Detailed Evaluation of Design Options

Least Benefit/ Most Impacts — Most Benefit/ Least Impacts

	Criteria	Criteria Description	Summary	Option 1 Baseline	Option 2 Priority Bus Lanes (Except for 1.1 km around the Highways)	Option 3 Priority Bus Lanes on Key Segments	Option 4 High Occupancy Vehicle Lanes (3+)	Option 5 Queue Jump Lanes at Key Intersections
		Option 1 presents the base values from which the other Options are compared. Options 2 through 5 present the difference in comparison with Option 1.		Baseline from which the other options are compared. This option includes planned and approved changes to bus routes as part of the opening of Line 5 Eglinton Crosstown LRT.	This option converts an existing vehicle lane in each direction into a priority bus lane between Steeles Avenue West and Eglinton Avenue West, except around the highways.	This option converts an existing vehicle lane in each direction into a priority bus lane with breaks around some intersections. The priority bus lanes start and stop multiple times along the study area.	This option converts an existing vehicle lane in each direction into a dedicated lane for High Occupancy Vehicles (HOV) with 3 or more passengers, buses, taxis, motorcycles and bicycles.	This option widens the road by adding or extending right-turn lanes at key intersections to give buses a head start. Cars, trucks and taxis may use the queue jump lane to access driveways or make right turns.
Public Transit	**Bus Travel Time**	Average bus travel time on Jane Street between Steeles Avenue West and Eglinton Avenue West during peak hours (minutes)	The implementation of transit priority solutions improves bus travel times in all options. Option 2 provides the greatest improvement with up to 6 minutes saved in one direction.	AM: 33 mins PM: 36 mins	**Highest travel time savings for buses** AM: 27 mins (6 mins saved) PM: 31 mins (5 mins saved)	**Lowest travel time savings for buses** AM: 32 mins (1 min saved) PM: 33 mins (3 mins saved)	**Moderate travel time savings for buses** AM: 29 mins (4 mins saved) PM: 32 mins (4 mins saved)	**Moderate travel time savings for buses** AM: 30 mins (3 mins saved) PM: 33 mins (3 mins saved)
Public Transit	**Bus Reliability**	A measure of the predictability of bus travel time. Reliable bus service increases people's confidence in riding the bus, reduces wait times, and reduces overcrowding.	More reliable travel times means that the bus more consistently arrives when it is supposed to. Option 2 provides the most reliable bus service with buses expected to consistently arrive within 3 mins of their average time.	AM: within 4 mins of average travel time PM: within 4 mins of average travel time	**Most reliable bus service** AM: within 3 mins of average travel time PM: within 3 mins of average travel time	**Least reliable bus service** AM: within 5 mins of average travel time PM: within 5 mins of average travel time	**Moderately reliable bus service** AM: within 3 mins of average travel time PM: within 4 mins of average travel time	**Moderately reliable bus service** AM: within 3 mins of average travel time PM: within 4 mins of average travel time
Public Transit	**Ridership Growth**	Forecasted increase in daily ridership as a result of the implementation of transit priority measures. Majority of the projected growth is expected to show up in the first year, with full growth realized in 3 years.	Improvements in bus travel time and reliability is expected to attract both new riders and those from nearby routes. Option 2 is expected to see the greatest increase in daily riders.	41,600 daily riders	**Highest increase in daily transit riders** Increase of 26% (9,250) daily riders 50,850 daily riders	**Lowest increase in daily transit riders** Increase of 6% (1,960) daily riders 43,560 daily riders	**Moderate increase in daily transit riders** Increase of 14% (5,110) daily riders 46,710 daily riders	**Lowest increase in daily transit riders** Increase of 6% (2,100) daily riders 43,700 daily riders
Public Transit	**Transit Operating Costs**	Operating cost savings from reduced travel times (hours saved/ year). Additional costs, including number of buses required, revenue gained/lost, etc. are not captured in this criteria.	Hours saved by the TTC result in cost savings (operational savings) that can either be re-invested into improved service along Jane Street or elsewhere in the system.	N/A	**Highest operational savings** 16,300 hours saved by the TTC per year	**Lowest operational savings** 2,000 hours saved by the TTC per year	**Moderate operational savings** 10,400 hours saved by the TTC per year	**Moderate operational savings** 7,500 hours saved by the TTC per year
Public Transit	**Bus Stop Consolidation**	Changes to walking distance as a result of bus stop removals/ relocations	Bus stop removals/relocations are proposed to reduce mid-block crossings where there is no protected crossing, to improve transit speed and reliability, and because some stops are closer than the minimums set out in the TTC's service standards. The same bus stop removals are proposed in all Options.	Bus stops are removed at 5 locations. Bus stops maintained provide access to key destinations (grocery stores, pharmacies, hospitals, etc.), have high ridership, provide connections to other routes and are a 3 mins or less walk to the next stop.	Bus stops are removed at 5 locations. Bus stops maintained provide access to key destinations (grocery stores, pharmacies, hospitals, etc.), have high ridership, provide connections to other routes and are a 3 mins or less walk to the next stop.			
Traffic	**Car Travel Time**	Average car travel time on Jane Street between Steeles Avenue West and Eglinton Avenue West (minutes).	The implementation of transit priority measures generally increases car travel times. Transit priority measures that provide the greatest degree of separation for transit (i.e., Option 2 and 3) also have the greatest impact on cars.	AM: 21 mins PM: 22 mins	**Highest travel time impact to cars** AM: 25 mins (4 mins increase) PM: 28 mins (6 mins increase)	**Moderate travel time impact to cars** AM: 26 mins (5 mins increase) PM: 25 mins (3 mins increase)	**Moderate travel time impact to cars** AM: 23 mins (2 mins increase) PM: 24 mins (2 mins increase)	**Lowest travel time impact to cars** AM: 21 mins (no change) PM: 21 mins (1 min saved)
Traffic	**Traffic Volume**	Estimated change in traffic volume demand on adjacent arterial roads.	Some traffic is expected to divert away from Jane Street as a result of capacity changes. The majority of traffic is expected to divert to Highway 400, Black Creek Drive and the adjacent arterial network. Transit priority solutions that provide the greatest degree of separation for transit (i.e., Option 2 and 3) are expected to result in the highest diverted volumes.	Traffic volumes range up to 1,500 vehicles/hour along the study area per direction	**Highest volume of diverted traffic** Adjacent arterials are estimated to experience <15% increase in vehicle volume.	**Highest volume of diverted traffic** Adjacent arterials are estimated to experience <15% increase in vehicle volume.	**Lowest volume of diverted traffic** Adjacent arterials are estimated to experience <10% increase in vehicle volume.	**Lowest volume of diverted traffic** Adjacent arterials are estimated to experience <10% increase in vehicle volume.
Traffic	**Intersection Delay**	Number of intersections operating with a Level of Service (LOS) of F. LOS is a qualitative measure (A through F) that defines how well traffic flows along a street.	A Level of Service (LOS) of F indicates that vehicles at an intersection are experiencing a relatively high amount of delay. In general, the number of intersections with LOS F does not change with different transit priority solutions.	AM: 1 intersection PM: 1 intersection	AM: 2 intersections PM: 1 intersection	AM: 1 intersection PM: 1 intersection		AM: 1 intersection PM: 0 intersections
Traffic	**Parking**	Potential modifications to curbside regulations (i.e., parking, standing, stopping)	Currently, cars cannot park anywhere along Jane Street; however, they are permitted to load or unload goods and passengers. With priority bus lanes and HOV lanes, cars will no longer be permitted to stop to load or unload.	Parking is prohibited along Jane Street at all times	All day stopping prohibitions are required where priority bus lanes are installed	All day stopping prohibitions are required where priority bus lanes are installed	All day stopping prohibitions are required where HOV lanes are installed	All day stopping prohibitions are required where queue jump lanes are constructed
Active Transportation	**Pedestrians**	Potential modifications to existing sidewalks	Queue jump lanes require changes to the curbs, with potential impacts to existing sidewalks and street furniture zones.	Maintains existing sidewalks and street furniture zones.	Maintains existing sidewalks and street furniture zones.			Localized impacts to existing sidewalks and street furniture zones at key locations.
Active Transportation	**People Cycling**	Potential impacts to the cycling experience	Safety and experience for people cycling is improved by increasing the amount of physical separation from cars. Priority bus lanes provide the greatest separation as people cycling are permitted to travel in the bus lane. However, safety for people cycling is lessened if there are a lot of stops and starts to the lanes as they are more exposed when vehicles need to change lanes.	People cycling are fully exposed to all traffic	**Highest benefit to people cycling** Priority bus lanes, which permit people cycling, provide an environment with the least exposure to traffic.	**Moderate benefit to people cycling** People cycling experience some exposure to traffic due to breaks in the priority bus lanes at key intersections.	**Moderate benefit to people cycling** HOV lanes provide access to people cycling but exposure to more vehicles reduce overall benefits.	**Lowest benefit to people cycling** May introduce additional conflicts between people cycling and right-turning vehicles at new queue jump lane locations.
Costs & Other Impacts	**Right-of-Way Impacts**	Potential for property acquisition, modification to existing driveway access or road widening within the right-of-way	Only Option 5 requires changes to the curbs. Options 2, 3 and 4 maintain the existing road width.	No impact	No impact			Minor impacts to driveway access and boulevard to construct queue jump lanes at some locations
Costs & Other Impacts	**Capital Cost**	Planning level capital cost estimates	Installation costs primarily consist of additional signage, such as bus only signs, and road paint, such as red paint or the diamond symbol. Option 5 has the highest costs as additional construction to move curbs and other infrastructure would be required.	N/A	Installation costs ~$4.7 million	Installation costs ~$3.9 million	Installation costs ~$2.5 million	Installation costs ~$10.7 million
Costs & Other Impacts	**Street Trees / Utilities**	Potential for removal or relocation of utilities or street furniture	Only Option 5 requires changes to the curbs, with potential impacts to trees and utilities. Options 2, 3 and 4 maintain existing infrastructure.	N/A	No impact			Minor impacts to trees and utilities.
Costs & Other Impacts	**Project Delivery Scope & Timeline**	Potential for quick stand alone implementation or multi-year capital work construction	Options 2, 3 and 4 are all quick build projects that require new signage and pavement markings. Only Option 5 requires changes to the curbs, which takes 2 to 5 years to complete.	N/A	Quick build (less than 12 months): Signs, pavement markings, traffic signal modification, minor civil work at bus stop areas			Longer timeframe (2 to 5 years): moving curbs, utility diversions and capital work coordination required
Overall Assessment	Overall summary of the relative rankings for each of the transit priority design options evaluated.		Option 2 is selected as the recommended design as it provides the greatest benefit to transit and cyclists while having manageable impact on cars and a reasonably quick and cost-efficient implementation. Note that bus lanes will not be installed between Wilson Avenue and Maple Leaf Drive/Church Street. This was done to maintain capacity for cars where vehicle volumes are highest (i.e., around the highway on/off ramps).	Buses will continue to operate in mixed traffic and experience delays as a result of congestion. People cycling do not receive any benefit as they will continue to ride in the same vehicle lane as cars. On-street parking continues to be prohibited along the entire study area with off-street parking available near businesses.	**Recommended** Priority bus lanes provide the greatest improvement for transit riders through reduced travel times and increased reliability. Safety for people cycling is improved as they are able to ride in the bus lane, reducing their exposure to cars. Priority bus lanes have the greatest impact on cars, with longer travel times and vehicles diverting to adjacent arterials. However, car travel times are estimated to be similar to bus travel times, making the bus a more attractive and viable option, and the diverted traffic is expected to use the Highway 400 and adjacent arterial roads as opposed to diverting through neighbourhoods.	**Not Recommended** Partial bus lanes are not expected to provide benefit to transit or people cycling, as buses and people cycling are required to merge with cars at multiple points along the study area. Delays and exposure caused by these merge points negates any benefit from the short dedicated segments.	**Not Recommended** HOV lanes are expected to provide moderate improvements to bus travel times with fewer impacts to cars than priority bus lanes along the full study area. HOV lanes, however, often have a low compliance rate, so enforcement would be requried to achive the intended benefits.	**Not Recommended** Queue jump lanes provide the least improvement in transit operations while also being the most expensive and disruptive to implement due to required road reconstruction.