technologies and services.

Examples of new transportation technologies include personal or shared electric bikes, electric scooters, Mobility-as-a-Service, self-driving technology, connected vehicles (vehicles that communicate with each other to maintain a certain distance and follow a common route).

The development of a formal Emerging Transportation Technologies Program is proposed. The program's mandate will include the following actions:

- Support the development of a smart signal implementation strategy for smart signal implementation
- Explore opportunities to adopt Mobility as a Service in Guelph
- Monitor and recommend micro-mobility technologies and services suitable for Guelph
- Support and develop policy and programs to support future of self-driving technology
- Develop curb space management strategies to support and develop policy and programs for e-commerce delivery services
- Develop a strategy to incorporate connected - or "smart" - features of transportation to make travel more convenient
- Support Mobility-as-a-Service (MaaS) platforms through private partnerships

8.0 Implementation

8.1 Implementation Process

Communication and Engagement

Delivering the vision and goals of the TMP requires ongoing communication and engagement to ensure the City continues to meet the needs of the community.

Continue to communicate in a proactive and inclusive manner

Continue to deliver an effective communication strategy to help impacted road users understand the purpose for and benefits of changes, and to mitigate negative reactions where congestion may occur.

The City will establish a Terms of Reference and mandate for Council's consideration that recommends an Integrated Transportation Advisory Committee composed of community members that represent one or more road user group to provide integrated community feedback into implementation of the TMP.

Reporting

The City is accountable and transparent to the residents, businesses and other stakeholders using its lands, services and resources. It is important to continuously track the implementation of the recommendations of this Plan and monitor key performance indicators that demonstrate how the City is trending toward achieving our goals. The following policies will assist staff in accurate and timely reporting to the public.

Monitor and track mode share

The City will continue to participate in the Transportation Tomorrow Survey every five (5) years to collect local and regional data on transportation behaviours, patterns and trends to be used in conjunction with local population and employment growth forecasts and distribution forecasts in order to model and project transportation mode share and network capacity.

The City will seek opportunities for enhanced multi-modal transportation data collection methodologies to inform mode share trends on an annual basis, if possible, to assist with tracking and informing capital investment decisions that best advance the City toward meeting the mode share target goals of this plan.

Develop and maintain a connectivity index

The City will develop a connectivity index to track how well the various transportation networks, including delivery of the recommended network improvements (**Schedule 1 in Annex A**) are complete and connected throughout the community. This index will serve as a key performance indicator for the plan 2019-2023 Strategic Plan.

Regular progress on the implementation of the TMP will be provided by reporting the connectivity index and the mode share (every 5 years) through the Guelph. Future Ready progress report and dashboard.

Funding the TMP

There are capital and operating costs to implementing this plan. These costs change with fluctuations in market prices, property values, available external funding opportunities and policy changes to tax and development charge rates. This section outlines the approach recommended to monitor and pay for the recommendations of this plan.

Use the City Budget to manage the affordability of this plan

The City will annually review the capital budget forecast and recommend capital projects that implement the TMP and advance toward achieving the desired mode share target while also aligning with infrastructure renewal and strategic priorities.

The City will consult the prioritization methodology developed by this plan and informed by community engagement to inform new projects to add for consideration to the capital budget forecast.

The City's operating budget forecast for maintaining transportation infrastructure will be compared to actuals on a regular basis to update and refine the operating costs of maintaining the transportation network.

The City will regularly monitor staff capacity and make recommendations for increasing staff resources as required to implement the programs and capital plans of the TMP through the multi-year operating budget process.

8.2 Capital Projects

Schedule 1 in Annex A shows the integrated transportation network plan for Guelph. A list of capital projects was identified that implement the preferred strategy. The projects were assigned to either the short term (2022-2031) or long-term (2032 or 2051) horizon, based on current capital planning and the strategic transportation needs. **Table 3** and **Table 4** show the TMP capital projects.

Prioritization

Overall, the approach to the project prioritization follows the same evaluation criteria approach as that used for the system alternatives, where criteria groups were aligned with the TMP values and goals. Each project was evaluated to as to what degree it supports each value:

- **Safe:** Safe means a transportation network where users of all modes can expect to travel hazard-free and complete trips without fatal or serious injury. In making decisions regarding safety, the most vulnerable users will be prioritized first. Decisions affecting the transportation network must first and foremost ensure the safety of pedestrians and cyclists, as these are the users who are at the greatest risk.

Table 3: 2022-2031 Projects

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Arkell Road	Gordon Street	Victoria Road S	AAA bikes	A+	A+
Clair Road	Beaver Meadow Dr	Victoria Road S	Widen 2-4 lanes	C	B
College Avenue	Hanlon Expressway	Victoria Road S	AAA Bikes	A+	A+
Edinburgh Road	Willow Road	London Road West	AAA bikes	A+	A+
Edinburgh Road	Kortright Road W	Southcreek Trail N	AAA bikes	A+	A+
Edinburgh Road	Southcreek Trail N	Gordon Street	AAA bikes	A+	A+
Elizabeth Street	Macdonell Street	Arthur Street S	AAA Bikes	A+	A+
Elmira Road	Massey Road	Speedvale Ave W	Urbanization	B/C	A+
Eramosa Road	Woolwich Street	Delhi Street	AAA bikes	A+	A+
Eramosa Road	Delhi Street	Metcalfe Street	AAA bikes	B/C	A+
Eramosa Road	Metcalfe Street	Meyer Drive	AAA bikes	B/C	A+
Eramosa Road	Meyer Drive	Victoria Road N	AAA bikes	B/C	A+
Gordon Street	Waterloo Street	Wellington Street	AAA bikes, Enhanced Pedestrians	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Gordon Street	Wellington Street	Speed River	AAA bikes, Enhanced Pedestrians	A+	A+
Gordon Street	Speed River	James Street	AAA bikes, Enhanced Pedestrians	A+	A+
Gordon Street	James Street	College Avenue	AAA bikes	A+	A+
Gordon Street	College Avenue	South Ring Road	Widen 2-4, Enhanced Pedestrians	C	B
Gordon Street	South Ring Road	Stone Road	AAA bikes, Enhanced Pedestrians	A+	A+
Gordon Street	Stone Road	Edinburgh Road S	AAA Bikes, Enhanced Pedestrians	A+	A+
Gordon Street	Edinburgh Road S	Lowes Road	Widen 4-5	Complete	Complete
Gordon Street	Lowes Road South	Clair Road	AAA bikes, Enhanced Pedestrian	A+	A+
Gordon Street	Clair Road	Gosling Gardens	AAA bikes, Enhanced Pedestrians	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Gordon Street	Gosling Gardens	Maltby Road	Urbanization - AAA bikes	B/C	A+
Grange Road	Victoria Road N	Watson Parkway N	AAA bikes	A+	A+
Laird Road	Downey Road	Few Street	New Roadway	C	C
Maltby Road	Gordon Street	Victoria Road S	Protect for widening 2-4	C	B
MacDonell Street	Norfolk Street	Carden Street	2-lane flexible Street	B/C	A/B
Paisley Road	Elmira Road S	Silvercreek Pkwy N	AAA Bikes, Enhanced Pedestrians	A+	A+
Silvercreek Pkwy	Woodlawn Road	Speedvale Ave W	Urbanization, AAA bikes	B/C	A+
Silvercreek Pkwy	Speedvale Ave W	Willow Road	AAA Bikes, Enhanced Pedestrians	A+	A+
Silvercreek Pkwy	Paisley Road	Waterloo Avenue	New Roadway	C	C
Speedvale Avenue	Elmira Road North	Imperial Road N	Multi-Use Path	A+	A+
Speedvale Avenue	Imperial Road N	Silvercreek Pkwy	Multi-use Path	A+	A+
Speedvale Avenue	Silvercreek Pkwy	Stevenson Street N	Multi-Use Path	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Speedvale Avenue	Stevenson Street N	Victoria Road North	AAA bikes	A+	A+
Stevenson Street	Speedvale Avenue	Emma Street	AAA bikes	A+	A+
Stevenson Street	Emma Street	Eramosa Road	AAA bikes	A+	A+
Stone Road	Hanlon Expressway	Edinburgh Road	AAA bikes	A+	A+
Stone Road	Edinburgh Road	Gordon Street	AAA bikes	A+	A+
Victoria Road	Eramosa River	College Avenue	Urbanization, AAA bikes	B/C	A+
Victoria Road	College Avenue	Stone Road East	Urbanization	n/a	A+
Victoria Road	Stone Road East	MacAlister Blvd	Repaint to create 4 lanes	A+	A+
Victoria Road	MacAlister Blvd	Arkell Road	Repaint to create 4 lanes	A+	A+
Victoria Road	Arkell Road	Clair Road East	Urbanization	B/C	A+
Victoria Road	Clair Road East	Maltby Road	Urbanization	B/C	A+
Watson Parkway	Couling Crescent	Eastview Road	AAA Bikes	A+	A+
Watson Parkway	Eastview Road	Grange Road	AAA Bikes	A+	A+
Watson Parkway	Grange Road	Fleming Road	AAA Bikes	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Watson Parkway	Fleming Road	York Road	AAA Bikes	A+	A+
Woodlawn Road	Nicklin Road	Woolwich Street	Multi Use Path	A+	A+
Woodlawn Road	Woolwich Street	Speed River	AAA bikes	A+/B/C	A+
Woolwich Road	Woodlawn Road	Speedvale Avenue	AAA Bikes, Enhanced Pedestrians	A+	A+
Woolwich Road	London Street	Norwich Street	AAA Bikes, Enhanced Pedestrians	A+	A+
Willow Road	Silvercreek Pkwy N	Dawson Road	AAA Bikes	A+	A+
Wyndham Street N	Woolwich Street	MacDonell Street	AAA Bikes, Enhanced Pedestrians	A+	A+
Wyndham Street S	MacdonellStreet	Wellington ST E	AAA Bikes, Enhanced Pedestrians	A+	A+
York Road	Stevenson Street	Victoria Road	AAA bikes	A+	A+
York Road	Victoria Road	Watson Parkway	Widen 2-4, Multi Use Path	Complete	Complete
York Road	Watson Parkway	Watson Road	Widen 2-4, Multi Use Path	Complete	Complete

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Willow Road	Elmira Road	Imperial Road	AAA bikes	A+	A+
Willow Road	Imperial Road	Silvercreek Pkwy	AAA bikes	A+	A+
Willow Road	Dawson Road	Edinburgh Road	AAA Bikes	A+	A+
Emma Street	Delhi Street	Stevenson Street N	AAA Bikes	A+	A+
Grange Street	Stevenson Street N	Victoria Road N	AAA bikes	A+	A+
Imperial Road	Speedvale Road	Willow Road	AAA bikes	A+	A+
Imperial Road	Willow Road	Paisley Road	AAA bikes	A+	A+
AT crossing 2	Along GJR		New AT bridge over Speed River	Complete	Complete
AT crossing 5	Emma Street	Earl Street	New AT bridge over Speed River	C	A+
Rail Grade Separation	Edinburgh Road	GO Rail line	Road/Rail Grade-Separation at GO Rail Line	C	C

Table 4: 2032-2051 Projects

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Arkell Road	Gordon Street	Victoria Road S	Protect for widening 2-4	C	B
Laird Road	Hanlon Exp	Southgate Drive	AAA bikes	A+	A+
Laird Road	Southgate Drive	Clair Road	Widen 2-4, AAA bikes	C	B
Clair Road	Laird Road	230m E of Laird	Widen 2-4, AAA bikes	C	B
Clair Road	230m E of Laird	Gosling Gardens	AAA bikes	A+	A+
Clair Road	Gosling Gardens	Farley Drive	AAA Bikes, Enhanced Pedestrians	A+	A+
Clair Road	Farley Drive	Beaver Meadow Dr	AAA bikes	A+	A+
College Avenue	Hanlon Exp	Edinburgh Road S	Widen 3-4	C	B
College Avenue	Edinburgh Road S	Gordon Street	Widen 2-4	C	B
Edinburgh Road	Wellington Street	Stone Road	AAA Bikes	A+	A+
Edinburgh Road	Stone Road	Ironwood Road	AAA Bikes	A+	A+
Edinburgh Road	Ironwood Road	Kortright Road W	Widen 3-4, AAA bikes	C	B
Elizabeth Street	Arthur Street S	Stevenson St N	AAA Bikes	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Elmira Road	Woodlawn Rd W	Massey Road	Protect for widening 3-4	C	B
Elmira Road	Massey Road	Speedvale Ave W	Protect for widening 3-4	C	B
Elmira Road	Speedvale Ave W	Willow Road	Widen 3-5	C	B
Elmira Road	Willow Road	Paisley Road	Widen 3-5	C	B
Elmira Road	Paisley Road	Stephanie Drive	Protect for widening 3-5	C	B
Elmira Road	Stephanie Drive	Fife Road	Protect for widening 3-5	C	B
Gordon Street	Gosling Gardens	Maltby Road	Widen 2-4	C	B
Laird Road	Few Street	Cooper Street	AAA Bikes	A+	A+
Laird Road	Cooper Street	Hanlon Expressway	AAA Bikes	A+	A+
Maltby Road	Hanlon Expressway	Gordon Street	Protect for widening 2-4	C	B
Paisley Road	West City Limit	Elmira Road South	Urbanization, AAA bikes	B/C	A+
Paisley Road	Silvercreek Pkwy N	East Limits of Road	Widen 2-4, AAA bikes	C	B
Silvercreek Pkwy	Woodlawn Road	Speedvale Ave W	Widen 2-4	C	B

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Silvercreek Pkwy	Speedvale Ave W	Willow Road	Widen 3-4	C	B
Silvercreek Pkwy	Willow Road	Sleeman Park	AAA bikes, Enhanced pedestrian	A+	A+
Silvercreek Pkwy	Sleeman Park	Paisley Road	Widen 4-5, AAA bikes, Enhanced pedestrian	C	B
Speedvale Ave	Eramosa Road	Watson Parkway N	Protect for widening 2-4	C	B
Stevenson Street	Eramosa Road	Bennett Avenue	AAA bikes	A+	A+
Stevenson Street	Bennett Avenue	Grange Street	AAA bikes	A+	A+
Stevenson Street	Grange Street	Elizabeth Street	AAA bikes	A+	A+
Stevenson Street	Elizabeth Street	York Road	AAA bikes	A+	A+
Stone Road	Victoria Road South	Watson Parkway Sh	Widen 2-4, AAA bikes	C	B
Victoria Road	Speedvale Ave E	Hadati Road	Widen 4-5, AAA bikes	C	B
Victoria Road	Hadati Road	Grange Rd N	Widen 4-5, AAA bikes	C	B
Victoria Road	Grand Rd N	Grange Rd S	Widen 4-5, AAA bikes	C	B

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Victoria Road	Grange Rd S	York Street	Widen 4-5, AAA bikes	C	B
Victoria Road	York Road	Eramosa River	Widen 4-5, AAA bikes	C	B
Victoria Road	Eramosa River	College Avenue	Widen 2-4	C	B
Victoria Road	College Avenue	Stone Rd E	Widen 2-4	C	B
Victoria Road	MacAlister Blvd	Arkell Road	Widen 3-4	C	B
Victoria Road	Arkell Road	Clair Road East	Widen 2-4	C	B
Victoria Road	Clair Road East	Maltby Road	Widen 2-4	C	B
Watson Parkway	Speedvale Ave	Couling Crescent	Protect for widening 2-4, AAA bikes	C	B
Watson Parkway	Couling Crescent	Eastview Road	Protect for widening 2-4	C	B
Watson Parkway	Eastview Road	Grange Road	Protect for widening 3-4	C	B
Watson Parkway	Fleming Road	York Road	Protect for widening 3-4	C	B
Watson Parkway	York Road	Stone Road East	Protect for widening 2-4	C	B
Woodlawn Road	Speed River	Victoria Road North	AAA bikes	A+	A+

Road	From	To	Project Type	EA Req't (current)	EA Req't (new)
Woolwich Road	Speedvale Avenue	London Street	AAA bikes	C	A+
Norfolk Street	Norwich Street	Waterloo Avenue	AAA bikes, Enhanced pedestrian	C	A+
Kortright Road	Scottsdale Drive	Edinburgh Road	AAA bikes	A+	A+
Scottsdale Drive	Stone Road	Kortright Road	AAA bikes	A+	A+
Waterloo Avenue	Edinburgh Road	Norfolk Street	AAA bikes	A+	A+
Imperial Road	Woodlawn Road	Speedvale Avenue	Urbanization, AAA bikes	B/C	A+
Imperial Road	Paisley Road	Wellington Street	AAA bikes	A+	A+
London Road	Edinburgh Road	Norfolk Street	AAA bikes	A+	A+
Waterloo Avenue	Silvercreek Parkway	Edinburgh Road	AAA bikes	A+	A+
AT crossing 1	Arthur Street	Fountain Street	New AT bridge over Speed River	C	A+
AT crossing 4	Waterloo Ave	Royal Rec Trail	New AT bridge over Eramosa River	C	A+
AT crossing 6	Neeve Street		New AT bridge over GO rail	C	A+

- **Equitable:** Equitable transportation speaks to a network that provides people with the ability to complete trips comfortably, safely, with dignity, and in a reasonable time, whether or not they own a vehicle. This applies throughout Guelph's geography, to all origins and destinations within the city. Additionally, by focusing on transportation equity, the City is seeking to ensure that members of marginalized communities have the same access/opportunities in finding and retaining employment.
- **Complete:** A complete - or a connected - network is one that treats all modes of travel as equal in importance. In essence, a multimodal network allows anyone to viably complete their trip by any mode of their choice. A complete network also ensures connectivity within and between networks for all modes.
- **Sustainable:** A sustainable transportation network is one that promotes healthy lifestyles and environmental stewardship. To promote healthy lifestyles and environmental sustainability, Guelph will encourage a shift towards active transportation modes (i.e. cycling and walking) and transit.
- **Supportive of Land Use:** A transportation system that is supportive of land use creates context-sensitive transportation links and enables the development of healthy high- and medium-density mixed use communities. Such communities have strong active transportation connections but also enable their residents to travel via any mode of their choice.
- **Affordable:** An affordable transportation network is one where investment decisions are made while keeping in mind the lifecycle costs of the decision. This means that both the capital and the operation/maintenance costs are considered. In an affordable transportation network, cost effective solutions are valued above ones that provide the same value but cost exponentially more. An affordable transportation network is also one that considers the user costs associated with each trip.

Five (5) of the six (6) values were used as criteria in the prioritization process, with associated sub-factors or indicators. "Safe" was removed from the prioritization as all of the projects meet safety requirements and are not differentiated by this criterion. Each project was assigned a score of 15 points based on their ability to address the five (5) criteria. All criteria are scored out of three (3) (i.e., 0, 1, 2 or 3), where the higher the score the better the alternative aligns with the objectives of the criteria. The criteria were constructed in such a way as to not over-emphasize the role of any one criteria group.

Table 5 shows the priority scores for the TMP capital projects.

Table 5: Prioritization of Capital Projects

Ranking	Project Name	Equitable	Complete	Safe	Sustainable	Supportive of Land Uses	Affordable	Project Average Score	Project Total Score
1	Silvercreek Pkwy	●	●	●	◔	●	◔	●	15
2	Gordon St	●	◔	●	◔	●	◔	●	14.5
3	Victoria Rd	●	◔	●	◔	●	◔	●	14
4	Woolwich Rd	◔	●	●	◔	●	◔	●	13.5
5	Clair Rd	●	●	●	◔	●	○	●	13
6	Edinburgh Rd	●	◔	●	◐	●	◔	●	13
7	Woodlawn Rd	●	◔	●	◔	●	◔	●	12
8	Wyndham St N	◔	●	○	●	●	◔	●	12
9	Wyndham St S	◔	●	○	●	●	◔	●	12
10	Eramosa Rd	◔	●	●	◔	●	○	●	11
11	Stone Rd	●	◔	●	◔	●	○	●	11
12	College Ave	●	◔	○	◔	●	◔	●	11
13	Paisley Rd	◔	●	○	◔	●	◔	●	11

Ranking	Project Name	Equitable	Complete	Safe	Sustainable	Supportive of Land Uses	Affordable	Project Average Score	Project Total Score
14	**York Rd**	Very Good	Good	Poor	Good	Very Good	Good	Very Good	11
15	**Scottsdale Dr**	Good	Fair	Very Good	Poor	Very Good	Good	Very Good	10.5
16	**Imperial Rd**	Good	Fair	Very Good	Poor	Very Good	Good	Very Good	10.5
17	**Waterloo Ave**	Very Good	Good	Poor	Fair	Very Good	Good	Good	9.5
18	**Waterloo Ave**	Very Good	Good	Poor	Fair	Very Good	Good	Good	9.5
19	**Speedvale Ave**	Good	Fair	Poor	Good	Very Good	Good	Good	9
20	**Norfolk St**	Good	Very Good	Poor	Good	Very Good	Poor	Good	9
21	**Kortright Rd**	Good	Fair	Very Good	Poor	Good	Poor	Good	8.5
22	**Laird Rd**	Very Good	Good	Poor	Fair	Good	Poor	Good	8
23	**Elimra Rd**	Very Good	Good	Poor	Fair	Very Good	Poor	Good	8
24	**Laird Rd**	Very Good	Good	Poor	Fair	Good	Poor	Good	8
25	**Willow Rd**	Very Good	Good	Poor	Fair	Very Good	Poor	Good	8
26	**Willow Rd**	Very Good	Good	Poor	Fair	Very Good	Poor	Good	8

Ranking	Project Name	Equitable	Complete	Safe	Sustainable	Supportive of Land Uses	Affordable	Project Average Score	Project Total Score
27	**Malty Rd**	Good	Poor	Poor	Fair	Very Good	Good	Good	7.5
28	**London Rd**	Good	Fair	Poor	Poor	Very Good	Good	Good	7.5
29	**Grange St**	Good	Fair	Poor	Poor	Good	Good	Good	6.5
30	**Arkell Rd**	Good	Fair	Fair	Poor	Good	Poor	Good	6.5
31	**Stevenson St**	Good	Fair	Poor	Poor	Very Good	Poor	Good	6
32	**Watson Pkwy**	Good	Poor	Poor	Poor	Very Good	Good	Good	6
33	**Elizabeth St**	Poor	Fair	Poor	Fair	Very Good	Poor	Fair	5
34	**Grange Rd**	Good	Fair	Poor	Poor	Good	Poor	Fair	5
35	**Emma St**	Good	Fair	Poor	Poor	Good	Poor	Fair	5

8.3 Policy and Program Actions

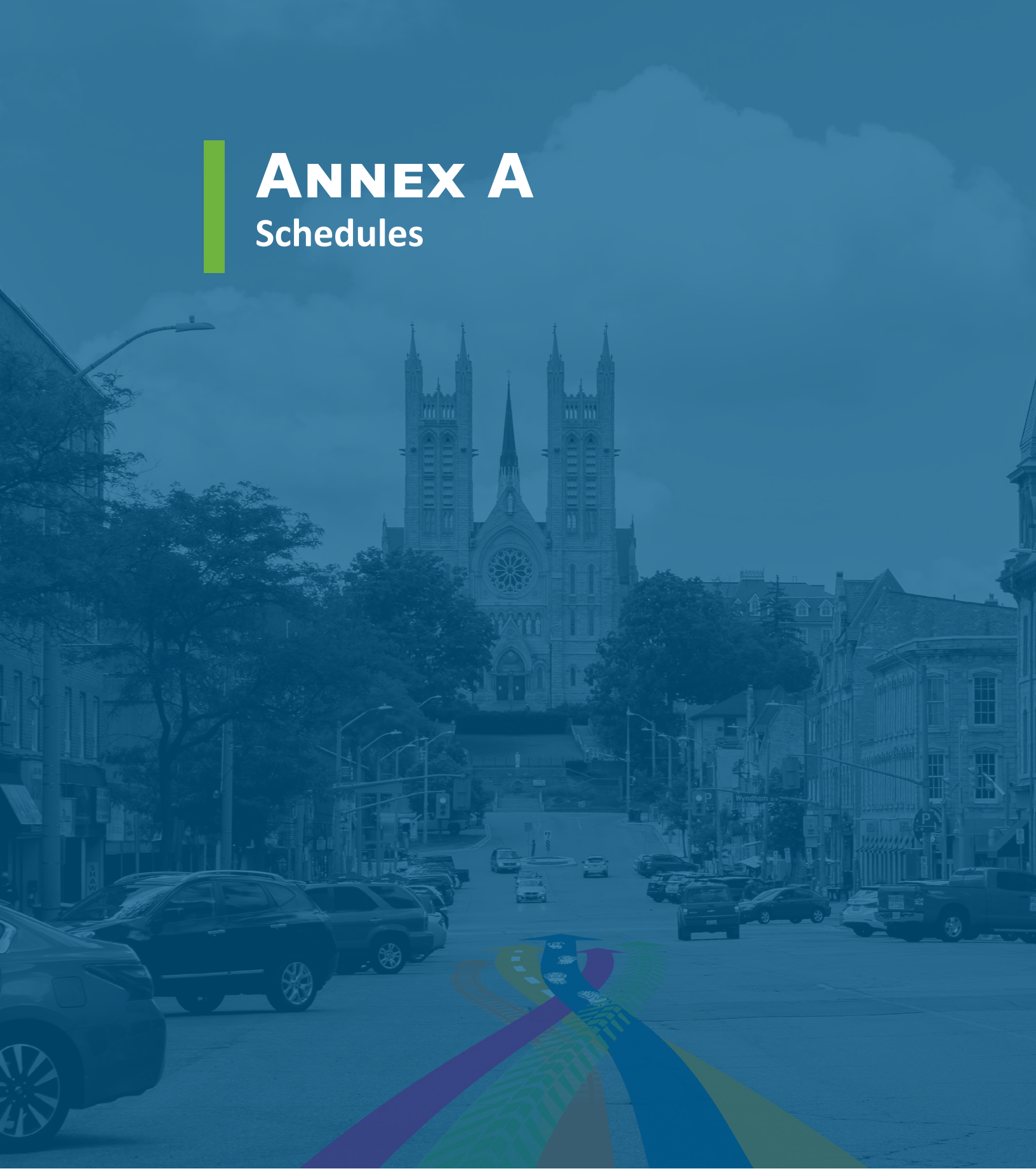
A list of capital projects was identified that implement the preferred strategy. The projects were assigned to either the short term (2022-2031) or long-term (2032 or 2051) horizon, based on current capital planning and the strategic transportation needs. **Table 6** shows the TMP Policy and Program Actions.

Table 6: Policy and Program Actions

Action	Timeframe (years)	
	0 - 5	6 - 10
Prepare | Update Mode Plans		
Pedestrian Master Plan		x
Cycling Master Plan Update	x	
Transit Master Plan Update	x	
Goods Movement Strategy	x	
Trails Master Plan Update		x
Transportation Master Plan Update		x
Downtown Parking Master Plan	x	
Prepare Guidelines		
Complete Streets Design Guidelines	x	
Multimodal Level of Service Guidelines	x	
Transportation Impact Assessment Guideline Update		x
Winter Cycling Network Maintenance Guidelines		x
Programs and Required Actions		
Transportation Demand Management Program		
Develop Action Plan	x	
Strategic Transportation Planning Program		

Action	Timeframe (years)	
	0 - 5	6 - 10
Develop Terms of Reference for Integrated Transportation Advisory Committee	x	
Develop TMP Monitoring Tool	x	
Active Transportation Program		
Incorporate an equity lens into active transportation planning and strategy	x	
Transportation Systems Management Program		
Develop Action Plan		x
Road Safety Program		
formally adopt Vision Zero	x	
Emerging Technology Program		
Develop Action Plan	x	

Annex A
Schedules



Transportation Master Plan

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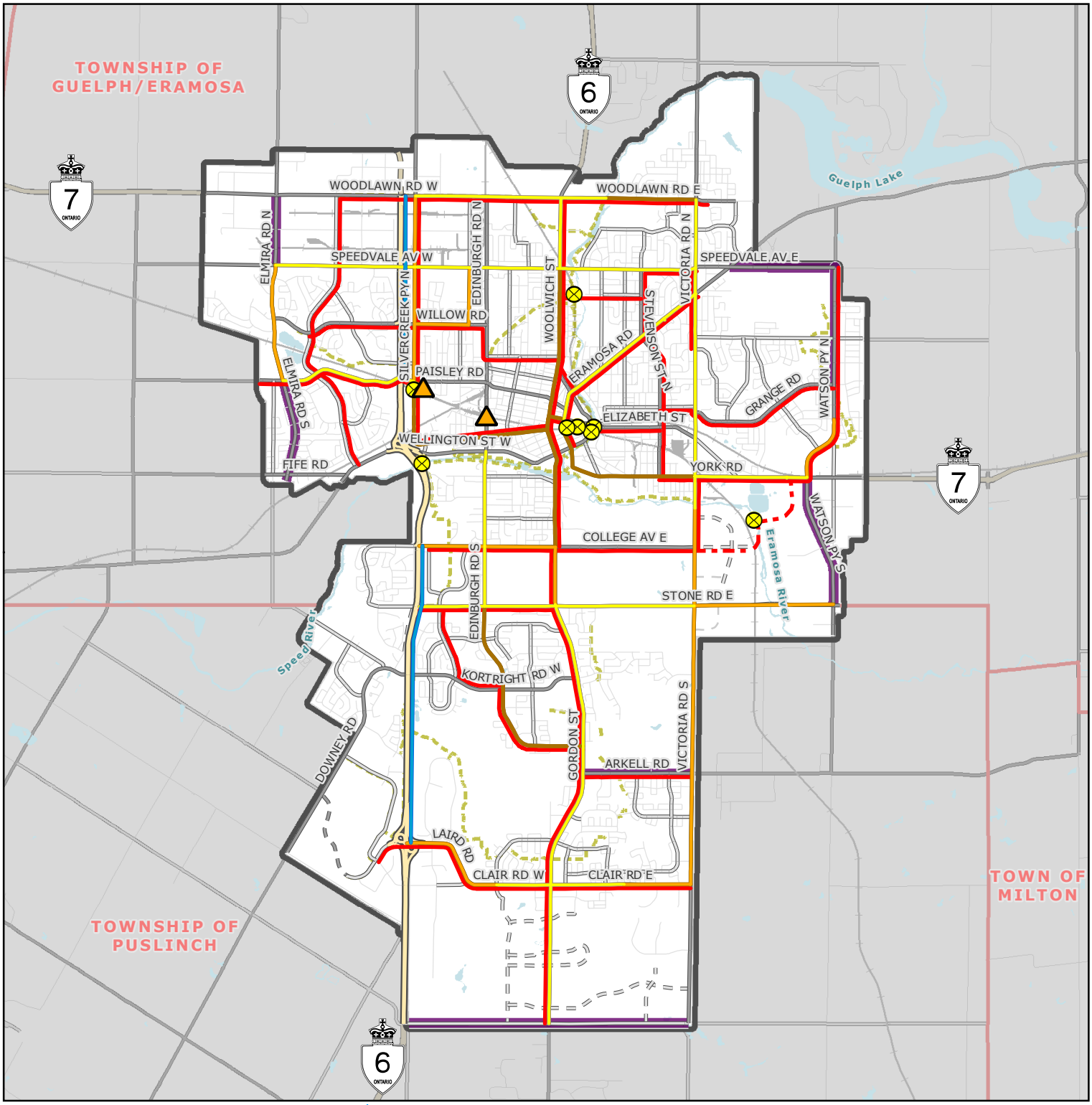
Schedules



PEDESTRIAN NETWORK

- Recommended Grade Separation
- Recommended Barrier Crossings Walking/Cycling

CYCLING SPINE NETWORK

- On-Street Spine Cycling Network
- Future Spine Connection Route (to be determined)

CAR MOBILITY IMPROVEMENTS

- Car Mobility - optimization and mode shift
- Potential Resiliency Widenings

QUALITY TRANSIT NETWORK

- Quality Transit Network - potential lane conversion
- Quality Transit Network - potential widening to 4 lanes
- Quality Transit Network - optimization only

2022 Transportation Master Plan

Schedule 1: Recommended Network

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
KM
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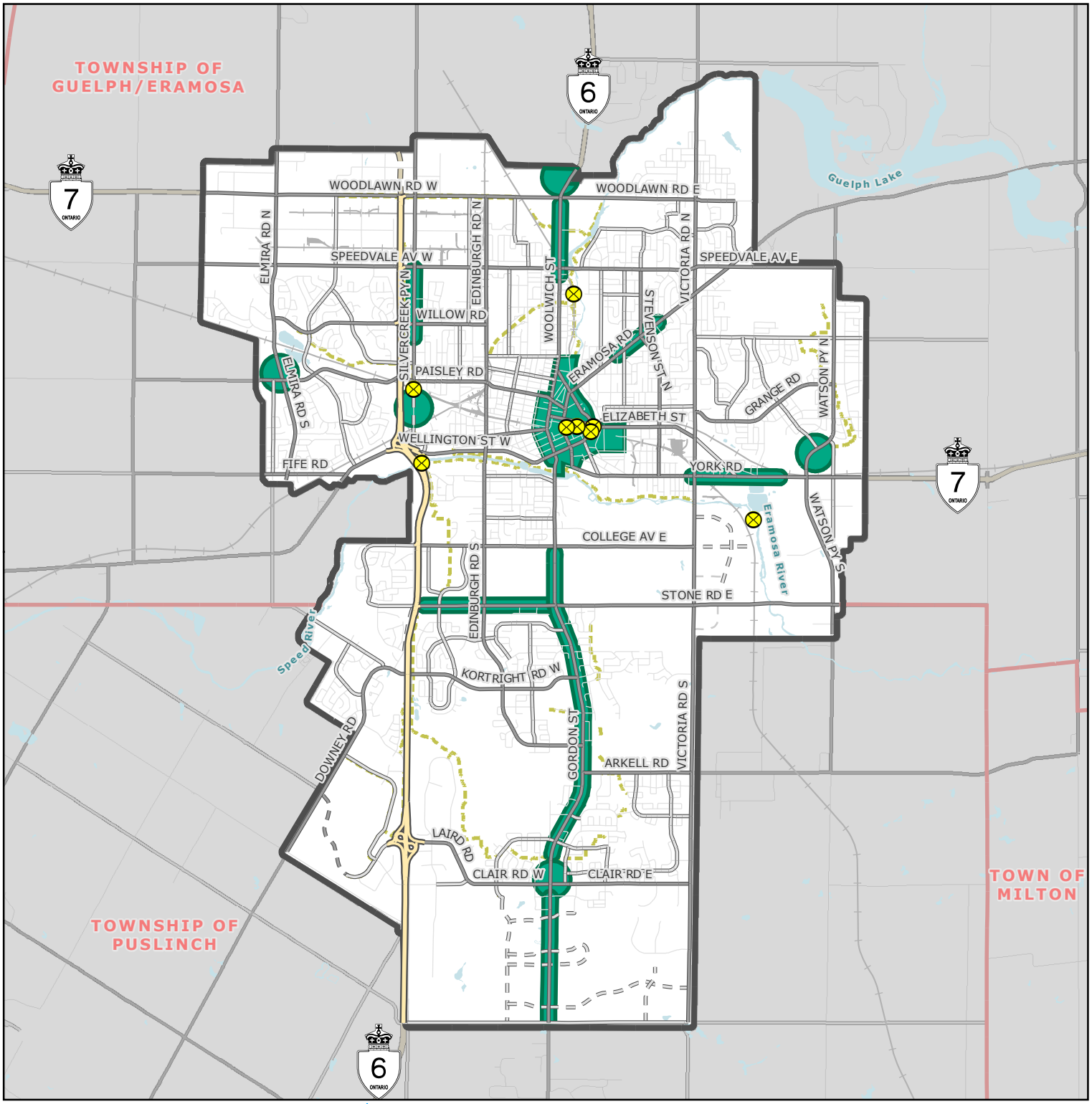
PROJECT: 18-8919
STATUS: DRAFT
DATE: 2022-05-31



PEDESTRIAN NETWORK

- Recommended Barrier Crossings Walking/Cycling
- Enhanced Pedestrian Realm

BASE DATA

- Municipal Boundaries
- Active Transportation Network
- Expressway (MTO)
- Arterial
- Collector Road
- Local Road
- Approved Expressway (MTO) (OP)
- Approved Arterial Road (OP)
- Approved Collector Road (OP)
- Approved Local Road (OP)
- Railway and Rail Yard
- Waterbody

2022 Transportation Master Plan

Schedule 2: Pedestrian Priority Network

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MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
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PROJECT: 18-8919
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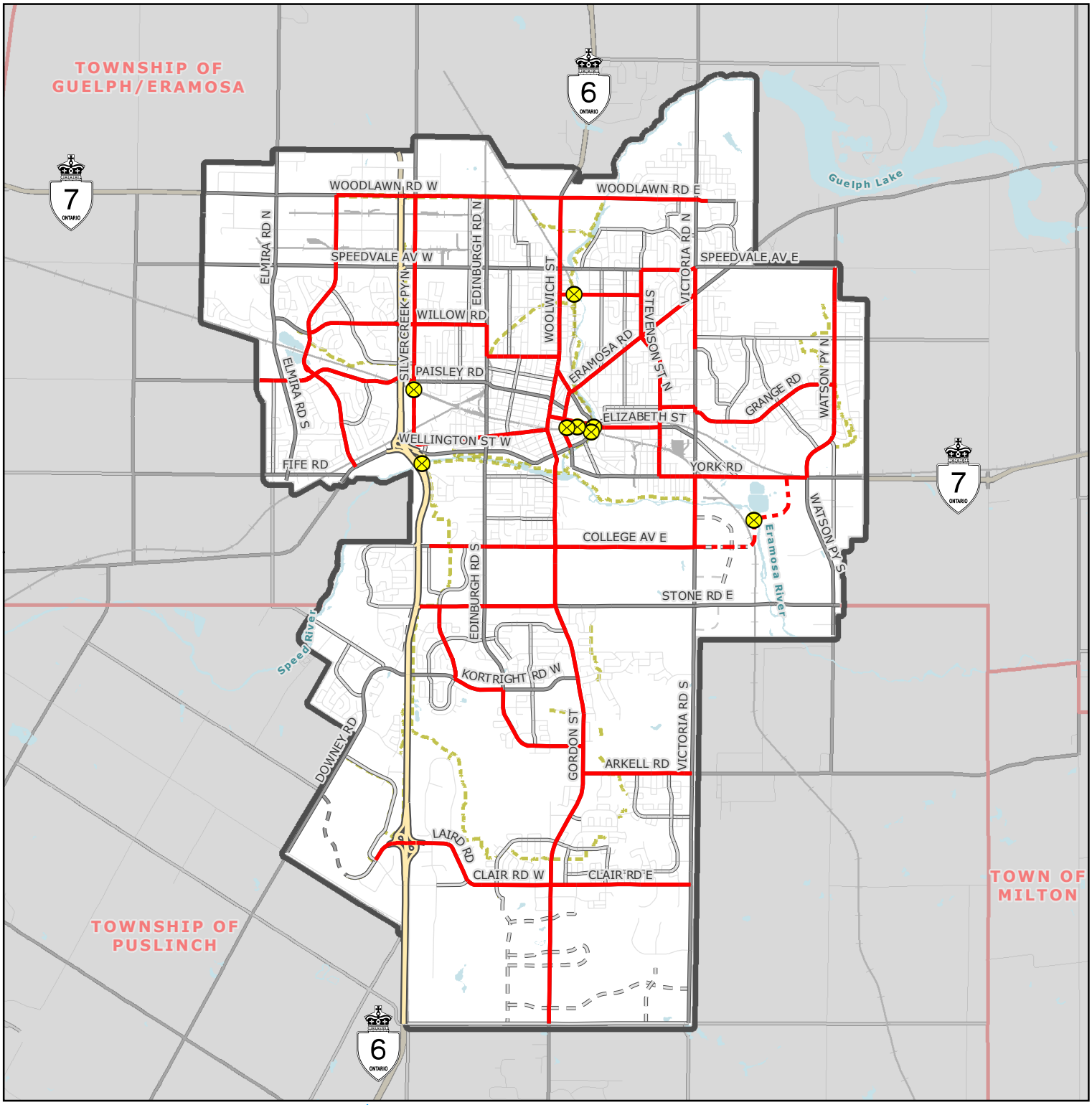

CYCLING SPINE NETWORK

- Recommended Barrier Crossings Walking/Cycling
- On-Street Spine Cycling Network
- Future Spine Connection Route (to be determined)

BASE DATA

- Municipal Boundaries
- Active Transportation Network
- Expressway (MTO)
- Arterial Road
- Collector Road
- Local Road
- Approved Expressway (MTO) (OP)
- Approved Arterial Road (OP)
- Approved Collector Road (OP)
- Approved Local Road (OP)
- Railway and Rail Yard
- Waterbody

2022 Transportation Master Plan

Schedule 3: Cycling Spine Network

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

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MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

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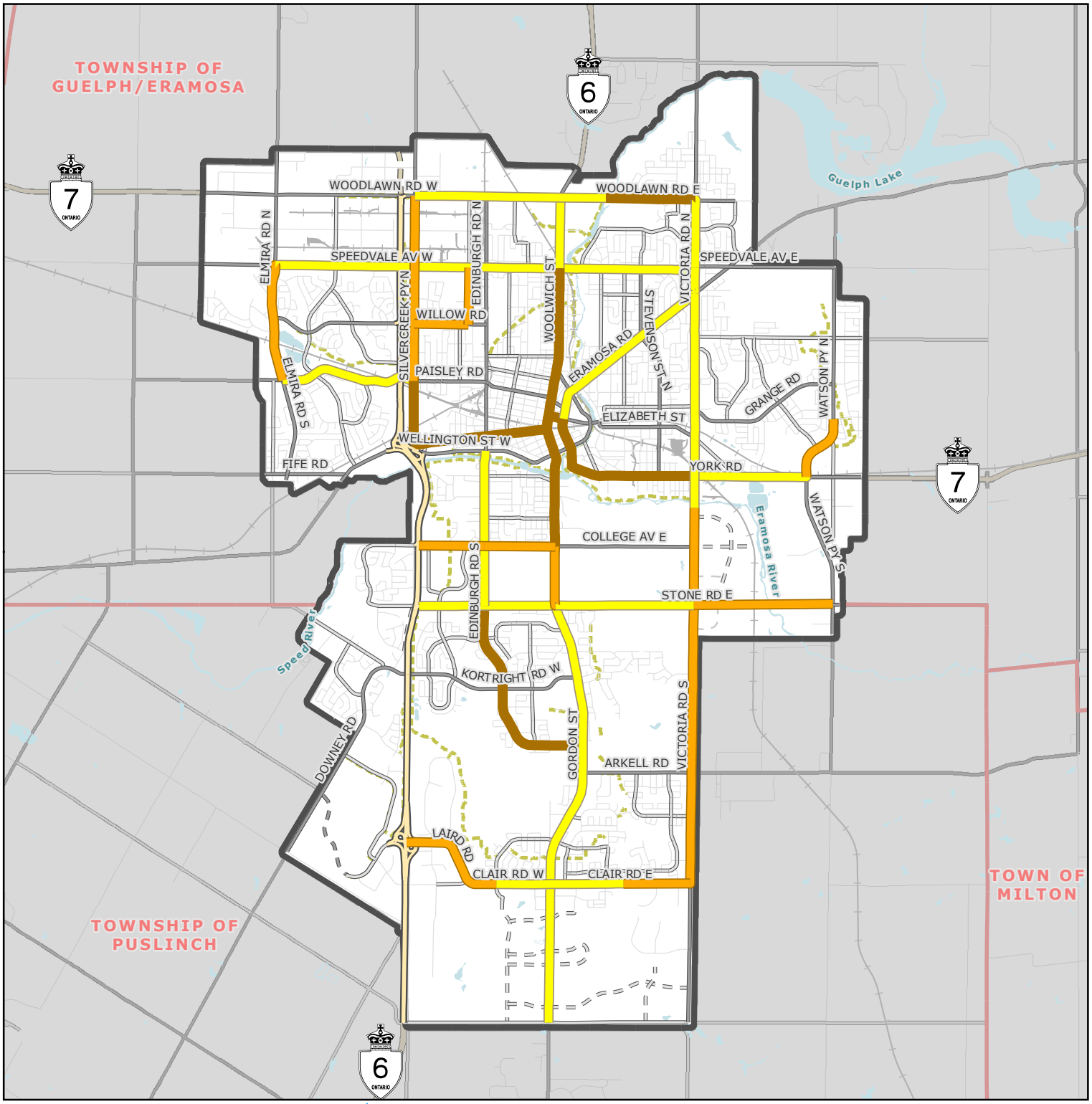
PROJECT: 18-8919
STATUS: DRAFT
DATE: 2022-05-31



QUALITY TRANSIT NETWORK

- Quality Transit Network - potential lane conversion
- Quality Transit Network - potential widening to 4 lanes
- Quality Transit Network - optimization only

BASE DATA

- Municipal Boundaries
- Active Transportation Network
- Expressway (MTO)
- Arterial Road
- Collector Road
- Local Road
- Approved Expressway (MTO) (OP)
- Approved Arterial Road (OP)
- Approved Collector Road (OP)
- Approved Local Road (OP)
- Railway and Rail Yard
- Waterbody

2022 Transportation Master Plan

Schedule 4: Quality Transit Network

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
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PROJECT: 18-8919
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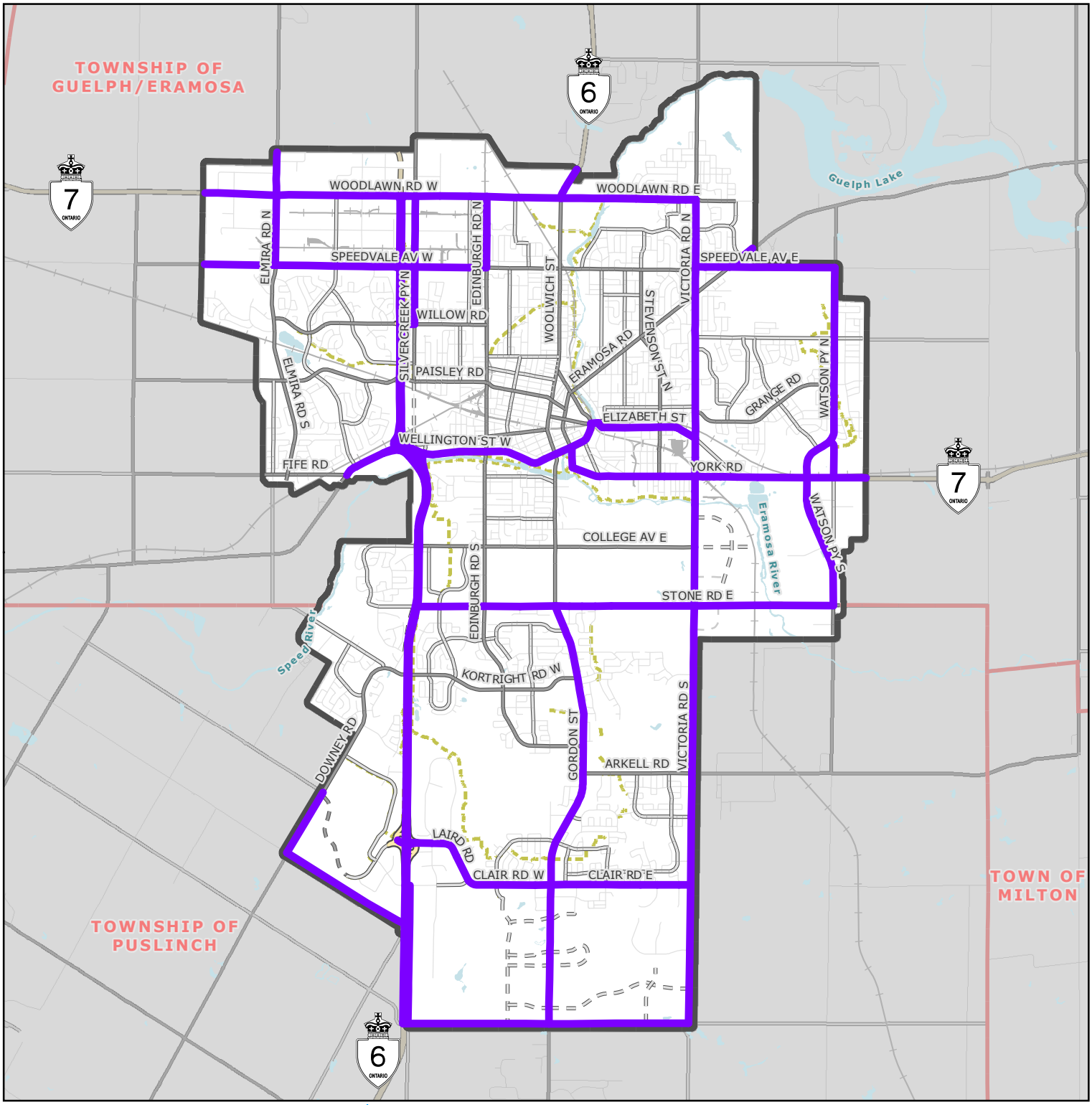

Existing 2021 Permissive Truck Routes

BASE DATA

- Municipal Boundaries
- Active Transportation Network
- Expressway (MTO)
- Arterial Road
- Collector Road
- Local Road
- Approved Expressway (MTO) (OP)
- Approved Arterial Road (OP)
- Approved Collector Road (OP)
- Approved Local Road (OP)
- Railway and Rail Yard
- Waterbody

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Schedule 5: Existing Goods Movement Network

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MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
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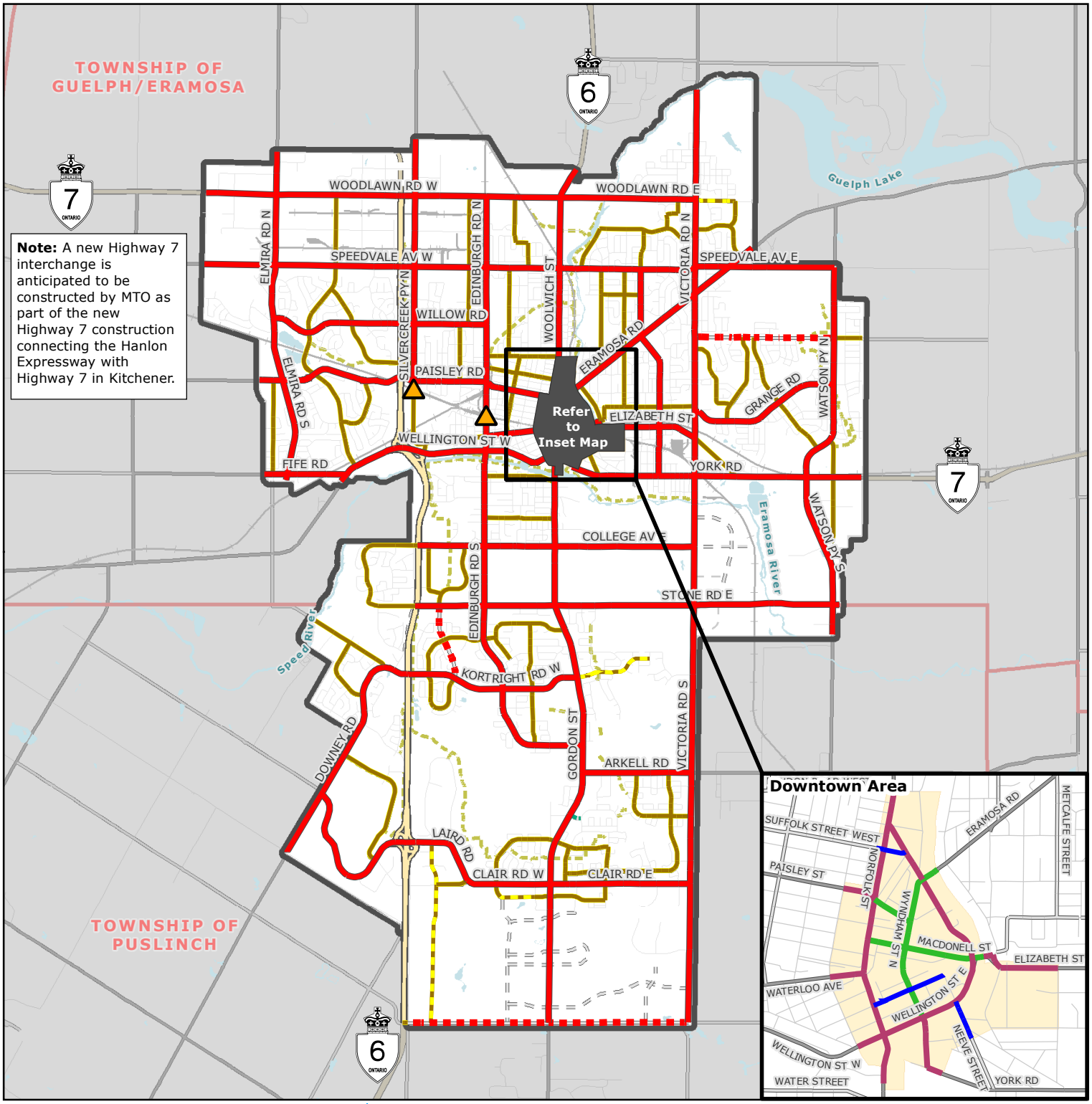
PROJECT: 18-8919
STATUS: DRAFT
DATE: 2022-05-31



Recommended Grade Separation
Arterial
Recommended Change to Arterial
Collector
Recommended Change to Collector
Recommended Change to Local

Downtown Road Classification
Primary Street
Downtown Main
Secondary Street
Downtown Area

BASE DATA
Municipal
Active Transportation Network

Expressway (MTO)
Arterial Road
Collector Road
Local Road
Approved Expressway (MTO) (OP)
Approved Arterial Road (OP)
Approved Collector Road (OP)
Approved Local Road (OP)

Railway and Rail Yard
Waterbody

2022 Transportation Master Plan

Schedule 6a: 2051 Street Hierarchy

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
KM
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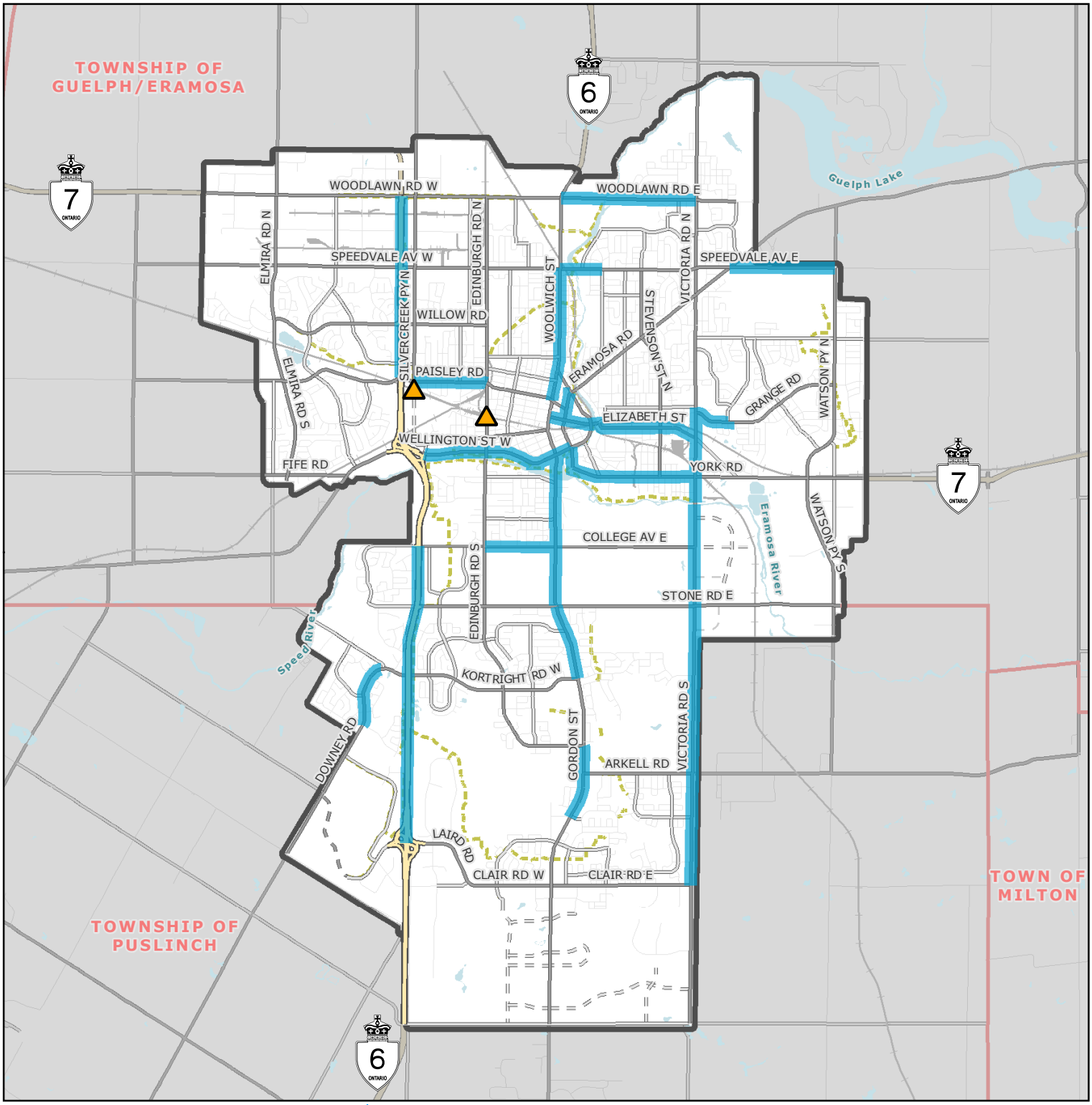
PROJECT: 18-8919
STATUS: DRAFT
DATE: 2022-05-31



Recommended Grade Separation

CAR MOBILITY IMPROVEMENTS

Car Mobility - optimization and mode shift

BASE DATA

Municipal Boundaries

Active Transportation Network

Expressway (MTO)

Arterial Road

Collector Road

Local Road

Approved Expressway (MTO) (OP)

Approved Arterial Road (OP)

Approved Collector Road (OP)

Approved Local Road (OP)

Railway and Rail Yard

Waterbody

2022 Transportation Master Plan

Schedule 6b: Car Priority Network

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000

KM

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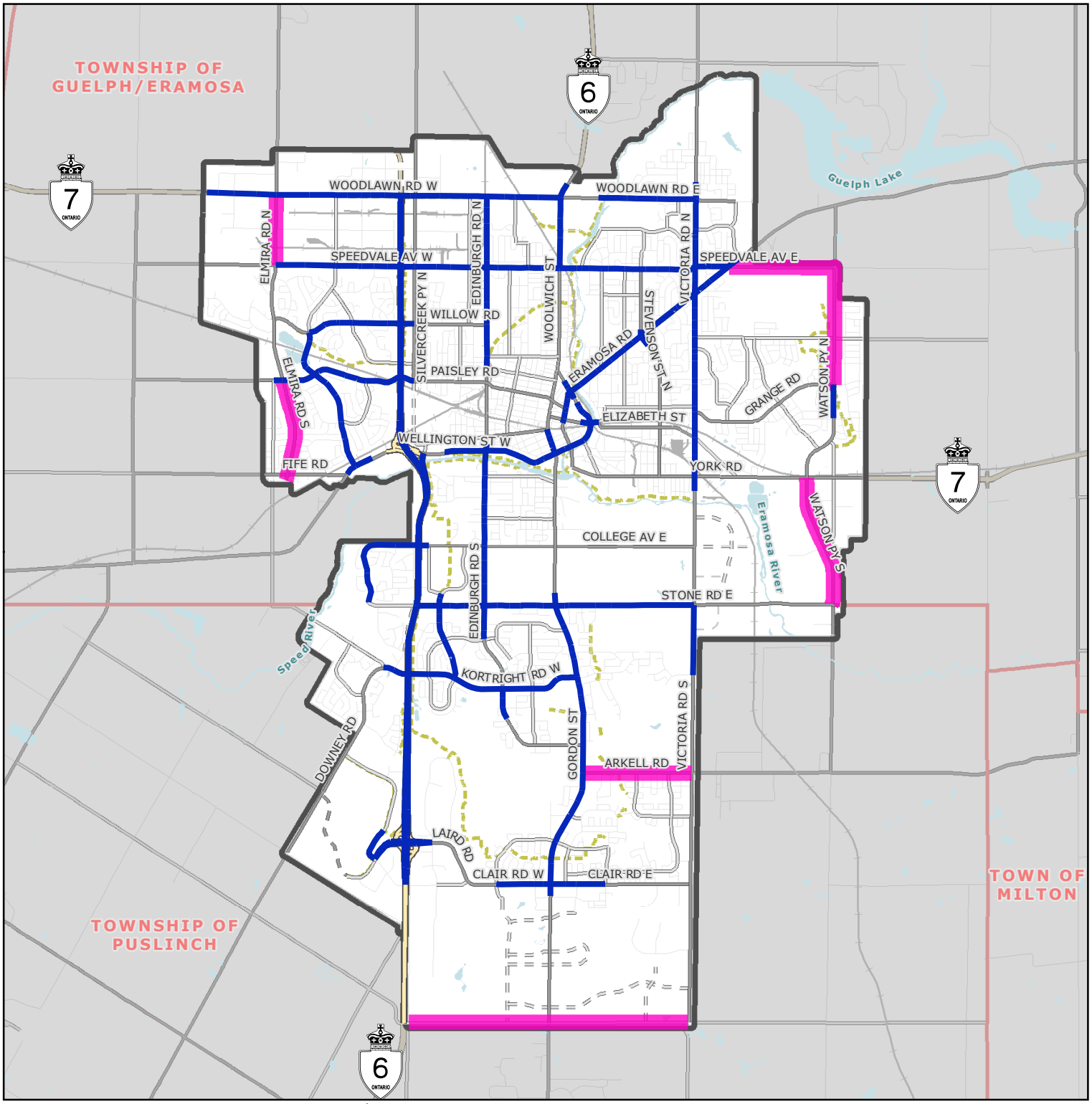
PROJECT: 18-8919
STATUS: DRAFT
DATE: 2022-05-31



4 Lane Arterial

Potential Resiliency Widenings

BASE DATA

- Municipal Boundaries
- Active Transportation Network
- Expressway (MTO)
- Arterial
- Collector Road
- Local Road
- Approved Expressway (MTO) (OP)
- Approved Arterial Road (OP)
- Approved Collector Road (OP)
- Approved Local Road (OP)
- Railway and Rail Yard
- Waterbody

2022 Transportation Master Plan

Schedule 6c: Resiliency Network

MAP DRAWING INFORMATION:
DATA PROVIDED BY CITY OF GUELPH 2019, MNRF 2019

MAP CREATED BY: GAM/LMM
MAP CHECKED BY: SD
MAP PROJECTION: NAD 1983 UTM Zone 17N

SCALE 1:80,000
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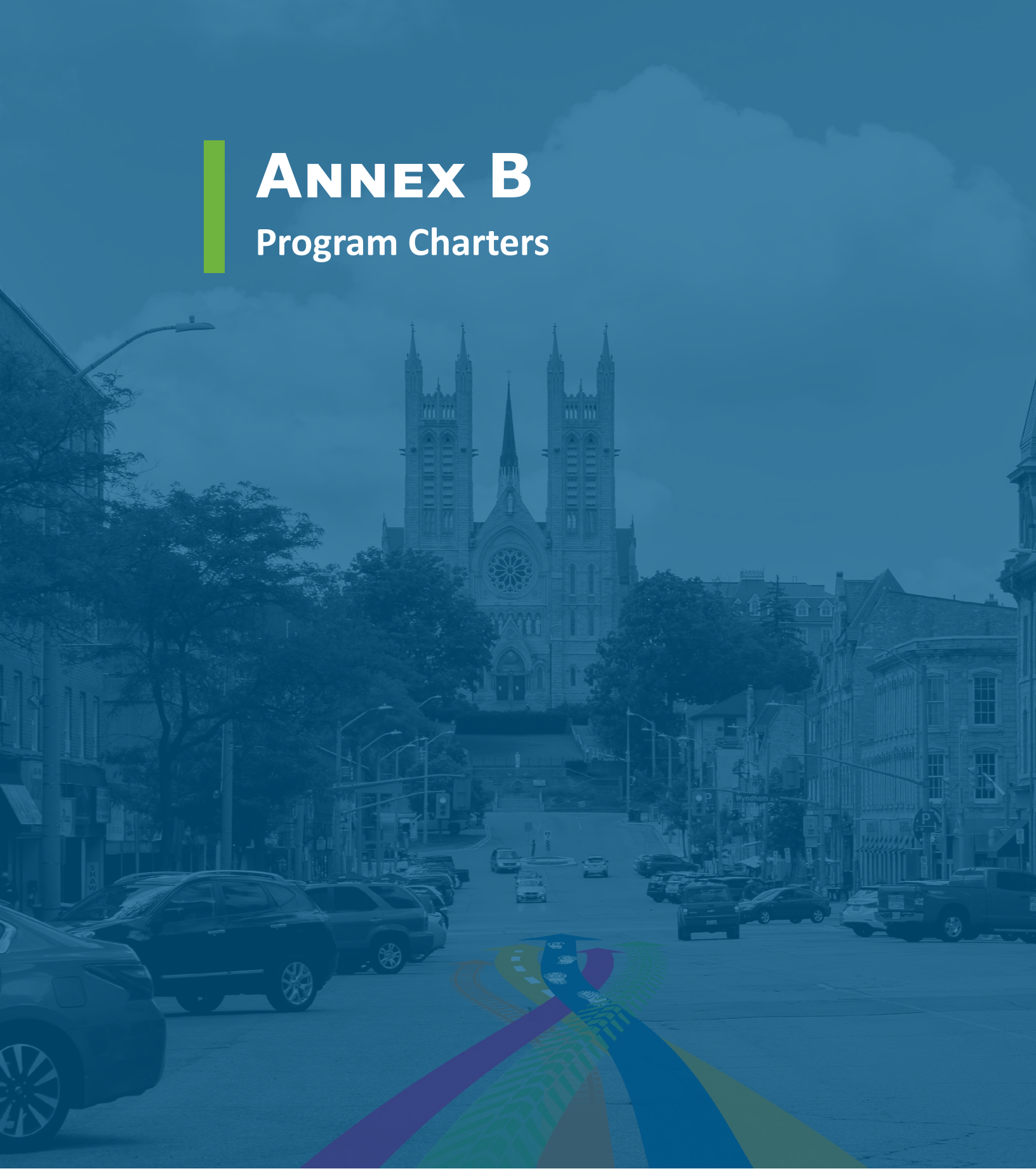
PROJECT: 18-8919
STATUS: DRAFT
DATE: 2022-05-31

Annex B

Program Charters



Transportation Master Plan

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City of Guelph Transportation Master Plan

Program Charters

November 2021 – 18-8919

Contents

Glossary of Terms

- A -

Active Transportation – The transport of people or goods through human-powered means, including walking, cycling and skateboarding.

Active Transportation Network – On-road and off-road infrastructure network for pedestrians and cyclists.

All Ages and Abilities (AAA) facilities – Bicycle facilities which are comfortable and attractive to use for people of all ages and abilities (including barrier-free, age-friendly, and universal design), with an additional focus on intersection safety.

- C -

Complete Streets Design Guideline – A guide that provides policy and design guidance on the planning, design, and operation of roadways to help implement the City's Official Plan vision for complete streets and other city building objectives.

Cycling Spine Network – A network of cycling routes with high-quality on-street cycling facilities that connect all areas of the City, and designed to support and encourage cycling by people of all ages and abilities. These spine routes represent the core of the City's larger cycling network.

- G -

Goods Movement Strategy – A strategy to help determine the transportation infrastructure improvements need to be made to help the support the goods movement industry.

- I -

Intelligent Transportation Systems – A combination of information and communication technologies used in transportation and traffic management to improve the safety, efficiency, and sustainability of transportation networks, reduce traffic congestion, and to enhance drivers' experiences.

Internet of Things (IoT) – Interconnection of everyday devices via the internet.

- L -

Level of Service (LOS) – A qualitative measure used to determine how well a transportation facility is operating.

Low-Impact Development – A planning and engineering approach to storm water management to minimize storm water runoff and filter, store and return rainwater and snow melt to the ground

- M -

Major Transit Station Areas (MTSA) – The area including and around any existing or planned higher-order transit station within a settlement area, or the area including and around a major bus depot in an urban core. Station areas generally are defined as the area within an approximate 500 metre radius of a transit station, representing about a 10-minute walk.

Micromobility – Refers to the use of light vehicles that can carry one or two passengers at a time, such as bicycles, scooters, and even small vehicles. Micromobility can be human-powered or powered by an electric motor.

Micro-transit – a form of demand responsive shared transport that offers flexible routing and/or scheduling.

Mobility-as-a-Service (MaaS)– An emerging user-oriented philosophy that takes advantage of digital platforms and real-time data to get a user of the service from point A to point B in the most convenient and personalized way possible for one single fee. MaaS leverages modern transportation options to optimize personal mobility. When planning a route, MaaS platforms can link transit, ride-hailing, car-sharing, micromobility, walking, and more to create one seamless trip for the user of this service.

Multimodal Level of Service Guidelines – A guide that provides policy and design guidance on the planning, design, and operation of roadways and intersection to help implement the City's Official Plan vision for complete streets. It provides guidance on how to assess the levels of service for various modes of transportation and their impacts, and what the specific target service levels for each mode should be given the location and context the transportation project.

- O -

Official Plan – Sets out the City's vision and goals for the future, and describes policies on how land in the City should be used. The Official Plan helps to ensure that future planning and development will meet the specific needs of your community.

- P -

Park-and-Ride facilities – Parking lots with public transport connections that allow commuters and other people to leave their vehicles and transfer to a bus, rail system, or carpool for the remainder of the journey.

Pedestrian Priority Network – A network of wide sidewalks and high-quality walking environments in areas of highest pedestrian activity in the city, such as Downtown Guelph, designed to support and encourage walking for people of all ages and abilities.

- S -

Smart signals – Traffic signals at intersections that detect traffic conditions and automatically adjust operations to optimize flow.

- T -

Transportation Demand Management (TDM) – A series of polices, programs and incentives intended to influence whether, when, where and how people travel, and encourage them to make more efficient use of the transportation system.

Transit Priority Measures – A collection of techniques and tools to reduce delay for public transit vehicles.

Transportation Systems Management (TSM) – uses operating strategies to increase capacity on the road network without increasing its physical size. Transportation system management includes measures such as transit signal priority at intersections, signal coordination, or dedicated lanes for high-occupancy vehicles.

-V-

Vision Zero – a global movement based on a safe systems approach to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.

City of Guelph Transportation Master Plan

Active Transportation Program

November 2021 – 18-8919

1.0 Active Transportation

1.1 Definition

Active Transportation requires a person to move themselves to a destination through non-motorized means. Examples of active transportation include, walking, cycling, scootering, and rollerblading. It can also include electric-powered bicycles, scooters and other '*micro-mobility*' devices that require human power to move them.

1.2 Background

1.2.1 Purpose

The City aims to reduce greenhouse gas emissions, promote healthy, active living amongst residents, and manage vehicle congestion. To achieve these goals, the City focuses on providing easily accessible active transportation infrastructure and resources.

1.2.2 Goal

The goal of Active Transportation Program is to support the mobility needs of a community in a manner that least damages the environment, while also balancing current and future transportation needs. The main actions include:

- Increase walking mode share target to 15% by 2051;
- Increase cycling mode share target to 10% by 2051;
- Design new and transform existing streets and pathways to meet All Ages and Abilities (AAA);
- Promote, facilitate, and design for *micro-mobility*;
- Update and implement the Cycling Master Plan, Active Transportation Network and Pedestrian Master Plan;
- Increase bicycle parking throughout the Downtown and other commercial/employment centres;
- Develop a comprehensive list of active transportation initiatives currently underway in the City;
- Support efforts to reduce annual community greenhouse gas emissions by 60% from 2007 levels to 7 tonnes of carbon dioxide (equivalent) per capita by 2031;
- Support City efforts toward 100% renewable energy for all City facilities and operations by 2050;
- Form partnerships and support advocacy groups to enhance cycling; and
- Fill connectivity gaps within the active transportation network.

1.2.3 Program Description:

Active transportation is part of the sustainable transportation group at the City of Guelph. The Active Transportation Program supports the mobility needs of a community in a manner that is the least harmful to the environment as possible, while also

providing equitable and affordable options for getting around. The Active Transportation program is responsible for implementing context-appropriate cycling and pedestrian infrastructure for road corridors and intersections in the city to complete the planned cycling and sidewalk networks.

The mandate also includes data collection and analysis, network planning, policy development and development review. Active Transportation staff coordinate with Public Works, Parks Planning and Engineering Services regularly to implement the various master plans under its supervision.

The Active Transportation program was initiated with the City's 2013 Cycling Master Plan, and expanded to include the Active Transportation Network and Sidewalk Needs Assessment plans, along with the coordination efforts with other City departments to implement these plans.

In future, the Active Transportation Program will also encompass other forms of *micro-mobility* such as push-scooters and other technologies.

1.3 TMP Objectives for the Program

This section provides an overview of the key objectives the City should fulfill for the future of the Sustainable transportation program.

- Coordinate data collection to support evidence-based policy and planning decisions
- Coordinate the implementation and update of the various plans for active transportation, such as the cycling master plan, pedestrian plan and active transportation network with (Policies 1.1, 2.1.1.2, 2.1.1.3, and 2.1.1.7)
- Incorporate an equity lens into active transportation planning and strategy
- Provide input into road design projects to facilitate implementing the various active transportation networks
- Provide input into city policies such as master plans, zoning by-law, and secondary plans to support the goals of the Transportation Master Plan (TMP) for active transportation
- Review development applications and subdivision applications to ensure compliance with Official Plan and TMP policies that support active transportation
- Deliver *Multimodal Level of Service Guidelines and Complete Streets Design Guidelines* (Policy 1.2.1.2)
- Support efforts to expand winter maintenance of the *Cycling Spine Network* and active transportation network (Policy 2.1.2)

1.4 Potential Partnerships

Community advocacy groups;

- Seniors associations;
- Guelph-Wellington Local Immigration Partnership;
- *Micro-mobility* service providers such as bike-shares or scooter-share programs;
- Local public health agency;

- Other levels of government for infrastructure funding opportunities;
- Chamber of Commerce; and
- Internal partnerships: Economic Development and Tourism, Solid Waste (bike reuse program), Public Works (maintenance and operations), Trails (off-road connectivity).

1.5 Resource Requirements

It is important to reflect the mode share targets in the proportionate staff and budget resourcing for the sustainable transportation program.

There are currently ten full-time positions in Transportation and Engineering Services dedicated to ensuring road design and traffic operations are maintained to support the current mode share of 80% of daily trips made by car. Two full time positions are currently dedicated to sustainable transportation, one of which is fully dedicated to Active Transportation and the other who offers some support but focuses on Transportation Demand Management (Chapter 2).

To support the mode shift to sustainable modes, it is recommended to grow the Sustainable transportation program staff complement between now and 2051 to six full-time positions. Two of these positions would be for supporting the planning, design, construction and use of active transportation facilities.

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City of Guelph Transportation Master Plan

Transportation Demand Management (TDM) Program

November 2021 – 18-8919

2.0 Transportation Demand Management (TDM)

2.1 Definition

Transportation Demand Management (TDM) is a term used to describe a suite of initiatives aimed at reducing traffic volumes (demand) on the road network, particularly in the commuter peak hours, by targeting driver behaviour and mode choice. It is different than Transportation System Management (covered in Chapter 4.0), which focuses on reducing traffic volumes through physical changes to infrastructure.

TDM include such broad strategies as:

- Influencing how people travel and what mode they choose
- Influencing when people travel to reduce congestion during peak hours
- Influencing where people travel through land use and transportation planning decisions

Approaches to TDM include education, marketing and outreach, policies, development/land use, and travel incentives/disincentives.

2.2 Background

2.2.1 Purpose

TDM is the active management of travel demand in a transportation system to increase system efficiency and achieve a variety of objectives, such as reducing greenhouse gases or improving congestion, by influencing how, why, when, and where people travel. It is an economical and efficient way to maximize the return on investment for transportation services and infrastructure.

2.2.2 Goal

The goal of the Transportation Demand Management (TDM) program is to reduce congestion and shift more trips to sustainable options like walking, cycling, and taking the bus. The main actions include:

- Supporting the TMP's mode share target of 40% by non-auto modes by 2051;
- Develop robust TDM guidelines for development application approvals;
- To influence the shape of development, develop a TDM checklist for development applications;
- Incorporate an equity lens approach to TDM planning and strategy (Policy 3.1.2.2)
- Deliver effective communications and marketing about TDM ;
- Engage with businesses and organizations to encourage the development of TDM programs;
- Support the development and maintenance of a Connectivity Index to track the multimodal connectivity of the City's transportation networks; and
- Develop a comprehensive list of TDM initiatives currently underway in the City.

2.2.3 Program Description

The program targets education and outreach efforts related to walking and cycling, carshare and carpooling. It also participates in development application review to ensure new development is built according to the Official Plan policies to support sustainable transportation and reduce trip generation where possible.

The 2005 Guelph-Wellington Transportation Strategy led to the creation of the TDM program in 2006. The program has covered educational outreach activities in schools and employers,

This section reviews the TDM program in Guelph today, which operates as part of the larger Sustainable transportation program. This program is run by staff from Engineering and Transportation Services.

Both Guelph's *Official Plan* and the 2005 Guelph-Wellington Transportation Study mandate the development of a TDM program. As a result, the existing TDM program was launched in 2006 under the direction of the sustainable transportation program. Below are examples of a few of the initiatives.

Active and Safe Routes to School

Public Health and the TDM group have been co-leads on the Active and Safe Routes to School initiative since 2006. The consortium of stakeholders overseeing this initiative also includes local school boards and Guelph Police Service. As part of the initiative, the TDM group helps develop school travel plans and walk to school programs.

Development Reviews

The TDM group also helps apply a TDM lens to development reviews. Members of the TDM group review site layout and site-specific context in order to inform comments on site plans and development applications. They then use an internal TDM checklist to identify and recommend additional TDM measures if required (e.g. adding bicycle parking, limiting car parking).

In the future, the TDM program has a goal of providing more TDM resources to developers. It also intends to launch a TDM strategic plan that will provide context-sensitive strategies for different areas of Guelph, including industrial areas, institutional areas, and downtown. The strategic plan will identify performance metrics that will be regularly reported to identify the initiative's progress and areas for improvement.

Carshare

The TDM groups works with local carshare providers to help find convenient locations for them to park, and promote these services to the community.

2.3 TMP Objectives for the Program

This section provides an overview of the key objectives the City should fulfill for the future TDM program.

- Develop a comprehensive TDM strategic plan to guide the work of this program
- Update and implement TDM strategies that reflect the needs and opportunities of

the community to achieve the TMP's mode share targets and maximize the efficient use of existing transportation infrastructure

- Form partnerships and support community collaborations to facilitate sustainable transportation and TDM initiatives
- Implement a coordinated branding, marketing and wayfinding strategies with active transportation, transit and trails
- Ensure that TDM is disseminated and effectively communicated to both Guelph staff, council and residents. (Policy 5.1.2.7)
- Ensure land use and urban design sustainable transportation include appropriate TDM measures through the development review process (Policy 5.1.2.7)
- Support the City's net zero carbon target by encouraging low or zero-emission transportation options including carsharing, ridesharing, and transit (Policy 5.4.2.1)
- Develop and maintain a TDM checklist for development applications (Policy 5.1.2.7)
- Increase the amount of park and ride and rideshare facilities near transit facilities
- Investigate micro-mobility options (Policy 5.6.1.1)
- Collaborate with regional TDM programs to support inter-city travel

2.4 Potential Partnerships

- School boards;
- University of Guelph and Conestoga College;
- Chamber of Guelph and Downtown Guelph Business Association;
- Guelph-Wellington Local Immigration Partnership;
- Large employers / Chamber of Commerce;
- Local environmental and transportation-related organizations;
- Our Energy Guelph;
- Internal partnerships: Economic Development and Tourism;
- Community advocacy groups;
- SmartCommute / Travelwise and
- Carshare providers

2.5 Resource Recommendations

It is important to reflect the mode share targets in the proportionate staff and budget resourcing for the sustainable transportation program. There are currently ten full-time positions in Transportation and Engineering Services dedicated to ensuring road design and traffic operations are maintained to support the current mode share of 80% of daily trips made by car. Two full time positions are currently dedicated to sustainable transportation.

There is currently one position dedicated to Transportation Demand Management, with some duties to support the Active Transportation program as well. To support the mode

shift to sustainable modes, it is recommended to grow the Sustainable transportation program staff complement between now and 2051 to six full-time positions. Two of these positions would be for supporting the Transportation Demand Management program.

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City of Guelph Transportation Master Plan

Strategic Transportation Planning Program

November 2021 – 18-8919

3.0 Strategic Transportation Planning

3.1 Definition

Strategic Transportation Planning is the process of designing the transportation network, facilities, and services to align with the Vision and Goals of the TMP. Strategic Transportation Planning requires a strong understanding of the impact of social and economic aspects that impact how, when, and why people move.

3.2 Background

3.2.1 Purpose

Strategic Transportation Planning is required to ensure population and employment growth can be accommodated by the transportation network. It considers regional and provincial policy and development impacts on the local transportation network.

3.2.2 Goal

The goal of Strategic Transportation Planning is to ensure people and goods can move safely and effectively throughout the City. It will inform policies, development and road design decisions through the collection, analysis, and interpretation of multimodal transportation data. The main outcomes include:

- Confirm and prioritize streets, trails, and routes for improvements in the Capital budget;
- Develop a *Complete Streets Design Guide* to guide all future street design by 2023;
- Develop a *Multimodal Level of Service* Guideline to evaluate the multimodal performance of streets by 2023;
- Develop a comprehensive *Goods Movement Strategy*;
- Maintain the City's Travel Demand Forecasting Model;
- Approach transportation planning with an equity lens;
- Support the required studies and assessments to implement TMP road network improvements; and
- Ensure development is compatible with the road network and transportation safety regulations and guidelines.

3.2.3 Program Description

The City's (Strategic) Transportation Planning group is currently responsible for:

- Maintaining the City's Travel Demand Forecasting Model;
- Leading all transportation network planning studies and corridor studies / Environmental Assessments
- Providing City input to network planning studies and corridor studies/ Environmental Assessments that are of interest to the City that are led by others (e.g., Metrolinx, the Ministry of Transportation of Ontario, County of Wellington)

- Providing transportation planning expertise on multi-disciplined City projects (e.g., the Clair-Maltby Master Servicing Plan, the Downtown Secondary Plan, etc.)
- Review development applications to ensure the road network and road geometrics can support the development and that safety standards are met

Guelph has already begun implementing and incorporating many Transportation Planning network trends including complete streets, complete networks, place-making for transportation corridors, and equity-based initiatives.

3.3 TMP Objectives for the Program

This section provides an overview of the key objectives the City should fulfill for the future Transportation Planning program.

- Prepare and maintain the Comprehensive *Goods Movement Strategy* (Policy 4.1.1)
- Prepare and maintain a City-wide guideline for preventative road safety measures (Policy 5.3.1)
- Develop a city-wide strategy for roundabouts (Policy 5.3.1.3)
- Ensure all related City plans are periodically reviewed and updated to align with the TMP goals (Policy 5.5.1.1)
- Update and maintain the City's transportation model
- Incorporate an equity lens approach to strategic transportation planning (Policy 3.1.2.2)
- Support the completion of Environmental Assessments required to implement the TMP Sustainability and Resiliency network plan
- Review development applications to ensure compatibility with the road network and transportation safety regulations and guidelines
- Continue to ensure the road network and system safely accommodate new development (Policy 5.1.2)
- Review (and if necessary, update) the City's Downtown Parking Strategy to support park-and-ride opportunities;

3.4 Potential Partnerships

Strategic Transportation Planning has the following potential partnerships:

- Metrolinx
- Ministry of Transportation of Ontario
- Adjacent municipalities

3.5 Resource Recommendations

There is currently one Transportation Planning Engineer fulfilling these objectives. To effectively keep up with population and employment growth projections and resulting transportation planning needs, it is recommended that this program be staffed by two full-time strategic transportation planners.

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City of Guelph Transportation Master Plan

Transportation System Management (TSM) Program

November 2021 – 18-8919

4.0 Transportation System Management (TSM)

4.1 Definition

Transportation System Management (TSM) uses operating strategies to increase capacity on the road network without increasing its physical size. TSM includes measures such as transit signal priority at intersections, signal coordination, or dedicated lanes for high-occupancy vehicles. It differs from *Transportation Demand Management* (TDM), which focuses on reducing traffic volumes by targeting driver behaviour and mode choice.

There is no formal TSM program at the City. However, groups and individuals fill many of the common TSM functions, including:

- Data collection
- Traffic signal design and operations
- Traffic investigations related to speed, driver behaviour, local congestion
- Intersection modifications and optimization
- Development review

4.2 Background

4.2.1 Purpose

Existing transportation infrastructure is not always equipped to manage an increase in traffic congestion. To make the transportation system as efficient as possible, communities often turn to TSM.

4.2.2 Goal

The goal of TSM is to increase the safety, capacity, efficiency, or level of service of a transportation facility without the need for new and expensive transportation infrastructure. The main actions include:

- Manage peak period congestion without increasing the physical size of the roadway
- Develop innovative intersection design to reduce delay and emissions from idling;
- Support transit priority measures to increase transit service and convenience;
- Accommodate all modes and reduce both delay and emissions by investing in selected capacity improvements to existing major street network operations; and
- Manage parking supply and demand both on- and off-street in the Downtown, and on-street city-wide
- Explore parking regulations and strategies city-wide and update the traffic and parking bylaws accordingly;
- Implement traffic flow improvements on regionally significant roads;
- Maintain the Traffic Bylaw to reflect changes to new infrastructure designs and standards that support active transportation and new technologies in micro-mobility.

4.2.3 Program Description

Transportation Systems Management uses various low-cost strategies to maintain or reduce travel time, maximize the efficiency of the transportation network, and improve the utilization of existing transportation facilities. Key examples include higher frequency public transit, eliminating on-street parking to add lanes, and making active transportation more convenient.

4.3 TMP Objectives for the Program

This section provides an overview of the key objectives the City should fulfill for the future TSM program.

- Develop a Transportation Systems Management Strategy and Action Plan that considers congestion management, access management, *transit priority, intelligent transportation systems and smart signals,* curbside management, and data collection (Policy 5.6)
- Manage congestion on road network during peak periods through signal optimization, smart signal technologies, alternative transportation facilities, and by maximizing the use of roadway before investing in new or expanded facilities
- Incorporate an equity lens approach to Transportation Systems Management planning and strategy
- Develop planning and design guidelines for roundabouts (Policy 5.3.1.3)
- Implement traffic flow improvements on important arterial roadways
- Collect and manage traffic count and turning movement data
- Coordinate the management of operational impacts of Metrolinx and other rail providers on the city's road network

4.4 Potential Partnerships

This section outlines the potential local partnerships the City can further develop or establish. It is recommended that Guelph continue to research, investigate, and implement Transportation Systems Management strategies. It is recommended that future partnerships be leveraged for engagement and public participation activities when TSM is a priority.

The following partnerships can be levied by the City:

- Wellington County;
- First Responder Committee / Guelph Police Services;
- Business Improvement Association / Downtown Guelph Business Association.
- Metrolinx

4.5 Resource Recommendations

It is recommended that the existing eight positions be maintained to continue to manage and operate the City's traffic signals, road operations and road safety programs.

An additional full-time employee is recommended to support expanding and maintaining the data collection program.

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City of Guelph Transportation Master Plan

Road Safety Program

November 2021 – 18-8919

5.0 Road Safety

5.1 Definition

Road safety refers to the strategies, tools, and measures cities can use to prevent collisions resulting in injuries and deaths. All road users are impacted by road safety.

There are four important areas of focus in current industry discussions about improving safety of roads: street function and design, intersection design, designing cycling facilities for all ages and abilities (*AAA facilities*), and *Vision Zero*, a global movement based on a safe systems approach to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.

Additionally the safe systems approach is a helpful framework for managing road safety and is based on the principles that life and health should not be compromised by the need to travel and that no level of death or serious injury is acceptable in our transportation network. According to the safe systems approach, safe transportation systems consist of four main elements: safer roads, safer road use, safer speeds, and safer vehicles.

5.2 Guelph's History with Road Safety

5.2.1 Purpose

Road-related incidents of injury and death continue to be a persistent challenge in many jurisdictions. Therefore, communities across Canada and around the world are emphasizing road safety in long-range planning and day-to-day operational decisions.

Many communities have developed road safety programs to address the safety concerns impacting all road users. For example, the Safe Roads Waterloo Region campaign is dedicated to reducing injuries and deaths caused by traffic collisions on roads. The program aligns with the global Vision Zero movement. More information can be found on the campaign website.

5.2.2 Goal

The goal of road safety programs is to provide strategies that improve road safety to benefit all users, regardless of their age, ability, or mode of transportation. The main outcomes include:

- Recommend formal Council adoption of Vision Zero
- Reduce roadway speeds on selected streets, as required
- Improve cooperation, communication and collaboration among stakeholders in existing initiatives and programs;
- Reduce the number of collisions and collision severity on roadways;
- Implement safer road and intersection design practices;
- Update and follow the City's Traffic Calming Strategy; and
- Support the development of *Multimodal Level of Service* Guidelines that include safety analysis for links and intersections.

Although the City of Guelph has not formally adopted a Vision Zero approach, many of the safe systems principles and preferred strategies to address road safety are in line with Vision Zero.

5.2.3 Program Description

Guelph has several plans and strategies already in place to improve the safety on the roads for its communities, which are actively managed through a number of initiatives and programs. These initiatives and programs are briefly described below:

- The City recently developed a Community Road Safety Strategy, which provides a high-level road safety plan that outlines emphasis areas and appropriate mitigation strategies for safety.
- The Community Speed Awareness Program installs temporary dynamic radar boards in residential neighbourhoods to raise awareness of speeding issues.
- The Guelph Road Safety Coalition coordinates and bolsters road safety efforts in the city through educating the public, raising awareness, building capacity, and sharing resources.
- The Active and Safe Routes to School Committee, established in 2009, supports the development and assessment of safe routes to school.

The Community Road Safety Strategy proactively and reactively reviews the operations of the road network and makes recommendations for localized modifications to improve road safety for all users and modes of travel. Three groups from the Engineering and Transportation Services department contribute to the City's Road Safety program. The groups include:

- Transportation Safety Specialists, who develop and update the City's strategy for improving road safety and associated policies like the City's Traffic Calming Policy;
- Traffic Investigations and Operations, who are responsible for the implementation and operation of smart signals and red light cameras. This group also reviews citizen concerns about road network operations, road marking plans, construction drawings, signage, etc. to recommend localized improvements
- Adult School Crossing Guard Program

5.3 TMP Objectives for the Program

This section provides an overview of the key objectives the City should fulfill for the future Road Safety program. To enhance the program further, it is recommended that Guelph formally adopt and endorse Vision Zero. The philosophies of Vision Zero will guide Guelph's objectives with the goal of improving road safety for all users by reducing collision severity and eliminating traffic fatalities.

Key objectives include:

- Formally endorse and adopt the Vision Zero approach to road design (Policy 5.3.1.1)
- Continue to implement the Community Road Safety Strategy, which forms part of Guelph's Vision Zero Plan, and update as necessary (Policy 5.3.1.1)
- Research and test new and innovative street function and design, and intersection

design to reduce the likelihood of collisions

- Continue to work with the Ministry of Transportation of Ontario to replace all existing at-grade intersections on the Hanlon Expressway with interchanges, overpasses or underpasses. (Policy 5.3.1.2)
- Continue to review the need for grade-separations of existing at-grade rail crossings (Policy 5.3.1.4)
- Improve cooperation, communication and collaboration among stakeholders in existing initiatives and programs
- Continue to follow the City's Traffic Calming Strategy Policy to reduce collision severity, and improve road safety and update as necessary

5.4 Potential Partnerships

This City has already developed multiple partnerships throughout various communities in Guelph. It is recommended that future partnerships be leveraged for engagement and public participation activities when Road Safety is a priority.

The following partnerships can be levied by the City:

- Schools
- Neighbourhood groups
- Public Health Agencies
- Guelph Police and Ontario Provincial Police
- University of Guelph
- Ministry of Transportation

5.5 Resource Recommendations

To support the Vision Zero efforts, additional road safety staff will be required to support new road safety initiatives and expansions of existing programs as a part of a Vision Zero community.

One full-time Transportation Safety Supervisor and one full-time Road Safety Technologist is recommended to support expanding and maintaining the road safety program.

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City of Guelph Transportation Master Plan

New Mobility and Emerging Technology Program

November 2021 – 18-8919

6.0 New Mobility and Emerging Technology

6.1 Definition

New Mobility and Emerging Technology are becoming ever more relevant to today's transportation industry. Amidst the rapid evolution of digital technologies and ever improving connectivity, new transportation related innovations continue to emerge at an unprecedented rate, helping residents travel in a more personalized and seamless multimodal way. Specific new mobility and emerging technology examples in the transportation field include, but are not limited to, ride-hailing, micro-transit, micro-mobility, *Mobility-as-a-Service* (MaaS), e-commerce, electrification, self-driving technology, drone delivery and connected mobility.

Today, a common theme amongst municipalities and transit agencies is that they are becoming integrated mobility providers. This means that they are no longer focused on exclusively providing public transit service, but they are integrating public transit with other supporting modes such as car-share and subsidized ride-hailing. Similarly, there is also a call for municipalities and public transit agencies to develop partnerships with new private transportation providers with the goal of maximizing efficiencies and providing benefits to travelers.

6.2 Background

6.2.1 Purpose

The City of Guelph 2019-2023 Strategic Plan calls for Guelph to be "future-ready". To ensure the City is prepared for opportune or disruptive new technologies or services in the transportation sector, the TMP recommends establishing an Emerging transportation technology office. This office is responsible for the study, analysis and recommendations of which technologies and services to pursue, test or avoid to protect the best interests of the community.

6.2.2 Goal

The goal of new mobility and emerging technology programs is to be a source of research, analysis, partnerships, testing and pilot projects for new transportation technologies and services. The main actions include:

- Support the implementation of smart signals and other emerging "smart" transportation technologies
- Explore opportunities to adopt *Mobility-as-a-Service* in Guelph;
- Monitor and recommend *mi*cro-mobil*ity* technologies and services suitable for Guelph;
- Develop curb space management strategies to support and develop policy and programs for e-commerce delivery services;
- Develop policy and programs to support future autonomous vehicle technology; and
- Develop a strategy to incorporate connected - or "smart" - features of transportation to make travel more convenient;

6.2.3 Program Description

To embrace the existing and future trends of New Mobility and Emerging Technology, the City will need to ensure a transition that is as seamless as possible and support the anticipated changes.

Micro-mobility

Bikeshare is an example of new transportation service model that changed how we move around cities. Many cities were on the cutting edge of providing Bikeshare services to their communities, but it turned out best adapted to larger cities with strong public transit.

E-scooters (push-scooters that have a small electric throttle) are another emerging popular trend in micro-mobility, and may have more potential for a mid-sized city like Guelph.

Micro-transit

Guelph Transit is currently using elements of micro-transit for Transit Mobility Services, its accessible transit service. For this service, Guelph Transit has partnered with a third-party technology provider for automated dispatch and routing to make the service more efficient.

Zero Emissions Vehicles

In 2018, Community Energy Initiative (CEI) set a target of having Guelph produce net zero carbon emissions by 2050. The CEI task force provided 20 potential actions for the City to help Guelph achieve this target. Guelph was one of the first Canadian communities to install an electric vehicle charging station. Today, there are over 20 city-owned public charging ports within 15 kilometres of the city. Most recently, Guelph Transit announced that it will replace 35 older diesel buses with electric buses, and add 30 brand new electric buses to their fleet by 2027.

Connected Mobility

Similar to many other municipalities, Guelph uses traffic signal preemption at select intersections for Fire Services emergency vehicles. Preemption is used to halt conflicting movements in advance of the emergency vehicle arriving at the intersection. This helps improve emergency response times and makes the roads safer for everyone. The City does not currently have any other forms of traffic signal priority measures. In 2020, the City piloted new traffic counting and detection technologies which enabled the City to have real-time traffic counts at select locations during all hours of the day. In the next 5 years, it is anticipated this technology will be installed at up to 50 intersections. Having real time traffic data will help the City make more informed operational decisions about its transportation network.

Mobility-as-a-Service

Mobility-as-a-Service is the integration of various forms of transport services into a single mobility service accessible on demand, usually through a digital platform. It

Alignment with TMP Problem Statements: Active Transportation

This section of the TMP aims to align the TMP Goals and Problem Statements with the Sustainable transportation program. The Goals have been used to structure the Problems Statements. In the table below, a connection to the Sustainable transportation program has been identified for each Goal and the complimentary Problem Statements.

Goal	Problem Statements	Connection
Goal 1: People of all ages and physical ability will be able to travel safely using any transportation mode that they choose	• We need to design our streets to serve the needs of a diverse group of people, of all ages and abilities. • We need to design our streets to safely serve all modes of transportation, including walking, cycling and transit.	• Provide transportation to all through sustainable options
Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them.	• We need strong (i.e. fast and direct) transit connections to existing and future jobs • We need more safe crossings of the rivers, rail lines and highways for people walking and cycling • We need better walking and cycling connections to transit stops and hubs	• Support mode shift to sustainable modes
Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car	• We need to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city	• Prioritize transit as a sustainable mode of transportation
Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050	• We need to reduce the percentage of trips made by car. • We need to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use. • We need to tap Guelph's unrealized potential for electric vehicles.	• Prioritize moving away from car dependency and move towards renewable energy for transportation

Goal	Problem Statements	Connection
Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives	• We need to redesign streets in key growth areas to prioritize walking, cycling and transit. • We need to update our road designs to reflect the unique priorities of different areas.	• Focus on active transportation and transit to support land use density
Goal 6: Investment decisions will be made considering the asset lifecycle costs	• We need to account for lifecycle costs in financial decisions on transportation projects.	• Consider environmental impact of new purchases (i.e. diesel buses) • Plan future facilities to be sustainable and adaptable
Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today	• We need to improve the resiliency of Guelph's transportation system. • We need to better prepare for the future of mobility.	• Support shift to sustainable modes

Alignment with TMP Problem Statements: Transportation Demand Management

This section of the TMP aims to align the TMP Goals and Problem Statements with the TDM program. The Goals have been used to structure the Problems Statements. In the table below, a connection to the TDM program has been identified for each Goal and the complimentary Problem Statements.

Goal	Problem Statements	Connection
Goal 1: People of all ages and physical ability will be able to travel safely using any transportation mode that they choose	• We need to design our streets to serve the needs of a diverse group of people, of all ages and abilities. • We need to design our streets to safely serve all modes of transportation, including walking, cycling and transit.	• Make transportation more accessible to all
Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them.	• We need strong (i.e. fast and direct) transit connections to existing and future jobs • We need more safe crossings of the rivers, rail lines and highways for people walking and cycling • We need better walking and cycling connections to transit stops and hubs	• Design strategies, measures and tools to respond to changes in traveler behaviours • Support mode shift to sustainable modes
Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car	• We need to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city	• Support mode shift to sustainable modes • Align demands with network development strategy
Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050	• We need to reduce the percentage of trips made by car. • We need to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use. • We need to tap Guelph's unrealized potential for electric vehicles.	• Reduce GHG and other environmental impacts

Goal	Problem Statements	Connection
Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives	• We need to redesign streets in key growth areas to prioritize walking, cycling and transit. • We need to update our road designs to reflect the unique priorities of different areas.	• Align demands with network development strategy
Goal 6: Investment decisions will be made considering the asset lifecycle costs	• We need to account for lifecycle costs in financial decisions on transportation projects.	• Plan future facilities and infrastructure to accommodate for demand • Make the network more affordable by reducing peak demands for travel
Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today	• We need to improve the resiliency of Guelph's transportation system. • We need to better prepare for the future of mobility.	• Support mode shift to sustainable modes

Alignment with TMP Problem Statements: Strategic Transportation Planning

This section of the TMP aims to align the TMP Goals and Problem Statements with the Transportation Planning program. The Goals have been used to structure the Problems Statements. In the table below, a connection to the Transportation Planning program has been identified for each Goal and the complimentary Problem Statements.

Goal	Problem Statements	Connection
Goal 1: People of all ages and physical ability will be able to travel safely using any transportation mode that they choose	• We need to design our streets to serve the needs of a diverse group of people, of all ages and abilities. • We need to design our streets to safely serve all modes of transportation, including walking, cycling and transit.	• Provide access and mobility to everyone, regardless of abilities
Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them.	• We need strong (i.e. fast and direct) transit connections to existing and future jobs • We need more safe crossings of the rivers, rail lines and highways for people walking and cycling • We need better walking and cycling connections to transit stops and hubs	• Provide simple and safe connections for all modes
Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car	• We need to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city	• Enable the transit system to be competitive with other modes
Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050	• We need to reduce the percentage of trips made by car. • We need to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use. • We need to tap Guelph's unrealized potential for electric vehicles.	• Build new connections and diversify modes to address climate change issues

Goal	Problem Statements	Connection
Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives	• We need to redesign streets in key growth areas to prioritize walking, cycling and transit. • We need to update our road designs to reflect the unique priorities of different areas.	• Respond to the changing interests of where people want to live and work through the road network planning
Goal 6: Investment decisions will be made considering the asset lifecycle costs	• We need to account for lifecycle costs in financial decisions on transportation projects.	• Improve network planning facilities and services
Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today	• We need to improve the resiliency of Guelph's transportation system. • We need to better prepare for the future of mobility.	• Track and respond to future trends for land use and transportation planning

Alignment with TMP Problem Statements: Transportation System Management

This section of the TMP aims to align the TMP Goals and Problem Statements with the Transportation Systems Management program. The Goals have been used to structure the Problems Statements. In the table below, a connection to the Transportation Systems Management program has been identified for each Goal and the complimentary Problem Statements.

Goal	Problem Statements	Connection
Goal 1: People of all ages and physical ability will be able to travel safely using any transportation mode that they choose	• We need to design our streets to serve the needs of a diverse group of people, of all ages and abilities. • We need to design our streets to safely serve all modes of transportation, including walking, cycling and transit.	• Monitor existing infrastructure to accommodate new growth
Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them.	• We need strong (i.e. fast and direct) transit connections to existing and future jobs • We need more safe crossings of the rivers, rail lines and highways for people walking and cycling • We need better walking and cycling connections to transit stops and hubs	• Safe and efficient infrastructure and services
Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car	• We need to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city	• Provide higher level of service for public transit through low-cost strategies
Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050	• We need to reduce the percentage of trips made by car. • We need to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use. • We need to tap Guelph's unrealized potential for electric vehicles.	• Provide greater efficiency and reduce congestion, which would result in higher air pollution rates

Goal	Problem Statements	Connection
Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives	• We need to redesign streets in key growth areas to prioritize walking, cycling and transit. • We need to update our road designs to reflect the unique priorities of different areas.	• Change infrastructure to accommodate future growth
Goal 6: Investment decisions will be made considering the asset lifecycle costs	• We need to account for lifecycle costs in financial decisions on transportation projects.	• Plan for low-cost changes
Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today	• We need to improve the resiliency of Guelph's transportation system. • We need to better prepare for the future of mobility.	• Focus on developing strategies instead of changing infrastructure

Alignment with TMP Problem Statements: Road Safety

This section of the TMP aims to align the TMP Goals and Problem Statements with the Road Safety program. The Goals have been used to structure the Problems Statements. In the table below, a connection to the Road Safety program has been identified for each Goal and the complimentary Problem Statements.

Goal	Problem Statements	Connection
Goal 1: People of all ages and physical ability will be able to travel safely using any transportation mode that they choose	• We need to design our streets to serve the needs of a diverse group of people, of all ages and abilities. • We need to design our streets to safely serve all modes of transportation, including walking, cycling and transit.	• Provide safe and easy to access facilities and infrastructure
Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them.	• We need strong (i.e. fast and direct) transit connections to existing and future jobs • We need more safe crossings of the rivers, rail lines and highways for people walking and cycling • We need better walking and cycling connections to transit stops and hubs	• Provide safe connections for all modes
Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car	• We need to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city	• Provide safe transit options on board and street at stops
Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050	• We need to reduce the percentage of trips made by car. • We need to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use. • We need to tap Guelph's unrealized potential for electric vehicles.	• Rebalance mode share by improving safety of other sustainable modes

Goal	Problem Statements	Connection
Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives	• We need to redesign streets in key growth areas to prioritize walking, cycling and transit. • We need to update our road designs to reflect the unique priorities of different areas.	• Review how density impacts the usability and safety of surrounding road network
Goal 6: Investment decisions will be made considering the asset lifecycle costs	• We need to account for lifecycle costs in financial decisions on transportation projects.	• Safety improvements need to be prioritized
Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today	• We need to improve the resiliency of Guelph's transportation system. • We need to better prepare for the future of mobility.	• Future growth accommodated by improved safety of network

Alignment with TMP Problem Statements: New Mobility and Emerging Technology

This section of the TMP aims to align the TMP Goals and Problem Statements with the New Mobility and Emerging Technology program. The Goals have been used to structure the Problems Statements. In the table below, a connection to the New Mobility and Emerging Technology program has been identified for each Goal and the complimentary Problem Statements.

Goal	Problem Statements	Connection
Goal 1: People of all ages and physical ability will be able to travel safely using any transportation mode that they choose	• We need to design our streets to serve the needs of a diverse group of people, of all ages and abilities. • We need to design our streets to safely serve all modes of transportation, including walking, cycling and transit.	• Consideration of future modes
Goal 2: Guelph's transportation system will be easy-to-use, reliable and give people and businesses the options they want when they need them.	• We need strong (i.e. fast and direct) transit connections to existing and future jobs • We need more safe crossings of the rivers, rail lines and highways for people walking and cycling • We need better walking and cycling connections to transit stops and hubs	• Diverse modes and new features are easy to use
Goal 3: Transit service will provide travel times and traveler convenience at levels that are competitive with travel by car	• We need to reduce transit travel times and improve traveler convenience to most destinations, particularly between neighbouring areas of the city	• Newer technologies improve convenience and reliability
Goal 4: The carbon footprint from the transportation sector will aim for net zero by 2050	• We need to reduce the percentage of trips made by car. • We need to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use. • We need to tap Guelph's unrealized potential for electric vehicles.	• Electric vehicles and infrastructure considered • Increased ridesharing minimizes need for parking • Improved reliability of other modes to reduce trips by car

Goal	Problem Statements	Connection
Goal 5: Guelph's streets, trails and rail networks will align with the City's land use objectives	• We need to redesign streets in key growth areas to prioritize walking, cycling and transit. • We need to update our road designs to reflect the unique priorities of different areas.	• New technology to improve functionality of existing network • New tools to respond to changes in traveler behaviours
Goal 6: Investment decisions will be made considering the asset lifecycle costs	• We need to account for lifecycle costs in financial decisions on transportation projects.	• Plan future facilities and infrastructure with new mobility and emerging technology in mind
Goal 7: Guelph's transportation system will plan for the changes of tomorrow, while delivering great service today	• We need to improve the resiliency of Guelph's transportation system. • We need to better prepare for the future of mobility.	• Support change in mode share shift with new and emerging trends

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