

City of Mississauga Memorandum



To: Mayor and Members of Council

From: Sam Rogers, Director, Infrastructure Planning & Engineering Services

Date: June 23, 2023

Subject: Bloor Street from Central Parkway East to Etobicoke Creek – Integrated Road Project (Wards 3 & 4)

In response to comments received and discussed regarding Agenda Items 7.1 and 10.1 at the June 7, 2023 General Committee meeting, the following information is provided for consideration.

Described below are the two Design Concept Alternatives for the Bloor Street Integrated Road Project (IRP) that were discussed during the meeting.

Alternative 6 – One-Way Cycle Track, Adjacent to Curb (both sides)

Elements of Design Concept Alternative 6 (Figure 1, below) include:

- Two travel lanes (one lane in each direction);
- Continuous Two-Way Left-Turn Lane (TWLTL);
- Widened sidewalks (both sides of the road);
- In-boulevard cycle tracks, adjacent to curb lane (both sides of the road); and
- Best opportunity for tree corridor (both sides of the road).

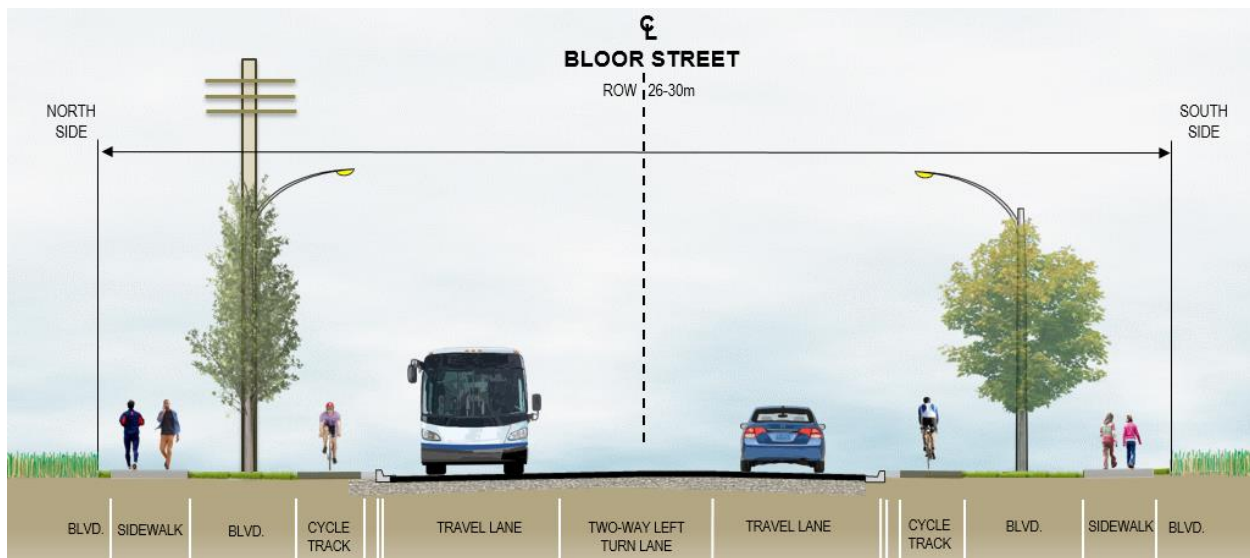


Figure 1: Design Concept Alternative 6

Alternative 5 – One-Way Cycle Track, Parallel to Sidewalk (both sides)

Elements of Design Concept Alternative 5 (Figure 2, below) include:

- Four travel lanes (two lanes in each direction);

- Sidewalks (both sides of the road);
- In-boulevard cycle tracks, adjacent to sidewalk (both sides of the road); and
- Opportunity for tree corridor (both sides of the road).

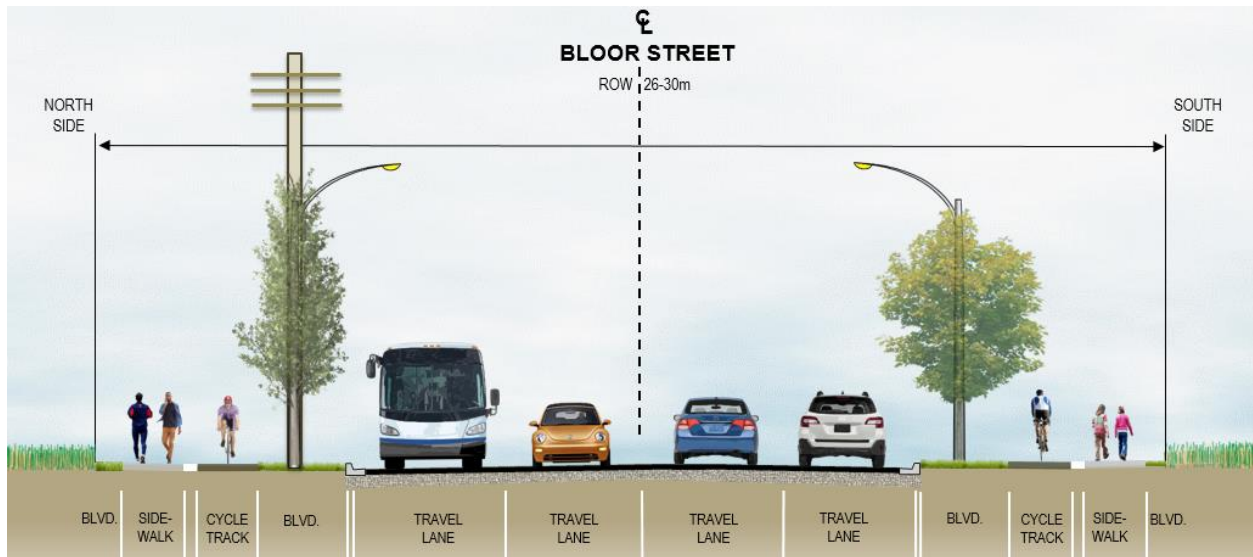


Figure 2: Design Concept Alternative 5

Transportation Model

During the study phase of the Bloor Street IRP, the City of Mississauga’s Travel Demand Model was used to estimate travel demands along Bloor Street and its major parallel streets. Travel Demand Models serve as crucial policy analysis and decision-support tools for provincial, regional and local governments in the Greater Toronto and Hamilton Area (GTHA). They are specifically designed to forecast travel patterns and assist in testing different land use and transportation network policy considerations. The Travel Demand Model includes Provincially mandated and Council approved population and employment growth forecasts to 2041.

The model used by the City was developed by the Travel Modelling Group, housed in the University of Toronto’s Faculty of Applied Science and Engineering, and is able to simulate travel demands across the entire GTHA region. To ensure its accuracy and reliability, the model undergoes rigorous validation processes using various data sources. These data sources include Traffic Counts, Transit Passenger Counts, Land Use Growth Forecasts, and the Transportation Tomorrow Survey (TTS), among others.

Of particular significance is the TTS, which plays a vital role in the model’s development and validation. The TTS is a collaborative effort by local and provincial government agencies to gather information about travel in southern Ontario. The TTS has been conducted every five years since 1986, with the most recent survey carried out in 2016, which involved approximately 160,000 interviews, capturing detailed information on close to 800,000 trips in south central Ontario. By aggregating this detailed trip information at a zone level, the TTS provides valuable insights such as trip origins and destinations, the mode of transportation used, trip purposes, and more. In turn, by leveraging these data sources and employing the City’s Travel Demand Model, the aim is to make informed decisions and develop effective transportation strategies for Mississauga.

Capacity Analysis for Bloor Street and Surrounding Network




The analysis completed for the Bloor Street IRP study included both existing and future (2041) conditions within the evening (“PM”) peak hour of traffic, typically the heaviest traffic period within the transportation network and the Bloor Street corridor. The field of transportation engineering utilizes a Level-of-Service (LOS) methodology to categorize the state of roadway vehicular capacity, ranging from A to F, where LOS A/B means no congestion, LOS C/D means some congestion and LOS E/F means approaching capacity.

The table below summarizes the bi-directional Screenline LOS results. This capacity analysis includes existing conditions and Alternative 6 within the future (2041) population and employment growth forecasts. The results take into consideration the entire transportation network, including the parallel east-west roads of Dundas Street, Bloor Street and Burnhamthorpe Road. The total available capacity is compared to the expected transportation demand.

Screenline Level-of-Service (LOS)

	EXISTING		2041	
	EB	WB	EB	WB
East of Dixie Road				
East of Tomken Road				
West of Cawthra Road				

Legend

	LOS A/B (no congestion)
	LOS C/D (some congestion)
	LOS E/F (congested to approaching capacity)

* Includes Dundas Street, Bloor Street and Burnhamthorpe Road.

It is important to note that Alternative 5 does not divert traffic from Bloor Street. Maintaining four lanes will continue to be an attractive corridor to accommodate longer distance trips and greater volume of traffic, which do not originate from or are destined to the Bloor Street study area.

If Alternative 6 were to be recommended, both Bloor Street and the adjacent transportation network will operate at an acceptable LOS.



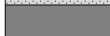
Travel Time Analysis

As part of a more detailed analysis that was completed at the intersection-level using the model “Synchro”, the estimated travel times along the Bloor Street corridor (from Central Parkway East to the Etobicoke Creek) were modelled for the existing configuration of the road, as well as for Alternatives 5 and 6. The summary table below provides the estimated travel times for each alternative under existing and future (2041) travel demand scenarios during the PM peak hour in the westbound direction along Bloor Street. This represents the busiest time of day and direction of flow.

Bloor Street - Travel Time & LOS

	PM Peak Hour (Westbound Direction)	
	Travel Time (minutes/seconds)	Level-of-Service (A to F)
Existing	10:55	D
Alternative 5	11:08	E
Alternative 6	9:28	D

Legend

	LOS A/B (no congestion)
	LOS C/D (some congestion)
	LOS E/F (congested and approaching capacity)

The modelling output has revealed that maintaining four lanes along Bloor Street will result in travel times of approximately 11 minutes for both the existing and Alternative 5 configurations of the road under the 2041 travel demand scenario; while for Alternative 6, the travel time is estimated to be approximately 9.5 minutes.

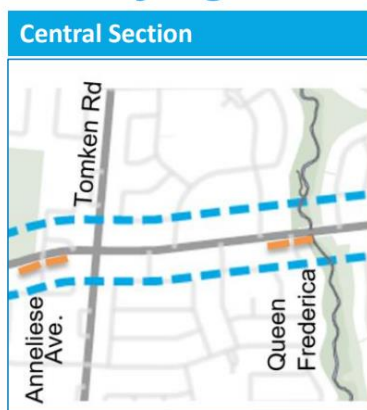
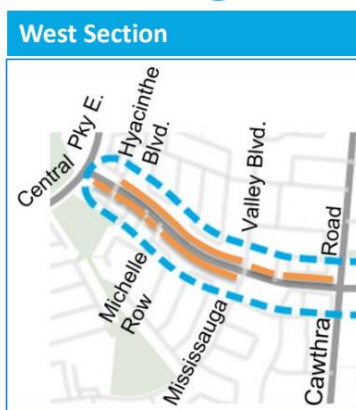
These modeling results indicate that Bloor Street is expected to be less congested with Alternative 6 than with Alternative 5. This is likely the result of Bloor Street becoming less attractive as a through-route for motorists with the reduction in vehicular lanes.

Noise Walls

A Noise Assessment has been completed to determine if either the existing or future (2041) noise levels in rear- and side-yards with direct exposure to Bloor Street warrant the need for noise walls under the City's policy. Factors used as input into the noise analysis include posted speed, elevation, percentage of heavy vehicles and distance from receiver location to Bloor Street. For the purpose of the analysis, it was assumed that Bloor Street would remain as a four-lane road in the future.

As was presented at Community Meeting #3 (March 9, 2022), the graphic below identifies the areas which may qualify for noise mitigation.

Noise Mitigation – Qualifying Locations*



* No qualifying noise mitigation locations in East Section.

— Locations which Qualify for Noise Mitigation



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A Noise Assessment has not been completed for the Alternative 6 scenario (i.e. reduced travel lanes). Should Alternative 6 be approved as the preferred conceptual design for the Bloor Street IRP, then the Noise Assessment will be updated during the detailed design phase of the project. As the traffic modeling results have found that the 2041 traffic volumes will be lower with Alternative 6 than with the current four-lane configuration along Bloor Street, it is anticipated that the areas that may qualify for noise mitigation will be reduced or eliminated.

Boulevard Trees

The Bloor Street corridor provides for trees within the City's existing right-of-way. The number of trees that can be accommodated within Alternative 5 and Alternative 6 vary due to their specific configuration and related space constraints. The table below highlights that both Alternative 5 and Alternative 6 will provide a greater opportunity to accommodate additional trees within the boulevard as compared to existing conditions.

Bloor Street - Boulevard Trees (within ROW)

Section	EXISTING	ALTERNATIVE 5	ALTERNATIVE 6
West (Central Parkway to Cawthra Road)	100	150	150
Central (Cawthra Road to Dixie Road)	140	140	150
East (Dixie Road to Etobicoke Creek)	30	130	160
Total	270	420	460

Notes

1. All values are approximate and have been rounded.
2. The detailed design phase will confirm how many trees can be accommodated for the recommended improvements.
3. Within Alternative 5, the majority of trees represent 'replanted' trees.

To determine the potential impacts to the existing trees within the Bloor Street right-of-way, a review has been completed for the proposed preliminary designs of both Alternatives 5 and 6. The results found that if Alternative 5 were to be implemented, approximately 80% of the

existing trees would be removed and replaced with new plantings. In comparison, under Alternative 6, about half as many existing trees (approximately 40%) would need to be removed and replaced.

In either scenario, each tree will be reviewed on a case-by-case basis during the detailed design phase of the project.

Transit Stops & Operations

The Bloor Street corridor accommodates MiWay routes 3, 8, 302 and 307. Under existing conditions, the majority of transit stops are situated at intersections within the curb lane, either near-side or far-side to the intersecting street. There are also a number of midblock transit stops which are not currently served by protected pedestrian crossings.

Table below summarizes transit stop locations for existing conditions, as well as Alternative 5 and Alternative 6.

Bloor Street - Transit Stops

Section	EXISTING			ALTERNATIVE 5			ALTERNATIVE 6		
	Curb Lane	Right-Turn Lane	Lay-by Lane	Curb Lane	Right-Turn Lane	Lay-by Lane	Curb Lane	Right-Turn Lane	Lay-by Lane
West (Central Parkway to Cawthra Road)	6	2	0	5	1	0	5	1	0
Central (Cawthra Road to Dixie Road)	14	1	0	11	0	0	8	3	2
East (Dixie Road to Etobicoke Creek)	12	1	0	11	0	0	8	1	2
Total	32	4	0	27	1	0	21	5	4

Notes

1. 'Curb lane' includes near-side, far-side and midblock transit stop locations.
2. Alternatives 5 and 6 eliminate a number of underutilized transit stops, as determined by MiWay.
3. The detailed design phase to confirm ultimate location of transit stops.

Under existing conditions and Alternative 5, the majority of transit stops are situated within the curb lane. In comparison, Alternative 6 will accommodate a greater proportion of the transit stops within either an exclusive right-turn lane (or far-side acceleration lane) or lay-by lane, which increases safety and decreases operational impacts and delay to motorists travelling within the curb lane.

It is noted that the total number of existing transit stops along Bloor Street will be reduced under both Alternatives 5 and 6, as several stops have been determined by MiWay as being underutilized and not warranted.