



City of Sarnia ACTIVE TRANSPORTATION MASTER PLAN

Action Plan and Implementation Strategy

December 2023

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1. Introduction

INTRODUCTION

This report presents the Action Plan and Implementation Strategy of the Active Transportation Master Plan ('ATMP') organised by type of action; infrastructure, planning, behaviour change and operations. Each action is described and located (if applicable). Details are provided on the implementation process and on the stakeholders responsible for monitoring the success of the actions. Canadian and international case studies are also presented as best practices.

The ATMP Action Plan and Implementation Strategy encompasses a diverse range of actions, addressing key elements vital for the success of an integrated active transportation network. Actions are grouped into four main themes of action:

1. **Infrastructure actions:** infrastructure actions within the Action Plan and Implementation Strategy encompass physical enhancements to the city's landscape, facilitating safer and more convenient active transportation.
2. **Planning actions:** Planning actions are strategic measures to create a planning framework supporting active transportation initiatives.
3. **Behavior change actions:** These actions focus on fostering a cultural shift towards embracing active transportation, through raising awareness and promoting community-led active transportation initiatives.
4. **Operations and maintenance actions:** Operations and maintenance actions ensure the sustainability and functionality of the active transportation network.

For **infrastructure actions**, the plan outlines the implementation of bike parking facilities, strategic street lighting to enhance safety, a description of proposed bike lanes, new intersection designs promoting cycling and walking safety, and the installation of bike counters at key intersections. Additionally, the plan proposes continuous sidewalks in residential areas, a signage strategy for improved navigation, placemaking initiatives, and the incorporation of universal design principles in public

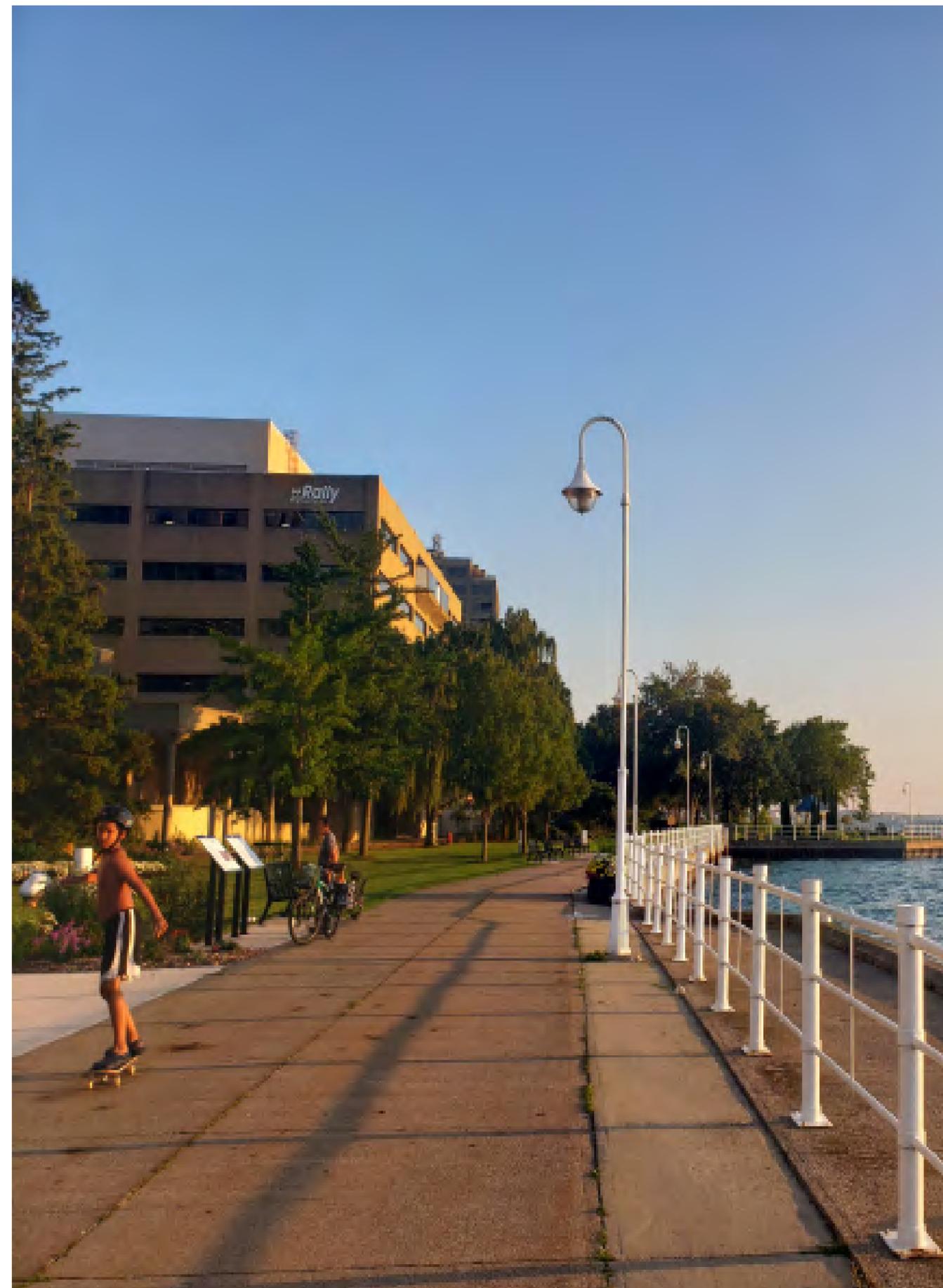
transit, fostering inclusivity.

The **planning actions** of the Action Plan and Implementation Strategy focus on establishing bike parking ratios, a bike registration program, and active transportation requirements for new developments. Moreover, the plan includes a by-law allowing parents to cycle with children on sidewalks, optimization of on-street car parking based on usage, and the creation of an open data portal for monitoring purposes. The adoption of a Safe Systems and Vision Zero policy is also highlighted, aligning with the city's commitment to promoting safety for all road users.

To foster **behavior change**, the Action Plan and Implementation Strategy introduces initiatives such as the School Street Pilot, bike training courses for citizens, as well as a Walk and Bike to School campaigns. The plan also seeks to promote the benefits of active travel for commuting trips through a city-wide active transportation campaign, organized biking and walking routes and tours, and support for community-led active transportation initiatives.

In terms of **operations and maintenance**, the Action Plan and Implementation Strategy suggests the implementation of pedestrian leading intervals in traffic lights, year-round maintenance of active transportation infrastructure, the incorporation of active transportation considerations at construction sites and events, and the overall improvement of intermodal connectivity.

The document concludes with a summary of prioritized options, a framework for monitoring and evaluation led by the Transportation Department, and a funding and financing section, which explores various opportunities for financial support. The plan aims to create a sustainable and vibrant active transportation network that aligns with the city's vision for a greener and healthier Sarnia.



2. Infrastructure Actions

These actions focus on improvements that can be implemented directly on Sarnia's roads, streets and wider infrastructure to make Sarnia more walkable and bike-friendly.

BIKE PARKING

DESCRIPTION

This initiative seeks to address the growing demand for secure and accessible bike parking facilities, encouraging more Sarnians to choose cycling as a viable mode of transport. Bike parking should resist cutting, bending and deformation and should be located close to amenities entrances.

On-street bike parking refers to bike parking facilities that are located directly along the street, typically in the form of bike racks or designated spaces. On-street bike parking should be implemented close to the entrance of amenities, maximum 20 metres away, and outside of the pedestrian circulation area.

Off-street bike parking, on the other hand, refers to parking facilities that are situated away from the main road, usually in designated areas like parking lots, garages, or enclosed structures. The city has the opportunity to enhance its infrastructure by investing in covered and secured off-street bike parking facilities, especially in key areas such as bus terminals, train stations, schools and hospitals. This initiative promotes cycling in a safe and convenient environment.



Location	Description
Commercial areas in Downtown Sarnia, Wellington Street, Confederation Street and Exmouth Street, Mitton Farmer's Market	Increasing the on-street bike parking in commercial areas of Sarnia will improve end-of-trip experience and participate in Sarnians choosing to bike instead of using their cars to shop and run errands. As a main employment area, adding bike parking will also facilitate commuting trips to downtown.
Within or at the entrance of parks and natural features such as Canatara Park and beach, Germain Park, Blackwell Trails Park, Rainbow Park, Waterfront Park, Tecumseh Park, entrances to the Howard-Watson Trail	Promoting bike trips for Sarnians who already use parks for walking, cycling or other sporting activities. Bike parking in parks can also be used during breaks in cycling leisure trips. This can also participate in improving the autonomy of young adults when going to out-of-school activities.
Bus terminals and train station	Intermodal connectivity between cycling and transit is facilitated when bike parking is available near stations.
Bike shops, schools and on trails	Install bike repair stations in mentioned locations.
Hospital and libraries	Promote staff cycling to and from work.

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Division of the City of Sarnia, citizens, local companies.

- **Assessment:** Begin by conducting a targeted assessment to identify high-demand areas for bike parking. A GIS analysis can be used.
- **Public Engagement:** Keep the community informed about the project's progress and seek input to address concerns or suggestions.
- **Action Planning:** Engage with Engineering and Operations Division to develop and update relevant bylaws and regulations, such as bike parking standards, to facilitate the installation of bike parking infrastructure on public and private properties.
- **Budget Allocation:** Secure the necessary funding for the project through a combination of municipal budgets, grants, and public-private partnerships.
- **Construction:** Collaborate with the Engineering and Operations Division to implement bike racks, shelters, and secure storage facilities at strategically chosen locations.
- Ensure compliance with accessibility standards to ensure cargo bikes for deliveries and families can also be parked.

TARGET FOR SUCCESS

Temporary bike racks implemented in the summer months to respond to the higher demand in cycling in this period and holidays such as Canada day celebrations. Include mandatory bike parking in newly developed commercial areas and within the city's parks. Only people with an access card can access off-street bike parking which should also be secured by video surveillance to prevent theft.

MONITORING

- Key performance indicators include the number of bike parking spaces added and the utilization rate of these spaces.
- Surveys and feedback from cyclists can help gauge satisfaction with the new infrastructure.

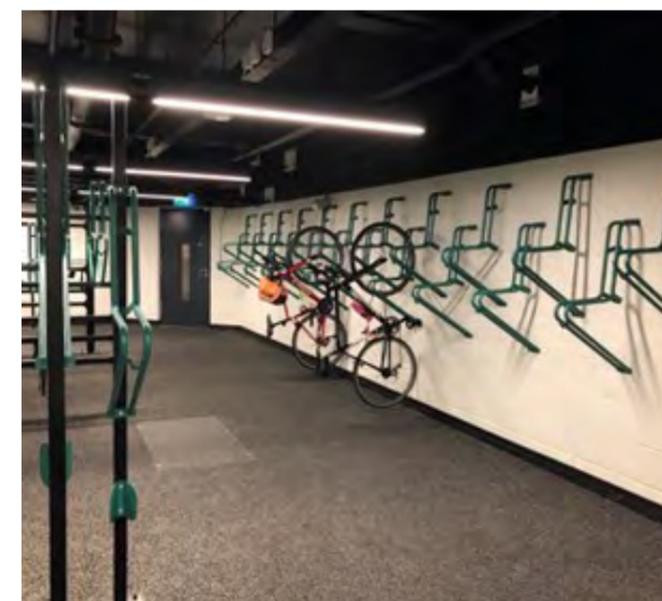


Figure 1: Off-street bike parking in London, UK

BEST PRACTICE CASE STUDY

Toronto bicycle stations are indoor parking spaces for bicycles that have 24-hour video surveillance and access control. They require registration and payment of a fee to use. There are four bicycle stations in the city, located at Union Station, City Hall, Finch West Station, and Victoria Park Station¹. The City of Ottawa provides bike parking requirements in Section 111 of the zoning-by-law Part 4 on Parking, Queuing, and Loading Provisions. The bike parking rates vary for different land uses and include recommendations for multiple scenarios².

1. Bicycle Parking Stations, City of Toronto, 2023, <https://www.toronto.ca/services-payments/streets-parking-transportation/cycling-in-toronto/bicycle-parking/bicycle-parking-stations/>
 2. Section 111, Part 4 – Parking, Queuing and Loading Provisions, City of Ottawa Zoning By-law 2008-250 Consolidation, https://documents.ottawa.ca/sites/documents/files/documents/zoning_bylaw_part4_en.pdf

PROPOSED BIKE LANES

DESCRIPTION

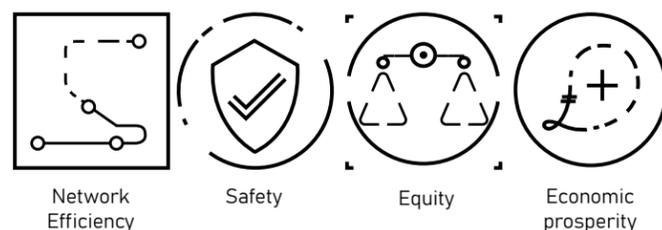
The City of Sarnia will create new bike lanes as part of the Active Transportation Master Plan to increase the infrastructure for cyclists in the city. Bike lanes will be developed in different phases of priorities, to connect Sarnians to their destination based on the following trip destinations: commuting, leisure, running errands, vulnerable communities, parks. The proposed cycling network is presented in Report 2 of the ATMP.

The consolidation of the cycling network will overall help the connectivity between cycling links, the safety of vulnerable users, equity by providing a separation between pedestrians and vehicular traffic, and health, by generating an increased number of cycling users in Sarnia

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Division of the City of Sarnia, citizens

- Engineering and Design: Prioritize implementing protected bike lanes on segments with most cycling demand using bike counters data and/or vulnerable population usage (school students, elderly).
- Construction and Maintenance: Ensure quality construction and establish a maintenance schedule to keep bike lanes in good condition, especially in winter times.
- Public engagement Gather the input of citizens for further improvements of the network and to accommodate changes in the demand patterns and the reality of the city. Involve local accessibility organizations including CLASS, Sarnia Accessibility Advisory Committee and Age-Friendly Sarnia-Lambton to gather feedback on the bike lane design to ensure it meets the specific needs of vulnerable users.



TARGET FOR SUCCESS

Aim to implement the cycling network based on the proposed phasing with Quick wins, Short-term, Medium-term and Long-term projects.

MONITORING

- Regularly collect data on bike lane usage, including the number of cyclists, peak usage times, and popular routes, to assess the effectiveness of the cycling network, through bike counters and assisted video counts.
- Conduct routine inspections of the bike lanes to ensure proper maintenance, clear signage, and overall safety, addressing any issues in a fast manner to maintain a high standard of usability and safety.



Figure 2: Segregated unidirectional bike lane in NYC, USA

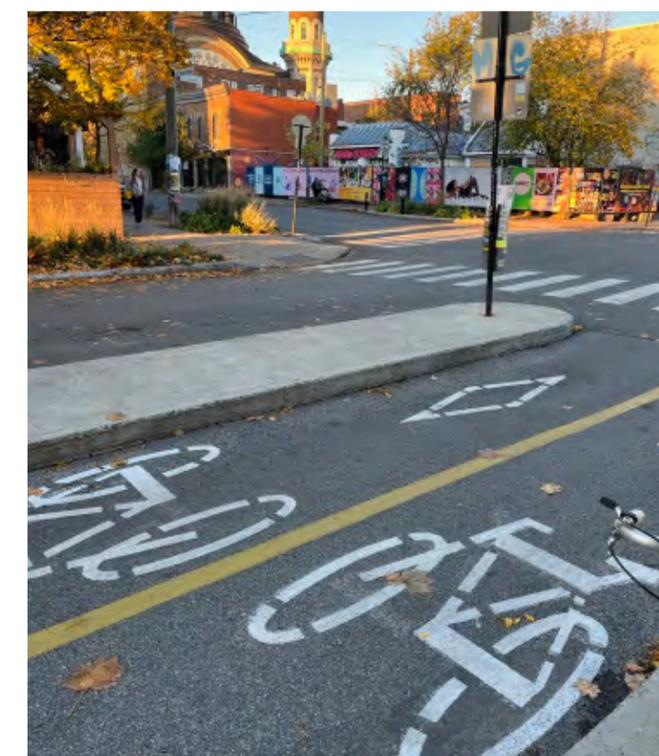


Figure 3: Segregated bidirectional bike lane in Montréal, CA



Figure 4: Flex posts on a unidirectional bike lane in Ottawa, CA

INTERSECTION DESIGN

DESCRIPTION

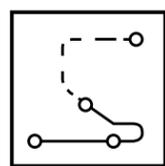
This initiative aims at enhancing road safety, promoting universal design, creating pedestrian and cycle-friendly spaces, and aligning with modern urban design principles. The proposed action for the City of Sarnia is the redesign of some intersections to prioritize safe pedestrian crossings, the integration of roundabouts and pedestrian lights, which will help with the efficiency and safety of the road network for all users.

As identified in the background report, there are intersections, particularly on Exmouth Street and Christina Street, London Road and Indian Road or Wellington Street and Christina Street, that have a high concentration of collisions involving pedestrian and cyclists. It is recommended to prioritize the redesign of these intersections to further improve the safety of the network and reduce collisions involving vulnerable users.

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Divisions of the City of Sarnia

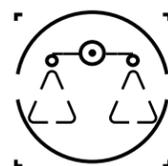
- **Planning:** Use best practice design guidelines for intersections¹ such as National Association of City Transportation Officials (NACTO) Design Guide and Transport Association Canada (TAC) Ottawa Protected Intersection Design Guide.
- **Design:** Work closely with design professionals to create intersection layouts that prioritize safe pedestrian crossings, consider universal design, and integrate bike lanes, including at roundabouts, with a focus on designing continuity for vulnerable users at intersections so their safety and comfort is maintained.
- **Maintenance:** Establish a maintenance schedule to keep intersections in great conditions including road markings.
- **Traffic management:** Collaborate with the division to maintain vehicular routes and to incorporate all modes of transportation through the traffic signal phasing during the construction phase and to optimize traffic signals for pedestrian safety.



Network Efficiency



Safety



Equity

TARGET FOR SUCCESS

Identify priority intersection to implement Ontario Traffic Manual design guidelines, specially along intersection with high collisions counts. Prioritized intersections should comply with Ontario Traffic Manual. The guide provide a design process framework, design criteria, and design examples for various intersection types and scenarios. The guidelines also address the benefits, challenges, and best practices of implementing protected intersections.

MONITORING

Regularly analyze collision data at intersections to measure changes in pedestrian safety and identify any recurring issues that need to be addressed. Counters will also help assessing the usage of redesigned intersections proper maintenance, clear signage, and overall safety, addressing any issues in a fast manner to maintain a high standard of usability and safety.

BEST PRACTICE CASE STUDY

A protected intersection is a type of intersection design that aims to improve the safety and comfort of cyclists and pedestrians crossing a busy vehicular traffic flow. It features corner islands that separate the bike lanes from the vehicle lanes, and provide a refuge area for cyclists and pedestrians waiting to cross. The Ontario Traffic Council (OTC) Protected Intersection Design Guide is a document that provides guidance on how to design and implement protected intersections, which are a type of intersection design that provides physical separation and clear sight lines between cyclists, pedestrians, and motorists.



Figure 5: Protected intersection in Ottawa, CA



Figure 6: Raised intersection in NYC, USA

1. National Association of City Transportation Officials, Urban Street Guide Design, 2013, Urban Street Design Guide

BIKE COUNTERS ON KEY INTERSECTION

DESCRIPTION

Bike counters are electronic devices installed along cycling paths or roads to count the number of bikes passing through a specific location.

The proposed action for the city of Sarnia involves the installation of bike counters at key intersections. This initiative aims at collecting bike demand data within the city, to foster a deeper understanding of cycling trends and support informed decision-making in urban planning. Bike counters can also be equipped with a visible counter which helps educate all road users on the presence of cyclists.

The action will further help with the monitoring of the efficiency and connectivity of the cycling network. The following locations are proposed as priority locations to set up bike counters.



Location	Description
Intersections along Confederation Street with Vidal Street and Brock Street	Key commuting route.
Howard Watson Nature Trail, Exmouth Street at Capel Street	Key intersection for North-South cycling trips
Maria Street and Russell Street	Key intersection on the East-West Crosstown MUP.
Howard Watson Trail	One of the main cycling routes in Lambton County.
Canatara Park entrance towards Cathcart Boulevard	Can help monitor modal split of visitors to the park.

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Divisions of the City of Sarnia

- Implementing bike counters on key intersections requires a coordinated effort involving multiple actors: Location Selection: Collaborate with city planners and transportation experts to identify strategic intersections for the installation of bike counters. These locations should encompass major cycling routes, commuter pathways, and recreational areas.
- Technology Procurement and Installation: Partner with technology vendors (such as Eco-counter¹) to acquire and install reliable bike counting equipment at the selected intersections. These systems may include infrared sensors or video cameras with associated software.
- Data Management and Analysis: Work with data analysts and urban researchers to collect and process the information gathered by the bike counters. Develop a centralized database to store and manage this data effectively.
- Public Engagement: Develop an Open Data Portal to enable citizens to consult data on bike ridership.



Figure 7: Bike counter on a bike lane in England, UK

TARGET FOR SUCCESS

Install bike counters on the identified intersections within the first year of starting the plan. Install new bike counters annually and systematically at new bike lane infrastructure near intersections. Consolidate produced data into an Open Data Portal available for the public within five years of adopting the ATMP.

MONITORING

- Regularly maintain and calibrate the bike counters to ensure their accuracy and reliability in data collection.
- Prioritize new bike lanes segments for the installation of counters; having a counter before and after implementation of a bike lane infrastructure will help assessing the impact of projects.

BEST PRACTICE CASE STUDY

The Regional Cycling Strategy of Metro Vancouver aims at increasing the cycling mode share, the safety, and the connectivity in the region by implementing various actions and initiatives. One of these actions is to install 16 in-ground bike counters along key bike and multi-use pathways across nine different road jurisdictions. The in-ground counters will detect electromagnetic signals from passing bikes to determine the number of bikes on a pathway and their direction of travel.²

1. See Eco counters for example, Eco Counters.
 2. Cycling for Everyone: A Regional Cycling Strategy for Metro Vancouver, Translink, 2011, Regional Cycling Strategy | TransLink

CONTINUOUS SIDEWALKS IN RESIDENTIAL AREAS

DESCRIPTION

The design of continuous sidewalks and bike paths indicates an uninterrupted path for pedestrians and cyclists' travel. Pedestrians and cyclists keep same elevation and vehicles change elevation over intersections to reduce their speed. Simultaneously, these designs signal to drivers that they are entering a space designated for walking and cycling, diverging from conventional street intersections where sidewalks and in-boulevard bike paths often end, requiring pedestrians and cyclists to cross the paved roadway.

The purpose of continuous sidewalk and bike path treatments is to enhance the safety and comfort of pedestrians and cyclists. Moreover, they contribute to traffic calming by shifting the responsibility of monitoring potential conflicts from pedestrians and cyclists to drivers. It is crucial to implement these designs only in situations where pedestrians and cyclists consistently have the priority over turning vehicles, ensuring their effectiveness and safety.

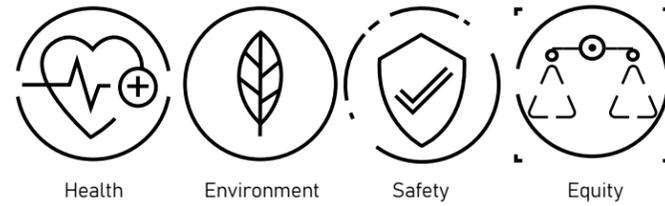
IMPLEMENTATION

Key stakeholders: The Engineering and Operations Division of the City of Sarnia, citizens, local businesses.

- Engineering and Design: Identify gaps in residential areas and commercial areas to prioritize projects as part of the Walkway Infill Program¹. The proposed walking network is presented in Section 3.
- Construction and Maintenance: Ensure the quality of sidewalks built and establish a maintenance schedule to keep sidewalks in good condition, especially in winter times.
- Public engagement: Gather citizens' input for further improvements of the network.

TARGET FOR SUCCESS

Providing continuous sidewalks on corridors with bike and pedestrian priority with vulnerable users such as school students and residents of



retirement homes to improve the equity of the active transportation network.

MONITORING

Regularly undertake pedestrian counts on main sidewalks to track their usage. Integrate data into an Open Data Portal and maintain records of sidewalk maintenance and repairs to ensure they remain safe and accessible.



Figure 8: Continuous sidewalk in Geneva, Switzerland

BEST PRACTICE CASE STUDY

The City of Nanaimo in British Columbia has adopted continuous sidewalks as a standard design for local street intersections and has built several in the Metral Drive, which is being transformed into a Complete Street. In the project, local street intersections were designed with several features, including stop signs on the local streets and speed hump markings on the ramp leading up to the sidewalk. Additionally, flared driveway ramps were situated on the boulevard, enhancing accessibility.

BIKE-SHARING SYSTEM/ MICROMOBILITY

DESCRIPTION

A bike-sharing system is a service in which bikes are made available for shared use to individuals on a short-term basis. A bike-sharing system is designed to provide an affordable and convenient mode of transportation for short trips within urban areas. The goal of a bike-sharing system in Sarnia would be to promote sustainable transportation, reduce traffic congestion, and enhance Sarnians' mobility options.

A bike sharing-system will improve the offer for cycling in the city and will help with the environmental resilience by reducing the dependence of Sarnians to vehicles. The system could be publicly or privately operated, depending on the scheme and the system and city's objectives.

Implementing electric mobility throughout the city with e-bikes or e-scooters will allow people that are less mobile to pick up active transportation as it requires less physical effort.

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Divisions within the Community Services Division

- Engineering: Identify a service area for a profitable or cost recovery scheme and target the integration with the existing public transit infrastructure.
- Operator: Tendering and selecting an operator and identifying the right mix of e-scooters and e-bikes provision.
- Equipment: Work with electrical services to provide access to proposed bike-sharing stations.

TARGET FOR SUCCESS

Develop a pilot project for a micromobility program within the next 5 years, evaluating the possibility to implement a bike-sharing system or an e-scooter program for the city.



MONITORING

Analyze usage data to identify peak hours, popular routes, and high-demand areas and use historical data to predict future demand, allowing for better resource allocation.



Figure 9: Bike sharing system in Dublin, Ireland

BEST PRACTICE CASE STUDY

The Kelowna bike sharing system is a pilot project that started in spring 2023 and will run for 18 months. The system is operated by Dropbike, a Toronto-based company that provides smart bikes that can be unlocked and rented using a smartphone app. The system aims at providing an alternative mode of transportation for residents and visitors, reducing congestion and emissions to the environment¹.

1. See the proposed walking network, in section 3.3.

1. Shared bikes and e-scooters ,City of Kelowna, 2020, Shared bikes and e-scooters | City of Kelowna

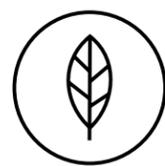
STREET LIGHTING

DESCRIPTION

The action proposed is the improvement of publicly owned street lighting, with a priority on lighting sidewalks for pedestrians and roadways for cyclists, focusing on improving the safety for vulnerable users. This initiative aims at enhancing safety, walking trips and bike ridership all-year long, and promoting a more vibrant urban environment.



Safety



Environment and Resilience

Location	Description
Vidal street, south of Chippewa Street	Vidal street is a key route for commuting cycling trips.
Howard Watson Nature Trail	Adequate lighting along the cycling route that also respects the surrounding nature will enhance ridership.
Parks	Lighting in parks will ensure cyclists can use the safest route even at night-time.

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Divisions of the City of Sarnia, citizens, local enterprises.

- **Assessment:** Identify and prioritize most-needed segments along the new sidewalks and the new bike lanes focusing first on the walking and cycling network.
- **Public Engagement:** Keep the community informed about the project's progress and seek input to address concerns or suggestions.
- **Action Engineering:** Develop a detailed public street lighting plan.
- **Budget Allocation:** Secure the necessary funding for the project through a combination of municipal budgets.
- **Installation:** Procure and install the new lighting fixtures, starting with sidewalks and parks. Ensure compliance with the safety and environmental standards during the installation.

TARGET FOR SUCCESS

Implement street lighting with a focus on vulnerable users along the walking and cycling network, focusing on intersections to provide continuity on the network. Vulnerable users also include women and children to provide them with an increased safety when walking and cycling at night time.

MONITORING

- Make regular audits of accident statistics, and public surveys on the perception of safety integrated into an Open Data Portal. Data will provide insights into the project's impact¹.
- Adjust the lighting plan as needed to address emerging issues and ensure that the lighting upgrades are in line with sustainability.



Figure 10: Street lights on a bike lane in Vilnius, Lithuania

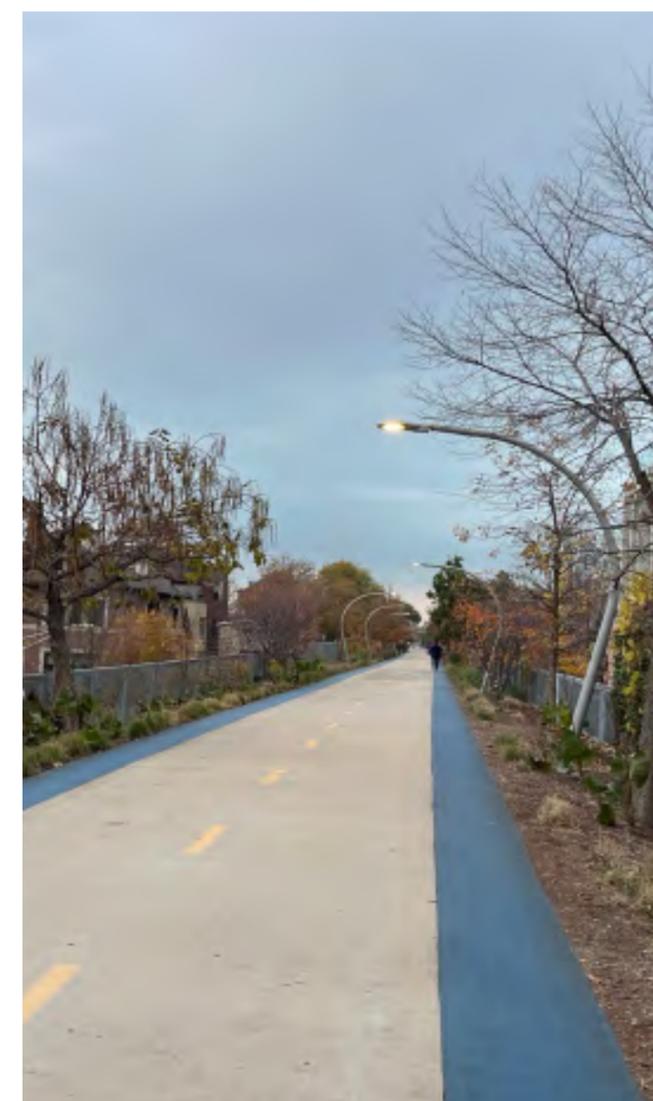


Figure 11: Street lights on the 606 Trail in Chicago, USA

BEST PRACTICE CASE STUDY

Public realm lighting is crucial to enhance safety and reducing collision risks at intersections, particularly for active transportation users. Copenhagen has installed an innovative lighting system, which enables bike users to avoid congestion in the city. Green lights on the floor replace traffic lights to show the priority for cyclists. The system is wireless and sensors turn on the lights when a user is passing by, while the rest of the time, the lights are dimmed when cycling flows are low².

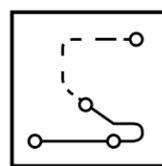
1. See section 1.6
 2. Copenhagen Lighting the Way to Greener, More Efficient Cities, New York Times, 2014, The Copenhagen Green Path.

SIGNAGE STRATEGY

DESCRIPTION

This initiative seeks to enhance the overall navigation experience within Sarnia for vehicles, bikes and pedestrians to improve the road safety, and promote local businesses and attractions through effective signage.

Coherent and uniform signage should be implemented on the cycling network, especially on quiet routes without segregated bike lanes to help with navigation and provide connectivity between bike lane segments. Bicycle and diamond pavement markings, as well as colour-consistent wayfinding signage can be used to identify cycling routes.



Network Efficiency



Safety

Location	Description
Exmouth Street and Capel Street	Key intersection for north-south active transportation trips.
Canatara Park and Waterfront entrance	Install cycling network maps and proper signage for wayfinding.
Russell Street and Maria Street	Install signage to direct cyclists towards downtown/waterfront.
On proposed Quiet routes	Install signage to keep navigation clear for cyclists along the quiet route network.

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Divisions of the City of Sarnia, local businesses, citizens

- Planning: Define key areas, routes, and destinations that require signage, identify gaps, and establish wayfinding signage maps towards main points of interests.
- Construction and Maintenance: Install wayfinding maps across point of interests and implement signage strategy for quiet routes network. Prioritize permanent signs over painted signage for maximum visibility.
- Public engagement: Gather citizens' input for further improvements of the signage network.

TARGET FOR SUCCESS

Ensure that every key intersection and point of interest has proper signage to help active transportation users navigate safely across the city. Focus on areas with new bike lanes and pedestrian infrastructure.

MONITORING

- Keep records of signage maintenance and repairs to ensure that signs remain in good condition and legible.
- Make a web page available for citizens to point missing and worn-out signs, to prioritize the replacement of signage.

BEST PRACTICE CASE STUDY

London Quietways are a network of bike routes that use low-traffic streets, parks, and waterways to connect different parts of the city. The signage used for London Quietways is designed to help cyclists navigate the routes and find their destinations. The signage consists of two main elements: surface markings and signs¹.

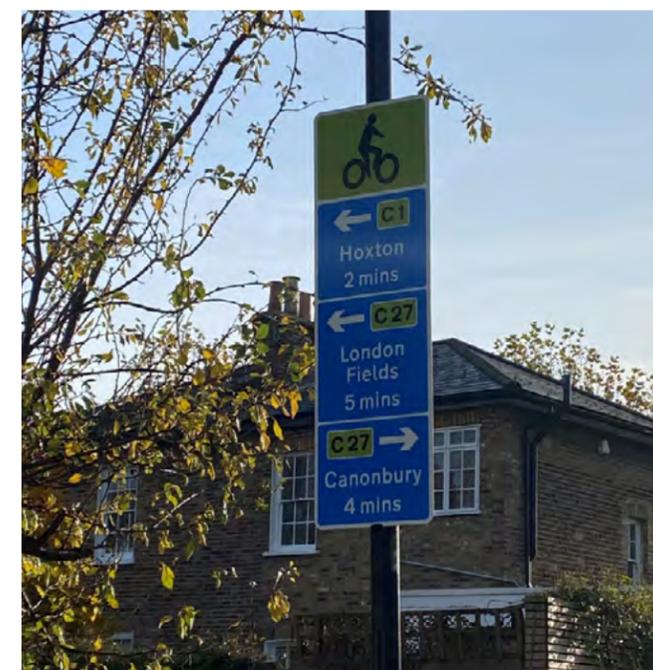


Figure 12: Quietway signage in London, U.K.

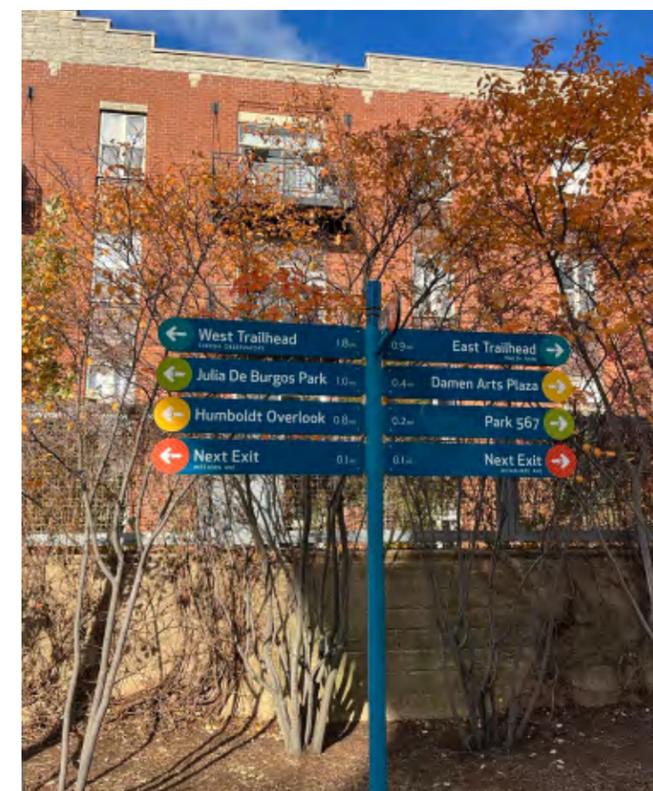


Figure 13: Signage on the 606 trail in Chicago, USA

1. Quietway Signing Guidance, London Councils, 2014, Item 8. Quietways Signing Guidance | London Councils.

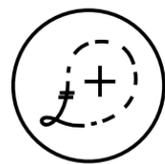
PLACEMAKING

DESCRIPTION

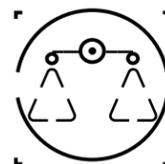
Placemaking involves transforming public spaces into vibrant, people-centered areas that foster community engagement, recreation, and cultural activities¹. This action aims at revitalizing Sarnia's urban areas, making them more attractive, functional, and inclusive for residents and visitors by including public benches, areas of shade and more greenery. Areas around downtown and Lochiel Street can be further expanded to improve the pedestrian shopping and eating experience. The development of a companion guide to the ATMP including placemaking design guidelines for new development areas would help build user-friendly neighbourhoods with mixed-use developments.



Health



Economic prosperity



Equity

Location	Description
Mitton Village	Potential area for placemaking at the five-star intersection of Mitton Street and Wellington Road. A summer pedestrianization can be implemented near the farmer's market.
Lochiel Street	Further expand Lochiel Street pedestrianization project.
London Road and Exmouth Street	Main commercial areas can develop a strategy to activate unused public spaces and attract active transportation users.
Christina Street, Downtown section	Summer seasonal closure of the street is popular with residents and could be expanded with activities on Lochiel Street
Clearwater Arena Hub	The City of Sarnia is simultaneously developing a master plan document for this Transit Terminal, which aims at improving the park and library hub.

IMPLEMENTATION

Key stakeholders: The Engineering and Operations Divisions and Community Services Division of the City of Sarnia, local businesses, citizens

- Consultations: engage city-wide consultations with the citizens and the retail sector in the city to identify the areas with most potential for placemaking.
- to activate these newly revitalized spaces, including cultural festivals, markets, outdoor concerts, and fitness classes.
- Construction: Ensure all new capital projects led by the City take into consideration the improvement of public spaces.
- Design: conceive pedestrian-oriented public spaces focusing on universal design,
- Funding and partnerships: secure funding and establish sponsorship for interested businesses and organizations.
- Programming: Develop a schedule of events and activities

TARGET FOR SUCCESS

Implement two city-wide placemaking projects aiming at revitalising existing urban spaces, culturally, economically, and socially. Build projects upon existing initiatives such as Lochiel Street and focus on the placemaking development of Mitton Village.

MONITORING

- Work with local businesses to gather data on increased footfall and sales attributed to placemaking initiatives.
- Regularly seek input and feedback from residents and visitors through surveys, public meetings, and social media to assess the impact of placemaking projects.



Figure 14: Public space with the Ottawa sign, CA

BEST PRACTICE CASE STUDY

The Byward Market in Ottawa features a variety of attractions, such as the Public Market, the National Gallery of Canada, the Notre Dame Cathedral Basilica, and many restaurants, bars, shops, and galleries. The City of Ottawa has embarked on a revitalization plan to improve the safety, accessibility, and attractiveness of the area by creating more green spaces, plazas, and waterfront access, and by supporting the arts and innovation district.²

1. What is Placemaking?, Project for Public Spaces, 2022, <https://www.pps.org/article/what-is-placemaking>
 2. Public Realm Plan: Vision & Principles, Ottawa, 2023 Public Realm Plan

UNIVERSAL DESIGN PUBLIC TRANSIT

DESCRIPTION

This initiative aims at enhancing the equity and inclusivity of the transit network by prioritizing the universal design of bus stops for Sarnians with disabilities, seniors and families. The accessible design of public transit promotes independence, social inclusion, and economic participation for all community members.

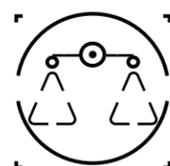
The Accessibility for Ontarians with Disabilities Act (AODA) Transportation Standards outline guidelines aimed at helping public transit providers, along with municipalities, universities, colleges, hospitals, and school boards, to ensure their transportation services and vehicles are accessible for individuals with disabilities.

This includes implementing features such as ramps or level boarding platforms for mobility-challenged individuals, sheltered areas with comfortable seating, and clear information displays for easy navigation. Universal design will further increase modal transfer options between transit and active transport, enhancing connectivity of the whole transport network.

IMPLEMENTATION

Key stakeholders: Sarnia Transit, the Engineering Department and the Public Works Department within the Engineering and Operations Divisions, citizens

- Assess the existing accessibility of the transit network: identify missing gaps between the walking network and bus stops.
- Design: Collaborate with design professionals to ensure the universal design of bus stops and stations. Ensure sidewalks and pathways leading to transit stops are step-free and well-maintained, in accordance with AODA's guidelines.
- Equipment for stations and buses: Work closely with Sarnia Transit to retrofit existing vehicles and stations to meet AODA's universal design standards.



Equity



Safety

TARGET FOR SUCCESS

Ensure all new transit stations comply with universal design guidelines.
Survey passengers' satisfaction with accessibility features and services.

MONITORING

Conduct regular audits of transit facilities in collaboration with local organizations such as Sarnia Accessibility Advisory Committee and Age Friendly Sarnia-Lambton to ensure ongoing compliance with universal design standards, addressing any deficiencies promptly.



Figure 15: Accessible ramp on a bus

BEST PRACTICE CASE STUDY

The Accessibility for Ontarians with Disabilities Act (AODA) Transportation Standards is a regulation under the AODA that aims to make it easier for everyone to travel in Ontario. The Transportation Standard applies only to organizations and agencies providing transportation services such as public transit, taxicabs, and school boards, hospitals, and universities who provide such services (e.g., shuttle buses)¹.

3. Planning Actions

These actions focus on changes that can be implemented at the level of the policies and the planning decisions to make Sarnia more walkable and bike-friendly.

PEDESTRIAN BUDGET IN CITY CAPITAL PROJECTS

DESCRIPTION

The City of Sarnia will ensure that capital projects led by the City will integrate and improve pedestrian connections. The Engineering Department will ensure entrances to proposed master plans, buildings, and streets are accessible for pedestrians. This includes taking into consideration universal design for users all of ages and abilities to promote walking.

IMPLEMENTATION

Key stakeholders: The Planning Department and Building & By-law Services Department within the Community Services Division and the Public Works Department within the Engineering & Operations Division

- By-law: Implement a by-law ensuring that a minimum of 1% of the budget of road, infrastructure, and transit improvement projects in Sarnia is dedicated to improving the pedestrian environment and accessibility within 500m of the project. This is in addition to the active transportation budget of the project.
- Active transportation assessment: At the planning stage of City-led master plans and development projects, an assessment will be undertaken to identify opportunities to create active transportation links to the rest of the city.
- Design guidelines: The development of a companion guide with design guidelines for universal design and active transportation would support the integration of pedestrian accessibility in all new city capital projects.
- The Engineering Department at the City of Sarnia will conduct inclusive design audits at the opening of capital projects.

TARGET FOR SUCCESS

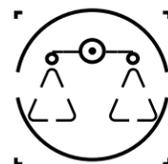
Create a Design Guidelines companion document to the ATMP for universal design and active transportation by the end of 2024. All capital projects to be reviewed by the Transportation Department



Health



Safety



Equity

MONITORING

- Conduct universal design audits on newly built capital projects in Sarnia.
- Upload audit reports to Open Data Portal.



Figure 16: Sidewalk widening in Edinburgh, UK

BEST PRACTICE CASE STUDY

As part of their ambition to improve pedestrians experience through the plan "Plan Piétons", the City of Strasbourg in France implemented an action "1% for pedestrians" which aims at directing 1% of public transport projects towards improving the pedestrian experience within a 500m radius around stations¹.

1. Le Plan Piétons de la Ville de Strasbourg, Ville de Strasbourg, 2013, <https://www.ecomobilite.org/IMG/pdf/at1planpietonstrasbourg.pdf>

BIKE PARKING RATIOS

DESCRIPTION

This action aims at providing secure and adequate bike parking in Sarnia to improve the experience of cyclists by offering safe infrastructure to lock bikes and improve end-to-end trips. The bike parking ratios would be included in the proposed development requirements at the development permit stage in order to deliver bike parking provisions to complement the City's offer of on-street bike parking.

Bike parking ratios should be implemented in distinct zones, Zone 1 and Zone 2. Zone 1, with commercial activity and cultural and institutional destinations, such as downtown, would require more bike parking than Zone 2 for residential areas. The bike parking should be provided at different ratios for both on-street (short-term bike parking) and off-street (long-term bike parking) parking.

The City of Sarnia should implement new bike parking ratios as part of the zoning by-law. Bike parking ratios will be based on surface areas for land uses such as office, retail and restaurants, by number of students for schools and universities, and by units for residential developments. For residential developments, bike parking ratios should not be correlated with car parking ratios.

Explicit requirements should be formulated for cycling amenities associated with off-street bike parking provision, such as lockers, showers and changing rooms. For example, one changing room/shower facility for every 10 long-term bike parking spaces should be recommended.

When bike parking ratio calculations end in fraction, the final number of bike parking spaces should be rounded up.

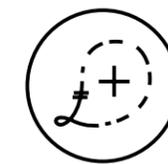
IMPLEMENTATION

Key stakeholders: Planning Department and Building & By-law Services Department within the Community Services Division, Developers.

- Planning: Building & By-law Services Department to implement bike parking ratio requirements in the zoning by-law for all new proposed developments to be applied at the



Safety



Economic prosperity



Equity

planning permit stage.

- Development permits: Planning Department to ensure bike parking requirements have been met before approving a development permit.

TARGET FOR SUCCESS

Implement updated bike parking ratio by-law by July 2024.

All approved proposed developments to implement bike parking following required off-street and on-street ratios from July 2024

Overall number of on-street and off-street bike parking increases.

MONITORING

- Collect data on number of bike parking provided by areas and within new developments.
- Ask tenants and employers to conduct surveys to understand demand for bike parking and associated facilities and offer more bike parking if demand is exceeded.

BEST PRACTICE CASE STUDY

Montreal's Côte-des-Neiges arrondissement zoning by-law includes a detailed chapter on bike parking requirements. Bike parking is required to be implemented when building, extending or changing the land use of any development. The zoning by-law requires 1 unit per 70 sqm for residential developments and 5 units for commercial and institutional developments larger than 500 sqm. Over 500sqm, commercial and institutional developments should implement 1 unit per 200sqm. Finally, for residential developments with over 20 bike parking spaces to have at least 50% of the bike parking located off-street and at least 20% of the bike parking located on-street.

OPEN DATA PORTAL TO MONITOR

DESCRIPTION

This initiative aims at collecting useful data which can be used in studies to justify the implementation of active transportation projects but also to monitor the success of the projects. The data portal should be accessible online to all Sarnians for transparency.

IMPLEMENTATION

Key stakeholders: Engineering and Operations Division and Community Services Division, Transportation Department, Schools, Employers

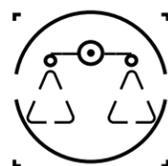
- Data structure: Structure the key data to share as open data based on what they currently have.
- Portal: Develop the Open Data Portal with a supplier.
- Future data collection: Outline formatting of future data to make sure it can be incorporated in an Open Data Portal and all departments within Engineering and Operations Division as well as departments within the Community Services Division at the City collecting any data within Sarnia to upload it to the Open Data Portal.
- Online access: Create a webpage with open access to all data collected.
- Communication: News will have to be published to Speak-up Sarnia anytime data is uploaded to the portal.

TARGET FOR SUCCESS

Open Data Portal operational by the start of 2026. All data collected by the city to be uploaded to the portal by 2028.

MONITORING

Give responsibility to a City of Sarnia employee to ensure all data collected is uploaded to the website.



Equity



Safety

BEST PRACTICE CASE STUDY

The City of Montreal has an open data webpage on the City's website with data available on a range of categories such as transport, infrastructure, health and tourism. The transport category includes data such as maps of the existing cycling network and future projects, vehicular and bike counts as well as signage plans.¹

¹ City of Montréal open Data portal, <https://donnees.montreal.ca/>

BIKE REGISTRATION PROGRAM

DESCRIPTION

The City of Sarnia can develop a bike registration program in collaboration with the Sarnia Police to reduce the number of stolen bikes and increase chances of retrieving stolen bikes. Bikes can be registered by citizens directly on a smartphone or with the use of a QR code with the name of the owner, the bike manufacturer, and serial number. If a bike is stolen it is easier for the police to identify the stolen bike.

IMPLEMENTATION

Key stakeholders: Bike Patrol Police Team, Engineering & Operations Division, Schools, Bike shops

- Coordination: Coordinate approach with the Bike Patrol Police Team.
- Development of the program: Chose a plan and approach the non-profit organization Bike Index which offers online free bike registry and already operates in Ontario (including: Windsor, Brantford, Toronto): <https://bikeindex.org/>.
- Pilot project: Pilot first campaign in Spring 2025.
- Viability: Review and adapt for running a recurring campaign.
- Pop-up bike registration: The registration of bikes can be offered to Sarnians in a kiosk held by the Police during the monthly pedestrianization of Christina Street, or directly in bike shops and schools. Pop up registration kiosks will offer materials related to bike usage and security, such as bike theft tips.

TARGET FOR SUCCESS

All bike shops and schools in Sarnia will be able to register bikes in the programme by 2026 after implementing a spring campaign in 2025. Reduce number of stolen bikes by 50% by 2030. Increase number of stolen bikes retrieved.

¹ Edmonton cyclists and police tout success of city's bike registration program, Dennis Kovtun , Jun 2022, <https://www.cbc.ca/news/canada/edmonton/edmonton-cyclists-and-police-tout-success-of-city-s-bike-registration-program-1.6488589>



Safety

MONITORING

Keep data on how many bikes are registered, how many are stolen and how many are retrieved and feed into Open Data Portal.

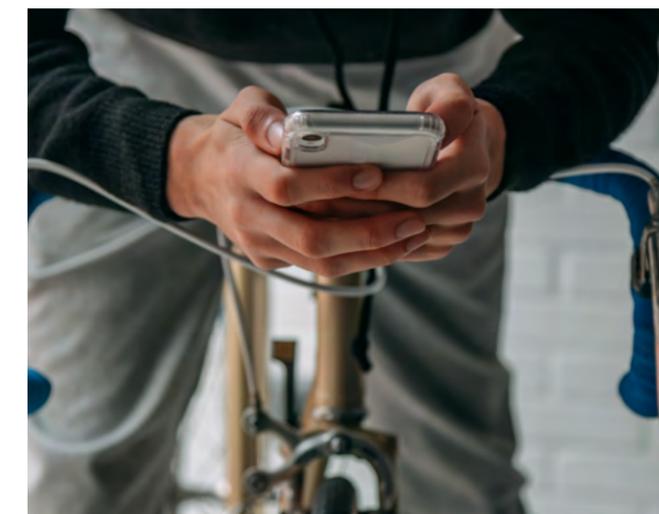


Figure 17: Person registering their bike online

BEST PRACTICE CASE STUDY

In July 2019, Edmonton Police Service has put in place a bike registration programme through the American non-profit organization Bike Index which operates in Canada¹. Between 2019 and 2022, 657 lost or stolen bikes were returned, and 100,000 bikes were registered. Bikes are registered with the serial number, make, model and colour of their bike which are then added to the online database. Photos can also be added to a bike profile to help identification.

ACTIVE TRANSPORTATION REQUIREMENTS FOR NEW DEVELOPMENTS

DESCRIPTION

This initiative aims at ensuring that new developments proposed to be built in Sarnia are required to implement active transportation infrastructure on their premises and surroundings. When a development permit is submitted to the City, proposed developments will have to provide the required number of on-street and off-street cycle parking based on their land-use and zoning. Developers should also be required to demonstrate the site will be accessible by pedestrians, cyclists and users with disabilities.

Active transportation requirements will include wide sidewalks, cycle lanes, dropped kerbs, safe pedestrian crossings, universal design of the entry points of the project, walking and cycling permeability as well as on-street benches and trees in the surroundings of new developments. Developers will have to ensure entry points to the site on their own land is connected to the wider active transportation network. The requirements will be built on elements from the newly-implemented Healthy Streets vision.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Transportation Department, Developers

- Planning: The City of Sarnia will implement a new section in the Transportation Impact Study (TIS) Guidelines to review existing active transportation infrastructure in Section 5. Existing Transportation Conditions and in Section 9 Transportation System Improvements creating a subsection 9.3, Implementation of Active Transportation Improvements for Cyclists and Pedestrians.
- Transportation Department: An employee at the City of Sarnia will be appointed to review the active transportation requirements.



TARGET FOR SUCCESS

The new TIS Guidelines will be adopted by the end of 2024. All new developments will include an active transportation section in their development permit application showing how the development improves the experience of existing and future pedestrians and cyclists by January 2026.

MONITORING

The City will collect data on planning applications and ensure all of them include the new active transportation requirements.

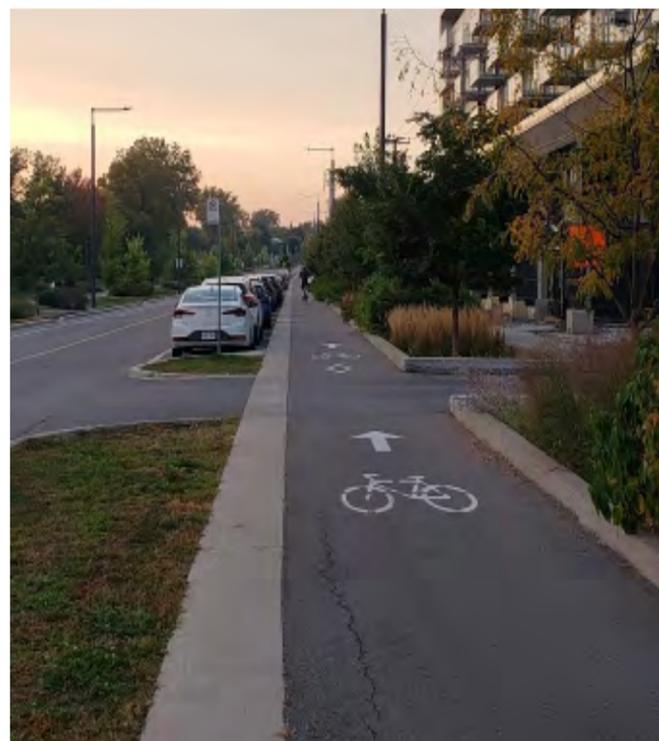


Figure 18: Bike lane by a residential development in Laval, CA

PARENTS CYCLING WITH CHILDREN ON SIDEWALKS BY-LAW

DESCRIPTION

This action aims at amending the by-law regarding adults accompanying kids riding their bikes on the sidewalks. This is to improve the safety for the accompanying adults who currently have to ride at a slower speed on the road shared with vehicles which is dangerous for both cyclists and vehicle drivers. This action will promote active transportation for children and participate in behaviour change.

IMPLEMENTATION

Key stakeholders: The Planning Department and the By-law Services Department within the Community Services Division, Schools, Children and Parents

- By-law: City officials will amend the by-law to allow accompanying parents to bike on sidewalks in Sarnia.
- Communication: Create a campaign to notify Sarnians of the change of the by-law.

TARGET FOR SUCCESS

Fewer accidents recorded and increased number of parents feeling safe and comfortable when cycling with their children.

MONITORING

Conduct surveys in schools to monitor changes in the feeling of safety for parents and children before and after implementation of the new by-law.

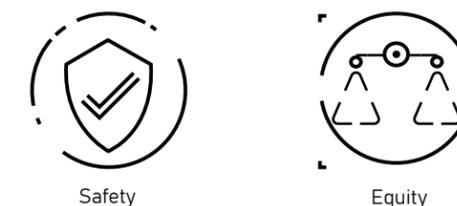


Figure 19: Parent and child on bike

OPTIMIZE ON-STREET CAR PARKING BASED ON USAGE

DESCRIPTION

This initiative aims at providing additional space for active transportation infrastructure by optimizing on-street car parking based on the level of usage. On-street parking is currently underutilised in Sarnia which can be demonstrated by data collection to identify the level of occupancy and rationalize the location of on-street parking spaces. Parking areas should be consolidated and more efficiently distributed to satisfy demand while also opening up new areas for alternative uses of the space. This can help deliver additional space for street redevelopment projects by counting the occupancy of parking spaces ahead of a project.

IMPLEMENTATION

Key stakeholders: The Public Works Department within the Engineering & Operations Division, the By-law Services Department within the Community Services Division and Residents, Sarnia Police Service

- Data collection: Conduct surveys to count on-street parking occupancy on streets where infrastructure projects are proposed for active transportation.
- Monitoring: Implement a monitoring strategy to build evidence of on-street parking utilisation.
- By-law: The department looks after amendments to the parking based on usage.
- Enforcement: Sarnia Police Service in charge of enforcement of new amendment.
- On-street parking payment: Explore the possibility of implementing residential parking permits in certain areas for on-street parking and direct collected fees towards active transportation projects and funding.

TARGET FOR SUCCESS

Increase space for active transportation infrastructure by reducing the overall number of on-street parking spaces.

Implement residential bespoke parking controls on



street parking spaces. Implement residential bespoke parking controls on roads with vulnerable users such as streets with schools or retirement homes.

MONITORING

- Prioritise the implementation of parking permits zones on streets with schools and retirement homes.
- Monitor the utilisation of on-street parking with data collected from the monitoring software.



Figure 20: On-street car parking in Paris, France



Figure 21: Trees and greenery between car park spaces in Paris, France

IMPLEMENTING HEALTHY STREETS VISION

DESCRIPTION

This action aims at implementing a Healthy Streets vision to make Sarnia's streets more accessible for all road users. The Healthy Streets vision will look at different criteria to improve road safety and creating a pedestrian and cyclists-friendly environment with more greenery, spaces to stop in the public realm. This action aims at creating a more inclusive City that respond to the needs of Sarnians of all ages and abilities by providing the right infrastructure.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division

- Engineering Department to hold a meeting where they identify key criteria to implement in the Healthy Streets vision.
- The City of Sarnia will develop a Healthy Streets vision to implement in all new capital projects.

TARGET FOR SUCCESS

Healthy Streets vision to be adopted by end of 2025. All new capital projects to have implemented a Healthy Streets vision from 2026. Improve Sarnians' overall activity levels and wellbeing.

MONITORING

- Yearly review of key areas to identify streets and public realm areas which need improvements.
- Newly appointed Transportation Department to ensure the Healthy Streets vision is implemented in capital projects.



Figure 22: Healthy Street with pedestrian and bike priority in Seattle, USA



Figure 23: Transport for London's Healthy Streets indicators

ADOPT A SAFE SYSTEMS AND VISION ZERO POLICY

DESCRIPTION

Sarnia will commit to achieving zero deaths and serious injuries on its roads by 2040 with the development of a Vision Zero policy. A Vision Zero policy is a road safety initiative that aims to eliminate all traffic fatalities and severe injuries. The core principles focus on prioritizing human life over mobility, promoting safe road design, enforcing traffic laws, and fostering a culture of responsibility among road users.

Collaboration with community stakeholders, ongoing data collection, and continuous evaluation of the program's effectiveness are essential for the successful implementation of Vision Zero in Sarnia. Continue with Traffic Calming measures and reinforce speed limits in certain important areas as identified through the public engagement.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, the Planning Department within the Community Services Division, Sarnia Police Service

- **Policy:** The policy should be implemented following significant consultation on how Safe Systems and Vision Zero can be achieved.
- **Implementation:** The policy would include measures to make roads safer for all users through establishing appropriate speed limits, engineering roads for appropriate speed limits, and enforcing speed limits.
- **Enforcement:** Sarnia Police Service should be consulted on strategies to enforce speed limits efficiently in key areas.

TARGET FOR SUCCESS

Zero deaths and serious injuries on Sarnia's roads by 2040.

MONITORING

Monitoring of progress by recording casualties and serious injuries on the street network.



Figure 24: Cyclists on the Black Lives Matter Plaza, Washington D.C, USA

BEST PRACTICE CASE STUDY

The World Health Organisation has declared Vision Zero an effective policy to prevent road traffic injury since 2004. In 2015, Edmonton was the first Canadian city to adopt Vision Zero. Between 2015 and 2021, traffic-related fatalities in Edmonton decreased by 50 per cent and serious injuries dropped by 32 per cent. Oslo and Helsinki show that Vision Zero can be achieved by implementing lower speed limits, upgraded intersection design and reallocating spaces from cars to pedestrians and cyclists. Both cities managed to eliminate all road traffic deaths in 2019 (though they have increased at a slower pace since).

4. Behavior Change Actions

These actions support people walking and cycling by giving them the resources they need to change how they travel. These actions aim at changing the travel behaviour of Sarnians of all ages and abilities.

SCHOOL STREET PILOT

DESCRIPTION

Sarnia will pilot its first School Street project, and learnings will be shared with schools across the City. Oak Avenue is the first location recommended for the pilot School Street.

School Streets become pedestrian and bike-only zones during school start and finish times – usually 30 minutes to an hour in the morning and in the afternoon, during term time. Outside these hours, all vehicles can continue using the street.

Pick-up and drop-off journeys generate significant car traffic near schools, which increases the risk of collisions with children walking and cycling to school. School streets also reduce the exposure of children to air pollution near their school and encourage children to be active. They also create more opportunities for socialising and community-building at the school gates – as parents and children are more likely to stop for a chat.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Parents, Chatham-Kent Lambton Administrative School Services (CLASS)

Once the consultation with schools, parents, children and residents has taken place, the Municipality can decide additional School Streets:

- Pilot School Street: For the first pilot at Oak Avenue, signage and barriers can be manually placed on the Street. For the duration of the pilot, enforcement of the closure should be managed by the Sarnia Police.
- Exemptions: There could be exemptions for people who live or work on a School Street, or people who have an Accessible Parking Permit. They can apply for an exemption to the City of Sarnia.

TARGET FOR SUCCESS

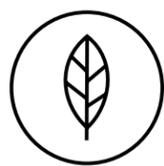
The proportion of young people who walk or bike to school across the City increases each year and the number who are being driven or drive to school decreases.



Safety



Health



Environment and Resilience

MONITORING

Annual survey of young people on the modes of transport they use to get to school. Data will be collected by participating schools undertaking hands-up surveys with school students.



Figure 25: Children walking to school

BEST PRACTICE CASE STUDY

Between 2021 and 2022, five School Streets were piloted, then implemented across Ontario – in Markham, Mississauga, Hamilton and Kingston. The project was designed to help reverse a fall in the proportion of children walking or biking to school. As a result of the School Streets, the proportion of children engaging in Active School Travel increased by up to 20% for one of the schools in Mississauga. The pilot also found that vehicle traffic did not increase on surrounding streets. Key lessons from the pilot stressed that currently there is no standardized municipal permit process for School Streets, and that participation of the City is essential to the scheme success.

BIKE TRAINING AND CONFIDENCE COURSES

DESCRIPTION

Free bike training courses will be offered to Sarnians in collaboration with schools and community organizations.

- The City of Sarnia will work with schools to ensure every children aged 5-18 is offered a free bike training course.
- Adults will also benefit from free courses to improve their confidence.

Courses could be organised in different modules ranging from:

- Cycling for beginners
- Tips and practice for people who have not biked for a long time or do not feel comfortable cycling in the city
- Family bike skills
- Bike maintenance classes

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Schools, Employers, CLASS

- Registration platform: In the first instance, a platform for registration of interest and skills would be developed.

Based on the skills needed, the City will work with potential course providers to develop the course program and communications. If needed, the City will fund a bike instructor training to meet demand.

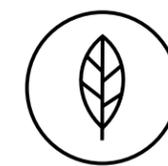
- Geography: To increase participation, it is recommended that courses are available in different neighborhoods, that bikes are provided as part of the course, and that courses are advertised widely online, on social media (working with employers and community groups to spread the word) and at local transport hubs, at civic and leisure centres.
- Events: Bike training courses could also be proposed as activities within School Street Pilots and the Christina Street closure.



Safety



Health



Environment and Resilience

TARGET FOR SUCCESS

The number of people taking part in courses increases.

Survey participants at the end to validate if their confidence riding a bike has increased.

MONITORING

Survey participants after a course to validate if their confidence riding a bike has increased.

BEST PRACTICE CASE STUDY

Transport for London offers online and in-person bike skills courses. Courses are available for all abilities and in all 33 London boroughs, and are provided free of charge. Online courses include “tips to get you and your bike prepared for the road”, “How to start cycling on the road safely and responsibly”, “Tips to brush up on your cycling skills”, “How to bike in a group with children or adults”. Instructor-led courses in person include basic bike skills (off-road practice to learn the basics), urban bike skills (Practice off-road and then move on to quiet roads to refresh your cycling technique), Advanced bike skills (covering complex junctions, in heavy traffic or at night) and family bike skills (to practice on quiet routes and through parks to learn how to bike with children).

WALK AND BIKE TO SCHOOL CAMPAIGN

DESCRIPTION

The City will encourage Sarnians to walk and bike to school through promotional campaigns and a network of Active School Travel Advocates. The City will work with schools to ensure that safe, accessible and convenient bike parking is provided within school compounds.

The campaign will build and complement the programs run by CLASS.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Schools, CLASS, Parents, Teachers

- Resources: A toolkit collating resources on promoting Active School Travel is available from Green Communities Canada¹ – this covers all the steps to achieve successful school travel planning.
- Communication: A range of communications methods are available for the City to promote Active School Travel.
- Sharing information and promotional content on social media, online, and across the City's existing communications to children and parents, such as school newsletters and notice boards).
- Working with schools and existing stakeholders (such as CLASS) to designate and resource an active school transport advocate in each school, whose role will be to coordinate active school travel campaigns and set up parent groups who walk and bike to school.
- Active school travel advocates will help parents set up and run a bike or walking bus – a group of children who live along the same route and could bike or walk to school together, accompanied by one or several parents. They will also ensure that adequate bike parking is provided within schools.



- Prizes and awards for schools that achieve the biggest uplifts in Active School Travel.

TARGET FOR SUCCESS

Increasing the proportion of young people and adults who walk and bike to school.

MONITORING

Teachers to undertake annual hands-up surveys of students of transportation to school.

BEST PRACTICE CASE STUDY

The City of Gatineau is encouraging all primary school children to walk or bike to school with a one-day challenge². Prior to challenge day, schools can participate by offering bike training, engaging with children and parents, and raising awareness on the benefits of active transportation. Schools can draw on a bank of resources including educational videos and interactive computer games, classroom activities, and outdoor practice such as test rides and individual assessment, and supervised test rides with a qualified instructor. On challenge day even children who live too far from school to walk or bike can be driven to a safe walking and cycling corridor and reach school using active travel.

1. School Travel Planning Toolkit, School Travel Canada, 2022, School Travel Planning Toolkit
2. Can Do It Challenge, Campagne Je suis Capable, 2023, I can do it challenge.

PROMOTE BENEFITS OF ACTIVE TRANSPORTATION FOR COMMUTING TRIPS

DESCRIPTION

The City will encourage its employees to walk and bike as part of their journey to work, and work with businesses to encourage them to do the same. Designated Active Travel Coordinators will audit bike parking facilities in each office building and communicate about the health benefits of walking and cycling.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division

- Advocates: An Active Transportation Advocate will be designated at each relevant building owned or funded by the City (such as the civic centre and other city offices, library, and recreation centres funded by the City).
- Feedback collection: Their role will be to consult workers on how they could be supported to walk and bike to work, promote active transportation and its health benefits, and share information and tips to support employees to walk or bike to work.
- Infrastructure: They will also audit the bike parking facilities in the building they are responsible for. The manager will then feedback to the City's facilities management team on any necessary improvements to the active transportation infrastructure, such as safe and accessible bike parking.
- Reward: The City could encourage take up of walking and cycling by offering prizes and awards for offices that achieve the biggest uplifts in active commuting.

TARGET FOR SUCCESS

Increasing the proportion of Sarnians who walk or bike as part of their journey to work, including in combination with public transit.

1. Smart Commute, 2023, Smart Commute



MONITORING

Mode share of commuting trips in national and provincial statistics such as the Transportation Tomorrow Survey.



Figure 26: Person cycling to work

BEST PRACTICE CASE STUDY

Smart Commute is an organisation working with other organisations and companies to encourage employees to use sustainable forms of transportation as part of their commute. They provide information on safe walking and cycling routes in the York Region and the Greater Toronto and Hamilton Area, as well as holding different contests and campaigns to promote active transportation, such as Walktober and Bike Month. They also have an online commuting cost calculator which shows employees the economic and environmental cost of their regular commute¹.

CITY WIDE ACTIVE TRANSPORTATION CAMPAIGN

DESCRIPTION

Campaigning is a powerful tool to raise awareness and promote behaviour change. Working with active transportation community groups and stakeholders, Sarnia will campaign to highlight the benefits of walking and cycling for everyone's health, and the resources available to help people take up active transportation.

IMPLEMENTATION

Key stakeholders: The Community Services Division, Transportation Department

- Communication channels: Sarnia will work with the active transportation community to devise a multi-channel campaign. Supports would include social media, physical notice and advertising boards across the City, and within buildings funded by the City, the City's magazine and newsletters, the City's website, as well as stands and communications at events, such as Canada day.
- Communication stories: The communications should be personal – telling stories of people who walk and bike in Sarnia, why they choose active transportation, their favourite itineraries and tips to walk and bike more. Interviews with doctors and nurses could also highlight the benefits of active transportation.

TARGET FOR SUCCESS

Increasing Sarnians' take up of active transportation. Become a Bronze Status Bicycle Friendly Community¹ by 2026.

MONITORING

A punctual survey of Sarnians, their perceptions of walking and cycling, and the time spent walking and cycling in the past week.



Figure 27: Bicycle friendly community

BEST PRACTICE CASE STUDY

The City of Hamilton and local not-for-profit organisations run various events and initiatives to promote cycling around the city. For example, a "Pride Ride" was organised on Canada Day weekend. Information on events and cycling accessibility is available on the websites and social medias of the organisations, such as Everyone Rides². The City of Hamilton also provides clear information regarding cycle routes and cycle safety around the city directly on their website³.

1. Current BFC Award Winners, Share the Road Cycling Coalition, 2021, Current BFC Communities | Share The Road
 2. Events and Group Rides, Everyone Rides, 2023, Events - Everyone Rides
 3. Cycling Network in Hamilton, City of Hamilton, 2023, Biking & Cyclists | City of Hamilton

BIKE AND WALKING ROUTES AND TOURS

DESCRIPTION

Sarnia will work with Tourism Sarnia-Lambton to develop and promote a map of leisure walking and biking routes to discover the city and organise regular walking and biking tours of the City's sights.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Tourism Sarnia-Lambton, Bike Friendly Lambton

- Wayfinding: The map of walking and biking routes will build on existing cycling developed by Bike Friendly Lambton, such as the Sarnia Bike Trails Map and the Tree of Distinction Tour.
- Economic activity: Walking and biking can be a popular way of discovering Sarnia. It also brings economic benefits as people are more likely to walk or bike past shops along the way.
- Program: A program of themed walking and cycling tours would be developed by the City in partnership with Tourism Sarnia-Lambton and promoted by both organisations. Tours could be targeted at residents and visitors and could include tours of local nature and biodiversity, history and architecture. Tours can also be facilitated with local organizations. These tours would be delivered at a small cost for participants and would be family-friendly where possible.

TARGET FOR SUCCESS

Increase walking and biking tourism in Sarnia – this could be increasing the number of people joining the tours.

MONITORING

An annual survey of Sarnians, their perceptions of walking and cycling, and the time spent walking and cycling in the past week.

1. Active Transportation Advisory Committee, Halifax Regional Municipality, 2023, Active Transportation Advisory Committee | Halifax
 2. Active Transportation (AT) Grants Program, Halifax Regional Municipality, 2023, Active Transportation Grants Program | Community Association | Halifax



Figure 28: Bike tour on a bidirectional bike lane

BEST PRACTICE CASE STUDY

Vélo Québec annually publishes a detailed map of the 3,450 km of bikeways in the Greater Montreal area and its surroundings, including the Oka-Mont-Saint-Hilaire Bike and Walking Trail (143 km long) and the Route Verte network (the longest bicycle network in North America, 5,700 km long). The map specifies types of bike lanes, bike access to bridges, river shuttles and self-service repair stations, locates heritage destinations, some tourist attractions as well as metro and commuter train stations. Digital and paper versions of the map are free, and available at many bike repair and customer service points across the city. Maps can also be mailed to residential addresses for \$3. Vélo Québec also organises once a year the Tour de Montréal (25 to 130 km long routes) which invites residents and visitors to bike around the island of Montreal on streets closed to vehicular traffic.

SUPPORT FOR COMMUNITY-LED ACTIVE TRANSPORTATION INITIATIVES

DESCRIPTION

Sarnia will increase its support to community led-active travel initiatives – by having a dedicated point of contact within the City in the Transportation Department, fast-tracked licenses (for temporary street closures or bike lanes), and community grants for active transportation projects.

IMPLEMENTATION

Key stakeholders: The Community Services Division, Transportation Department, Community groups

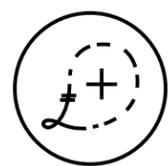
- Community groups: The Transportation Department will create a liaison group with community active transportation groups – the group will meet regularly to exchange ideas and progress projects.
- Process improvement: The Transportation Department will streamline processes required for temporary bike lanes and street closure applications and decisions.
- Funding: The Transportation Department will make grants available to community groups to support their active transportation projects – such as School Street pilots, Event Day bike lanes, bike proficiency training and walking and biking promotional events.

TARGET FOR SUCCESS

The number of community-led active transportation projects, and their impact on the take up of walking and biking increases.

MONITORING

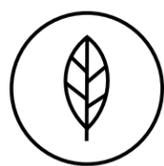
The Transportation Department will record the number of community-led active transportation initiatives and their impact on the take up of walking and biking.



Economic prosperity



Health



Environment and Resilience



Figure 29: Cyclists on Canada Day in Sarnia, CA

BEST PRACTICE CASE STUDY

At the City of Halifax, an Active Transportation Supervisor was appointed to oversee the planning and work carried out for active transportation projects in the municipality of Halifax. An Active Transportation Advisory Committee was also appointed to advise on all active transportation matters to the Transportation Standing Committee of the municipality¹. An Active Transportation Grants Program was also created to provide grants for community associations which operate and maintain the local active transportation network or educate the public about walking and cycling².

1. Active Transportation Advisory Committee, Halifax Regional Municipality, 2023, Active Transportation Advisory Committee | Halifax

2. Active Transportation (AT) Grants Program, Halifax Regional Municipality, 2023, Active Transportation Grants Program | Community Association | Halifax

5. Operations and Maintenance Actions

These actions focus on operational and maintenance changes that can be made to the current and future infrastructure to make Sarnia more walkable and bike-friendly.

PEDESTRIAN LEADING INTERVALS IN TRAFFIC LIGHTS

DESCRIPTION

The City will review and adjust pedestrian crossing timing to make sure that they are safe for people with slower walking or wheeling speeds. The City will also explore increasing the frequency of pedestrian crossing phases to reduce waiting times at crossings.

The City will also implement pedestrian leading intervals at intersections with the highest number of vulnerable users and vehicles collisions using signage to improve safety for pedestrians crossing.

For cyclists, the City will pilot green wave corridors – which coordinate traffic lights along key commuter bike routes to the average bike speed, allowing cyclists travelling at a moderate pace to encounter only green traffic signals. These make cycling more convenient and less physically demanding, and more comfortable in wet weather. Green waves also encourage cyclists and motorists to keep to a moderate speed.

Leading Pedestrian Intervals (LPIs) and Leading Bike Intervals (LBIs) should be tested as pilots at the most challenging intersection in the city as they can reduce pedestrian-vehicle collisions as much as 60% at treated intersections¹. Bike signals should be added to regular traffic signal heads.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division

- Changes to traffic phasing can often be implemented quickly, they are relatively inexpensive and visible and popular with cyclists and pedestrians.
- The pedestrian crossing times review will look at existing pedestrian crossing phases and crossing times. These will be benchmarked against good practice for accessibility and inclusion.
- Adjustments to traffic light phases and crossing



- times will be made in line with good practice for pedestrian accessibility.
- The green wave pilot would be implemented on routes with bike lanes that are used by cyclists.
- Changing traffic light phasing will impact on vehicle waiting times at intersections – this should be estimated at key intersections where queuing is likely to be an issue.

TARGET FOR SUCCESS

New crossing times and phases for pedestrians, and green waves rolled out across the City.

MONITORING

Impact on walking, cycling, and vehicle waiting times at main intersections should be monitored based on CCTV imagery.



Figure 30: Green wave signage in San Francisco, USA

BEST PRACTICE CASE STUDY

The San Francisco Municipal Transportation Agency (SFMTA) first implemented bike green waves on Valencia Street in 2010. Following widespread support, the SFMTA added four other green waves on additional streets of the city. As well as traffic phasing, the SFMTA introduced “green wave” signage to help cyclists and motorists prepare and adjust their speeds².

ALL-YEAR MAINTENANCE

DESCRIPTION

The City will ensure bike lanes and sidewalks are maintained and useable at every season. This will include leaf and snow clearing as well as potholes removal. This will enable walking and cycling to become a safe and comfortable alternative to the private car year-round. Sidewalk plows can be used to clear snow from bike lanes. In addition, flex posts can be kept on bike lanes for the winter season to maintain the safety of cyclists across all seasons. Make special considerations for winter maintenance of the network, focus on trailheads and trails connections; consider Michael Snow Court.

The maintenance budget should include the replacement of flex posts regularly when worn-out.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division

- Snow and leaf removal: The City will ensure a yearly budget is provided for snow and leaf removal operations.
- Maintenance: The City's street maintenance team will cover maintenance of bike lanes and sidewalks.

TARGET FOR SUCCESS

All cycling and walking infrastructure is accessible, protected and comfortable to use year-round.

MONITORING

A regular street audit of bike lanes and sidewalks in fall and winter should be conducted, and tracking the number of reports of walking and cycling infrastructure needing maintenance.



Figure 31: Sidewalk snow removal operations

BEST PRACTICE CASE STUDY

The City of Longueuil has committed to plowing snow from 116 km of bike paths by 2025, up from 32 km in 2022. By 2025 it estimates that over half of the cycling network will be maintained year-round. Meanwhile Montréal has tested a new method to plow snow from bike lanes involving a two-step process that combines street sweepers clearing pavements and bike lanes, then coating paths with snow-melting brine. This process prevents the formation of snow and ice on bike lanes.

1. Urban Street Design Guide, Leading Pedestrian Interval, NACTO, 2013, Island Press. Accessed in November 2023: < <https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/traffic-signals/leading-pedestrian-interval/>>
 2. Green Wave Becomes Permanent on Valencia Street, Streetsblog SF, 2011, Green Waves San Francisco

ACTIVE TRANSPORTATION AT CONSTRUCTION SITES

DESCRIPTION

Where construction sites require sidewalk or bike lane space, sidewalks and bike lanes will be provided in an alternative location to ensure the network continuity and connectivity.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Contractors, Developers and Construction workers

- Construction plans: Sarnia will require developers and constructors to put in place a contingency plan for pedestrian and bike movements at and around construction sites.
- Alternative routes: Where sidewalks and bike lanes need to be obstructed for the needs of construction, the City of Sarnia will ensure it is only a last resort solution and that safe walking and cycling infrastructure will be provided in lieu while construction takes place. Pedestrian and cycling infrastructure should also be restored to a high level of quality once construction is completed.

TARGET FOR SUCCESS

100% of construction sites allow for safe walking and cycling movement, existing infrastructure is re-provided during construction.

MONITORING

Audit of regular practices at construction sites.



Safety



Health

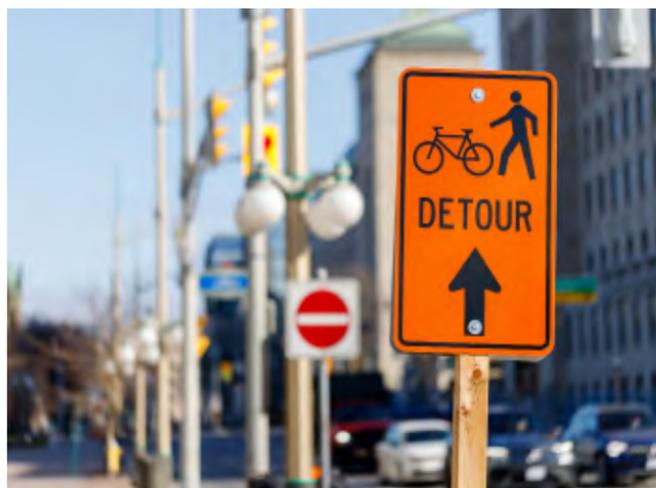


Figure 32: Temporary construction signage for cyclists and pedestrians

BEST PRACTICE CASE STUDY

The City of Calgary added a section on its website dedicated to impacts related to ongoing construction sites in the city. The subsection gives construction sites' location, impact, and the type of project as well as giving access to documents such as maps indicating alternatives routes to allow cyclists to safely bypass construction areas while minimizing disruptions. Additionally, there is an option to receive project updates and information on constructions in a preferred area by filling up a form¹.

1. See Green line stations impacts, Calgary, 2023, <https://www.calgary.ca/green-line/green-line-construction/green-line-construction-updates.html>

ACTIVE TRANSPORTATION AT EVENTS

DESCRIPTION

The City of Sarnia will request that event organisers make events more pedestrian- and bike-friendly and support them in achieving their active transportation goals. This will include temporary bike parking in convenient and visible locations, temporary bike lanes, informing attendees of walking and cycling routes, informing of public transit options and schedules, working with public transit providers to add services where needed to meet demand, and even offering incentives for people who use active transportation and public transport to get to events.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Events organisers

- Licensing: Event organisers will be encouraged to promote active transportation at events through Sarnia's event licensing process.
- Best practice guidelines: The Transportation Department will create a web page or short guidance document with best practices for active transportation at events to share with event organisers.

TARGET FOR SUCCESS

All events in Sarnia encourage active transportation.

MONITORING

Audit of initiatives to encourage active transportation at events.



Safety



Health



Figure 33: Bike parking for an event at the Olympic Park in Montreal, CA

BEST PRACTICE CASE STUDY

The Lac des Nations festival takes place at Jacques-Cartier Park, ideally located at the intersection of several recreational and utility bike paths. The festival provides visitors a bike enclosure secured by volunteers. The parking lot is located very close to the main entrance of the festival. The festival still requires cyclists to bring their locks and the festival assumes no responsibility for any theft or vandalism.

INTERMODAL CONNECTIVITY

DESCRIPTION

The City of Sarnia will support the integration of multi modal trips with cycling and public transit modes through physical infrastructure, online transportation planning and ticketing. This will include providing secure bike parking at public transit interchanges, and create a discounted “bike & transit” ticket for any bikeshare scheme – with ticketing platforms integrated to enable single payment for both modes of transport.

IMPLEMENTATION

Key stakeholders: The Engineering & Operations Division, Transit Sarnia, public transit and bikeshares systems providers

- **Collaboration:** Work with Sarnia Transit and any bikeshare providers to release timely and reliable open data on public transit and bikeshare systems – including live tracker data on buses or number of bikes available for rent. This data can then be picked up by popular travel planning applications.
- **Infrastructure:** Physical infrastructure will also help improve intermodal trips – such as digital screens and maps showing upcoming transit services and walking distance to hire a bike. Bike parking at stations and bus stops will make it more convenient to connect to and from public transit.

TARGET FOR SUCCESS

Bike parking and departure screens are rolled out at key public transit stops.

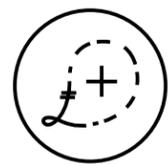
Travel planning mobile applications offer a “bike & transit” option to reach destination.

Availability of “bike & transit” discounted tickets when a bikeshare system becomes available.

MONITORING

Annual progress audit on bike parking availability at transit stops.

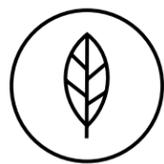
Reliable data available on travel planning platform.



Economic prosperity



Health



Environment and Resilience

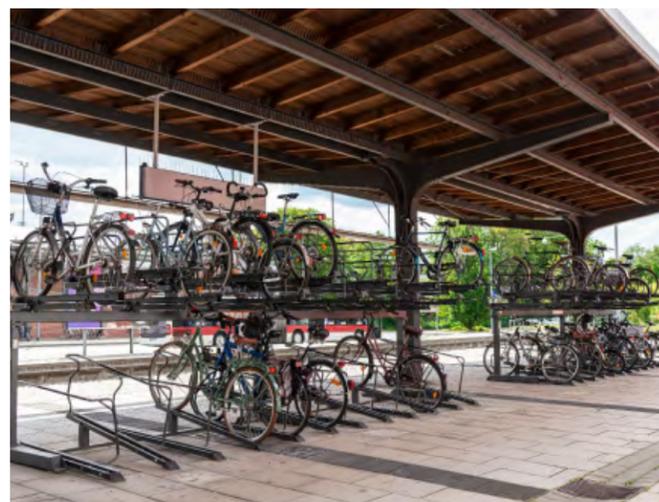


Figure 34: Bike parking at train station

BEST PRACTICE CASE STUDY

Austin's public transport agency, CapMetro, has partnered with the BCycle bike share system to facilitate intermodal connections. The CapMetro trip planner shows options for public transport, cycling, and a combination of both¹. Bikeshare passes can be purchased from their mobile application, including the option of a combined public transport and bike share pass².

1. Trip Planner, CapMetro, 2023, Trip Planner – CapMetro – Austin Public Transit

2. MetroBike passes, MetroBike, CapMetro, 2023, MetroBike – CapMetro – Austin Public Transit

6. Actions Summary Table

Name of action	Timeframe	Difficulty of Implementation (* Easy, ** Moderate, *** Complex)	Responsibility	Benefits (* Light, ** Moderate, *** Significant)	Cost (\$ Inexpensive, \$\$ Moderate, \$\$\$ Costly)
Infrastructure Actions					
Bike parking	Ongoing	*	The Engineering and Operations Division , Citizens, Local companies	**	\$
Proposed bike lanes	Ongoing	***	The Engineering and Operations Division, Citizens	***	\$\$\$
Intersection design	Medium (5-10 years)	**	The Engineering and Operations Division	**	\$\$
Bike counters on key intersection	Ongoing	*	The Engineering and Operations Division	*	\$
Continuous sidewalks in residential areas	Medium (5-10 years)	***	The Engineering and Operations Division, Citizens, local businesses	***	\$\$\$
Bike-sharing system / micromobility	Short (0-5 years)	**	The Engineering and Operations Division, Citizens, Local enterprises	***	\$\$\$
Street lighting	Medium (5-10 years)	**	The Engineering and Operations Division	**	\$\$
Signage strategy	Short (0-5 years)	*	The Engineering and Operations Division, Citizens, Local businesses	**	\$
Placemaking	Ongoing	***	The Engineering and Operations Division and the Community Services Division, Citizens, Local businesses	***	\$\$\$
Universal design public transit	Medium (5-10 years)	**	Sarnia Transit, the Engineering and Operations Division, Citizens	**	\$\$
Planning Actions					
Pedestrian budget in city capital projects	Medium (5-10 years)	*	The Planning Department and Building & By-law Services Department within the Community Services Division and the Public Works Department within the Engineering & Operations Division	***	\$
Bike parking ratios	Short (0-5 years)	**	Planning Department and Building & By-law Services Department within the Community Services Division	**	\$
Bike registration program	Short (0-5 years)	*	Engineering & Operations Division, Bike Patrol Police Team, Schools, Bike shops	*	\$
Active transportation requirements for new developments	Short (0-5 years)	**	The Planning Department within the Community Services Division, Transportation Department, Developers	***	\$
Parents cycling with children on sidewalks by-law	Short (0-5 years)	*	The Planning Department and the By-law Services Department within the Community Services Division, Schools, Children and parents	**	\$
Optimize on-street car parking based on usage	Medium (5-10 years)	**	The Public Works Department within the Engineering & Operations Division, the By-law Services Department within the Community Services Division, Sarnia Police services and Residents	***	\$\$

Name of action	Timeframe	Difficulty of Implementation (* Easy, ** Moderate, *** Complex)	Responsibility	Benefits (* Light, ** Moderate, *** Significant)	Cost (\$ Inexpensive, \$\$ Moderate, \$\$\$ Costly)
Open data portal	Short (0-5 years)	**	The Engineering and Operations Division and Community Services Division, Transportation Department, Schools, Employers	**	\$\$
Adopt a safe systems and vision zero policy	Long (10-20 years)	**	The Planning Department within the Community Services Division, the Engineering & Operations Division and Sarnia Police Service	***	\$\$
Implementing healthy streets vision	Short (0-5 years)	*	The Engineering and Operations Division	***	\$
Behaviour Change Actions					
School street pilot	Short (0-5 years)	**	The Engineering & Operations Division, Parents, CLASS	**	\$
Bike training and confidence courses	Ongoing	**	The Engineering & Operations Division, Schools, Employers, CLASS	**	\$
Walk and bike to school campaign	Short (0-5 years)	*	The Engineering & Operations Division, CLASS, Parents, Teachers	**	\$
Promote benefits of active travel for commuting trips	Short (0-5 years)	*	The Engineering & Operations Division	**	\$
City wide active transportation campaign	Ongoing	**	The Community Services Division, the Transportation Department	***	\$
Bike and walking routes and tours	Short (0-5 years)	*	The Planning Department within the Community Services Division, Tourism Sarnia-Lambton, Bike Friendly Lambton	**	\$
Support for community-led active transportation initiatives	Ongoing	**	The Community Services Division, Transportation Department, Community groups	***	\$
Operations and Maintenance Actions					
Pedestrian and bike priority at traffic lights	Medium (5-10 years)	***	The Engineering & Operations Division	**	\$
All-year maintenance	Ongoing	**	The Engineering & Operations Division	***	\$\$\$
Active transportation at construction sites	Short (0-5 years)	*	The Engineering & Operations Division, Contractors, Developers and Construction workers	**	\$\$
Active travel at events	Short (0-5 years)	*	The Engineering & Operations Division, Events organisers	**	\$
Intermodal connectivity	Medium (5-10 years)	***	The Engineering & Operations Division, Transit Sarnia, Public Transit and Bikeshare Systems Providers	**	\$\$

7. Monitoring and Evaluation

MONITORING AND EVALUATION

TRANSPORTATION DEPARTMENT

The department would oversee the implementation of active transportation initiatives and ensure that the goals outlined in the ATMP are met effectively. The department can assign responsibilities to dedicated staff members, who will supervise the execution of various projects outlined in the plan, including the construction of bike lanes, sidewalks, and pedestrian-friendly zones, and assess their continuity with the ATMP guidelines. The Transportation Department could also be consulted on capital projects to adequately integrate walking and cycling needs on projects, and potentially also take charge of gathering public feedback regarding the ATMP projects and accordingly adapt planning and actions.

DATA COLLECTION

Data collection is a key part of monitoring the ATMP for Sarnia. It can help to measure the plan's progress and impact, identify its strengths and weaknesses, provide feedback and evidence for future improvements, and communicate the benefits and challenges of active transportation. Various methods can be used to collect data on active transportation users, modes, infrastructure, and outcomes. Data collection can also be integrated with other planning processes and capital projects to compare before and after situations.

Some examples of data collection methods for active transportation are:

Surveys and interviews with residents, users, and providers of active transportation modes and services

Counts of pedestrians, cyclists, and other active travelers on the network

Analysis of travel patterns, mode choices, trip purposes, and trip distances using smartphone apps, GPS devices, or web-based tools

Assessment and audits of the quality, safety, inclusive design, and connectivity of the active transportation infrastructure and facilities

Measurement of the environmental, health, economic, and social impacts of active transportation.

OPEN DATA PORTAL

An Open Data Portal could provide a platform for the City to share the progress and performance of the ATMP with the public and other stakeholders.

The City could publish data on the implementation, usage, and impact of the active transportation network, such as the number and location of completed projects, the mode share and travel patterns of active transportation users, the safety and accessibility indicators, and the environmental and health outcomes. This would increase the transparency and accountability of the City and foster public trust and engagement. The Open Data Portal could also be used to monitor the implementation of the ATMP by recording all infrastructure completed and in-progress, with frequent updates.

The City would have to validate the format needed for data from sensors, surveys, feedback, or third-party applications to incorporate efficiently onto and be able to periodically update the portal.

USER EXPERIENCE SURVEYS

Periodic surveys should be administered to residents, commuters, and active transportation users to gather qualitative feedback on their experiences. These surveys will focus on user satisfaction, ease of access, perceived safety, and suggestions for improvements. The feedback collected will be integrated into the Open Data Portal, giving valuable insights into the user perspective, guiding future enhancements of active transportation facilities.

Spatial mapping tools can be used on the Speak Up Sarnia page to gather localized feedback and measure improvements in the quality of infrastructure.

METRICS AND KPIS

Metrics and KPIs aim at identifying measures for the different benefits targeted with the ATMP. For each benefit, a list of recommended metrics has been highlighted which can be collected at regular intervals to feed into a monitoring program.

Health

- Where individuals reside, work, learn, and engage in recreational activities, as well as

- their mode of travel, can significantly impact their health and ability to make travel choices. Transportation systems play a crucial role in accessing services and community amenities.
- Additionally, convenient options for walking, using public transit, or cycling yield specific health advantages. These choices enhance daily physical activity, effectively preventing and managing chronic diseases such as cancer, diabetes, and heart disease.
- Proposed indicators and targets include:
 - Increasing number of active adults.
 - Increasing number of active transport users including childrens.
 - Reduced incidence of sedentarism related illnesses (less pressure on public health services).

Safety

- The implementation of the ATMP can positively impact safety in Sarnia by reducing the risk of injury and fatality for pedestrians and cyclists. As more people choose to use active transportation, protected and well-maintained infrastructure must be put in place to reduce any risk of potential collisions.
- The ATMP can also improve safety by encouraging the design of facilities that are accessible, comfortable, and convenient for all users.
- Proposed indicators and targets include:
 - Decrease in overall number of collisions involving pedestrians or cyclists.
 - Decrease in gravity of collisions involving pedestrians or cyclists.

Network efficiency

- Network efficiency is the measure of how well a transportation network connects people to their destinations and enables them to travel with minimal delay, cost, and environmental impact. It is important to keep an efficient and accessible active transport network to promote constant and increased usage over the years.
- Network efficiency also supports the integration of active transportation with public transit, as people can easily access transit stops and stations by walking or cycling, increasing the efficiency of the overall transport network of Sarnia.

- Proposed indicators and targets include:
 - Define standards of network efficiency to be applied to each network improvement.
 - Measure the level of satisfaction of citizens and employers through an annual AT survey.
 - Incorporate missing links as part of new projects to connect the network.

Equity

- It is fundamental to apply an equity lens to all policies, actions, and projects in the plan, and using data and community input to identify and prioritize the needs of different groups.
- Promoting an equitable community entails inclusive design and prosperity, enabling everyone to realize their full potential. In the context of transportation equity, this concept encompasses various dimensions.
- Geographic equity involves fair treatment and funding allocation across different areas in prioritizing safety and mobility needs. Modal equity emphasizes an equitable distribution of funding for diverse transportation modes, including walking, driving, public transportation, and cycling, aligning with community objectives and system requirements. Travel choice equity advocates for meaningful transportation options, facilitating access to jobs, healthcare, education, public amenities, and opportunities.
- Social equity goes beyond fairness, addressing historical injustices caused by transportation decisions, necessitating acknowledgment and purposeful action. That is why it is highly recommended to treat equity issues transversally across all planning areas.
- Proposed indicators and targets include:
 - Use the Statistics Canada database to compare the income group of the dissemination area in which a project sits with the average income in Sarnia.

Environment and resilience

- It's imperative to acknowledge the repercussions of transportation on both air quality and public health. The utilization of fossil fuels in energy and transportation leads to the emission of harmful pollutants, including nitrogen oxides (NOx), volatile organic

- compounds (VOCs), and particulate matter (PM).
- These emissions undergo chemical reactions in outdoor air, generating ozone when exposed to sunlight. This interplay highlights the critical need to address the environmental impact of transportation activities, emphasizing the importance of transitioning to cleaner, sustainable alternatives to mitigate air and environmental pollution and to safeguard public health.
- Proposed indicators and targets include:
 - Measure the greenhouse gas emissions generated by transportation for Sarnia annually
 - Measure greenhouse gas emissions associated with the actions of the ATMP when implemented
 - Measure greenhouse gas emissions associated with changes in the mode share in Sarnia.
- Monitor business owner sales with monthly quick surveys.
- Monitor new job creation within 1 km of new active transportation infrastructure.

Economic prosperity

- The direct and indirect economic benefits of active transportation include increased property value through the reduction of noise and pollution, increased productivity through the reduction of congestion, and new job creation.
- The Government of Canada has recognized the importance of active transportation and has created a National Active Transportation Strategy to support its expansion and enhancement across the country (see next section).
- Finally, a shift in transportation modes will reduce parking demand, reducing considerably construction costs for commercial and residential developments.
- Proposed indicators and targets include:

Monitor vacancy rate of commercial areas before and after placemaking projects.

Monitor business owner sales with monthly quick surveys.

Monitor new job creation within 1 km of new active transportation infrastructure.

- Monitor vacancy rate of commercial areas before and after placemaking projects.

8. Funding and Financing

FUNDING AND FINANCING

Implementing the Active Transportation Master Plan will generate revenue as people who take up active travel tend to be healthier – which reduces pressure and cost impacts on health services.

Active transportation measures would also improve the quality of life in Sarnia, with regards to lower pollution, noise levels and better links with parks, and will make it more attractive for people to live and work in Sarnia. This should translate in higher tax receipts in the City.

In the short to medium term, grants, loans, sponsorships, donations and developer contributions can help fund the implementation of this ATMP. This section gives an overview of the

current and potential funding opportunities for active transportation in Sarnia, including federal, provincial, municipal, and private sources, to provide the city with financial leverage to comply with the plan.

Some of these funding opportunities will require match funding and overall, these opportunities are unlikely to cover the full cost of implementing the ATMP. The City will allocate some of its existing and projected revenue streams to implement the Active Transportation Master Plan in full. This could include drawing revenue from parking or local taxation sources.

The table below provides a list of external funding sources that Sarnia could draw on to implement the actions set out in this ATMP.

Funding opportunity	Funding source	Type of project funded	Maximum grant per project	What the funding can be used for	Example of projects this could help fund in Sarnia
Active Transportation Fund	Federal Government	Planning projects, capital projects	\$50,000 for planning. Infrastructure project can be funded at a higher level.	Improvements to active transportation planning and infrastructure	<ul style="list-style-type: none"> • Cycle paths • Continuous sidewalks • Safer junctions for walking and cycling • Signage • Bike counters
Southwestern Ontario Development Fund	Ontario Government	Capital projects	\$1,500,000	Projects that encourage private sector investment, lead to business growth and broad positive economic impacts, and encourage cluster development	<ul style="list-style-type: none"> • Bike share system • Main street and town centre walking and cycling improvements • Cycle tourism development measures (new map and tours)
Tourism Development Fund (TDF)	Ontario Government	Non-capital	\$25,000	Projects that will increase tourist visits and visitor spending in Ontario by: <ul style="list-style-type: none"> • developing innovative tourism products and experiences • increasing domestic and/or foreign private sector tourism investment • strengthening the skills, resources and abilities of the tourism industry to attract or support new tourism investments 	<ul style="list-style-type: none"> • Cycle tourism development measures (new map and tours, support a bikeshare visitor offer)
Study: Reduce fossil fuel use in fleets	Green Municipal Fund	Non-capital	\$175,000	Feasibility studies for projects that reduce or avoid fossil fuel use in any vehicle that delivers municipal services.	Although not within scope of this ATMP, this fund could be used for a feasibility study to upgrade the City's fleet of servicing vehicles to zero emissions – if possible to micromobility. This would contribute to promoting active transportation in Sarnia.

Funding opportunity	Funding source	Type of project funded	Maximum grant per project	What the funding can be used for	Example of projects this could help fund in Sarnia
Capital project: Transportation networks and commuting options	Green Municipal Fund	Capital projects	\$1,500,000	Community and local government projects that improve children's lives	<ul style="list-style-type: none"> • A continuous walking network, including improved walking links to parks and main streets • Expansion of the cycling network • Safer junctions for walking and cycling • Supporting the introduction of a bike share system • Campaigns to encourage children and adults to take up active transportation • Support for active transportation at events
Study: Transportation networks and commuting options	Green Municipal Fund	Non-capital	\$175,000	<p>Projects that either</p> <ul style="list-style-type: none"> • Reduce the number of vehicles on the road, the number of kilometres they travel, or the amount of time they spend transporting people or goods, or • Get people to use their vehicles more efficiently or switch to less polluting forms of transportation (i.e., a modal shift to public transit, walking, or cycling). 	<ul style="list-style-type: none"> • Feasibility study for a project to adapt the existing public transit fleet to make it more accessible (including interventions such as additional wheelchair spaces and bike racks)
Pilot project: Transportation networks and commuting options	Green Municipal Fund	Capital projects	\$500,000	A feasibility study of an initiative that may reduce pollution in Canadian communities by improving transportation systems and networks or encouraging people to switch to less polluting transportation options.	A pilot project to adapt the existing public transit fleet to make it more accessible (including interventions such as additional wheelchair spaces and bike racks in buses and trains)
Collaboration with local organizations for community-led active transportation	Sarnia Lions Club, Rotary Club Sarnia and Seaway Kiwanis Sarnia	Various	Small scale	Pilot projects that reduce pollution in Canadian communities by improving transportation systems and networks or encouraging people to switch to less polluting transportation options. Community projects that improve children's life and support schools.	<ul style="list-style-type: none"> • Support for school active travel transportation initiatives (including bike training, campaigns and temporary infrastructure to enable it). • Support for community-led active transportation projects such as active transportation at events, travel planning in schools (this could be setting up walking and cycling buses) • Bike training for children and adults
Developer contributions	Private	Capital and non-capital	All scales	Improvements linked to new development or to mitigate its impact	<ul style="list-style-type: none"> • Improvements to the walking network, including improved walking links to parks and main streets • Expansion of the cycling network • Safer junctions for walking and cycling • Supporting the introduction of a bike share system
Corporate sponsors	Private	Capital and non-capital	All scales	Projects that offer brand visibility	<ul style="list-style-type: none"> • Contribution to a bike share system • Active travel provision at events • Community-led active travel projects
Street furniture and media partner	Private	Capital and non-capital	All scales	Projects that offer brand visibility	<ul style="list-style-type: none"> • Street furniture such as signage and lighting enhancements • Contribution to a bike share system

9. ATMP Conclusion

ATMP CONCLUSION

The Sarnia Active Transportation Master Plan extends beyond the mere provision of sidewalks and bike lanes; it represents a concerted effort to acknowledge and embrace the community's eagerness for transformative initiatives. It marks the beginning of a cultural shift towards making active transportation a priority in the daily lives of Sarnia residents. The Sarnia Active Transportation Master Plan (ATMP) builds on the existing Transportation Master Plan (2014), aiming to address current and future community needs.

Consultation and engagement have been at the basis of the ATMP process, revealing that Sarnians are not only ready but enthusiastic about the prospect of a more connected and accessible city. Their collective commitment has fed directly into the vision for this plan. The workshops and engagement activities have shown that the Sarnia community is not merely a passive observer but an active participant ready to make the change.

The Active Transportation Network is a result of this collaboration. It outlines the proposed framework for a cohesive and integrated cycling and walking network in Sarnia. This network not only addresses current gaps in infrastructure but also strategically connects key destinations, fostering a safer and more efficient active transportation experience for residents.

A central focus is the creation of a cycling network, connecting residential areas with job centers, enhancing leisure and shopping connectivity, and catering to vulnerable populations. The plan integrates with existing infrastructure, expands

bike lanes on key streets, and emphasizes safety measures. Additionally, the ATMP aligns with the Walkway Infill Program, aiming to develop a comprehensive walking network that fills gaps in the existing infrastructure, promoting safety and short-distance walking trips for residents throughout the city, and prioritizing new sidewalks and safer intersections next to schools, commercial destinations and retirement homes.

The Action Plan in turn serves as a comprehensive road map, carefully delineating specific initiatives, policies, and implementation strategies to manifest the vision and network into reality. It navigates through the realms of short-term and long-term objectives, accentuating the importance of infrastructure development, planning policy evolution, behavior change and four-season operation and maintenance of the active transportation network. The Action Plan identifies the responsibilities and resources required for the execution of each outlined action, turning aspirations into tangible achievements. Finally, the ATMP's dynamic vision and projects underscore the need for vigilant monitoring to ensure the plan's objectives are accomplished effectively over time.

As Sarnia's community embarks on this transformative journey, the Active Transportation Master Plan will guide their collective effort towards sustainable mobility and active transportation. In motion, we connect active transportation to community-building, where Sarnia's streets are not just roads but pathways for a community united by the pursuit of a more sustainable and active tomorrow.