

Rapidway Questions

The Rapidways for Viva in the median of Yonge Street will introduce a median street divider into an area of Yonge Street that now is continuously paved from curb to curb. The existing pattern of two travel lanes in each direction and a centre lane used for turns from both directions will be replaced by a pattern of two through lanes in each direction and two centre Rapidways. Additional left turn lanes, now found at major signalised intersections, will be lengthened and used to complete both left and U-turns.

WHAT WILL RAPIDWAYS ACCOMPLISH?

The Rapidways will allow Viva rapid transit vehicles to travel in their own dedicated lanes, facilitating reliable operation and carrying riders quickly through one of the most seriously congested segments of York Region's transportation network. The median construction will have the added benefit of providing safe and efficient organization of the general vehicle movements on this section of Yonge Street.

WHAT TRAFFIC CHANGES WILL BE INTRODUCED?

As is the case for any major street, with or without rapid transit facilities, the introduction of median dividers is intended to improve traffic flow and provide safe designated locations for left and U-turns at signalized intersections. In the case of Yonge Street, mid-block driveways "across the street" will be accessible via a U-turn at the next signalized intersection and then a right turn from the curb lane into the destination. The U-turns will occur from special left/U turn lanes governed by a separate turn arrow phase, which allows exclusive turning time for the movement.

York Region's EA identifies these signalized intersections and their spacing in the Steeles to Richmond Hill Centre segment. Data for this segment and others examined are listed in Table 1. The list includes intersections with and without Viva stations. The average distance between U-turn opportunities in this 4-km segment is about 386 m. The feasibility of two new turning locations is being examined between Steeles Ave and Doncaster Ave and between Clark Ave and Elgin Street. If we add these two the average spacing between left / u-turn opportunities will drop to 322m.

WHAT IS TORONTO'S STREETCAR EXPERIENCE WITH MEDIAN DEDICATED TRANSITWAYS?

In recent years Toronto has installed a number of dedicated streetcar lanes on major TTC surface routes in the city. It has also installed a short segment of non-transit median barriers on Yonge Street in the central business area of North York. Observations have been conducted to identify similar characteristics of these installations.

St Clair Avenue West

The most recent introduction of dedicated streetcar lanes, that is, running space not shared by other vehicles on the street, was on a roughly 2-km long stretch of St Clair Avenue West between Yonge Street and Vaughan Road west of Bathurst Street. The project introduced raised track areas edged by curbs where earlier there was no distinction in street grade. Now that this project has been substantially completed and is in normal operation, the impacts of construction are in the past. Data on turning opportunities and spacing is found in Table 1 and shows the average interval between left / u-turn opportunities as 284m.

Spadina Avenue

An example of dedicated streetcar lanes which has been operating for several years (since 1997) is found on Spadina Avenue between Bloor Street and the downtown waterfront. The streetcar tracks run in the median of Spadina within one of the oldest sections of the city. Accordingly, spacing of stops and crossing opportunities corresponds to a more closely spaced historical street grid. Data on turning opportunities and spacing is found in Table 1 and shows the average interval between left / u-turn opportunities as 245m.

Queens Quay West

A special application in Toronto is the dedicated Harbourfront lanes on Queens Quay West. The character of this waterfront line is unlike “normal” urban transit or traffic patterns, given the recreational and residential theme of the area and the emphasis on pedestrian movements. While the median reservation for transit has the same two-track dedicated lane dimensions as the other mentioned examples, the remaining roadway is constrained, often to a single travel lane in each direction or a combined left and through lane in some locations. Data on turning opportunities and spacing is found in Table 1 and shows the average interval between left / u-turn opportunities as 276m.

North York

The North York downtown area on Yonge Street lies just north of Sheppard Avenue. Although there is no reserved median transit operation in this area, a 1070 m-long median divider has been installed, from Sheppard Avenue to Parkview Avenue. North of Parkview the bi-directional middle lane resumes and continues to the city boundary at Steeles. Data on turning opportunities and spacing is found in Table 1 and shows the average interval between left / u-turn opportunities as 214m.

Conclusion:

Both York Region and the City of Toronto have calibrated turning locations and property access to the conditions of their respective urban and suburban street grids and operating patterns. The number and spacing of left and U-turn locations correspond to local conditions and are adequate for automobile traffic and acceptable for improved transit operations.

TABLE 1 - COMPARISON OF Y1 TURNING OPPORTUNITIES WITH TORONTO EXAMPLES			
Signal intersection	+/- Distance (m)	Left or U Turn	Comments
Yonge Street (York Region Y1)			
Steeles	0	Yes	
Doncaster/Meadowview	430	Yes	
Glen Cameron	400	Yes	
Clark	200	Yes	
Arnold/Elgin	480	Yes	
John	320	Yes	
Centre/Thornhill Summit	230	Yes	
(Proposed Midblock EA)	300	Yes	
Royal Orchard	430	Yes	
Uplands	490	Yes	
Langstaff	580	Yes	
Total Length	3860		
	386	Average Interval Between Left / U Turn Opportunities	
St Clair Ave W			
Yonge Street	0	Yes	
Deer Park Crescent	342	Yes	LT into private access on south side
Avenue Road	300	Yes	
	330	Yes	Mid-block (Dunvegan/Warren), U-turn signals
Russel Hill Road	230	Yes	One way street
Spadina Road	280	Yes	
Tweedsmuir Avenue	200	No	Pedestrian crossing only
Wells Hill Avenue	220	Yes	Left turn around traffic island
Bathhurst Street	210	Yes	
Vaughan Road	160	Yes	
Total Length	2272		
	284	Average Interval Between Left / U Turn Opportunities	
Spadina Ave			
Bloor St W	0	Yes	
	50	Yes	Median crossing Nbd to Sbd only
Sussex Avenue	80	No	One way street
Harbord Street	180	Yes	
Wilcocks Street	200	No	No turns permitted
College Street	440	Yes	Through Spadina Crescent
Nassau Street	230	Yes	One way street, U-turn signals
St Andrew Street	162	Yes	
Dundas Street	132	Yes	
Sullivan St	230	Yes	One way street
Queen Street W	240	Yes	
Richmond Street W	102	No	No turns permitted
Adelaide Street W	120	Yes	One way street
King Street W	144	No	No turns permitted
Front Street W	306	Yes	
Bremner Blvd	240	Yes	
Lakeshore Blvd W	240	Yes	
Queens Quay W	90	Yes	
Total Length	3186		
	245	Average Interval Between Left / U Turn Opportunities	

TABLE 1 - COMPARISON OF Y1 TURNING OPPORTUNITIES WITH TORONTO EXAMPLES			
Signal intersection	+/- Distance (m)	Left or U Turn	Comments
Queens Quay W			
Bathurst	0	Yes	
Don Leckie Way	160	Yes	
Spadina Avenue	440	Yes	
		No	Transit only signal adjacent Shoppers Drugmart
Robertson Street	470	Yes	
Lower Simcoe Street	330	Yes	
York Street	234	Yes	
		Yes	Signalised mid-block access to car parking
Bay Street	300	Yes	
Total Length	1934		
	276	Average Interval Between Left / U Turn Opportunities	
Yonge Street (North York Downtown)			
Sheppard	0	Yes	
Elmhurst/Greenfield	192	Yes	
	174	Yes	Upper Madison (N) - no signals
North York/Elmwood	202	Yes	
Park Home/Empress	306	Yes	
	196	Yes	Parkview Ave - no signals
Total Length	1070		
	214	Average Interval Between Left / U Turn Opportunities	