

# Transportation Problems, Opportunities and Alternative Solutions

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City of Guelph Transportation Master Plan



# Guelph Transportation Master Plan

## Moving Guelph Forward

Guelph is growing and how we move around our city is changing. We're exploring transportation options to make our city move better in every way. Through the Transportation Master Plan (TMP) update, we will look at all of the ways we move: walking, cycling, riding transit, driving, trucking and using trains. A renewed plan will ensure we have the right travel options and capacity to support the people and jobs we expect as Guelph grows, while maintaining high quality of life for residents and workers.

The updated TMP will define how our transportation system will support the community as Guelph continues to grow. The update will look at transportation planning in Guelph up to and beyond 2031. The main objectives are:

- To ensure the new plan builds upon current policies, including the Official Plan and other master plans that have been approved since 2005;
- To recommend new policies and guidelines that reflect our community's vision and that balance mobility, environment and efficiency while prioritizing safety and access for all travellers; and
- To explore how new and evolving technologies and travel services will shape the future of transportation in Guelph.

Two key stages of the TMP process include identifying issues and opportunities for transportation improvements followed by determining which alternative solution – or approach to fixing the problems – the City should take going forward. This paper presents the *Problem and Opportunity Statements* for the TMP update and the *Alternative Solutions* for network development that will be evaluated at a later stage of the project.

To find out how you can get involved with subsequent stages of the TMP update and to see the latest project progress, visit [guelph.ca/tmp](http://guelph.ca/tmp).

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# The Guelph TMP Process

Identification of transportation problems and the development of alternative solutions to these issues are important parts of the TMP process. This section provides a summary of the planning process and where the *Problem and Opportunity Statements* and *Alternative Solutions* fit into the TMP.

# Process Overview

Figure 1 outlines the stages of the Guelph TMP planning process.

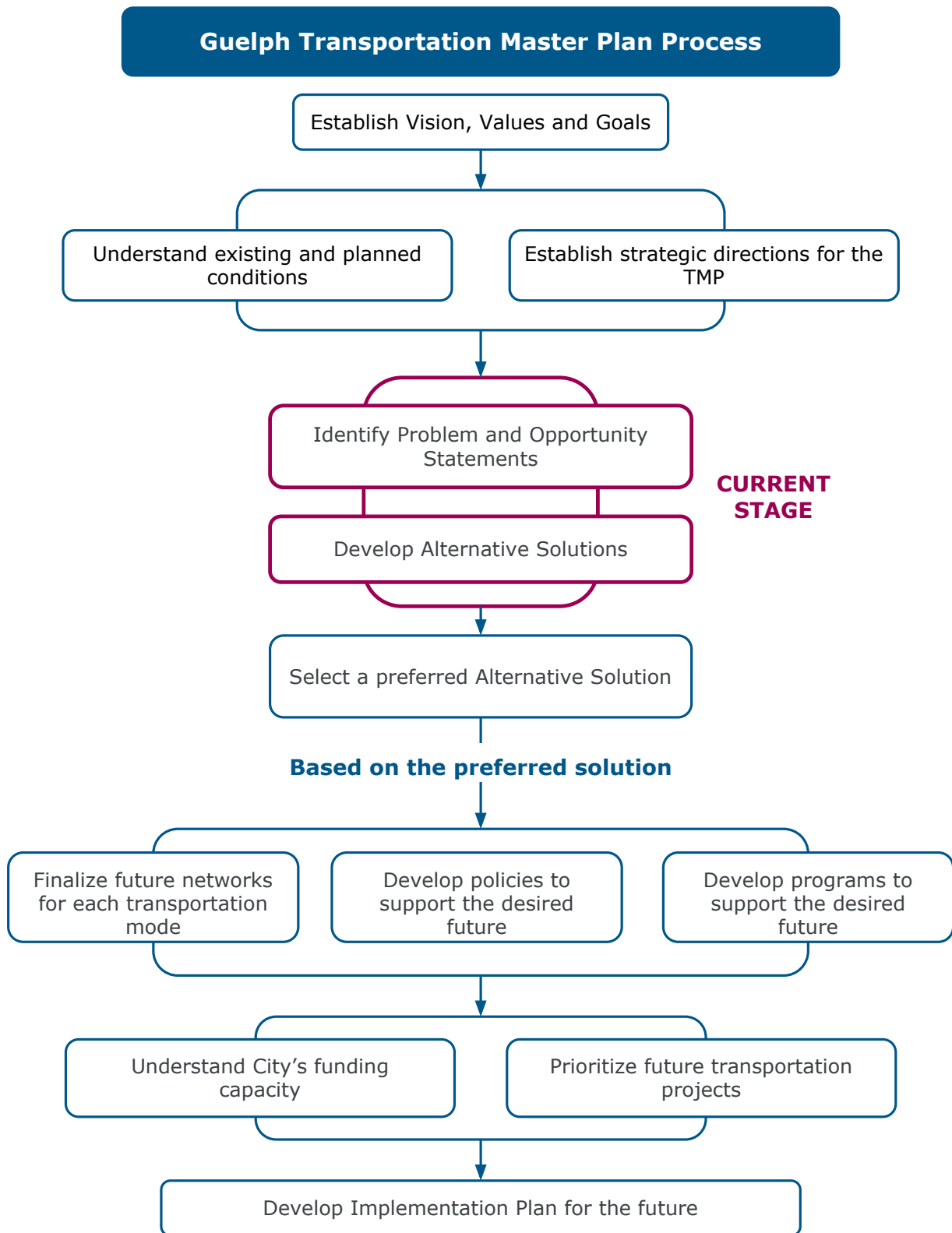


Figure 1: Guelph TMP Planning Process

## Planning Process Background

The Guelph TMP is being completed in compliance with the Master Plan process described in the Municipal Engineers Association (MEA) Class Environmental Assessment (EA) process. The EA process is the governing decision-making process for infrastructure projects as defined under the Ontario Environmental Assessment Act.

Section 4 of the MEA Class EA Guidelines describes Master Plans and the roles of *Problem and Opportunity Statements* and *Alternative Solutions* as follows:

*Master Plans are long range plans which integrate infrastructure requirements for existing and future land use with environmental assessment planning principles. These plans examine an infrastructure system(s) or group of related projects in order to outline a framework for planning for subsequent projects and/or developments. At a minimum, Master Plans address Phases 1 (Problem and Opportunity Statements) and 2 (Alternative Solutions) of the Municipal Class EA process.*





# Problem and Opportunity Statements

In earlier stages of the project, staff reviewed the numerous responses from Guelph residents about what worked and what didn't with regards to transportation in our city. Staff also reviewed the current transportation networks, demands, policies and programs in Guelph.

The team compared what they found to the values and goals for this TMP to evaluate if our current directions would allow Guelph to achieve the TMP transportation vision for

the future. The gaps between our current system and the desired transportation future were identified as problems and opportunities.

The resulting *Problem and Opportunity Statements* 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 Problems and Opportunity Statements.

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.**

Our traditional designs for streets and intersections generally consider the needs of only confident cyclists and able-bodied pedestrians. We need to design streets and intersections 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.

**We need to design our streets to safely serve all modes of transportation, including walking, cycling and transit.**

The design of Guelph's street network prioritizes on making the experience most comfortable and efficient for cars. Other modes of travel are provided for, but not to the same level that 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 is 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.

**We need strong (i.e. fast and direct) transit connections to existing and future jobs.**

The updated Guelph TMP will need transit to become a more popular travel choice for people travelling to and from work. It is also committing 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.

**We need more safe crossings of the rivers, rail lines and highways for people walking and cycling.**

The updated Guelph TMP will need walking and cycling to become more popular travel choices 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 is considered.

**We need better walking and cycling connections to transit stops and hubs.**

All transit trips include a walking or cycling connection to and from transit stops. Poor and/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, but not all transit stops, stations and transfer hubs are connected with high quality walking and cycling connections.



### 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.**

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

**We need 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.

**We need to update the downtown parking strategy to align with the objectives of the TMP to reduce downtown car use.**

The City of Guelph is currently planning for a 1,400 to 1,700 increase in the number of parking stalls downtown, 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.

**We need to tap Guelph's unrealized potential for electric vehicles.**

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

**We need 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.

**We need to update our road designs to reflect the unique 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 to look 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

**We need to account for lifecycle costs in financial decisions on transportation projects.**

Financial decisions for transportation projects always consider 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 can lead 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

**We need to improve the resiliency of Guelph'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.

**We need 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 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.



# Definitions of Alternative Solutions

*Alternative Solutions* refer to the approaches to designing future transportation networks that the City can take in response to the Problem and Opportunity Statements identified in the previous section.

Four *Alternative Solutions* were developed for this TMP update. In the next stage of the project, these alternatives will be evaluated and compared to each other based on their ability to support the goals and intent of the TMP.

Each of the solutions will have certain constraints that will become clearer once network plans for each mode are finalized. For example, even if the solution we choose will require the City to widen streets for cycling infrastructure where it cannot be accommodated in the existing width – or right-of-way (ROW) - widening a street may not be physically possible or financially feasible in every case. In such cases, trade-offs will have to be made based on the priorities established through this TMP update.

Note that references to “streets” in the following descriptions refer to the arterial and collector streets in Guelph.

## Alternative 1 – Do Nothing

### Key Attributes:

- Make no changes to the existing transportation network for any mode - car, transit, bike or pedestrian.

### Rationale:

The first option is to stick with the status quo – make no changes to the existing transportation networks for each mode of travel. Alternative 1 would create no new impacts on the natural or social environments. It would also not add any new costs for the City beyond planned projects that have already been committed to. Adopting this alternative would mean that infrastructure for different modes of transportation will remain pretty much as it is today.

## Alternative 2 – Sustainability Focus

### Key Attributes:

- Do not widen streets to increase car capacity; only widen if needed to improve conditions for walking, cycling or transit users and if widening is supported by appropriate environmental studies.
- Develop a Quality Transit network that could include widening of streets to four-lanes for transit-only improvements.
- Improve transit service and reduce transit delays in Quality Transit Corridors and on Key Transit Connection links.
- Develop a core network of high quality cycling links designed to serve cyclists of all ages and abilities by building new and improving existing cycling infrastructure

- Improve the pedestrian environment in Intensification Corridors and Mixed-Use Nodes
- Create new walking and cycling connections across barriers (rivers, rail and the Hanlon Parkway) where supported by appropriate environmental studies.

### Rationale:

Alternative 2 focuses on improving and encouraging walking, cycling and travel by bus. It creates attractive and interesting streets for walking in the key growth areas, develops a core network of cycling links that serve cyclists of all ages and abilities, improves transit service and reduces bus travel times in critical transit corridors. Alternative 2 also creates the ability to install transit priority lanes and features in these key corridors when they are needed by widening (where appropriate) the property envelopes for these street corridors to allow for four lanes. This alternative does not feature street widening projects for the purpose of increasing car capacity (i.e. adding more travel lanes for cars).

## Alternative 3 – Sustainability and Resiliency Focus

### Key Attributes:

- Do not widen streets to increase car capacity; only widen if needed to improve conditions for walking, cycling or transit users and widening is supported by appropriate environmental studies.
- Develop a network of streets that could be widened to four lanes in the future to meet a range of transportation needs. Widening of these streets would only occur if the need were proven in future network studies.
- Develop a Quality Transit network that could include widening of streets to four-lanes for transit-only

improvements.

- Improve transit service and reduce transit delays in Quality Transit Corridors and on Key Transit Connection links.
- Create a core network of high quality cycling links designed to serve cyclists of all ages and abilities by building new and improving existing cycling infrastructure.
- Improve the pedestrian environment in Intensification Corridors and Mixed-Use Nodes.
- Create new walking and cycling connections across barriers (rivers, rail and the Hanlon Parkway) where supported by appropriate environmental studies.

#### **Rationale:**

Alternative 3 provides the same infrastructure for walking, cycling and transit as Alternative 2, and includes the same transit service improvements in Quality Transit Corridors and on Key Transit Connection Links. Alternative 3 also provides transportation network resilience by enabling the development of a network of four-lane streets running north-south and east-west across Guelph.

## **Alternative 4 – Large-Scale Infrastructure Expansion Focus**

#### **Key Attributes**

- Any street widening for any purpose will first be the focus of appropriate environmental studies.
- Develop a network of streets that could be widened to four lanes in the future to meet a range of transportation needs. Widening of these streets would only occur if the need were proven in future network studies.

- Widen streets that require additional car capacity where they currently exceed or will exceed the City's targets for congestion if the widenings do not conflict with the needs of the Quality Transit Network.
- Develop a Quality Transit network that could include widening of streets to four-lanes for transit-only improvements.
- Improve transit service and reduce transit delays in Quality Transit Corridors and on Key Transit Connection links.
- Create a core network of high quality cycling links designed to serve cyclists of all ages and abilities by building new and improving existing cycling infrastructure.
- Improve the pedestrian environment in Intensification Corridors and Mixed-Use Nodes.
- Create new walking and cycling connections across barriers (rivers, rail and the Hanlon Parkway) where supported by appropriate environmental studies.

#### **Rationale:**

Alternative 4 is the maximum infrastructure solution. It provides the same infrastructure as Alternative 3 but also allows any congested street to be widened if it is necessary to increase car capacity for existing and forecasted future car volumes. This means that in addition to the infrastructure in Alternative 3, Alternative 4 will also widen any roads where traffic congestion exceeds the City's "acceptable" levels of congestion.