25 September 2023

Kiersten Fishburn
Planning Secretary
Department of Planning and Environment
Locked Bag 5022
Parramatta NSW 2124

Attention: Shiraz Ahmed

Dear Ms Fishburn

RE: New primary school in Edmondson Park (SSD 10224): Traffic Modelling Report in accordance with condition D35.

I refer to the SSD Application 10224 New primary school in Edmondson Park approved on 15 December 2021.

In accordance with Condition D35 of the development consent, the project submits the Traffic Modelling Report for this project, which reviews the operation of Buchan Avenue and Faulkner Way intersection at Edmondson Park and considers full capacity of the site.

The report details modelling for the current enrolments of 546 and also considers future capacity at 1012.

Should you wish to discuss the above further please do not hesitate to contact the undersigned.

Yours sincerely,

Michael Ing
Project Director
School Infrastructure NSW

SCHOOL INFRASTRUCTURE NSW
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19 Sep 2023

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TO	Berri Jones, Project Manager, Colliers
FROM	Ali Rasouli; Principal Lead, Ason Group
CC	Rebecca Lehman, Sustainable Transport Technical Advisor, SINSW Kamoru Adetunmbi, Transport Planning Manager, SINSW Matt Rheuben, Senior Project Director, SINSW Michael Ing, Project Director, SINSW Conor Maguire, National Director, Colliers Nathan Martin, Senior Project Director, Colliers Daniella Khouri, Project Engineer, Colliers
SUBJECT	Edmondson Park Public School – Traffic Modelling – Intersection of Buchan Avenue and Faulkner Way

Purpose of Report

This Transport Statement (TS) has been prepared to respond to and address Conditions of Consent, specifically D35, of SSD 10224 to review the operation of the Buchan Avenue / Faulkner Way intersection, and inform and validate whether intersection treatments or mitigation measures are required to ensure acceptable levels of service for the operation of the intersection when the school will operate at full capacity.

Additional Traffic Modelling and Roadworks

D35. Prior to the enrolment of the 1000th student, traffic monitoring by an independent suitability qualified traffic engineer, independent of PTC, must be undertaken to review the operation of the Buchan Avenue/Faulkner Way intersection, comprising an intersection performance analysis and investigation and consideration of possible intersection treatments. A report must be submitted to the satisfaction of the Planning Secretary which summaries the results of the traffic monitoring and, if required, provides mitigation measures to ensure acceptable levels of service and safe operation of the intersection.

D36. Any roadworks recommended in the traffic report prepared under condition D35, must be completed prior to the operation of the school with 1000 or more students.

Note:

- *Approval must be obtained for roadworks under section 138 of the Roads Act 1993.*
- *All costs associated with the proposed road upgrade works must be borne by the Applicant.*

1.1 Traffic Volumes

1.1.1 Term 3 2023

Ason Group commissioned intersection turning movement counts during NSW School Term 3 at the following intersections on Tuesday 1 August 2023, during AM Peak (7:30 AM to 10:00 AM) and PM Peak (1:30 PM to 4:00 PM):

- Buchan Avenue / Faulkner Way
- Buchan Avenue / Bezentin Ridge Road

The following school peak hours were identified and assessed:

- AM Network Peak: 8:00 AM – 9:00 AM
- PM Network Peak: 2:15 PM – 3:15 PM

The Term 3 AM and PM school peak hour traffic movements at the two key intersections in the proximity of the Site are illustrated in **Attachment A**.

The school would be accessible from 7:00 AM – 6:00 PM on weekdays with restricted access outside of these hours. The bell times are as follows:

- Start Time: 8:45 AM
- Finish Time: 2:10 PM

1.1.2 Term 1 2023

Ason Group also commissioned intersection turning movement counts during School Term 1 at the following intersections on Tuesday 21 March 2023, during AM peak (8:00 AM – 9:30 AM) and PM Peak (2:00 PM – 4:00 PM):

- Buchan Avenue / Faulkner Way
- Buchan Avenue / Bezentin Ridge Road

The following school peak hours were assessed:

- AM Network Peak: 8:00 AM – 9:00 AM
- PM Network Peak: 2:15 PM – 3:15 PM

The Term 1 AM and PM school peak hour traffic movements at the two key intersections in the proximity of the Site are illustrated in **Attachment B**.

1.2 Modelling Input / Assumptions

1.2.1 Project Case Assumption

Assumptions for the project case (school at full enrolment capacity) have been undertaken as follows:

- Based on information received from the school, there were approximately 546 students enrolled at the school at the time of traffic surveys undertaken. In accordance with a full capacity of 1,012 students, a factor of 1.85 has been adopted. Refer to **Attachment C** for more detail of factor applied. Factor has been applied as follows:
  - Inbound traffic during the AM school peak hour.
  - Outbound traffic during the PM school peak hour.
- Midblock flows have been adjusted – minor discrepancies involving vehicles at the Buchan Ave / Bezentin Ridge Rd intersection to account for some U-turn movements. Refer to **Attachment C** for details of mid-block balancing.
  - The model has excluded the u-turn volumes resulting from some three-point turns observed on Buchan Ave.
- 1% background growth has been applied to Eastbound and Westbound through movements. Refer to **Attachment B** for details of background growth applied.
- The model does not incorporate a cycle lane because the number of cyclists observed during the surveyed hours is extremely low, essentially negligible. As a result, it has no impact on the model's performance.
- The model does not account for on-street parking lanes, as SIDRA focuses on signalised site types when considering parking maneuvers. In this scenario, parking maneuvers will not impact the saturation flow rate. This is because the traffic volumes on the major eastbound/westbound movements are relatively low, and there are no merging issues for parked vehicles to rejoin the main lane.

1.2.2 SIDRA Input Parameters

All modelling assessments for this study were carried out in SIDRA Network software version 9.1, with the below input parameters:

- ‘Current Setup’ was set to New South Wales.
- Site Level of Service Method was set to ‘Delay (RTA NSW)’.
- Physical features of the existing intersection geometries were coded with reference to the latest Nearmap aerial imageries (captured on 25 July, 2023).
- Default values for basic saturation flow, peak flow factor and pedestrian walking speed were unchanged.
- Speed limits were input as per existing posted speed limits at each location for Base Case and Project Case scenarios.
- School Zone speed limits applied to all legs of Buchan Avenue, Faulkner Way and Bezentin Ridge Road in all scenarios.

TABLE 1: MODELLED INTERSECTIONS AND PARAMETER ADJUSTMENTS

#	Intersection Name	Control	Peak Hour	Adjustment
1	Buchan Avenue / Faulkner Way	Priority	AM	• Speed adjustment to 40km/h on all legs
			PM	
2	Buchan Avenue / Bezentin Ridge Road	Priority	AM	• Speed adjustment to 40km/h on all legs
			PM	

The SIDRA intersection models were calibrated and validated against the observed back-of-queue information and queue length survey data in accordance with TfNSW Traffic Modelling Guidelines.

1.3 Baseline SIDRA Performance Testing

The performance of the existing road network is largely dependent on the operating performance of key intersections, which are critical capacity control points on the road network.

SIDRA Intersection 9.1 modelling software was used to assess the proposed peak hour operating performance of intersections on the surrounding road network at key intersections within proximity of the Site.

In accordance with RMS, (now Transport for NSW) *Guide to Traffic Generating Developments V2.2* (2002) (RMS Guide), the Levels of Service (LOS) relevant to local roads are used to evaluate the operational performance of intersections.

According to the RMS guidelines, roads operating at LOS D or better are generally considered to have acceptable flow conditions because they are below capacity. Roads operating at LOS E or worse are generally considered to have unacceptable flow conditions because they are at or above capacity. In this regard, the operating performance of the key intersections has been analysed using the SIDRA Intersection 9.1 software.

SIDRA modelling outputs a range of performance measures, in particular:

- **Level of Service (LOS)** – The LOS is a qualitative measure used to relate the quality of motor vehicle traffic service. LOS is used to analyse roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measures like vehicle speed, density, and congestion.
- **Average Vehicle Delay (AVD)** – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is that for the movement with the highest AVD.
- **Degree of Saturation (DOS)** – The DOS of an intersection (typically under traffic signal control) or a link measures the demand relative to the total capacity. A DoS value of 100% means that demand and capacity are equal and no further traffic is able to progress through the junction.

The SIDRA recommended criteria for the assessment of intersections as references by the RMS Guide are outlined in **Table 2**.

TABLE 2: RMS LEVEL OF SERVICE GUIDELINES

Level of Service	Average Delay per Vehicle (Sec/Veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment

1.3.1 SIDRA Layout

Figure 1 captures the layout geometry of the existing intersection configurations as interpreted in the SIDRA modelling software.

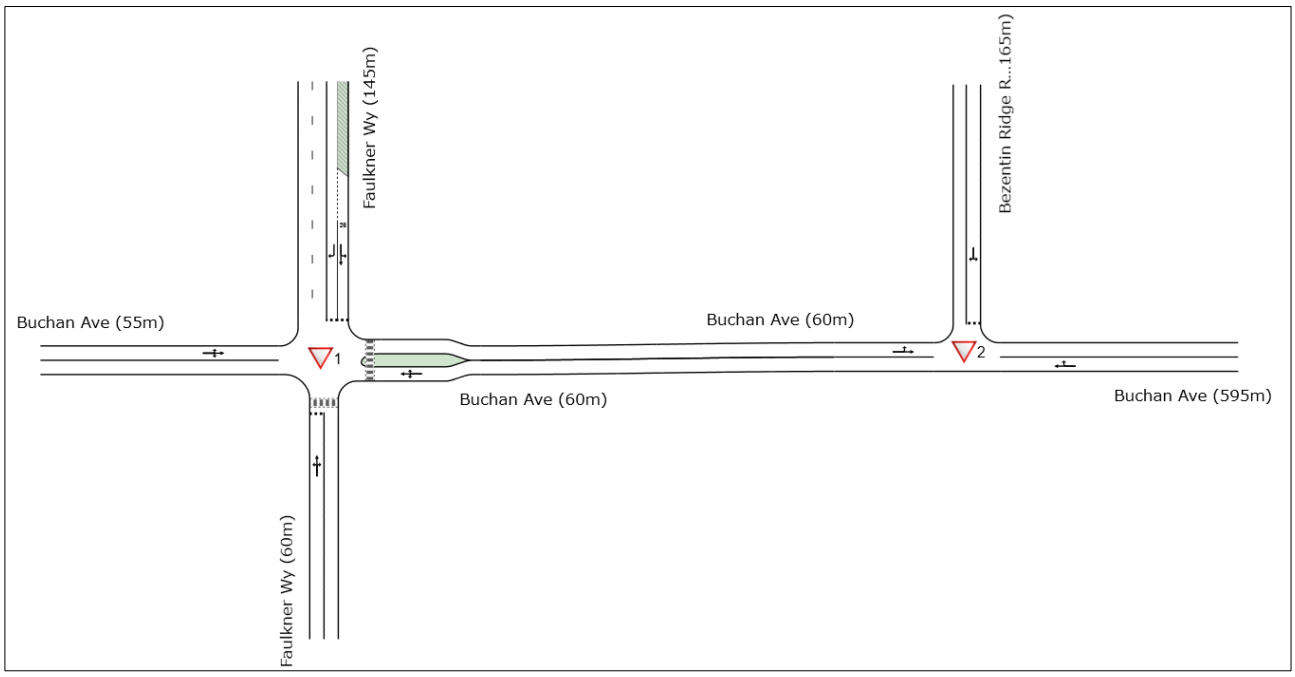

Figure 1: Existing intersection layout as modelled in SIDRA Intersection 9.1

1.3.2 Existing Intersection Performance

The results of the baseline SIDRA Intersection assessment are provided in **Table 3.**

TABLE 3 TERM 3 YEAR 2023 SCHOOL AM & PM PEAK HOUR INTERSECTION PERFORMANCE

#	Intersection Name	Control	Period	Intersection Delay (s)	95th Percentile Queue (m)	Level of Service
1	Buchan Ave / Faulkner Wy	Give Way	AM	12	15	A
			PM	9	7	A
2	Buchan Avenue / Bezentin Ridge Road	Give Way	AM	7	6	A
			PM	6	3	A

A copy of the existing detailed SIDRA results is presented in **Attachment D.**

1.3.3 Intersection Performance – Term 1 and Term 3 Comparison

School peak hour Intersection performance from traffic survey data collected in Term 1 and Term 3 are shown in **Table 4**. A copy of the SIDRA results for Term 1 are presented in **Attachment E**.

TABLE 4 EXISTING YEAR 2023 SCHOOL AM & PM PEAK HOUR INTERSECTION PERFORMANCE

Term 1 2023 (March 2023)						
#	Intersection Name	Control	Period	Intersection Delay (s)	95th Percentile Queue (m)	Level of Service
1	Buchan Ave / Faulkner Wy	Give Way	AM	11	5	A
			PM	6	2	A
2	Buchan Avenue / Bezentin Ridge Road	Give Way	AM	7	2	A
			PM	6	1	A
Term 3 2023 (August 2023)						
1	Buchan Ave / Faulkner Wy	Give Way	AM	12	15	A
			PM	9	7	A
2	Buchan Avenue / Bezentin Ridge Road	Give Way	AM	7	6	A
			PM	6	3	A

With reference to the tables above, the analysis indicated:

1. The Buchan Ave / Faulkner Wy intersection operates at LOS A for both the AM Peak and PM Peak during Term 1 and Term 3.
2. The Buchan Ave / Bezentin Ridge Rd intersection operates at LOS A for both the AM Peak and PM Peak during Term 1 and Term 3.

1.4 Intersection Performance

1.4.1 Scenarios

The modelling scenarios undertaken are provided in **Table 5,** with the intersection turning volumes for each scenario detailed in **Attachment A** and **Attachment C** respectively.

TABLE 5 MODELLING SCENARIOS

Scenario	Name	Description
1	Base Case Term 3 2023	Existing Layout
2	Project Case Full School Enrolment	Existing Layout

1.4.2 Intersection Impact

The SIDRA Intersection modelling results for Scenarios 1 and Scenario 2 are presented in **Table 6**.

TABLE 6: TRAFFIC MODELLING RESULTS

Scenario 1 with Existing Intersection Layouts						
Base Case with 546 students (2023)						
#	**Intersection Name**	**Control**	**Period**	**Intersection Delay (s)**	**95th Percentile Queue**	**Level of Service**
1	Buchan Ave / Faulkner Wy	Give Way	AM	12	15	**A**
			PM	9	9	**A**
2	Buchan Avenue / Bezentin Ridge Road	Give Way	AM	7	6	**A**
			PM	6	3	**A**
Scenario 2 with Existing Intersection Layouts						
Future Projected Case with 1,012 students						
#	**Intersection Name**	**Control**	**Period**	**Intersection Delay (s)**	**95th Percentile Queue**	**Level of Service**
1	Buchan Ave / Faulkner Wy	Give Way	AM	29	47	**C**
			PM	19	24	**B**
2		Give Way	AM	9	6	**A**

	Buchan Avenue / Bezentin Ridge Road		PM	7	3	**A**

The full SIDRA modelling outputs for Scenario 1 and Scenario 2 are provided in **Attachment D** and **F**.

With reference to the tables above, the analysis indicated for the operation of the school at a full enrolment capacity of 1,012 students:

1. The Buchan Ave / Faulkner Wy intersection operates at LOS C during the AM Peak and LOS B during the PM Peak.
2. The Buchan Ave / Bezentin Ridge Rd intersection continues to operate at LOS A in both the AM Peak and PM Peak.

1.5 Recommendations

The intersection performance analysis and investigation demonstrates that the existing intersections accommodate acceptable levels of service and sufficient capacity for operation of the intersection of Buchan Avenue / Faulkner Way. No future upgrades are recommended as a result of Edmondson Park Public School operating at full enrolment capacity.

Yours sincerely,

Ali Rasouli

Principal Lead

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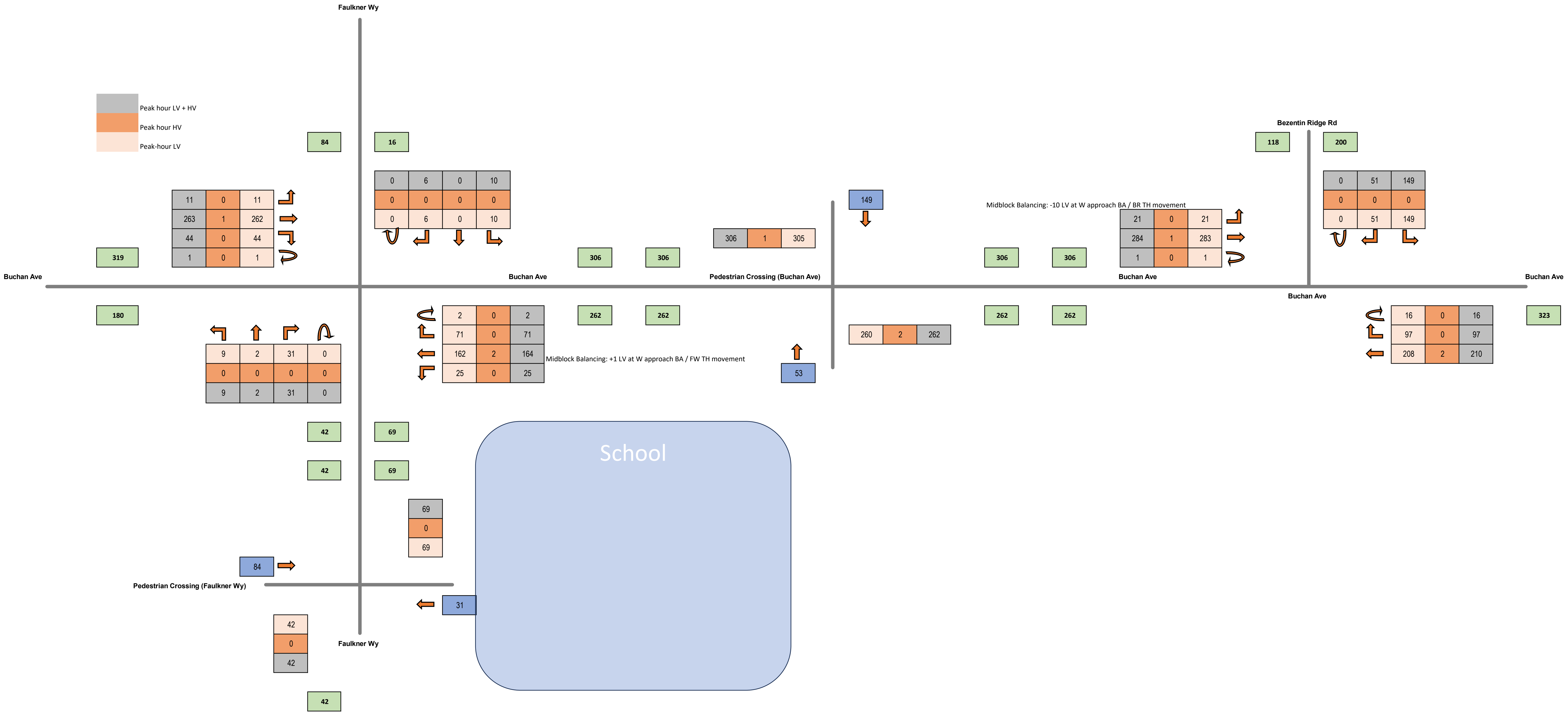
M: +61 481 350 932

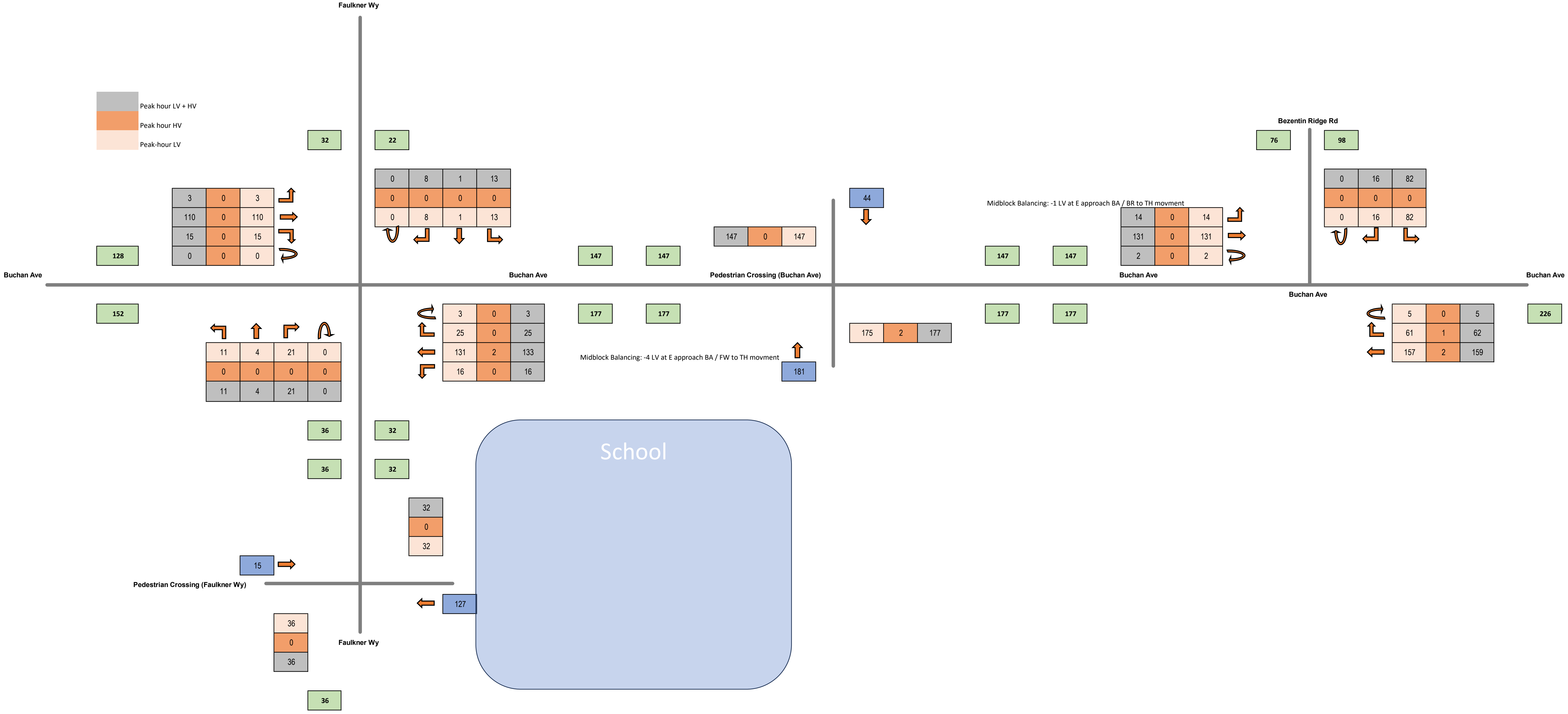
Attachment A – TERM 3 2023 AM AND PM PEAK HOUR INTERSECTION TURNING VOLUMES

AM - EX



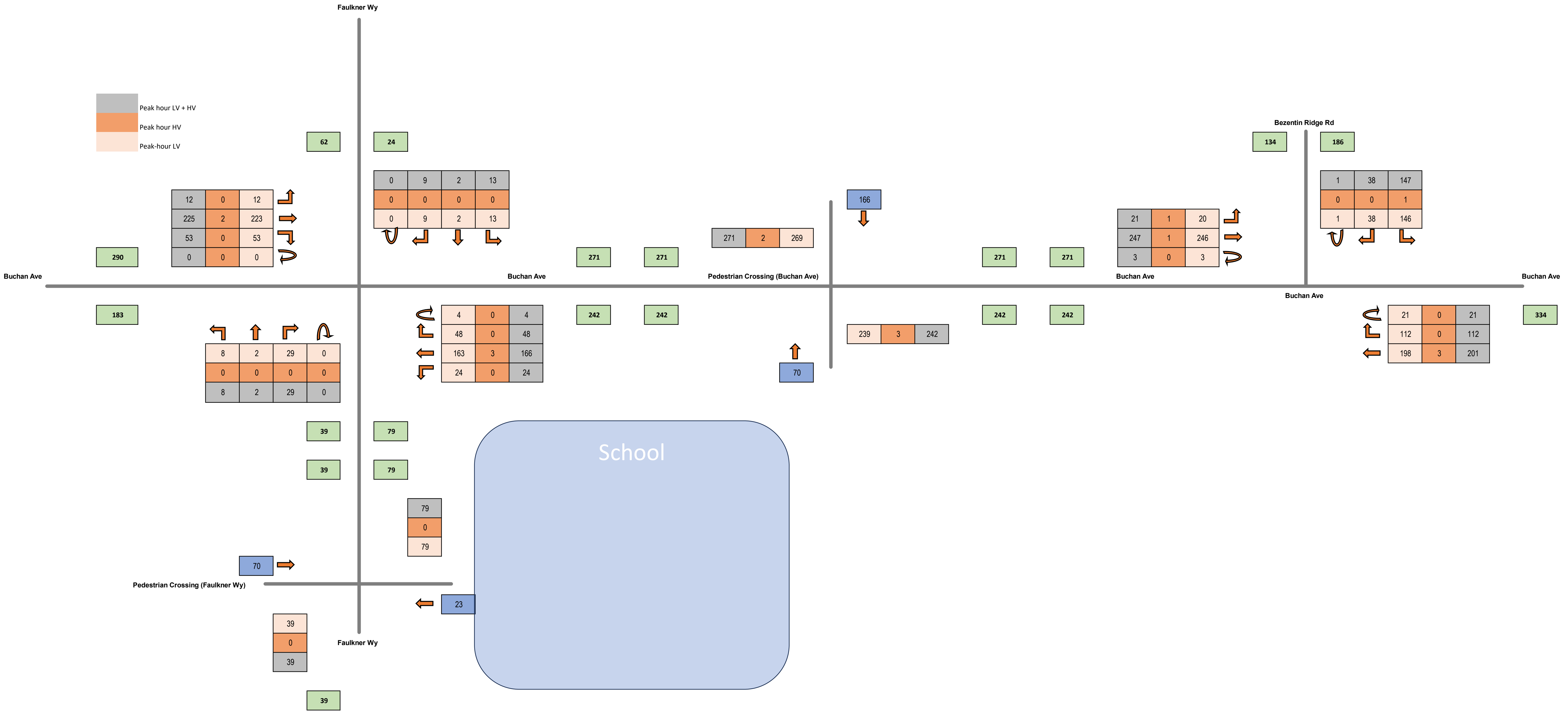
Faulkner Wy
Peak hour LV + HV
Peak hour HV
Peak-hour LV
84
16
11 0 11
263 1 262
44 0 44
1 0 1
0 6 0 10
0 0 0 0
0 6 0 10
319
Buchan Ave
180
9 2 31 0
0 0 0 0
9 2 31 0
2 0 2
71 0 71
162 2 164
25 0 25
Buchan Ave
306
306
262
262
Midblock Balancing: +1 LV at W approach BA / FW TH movement
306 1 305
Pedestrian Crossing (Buchan Ave)
149
53
260 2 262
Midblock Balancing: -10 LV at W approach BA / BR TH movement
306
306
262
262
21 0 21
284 1 283
1 0 1
Buchan Ave
Bezentin Ridge Rd
118
200
0 51 149
0 0 0
0 51 149
Buchan Ave
Buchan Ave
16 0 16
97 0 97
208 2 210
323
42
69
42
69
69
0
69
School
84
Pedestrian Crossing (Faulkner Wy)
31
42
0
42
Faulkner Wy
42

PM - EX

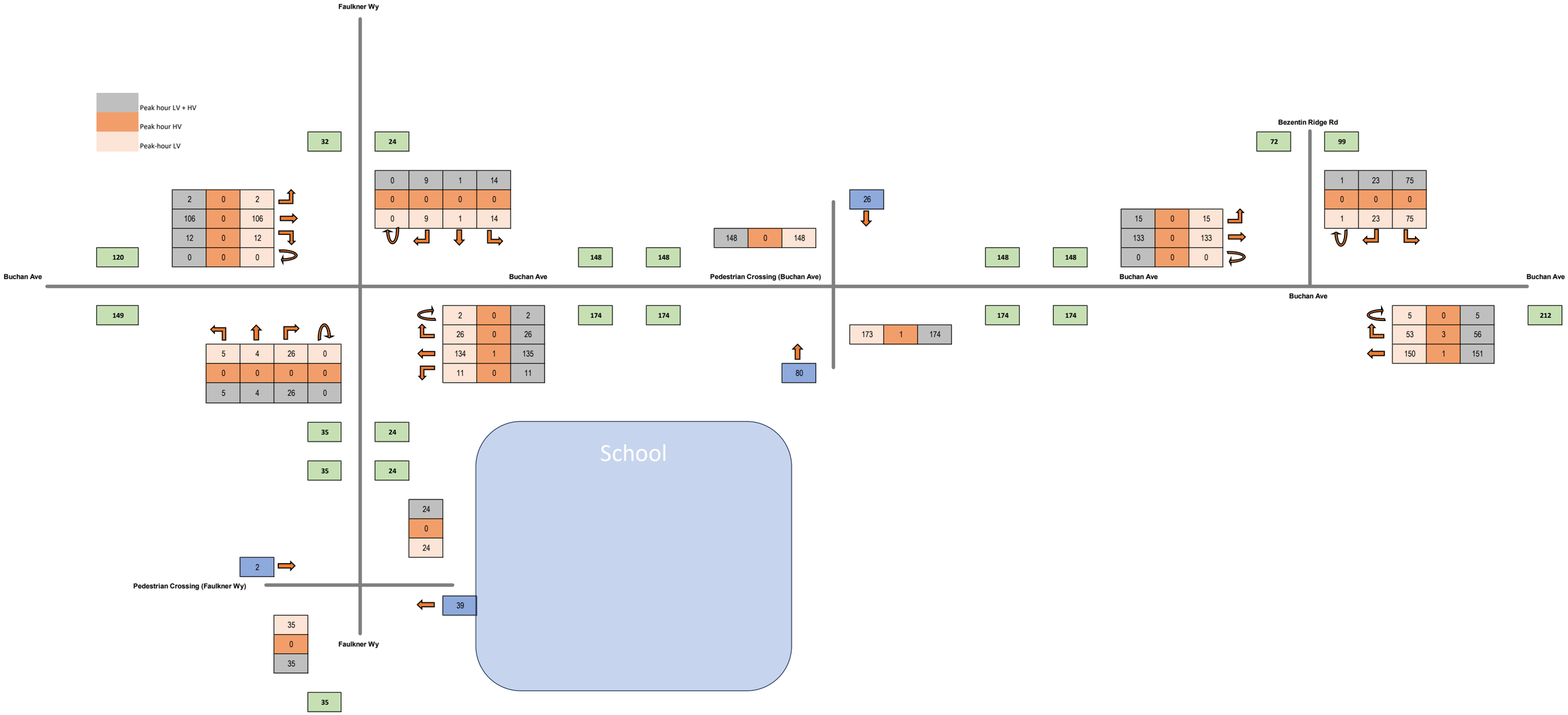

Faulkner Wy
Peak hour LV + HV
Peak hour HV
Peak-hour LV
32
22
3 0 3
110 0 110
15 0 15
0 0 0
0 8 1 13
0 0 0 0
0 8 1 13
128
Buchan Ave
152
11 4 21 0
0 0 0 0
11 4 21 0
3 0 3
25 0 25
131 2 133
16 0 16
Buchan Ave
147
147
177
177
147 0 147
Pedestrian Crossing (Buchan Ave)
44
175 2 177
Midblock Balancing: -4 LV at E approach BA / FW to TH movment
181
Midblock Balancing: -1 LV at E approach BA / BR to TH movment
147
147
177
177
14 0 14
131 0 131
2 0 2
Buchan Ave
Bezentin Ridge Rd
76
98
0 16 82
0 0 0
0 16 82
Buchan Ave
Buchan Ave
5 0 5
61 1 62
157 2 159
226
36
32
36
32
School
32
0
32
15
Pedestrian Crossing (Faulkner Wy)
127
36
0
36
Faulkner Wy
36

Attachment B – TERM 1 2023 AM AND PM PEAK HOUR INTERSECTION TURNING VOLUMES

AM - EX (T1)

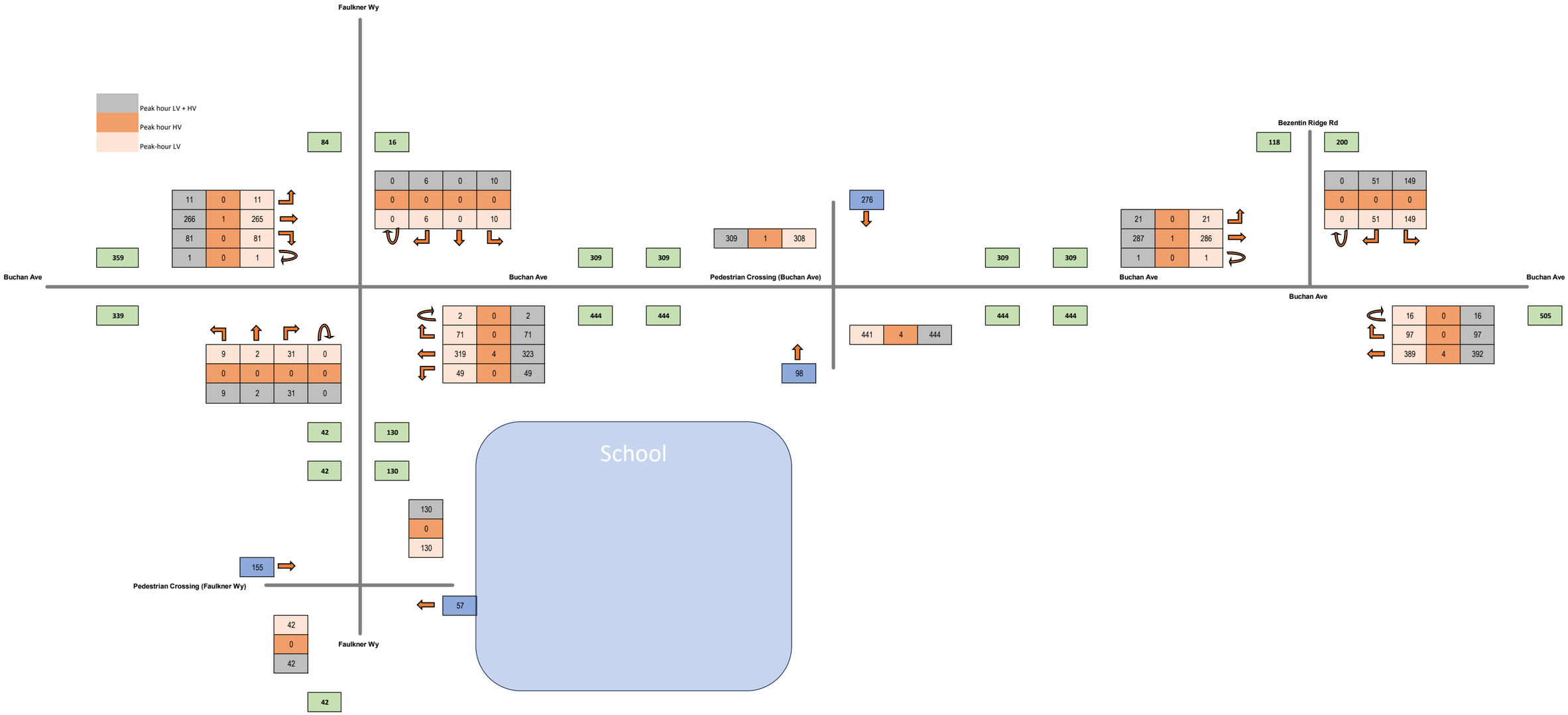

Faulkner Wy
Peak hour LV + HV
Peak hour HV
Peak-hour LV
62
24
0
9
2
13
0
0
0
0
0
9
2
13
12
0
12
225
2
223
53
0
53
0
0
0
290
Buchan Ave
183
271
2
269
166
271
271
271
271
Pedestrian Crossing (Buchan Ave)
Bezentin Ridge Rd
134
186
1
38
147
0
0
1
1
38
146
21
1
20
247
1
246
3
0
3
Buchan Ave
Buchan Ave
Buchan Ave
4
0
4
48
0
48
163
3
166
24
0
24
8
2
29
0
0
0
0
0
8
2
29
0
242
242
239
3
242
70
242
242
21
0
21
112
0
112
198
3
201
334
39
79
39
79
School
79
0
79
70
Pedestrian Crossing (Faulkner Wy)
23
39
0
39
Faulkner Wy
39

PM - EX (T1)

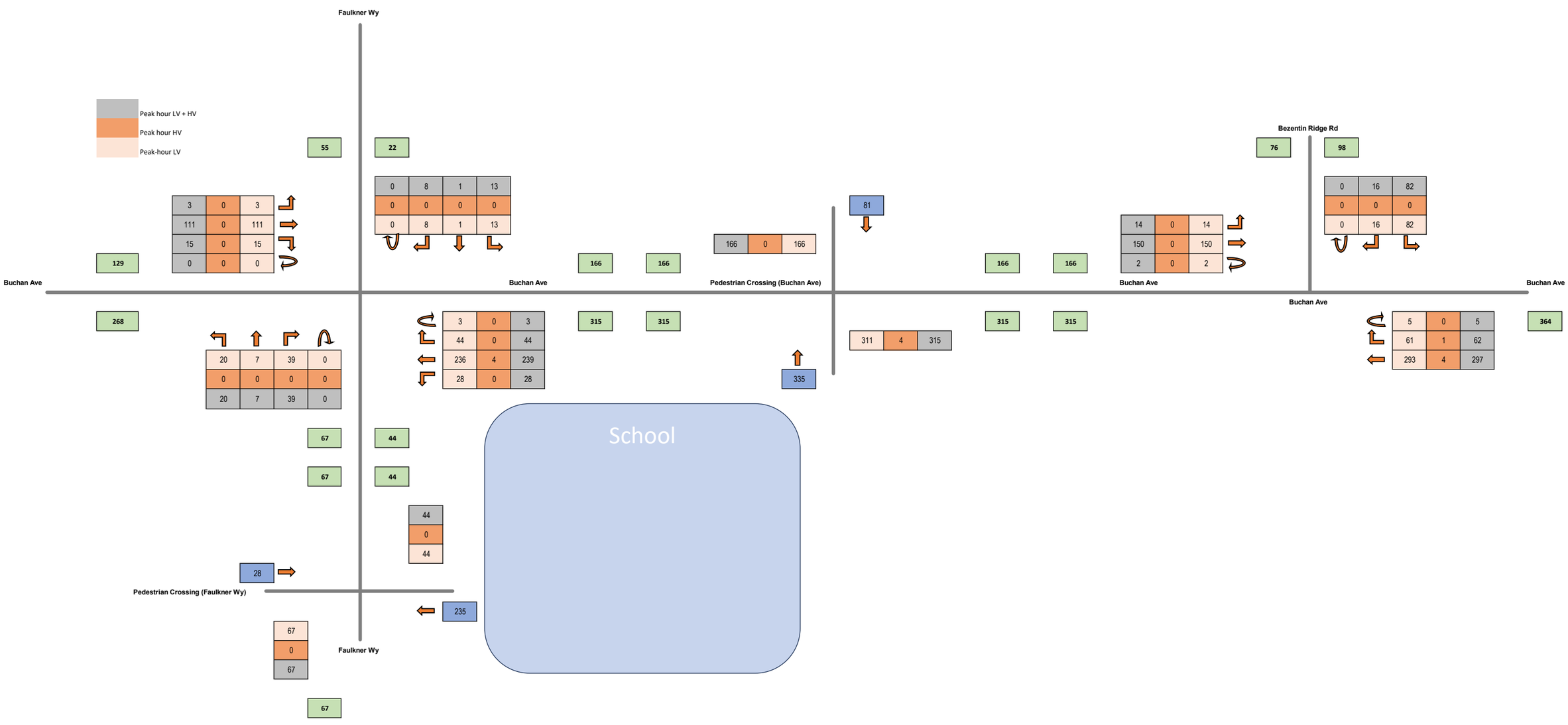

Peak hour LV + HV
Peak hour HV
Peak-hour LV
Faulkner Wy
Buchan Ave
Buchan Ave
Pedestrian Crossing (Buchan Ave)
Buchan Ave
Buchan Ave
Bezentin Ridge Rd
Buchan Ave
School
Pedestrian Crossing (Faulkner Wy)
Faulkner Wy
32
24
72
99
120
148
148
148
148
174
174
174
174
149
212
35
24
35
24
35
2
39
2 0 2
106 0 106
12 0 12
0 0 0
0 9 1 14
0 0 0 0
0 9 1 14
148 0 148
26
80
15 0 15
133 0 133
0 0 0
1 23 75
0 0 0
1 23 75
5 4 26 0
0 0 0 0
5 4 26 0
2 0 2
26 0 26
134 1 135
11 0 11
173 1 174
5 0 5
53 3 56
150 1 151
24
0
24
35
0
35

Attachment C – PROJECT CASE SCHOOL AT FULL ENROLMENT CAPACITY AM AND PM PEAK HOUR INTERSECTION TURNING VOLUMES

AM - FC


Peak hour LV + HV
Peak hour HV
Peak-hour LV
Faulkner Wy
Bezentin Ridge Rd
Buchan Ave
Buchan Ave
Pedestrian Crossing (Buchan Ave)
Buchan Ave
Buchan Ave
Buchan Ave
84
16
118
200
359
309
309
309
309
339
444
444
444
444
505
42
130
42
130
School
Pedestrian Crossing (Faulkner Wy)
Faulkner Wy
155
57
42
130
11 0 11
266 1 265
81 0 81
1 0 0 1
0 6 0 10
0 0 0 0
0 6 0 10
309 1 308
276
98
441 4 444
21 0 21
287 1 286
1 0 0 1
0 51 149
0 0 0
0 51 149
9 2 31 0
0 0 0 0
9 2 31 0
2 0 2
71 0 71
319 4 323
49 0 49
16 0 16
97 0 97
389 4 392
130
0
130
42
0
42

PM - FC


Peak hour LV + HV
Peak hour HV
Peak-hour LV
Faulkner Wy
Buchan Ave
Buchan Ave
Pedestrian Crossing (Buchan Ave)
Buchan Ave
Bezentin Ridge Rd
Buchan Ave
Buchan Ave
55
22
76
98
129
166
166
166
166
166
166
268
315
315
315
315
315
364
67
44
67
44
44
School
Pedestrian Crossing (Faulkner Wy)
Faulkner Wy
67
67

Attachment D – TERM 3 2023 SIDRA MODELLING RESULTS

MOVEMENT SUMMARY

Site: 1 [1 - Buchan Ave / Faulkner Wy AM (Site Folder: Base Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC AM (Network Folder: Base Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Faulkner Wy (60m)															
30	L2	All MCs	9	0.0	9	0.0	0.101	4.4	LOS A	0.3	2.3	0.61	0.77	0.61	20.5
31	T1	All MCs	2	0.0	2	0.0	0.101	6.3	LOS A	0.3	2.3	0.61	0.77	0.61	26.0
32	R2	All MCs	33	0.0	33	0.0	0.101	11.7	LOS A	0.3	2.3	0.61	0.77	0.61	16.0
Approach			44	0.0	44	0.0	0.101	9.9	LOS A	0.3	2.3	0.61	0.77	0.61	18.0
East: Buchan Ave (60m)															
21	L2	All MCs	26	0.0	26	0.0	0.285	5.3	LOS A	1.5	10.4	0.48	0.43	0.48	29.3
22	T1	All MCs	173	1.2	173	1.2	0.285	1.9	LOS A	1.5	10.4	0.48	0.43	0.48	31.1
23	R2	All MCs	75	0.0	75	0.0	0.285	6.0	LOS A	1.5	10.4	0.48	0.43	0.48	32.6
Approach			274	0.8	274	0.8	0.285	3.3	NA	1.5	10.4	0.48	0.43	0.48	31.5
North: Faulkner Wy (145m)															
24	L2	All MCs	11	0.0	11	0.0	0.012	5.2	LOS A	0.0	0.3	0.47	0.56	0.47	29.3
25	T1	All MCs	1	0.0	1	0.0	0.012	6.1	LOS A	0.0	0.3	0.47	0.56	0.47	30.8
26	R2	All MCs	6	0.0	6	0.0	0.011	7.0	LOS A	0.0	0.2	0.50	0.62	0.50	28.0
Approach			18	0.0	18	0.0	0.012	5.9	LOS A	0.0	0.3	0.48	0.58	0.48	28.9
West: Buchan Ave (55m)															
27	L2	All MCs	12	0.0	12	0.0	0.346	3.4	LOS A	2.1	14.9	0.26	0.16	0.26	33.5
28	T1	All MCs	277	0.4	277	0.4	0.346	2.2	LOS A	2.1	14.9	0.26	0.16	0.26	28.1
29	R2	All MCs	46	0.0	46	0.0	0.346	5.2	LOS A	2.1	14.9	0.26	0.16	0.26	29.7
Approach			335	0.3	335	0.3	0.346	2.6	NA	2.1	14.9	0.26	0.16	0.26	28.8
All Vehicles			671	0.5	671	0.5	0.346	3.5	NA	2.1	14.9	0.38	0.32	0.38	29.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [1 - Buchan Ave / Faulkner Wy PM (Site Folder: Base Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC PM (Network Folder: Base Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Faulkner Wy (60m)															
30	L2	All MCs	12	0.0	12	0.0	0.058	4.3	LOS A	0.2	1.4	0.50	0.64	0.50	23.9
31	T1	All MCs	4	0.0	4	0.0	0.058	4.3	LOS A	0.2	1.4	0.50	0.64	0.50	29.1
32	R2	All MCs	22	0.0	22	0.0	0.058	8.5	LOS A	0.2	1.4	0.50	0.64	0.50	19.8
Approach			38	0.0	38	0.0	0.058	6.7	LOS A	0.2	1.4	0.50	0.64	0.50	22.9
East: Buchan Ave (60m)															
21	L2	All MCs	17	0.0	17	0.0	0.198	5.5	LOS A	1.0	6.8	0.45	0.38	0.45	30.4
22	T1	All MCs	140	1.5	140	1.5	0.198	1.9	LOS A	1.0	6.8	0.45	0.38	0.45	32.4
23	R2	All MCs	26	0.0	26	0.0	0.198	4.9	LOS A	1.0	6.8	0.45	0.38	0.45	33.4
Approach			183	1.1	183	1.1	0.198	2.7	NA	1.0	6.8	0.45	0.38	0.45	32.4
North: Faulkner Wy (145m)															
24	L2	All MCs	14	0.0	14	0.0	0.013	4.5	LOS A	0.0	0.3	0.39	0.50	0.39	29.9
25	T1	All MCs	1	0.0	1	0.0	0.013	4.3	LOS A	0.0	0.3	0.39	0.50	0.39	31.3
26	R2	All MCs	8	0.0	8	0.0	0.010	5.0	LOS A	0.0	0.2	0.36	0.52	0.36	30.2
Approach			23	0.0	23	0.0	0.013	4.7	LOS A	0.0	0.3	0.38	0.51	0.38	30.1
West: Buchan Ave (55m)															
27	L2	All MCs	3	0.0	3	0.0	0.144	3.4	LOS A	0.7	4.9	0.31	0.20	0.31	34.2
28	T1	All MCs	116	0.0	116	0.0	0.144	1.8	LOS A	0.7	4.9	0.31	0.20	0.31	29.5
29	R2	All MCs	16	0.0	16	0.0	0.144	4.7	LOS A	0.7	4.9	0.31	0.20	0.31	30.5
Approach			135	0.0	135	0.0	0.144	2.2	NA	0.7	4.9	0.31	0.20	0.31	30.0
All Vehicles			379	0.6	379	0.6	0.198	3.1	NA	1.0	6.8	0.40	0.35	0.40	30.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2 - Buchan Ave / Bezentin Ridge Rd AM (Site Folder: Base Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC AM (Network Folder: Base Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Buchan Ave (595m)															
22	T1	All MCs	221	1.0	221	1.0	0.193	0.0	LOS A	0.8	5.4	0.29	0.32	0.29	38.4
23	R2	All MCs	102	0.0	102	0.0	0.193	6.2	LOS A	0.8	5.4	0.29	0.32	0.29	38.0
Approach			323	0.7	323	0.7	0.193	2.0	NA	0.8	5.4	0.29	0.32	0.29	38.3
North: Bezentin Ridge Rd (165m)															
24	L2	All MCs	157	0.0	157	0.0	0.203	4.6	LOS A	0.8	5.7	0.44	0.59	0.44	36.7
26	R2	All MCs	54	0.0	54	0.0	0.203	7.1	LOS A	0.8	5.7	0.44	0.59	0.44	30.2
Approach			211	0.0	211	0.0	0.203	5.2	LOS A	0.8	5.7	0.44	0.59	0.44	36.1
West: Buchan Ave (60m)															
27	L2	All MCs	22	0.0	22	0.0	0.166	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	37.6
28	T1	All MCs	299	0.4	299	0.4	0.166	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach			321	0.3	321	0.3	0.166	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.7
All Vehicles			855	0.4	855	0.4	0.203	2.1	NA	0.8	5.7	0.22	0.28	0.22	38.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2 - Buchan Ave / Bezentin Ridge Rd PM (Site Folder: Base Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC PM (Network Folder: Base Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Buchan Ave (595m)															
22	T1	All MCs	167	1.3	167	1.3	0.130	0.0	LOS A	0.4	3.0	0.17	0.20	0.17	38.8
23	R2	All MCs	65	1.6	65	1.6	0.130	4.6	LOS A	0.4	3.0	0.17	0.20	0.17	38.3
Approach			233	1.4	233	1.4	0.130	1.3	NA	0.4	3.0	0.17	0.20	0.17	38.7
North: Bezentin Ridge Rd (165m)															
24	L2	All MCs	86	0.0	86	0.0	0.078	3.8	LOS A	0.3	2.1	0.25	0.47	0.25	37.1
26	R2	All MCs	17	0.0	17	0.0	0.078	5.1	LOS A	0.3	2.1	0.25	0.47	0.25	31.4
Approach			103	0.0	103	0.0	0.078	4.0	LOS A	0.3	2.1	0.25	0.47	0.25	36.8
West: Buchan Ave (60m)															
27	L2	All MCs	15	0.0	15	0.0	0.079	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	37.5
28	T1	All MCs	139	0.0	139	0.0	0.079	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	39.8
Approach			154	0.0	154	0.0	0.079	0.3	NA	0.0	0.0	0.00	0.04	0.00	39.7
All Vehicles			489	0.6	489	0.6	0.130	1.6	NA	0.4	3.0	0.13	0.21	0.13	38.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Attachment E – TERM 1 2023 SIDRA MODELLING RESULTS

MOVEMENT SUMMARY

Site: 1 [1 - Buchan Ave / Faulkner Wy AM - T1 (Site Folder: Base Case - T1)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC AM - T1 (Network Folder: Base Case - T1)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Faulkner Wy (60m)															
30	L2	All MCs	8	0.0	8	0.0	0.090	4.3	LOS A	0.1	0.8	0.59	0.75	0.59	21.0
31	T1	All MCs	2	0.0	2	0.0	0.090	5.7	LOS A	0.1	0.8	0.59	0.75	0.59	26.5
32	R2	All MCs	31	0.0	31	0.0	0.090	11.1	LOS B	0.1	0.8	0.59	0.75	0.59	16.5
Approach			41	0.0	41	0.0	0.090	9.4	LOS A	0.1	0.8	0.59	0.75	0.59	18.5
East: Buchan Ave (60m)															
21	L2	All MCs	25	0.0	25	0.0	0.274	5.4	LOS A	0.6	4.0	0.50	0.43	0.50	29.4
22	T1	All MCs	175	1.8	175	1.8	0.274	2.2	LOS A	0.6	4.0	0.50	0.43	0.50	31.2
23	R2	All MCs	51	0.0	51	0.0	0.274	5.9	LOS A	0.6	4.0	0.50	0.43	0.50	32.7
Approach			251	1.3	251	1.3	0.274	3.3	NA	0.6	4.0	0.50	0.43	0.50	31.5
North: Faulkner Wy (145m)															
24	L2	All MCs	14	0.0	14	0.0	0.017	5.2	LOS A	0.0	0.2	0.47	0.56	0.47	29.4
25	T1	All MCs	2	0.0	2	0.0	0.017	5.5	LOS A	0.0	0.2	0.47	0.56	0.47	30.9
26	R2	All MCs	9	0.0	9	0.0	0.015	6.6	LOS A	0.0	0.1	0.48	0.61	0.48	28.5
Approach			25	0.0	25	0.0	0.017	5.7	LOS A	0.0	0.2	0.47	0.58	0.47	29.1
West: Buchan Ave (55m)															
27	L2	All MCs	13	0.0	13	0.0	0.322	3.4	LOS A	0.8	5.4	0.24	0.17	0.24	33.0
28	T1	All MCs	237	0.9	237	0.9	0.322	2.5	LOS A	0.8	5.4	0.24	0.17	0.24	26.9
29	R2	All MCs	56	0.0	56	0.0	0.322	5.0	LOS A	0.8	5.4	0.24	0.17	0.24	29.0
Approach			305	0.7	305	0.7	0.322	3.0	NA	0.8	5.4	0.24	0.17	0.24	28.0
All Vehicles			622	0.8	622	0.8	0.322	3.7	NA	0.8	5.4	0.38	0.33	0.38	28.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [1 - Buchan Ave / Faulkner Wy PM - T1 (Site Folder: Base Case - T1)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC PM - T1 (Network Folder: Base Case - T1)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Faulkner Wy (60m)															
30	L2	All MCs	5	0.0	5	0.0	0.049	4.0	LOS A	0.1	0.5	0.42	0.58	0.42	25.4
31	T1	All MCs	4	0.0	4	0.0	0.049	3.7	LOS A	0.1	0.5	0.42	0.58	0.42	30.4
32	R2	All MCs	27	0.0	27	0.0	0.049	6.2	LOS A	0.1	0.5	0.42	0.58	0.42	21.7
Approach			37	0.0	37	0.0	0.049	5.6	LOS A	0.1	0.5	0.42	0.58	0.42	24.1
East: Buchan Ave (60m)															
21	L2	All MCs	12	0.0	12	0.0	0.165	4.1	LOS A	0.3	2.3	0.30	0.23	0.30	31.9
22	T1	All MCs	142	0.7	142	0.7	0.165	0.8	LOS A	0.3	2.3	0.30	0.23	0.30	34.1
23	R2	All MCs	27	0.0	27	0.0	0.165	4.3	LOS A	0.3	2.3	0.30	0.23	0.30	34.5
Approach			181	0.6	181	0.6	0.165	1.6	NA	0.3	2.3	0.30	0.23	0.30	34.1
North: Faulkner Wy (145m)															
24	L2	All MCs	15	0.0	15	0.0	0.012	4.1	LOS A	0.0	0.1	0.30	0.46	0.30	30.4
25	T1	All MCs	1	0.0	1	0.0	0.012	3.6	LOS A	0.0	0.1	0.30	0.46	0.30	31.7
26	R2	All MCs	9	0.0	9	0.0	0.012	4.9	LOS A	0.0	0.1	0.35	0.52	0.35	30.3
Approach			25	0.0	25	0.0	0.012	4.4	LOS A	0.0	0.1	0.32	0.48	0.32	30.4
West: Buchan Ave (55m)															
27	L2	All MCs	2	0.0	2	0.0	0.117	3.4	LOS A	0.2	1.6	0.24	0.15	0.24	35.4
28	T1	All MCs	112	0.0	112	0.0	0.117	0.8	LOS A	0.2	1.6	0.24	0.15	0.24	32.5
29	R2	All MCs	13	0.0	13	0.0	0.117	4.2	LOS A	0.2	1.6	0.24	0.15	0.24	32.2
Approach			126	0.0	126	0.0	0.117	1.2	NA	0.2	1.6	0.24	0.15	0.24	32.6
All Vehicles			369	0.3	369	0.3	0.165	2.0	NA	0.3	2.3	0.29	0.25	0.29	32.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2 - Buchan Ave / Bezentin Ridge Rd AM - T1 (Site Folder: Base Case - T1)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC AM - T1 (Network Folder: Base Case - T1)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Buchan Ave (595m)															
22	T1	All MCs	212	1.5	212	1.5	0.197	0.0	LOS A	0.3	2.4	0.30	0.32	0.30	38.3
23	R2	All MCs	118	0.0	118	0.0	0.197	5.7	LOS A	0.3	2.4	0.30	0.32	0.30	37.9
Approach			329	1.0	329	1.0	0.197	2.1	NA	0.3	2.4	0.30	0.32	0.30	38.1
North: Bezentin Ridge Rd (165m)															
24	L2	All MCs	155	0.7	155	0.7	0.175	4.4	LOS A	0.3	2.0	0.40	0.56	0.40	36.8
26	R2	All MCs	40	0.0	40	0.0	0.175	6.8	LOS A	0.3	2.0	0.40	0.56	0.40	30.5
Approach			195	0.5	195	0.5	0.175	4.9	LOS A	0.3	2.0	0.40	0.56	0.40	36.4
West: Buchan Ave (60m)															
27	L2	All MCs	22	4.8	22	4.8	0.146	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	37.5
28	T1	All MCs	260	0.4	260	0.4	0.146	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	39.8
Approach			282	0.7	282	0.7	0.146	0.3	NA	0.0	0.0	0.00	0.04	0.00	39.7
All Vehicles			806	0.8	806	0.8	0.197	2.1	NA	0.3	2.4	0.22	0.28	0.22	38.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2 - Buchan Ave / Bezentin Ridge Rd PM - T1 (Site Folder: Base Case - T1)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BC PM - T1 (Network Folder: Base Case - T1)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Buchan Ave (595m)															
22	T1	All MCs	161	2.0	161	2.0	0.122	0.0	LOS A	0.1	1.1	0.16	0.19	0.16	38.9
23	R2	All MCs	57	1.9	57	1.9	0.122	4.7	LOS A	0.1	1.1	0.16	0.19	0.16	38.4
Approach			218	1.9	218	1.9	0.122	1.2	NA	0.1	1.1	0.16	0.19	0.16	38.7
North: Bezentin Ridge Rd (165m)															
24	L2	All MCs	79	0.0	79	0.0	0.081	3.8	LOS A	0.1	0.9	0.26	0.48	0.26	37.0
26	R2	All MCs	24	0.0	24	0.0	0.081	5.1	LOS A	0.1	0.9	0.26	0.48	0.26	31.3
Approach			103	0.0	103	0.0	0.081	4.1	LOS A	0.1	0.9	0.26	0.48	0.26	36.6
West: Buchan Ave (60m)															
27	L2	All MCs	16	0.0	16	0.0	0.080	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	37.5
28	T1	All MCs	140	0.0	140	0.0	0.080	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.8
Approach			156	0.0	156	0.0	0.080	0.3	NA	0.0	0.0	0.00	0.05	0.00	39.7
All Vehicles			477	0.9	477	0.9	0.122	1.6	NA	0.1	1.1	0.13	0.20	0.13	38.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Attachment F – PROJECT CASE SCHOOL AT FULL ENROLMENT CAPACITY SIDRA MODELLING RESULTS

MOVEMENT SUMMARY

Site: 2 [2 - Buchan Ave / Bezentin Ridge Rd PM (Site Folder: Project Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PC PM (Network Folder: Project Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Buchan Ave (595m)															
22	T1	All MCs	313	1.3	313	1.3	0.207	0.0	LOS A	0.5	3.4	0.12	0.14	0.12	39.2
23	R2	All MCs	65	1.6	65	1.6	0.207	5.0	LOS A	0.5	3.4	0.12	0.14	0.12	38.6
Approach			378	1.4	378	1.4	0.207	0.9	NA	0.5	3.4	0.12	0.14	0.12	39.1
North: Bezentin Ridge Rd (165m)															
24	L2	All MCs	86	0.0	86	0.0	0.083	3.9	LOS A	0.3	2.2	0.28	0.48	0.28	37.0
26	R2	All MCs	17	0.0	17	0.0	0.083	6.2	LOS A	0.3	2.2	0.28	0.48	0.28	31.2
Approach			103	0.0	103	0.0	0.083	4.3	LOS A	0.3	2.2	0.28	0.48	0.28	36.7
West: Buchan Ave (60m)															
27	L2	All MCs	15	0.0	15	0.0	0.089	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	37.6
28	T1	All MCs	158	0.0	158	0.0	0.089	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	39.8
Approach			173	0.0	173	0.0	0.089	0.3	NA	0.0	0.0	0.00	0.04	0.00	39.7
All Vehicles			654	0.8	654	0.8	0.207	1.3	NA	0.5	3.4	0.12	0.17	0.12	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [1 - Buchan Ave / Faulkner Wy AM (Site Folder: Project Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PC AM (Network Folder: Project Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Faulkner Wy (60m)															
30	L2	All MCs	9	0.0	9	0.0	0.240	7.1	LOS A	0.7	5.2	0.86	0.96	0.95	12.9
31	T1	All MCs	2	0.0	2	0.0	0.240	11.7	LOS A	0.7	5.2	0.86	0.96	0.95	18.1
32	R2	All MCs	33	0.0	33	0.0	0.240	28.7	LOS C	0.7	5.2	0.86	0.96	0.95	8.9
Approach			44	0.0	44	0.0	0.240	23.3	LOS B	0.7	5.2	0.86	0.96	0.95	10.4
East: Buchan Ave (60m)															
21	L2	All MCs	52	0.0	52	0.0	0.639	12.6	LOS A	6.6	46.8	0.76	1.00	1.34	21.5
22	T1	All MCs	340	1.2	340	1.2	0.639	8.2	LOS A	6.6	46.8	0.76	1.00	1.34	22.2
23	R2	All MCs	75	0.0	75	0.0	0.639	12.0	LOS A	6.6	46.8	0.76	1.00	1.34	26.1
Approach			466	0.9	466	0.9	0.639	9.3	NA	6.6	46.8	0.76	1.00	1.34	23.0
North: Faulkner Wy (145m)															
24	L2	All MCs	11	0.0	11	0.0	0.016	6.3	LOS A	0.1	0.4	0.56	0.64	0.56	27.3
25	T1	All MCs	1	0.0	1	0.0	0.016	10.2	LOS A	0.1	0.4	0.56	0.64	0.56	29.2
26	R2	All MCs	6	0.0	6	0.0	0.014	9.2	LOS A	0.0	0.3	0.61	0.72	0.61	25.9
Approach			18	0.0	18	0.0	0.016	7.6	LOS A	0.1	0.4	0.58	0.67	0.58	26.9
West: Buchan Ave (55m)															
27	L2	All MCs	12	0.0	12	0.0	0.488	3.4	LOS A	3.5	24.4	0.42	0.24	0.42	29.1
28	T1	All MCs	280	0.4	280	0.4	0.488	5.5	LOS A	3.5	24.4	0.42	0.24	0.42	20.1
29	R2	All MCs	85	0.0	85	0.0	0.488	8.5	LOS A	3.5	24.4	0.42	0.24	0.42	24.3
Approach			377	0.3	377	0.3	0.488	6.1	NA	3.5	24.4	0.42	0.24	0.42	21.9
All Vehicles			905	0.6	905	0.6	0.639	8.6	NA	6.6	46.8	0.62	0.68	0.93	21.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [1 - Buchan Ave / Faulkner Wy PM (Site Folder: Project Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PC PM (Network Folder: Project Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Faulkner Wy (60m)															
30	L2	All MCs	21	0.0	21	0.0	0.219	6.1	LOS A	0.7	5.1	0.75	0.89	0.81	17.3
31	T1	All MCs	7	0.0	7	0.0	0.219	7.2	LOS A	0.7	5.1	0.75	0.89	0.81	22.9
32	R2	All MCs	41	0.0	41	0.0	0.219	19.4	LOS B	0.7	5.1	0.75	0.89	0.81	12.8
Approach			69	0.0	69	0.0	0.219	14.1	LOS A	0.7	5.1	0.75	0.89	0.81	15.9
East: Buchan Ave (60m)															
21	L2	All MCs	29	0.0	29	0.0	0.472	11.5	LOS A	3.4	24.3	0.68	0.78	0.97	23.9
22	T1	All MCs	253	1.7	253	1.7	0.472	6.4	LOS A	3.4	24.3	0.68	0.78	0.97	24.9
23	R2	All MCs	46	0.0	46	0.0	0.472	8.2	LOS A	3.4	24.3	0.68	0.78	0.97	28.2
Approach			328	1.3	328	1.3	0.472	7.1	NA	3.4	24.3	0.68	0.78	0.97	25.4
North: Faulkner Wy (145m)															
24	L2	All MCs	14	0.0	14	0.0	0.017	5.6	LOS A	0.1	0.4	0.50	0.59	0.50	28.8
25	T1	All MCs	1	0.0	1	0.0	0.017	6.5	LOS A	0.1	0.4	0.50	0.59	0.50	30.4
26	R2	All MCs	8	0.0	8	0.0	0.012	6.0	LOS A	0.0	0.3	0.44	0.58	0.44	29.1
Approach			23	0.0	23	0.0	0.017	5.8	LOS A	0.1	0.4	0.48	0.59	0.48	29.0
West: Buchan Ave (55m)															
27	L2	All MCs	3	0.0	3	0.0	0.189	3.4	LOS A	0.9	6.3	0.48	0.33	0.48	31.4
28	T1	All MCs	117	0.0	117	0.0	0.189	3.9	LOS A	0.9	6.3	0.48	0.33	0.48	23.9
29	R2	All MCs	16	0.0	16	0.0	0.189	6.2	LOS A	0.9	6.3	0.48	0.33	0.48	27.0
Approach			136	0.0	136	0.0	0.189	4.2	NA	0.9	6.3	0.48	0.33	0.48	24.8
All Vehicles			557	0.8	557	0.8	0.472	7.2	NA	3.4	24.3	0.63	0.68	0.81	24.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2 - Buchan Ave / Bezentin Ridge Rd AM (Site Folder: Project Case)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PC AM (Network Folder: Project Case)]

Base Case
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Buchan Ave (595m)															
22	T1	All MCs	414	1.0	414	1.0	0.293	0.0	LOS A	0.9	6.3	0.21	0.23	0.21	38.9
23	R2	All MCs	102	0.0	102	0.0	0.293	6.8	LOS A	0.9	6.3	0.21	0.23	0.21	38.4
Approach			516	0.8	516	0.8	0.293	1.3	NA	0.9	6.3	0.21	0.23	0.21	38.8
North: Bezentin Ridge Rd (165m)															
24	L2	All MCs	157	0.0	157	0.0	0.226	4.6	LOS A	0.9	6.3	0.48	0.61	0.48	36.4
26	R2	All MCs	54	0.0	54	0.0	0.226	9.2	LOS A	0.9	6.3	0.48	0.61	0.48	29.5
Approach			211	0.0	211	0.0	0.226	5.8	LOS A	0.9	6.3	0.48	0.61	0.48	35.8
West: Buchan Ave (60m)															
27	L2	All MCs	22	0.0	22	0.0	0.167	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	37.6
28	T1	All MCs	302	0.3	302	0.3	0.167	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach			324	0.3	324	0.3	0.167	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.7
All Vehicles			1051	0.5	1051	0.5	0.293	1.9	NA	0.9	6.3	0.20	0.25	0.20	38.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.