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April 11, 2014

OUR REF: TO1110TOX00
BY EMAIL: renfroe@domicile.ca

Domicile Development Inc.
371A Richmond Road
Suite 1
Ottawa, ON K2A 0E7

Attention: Mr. David Renfroe

Dear Sir:

RE: 989 Somerset Street Residential/Retail Development Transportation Overview

1. INTRODUCTION

The proposed development at 989 Somerset Street consists of 127 residential condo units, 1409 m^2 (15,169 ft^2) of commercial/general retail and 128 on-site parking spaces located both at-grade (15 spaces) and in two levels of below-grade structure (113 spaces).

The site, as depicted in its local context in Figure 1, has frontage on Somerset Street, City Centre Avenue and Spruce Street. Somerset Street is elevated at this location as it rises to pass over the O-Train corridor. As shown on the Figure 2: Site Plan, the retail uses are proposed along the Somerset Street and City Centre Avenue frontages, with the building's vehicular connection being to Spruce Street. As Spruce Street is blocked off mid-block to deter commercial cut-through traffic, all site-generated vehicle traffic will enter/exit the site via City Centre Avenue.

2. SCOPE OF WORK

As the proposed development will generate less than 75 vph, which is the City's threshold below which no traffic analysis is required, we proposed that a Transportation Overview addressing only the relevant "local" multi-modal issues was the appropriate level of transportation analysis. This would also include assessment of the adjacent Scott/City Centre intersection. This scope was proposed to Wally Dubyk of the City, and agreed to.

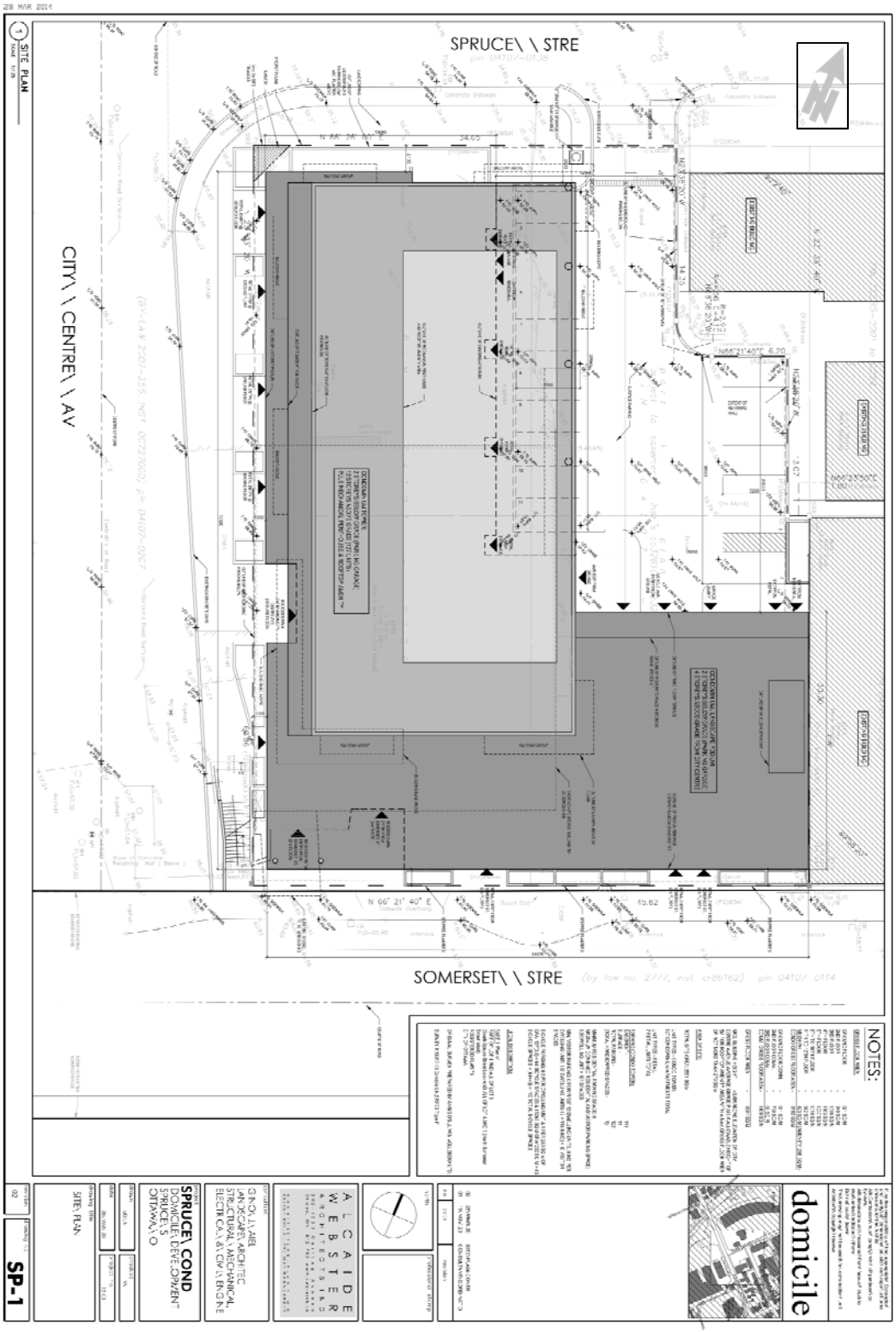
Figure 1: Site Context

3. EXISTING CONDITIONS

3.1 Transit

The subject site is located approximately 300 m from the Bayview LRT station, which is the interface between the O-Train line to/from the south and the Confederation LRT line to/from the east and west (conversion to LRT to be completed by 2017). In addition to this close proximity to City-wide LRT service, there is also excellent bus service on both Albert Street and Somerset Street.

Figure 2: Site Plan



3.2 Pedestrians and Cycling

With regards to pedestrian facilities, sidewalks exist on both sides of Somerset Street and Spruce Street. There is one on the east side of City Centre Avenue, but it is not continuous. The site is also in close proximity to the multi-use pathways along the east side of the O-Train corridor, along the north side of Scott Street and along the Ottawa River, which provides good City-wide connectivity.

With regard to cycling facilities, the above-noted multi-use pathways have been noted, and there are cycling lanes in both directions on the adjacent section of Somerset Street.

3.3 Roads and Intersections

Both Somerset Street and Albert Street are arterial roads, and City Centre Avenue is a local street.

The adjacent section of Somerset Street is two lanes with bicycle lanes in each direction. Its right-of-way protection policy is 20 m and the unposted speed limit is 50 kph.

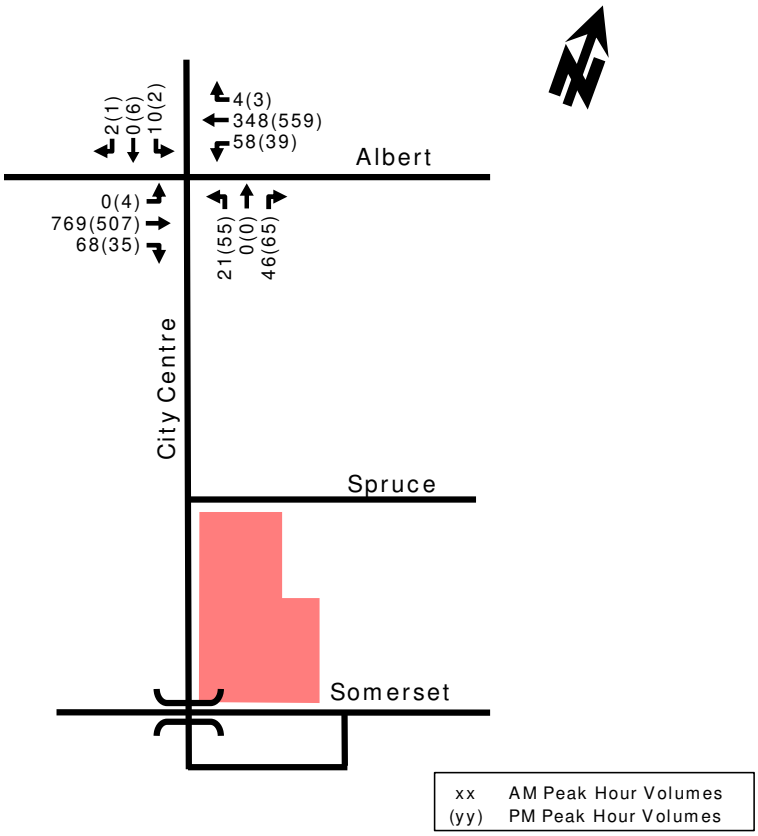
Albert Street, at City Centre Avenue, is a four-lane road with a posted speed limit of 50 kph. Its intersection with City Centre Avenue is STOP sign controlled on the northbound and southbound approaches. The northbound approach has both a left-turn lane and a right-turn channel. The westbound approach on Albert Street has two through lanes and a left-turn lane.

City Centre Avenue and Spruce Street are two-lane local streets with unposted speed limits of 50 kph. Spruce Street is blocked off to the east of the site to prohibit City Centre commercial traffic from using this local residential street to connect to Preston Street. Parking is permitted on both sides of Spruce Street.

City Centre Avenue has a narrow two-lane tunnel at its south end that connects to a federal government site. Traffic using this tunnel can connect to Somerset Street by driving through a private parking lot, but this movement is not encouraged and is not meant to be utilized by general traffic. Parking is permitted on both sides of City Centre Avenue.

With regard to the Albert/City Centre intersection, its current peak hour traffic volumes are depicted in Figure 3, with the City count included as Attachment #1. As shown, City Center Avenue is a low volume street carrying only 67 vph northbound and 126 vph southbound during the morning peak hour and 120 vph northbound and 74 vph southbound during the afternoon peak hour.

Figure 3: Existing Peak Hour Traffic Count



The ensuing Table 1 provides a summary of existing traffic operations at the Albert/City Centre intersection, based on the Synchro (V8) traffic analysis software. The subject study area intersection was assessed in terms delay and the corresponding Level of Service (LoS) for the 'critical movement(s)'. The Synchro model output of existing conditions is provided within Attachment #2. As noted in Table 1, the intersection currently functions at a good LoS 'C' during both peak hours.

Table 1: Existing Performance at the Albert/ City Centre Intersection

Intersection	Weekday AM Peak (PM Peak)			
	Critical Movement			Intersection 'as a whole'
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)
Albert/City Centre	C(C)	21.5(19.7)	SBL(SBL)	1.6(2.1)
Note: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane.				

As shown in Table 1, the 'critical movements' at the unsignalized Albert/City Centre intersection are currently operating at an acceptable LoS 'C' during both the weekday morning and afternoon peak hours, with respect to the City of Ottawa operating standards of LoS 'D' or better (0.90 > v/c > 0.00).

4. PROJECTED CONDITIONS

4.1 Site-Generated Peak Hour Traffic

The following Table 2 summarizes the appropriate vehicle trip generation rates for the proposed land uses obtained from the 9th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

Table 2: ITE Trip Generation Rates

Land Use	Data Source	Trip Rates	
		AM Peak	PM Peak
High-Rise Condo	ITE 232	T = 0.34(du); T = 0.29(du) + 28.86	T = 0.38(du); T = 0.34(du) + 15.47
Specialty Retail	ITE 826	T = 1.36(X); T = 1.20(X) + 10.74	T = 2.71(X); T = 2.40(X) + 21.48

Notes: T = Average Vehicle Trip Ends
X = 1,000 ft^2 Gross Floor Area
du= Dwelling units
Specialty Retail AM Peak is assumed to be 50% of the PM Peak

As ITE trip generation surveys only record vehicle trips and typically reflect highly suburban locations (with little to no access by travel modes other than private automobiles), adjustment factors appropriate to the more urban study area context were applied to attain estimates of person trips for the proposed development. This approach is considered appropriate within the industry for urban infill developments.

To convert ITE vehicle trip rates to person trips, an auto occupancy factor and a non-auto trip factor were applied to the ITE vehicle trip rates. Our review of available literature suggests that a combined factor of approximately 1.3 is considered reasonable to account for typical North American auto occupancy values of approximately 1.15 and a combined transit and non-motorized modal share of less than 10%. As such, the person trip generation for the proposed site is summarized in Table 3.

Table 3: Modified Person Trip Generation

Land Use	Data Source	Area	AM Peak (persons)			PM Peak (persons)		
			In	Out	Total	In	Out	Total
High-Rise Condo	ITE 232	127 units	16	69	85	47	29	76
Specialty Retail	ITE 826	15,169 ft^2	21	17	38	33	42	75
Total Person Trips			37	86	123	80	71	151
Note: 1.3 factor to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%								

The person trips shown in Table 3 for the proposed site were then reduced by modal share values (including a reduction for 'pass-by' trips) based on the site's location and proximity to adjacent communities, employment, other shopping uses and transit availability. Modal share and 'pass-by' values for residential and retail land uses within the proposed development are summarized in Tables 4 and 5, respectively, with the total site vehicle trip generation summarized in Table 6.

Given the close proximity to rapid transit, it is reasonable to assume that the residential component of the proposed development will generate a high transit modal share.

Table 4: Residential Modal Site Trip Generation

Travel Mode	Mode Share	AM Peak (Persons/ hr)			PM Peak (Persons/ hr)		
		In	Out	Total	In	Out	Total
Auto Driver	30%	5	21	26	15	9	24
Auto Passenger	10%	2	7	9	5	3	8
Transit	40%	6	28	34	18	12	30
Non-motorized	20%	3	13	16	9	5	14
Total Person Trips	100%	16	69	85	47	29	76
Total 'New' Auto Trips		5	21	26	15	9	24

Given the area of the site, it is reasonable to assume that the retail component of the proposed development will generate a higher non-motorized modal share.

Table 5: Retail Modal Site Trip Generation

Travel Mode	Mode Share	AM Peak (Persons/ hr)			PM Peak (Persons/ hr)		
		In	Out	Total	In	Out	Total
Auto Driver	50%	11	9	20	17	21	38
Auto Passenger	15%	3	3	6	5	7	12
Transit	10%	2	1	3	3	4	7
Non-motorized	25%	5	4	9	8	10	18
Total Person Trips	100%	21	17	38	33	42	75
Less Retail 'Pass-by' (30%)		-3	-3	-6	-6	-6	-12
Total 'New' Auto Trips		8	6	14	11	15	26

Table 6: Total Site Vehicle Trip Generation

Land Use	AM Peak (veh/ h)			PM Peak (veh/ h)		
	In	Out	Total	In	Out	Total
High-Rise Condominium	5	21	26	15	9	24
Specialty Retail Centre	11	9	20	17	21	38
Retail Pass-By (30%)	-3	-3	-6	-6	-6	-12
Total 'New' Auto Trips	13	27	40	26	24	50

As shown in Table 6, the resulting number of potential 'new' two-way vehicle trips for the proposed development is approximately 40 and 50 veh/h during the weekday morning and afternoon peak hours, respectively.

With regard to transit ridership, the projected approximately 40 potential transit patrons per hour can be adequately accommodated by the study area transit service.

4.2 Background Traffic Growth

Background traffic growth on Albert Street could be significant with the ultimate build-out of City Centre, Bayview Yards and LeBreton Flats. However, as there is no staging or schedule for any of this development, and as the subject development proposal does not require any traffic analysis, for purposes of this study we have assumed projected conditions to be existing conditions plus site-generated traffic.

4.3 Assignment of Site-Generated Traffic

For purposes of this study, it is assumed that all site-generated traffic will access/egress the site via the Albert/City Centre intersection with a 50% eastbound, 50% westbound directional split. The resultant assignment is depicted in Figure 4. The combination of existing plus site-generated traffic is depicted in Figure 5.

Figure 4: Assignment of Site-Generated Traffic

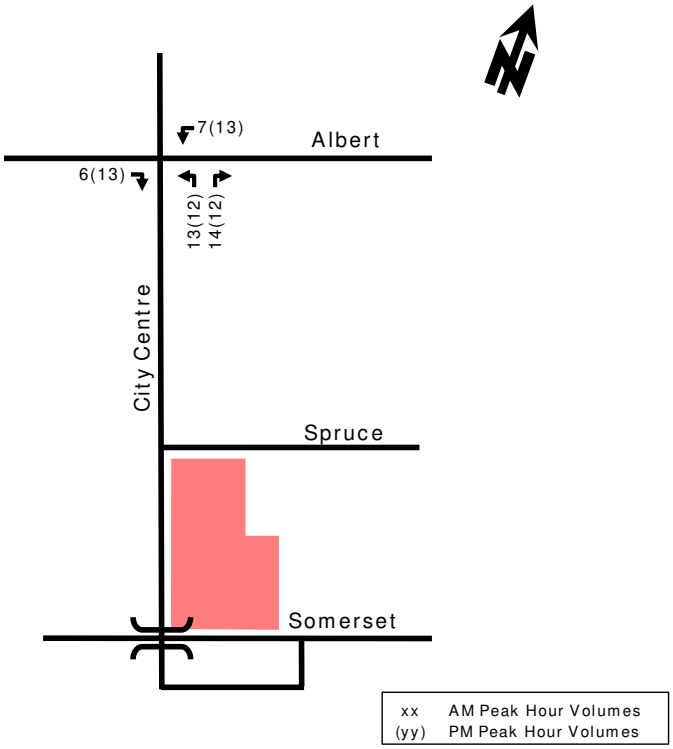
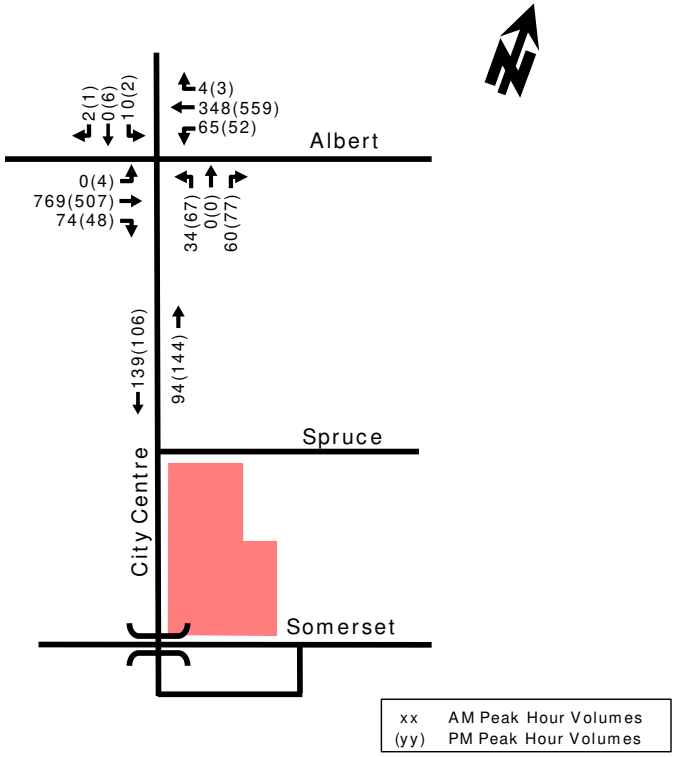


Figure 5: Total Projected Peak Hour Traffic



With regard to the projected operation of the Albert/City Centre intersection, the ensuing Table 7 provides a summary of projected traffic operations at study area intersections, based on the Synchro (V8) traffic analysis software. The proposed City Centre connections to Albert Street are assumed to be STOP control on the minor approaches only. The Synchro model output of projected conditions are provided within Attachment #3.

Table 7: Projected Performance at the Albert/ City Centre Intersection

Intersection	Weekday AM Peak (PM Peak)			
	Critical Movement			Intersection 'as a whole'
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)
Albert/City Centre	C(C)	22.6(21.2)	SBL(NBL)	2.2(2.8)
Note: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane.				

As shown in Table 7, the 'critical movements' at the unsignalized Albert/City Centre intersection are projected to continue to operate at an acceptable LoS 'C' during both the weekday morning and afternoon peak hours, with respect to the City of Ottawa operating standards of LoS 'D' or better (0.90 > v/c > 0.00). This is similar to the existing intersection performance summarized in Table 1.

Based on the projected volumes the existing length westbound auxiliary left-turn lane storage length is considered sufficient and does not need to be lengthened.

As summarized in Attachment #4, traffic signals are not warranted (only 40%) for the Figure 5 Total Projected Peak Hour Traffic. At some point in the future with City Centre and LeBreton Flats development, they will be warranted.

5. SITE PLAN REVIEW

Transportation-related details of the Site Plan are as follows, and it is noteworthy that all By-Law requirements are met, with the exception of the amount of visitor parking.

- The sidewalk width is a minimum of 2 m wide on all three street frontages;
- The site driveway connection to Spruce Street is located at the east property limit approximately 26 m from the City Centre property line;
- The driveway is 8 m wide with a maximum 2% slope extending for more than 9 m;
- All parking spaces are a minimum 2.6 m wide and 5.2 m long;

- The floor-to-floor ramps in the garage are approximately 6.6 m wide with a maximum 12% grade;
- The garage circulation aisles are 6.7 m wide; and
- The vehicle parking supply totals 128 spaces for the residential component of which 11 are at-grade for visitors, 4 are at-grade and for sale to adjacent property owners and 113 are below-grade for residents. The bicycle parking supply will total a minimum of 71 spaces. With regard to By-Law requirements, the resident and retail parking provision meets By-Law (retail requires 0 spaces), however, the visitors parking of 11 spaces is 13 short of the required 24 spaces. It is our experience/opinion that 11 surface spaces available for visitors is sufficient for a 128 unit condo project, but regardless, a variance is required.

In review of the Site Plan and in summary of the foregoing, the site is well laid out from a vehicle circulation perspective. As the pedestrian entrances to both the condo tower and the retail units are located on Somerset Street and City Centre Avenue, there will be minimal, if any, pedestrian conflict with site-generated traffic.

It is noteworthy that the Site Plan also shows the potential for stairs and an elevator connecting the lower City Centre Avenue sidewalk with the upper Somerset Street sidewalk. The existing road tunnel under Somerset Street is also identified as a future multi-use path. It is likely that there will be ongoing discussions with the City regarding the provision of these facilities.

6. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing analysis, the Findings, Conclusions and Recommendations of this study are as follows.

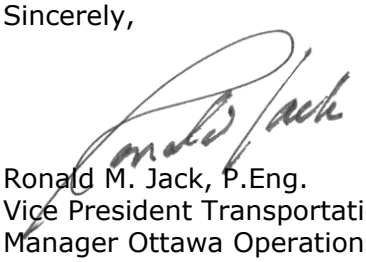
- The proposed development is comprised of 127 condominium units, 1409 m^2 of commercial/general retail and 128 on-site parking spaces;
- As the proposed development is projected to generate only 40 vph to 50 vph two-way total during peak hours, no traffic analysis is required based on the City's Transportation Impact Assessment Guidelines. Regardless, this Transportation Overview was prepared to assist in the Site Plan development and approval;
- The existing Albert/City Centre intersection operates at a very good Level of Service 'C', and current volumes do not meet traffic signal warrants;
- The development's projected approximately 40 transit patrons during peak hours can be very well accommodated by the study area's local bus and rapid transit service;

- With the combination of site-generated traffic plus existing peak hour traffic, the Albert/City Centre intersection will continue to operate at the very good Level of Service 'C'. Traffic signals remain unwarranted at 35%;
- With regard to vehicle circulation, the Site Plan is well laid out, the pedestrian/vehicle conflicts are minimal and all related By-Law requirements are met; and
- The proposed resident, retail and bicycle parking provision meets By-Law requirements. The visitor parking supply (11 spaces) is 13 short of By-Law requirements, thus a variance is required.

Based on the foregoing the proposed Site Plan is recommended from a transportation perspective.

Please call if you have any questions of the foregoing.

Sincerely,



Ronald M. Jack, P.Eng.
Vice President Transportation
Manager Ottawa Operations

Attachments

Attachment #1

Albert/City Centre Traffic Count

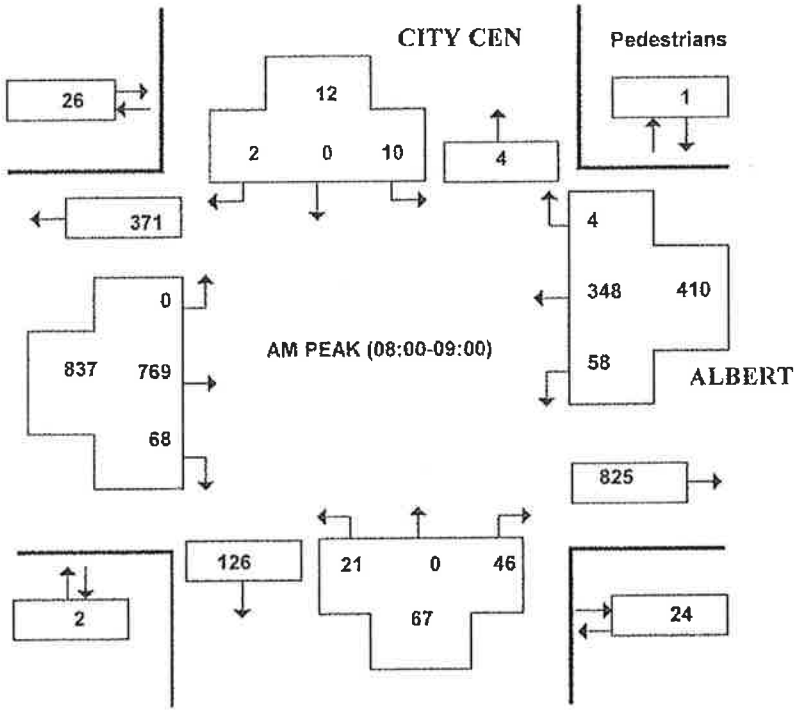
ALBERT ST and CITY CENTRE

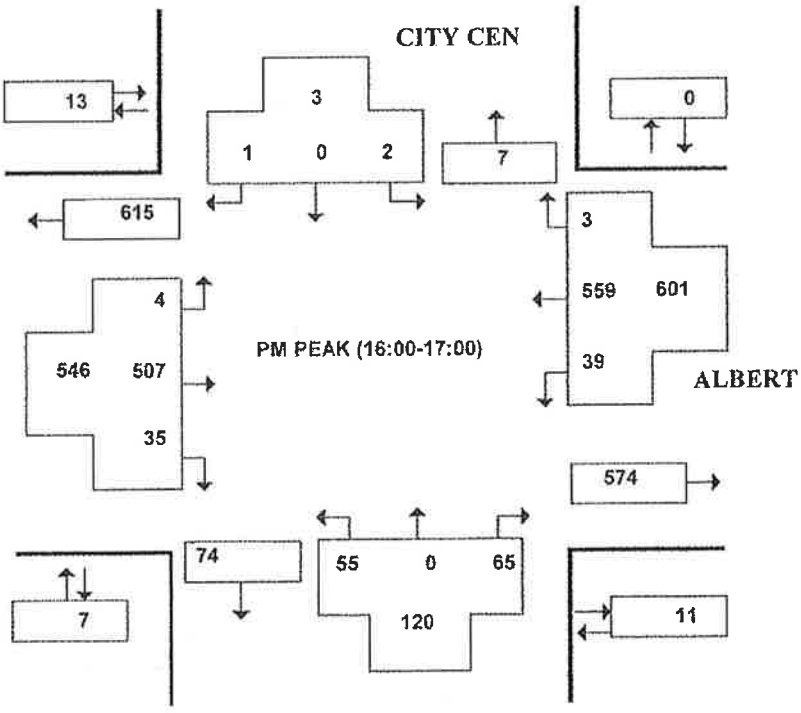
(ULRS Listing ALBERT & CITY CEN)

Survey Date: Monday 11 June 2012
Conditions: dry
Start Time: 0700

Total Observed U-Turns
Northbound: 3 Southbound: 1
Eastbound: 0 Westbound: 2

AADT Factor
Monday in June is 0.9

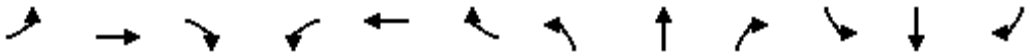




Attachment #2

Existing Intersection Operation

Existing AM
1: City Centre/Transitway & Albert

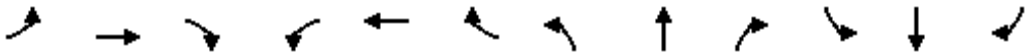


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	769	68	58	348	4	21	0	46	10	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	809	72	61	366	4	22	0	48	11	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	371			881			1153	1338	441	895	1372	185
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	371			881			1153	1338	441	895	1372	185
tC, single (s)	6.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	3.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			92			85	100	91	95	100	100
cM capacity (veh/h)	705			763			143	140	564	202	133	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	405	476	61	244	126	71	13
Volume Left	0	0	61	0	0	22	11
Volume Right	0	72	0	0	4	48	2
cSH	705	1700	763	1700	1700	456	231
Volume to Capacity	0.00	0.28	0.08	0.14	0.07	0.15	0.05
Queue Length 95th (m)	0.0	0.0	2.0	0.0	0.0	4.1	1.3
Control Delay (s)	0.0	0.0	10.1	0.0	0.0	19.1	21.5
Lane LOS			B			C	C
Approach Delay (s)	0.0		1.4			19.1	21.5
Approach LOS						C	C

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	52.4%	ICU Level of Service		A
Analysis Period (min)	15			

Existing PM
1: City Centre/Transitway & Albert



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	507	35	39	559	3	55	0	65	2	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	4	534	37	41	588	3	58	0	68	2	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	592			571			938	1234	285	947	1251	296
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	592			571			938	1234	285	947	1251	296
tC, single (s)	6.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	3.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			73	100	90	99	100	100
cM capacity (veh/h)	531			998			211	167	712	188	163	701

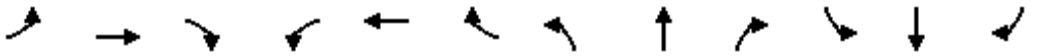
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	271	304	41	392	199	126	3
Volume Left	4	0	41	0	0	58	2
Volume Right	0	37	0	0	3	68	1
cSH	531	1700	998	1700	1700	460	248
Volume to Capacity	0.01	0.18	0.04	0.23	0.12	0.27	0.01
Queue Length 95th (m)	0.2	0.0	1.0	0.0	0.0	8.4	0.3
Control Delay (s)	0.3	0.0	8.8	0.0	0.0	18.8	19.7
Lane LOS	A		A			C	C
Approach Delay (s)	0.1		0.6			18.8	19.7
Approach LOS						C	C

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	45.3%	ICU Level of Service		A
Analysis Period (min)	15			

Attachment #3

Projected Intersection Operation

Projected AM
1: City Centre/Transitway & Albert

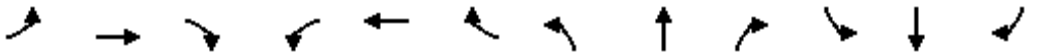


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	769	74	65	348	4	34	0	60	10	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	809	78	68	366	4	36	0	63	11	0	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	371			887			1171	1356	444	910	1393	185
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	371			887			1171	1356	444	910	1393	185
tC, single (s)	6.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	3.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			91			74	100	89	94	100	100
cM capacity (veh/h)	705			759			137	135	562	190	128	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	405	483	68	244	126	99	13
Volume Left	0	0	68	0	0	36	11
Volume Right	0	78	0	0	4	63	2
cSH	705	1700	759	1700	1700	380	218
Volume to Capacity	0.00	0.28	0.09	0.14	0.07	0.26	0.06
Queue Length 95th (m)	0.0	0.0	2.3	0.0	0.0	7.8	1.4
Control Delay (s)	0.0	0.0	10.2	0.0	0.0	22.3	22.6
Lane LOS			B			C	C
Approach Delay (s)	0.0		1.6			22.3	22.6
Approach LOS						C	C

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	52.6%	ICU Level of Service		A
Analysis Period (min)	15			

Projected PM
1: City Centre/Transitway & Albert



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	507	48	52	559	3	67	0	77	2	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	4	534	51	55	588	3	71	0	81	2	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	592			584			972	1268	292	975	1292	296
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	592			584			972	1268	292	975	1292	296
tC, single (s)	6.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	3.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			94			64	100	88	99	100	100
cM capacity (veh/h)	531			986			197	157	704	173	152	701

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	271	317	55	392	199	152	3
Volume Left	4	0	55	0	0	71	2
Volume Right	0	51	0	0	3	81	1
cSH	531	1700	986	1700	1700	423	232
Volume to Capacity	0.01	0.19	0.06	0.23	0.12	0.36	0.01
Queue Length 95th (m)	0.2	0.0	1.3	0.0	0.0	12.2	0.3
Control Delay (s)	0.3	0.0	8.9	0.0	0.0	21.2	20.8
Lane LOS	A		A			C	C
Approach Delay (s)	0.1		0.8			21.2	20.8
Approach LOS						C	C

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	48.3%	ICU Level of Service		A
Analysis Period (min)	15			

Attachment #4

Traffic Signal Warrant Analysis

Albert/ City Centre - (peak hour signal warrant)

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Restricted Flow - Operating Speed Less Than 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	900	75%	38%	40% No
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	170	38%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	900	68%	40%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	75	40%		

Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above*

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)*

Yes

No