
APPENDIX H

John Street Closure Traffic Analysis



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DATE: May 19, 2009
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John Street Closure Traffic Analysis

Introduction

Traffic impacts in the Weston Neighbourhood have been assessed as part of the overall Class Environmental Assessment for the Georgetown South Rail Corridor Expansion. Specifically, a detailed traffic analysis has addressed the potential impacts related to the proposed closure of John Street at the existing rail crossing plus the relocation and expansion of the GO parking facility. Although GO Transit currently leases 110 parking spaces in this City owned parking lot on John Street, observations suggest that the majority of the spaces in this parking lot are utilized by GO patrons under weekday conditions. The expanded facility will be located on the east side of Weston Road immediately south of Bellevue Crescent and will accommodate approximately 400 parking spaces as well as a passenger pick-up and drop-off facility. This memorandum summarizes the technical assumptions, analysis methodology and traffic impacts related to the change to the road network and the relocation/expansion of the GO parking facility.

Study Methodology

Existing traffic conditions were assessed on the basis of weekday peak hour turning movement volumes recorded at the Weston Road intersections between Church Street and Bellevue Crescent, the John Street intersections east of Weston Road to Rosemount Avenue (including the driveways serving the City of Toronto parking lot) and the Lawrence Avenue intersections with South Station Street and Ralph Street.

The diversion of existing traffic volumes resulting from the closure of John Street at the existing rail crossing was established, in part, on the basis of existing turning movement distribution at the John Street intersections with Weston Road, South Station Street and the alleyway running between John Street and Elsmere Avenue immediately east of Weston Road. Consideration of these data was supplemented with field observations to approximate the travel patterns of traffic using the alleyway between John Street and Elsmere Avenue. Observations confirm that westbound John Street traffic uses the alleyway and Elsmere Avenue to head northbound on Weston Road or to continue west on Lawrence Avenue via Little Avenue. Diverted traffic was assigned to either Weston Road via King Street or Lawrence Avenue via Ralph Street.

The diversion of GO commuter parking traffic to the planned lot on Weston Road reflects the travel patterns observed at the existing commuter parking lot during the morning and afternoon peak periods. Field observations established the proportion of commuters arriving at the parking lot during the morning peak period from each of the John Street (east and west), South Station Street and Elsmere Avenue approaches. Similar observations during the afternoon peak hour established the outbound distribution. These travel patterns provided the basis for assigning trips to the planned parking facility on Weston Road.

Notwithstanding that GO leases only 110 parking spaces, field observations suggest that the majority of the 190 available spaces are used by GO patrons. Observations also indicate that 45% of the existing demand arrives and departs during the peak hour hours. The traffic analysis, therefore, reflects an assumption that the planned 400 parking spaces will also attract a peak hour demand equivalent to 45% of the proposed supply. These trips were assigned to the study-area road network based on the arrival and departure patterns established for the existing lot.

We note that the traffic analysis reflects no reduction in turning movement volumes along Weston Road as a result of the travel pattern changes related to the closure of John Street at the rail tracks and the relocation of the GO commuter parking facility. This conservative assumption reflects consideration of the fact that there may be additional local traffic generation along John Street with more parking spaces available in the municipal parking lot. Details related to the assumed traffic diversion and commuter parking facility trip generation follow later in the report.

Intersection capacity and level-of-service analysis was carried out to assess existing operating conditions and estimate the traffic impacts associated with John Street closure and the relocation/expansion of the GO commuter parking facility. *Synchro 7* was applied to establish intersection movement capacity utilization while detailed micro-simulation analysis using *VISSIM* was carried out to determine vehicular queuing and delay characteristics.

Existing Traffic Conditions

Figure 1 summarizes the balanced morning and afternoon peak hour turning movement volumes based on surveys conducted in March 2009. The only data not representative of 2009 conditions are the turning movements at the Lawrence Avenue intersection with Ralph Street. Although the turning movements entering and departing Ralph Street reflect counts undertaken in 2004, the through volumes on Lawrence Avenue were adjusted to reflect the 2009 demand recorded east of Weston Road. Given the stability of the adjacent neighbourhood, this is a reasonable approach.

We note that there are turning movement restrictions at a number of locations in the study area network and these are also identified in **Figure 1**. A summary of the existing weekday morning and afternoon peak hour level of service (LOS) impacts is presented in **Table 1**. The detailed capacity analysis output is provided for reference in the **Technical Appendix**.

The level-of-service summary demonstrates that each of the study-area intersections currently operates with good levels of service during the peak hours. Individual intersection movements operate with a LOS C or better at all stop-controlled intersections and operating conditions at the signalized intersections reflect a LOS D or better. Each of the individual signalized intersection movements operate at less than 70% of available capacity during the weekday peak hours.

Queuing on all approaches to the unsignalized and signalized study area intersections currently extends to no more than 15 metres and 60 metres in length, respectively. The analysis confirms that existing lane geometry and intersection traffic control are adequate to accommodate existing travel demand.

**Figure 1 Existing Traffic Volumes
 AM (PM) Peak Hours**

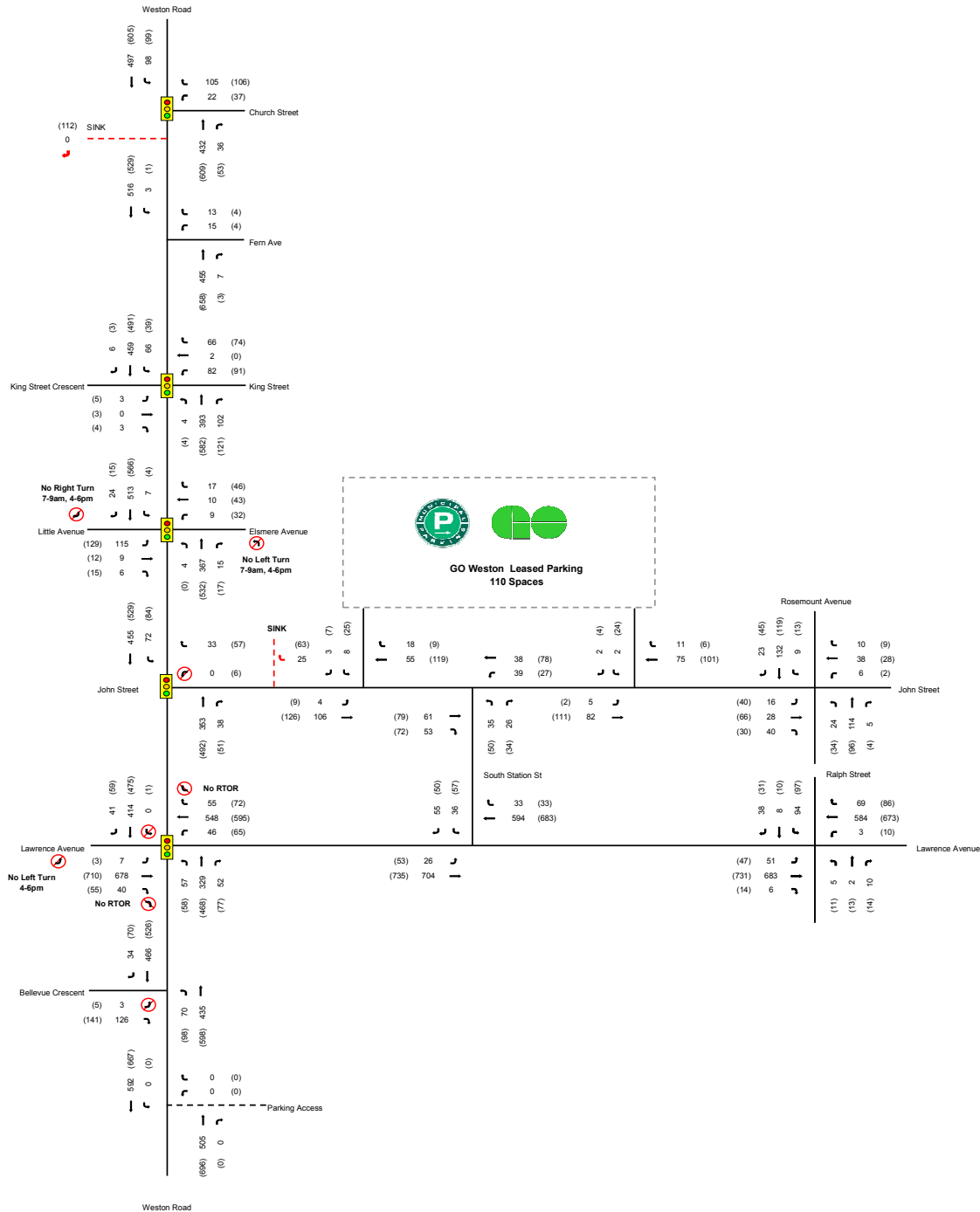


Table 1 Existing Intersection Levels of Service

Intersection/Movement	Level of Service							
	Weekday A.M. Peak Hour				Weekday P.M. Peak Hour			
	V/C	Delay	LOS	Queue ¹	V/C	Delay	LOS	Queue ¹
<i>Church St at Weston Rd</i>								
Westbound Left	0.05	25 s	C	6 m	0.08	23 s	C	12 m
Westbound Right	0.22	4 s	A	0 m	0.22	4 s	A	0 m
Northbound Through/Right	0.25	7/5 s	A/A	21 m	0.33	6/5 s	A/A	27 m
Southbound Left/Through	0.40	14/9 s	B/A	29 m	0.46	17/9 s	B/A	35 m
<i>Fern St at Weston Rd</i>								
Westbound Left/Right	-	16/7 s	C/A	6 m	-	15/7 s	B/A	0 m
Northbound Through/Right	-	0/1 s	A/A	0 m	-	0/0 s	A/A	0 m
Southbound Left/Through	-	2/0 s	A/A	0 m	-	4/0 s	A/A	0 m
<i>King St at Weston Rd</i>								
Eastbound Left/Through/Right	0.02	40/0/5 s	D/A/A	1 m	0.05	33/14/4 s	C/B/A	6 m
Westbound Left/Through/Right	0.52	36/34/17 s	D/C/B	30 m	0.65	35/0/20 s	C/A/B	32 m
Northbound Left/Through/Right	0.25	5/3/2 s	A/A/A	14 m	0.38	4/3/2 s	A/A/A	19 m
Southbound Left/Through/Right	0.30	9/6/6 s	A/A/A	26 m	0.32	12/7/6 s	B/A/A	30 m
<i>Elsmere Avenue at Weston Rd</i>								
Eastbound Left/Through/Right	0.34	27/22/13 s	C/C/B	24 m	0.40	27/23/15 s	C/C/B	28 m
Westbound Left/Through/Right	0.08	25/21/8 s	C/C/A	9 m	0.24	24/21/12 s	C/C/B	21 m
Northbound Left/Through/Right	0.24	10/5/5 s	A/A/A	16 m	0.29	0/6/4 s	A/A/A	22 m
Southbound Left/Through/Right	0.33	7/2/2 s	A/A/A	13 m	0.33	8/2/3 s	A/A/A	15 m
<i>John St at Weston Rd</i>								
Westbound Left/Right	0.05	0/6 s	A/A	6 m	0.13	48/8 s	D/A	9 m
Northbound Through/Right	0.18	0/2 s	A/A	6 m	0.21	1/3 s	A/A	13 m
Southbound Left/Through	0.29	3/1 s	A/A	1 m	0.30	4/1 s	A/A	8 m
<i>Lawrence Avenue at Weston Rd</i>								
Eastbound Left/Through/Right	0.63	24/20/22 s	C/B/C	54 m	0.64	29/22/23 s	C/C/C	60 m
Westbound Left	0.28	41 s	D	14 m	0.39	43 s	D	17 m
Westbound Through/Right	0.50	22/23 s	C/C	54 m	0.54	17/18 s	B/B	55 m
Northbound Left/Through/Right	0.36	17/13/7 s	B/B/A	28 m	0.44	18/13/10 s	B/B/A	35 m
Southbound Through/Right	0.43	7/5 s	A/A	16 m	0.45	9/6 s	A/A	26 m
<i>Bellevue Crescent at Weston Rd</i>								
Eastbound Left/Right	-	11/7 s	B/A	9 m	-	13/8 s	B/A	9 m
Northbound Left/Through	-	1/0 s	A/A	0 m	-	2/0 s	A/A	1 m
Southbound Through /Right	-	0/1 s	A/A	0 m	-	0/1 s	A/A	0 m
<i>South Station St at Lawrence Ave</i>								
Eastbound Left/Through	-	0/0 s	A/A	0 m	-	4/0 s	A/A	7 m
Westbound Through/Right	-	0/1 s	A/A	0 m	-	1/1 s	A/A	0 m
Southbound Left/Right	-	14/9 s	B/A	10 m	-	19/11 s	C/B	12 m
<i>Ralph Street at Lawrence Avenue</i>								
Eastbound Left	0.11	6 s	A	0 m	0.12	23 s	C	10 m
Eastbound Through/Right	0.31	1/1 s	A/A	6 m	0.33	10/10 s	A/A	56 m
Westbound Left	0.01	7 s	A	0 m	0.03	11 s	B	0 m
Westbound Through/Right	0.30	3/3 s	A/A	20 m	0.34	3/4 s	A/A	22 m
Northbound Left	0.03	36 s	D	3 m	0.07	37 s	D	6 m
Northbound Through/Right	0.05	39/6 s	D/A	4 m	0.11	33/9 s	C/A	10 m
Southbound Left/Through/Right	0.66	39/40/22 s	D/D/C	35 m	0.65	39/37/21 s	D/D/C	33 m

Note: 1. Queue length reflects 95th percentile condition

John Street Traffic Reassignment

The John Street traffic volume immediately west of Rosemount Avenue was reassigned to King Street and Ralph Street to establish the relative increases in demand on these alternate routes as well as the level-of-service impacts at the arterial road intersections resulting from the closure of John Street at the existing rail crossing. The reassignment of this demand reflects the following observations and assumptions:

- A portion of the westbound John Street traffic uses the laneway immediately east of Weston Road to access Weston Road via Elsmere Avenue. Observations indicate that approximately 65% of these vehicles turn north onto Weston Road and 35% continue through to Lawrence Avenue via Little Avenue.
- All westbound John Street traffic approaching Weston Road turns right to head northbound along Weston Road.
- Westbound John Street traffic turning left onto South Station Street is assumed to distribute equally to Lawrence Avenue west of Weston Road and Weston Road south of Lawrence Avenue.
- Although a portion of the westbound John Street traffic crossing the rail tracks is destined to the commuter parking lot, reassignment of these commuter parking trips is addressed separately.
- Based on the existing westbound traffic volumes and observed travel patterns, the traffic analysis reflects the assumption that morning and afternoon peak hour westbound John Street traffic is destined northbound and southbound on Weston Road and westbound on Lawrence Avenue in the proportions of 60%, 25% and 15%, respectively.
- The eastbound John Street traffic entering from southbound Weston Road is approximately equal to the sum of the eastbound John Street traffic entering from northbound Weston Road and from South Station Street. Accordingly, the traffic analysis reflects the assumptions that morning and afternoon peak hour eastbound John Street traffic at the rail crossing originates from southbound and northbound Weston Road in equal proportions.

Westbound John Street traffic (at the rail crossing) destined northbound on Weston Road is assumed to use King Street as an alternate. John Street traffic destined westbound on Lawrence Avenue or southbound on Weston Road is assumed to use Ralph Street as an alternate. Eastbound John Street traffic (at the rail crossing) originating from southbound Weston Road is assumed to divert to King Street while traffic originating from northbound Weston Road is assumed to use Ralph Street via Lawrence Avenue.

Given the potential uncertainties regarding the existing travel patterns, the traffic analysis reflects no turning movement volume reductions to account for the reassignment of John Street traffic volumes from the existing rail crossing. In this regard, the estimated intersection travel demand volumes are conservative.

GO Commuter Parking Lot Relocation/Expansion

The trip generation of the proposed parking lot was assumed to be proportional to the number of trips generated by the existing municipal parking lot on John Street on the basis of the relative

number of parking spaces. The John Street lot has 190 spaces and, as noted previously, although only 110 spaces are leased by GO Transit, observations suggest that the majority of the lot is used by commuters. Observations also confirm that 45% of the available spaces at the existing parking facility are filled and vacated by GO commuters during the weekday morning and afternoon peak hours, respectively. Accordingly, the estimated peak hour trip generation for the planned GO parking facility (with 400 parking spaces) is 180 trips (inbound during the morning peak hour and outbound during the afternoon peak hour, respectively). In addition to this estimated demand, the traffic analysis incorporates 100 additional pick-up and drop-off trips.

Weekday morning and afternoon peak hour observations established the current distribution of GO commuter trips arriving at and departing from the existing John Street parking facility. Specifically, morning peak period observations identified the number of commuter vehicles entering the parking facility from each of four approaches: from Weston Road via John Street; from Weston Road via Elsmere Avenue; from east of the rail crossing on John Street and from Lawrence Avenue via South Station Street. The observed commuter trips entering or leaving on each of the four approaches were assumed to be further distributed on the basis of the existing turning movement distributions. The corresponding travel patterns are summarized in **Table 2**.

Table 2 John Street Municipal Parking Lot Traffic Distribution

Direction of Approach	Proportion of Trips	
	AM Peak Inbound	PM Peak Outbound
From/to the east using Lawrence Ave via South Station St	13%	5%
From/to the east using John St	35%	44%
From/to the west using Lawrence Ave via South Station St	12%	0%
From/to the west using Lawrence Ave via Little Ave	13%	16%
From/to the south using Weston Rd via John St	10%	0%
From/to the south using Weston Rd via South Station St	0%	5%
From/to the south using Weston Rd via Elsmere Ave	0%	5%
From/to the north using Weston Rd via John St	5%	8%
From/to the north using Weston Rd via Elsmere Ave	12%	17%
<i>Total</i>	<i>100%</i>	<i>100%</i>

These assumptions were applied to reassign the existing peak hour commuter trips to the planned new facility on Weston Road. The reassigned trips were factored upwards to reflect the new total number of parking spaces as described above. The corresponding trip distribution related to the planned facility is summarized in **Table 3**. The additional passenger pick-up and drop-off trips were assumed to approach from the north and south in equal proportions during each of the morning and afternoon peak hours.

As with the reassignment of John Street traffic at the existing rail crossing, the reassignment of the GO commuter traffic reflects no turning movement volume reductions to account for the relocation of the parking facility. We note further that by reassigning the total traffic on John Street at the rail crossing (which includes a portion of the GO commuter traffic) and then separately reassigning the GO commuter trips, there is an element of double counting that increases the level of conservatism in this regard.

Table 3 GO Parking Lot Trip Distribution

Direction of Approach	Proportion of Trips	
	AM Peak Inbound	PM Peak Outbound
From/to the east using Lawrence Ave via Weston Rd	13%	5%
From/to the east using Rosemount Ave/Ralph St via Lawrence Ave and Weston Rd	26%	31%
From/to the east using Rosemount Ave via King St and Weston Rd	9%	13%
From/to the west using Lawrence Ave via Weston Rd	25%	16%
From/to the south using Weston Rd	10%	10%
From/to the north using Weston Rd	17%	25%
<i>Total</i>	<i>100%</i>	<i>100%</i>

The reassignment of John Street traffic from the existing rail crossing plus the reassigned GO commuter parking trips (including growth related to the expansion of the parking supply and passenger pick-up and drop-off facility) is summarized in **Figure 2**. The corresponding total traffic volumes are summarized in **Figure 3**.

Level of Service Impacts

Future traffic operations were evaluated to estimate the potential capacity and level of service impacts associated with the relocation and expansion of the GO parking facility and the closure of John Street at the existing rail crossing. The estimated impacts during the weekday morning and afternoon peak hours are summarized in **Table 4**. The detailed capacity analysis output is provided for reference in the **Technical Appendix**.

Table 4 Future Conditions Intersection Levels of Service

Intersection/Movement	Level of Service							
	Weekday A.M. Peak Hour				Weekday A.M. Peak Hour			
	V/C	Delay	LOS	Queue ¹	V/C	Delay	LOS	Queue ¹
<i>Church St at Weston Rd</i>								
Westbound Left	0.05	26 s	C	7 m	0.08	23 s	C	12 m
Westbound Right	0.22	4 s	A	0 m	0.22	5 s	A	0 m
Northbound Through/Right	0.30	8/6 s	A/A	28 m	0.41	7/6 s	A/A	36 m
Southbound Left/Through	0.49	16/9 s	B/A	33 m	0.56	21/10 s	C/A	40 m
<i>Fern St at Weston Rd</i>								
Westbound Left/Right	-	16/8 s	C/A	6 m	-	17/7 s	C/A	0 m
Northbound Through/Right	-	0/1 s	A/A	0 m	-	0/0 s	A/A	0 m
Southbound Left/Through	-	3/0 s	A/A	0 m	-	1/0 s	A/A	0 m
<i>King St at Weston Rd</i>								
Eastbound Left/Through/Right	0.02	28/0/5 s	C/A/A	0 m	0.05	33/16/5 s	C/B/A	6 m
Westbound Left/Through/Right	0.71	38/40/22 s	D/D/C	45 m	0.80	37/0/22 s	D/A/C	47 m
Northbound Left/Through/Right	0.27	6/3/3 s	A/A/A	15 m	0.45	7/3/2 s	A/A/A	19 m
Southbound Left/Through /Right	0.40	11/7/5 s	B/A/A	33 m	0.52	15/8/5 s	B/A/A	35 m

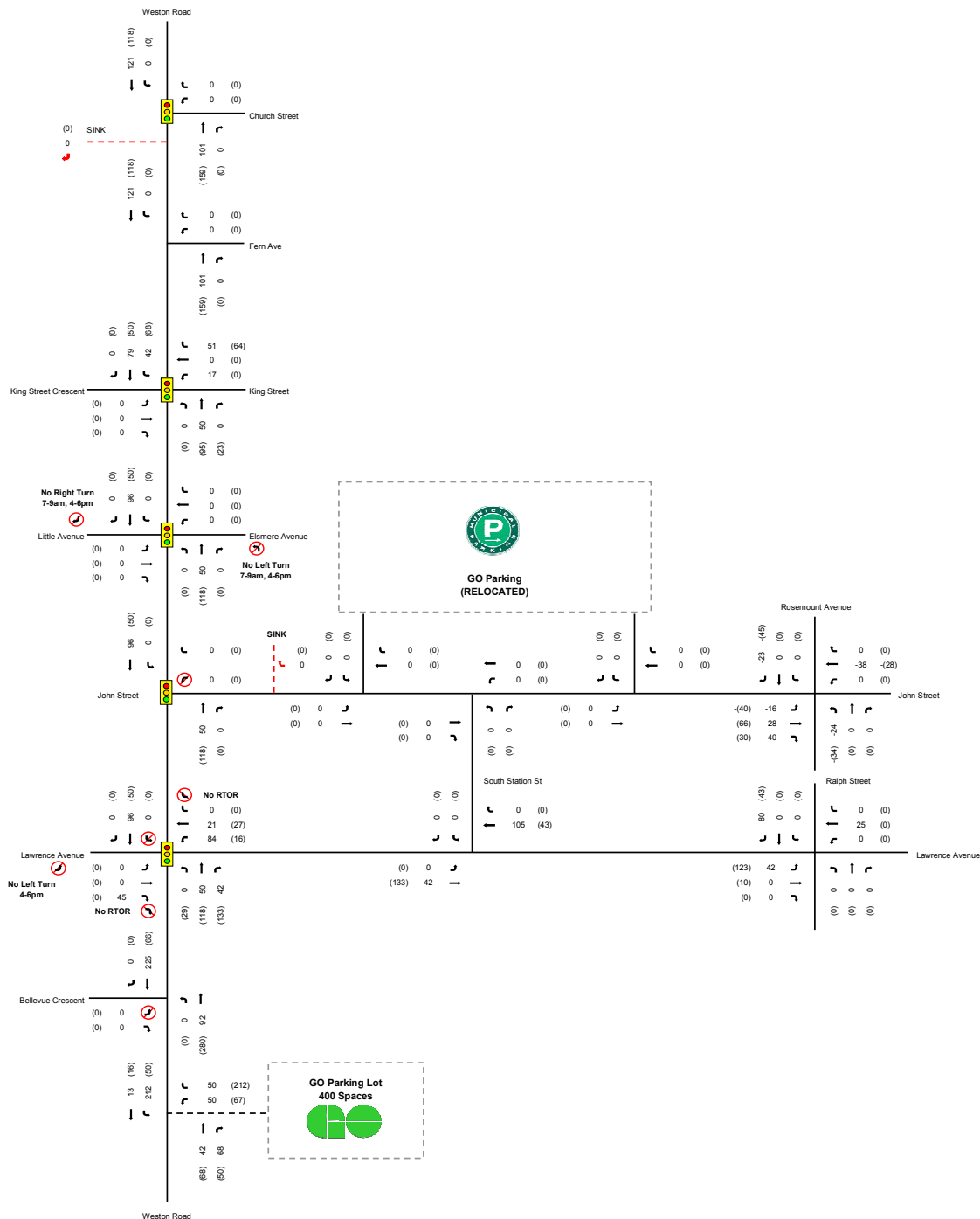
Table 5 (Cont'd) Future Conditions Intersection Levels of Service

Intersection/Movement	Level of Service							
	Weekday A.M. Peak Hour				Weekday A.M. Peak Hour			
	V/C	Delay	LOS	Queue ¹	V/C	Delay	LOS	Queue ¹
<i>Elsmere Avenue at Weston Rd</i>								
Eastbound Left/Through/Right	0.34	26/19/14 s	C/B/B	24 m	0.40	28/23/15 s	C/C/B	28 m
Westbound Left/Through/Right	0.08	23/20/7 s	C/B/A	9 m	0.24	24/21/12 s	C/C/B	21 m
Northbound Left/Through/Right	0.27	14/5/5 s	B/A/A	17 m	0.36	0/7/6 s	A/A/A	26 m
Southbound Left/Through /Right	0.39	5/2/2 s	A/A/A	15 m	0.35	9/2/2 s	A/A/A	15 m
<i>John St at Weston Rd</i>								
Westbound Left/Right	0.05	0/5 s	A/A	6 m	0.13	39/9 s	D/A	11 m
Northbound Through/Right	0.20	0/2 s	A/A	10 m	0.26	3/2 s	A/A	16 m
Southbound Left/Through	0.34	4/1 s	A/A	4 m	0.33	7/1 s	A/A	11 m
<i>Lawrence Avenue at Weston Rd</i>								
Eastbound Left/Through/Right	0.68	27/21/20 s	C/C/B	57 m	0.64	27/22/22 s	C/C/C	60 m
Westbound Left	0.88	84 s	F	60 m	0.49	52 s	D	26 m
Westbound Through/Right	0.52	25/26 s	C/C	66 m	0.56	19/20 s	B/B	59 m
Northbound Left/Through/Right	0.45	20/13/8 s	B/B/A	32 m	0.71	24/16/13 s	C/B/B	51 m
Southbound Through /Right	0.52	7/5 s	A/A	19 m	0.49	8/6 s	A/A	26 m
<i>Bellevue Crescent at Weston Rd</i>								
Eastbound Left/Right	-	16/8 s	C/A	10 m	-	14/8 s	B/A	9 m
Northbound Left/Through	-	3/0 s	A/A	0 m	-	4/2 s	A/A	5 m
Southbound Through /Right	-	1/0 s	A/A	0 m	-	0/1 s	A/A	0 m
<i>South Station St at Lawrence Ave</i>								
Eastbound Left/Through	-	12/0 s	B/A	4 m	-	5/0 s	A/A	6 m
Westbound Through/Right	-	2/1 s	A/A	0 m	-	2/1 s	A/A	0 m
Southbound Left/Right	-	28/17 s	D/C	17 m	-	20/12 s	C/B	13 m
<i>Ralph Street at Lawrence Avenue</i>								
Eastbound Left	0.22	10 s	A	8 m	0.45	30 s	C	47 m
Eastbound Through/Right	0.33	1/1 s	A/A	9 m	0.35	11/8 s	B/A	54 m
Westbound Left	0.01	8 s	A	0 m	0.03	14 s	B	0 m
Westbound Through/Right	0.32	3/4 s	A/A	25 m	0.35	4/4 s	A/A	25 m
Northbound Left	0.04	34 s	C	3 m	0.07	33 s	C	7 m
Northbound Through/Right	0.04	29/7 s	C/A	2 m	0.10	33/8 s	C/A	8 m
Southbound Left/Through/Right	0.76	38/34/21 s	D/C/C	45 m	0.71	37/36/23 s	D/D/C	38 m
<i>GO Parking Lot Access at Weston Rd</i>								
Westbound Left/Right	-	17/7 s	C/A	14 m	-	21/13 s	C/B	34 m
Northbound Through/Right	-	0/1 s	A/A	0 m	-	2/1 s	A/A	0 m
Southbound Left/Through	-	7/1 s	A/A	23 m	-	7/1 s	A/A	0 m

Note: 1. Queue length reflects 95th percentile condition

The capacity and level-of-service analyses demonstrate that impacts of the John Street closure and the relocation/expansion of the GO parking facility can be accommodated during the weekday morning and afternoon peak hours. Estimated impacts at stop-controlled intersections reflect LOS C or better with the only exception being a morning peak hour southbound left turn LOS D from South Station Street onto Lawrence Avenue. Estimated queuing (95th percentile) at the stop-controlled intersections is not expected to exceed 25 and 35 metres on the major and minor street approaches, respectively.

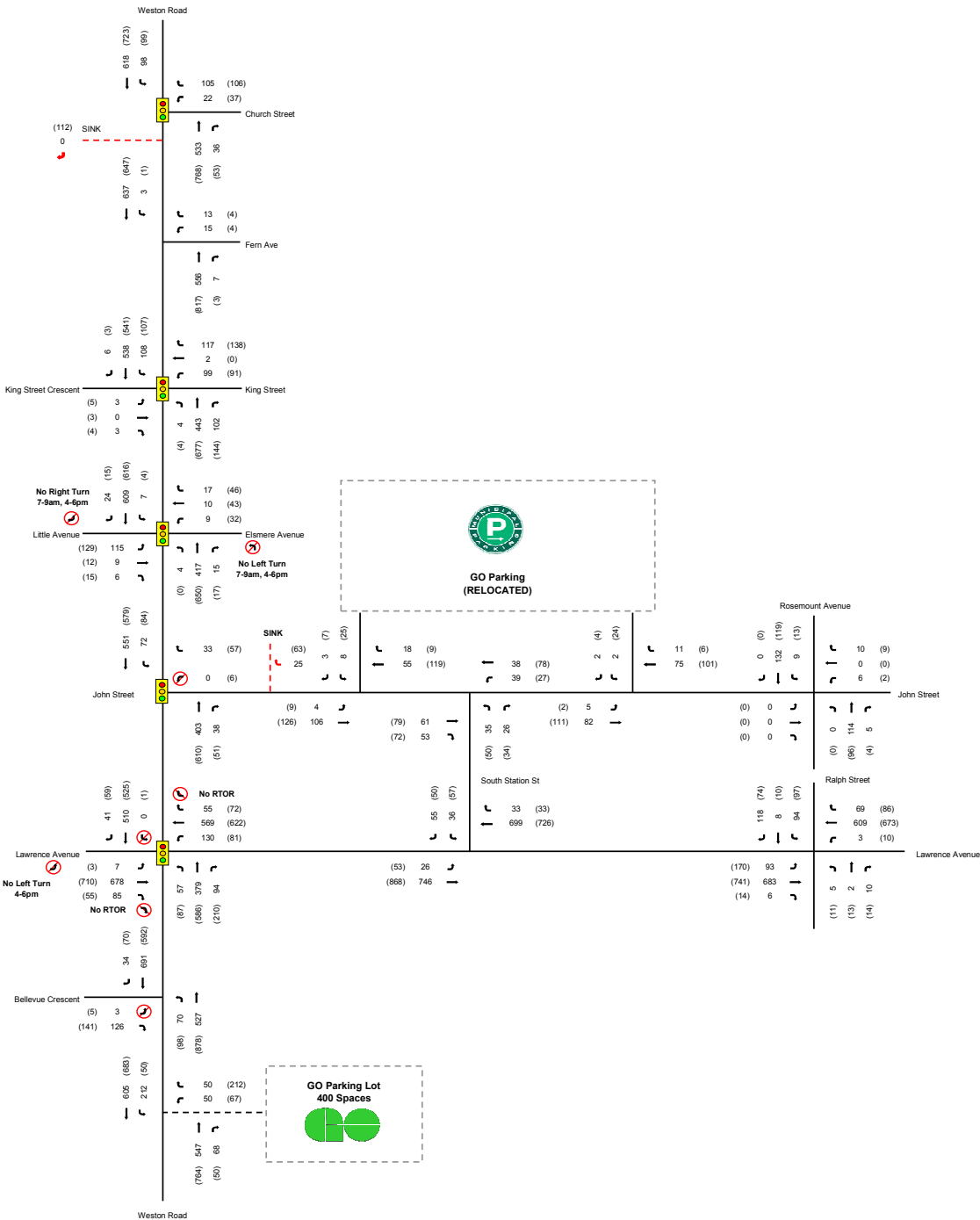
**Figure 2 Reassigned GO Parking Lot and John Street Traffic Volumes
 AM (PM) Peak Hours**



The traffic signal controlled Weston Road intersections with Church Street, King Street, Elsmere Avenue and John Street are expected to continue to operate at less than 80% of available capacity and LOS D or better during each of the morning and afternoon peak hours. Diversion of traffic to King Street is readily accommodated by the existing traffic control at Weston Road. Any increases to intersection queue lengths is not expected to be more than 15 metres while any increases to average vehicle delays at the intersection are expected to be less than 10 seconds.

Estimated directional volume increases of 40 to 90 vehicles during the peak hours result in total directional volumes of 210 to 260 vehicles on King Street immediately east of Weston Road.

**Figure 3 Total Traffic Volumes
 AM (PM) Peak Hours**



Corresponding directional increases of 40 to 120 vehicles are estimated for Ralph Street at Lawrence Avenue. The traffic analysis confirms that this intersection will continue to operate at less than 80% of available capacity and LOS D or better during the morning and afternoon peak

hours based on the existing traffic signal phasing/timings. With the exception of the eastbound left-turn movement (during the afternoon peak hour), vehicle queues at this intersection are not expected to increase by more than 10 metres and any increases in average vehicle delays are expected to be less than 5 seconds. The estimated increase in the average vehicle delay for the eastbound left-turn movement during the afternoon peak hour is less than 10 seconds while the 95th percentile queue length is estimated to increase by 35 to 40 metres. Notwithstanding that this queuing condition extends beyond the available lane storage of approximately 20 metres, the analysis confirms that impacts on through traffic are manageable. Moreover, there are a number of potential opportunities for mitigation. These include lengthening the available storage by simply extending the existing pavement markings within the available cross-section and/or providing a protected left-turn phase. Opposing traffic volumes and operating conditions can readily accommodate the eastbound protected left-turn phase.

Notwithstanding that there are adequate opportunities for mitigating the reported eastbound left-turn queuing impacts at the Lawrence Avenue intersection with Ralph Street, the reassigned left-turn demand is likely overstated. The reassignment of traffic related to the relocation of the GO parking facility does not account for the potential likelihood that a portion of the existing commuter demand approaches the John Street parking lot from Jane Street by cutting through the adjacent neighbourhood on any one of a number of east-west residential streets extending between Jane Street and the Rosemount Avenue. The analysis assumes that the commuter trips are generated by the neighbourhood and reassigns them to Ralph Street, accordingly. It is likely that at least a portion of the reassigned rail commuter demand originating from or destined to Jane Street (or beyond) will use Lawrence Avenue and result in a corresponding reduction in rail commuter trips using the local streets. Accordingly, the estimated left-turn demand and reported impacts at Ralph Street may be overstated.

The intersection of Weston Road and Lawrence Avenue can accommodate the impacts related to the John Street closure and the relocation/expansion of the GO commuter parking facility while maintaining volume-to-capacity ratios below 0.75 and LOS D or better with one exception. The analysis identifies a morning peak hour westbound left-turn volume-to-capacity ratio of 0.88 and a LOS F. These impacts reflect existing signal control phasing and timings and do not include a protected westbound left-turn phase. A protected phase can address the potential LOS and queuing impacts and can be accommodated by the conflicting movements at this intersection.

Summary

Traffic impacts related to the planned closure of John Street at the existing rail crossing and the relocation/expansion of the GO commuter parking facility can be accommodated by the study area intersections along Weston Road and Lawrence Avenue. Peak hour traffic diversion from John Street to King Street is estimated to be between 40 and 90 vehicles per direction while the corresponding diversion to Ralph Street is between 40 and 120 vehicles per direction. While these estimates may be conservative given that there are other alternatives to John Street, the analysis confirms that the morning and afternoon peak hour impacts can be accommodated at the arterial road intersections with potential minor improvements to traffic signal phasing/timings on the Lawrence Avenue at Weston Road and Ralph Street. Protected westbound and eastbound left-turn phases at Weston Road and Ralph Street can adequately accommodate potential impacts at these locations. Extension of the available lane storage for these movements is also possible through modifications to pavement markings only.