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**Bicycle Lane Implementation – Retrofit of
Existing Bicycle Lanes to align with Current Guidelines**

TO: MAYOR BROWN AND MEMBERS OF COUNCIL
COPY TO: CORPORATE LEADERSHIP TEAM

SUBJECT

At the Committee of Council meeting of Wednesday May 8, 2024, the minutes from the Brampton Community Safety Advisory Committee and three delegations were referred to staff to address concerns raised regarding the intersection of Dixie Road and Howden Boulevard.

In addition, staff were asked to identify the implications of retrofitting previously implemented bicycle lanes in the City to align with current design guidance and industry best practices, and ensure consistent application across the entire on-road AT network. This briefing note speaks to both of these matters.

BACKGROUND

At its meeting of September 25, 2019, City Council endorsed the vision, goals, and recommendations of the [Brampton Active Transportation Master Plan \(2019\)](#).

The Active Transportation Master Plan (ATMP) provides the implementation framework for network plans, policies and programs that support the 2040 Vision of “*a mosaic of safe, integrated transportation choices and new modes, contributing to civic sustainability, and emphasizing walking, cycling and transit.*” The ATMP states that “through developing an integrated, attractive, and accessible system of sidewalks, cycling facilities and trails, Brampton will be a livable city where all members of the community can safely and conveniently access places, goods and services and connect to transit using active modes of transportation.”

Prioritizing the implementation of the Active Transportation Master Plan and advancing the proposed active transportation network is a matter of equity and a key ingredient to addressing

the challenges of access and mobility for people of all ages, abilities, and means in a rapidly urbanizing City.

The ATMP recommends a comprehensive future cycling network that incorporates a variety of facility types such as signed routes, bike lanes, buffered bike lanes, protected bike lanes, cycle tracks, multi-use paths (located within road allowance) and recreational trails (located within parks and valley lands).

The network elements of the ATMP implementation strategy are delivered in partnership between the Planning, Building & Growth Management, Public Works & Engineering and Community Services Departments, as a part of capital improvement projects, new development applications and maintenance programs.

Every spring since endorsement of the ATMP staff have presented an [Annual Report to Council](#), summarizing the scope of active transportation elements implemented in the previous year and presenting the proposed program for the upcoming year. The intent of the Annual Report is to measure the progress and successes of the ATMP and to advise Council and the community of changes coming to City roads prior to the beginning of each construction season. This report offers an opportunity for inputs and feedback from both Council and the public.

ATMP Budget Process

One of the key implementation strategies outlined in the ATMP is to incorporate cycling and walking infrastructure into planned construction opportunities (e.g., capital road projects, road resurfacing program). Since 2021, the City has also included a reoccurring “Active Transportation Projects” line item in the annual Capital budget that identifies funding to construct a city-wide connected cycling and pedestrian network (per the Active Transportation Master Plan) to enable safer, more convenient travel by non-motorized modes.

The 2024 Capital Budget allocation is provided in Table 1 below:

Table 1: 2024 AT Implementation Program Budget

Dept./Div.	Item	2024 Budget Allocation
CS/Parks Maintenance & Forestry	Recreation Trail Repair & Replacement – Various	\$835K
	Orangeville Railway Consulting-Visioning and detailed design study/City Wide	\$500K

PB&GM/Transportation Planning	Active Transportation Plans and Studies	\$260K
	Transportation Modelling & Data Analytics	\$160K
PWE/Capital Works	Sidewalk - Missing links City-wide	\$600K
	Road Resurfacing Program	\$467K
	Goreway Drive (2.2km)	\$1.6M
	Williams Parkway (5.6km)	\$4.2M
	Quincy Place Pedestrian Bridge Replacement	\$400K
PWE/Road Maintenance, Ops. & Fleet	Active Transportation Enhancements	\$800K
	Active Transportation - Green Pavement Markings	\$2M
	Controlled Pedestrian Crosswalk	\$70K
TOTAL		\$11.9M

Lane Kilometres Constructed – Actual vs Target

Approximately 78.5 kilometers of the City’s cycling network has been constructed since the ATMP was endorsed by Council in September 2019. Based on the ultimate length of the recommended cycling network, by the end of 2023, 87 km of the network should have been constructed to date (2023 target). The utility of active transportation extends beyond mobility. Advancing the City’s active transportation strategy and making sustainable mode choices a viable travel option will support broader city-building objectives to support a more equitable, green, attractive, healthy, and safe Brampton. The ATMP includes targets for bike lanes, multi-use paths, recreational trails, and signed bike routes to be implemented in Brampton by 2041, together totaling approximately 866 km. To date 549 km of the total network has been constructed.

Incursion of right turning motor vehicles into bicycle lanes at intersections – Accident Prevention

Along roadways where a buffer has been provided adjacent to a bike lane (providing a separation in space between motor vehicles and people on bikes), vehicles are using this wide space, not complying with the solid line dividing the bike lanes and general-purpose lanes on the approach to intersections and making right turns from the bike lane.

The attached educational pamphlet was included with a past tax bill mail-out (2020), staff have posted similar information on the City website and helped to promote a series of safety videos

created by our community partners (Bike Brampton) our virtual Bike the Creek Event in 2020 ([sample video - 'Be Aware'](#)).

In addition to these educational/encouragement tactics, staff investigated additional measures to raise awareness of this conflict at intersections - namely supplemental signs and pavement markings. An educational sign was created to supplement the required regulatory signs to clearly illustrate where drivers are supposed to turn right in this scenario. Right turn pavement marking arrows placed in the general-purpose vehicle lane were also implemented to provide motorists with positive guidance on appropriate turning positions.

These additional measures (supplemental pavement markings and signs) were introduced at three pilot locations (Dixie Road/Howden Boulevard, North Park Drive/MacKay Street and Peter Robertson Boulevard/Sunny Meadow Boulevard). Preliminary results indicate that the additional pavement markings and signage have not been effective and have had a nominal impact on the compliance rate (6% improvement in compliance rate, important to note that 82% of vehicle are still not in compliance and turning right from the bicycle lanes).

In the case of Howden Boulevard and Dixie Road, physical measures (bollards) are recommended by the Community Safety Advisory Committee to alleviate the conflict ([BCS008-2024 - April 18, 2024](#)). As an interim measure, the Region of Peel have positioned construction barrels between the bicycle lanes and general purpose (motor vehicle) lanes at the intersection. The East-West Cycling Corridor (protected bicycle lanes) will address the physical separation on the west leg of the intersection – construction to be completed before the end of May. The Region is arranging to have flexible posts installed on the east leg of the intersection as the construction of the protected bicycle lanes, east of Dixie Road has been delayed due to planned utility work.

Given Committee's focus on safety, staff will propose a program in 2025 that would introduce physical separation at intersections where bicycle lanes intersect with arterial roadways, are controlled by a traffic signal or at locations that experience a significant volume of right turning vehicles. This program will be developed together with road maintenance and operations staff to ensure the solution is one that can be maintained throughout the year. An inventory of bicycle lanes across the City has identified 13 intersections that would meet these requirements and the estimated cost to upgrade the intersections is approximately \$35K. The anticipated financial impact on maintenance operations will range approximately from \$40K to \$75K per year.

Bicycle Infrastructure Design Guidance

The Ontario Traffic Manual Book 18: Bicycle Facilities is a province-wide bicycle facilities design manual. Similar to other books in the OTM series of manuals (i.e. relating to regulatory

signs, warning signs, etc.), Book 18 provides municipalities in Ontario with a consistent approach to plan, design, build, regulate and maintain bicycle facilities.

It should be noted that not all intersection treatments will look the same. Intersection designs vary based on opportunities and constraints such as road width, number of through lanes and turning lanes, whether the bike lane continues through the intersection or ends, transit stops etc.

Cycling facility design in the province is ever evolving as municipalities are continually learning how Ontarians are interpreting designs and using infrastructure. The first version of the guideline published in 2013 had to be revised again in 2021 to address the changes in best practice.

Specific to Brampton, the following are two changes in guidance relating to bicycle lanes that the City has incorporated into more recent designs and plans to incorporate (retrofit) into existing bike lanes.

- Green Paint - green surface treatment can be used as a traffic control device to increase the visibility of a cycling facility, highlight areas of conflict and reinforce priority to people riding bikes in conflict areas. Green surface treatment may be applied either as a solid colour treatment, or in a dashed pattern (dashed green treatments are typically applied at merge zones or bus stops).
- Solid Line vs Dashed Line at Intersection Approaches – previous guidance allowed drivers to enter or cross a bicycle lane to turn right at an intersection or driveway. At these locations a dashed line is used to delineate the bicycle lane leading to the intersection, in this scenario drivers are allowed to enter the bike lane when it is safe and clear of cyclists. In more recent guidance a solid line extends to the intersection, vehicles are not allowed to enter the bike lane and drivers must yield to cyclists before they can complete their right turn. The city has accepted the use of the solid line as standard practice as it minimizes the conflict points.

In response to the Green Paint guidance and as direction from Council, the City has incorporated the use of more green paint into its bicycle facility designs and will continue to do so. As noted in *Table 1*, there is \$2M allocated for this project in the 2024 Capital Budget. This year, the City will also be introducing green paint along 10.3 km of existing bicycle lanes that were designed and implemented prior to this recent guidance. Bicycle lanes in the Downtown and Bramalea areas will be the first phase of a bicycle lane retrofit program that will bring consistency to all cycling infrastructure in the City.

Retrofit Program

Under the existing pavement marking maintenance (retrace) program every intersection is painted at least once per year. Within the scope of that work, direction was given several years ago to the contractor to update the existing dashed-line bicycle lanes to a solid line. Any outstanding locations that continue to have dashed lines may have been missed or involve more complex scenarios, such as transit stop locations, where dashed lines are recommended through OTM Book 18.

An inventory of bicycle lanes across the City indicates that there are 70 intersections (majority are in new development areas) that have not been updated and will be as a part of this year's maintenance contract (where the subdivision has been assumed by the City), at a cost of \$2,000. The map attached illustrates the 70 intersections requiring a retrofit.

The design of new bicycle lane infrastructure included with the 2024 ATMP Implementation work plan presented to Council last month is based on the most recent guidance from the province. There would be no benefit in pausing or delaying these projects, while existing lanes are retrofitted. The retrofit can be undertaken in parallel with the 2024 program.

In some cases, new bicycle lanes are tied to existing construction programs (road resurfacing program) that may result in undesired pavement markings being applied to a new pavement surface that would need to be removed to accommodate bike lanes in the future.

Enforcement of Bicycle Related Offenses

Under the Highway Traffic Act (HTA), a bicycle is included in the definition of a vehicle. Bicycle lanes fall under the Act provisions respecting designated lanes (Section 154). Lanes can be designated for slower moving traffic, traffic moving in a particular direction, or for different class or types of vehicles. Through the Brampton Traffic By-law 93-93, the City designates the bike lanes for exclusive use by modes of active transportation and have authority to do so under the HTA. Penalties or offences relating to people on bikes (riding on a sidewalk, underage with no helmet) are enforced by Peel Regional Police as they are considered moving violations. Municipal enforcement officers only have the authority to issue infraction notices for non-moving violations that are included within the Traffic By-law (i.e. parking in a bike lane).

Transportation Equity

Equity in transportation seeks fairness in mobility and accessibility to meet the needs of all community members. A central goal of transportation equity is to facilitate social and economic opportunities by providing equitable levels of access to affordable and reliable transportation options based on the needs of the populations being served, particularly marginalized communities that are traditionally underserved.

Active transportation helps to reduce barriers that eliminate transportation-related disparities in mobility, health, environmental quality, and economic opportunities among different segments of society by promoting:

- **Access to Transportation:** walking and cycling can provide more equitable access to transportation for individuals who may not have access to private vehicles or public transit. This is particularly significant for socio-economic disadvantaged communities such as low-income communities or those living in areas with limited transportation options.
- **Safety and Social Inclusion:** Investing in pedestrian-friendly infrastructure, such as sidewalks, crosswalks, and well-lit pathways, improves safety for pedestrians and cyclists, particularly in underserved communities. Enhancing safety and accessibility can foster social inclusion by ensuring that everyone, including children, the elderly, and people with disabilities, can participate fully in community life.
- **Economic Equity:** Active transportation can reduce transportation costs for individuals and families, particularly those who may struggle with the financial burden of owning and maintaining a vehicle. By providing affordable transportation options, active transportation can increase access to employment, education, and essential services, thereby promoting economic equity.
- **Health Equity:** Active transportation promotes physical activity, which can contribute to improved health outcomes.
- **Environmental Equity:** Active transportation modes produce fewer greenhouse gas emissions compared to motorized transportation, thus contributing to environmental equity by reducing air pollution and mitigating climate change.
- **Community Development:** Investing in active transportation infrastructure can revitalize neighborhoods, stimulate economic development, and enhance the overall quality of life for residents. By creating walkable and bike-friendly environments, communities can become more attractive places to live, work, and play, leading to greater equity in access to amenities and opportunities.

Community Building

The utility of active transportation extends beyond mobility. Advancing the City's active transportation strategy and making sustainable mode choices a viable travel option will also support broader city-building objectives to support a more equitable, green, attractive, healthy, and safe Brampton.

Most recently the City's approved Parks and Recreation Master Plan (PRMP) Update includes policy that states - when planning and designing parks and recreation facilities it is important to

consider alignment with Brampton's public transportation and active transportation systems. Where possible, parks and recreation facilities are to be situated along or near trails, sidewalks and transit stops. Parks also have internal pathways that can increase connectivity within neighbourhoods as well as provide aesthetically pleasing environments to walk. The PRMP supports continued alignment of parks and recreation services to support initiatives advanced in Brampton's Active Transportation Master Plan.

Health

Daily physical activity is an important way to help prevent chronic diseases, including diabetes – Peel and Brampton residents historically have the highest rates of diabetes in the Province. Many Brampton residents spend the vast majority of their day commuting by car and working sedentary jobs that leave little opportunity for physical activity. There is strong evidence that a supportive environment for active transportation can help Brampton's residents be more physically active because it helps build opportunities for movement into their daily lives.

Increased physical activity through active transportation can also support other health benefits, such as improvements in mental health, and when residents replace car trips with walking, cycling or transit-use, we see reductions in per capita emissions that can help improve air quality to reduce exposures that contribute to respiratory diseases and various cancers.

Environment

Brampton's largest user of energy is the transportation sector representing 35% of source energy use and is the biggest emitter of green house gases (GHG). In Brampton, automobiles are used for over 80% of trips in the city, including commuting to work and to the grocery store. Travel choices can have a significant impact on GHG emissions and energy consumption within a community. The safety, ease, and convenience of transportation modes greatly influence people's choice of transportation. Therefore, proper planning and design of our transportation networks are critical in creating viable, low emission alternatives of travel for residents such as transit, cycling, and walking.

NEXT STEPS

- Discussion item relating to the implementation of the ATMP at the May 27, 2024 Planning Committee meeting.
- Staff are available to attend and participate in any town hall meetings or public information centre (if required) in support of the ATMP.

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