



166 Boyd Street – Traffic Brief

A & B Bulat Homes Ltd.

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166 Boyd Street – Traffic Brief

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Prepared and Reviewed By:

Matthew Cvasin, Transportation Engineering Technologist

Jonathan D. Law, Transportation Engineer

EXP

1595 Clark Boulevard

Brampton, Ontario L6T 4V1

t: +1.905.793.9800

Approved By:

Yves Marie Monereau, P.Eng., PE, PTOE, RSP

Manager, Traffic Engineering

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1. Introduction

EXP has been retained by A & B Bulat Homes Ltd. to prepare a traffic brief in support of the proposed residential development located at 166 Boyd Street, within the jurisdiction of the Town of Carleton Place. Based on correspondence with the Town, a traffic brief outlining the anticipated site traffic and distribution is considered appropriate for the site application. The available traffic data available from the Town has been reviewed, however traffic data for the surrounding study area intersections were unavailable. Due to the current COVID-19 pandemic, existing surveyed traffic counts would not be representative of typical conditions. Therefore, traffic intersection operations will not be analyzed for this brief.

The proposed development would consist of 71 townhouse units along a private crescent. The proposed site plan is illustrated in **Appendix A**.

2. Existing Conditions

The location of the development is illustrated in Figure 1. The development will have two accesses connected to Boyd Street, one of which would be directly adjacent to Arthur St and the other would be to the south of Arthur.



Figure 1 - Study Area

Mississippi Road is a collector road as per the Town's Official Plan, while Boyd Street, Arthur Street, Morris Street and Woodward Street are all local roads. All roads in the study area are two-lane, undivided and have a 50 km/h posted speed limit.

Historical turning movement count data along Mississippi Road was acquired from the Town in two locations – one at Mississippi Road and Hughes Street (south of the study area) and the other at Mississippi Road and Blair Street

(north of the study area). Both counts were conducted over a week in 2017. The count as Hughes Street indicates an AADT of 2,791 and about 5% heavy vehicle traffic. The count at Blair Street indicates an AADT of 1,544 and about 2% heavy vehicle traffic. The traffic data provided is included as **Appendix B**.

Currently, Boyd Street is separated between Arthur Street and Taber Street, directly in front of the proposed development. As part of this development, Boyd Street is to be extended to connect Arthur Street and Taber Street.

3. Site Generated Traffic

3.1. Trip Generation

The trip generation for the proposed development was calculated using the ITE Trip Generation Manual 10th Edition, with the land use code for multifamily low-rise units which represents the proposed townhouses. The peak hour of the adjacent street was used to demonstrate the worse-case scenario for the road network. Based on the study area and lack of available transit routes, a non-auto modal split was not applied to the trip generation. The projected vehicular trips are outlined in **Table 1**.

Table 1 - Trip Generation

Land Use	Independent Variable	Parameters	AM Peak Hour		PM Peak Hour	
			In	Out	In	Out
Multifamily Housing Low-Rise (ITE #220)	71 units	Total Trips	34		63	
		Distribution	23%	77%	63%	37%
		New Trips	8	26	40	23

Based on the trip generation, the development can expect to generate 34 AM peak hour trips and 63 PM peak hour trips.

3.2. Trip Distribution

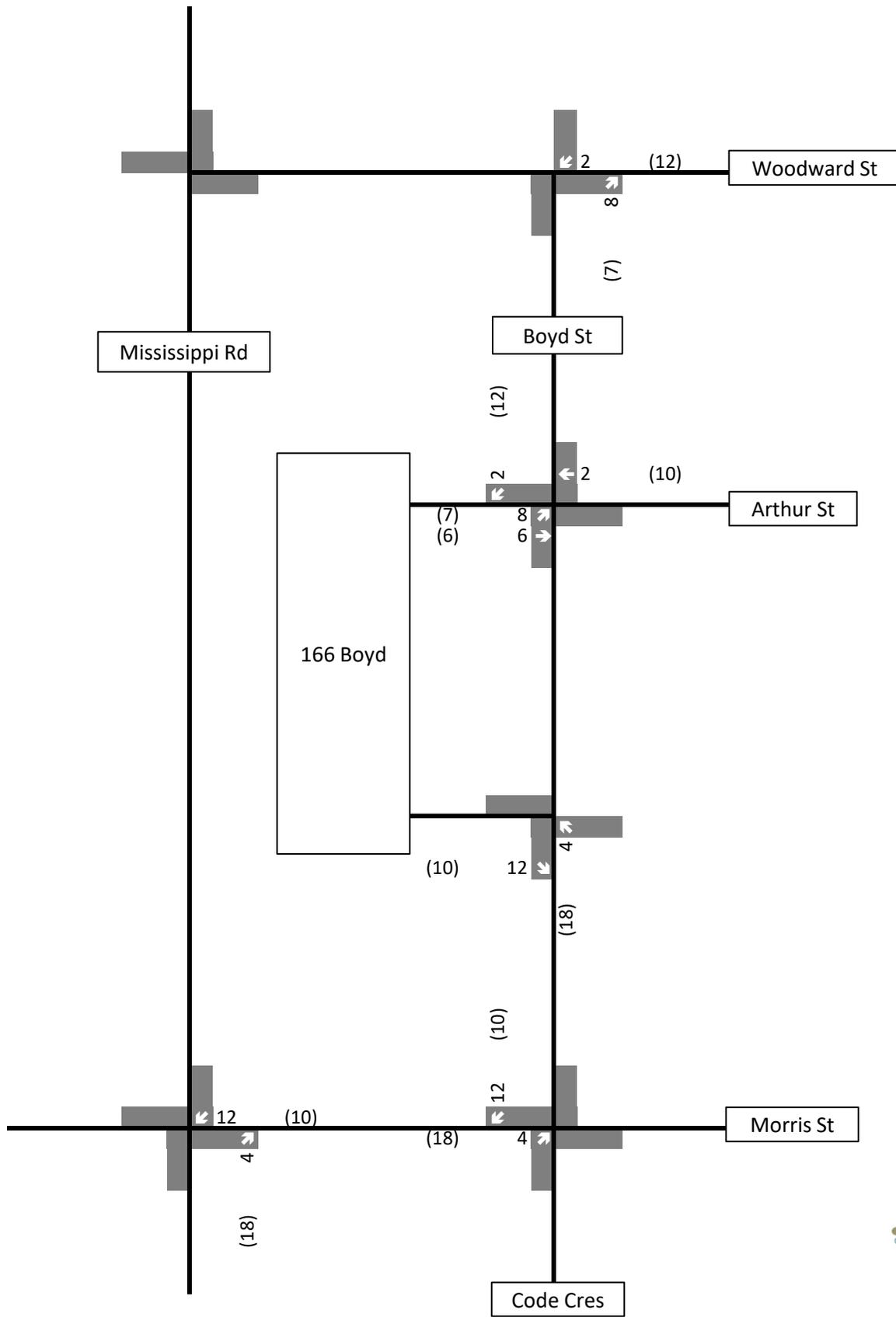
Trip distribution of the site trips was conducted based on the assumptions outlined in the Jackson Ridge Subdivision Traffic Impact Statement dated December 2013. The statement anticipated 40% trips to/from the north, 40% trips to/from the east, 10% trips to/from the south and 10% trip to/from the west.

North trips to/from the site were distributed between Arthur Street and Woodward Street. East to/from trips were distributed between Arthur Street and Mississippi Road which would provide access to Highway 7. South to/from trips were evenly distributed between Mississippi Road and Arthur Street. All west to/from trips were distributed south on Mississippi Road which would provide access to Highway 7.

The trip distribution is summarized in **Table 2**. The trip distribution is visualized in **Figure 2**.

Table 2 - Trip Distribution

Direction	Percentage	AM (In)	AM (Out)	PM (In)	PM (Out)
Mississippi Road (south)	45%	4	12	18	10
Woodward Street (east)	30%	2	8	12	7
Arthur Street (east)	25%	2	6	10	6



Legend

- xx A.M. Peak Hour Traffic Volumes
- (xx) P.M. Peak Hour Traffic Volumes

Figure 2

Site Trips Distribution

The distribution of site traffic was estimated based on existing travel patterns, the Jackson Ridge Traffic Study and engineering judgement. It is expected that most trips would arrive and depart via Mississippi Road due to its direct connection to Highway 7. This route is more likely to be used by commuter trips travelling between Ottawa. Trips destined between the core of Carleton Place would likely utilize Woodward Street with a portion of trips also using Arthur Street.

4. Conclusions

The trip generation and distribution for the development anticipate no major changes to the existing road network in the study area. A small number of trips are expected to be generated by the development in the peak hours. The trip distribution is expected to create no disruptions in existing traffic patterns. The heaviest intersection impacted by the development will be Mississippi Road and Morris Street, with 16 additional vehicles in the AM making a westbound left and 28 additional vehicles in the PM making a northbound right.

The Jackson Ridge Traffic Impact Statement indicated that an all-way stop control at the intersection of Mississippi Road and Morris Street may need to be considered due to the increased traffic volumes from their development. The Ontario Traffic Manual (OTM) suggests that an all-way stop be considered on minor roads wherein the total vehicle volumes on all approaches exceeds 350 vph for the highest hour recorded or where the volume split does not exceed 65% for the major and 35% for the minor. The addition of trips from this site would have an impact on the split of traffic volumes for this intersection. An all-way stop warrant should be conducted when traffic data is available.

It is concluded that the development of 166 Boyd Street would have a minimal impact on the overall transportation network.

Appendix A:
Proposed Site Plan



Appendix A:
Existing Traffic Data



CARLETON PLACE TRAFFIC COUNT DATA INFORMATION SHEET

Location	Mississippi Rd
Civic Address	At Hughes St
Starting Date	Tuesday Oct 24th 2017
Finishing Date	Monday Oct 30th 2017
Weather	Clear
Count taken by	Dan Varcoe

Total A.A.D.T. for this location is **2,791**

Daily Total Count

Friday	2582	Saturday	2473
Sunday	1913	Monday	2503
Tuesday	2549	Wednesday	2668
Thursday	2798		

Total Count	17,486	Northbound	8,414
		Southbound	9,072

Actual Daily Average Count

Mon. to Fri.	2620.0	Sat./ Sun	2193.0
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Vehicle Data

Day	Class #1 	Class #2 	Class #3 	Class #4 	Class #5 	Class #6 	Class #7 	Class #8 	Class #9 	Class #10 	Class #11 	Class #12 	Daily Total
Sun.	4	1580	267	0	15	28	19	0	0	0	0	0	1913
Mon.	4	1960	385	46	39	48	19	0	0	2	0	0	2503
Tues.	7	2021	365	55	46	47	8	0	0	0	0	0	2549
Wed.	11	2085	408	59	44	50	9	2	0	0	0	0	2668
Thurs.	15	2229	380	48	46	63	13	3	1	0	0	0	2798
Fri.	6	2088	372	3	43	59	9	0	1	1	0	0	2582
Sat.	12	1987	377	3	35	43	16	0	0	0	0	0	2473
Total	59	13950	2554	214	268	338	93	5	2	3	0	0	17486

Speed Data

Km/hr	Class #1 	Class #2 	Class #3 	Class #4 	Class #5 	Class #6 	Class #7 	Class #8 	Class #9 	Class #10 	Class #11 	Class #12 	Speed Total
0-10	2	6											8
10-20	29	1181	129	4	3	45	13		1				1405
20-30	10	1145	142	23	6	247	72	1	1	3			1650
30-40		2373	521	77	61	25	5	1					3063
40-50	9	6304	1126	99	142	16	3	3					7702
50-60	6	2639	548	11	49	5							3258
60-70	2	289	76		4								371
70-80	1	11	11		3								26
80-90		2	1										3
90-100													0
100-110													0
110-120													0
120-130													0
130-140													0
140-150													0
150-160													0
Total	59	13950	2554	214	268	338	93	5	2	3	0	0	17486

Annual Average Daily Traffic.

Item/Day	Mon
Cars	2349
Comm. trucks X2	308
24hr. Vol. factor	2657
Weekly factor	1.072
Seasonal Factor	0.98

Total A.A.D.T. for this location is

2,791

Class		Axles	Axle spacing in feet				
			Axle 1-2	Axle 2-3	Axle 3-4	Axle 4-5	Axle 5-6
1	motorcycle	2	<6.0				
2	passenger car	2	6.0 - 10.0				
	car 1 axle trailer	3	< 10.0	10.0 - 18.0			
	car 2 axle trailer	4	< 10.0		< 3.5		
3	Pickup truck	2	10.0 - 15.0				
	Pickup + 1 axle trailer	3	10.0 - 15.0	10.0 - 18.0			
	Pickup + 2 axle trailer	4	10.0 - 15.0		< 3.5		
	Pickup + 3 axle trailer	5	10.0 - 15.0			< 3.5	
4	Bus	2	> 20.0				
	Bus	3	> 19.0				
5	single unit truck - dual rear ax	2	14.9 - 20.0			< 3.5	
6	3 axle truck	3		< 18.0			
7	4 axle truck	4					
8	2S1	3		>18.0			
	2S2	4		> 5.0	< 3.5		
	3S1	4		< 5.0	> 10.0		
9	3S2	5		< 6.1		3.5 - 8.0	
	5 axle combination	5					
10	6 axle combination	6					
	3S3	6					
11	2S1 - 2	5		> 6.0			
12	3S1 - 2	6					> 10.0
13	Truck	7 or more					

Speed Statistics

Total vehicles in profile = 17,486
Posted Speed Limit = 50km/hr
Number Speeding = 3658 (20.92%)
Maximum Speed = 86.8 km/hr
Minimum Speed = 2.1 km/hr
Mean Speed = 41.3 km/hr
85% Speed = 51.65 km/hr
95% Speed = 56.64 km/hr
Median Speed = 43.47 km/hr
16 km/hr pace = 35 to 55
Number in 20 km/hr pace = 12,194 (69.74%)
Variance = 131.2
Standard Deviation = 11.45 km/hr



CARLETON PLACE TRAFFIC COUNT DATA INFORMATION SHEET

Location	Mississippi Rd
Civic Address	At # 63
Starting Date	Thur July 6th 2017
Finishing Date	Thur July 13th 2017
Weather	Clear
Count taken by	Dan Varcoe

Total A.A.D.T. for this location is **1,544**

Daily Total Count

Friday	1644	Saturday	1547
Sunday	1361	Monday	1580
Tuesday	1489	Wednesday	1512
Thursday	1766		

Total Count	10,899	Northbound	5,344
		Southbound	5,555

Actual Daily Average Count

Mon. to Fri.	1598.2	Sat./ Sun	1454.0
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Vehicle Data

Day	Class #1	Class #2	Class #3	Class #4	Class #5	Class #6	Class #7	Class #8	Class #9	Class #10	Class #11	Class #12	Daily Total
Sun.	19	1086	245	0	9	2	0	0	0	0	0	0	1361
Mon.	13	1241	295	5	22	3	0	0	0	1	0	0	1580
Tues.	15	1167	264	6	28	7	1	0	0	1	0	0	1489
Wed.	13	1207	273	4	13	1	0	0	1	0	0	0	1512
Thurs.	27	1423	280	3	21	9	3	0	0	0	0	0	1766
Fri.	14	1328	271	3	25	2	0	0	1	0	0	0	1644
Sat.	28	1231	272	0	15	1	0	0	0	0	0	0	1547
Total	129	8683	1900	21	133	25	4	0	2	2	0	0	10899

Speed Data

Km/hr	Class #1	Class #2	Class #3	Class #4	Class #5	Class #6	Class #7	Class #8	Class #9	Class #10	Class #11	Class #12	Speed Total
0-10	1	1											2
10-20	30	13	6	1	1	3							54
20-30	19	185	66	2	5	5	3		2	1			288
30-40	13	2441	640	12	44	14	1			1			3166
40-50	43	4901	964	6	69	3							5986
50-60	14	1095	221		14								1344
60-70	5	42	3										50
70-80	3	5											8
80-90	1												1
90-100													0
100-110													0
110-120													0
120-130													0
130-140													0
140-150													0
150-160													0
Total	129	8683	1900	21	133	25	4	0	2	2	0	0	10899

Annual Average Daily Traffic.

Item/Day	Wed
Cars	1493
Comm. trucks X2	38
24hr. Vol. factor	1531
Weekly factor	1.108
Seasonal Factor	0.91

Total A.A.D.T. for this location is

1,544

Class		Axles	Axle spacing in feet				
			Axle 1-2	Axle 2-3	Axle 3-4	Axle 4-5	Axle 5-6
1	motorcycle	2	<6.0				
2	passenger car	2	6.0 - 10.0				
	car 1 axle trailer	3	< 10.0	10.0 - 18.0			
	car 2 axle trailer	4	< 10.0		< 3.5		
3	Pickup truck	2	10.0 - 15.0				
	Pickup + 1 axle trailer	3	10.0 - 15.0	10.0 - 18.0			
	Pickup + 2 axle trailer	4	10.0 - 15.0		< 3.5		
	Pickup + 3 axle trailer	5	10.0 - 15.0			< 3.5	
4	Bus	2	> 20.0				
	Bus	3	> 19.0				
5	single unit truck - dual rear ax	2	14.9 - 20.0			< 3.5	
6	3 axle truck	3		< 18.0			
7	4 axle truck	4					
8	2S1	3		>18.0			
	2S2	4		> 5.0	< 3.5		
	3S1	4		< 5.0	> 10.0		
9	3S2	5		< 6.1		3.5 - 8.0	
	5 axle combination	5					
10	6 axle combination	6					
	3S3	6					
11	2S1 - 2	5		> 6.0			
12	3S1 - 2	6					> 10.0
13	Truck	7 or more					

Speed Statistics

Total vehicles in profile = 10,899
Posted Speed Limit = 50km/hr
Number Speeding = 1403 (12.87%)
Maximum Speed = 84.7 km/hr
Minimum Speed = 3.1 km/hr
Mean Speed = 42.8 km/hr
85% Speed = 49.14 km/hr
95% Speed = 53.10 km/hr
Median Speed = 42.66 km/hr
16 km/hr pace = 33 to 53
Number in 20 km/hr pace = 9,578 (87.88%)
Variance = 46.13
Standard Deviation = 6.79 km/hr