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Mr. Faisal Saeed, General Supervisor  
City of Edmonton  
Transportation Planning – Development Planning & Engineering Section  
Development Planning – Long Term  
1300, Century Place  
9803 – 102A Avenue  
Edmonton AB T5J 3A3

Dear Mr. Saeed:

**Re: Ogilvie Ridge Surplus School Site  
Trip Generation Comparison & Existing Traffic Operations**

Bunt & Associates is currently undertaking a traffic impact assessment for a proposed 100-unit low-rise condominium (RA7) on the identified surplus school site in the Ogilvie Ridge neighbourhood. **Exhibit 1** illustrates the study area for this assignment.

In advance of the upcoming open house on this proposed initiative we have completed a high level comparison of the trip generation characteristics associated with the proposed RA7 development versus that of a typical elementary school in Edmonton. In addition, we have completed a Synchro analysis of the existing intersection operations at four of the identified study intersections. The following provides a summary of our findings to date.

## 1. TRIP GENERATION COMPARISON

### 1.1 Trip Generation Rates

A review of Institute of Transportation Engineers (ITE) Trip Generation Manual 9<sup>th</sup> Edition and the City of Edmonton's accepted trip generation rates for residential development was completed to determine the appropriate trip generation rates to be used in comparison of the projected traffic between the originally planned elementary school and the proposed RA7 site.

**Table 1-1** summarizes the AM and PM peak hour and daily trip generation rates used in the assessment.

**Table 1-1: Trip Generation Rates**

Land Use	Source	AM Peak Hour (In/Out)	PM Peak Hour (In/Out)	PM Peak Hour of Generator (In/Out)	Daily (In/Out)
Residential RA7	Measured MDR/ITE LUC 230	0.34 trips/unit (17%/83%)	0.40 trips/unit (63%/37%)	-	5.81 trips/unit (50%/50%)
Elementary School	ITE LUC 520	0.45 trips/student (55%/45%)	0.15 trips/student (49%/51%)	0.28 trips/student (45%/55%)	1.29 trips/student (50%/50%)

It is acknowledged that the PM peak hour of a school does not typically coincide with the PM peak hour of adjacent street traffic. The PM peak hour of school (PM Peak Hour of Generator) would normally occur between 3:00 PM and 4:00 PM when traffic movements on the collector roadway network are relatively light. The PM peak hour of the collector roadway network in the area of the proposed development has been determined to be between approximately 4:45 PM to 5:45 PM. During this time period, the school would not have generated significant traffic movements (other than during special event activities).

## 1.2 Projected Traffic Generation Estimates

**Table 1-2** presents a comparison of the anticipated AM and PM peak hour traffic volumes and daily traffic volumes to be generated by the proposed residential development and the previously planned elementary school.

Estimated student populations for the originally planned elementary school are not available. To determine the approximate student populations for this school, we completed a review of the 2013/2014 student populations published by Alberta Education for every Edmonton Public School Board (EPSB) elementary school in operation within the City of Edmonton. Based on this review, the average student population for an EPSB elementary School (Grades K-6) is 270 students.

**Table 1-2: Trip Generation Estimates**

Land Use	Units / Students	AM Peak Hour			PM Peak Hour			Daily		
		Rate	In	Out	Rate	In	Out	Rate	In	Out
Residential	100	0.34	6	28	0.40	25	15	5.81	291	291
<b>Total Residential Trips</b>			<b>34</b>			<b>40</b>			<b>582</b>	
Elementary School	270	0.45	67	55	0.15	20	21	1.29	174	174
<b>Total School Trips</b>			<b>122</b>			<b>41</b>			<b>348</b>	

As summarized in Table 1-2, the development of a 100 unit low-rise apartment building is anticipated to generate significantly less AM peak hour traffic and similar PM peak hour traffic as compared to an

average sized elementary school in Edmonton. It is noted that from a daily trip generation perspective, the proposed residential development is anticipated to generate approximately 234 two-way trips more than an average elementary school.

## 2. EXISTING TRAFFIC OPERATIONS

Bunt & Associates completed traffic counts at the following intersections:

- Rabbit Hill Rd. & 23 Avenue on Tuesday, November 3, 2015;
- Rabbit Hill Rd. & Hodgson Blvd. on Wednesday, November 4, 2015;
- Rabbit Hill Rd. & Ogilvie Blvd. on Wednesday, November 4, 2015; and
- Ogilvie Blvd. & Osborne Gate on Thursday, November 5, 2015.

Using the existing roadway and intersection configurations, AM and PM peak hour volumes were extracted from these traffic counts and input into Synchro 9.0 to identify existing intersection operations. In addition, existing daily traffic volume data was collected and processed at three locations along Ogilvie Blvd. (Hodgson Blvd.) to gauge if the collector roadway has capacity to accommodate further development.

### 2.1 Daily Traffic

The recorded daily volumes along Ogilvie Blvd. (Hodgson Blvd.) are illustrated in **Exhibit 2**.

Ogilvie Blvd. (Hodgson Blvd.) is a neighbourhood collector roadway. Typically, a neighbourhood collector roadway can typically carry between 5,000 and 10,000 vehicles per day depending on whether private driveways directly access the roadway. In this case, Ogilvie Blvd. (Hodgson Blvd.) does have private driveways accessing it, which suggests that it can handle volumes at the lower limit of 5,000 vpd.

Daily traffic volumes recorded along Ogilvie Blvd range between 923 and 2,632 vpd, well below the acceptable threshold for a neighbourhood collector with private driveway access, indicating available capacity to handle increased traffic volumes.

### 2.2 Capacity Assessment

The following provides a summary of the existing traffic operations in the AM and PM peak hour at four of the study intersections, while **Exhibit 3** illustrates the existing AM and PM traffic volumes at each intersection. Existing geometry, traffic control and signal timings (provided by the City of Edmonton) were used in this analyses.

#### 2.2.1 Rabbit Hill Rd. & 23 Avenue

As shown in **Table 2-1**, the intersection of Rabbit Hill Rd. and 23 Avenue is currently operating at LOS E or better. However, v/c ratios are less than 0.84 in the AM peak hour and 0.78 in the PM peak hour, indicating that there is sufficient capacity at the intersection to accommodate those movements. LOS E is related to the delay from the use of protected only phasing for dual left turns.

**Table 2-1: Rabbit Hill Rd. and 23 Avenue – Existing Operations**

Eastbound			Westbound			Northbound			Southbound			
Movement	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Hour – Signalized (120s cycle, WBL & SBL Pt)												
Geometry	L/T/T/R			L/L/T/T/R			L/T/T/R			L/L/T/T/R		
Volume (vph)	162	734	110	174	292	135	178	594	523	305	281	46
v/c	0.62	0.68	0.20	0.64	0.18	0.18	0.73	0.67	0.84	0.76	0.23	0.07
Delay (s)	46.8	40.7	6.5	62.7	21.0	4.0	56.1	42.6	37.0	62.4	20.5	1.4
LOS	D	D	A	E	C	A	E	D	D	E	C	A
95 <sup>th</sup> Queue (m)	65	#125	11	37	36	11	66	85	115	58	29	3
Intersection Delay (s)						38.1	Intersection LOS					D
PM Peak Hour – Signalized (120s cycle, WBL & SBL Pt, EBL & NBL Pm + Pt)												
Geometry	L/T/T/R			L/L/T/T/R			L/T/T/R			L/L/T/T/R		
Volume (vph)	104	442	156	562	669	301	201	401	230	207	440	57
v/c	0.28	0.37	0.24	0.78	0.45	0.38	0.78	0.70	0.51	0.73	0.71	0.14
Delay (s)	15.0	32.1	5.7	53.8	22.0	3.4	51.0	54.4	8.7	65.4	52.8	0.7
LOS	B	C	A	D	C	A	D	D	A	E	C	A
95 <sup>th</sup> Queue (m)	20	68	16	85	86	14	#63	64	22	41	69	0
Intersection Delay (s)						34.7	Intersection LOS					C

**2.2.2 Rabbit Hill Rd. & Hodgson Blvd. (Ogilvie Blvd.)**

As shown in Table 2-2, movements along Rabbit Hill Rd. at the intersection of Rabbit Hill Rd. and Hodgson Blvd are currently operating at LOS B or better in the AM and PM peak with a maximum v/c of 0.28. The eastbound movements in the AM peak hour and the westbound left/through movements in the AM and PM peak hours off Hodgson Blvd. at the intersection are currently experiencing LOS F due to delays greater than 50 seconds. In particular, the westbound left/through movements are currently experiencing an average delay greater than two minutes in the AM peak hour, however, the v/c ratio is 0.70 in the AM peak indicating that it is still operating under capacity.

**Table 2-2: Rabbit Hill Rd. and Hodgson Blvd. – Existing Operations**

Eastbound			Westbound			Northbound			Southbound			
Movement	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Hour – Unsignalized (EB & WB Stop Control)												
Geometry	LTR			LT/R			L/T/T/R			L/T/T/R		
Volume (vph)	7	0	4	28	9	136	3	838	37	40	534	1
v/c	0.25			0.70			0.26	0.00	0.28	0.02	0.11	0.00
Delay (s)	79.8			165.0			14.2	8.9	0.0	0.0	11.5	0.0
LOS	F			F			B	A	A	A	B	A
95 <sup>th</sup> Queue (m)	7			23			8	0	0	0	3	0
Intersection Delay (s)						5.3	Intersection LOS					A
PM Peak Hour – Unsignalized (EB & WB Stop Control)												
Geometry	LTR			LT/R			L/T/T/R			L/T/T/R		
Volume (vph)	3	0	5	24	0	47	6	673	62	94	639	3
v/c	0.05			0.25			0.09	0.01	0.23	0.04	0.12	0.00
Delay (s)	25.0			54.9			11.5	8.8	0.0	0.0	10.1	0.0
LOS	C			F			B	A	A	A	B	A
95 <sup>th</sup> Queue (m)	1			7			2	0	0	0	3	0
Intersection Delay (s)						1.9	Intersection LOS					A

**2.2.3 Rabbit Hill Rd. & Ogilvie Blvd.**

As shown in Table 2-3, side-street left/through movements are currently experiencing LOS F during the AM peak hour; however, the east/west approaches have a v/c ratio of 0.32 indicating there is sufficient capacity for the movements. The intersection is currently operating at acceptable levels of service during the PM peak hour.

**Table 2-3: Rabbit Hill Rd. and Ogilvie Blvd. – Existing Operations**

Eastbound				Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Hour – Unsignalized (EB & WB Stop Control)												
Geometry	LT/R			LT/R			L/T/TR			L/T/TR		
Volume (vph)	28	1	20	24	1	60	9	865	26	33	515	10
v/c	0.32		0.03	0.33		0.14	0.01	0.42		0.06	0.21	
Delay (s)	57.6		10.2	74.2		14.4	8.9	0.0		11.4	0.0	
LOS	F		B	F		B	A	A		B	A	
95 <sup>th</sup> Queue (m)	10		1	10		4	0	0		2	0	
Intersection Delay (s)						2.8	Intersection LOS					A
PM Peak Hour – Unsignalized (EB & WB Stop Control)												
Geometry	LT/R			LT/R			L/T/TR			L/T/TR		
Volume (vph)	11	0	9	9	0	25	11	651	26	47	743	17
v/c	0.10		0.02	0.07		0.04	0.01	0.27		0.06	0.30	
Delay (s)	40.1		11.1	35.6		11.1	9.4	0.0		9.5	0.0	
LOS	E		B	E		B	A	A		A	A	
95 <sup>th</sup> Queue (m)	3		1	2		1	0	0		1	0	
Intersection Delay (s)						1.1	Intersection LOS					A

**2.2.4 Ogilvie Blvd & Osborne Gate**

As shown in Table 2-4, the intersection of Ogilvie Blvd and Osborne Gate is currently operating at excellent levels of service with v/c ratios less than 0.04 in the AM peak hour and 0.03 in the PM peak hour.

Table 2-4: Ogilvie Blvd. and Osborne Gate- Existing Operations

	Eastbound		Westbound		Southbound	
Movement	L	T	T	R	L	R
AM Peak Hour – Unsignalized (SB Yeild Control)						
Geometry	LT		TR		LR	
Volume (vph)	6	32	67	3	4	15
v/c	0.01		0.04		0.03	
Delay (s)	1.0		0.0		8.9	
LOS	A		A		A	
95 <sup>th</sup> Queue (m)	0		0		1	
Intersection Delay (s)			1.8	Intersection LOS		A
PM Peak Hour – Unsignalized (SB Yeild Control)						
Geometry	LT		TR		LR	
Volume (vph)	14	43	31	3	3	8
v/c	0.01		0.03		0.02	
Delay (s)	2.0		0.0		9.2	
LOS	A		A		A	
95 <sup>th</sup> Queue (m)	0		0		1	
Intersection Delay (s)			2.1	Intersection LOS		A

I trust this provides the necessary information in advance of the upcoming open house. Please do not hesitate to contact us if you have any questions or wish to discuss further.

Yours truly,  
**Bunt & Associates**



Anna Bauditz, P.Eng.  
 Transportation Engineer

Attachment: Exhibits 1 through 3





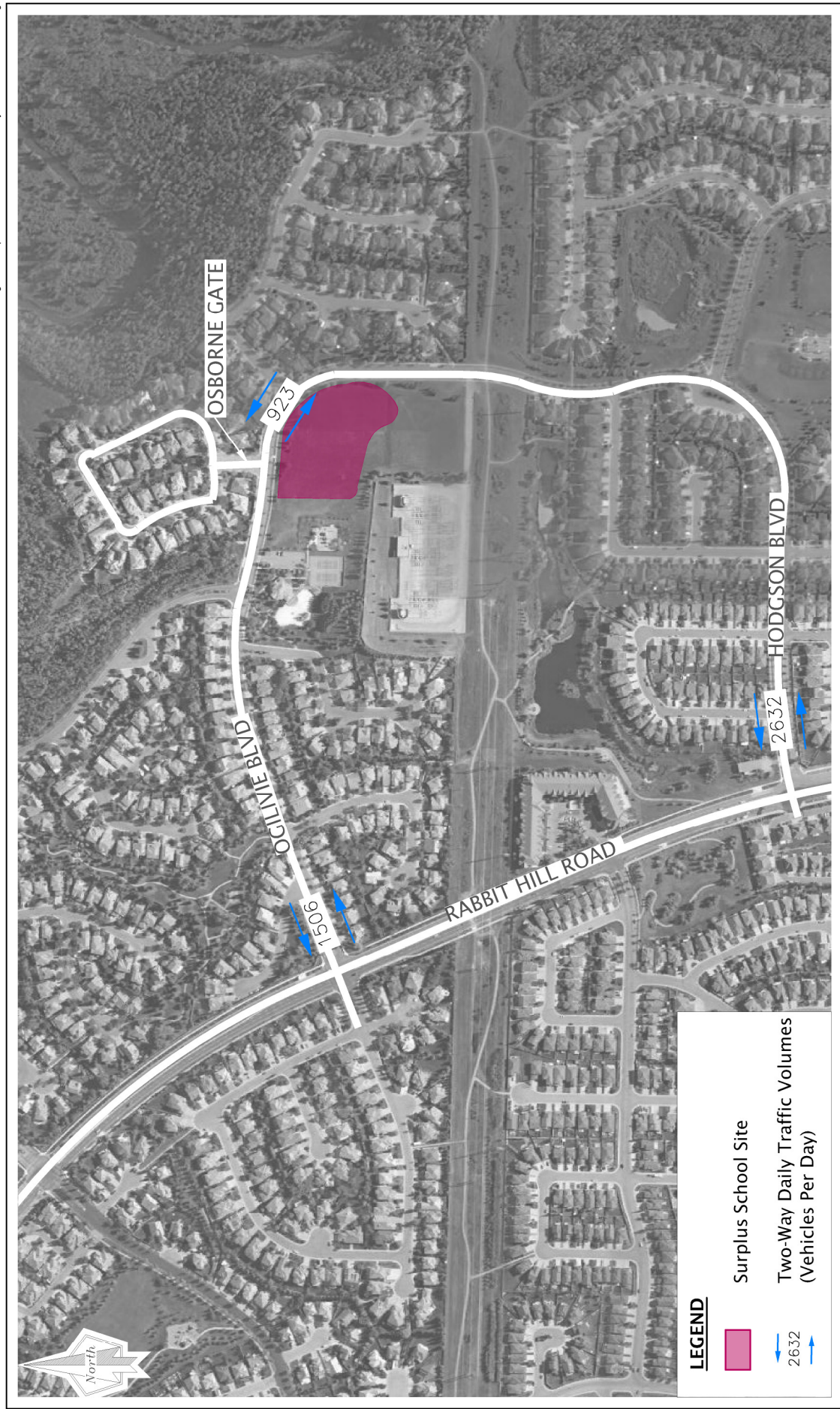
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Exhibit 1



## Site Context Plan



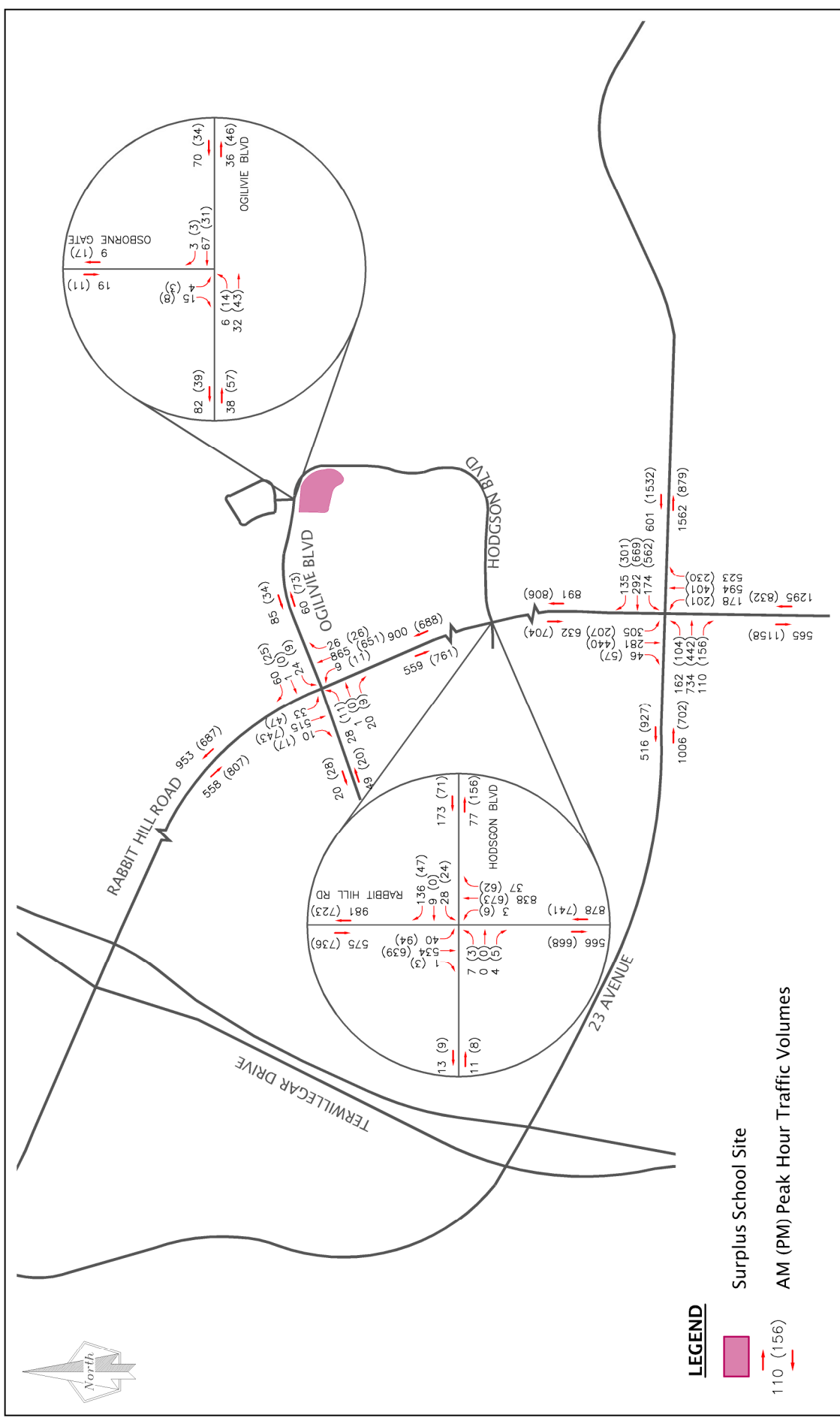


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Exhibit 2



## Existing Daily Traffic Volumes



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Exhibit 3



# Existing AM (PM) Peak Hour Traffic Volumes