
Our Ref: 1953_FOR01

24 December 2025

Transport for NSW
Locked Bag 2030
Newcastle NSW 2302

For the Attention of Kane Hitchcock, Development Services Case Officer, Transport Planning

Application Reference: SSD-83366960

Project Name: The Belvedere, Nelson Bay

Property Location: 42 Donald Street, 5 Church Street, 7 Church Street, Nelson Bay

Development Type: HDA Housing

Subject: Response to Transport for NSW's Comments

Dear Kane,

We refer to the above application for an HDA Housing development on the site at 42 Donald Street, 5 Church Street and 7 Church Street in Nelson Bay.

This letter has been prepared in response to Transport for NSW's advice provided by email on 24 November 2025 in respect of the proposal, which is copied below for reference.

This letter is supplementary to, and should therefore be read in conjunction with, the Traffic Report prepared by Q Traffic which accompanied the application.

Transport for NSW's Advice

- 1. Undertake intersection performance modelling for Church Street / Donald Street and at least one upstream intersection (Stockton Street).***
- 2. Provide a trip distribution and assignment analysis to identify potential pressure points on the state road network.***
- 3. The TIA assumes typical weekday conditions without considering summer holiday peaks, which could amplify cumulative impacts on the local and state road network. Include seasonal adjustment factors and cumulative development scenarios.***

Response

As outlined in the Traffic Report which accompanied the application, a conservatively high estimate of the traffic generation of the proposed development is 34 vehicle movements in the critical peak hours.

This equates to just over one (1) vehicle trip every two (2) minutes on average, during the peak hours. This level of traffic generation is clearly low, and once distributed onto the surrounding road network, would be within the range of typical fluctuations in traffic volumes on the road network, therefore negligible from a transport planning perspective.

Notwithstanding the above, in response to Transport for NSW's advice, detailed capacity analyses have been undertaken at the following intersections in proximity to the subject site:

- Church Street / Donald Street
- Donald Street / Stockton Street

The following sections outline the modelling inputs and assumptions applied, along with the results of the capacity analyses undertaken.

Background Traffic Volumes

For the purpose of these analyses, traffic counts were undertaken at the subject intersections on Thursday 11 December 2025 and Saturday 13 December 2025. The results of these traffic counts are included as **Attachment 1**.

Assuming the development is complete and operational in 2027, analyses have been undertaken for this anticipated year of opening based upon the recommended procedure outlined in the NSW Government Guide to Transport Impact Assessment (TS 00085 | Version 1.1) for a smaller scale development. The weekday morning and afternoon peak, and the Saturday peak periods have been assessed.

In order to forecast 2027 background traffic volumes, a conservatively high background traffic growth rate of 3% per annum compound has been applied, with the resulting forecast 2027 background traffic volumes as shown in the figures included as **Attachment 2**.

Whilst the traffic counts were undertaken in mid-December and therefore reflect higher summer holiday peak period traffic conditions, in response to Transport for NSW's advice, and in accordance with the recommendations in the NSW Government Guide to Transport Impact Assessment (TS 00085 | Version 1.1), sensitivity analyses have been undertaken. These assume an additional loading factor of 25% on forecast 2027 traffic volumes. The resulting forecast 'sensitivity test' 2027 background traffic volumes are as shown in the figures included as **Attachment 3**.

Development Traffic Volumes

As outlined in the Traffic Report which accompanied the application, a conservatively high estimate of the traffic generation of the proposed development is 34 vehicle movements in the critical peak hours.

In order to assign this traffic onto the adjacent road network, the following assumptions have been applied:

- During the AM peak hour, 70% of traffic generated by the development will be departure trips and 30% will be arrival trips;
- During the PM peak hour, 30% of traffic generated by the development will be departure trips and 70% will be arrival trips;
- During the Saturday peak hour, 50% of traffic generated by the development will be departure trips and 50% will be arrival trips;
- 70% of development traffic will have an origin / destination to/from the south via Church Street;
- 20% of development traffic will have an origin / destination to/from the north via Church Street; and
- 10% of development traffic will have an origin / destination to/from east via Donald Street.

The resulting forecast development traffic volumes are as shown in the figures included as **Attachment 4**, and demonstrate that the increases in turning movement volumes at the subject intersections are very low, and unlikely to have any material impact upon the performance of these intersections.

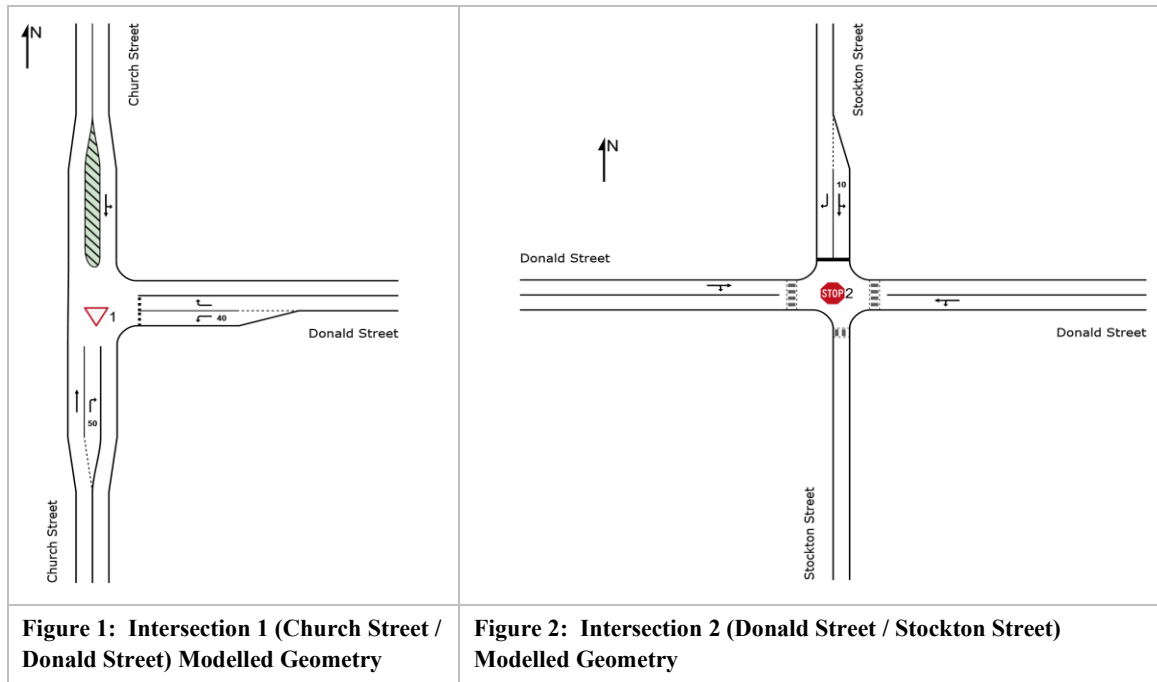
Notwithstanding the above, in response to Transport for NSW's request, detailed capacity analyses have been undertaken at the subject intersections using SIDRA INTERSECTION 10, using the design traffic volumes as discussed in the following sections.

Design Traffic Volumes

The 2027 design traffic volumes have been established through the addition of the forecast ‘sensitivity test’ 2027 background traffic volumes to the estimated development traffic volumes, and are as shown in the figures included as **Attachment 5**.

Intersection Configurations

The modelled intersection configurations are as shown in the figures below.



Results of Traffic Analyses

The detailed results of the 2027 traffic analyses both without and with the proposed development are provided in **Attachment 6**, and summarised in the table below.

Table 1: Summary of Results of Intersection Capacity Analyses (2027)

	Design Scenario	Intersection Degree of Saturation	Average Delay - Critical Movement (secs)	Level of Service - Critical Movement	95 th Percentile Queue (m)
Intersection 1: Church Street / Donald Street					
AM Peak	Without Development	0.231	13.0	LOS A	6.8
	With Development	0.232	13.2	LOS A	7.1
PM Peak	Without Development	0.437	20.3	LOS B	13.6
	With Development	0.457	21.1	LOS B	14.4
Sat Peak	Without Development	0.406	19.0	LOS B	12.5
	With Development	0.425	19.7	LOS B	13.2
Intersection 2: Donald Street / Stockton Street					
AM Peak	Without Development	0.332	12.5	LOS A	13.2
	With Development	0.335	12.5	LOS A	13.4
PM Peak	Without Development	0.464	17.4	LOS B	24.2
	With Development	0.468	17.5	LOS B	24.5
Sat Peak	Without Development	0.386	14.0	LOS A	17.3
	With Development	0.389	14.1	LOS A	17.6

As shown in the table above:

- Both intersections assessed are expected to be operating well within acceptable capacity limits both without and with the additional traffic expected to be generated by the proposed development, with limited queuing and delays, and under 50% degree of saturation;
- The additional traffic expected to be generated by the proposed development is expected to have a very minor impact upon the performance of the subject intersections; and
- The operational performance of the intersections indicates that there is ample spare capacity to accommodate future traffic growth and/or additional seasonal variations in traffic volumes.

Importantly, these analyses conservatively assume:

- a high background traffic growth rate of 3% per annum compound;
- an additional 25% loading factor upon the forecast background 2027 traffic volumes (as a sensitivity test);
- a conservatively high estimated site traffic generation; and
- that all traffic generated by the proposed development will either travel to/from the west through the Church Street / Donald Street intersection or to/from the east through the Donald Street / Stockton Street intersection (when a proportion of traffic generated by the proposed development may travel to/from the Woolworths supermarket, for example, and therefore will not travel through one of the subject intersections).

Furthermore, it should be noted that the subject site currently accommodates uses which generate (or previously generated) traffic volumes onto the local road network. These include a dwelling house, and a two-storey commercial building which accommodated a beauty salon on the ground floor and two (2) residential units on the first floor. When this traffic generation is removed from the road network due to the redevelopment of the subject site, the net traffic generation of the proposal will be notably lower than that previously described (i.e. 34vph in the peak hours), and may in fact be negative (i.e. the proposed development may generate lower traffic volumes than the previous uses on the subject site).

Summary and Recommendations

In summary, and consistent with the conclusion in the Traffic Report which accompanied the application, it is concluded that no external roadworks are required to support the proposed development, from a capacity perspective.

In my capacity as a Registered Professional Engineer of Queensland, I am satisfied that the proposed development will not have an unacceptable impact upon the safety or efficiency of the public road network.

On this basis, it is recommended that the subject development application be approved from a traffic engineering perspective.

Should you have any queries regarding the above, please do not hesitate to contact the undersigned.

Regards



Richard Quinn
BECivil, MIEAust, RPEQ (08565)
Director – Q Traffic

ATTACHMENT 1

Results of Traffic Counts

TRANS TRAFFIC SURVEY
TURNING MOVEMENT SURVEY

Intersection of Donald St and Church St, Nelson Bay

GPS -32.721636, 152.141268

Date: Thu 11/12/25
Weather: Overcast
Suburban: Nelson Bay
Customer: Micromax

North: Church St
East: Donald St
South: Church St
West: N/A

Survey AM: 7:00 AM-9:00 AM
Period PM: 3:00 PM-6:00 PM
Traffic AM: 8:00 AM-9:00 AM
Peak PM: 3:00 PM-4:00 PM

All Vehicles

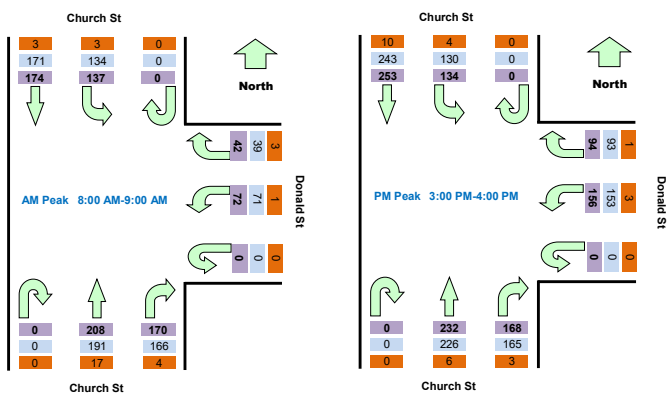
Time		North Approach Church St			East Approach Donald St			South Approach Church St			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
7:00	7:15	0	24	11	0	8	12	0	21	41	497	
7:15	7:30	0	35	9	0	6	6	0	20	30	541	
7:30	7:45	0	39	13	0	9	15	0	14	40	627	
7:45	8:00	0	35	20	0	9	9	0	34	37	708	
8:00	8:15	0	36	23	0	12	17	0	37	36	803	Peak
8:15	8:30	0	42	34	0	9	15	0	36	56		
8:30	8:45	0	44	34	0	12	14	0	46	61		
8:45	9:00	0	52	46	0	9	26	0	51	55		
15:00	15:15	0	58	43	0	18	41	0	38	75	1037	Peak
15:15	15:30	0	61	33	0	23	31	0	41	62	1034	
15:30	15:45	0	59	33	0	22	44	0	33	44	994	
15:45	16:00	0	75	25	0	31	40	0	56	51	1014	
16:00	16:15	0	74	28	0	30	38	0	40	60	990	
16:15	16:30	0	52	16	0	22	34	0	39	48	959	
16:30	16:45	0	61	34	0	17	36	0	41	66	961	
16:45	17:00	0	71	23	0	19	28	0	35	78	898	
17:00	17:15	0	52	25	0	21	37	0	39	65	845	
17:15	17:30	0	48	21	0	22	29	0	30	63		
17:30	17:45	0	33	21	0	17	26	0	41	54		
17:45	18:00	0	36	47	0	17	18	0	36	47		

Peak Time		North Approach Church St			East Approach Donald St			South Approach Church St			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	0	174	137	0	42	72	0	170	208	803
15:00	16:00	0	253	134	0	94	156	0	168	232	1037

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy



Light Vehicles

Time		North Approach Church St			East Approach Donald St			South Approach Church St		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:00	7:15	0	23	10	0	6	10	0	21	34
7:15	7:30	0	33	8	0	5	6	0	19	22
7:30	7:45	0	36	13	0	8	15	0	13	39
7:45	8:00	0	32	20	0	8	9	0	32	35
8:00	8:15	0	36	22	0	11	17	0	36	34
8:15	8:30	0	42	34	0	8	14	0	36	49
8:30	8:45	0	43	34	0	12	14	0	44	56
8:45	9:00	0	50	44	0	8	26	0	50	52
15:00	15:15	0	56	43	0	18	41	0	36	71
15:15	15:30	0	58	33	0	23	31	0	41	61
15:30	15:45	0	57	30	0	21	43	0	33	43
15:45	16:00	0	72	24	0	31	38	0	55	51
16:00	16:15	0	74	27	0	30	38	0	40	59
16:15	16:30	0	49	16	0	21	33	0	38	46
16:30	16:45	0	61	32	0	16	36	0	41	66
16:45	17:00	0	71	23	0	19	28	0	34	78
17:00	17:15	0	51	25	0	20	37	0	38	65
17:15	17:30	0	47	21	0	22	29	0	30	63
17:30	17:45	0	33	20	0	16	26	0	40	54
17:45	18:00	0	35	46	0	16	18	0	35	46

Peak Time		North Approach Church St			East Approach Donald St			South Approach Church St			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	0	171	134	0	39	71	0	166	191	772
15:00	16:00	0	243	130	0	93	153	0	165	226	1010

Heavy Vehicles

Time		North Approach Church St			East Approach Donald St			South Approach Church St		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:00	7:15	0	1	1	0	2	2	0	0	7
7:15	7:30	0	2	1	0	1	0	0	1	8
7:30	7:45	0	3	0	0	1	0	0	1	1
7:45	8:00	0	3	0	0	1	0	0	2	2
8:00	8:15	0	0	1	0	1	0	0	1	2
8:15	8:30	0	0	0	0	1	1	0	0	7
8:30	8:45	0	1	0	0	0	0	0	2	5
8:45	9:00	0	2	2	0	1	0	0	1	3
15:00	15:15	0	2	0	0	0	0	0	2	4
15:15	15:30	0	3	0	0	0	0	0	0	1
15:30	15:45	0	2	3	0	1	1	0	0	1
15:45	16:00	0	3	1	0	0	2	0	1	0
16:00	16:15	0	0	1	0	0	0	0	0	1
16:15	16:30	0	3	0	0	1	1	0	1	2
16:30	16:45	0	0	2	0	1	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	1	0
17:00	17:15	0	1	0	0	1	0	0	1	0
17:15	17:30	0	1	0	0	0	0	0	0	0
17:30	17:45	0	0	1	0	1	0	0	1	0
17:45	18:00	0	1	1	0	1	0	0	1	1

Peak Time		North Approach Church St			East Approach Donald St			South Approach Church St			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	0	3	3	0	3	1	0	4	17	31
15:00	16:00	0	10	4	0	1	3	0	3	6	27

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

Intersection of Donald St and Stockton St, Nelson Bay

GPS -32.721937, 152.143552

Date: Thu 11/12/25

Weather: Overcast

Suburban: Nelson Bay

Customer: Micromax

North: Stockton St

East: Donald St

South: Stockton St

West: Donald St

Survey AM: 7:00 AM-9:00 AM

Period PM: 3:00 PM-5:00 PM

Traffic AM: 8:00 AM-9:00 AM

Peak PM: 3:00 PM-4:00 PM

All Vehicles

Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	6	8	4	0	0	12	7	0	0	0	0	0	12	10	0	225	
7:15	7:30	0	8	11	5	0	0	6	7	0	0	0	0	0	11	16	0	266	
7:30	7:45	0	4	6	4	0	0	18	14	0	0	0	0	0	12	7	0	295	
7:45	8:00	0	3	7	3	0	0	5	6	0	0	0	0	0	4	9	0	348	
8:00	8:15	0	13	9	10	0	0	18	16	0	0	0	0	0	16	18	0	453	Peak
8:15	8:30	0	4	10	11	0	0	13	9	0	0	0	0	0	22	24	0		
8:30	8:45	0	16	8	10	0	0	16	23	0	0	0	0	0	18	27	0		
8:45	9:00	0	8	16	6	0	0	26	19	0	0	0	0	0	26	41	0		
15:00	15:15	0	19	18	18	0	0	30	23	0	0	0	0	0	17	50	0	688	Peak
15:15	15:30	0	18	16	26	0	0	25	18	0	0	0	0	0	22	33	0	677	
15:30	15:45	0	14	19	21	0	0	38	25	0	0	0	0	0	27	36	0	652	
15:45	16:00	0	16	17	14	0	0	33	29	0	0	0	0	0	21	45	0	614	
16:00	16:15	0	14	21	16	0	0	34	18	0	0	0	0	0	23	38	0	565	
16:15	16:30	0	10	18	14	0	0	26	17	0	0	0	0	0	19	29	0	557	
16:30	16:45	0	12	21	7	0	0	28	21	0	0	0	0	0	17	36	0	552	
16:45	17:00	0	7	15	11	0	0	30	15	0	0	0	0	0	15	33	0	525	
17:00	17:15	0	11	23	9	0	0	30	23	0	0	0	0	0	26	34	0	519	
17:15	17:30	0	13	11	12	0	0	31	12	0	0	0	0	0	15	34	0		
17:30	17:45	0	12	10	9	0	0	16	16	0	0	0	0	0	20	32	0		
17:45	18:00	0	7	12	7	0	0	18	24	0	0	0	0	0	26	26	0		

Peak Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
8:00	9:00	0	41	42	37	0	0	73	67	0	0	0	0	0	82	110	0	453	
15:00	16:00	0	67	70	79	0	0	126	95	0	0	0	0	0	87	164	0	688	

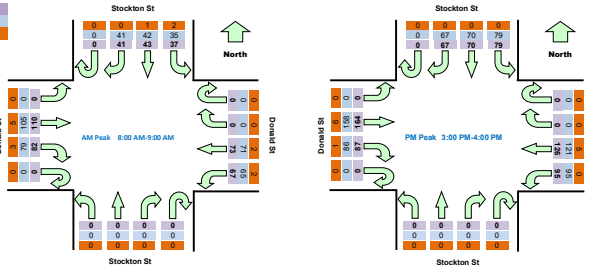
Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total

Light

Heavy



Light Vehicles

Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
7:00	7:15	0	6	8	4	0	0	10	7	0	0	0	0	0	12	10	0		
7:15	7:30	0	8	10	5	0	0	5	7	0	0	0	0	0	11	13	0		
7:30	7:45	0	4	6	4	0	0	17	14	0	0	0	0	0	11	7	0		
7:45	8:00	0	3	7	3	0	0	5	6	0	0	0	0	0	4	8	0		
8:00	8:15	0	13	9	9	0	0	17	16	0	0	0	0	0	15	17	0		
8:15	8:30	0	4	9	11	0	0	13	8	0	0	0	0	0	21	24	0		
8:30	8:45	0	16	8	9	0	0	16	22	0	0	0	0	0	18	26	0		
8:45	9:00	0	8	16	6	0	0	25	19	0	0	0	0	0	25	38	0		
15:00	15:15	0	19	18	18	0	0	30	23	0	0	0	0	0	16	49	0		
15:15	15:30	0	18	16	26	0	0	25	18	0	0	0	0	0	22	33	0		
15:30	15:45	0	14	19	21	0	0	35	25	0	0	0	0	0	27	34	0		
15:45	16:00	0	16	17	14	0	0	31	29	0	0	0	0	0	21	42	0		
16:00	16:15	0	14	20	16	0	0	34	18	0	0	0	0	0	23	38	0		
16:15	16:30	0	10	17	13	0	0	25	17	0	0	0	0	0	19	28	0		
16:30	16:45	0	12	20	7	0	0	27	21	0	0	0	0	0	17	34	0		
16:45	17:00	0	7	15	11	0	0	30	15	0	0	0	0	0	15	32	0		
17:00	17:15	0	11	23	9	0	0	29	23	0	0	0	0	0	26	34	0		
17:15	17:30	0	13	11	11	0	0	30	12	0	0	0	0	0	15	34	0		
17:30	17:45	0	12	10	9	0	0	16	16	0	0	0	0	0	19	31	0		
17:45	18:00	0	7	12	7	0	0	17	23	0	0	0	0	0	25	25	0		

Peak Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
8:00	9:00	0	41	42	35	0	0	71	65	0	0	0	0	0	79	105	0	438	
15:00	16:00	0	67	70	79	0	0	121	95	0	0	0	0	0	86	158	0	676	

Heavy Vehicles

Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
7:00	7:15	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0		
7:15	7:30	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	0		
7:30	7:45	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0		
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
8:00	8:15	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0		
8:15	8:30	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0		
8:30	8:45	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0		
8:45	9:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3	0		
15:00	15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
15:15	15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15:30	15:45	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0		
15:45	16:00	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0		
16:00	16:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
16:15	16:30	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0		
16:30	16:45	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0		
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
17:00	17:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0		
17:15	17:30	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0		
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
17:45	18:00	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0		

Peak Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
8:00	9:00	0	0	1	2	0	0	2	2	0	0	0	0	0	3	5	0	15	
15:00	16:00	0	0	0	0	0	0	5	0	0	0	0	0	0	1	6	0	12	

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au



Intersection of Donald St and Church St, Nelson Bay

GPS -32.721636, 152.141268

Date: Sat 13/12/25

Weather: Overcast

Suburban: Nelson Bay

Customer: Micromax

North:	Church St
East:	Donald St
South:	Church St
West:	N/A

Survey	AM:	9:00 AM-12:00 PM
Period	PM:	12:00 AM-12:00 AM
Traffic	AM:	11:00 AM-12:00 PM
Peak	PM:	#REF!

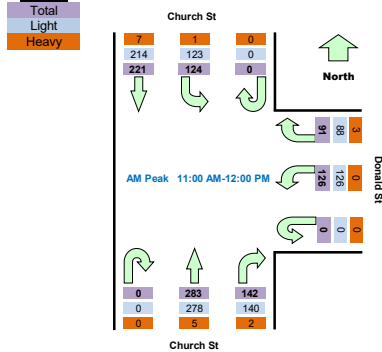
All Vehicles

Time		North Approach Church St			East Approach Donald St			South Approach Church St			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
9:00	9:15	0	52	27	0	22	15	0	21	37	799	
9:15	9:30	0	39	34	0	17	26	0	40	48	847	
9:30	9:45	0	53	26	0	21	36	0	29	39	862	
9:45	10:00	0	37	30	0	21	28	0	32	69	882	
10:00	10:15	0	57	29	0	15	23	0	31	67	884	
10:15	10:30	0	53	35	0	18	25	0	38	50	897	
10:30	10:45	0	50	37	0	29	27	0	23	58	930	
10:45	11:00	0	54	27	0	21	21	0	35	61	968	
11:00	11:15	0	56	21	0	21	26	0	41	70	987	Peak
11:15	11:30	0	63	32	0	25	34	0	26	72		
11:30	11:45	0	45	38	0	25	36	0	36	82		
11:45	12:00	0	57	33	0	20	30	0	39	59		

Peak Time		North Approach Church St			East Approach Donald St			South Approach Church St			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
11:00	12:00	0	221	124	0	91	126	0	142	283	987

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic



Light Vehicles

Time		North Approach Church St			East Approach Donald St			South Approach Church St		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
9:00	9:15	0	49	27	0	21	13	0	20	34
9:15	9:30	0	38	34	0	17	26	0	40	47
9:30	9:45	0	53	26	0	19	36	0	29	38
9:45	10:00	0	35	29	0	20	28	0	32	61
10:00	10:15	0	56	29	0	15	23	0	31	65
10:15	10:30	0	52	32	0	17	25	0	36	49
10:30	10:45	0	50	36	0	29	27	0	23	58
10:45	11:00	0	53	26	0	21	20	0	34	57
11:00	11:15	0	54	21	0	19	26	0	40	68
11:15	11:30	0	61	31	0	25	34	0	25	70
11:30	11:45	0	43	38	0	25	36	0	36	82
11:45	12:00	0	56	33	0	19	30	0	39	58

Peak Time		North Approach Church St			East Approach Donald St			South Approach Church St			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
11:00	12:00	0	214	123	0	88	126	0	140	278	969

Heavy Vehicles

Time		North Approach Church St			East Approach Donald St			South Approach Church St		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
9:00	9:15	0	3	0	0	1	2	0	1	3
9:15	9:30	0	1	0	0	0	0	0	0	1
9:30	9:45	0	0	0	0	2	0	0	0	1
9:45	10:00	0	2	1	0	1	0	0	0	8
10:00	10:15	0	1	0	0	0	0	0	0	2
10:15	10:30	0	1	3	0	1	0	0	2	1
10:30	10:45	0	0	1	0	0	0	0	0	0
10:45	11:00	0	1	1	0	0	1	0	1	4
11:00	11:15	0	2	0	0	2	0	0	1	2
11:15	11:30	0	2	1	0	0	0	0	1	2
11:30	11:45	0	2	0	0	0	0	0	0	0
11:45	12:00	0	1	0	0	1	0	0	0	1

Peak Time		North Approach Church St			East Approach Donald St			South Approach Church St			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
11:00	12:00	0	7	1	0	3	0	0	2	5	18

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au



Intersection of Donald St and Stockton St, Nelson Bay

GPS -32.721937, 152.143552

Date: Sat 13/12/25
Weather: Overcast
Suburban: Nelson Bay
Customer: Micromax

North: Stockton St
East: Donald St
South: Stockton St
West: Donald St

Survey AM: 9:00 AM-12:00 PM
Period PM: 12:00 AM-12:00 AM
Traffic AM: 10:15 AM-11:15 AM
Peak PM: #REF!

All Vehicles

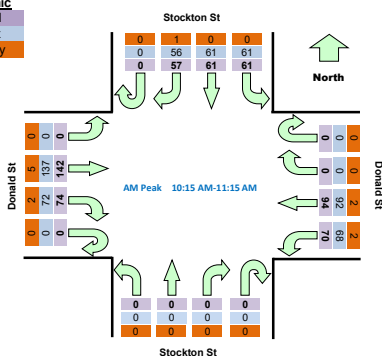
Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
9:00	9:15	0	13	19	17	0	0	22	12	0	0	0	0	0	12	28	0	539	
9:15	9:30	0	17	15	16	0	0	20	16	0	0	0	0	0	17	31	0	527	
9:30	9:45	0	17	24	20	0	0	30	16	0	0	0	0	0	14	38	0	543	
9:45	10:00	0	14	14	24	0	0	24	13	0	0	0	0	0	11	25	0	527	
10:00	10:15	0	16	17	9	0	0	17	11	0	0	0	0	0	14	27	0	537	
10:15	10:30	0	16	18	15	0	0	25	18	0	0	0	0	0	20	36	0	559	Peak
10:30	10:45	0	15	8	17	0	0	27	20	0	0	0	0	0	16	40	0	554	
10:45	11:00	0	14	14	12	0	0	21	18	0	0	0	0	0	21	35	0	549	
11:00	11:15	0	12	21	17	0	0	21	14	0	0	0	0	0	17	31	0	549	
11:15	11:30	0	25	17	12	0	0	28	13	0	0	0	0	0	14	34	0		
11:30	11:45	0	14	13	20	0	0	24	21	0	0	0	0	0	10	36	0		
11:45	12:00	0	13	18	7	0	0	27	10	0	0	0	0	0	18	42	0		

Peak Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
10:15	11:15	0	57	61	61	0	0	94	70	0	0	0	0	0	74	142	0	559

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy



Light Vehicles

Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
9:00	9:15	0	12	19	17	0	0	21	12	0	0	0	0	0	12	27	0
9:15	9:30	0	17	15	16	0	0	19	14	0	0	0	0	0	17	31	0
9:30	9:45	0	17	24	20	0	0	29	16	0	0	0	0	0	14	38	0
9:45	10:00	0	13	14	24	0	0	23	13	0	0	0	0	0	11	24	0
10:00	10:15	0	16	17	9	0	0	17	11	0	0	0	0	0	14	27	0
10:15	10:30	0	16	18	15	0	0	25	18	0	0	0	0	0	20	34	0
10:30	10:45	0	15	8	17	0	0	27	20	0	0	0	0	0	16	38	0
10:45	11:00	0	14	14	12	0	0	20	17	0	0	0	0	0	20	34	0
11:00	11:15	0	11	21	17	0	0	20	13	0	0	0	0	0	16	31	0
11:15	11:30	0	25	17	12	0	0	28	12	0	0	0	0	0	14	33	0
11:30	11:45	0	14	13	20	0	0	23	21	0	0	0	0	0	10	36	0
11:45	12:00	0	13	18	7	0	0	26	9	0	0	0	0	0	18	41	0

Peak Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
10:15	11:15	0	56	61	61	0	0	92	68	0	0	0	0	0	72	137	0	547

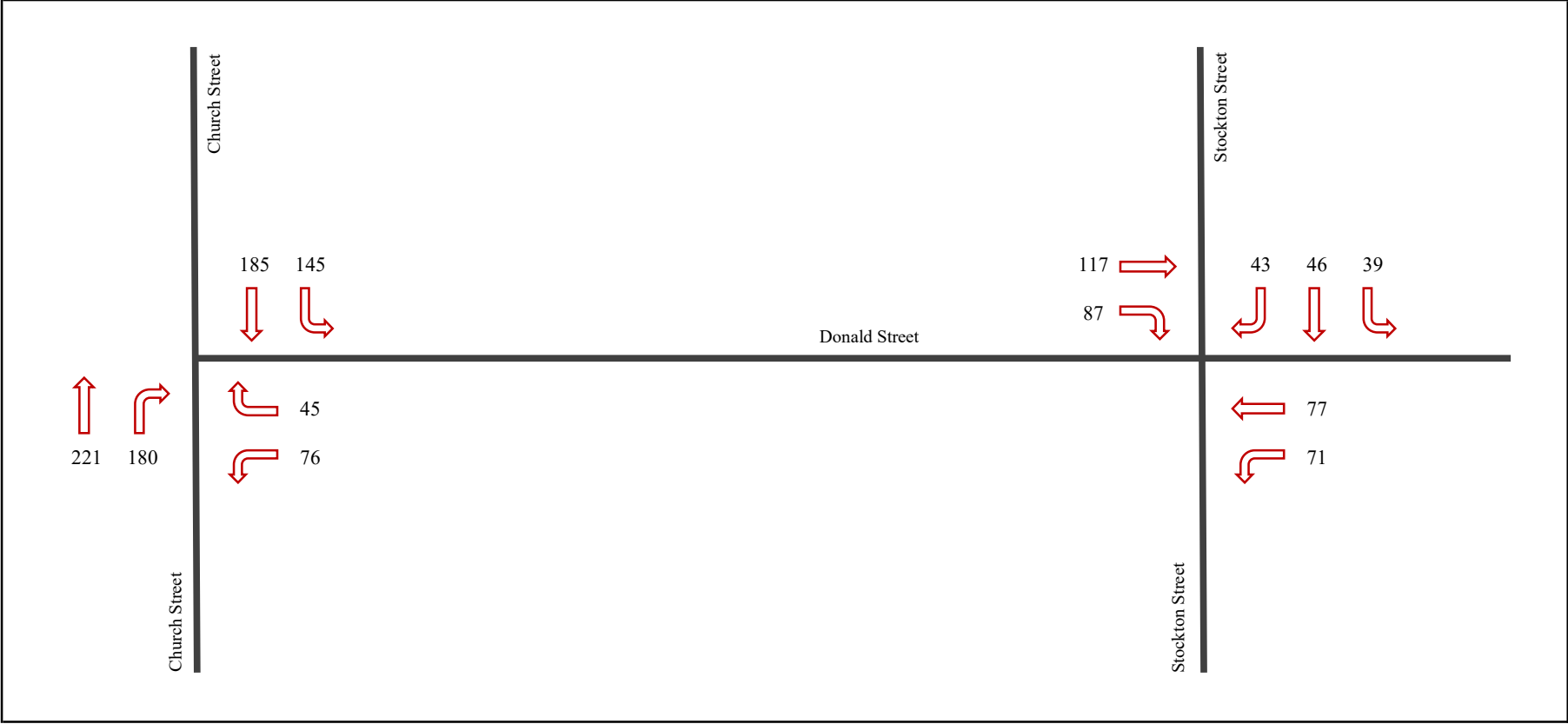
Heavy Vehicles

Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
9:00	9:15	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0
9:15	9:30	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
9:45	10:00	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0
10:00	10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
10:45	11:00	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0
11:00	11:15	0	1	0	0	0	0	1	1	0	0	0	0	0	1	0	0
11:15	11:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
11:30	11:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0

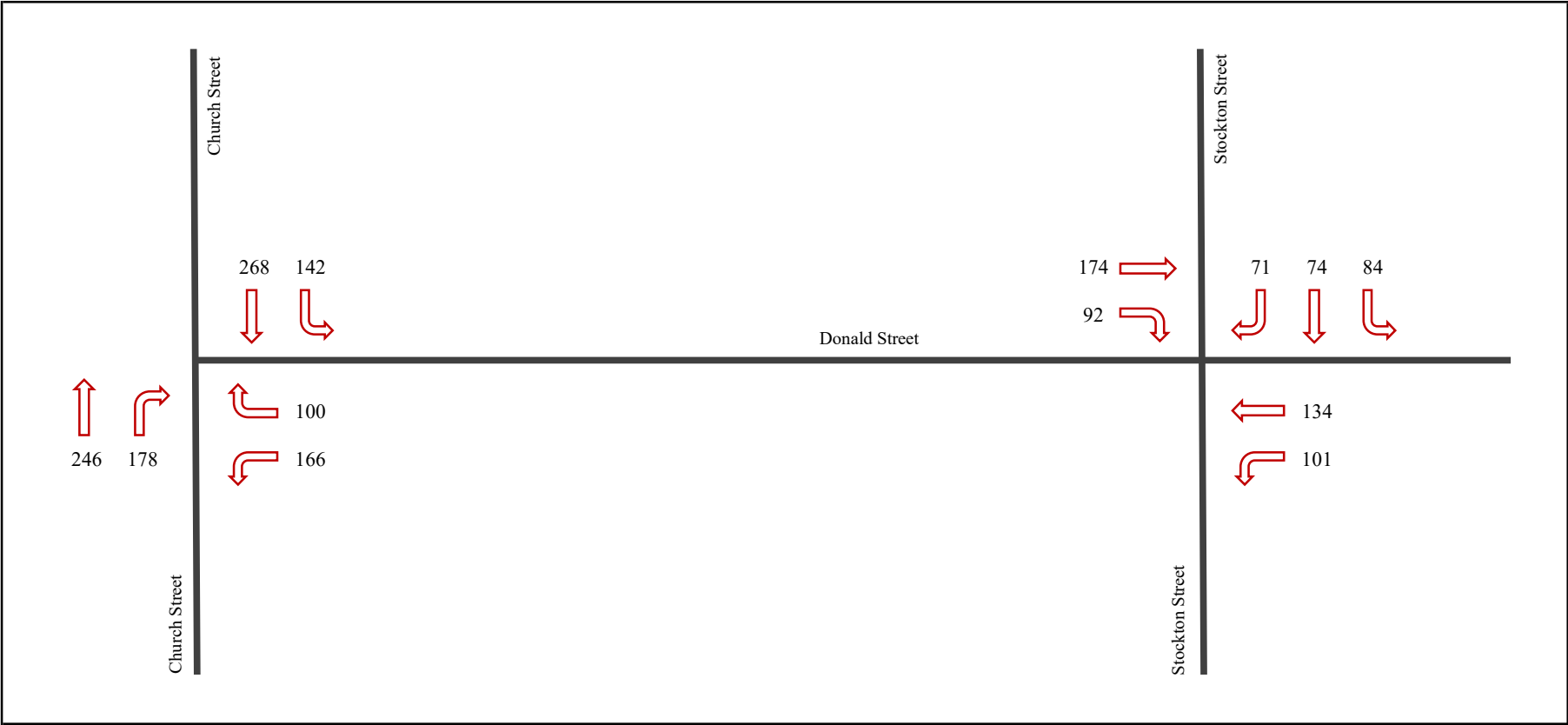
Peak Time		North Approach Stockton St				East Approach Donald St				South Approach Stockton St				West Approach Donald St				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
10:15	11:15	0	1	0	0	0	0	2	2	0	0	0	0	0	2	5	0	12

ATTACHMENT 2

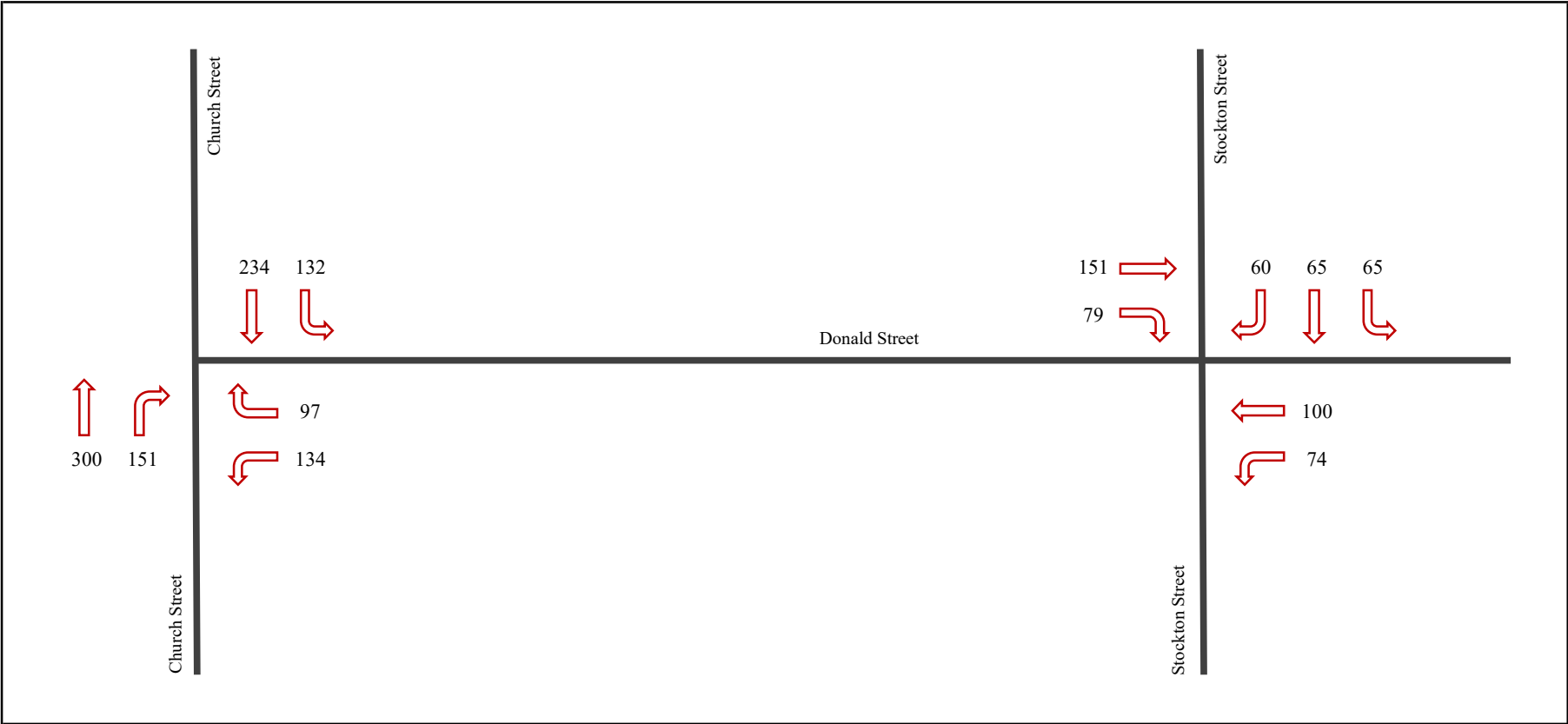
Forecast 2027 Background Traffic Volumes



2027 Weekday AM Peak Hour - Background Volumes



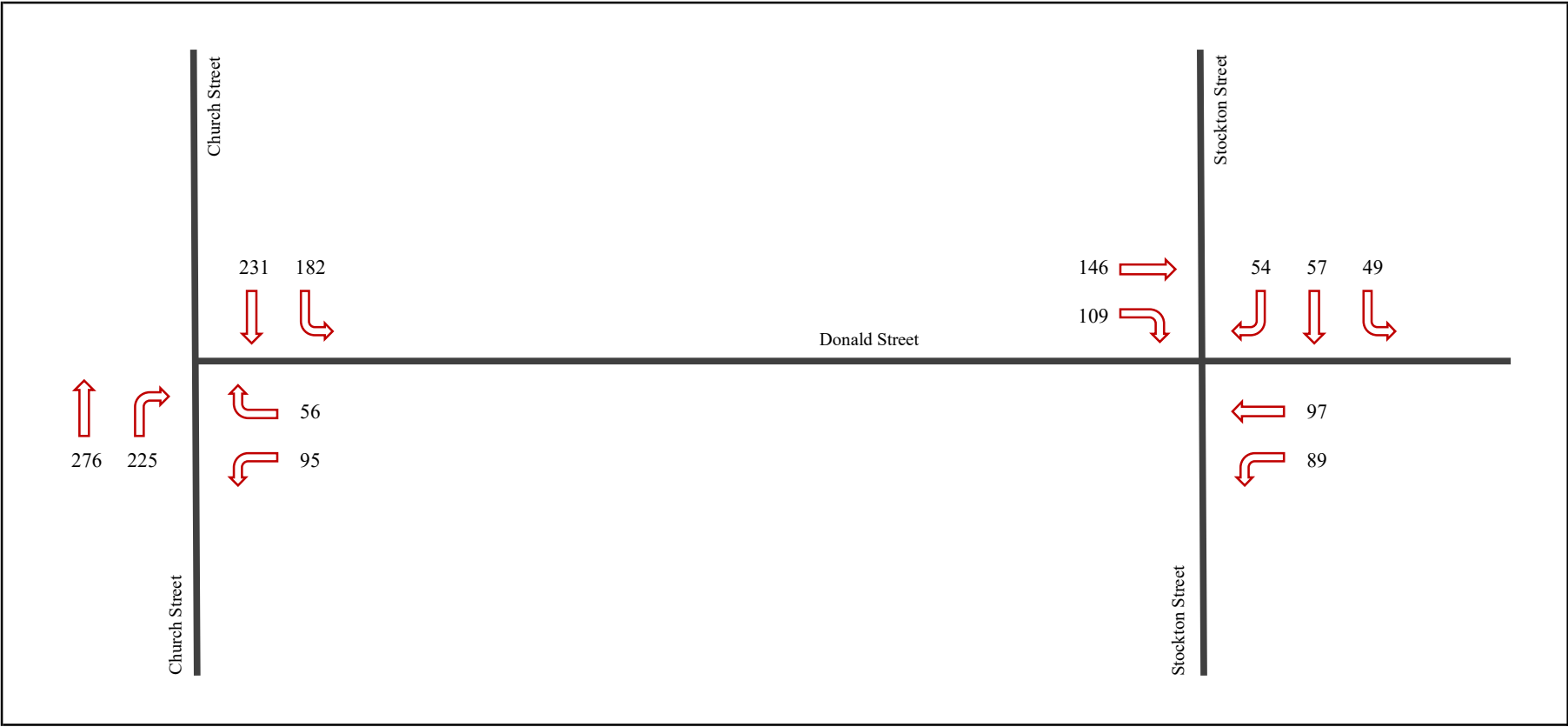
2027 Weekday PM Peak Hour - Background Volumes



2027 Saturday Peak Hour - Background Volumes

ATTACHMENT 3

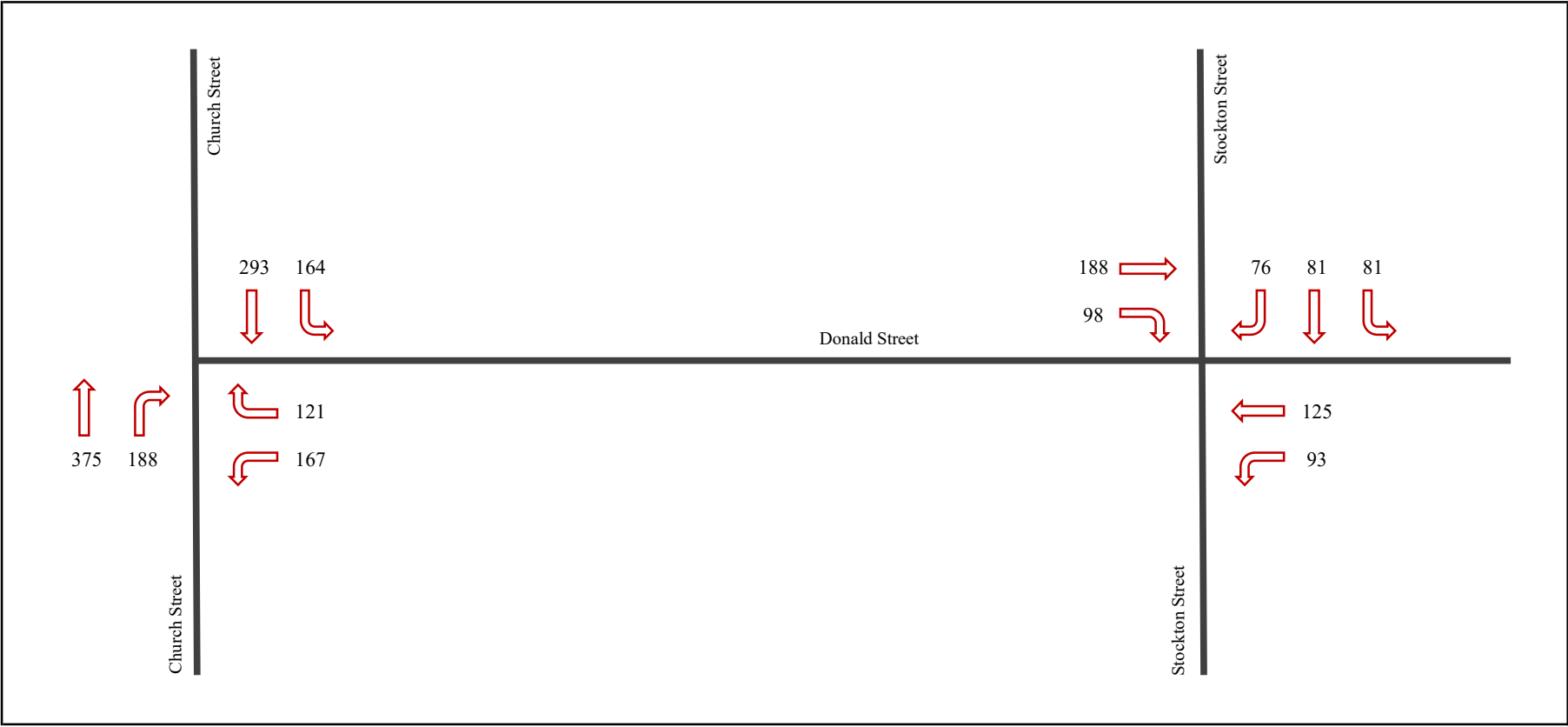
Forecast 2027 Background Traffic Volumes – Sensitivity Test (25% Loading Factor)



2027 Weekday AM Peak Hour - Background Volumes + 25% (Sensitivity)



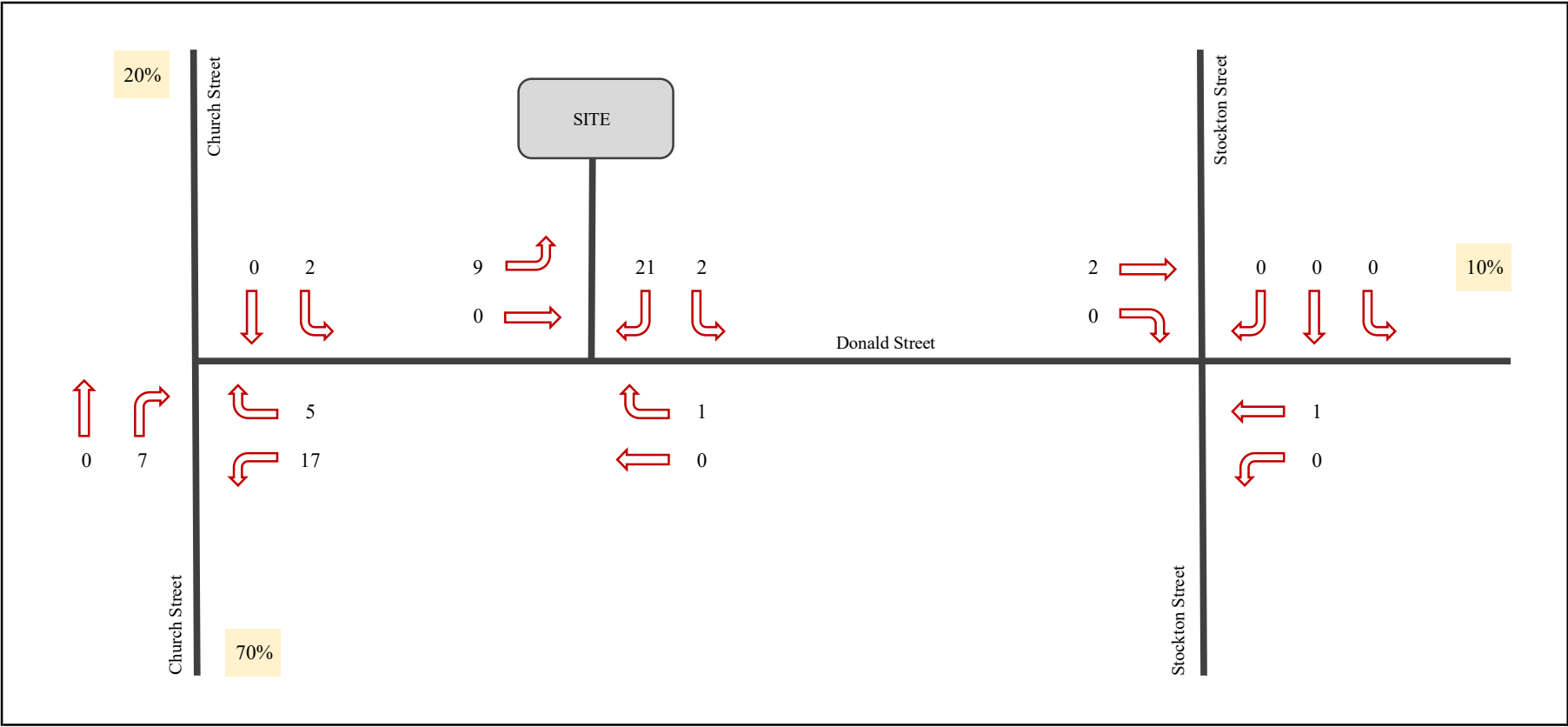
2027 Weekday PM Peak Hour - Background Volumes + 25% (Sensitivity)



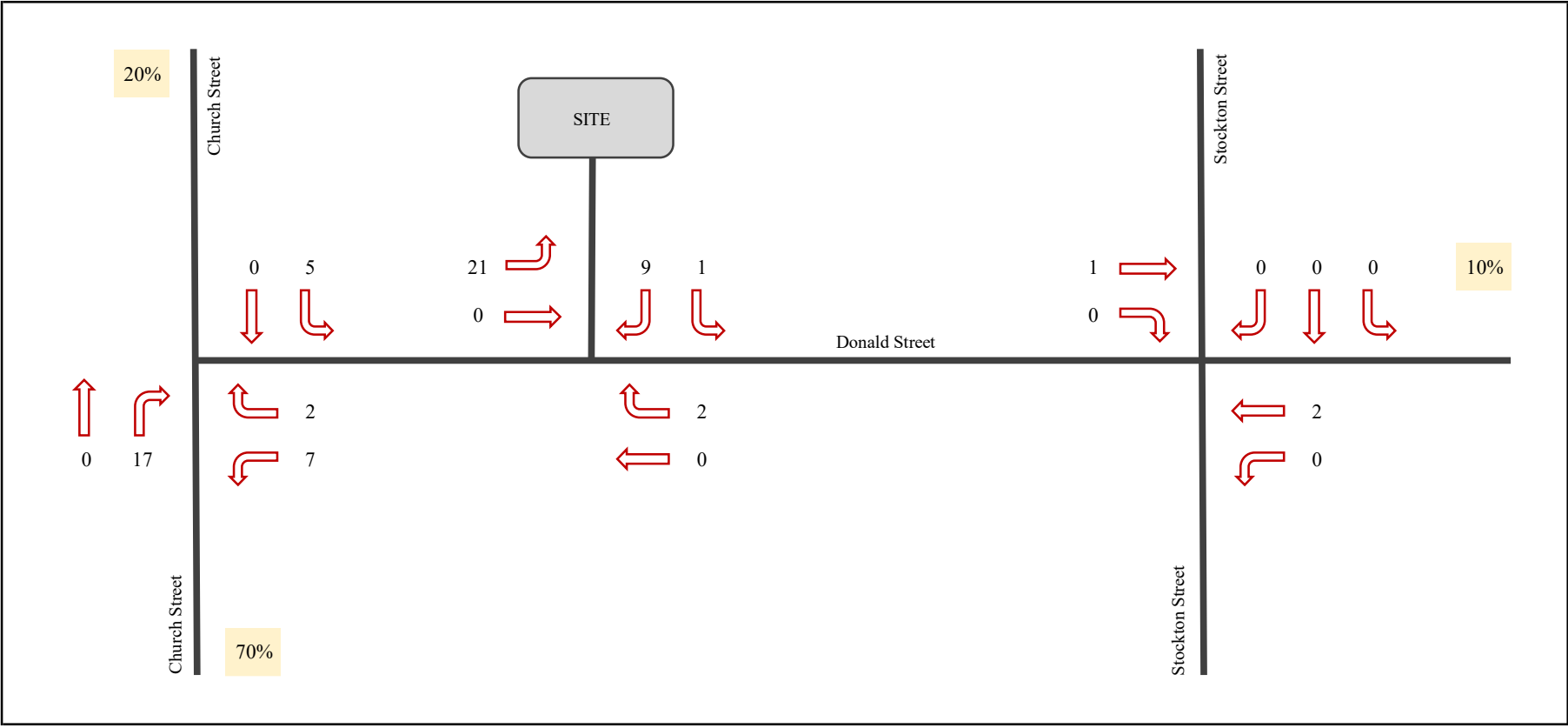
2027 Saturday Peak Hour - Background Volumes + 25% (Sensitivity)

ATTACHMENT 4

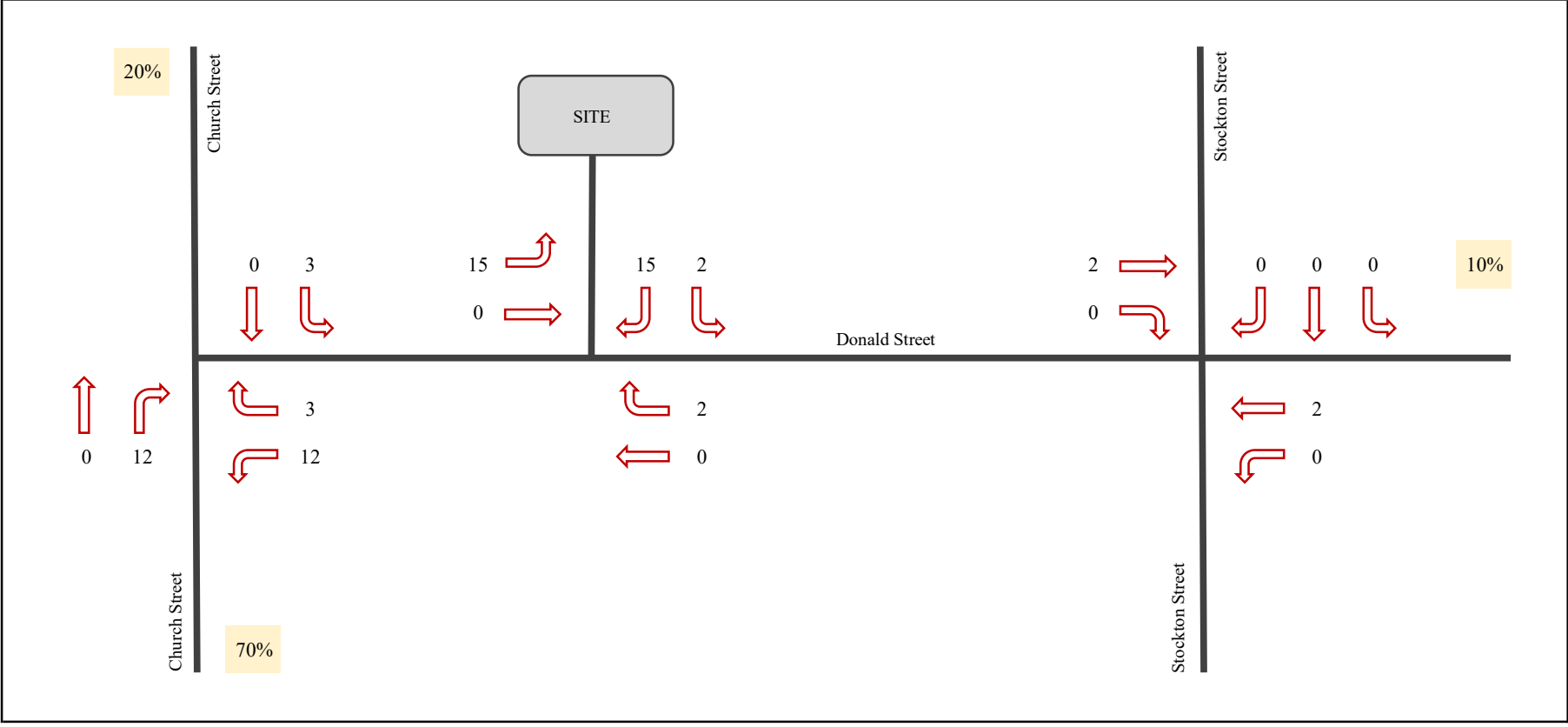
Forecast Development Traffic Volumes



AM Peak Hour



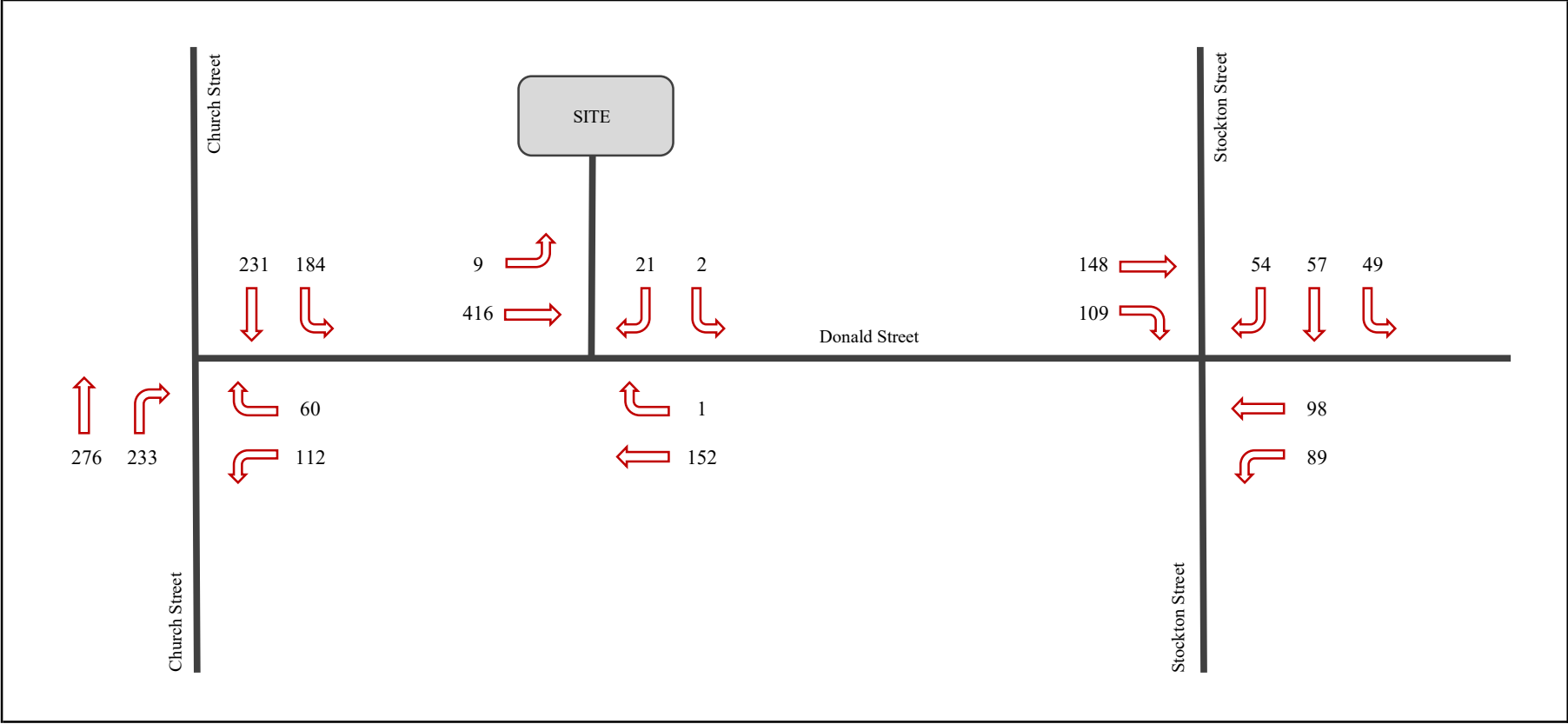
PM Peak Hour



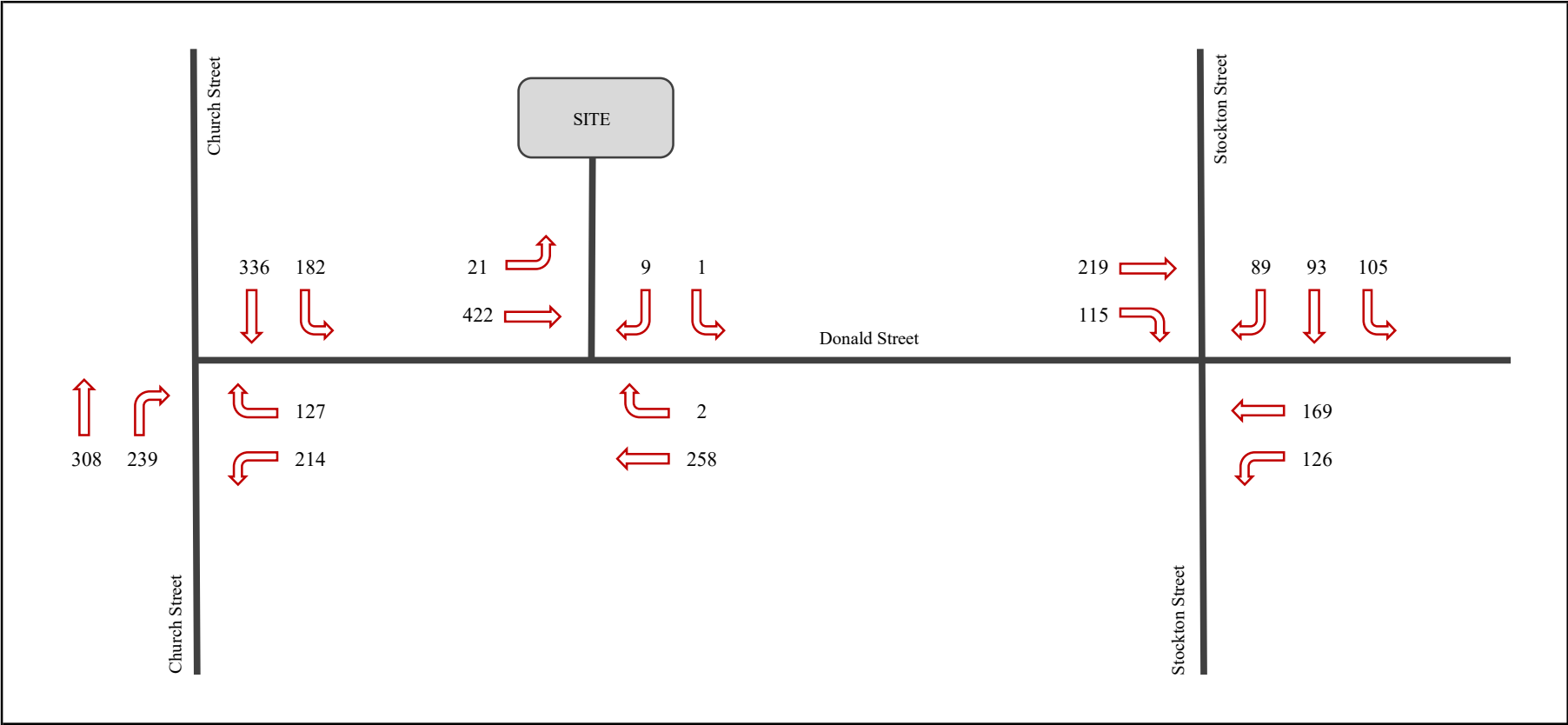
Saturday Peak Hour

ATTACHMENT 5

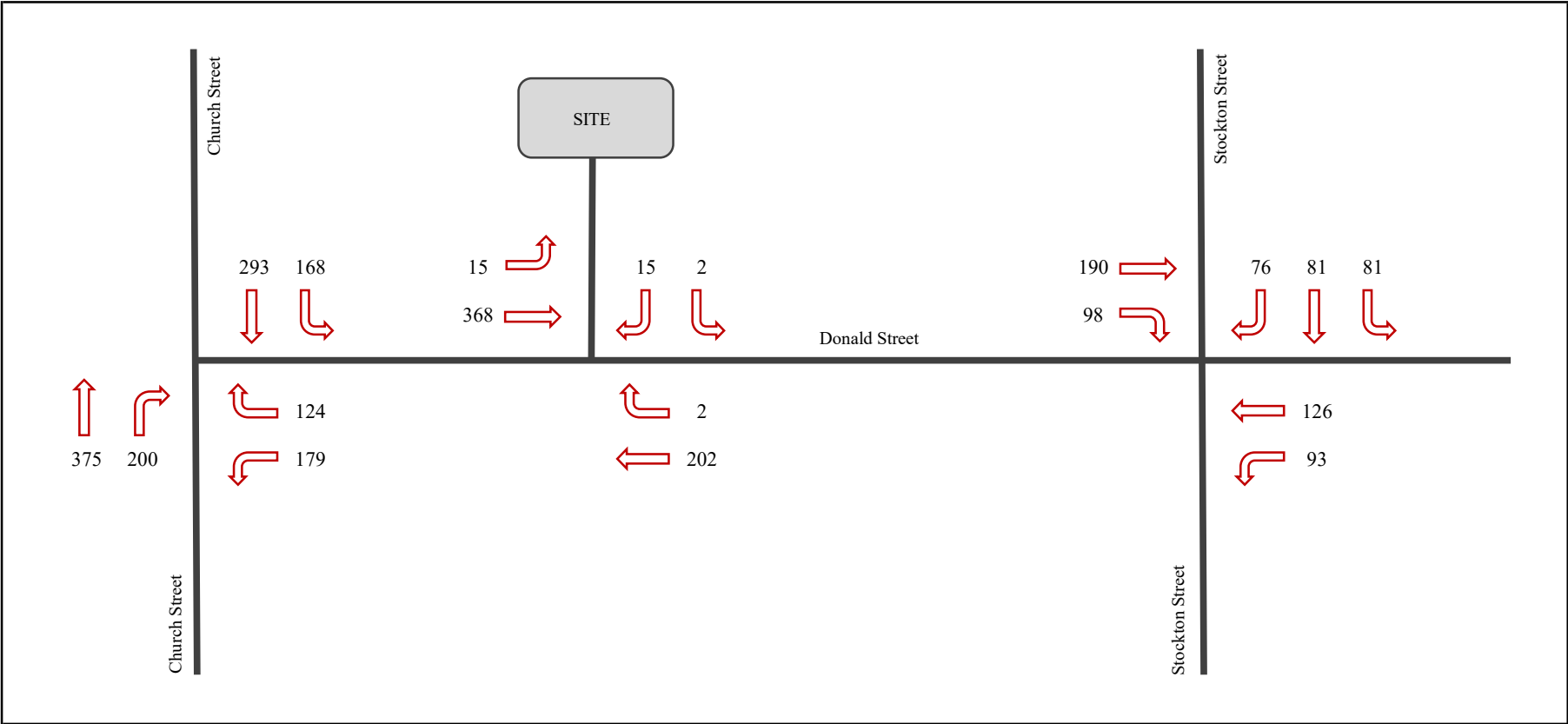
Forecast 2027 Design (With Development) Traffic Volumes



2027 Weekday AM Peak Hour - Background Volumes + 25% (Sensitivity) + DEVELOPMENT



2027 Weekday PM Peak Hour - Background Volumes + 25% (Sensitivity) + DEVELOPMENT



2027 Saturday Peak Hour - Background Volumes + 25% (Sensitivity) + DEVELOPMENT

ATTACHMENT 6

Results of SIDRA Modelling

MOVEMENT SUMMARY

▼ **Site: [1] 2027 Without Dev - AM Peak (Intersection 1)**
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Church Street / Donald Street Intersection
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
South: Church Street															
2	T1	All MCs	291	2.0	291	2.0	0.151	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	All MCs	237	2.0	237	2.0	0.207	6.5	LOS A	1.0	6.8	0.51	0.67	0.51	44.7
Approach			527	2.0	527	2.0	0.207	3.0	NA	1.0	6.8	0.23	0.30	0.23	47.5
East: Donald Street															
4	L2	All MCs	100	2.0	100	2.0	0.077	5.4	LOS A	0.3	2.2	0.33	0.55	0.33	45.2
6	R2	All MCs	59	2.0	59	2.0	0.153	13.0	LOS A	0.5	3.9	0.71	0.87	0.71	41.4
Approach			159	2.0	159	2.0	0.153	8.2	LOS A	0.5	3.9	0.47	0.67	0.47	43.7
North: Church Street															
7	L2	All MCs	192	2.0	192	2.0	0.231	4.6	LOS A	0.0	0.0	0.00	0.24	0.00	47.4
8	T1	All MCs	243	2.0	243	2.0	0.231	0.1	LOS A	0.0	0.0	0.00	0.24	0.00	48.6
Approach			435	2.0	435	2.0	0.231	2.1	NA	0.0	0.0	0.00	0.24	0.00	48.0
All Vehicles			1121	2.0	1121	2.0	0.231	3.4	NA	1.0	6.8	0.18	0.33	0.18	47.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (4)] 2027 With Dev - AM Peak (Intersection 1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Church Street / Donald Street Intersection
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				
			veh/h	%	veh/h	%									v/c
South: Church Street															
2	T1	All MCs	291	2.0	291	2.0	0.151	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	All MCs	245	2.0	245	2.0	0.215	6.5	LOS A	1.0	7.1	0.52	0.68	0.52	44.7
Approach			536	2.0	536	2.0	0.215	3.0	NA	1.0	7.1	0.24	0.31	0.24	47.4
East: Donald Street															
4	L2	All MCs	118	2.0	118	2.0	0.091	5.4	LOS A	0.4	2.6	0.33	0.56	0.33	45.2
6	R2	All MCs	63	2.0	63	2.0	0.167	13.2	LOS A	0.6	4.2	0.72	0.87	0.72	41.3
Approach			181	2.0	181	2.0	0.167	8.1	LOS A	0.6	4.2	0.47	0.67	0.47	43.8
North: Church Street															
7	L2	All MCs	194	2.0	194	2.0	0.232	4.6	LOS A	0.0	0.0	0.00	0.24	0.00	47.4
8	T1	All MCs	243	2.0	243	2.0	0.232	0.1	LOS A	0.0	0.0	0.00	0.24	0.00	48.6
Approach			437	2.0	437	2.0	0.232	2.1	NA	0.0	0.0	0.00	0.24	0.00	48.0
All Vehicles			1154	2.0	1154	2.0	0.232	3.5	NA	1.0	7.1	0.18	0.34	0.18	47.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (Akcelik 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 (2)] 2027 Without Dev - PM Peak (Intersection 1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Church Street / Donald Street Intersection
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: Church Street															
2	T1	All MCs	324	2.0	324	2.0	0.168	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	All MCs	235	2.0	235	2.0	0.235	7.2	LOS A	1.1	7.5	0.58	0.73	0.58	44.4
Approach			559	2.0	559	2.0	0.235	3.1	NA	1.1	7.5	0.24	0.31	0.24	47.4
East: Donald Street															
4	L2	All MCs	218	2.0	218	2.0	0.188	6.0	LOS A	0.8	5.7	0.44	0.63	0.44	44.9
6	R2	All MCs	132	2.0	132	2.0	0.437	20.3	LOS B	1.9	13.6	0.84	1.02	1.15	38.3
Approach			349	2.0	349	2.0	0.437	11.4	LOS A	1.9	13.6	0.59	0.78	0.71	42.2
North: Church Street															
7	L2	All MCs	187	2.0	187	2.0	0.286	4.7	LOS A	0.0	0.0	0.00	0.19	0.00	47.6
8	T1	All MCs	354	2.0	354	2.0	0.286	0.1	LOS A	0.0	0.0	0.00	0.19	0.00	48.8
Approach			541	2.0	541	2.0	0.286	1.7	NA	0.0	0.0	0.00	0.19	0.00	48.4
All Vehicles			1449	2.0	1449	2.0	0.437	4.6	NA	1.9	13.6	0.23	0.38	0.26	46.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (5)] 2027 With Dev - PM Peak (Intersection 1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Church Street / Donald Street Intersection
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. Dist]					
			veh/h	%	veh/h	%				v/c	sec				
South: Church Street															
2	T1	All MCs	324	2.0	324	2.0	0.168	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	All MCs	252	2.0	252	2.0	0.253	7.3	LOS A	1.1	8.1	0.58	0.74	0.58	44.3
Approach			576	2.0	576	2.0	0.253	3.2	NA	1.1	8.1	0.25	0.32	0.25	47.3
East: Donald Street															
4	L2	All MCs	225	2.0	225	2.0	0.195	6.1	LOS A	0.8	5.9	0.44	0.63	0.44	44.9
6	R2	All MCs	134	2.0	134	2.0	0.457	21.1	LOS B	2.0	14.4	0.85	1.04	1.19	37.9
Approach			359	2.0	359	2.0	0.457	11.7	LOS A	2.0	14.4	0.59	0.78	0.72	42.1
North: Church Street															
7	L2	All MCs	192	2.0	192	2.0	0.288	4.7	LOS A	0.0	0.0	0.00	0.19	0.00	47.6
8	T1	All MCs	354	2.0	354	2.0	0.288	0.1	LOS A	0.0	0.0	0.00	0.19	0.00	48.8
Approach			545	2.0	545	2.0	0.288	1.7	NA	0.0	0.0	0.00	0.19	0.00	48.4
All Vehicles			1480	2.0	1480	2.0	0.457	4.7	NA	2.0	14.4	0.24	0.38	0.27	46.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (3)] 2027 Without Dev - Sat Peak (Intersection 1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Church Street / Donald Street Intersection
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				km/h
South: Church Street															
2	T1	All MCs	395	2.0	395	2.0	0.205	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	All MCs	198	2.0	198	2.0	0.183	6.7	LOS A	0.8	5.8	0.53	0.69	0.53	44.6
Approach			593	2.0	593	2.0	0.205	2.3	NA	0.8	5.8	0.18	0.23	0.18	48.0
East: Donald Street															
4	L2	All MCs	176	2.0	176	2.0	0.145	5.8	LOS A	0.6	4.3	0.39	0.60	0.39	45.0
6	R2	All MCs	127	2.0	127	2.0	0.406	19.0	LOS B	1.7	12.5	0.82	1.01	1.10	38.8
Approach			303	2.0	303	2.0	0.406	11.3	LOS A	1.7	12.5	0.57	0.77	0.69	42.2
North: Church Street															
7	L2	All MCs	173	2.0	173	2.0	0.255	4.7	LOS A	0.0	0.0	0.00	0.19	0.00	47.6
8	T1	All MCs	308	2.0	308	2.0	0.255	0.1	LOS A	0.0	0.0	0.00	0.19	0.00	48.8
Approach			481	2.0	481	2.0	0.255	1.7	NA	0.0	0.0	0.00	0.19	0.00	48.4
All Vehicles			1377	2.0	1377	2.0	0.406	4.1	NA	1.7	12.5	0.20	0.34	0.23	46.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (6)] 2027 With Dev - Sat Peak (Intersection 1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Church Street / Donald Street Intersection
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				
			veh/h	%	veh/h	%									
South: Church Street															
2	T1	All MCs	395	2.0	395	2.0	0.205	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	All MCs	211	2.0	211	2.0	0.196	6.8	LOS A	0.9	6.2	0.54	0.70	0.54	44.6
Approach			605	2.0	605	2.0	0.205	2.4	NA	0.9	6.2	0.19	0.24	0.19	47.9
East: Donald Street															
4	L2	All MCs	188	2.0	188	2.0	0.155	5.8	LOS A	0.6	4.6	0.40	0.60	0.40	45.0
6	R2	All MCs	131	2.0	131	2.0	0.425	19.7	LOS B	1.9	13.2	0.83	1.02	1.13	38.5
Approach			319	2.0	319	2.0	0.425	11.5	LOS A	1.9	13.2	0.57	0.77	0.70	42.1
North: Church Street															
7	L2	All MCs	177	2.0	177	2.0	0.257	4.7	LOS A	0.0	0.0	0.00	0.20	0.00	47.6
8	T1	All MCs	308	2.0	308	2.0	0.257	0.1	LOS A	0.0	0.0	0.00	0.20	0.00	48.8
Approach			485	2.0	485	2.0	0.257	1.8	NA	0.0	0.0	0.00	0.20	0.00	48.3
All Vehicles			1409	2.0	1409	2.0	0.425	4.2	NA	1.9	13.2	0.21	0.35	0.24	46.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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] 2027 Without Dev - AM Peak (Intersection 2)**
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Donald Street / Stockton Street Intersection
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				km/h
East: Donald Street															
4	L2	All MCs	94	2.0	94	2.0	0.235	6.4	LOS A	1.1	7.8	0.52	0.53	0.52	45.8
5	T1	All MCs	102	2.0	102	2.0	0.235	3.5	LOS A	1.1	7.8	0.52	0.53	0.52	46.9
Approach			196	2.0	196	2.0	0.235	4.9	NA	1.1	7.8	0.52	0.53	0.52	46.3
North: Stockton Street															
7	L2	All MCs	52	2.0	52	2.0	0.164	9.2	LOS A	0.6	4.4	0.54	0.96	0.54	43.2
8	T1	All MCs	60	2.0	60	2.0	0.164	12.5	LOS A	0.6	4.4	0.54	0.96	0.54	43.1
9	R2	All MCs	57	2.0	57	2.0	0.116	12.0	LOS A	0.4	2.7	0.55	1.00	0.55	42.2
Approach			168	2.0	168	2.0	0.164	11.3	LOS A	0.6	4.4	0.54	0.98	0.54	42.8
West: Donald Street															
11	T1	All MCs	154	2.0	154	2.0	0.332	4.0	LOS A	1.8	13.2	0.60	0.65	0.68	46.3
12	R2	All MCs	115	2.0	115	2.0	0.332	8.4	LOS A	1.8	13.2	0.60	0.65	0.68	44.9
Approach			268	2.0	268	2.0	0.332	5.9	NA	1.8	13.2	0.60	0.65	0.68	45.7
All Vehicles			633	2.0	633	2.0	0.332	7.0	NA	1.8	13.2	0.56	0.70	0.59	45.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (4)] 2027 With Dev - AM Peak (Intersection 2)**
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Donald Street / Stockton Street Intersection
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				km/h
East: Donald Street															
4	L2	All MCs	94	2.0	94	2.0	0.236	6.4	LOS A	1.1	7.9	0.52	0.53	0.52	45.8
5	T1	All MCs	103	2.0	103	2.0	0.236	3.5	LOS A	1.1	7.9	0.52	0.53	0.52	46.9
Approach			197	2.0	197	2.0	0.236	4.9	NA	1.1	7.9	0.52	0.53	0.52	46.3
North: Stockton Street															
7	L2	All MCs	52	2.0	52	2.0	0.165	9.2	LOS A	0.6	4.4	0.54	0.97	0.54	43.1
8	T1	All MCs	60	2.0	60	2.0	0.165	12.5	LOS A	0.6	4.4	0.54	0.97	0.54	43.1
9	R2	All MCs	57	2.0	57	2.0	0.117	12.1	LOS A	0.4	2.7	0.55	1.00	0.55	42.2
Approach			168	2.0	168	2.0	0.165	11.3	LOS A	0.6	4.4	0.54	0.98	0.54	42.8
West: Donald Street															
11	T1	All MCs	156	2.0	156	2.0	0.335	4.1	LOS A	1.9	13.4	0.60	0.65	0.68	46.3
12	R2	All MCs	115	2.0	115	2.0	0.335	8.4	LOS A	1.9	13.4	0.60	0.65	0.68	44.9
Approach			271	2.0	271	2.0	0.335	5.9	NA	1.9	13.4	0.60	0.65	0.68	45.7
All Vehicles			636	2.0	636	2.0	0.335	7.0	NA	1.9	13.4	0.56	0.70	0.59	45.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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)] 2027 Without Dev - PM Peak (Intersection 2)**
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Donald Street / Stockton Street Intersection
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				km/h
East: Donald Street															
4	L2	All MCs	133	2.0	133	2.0	0.375	7.2	LOS A	2.3	16.3	0.58	0.61	0.67	45.3
5	T1	All MCs	176	2.0	176	2.0	0.375	4.4	LOS A	2.3	16.3	0.58	0.61	0.67	46.4
Approach			308	2.0	308	2.0	0.375	5.6	NA	2.3	16.3	0.58	0.61	0.67	46.0
North: Stockton Street															
7	L2	All MCs	111	2.0	111	2.0	0.368	10.9	LOS A	1.8	12.6	0.65	1.06	0.85	41.8
8	T1	All MCs	98	2.0	98	2.0	0.368	17.4	LOS B	1.8	12.6	0.65	1.06	0.85	41.8
9	R2	All MCs	94	2.0	94	2.0	0.246	15.4	LOS B	0.9	6.2	0.69	1.03	0.76	40.7
Approach			302	2.0	302	2.0	0.368	14.4	LOS A	1.8	12.6	0.66	1.05	0.82	41.4
West: Donald Street															
11	T1	All MCs	228	2.0	228	2.0	0.464	5.4	LOS A	3.4	24.2	0.67	0.76	0.93	45.4
12	R2	All MCs	121	2.0	121	2.0	0.464	11.0	LOS A	3.4	24.2	0.67	0.76	0.93	44.1
Approach			349	2.0	349	2.0	0.464	7.3	NA	3.4	24.2	0.67	0.76	0.93	44.9
All Vehicles			960	2.0	960	2.0	0.464	9.0	NA	3.4	24.2	0.64	0.80	0.81	44.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (5)] 2027 With Dev - PM Peak (Intersection 2)**
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Donald Street / Stockton Street Intersection
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand		Arrival		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			Flows		Flows					Queue					
			[Total HV]	[Total HV]	[Veh.]	[Dist]									
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Donald Street															
4	L2	All MCs	133	2.0	133	2.0	0.378	7.2	LOS A	2.3	16.6	0.58	0.61	0.68	45.3
5	T1	All MCs	178	2.0	178	2.0	0.378	4.5	LOS A	2.3	16.6	0.58	0.61	0.68	46.4
Approach			311	2.0	311	2.0	0.378	5.6	NA	2.3	16.6	0.58	0.61	0.68	46.0
North: Stockton Street															
7	L2	All MCs	111	2.0	111	2.0	0.370	11.0	LOS A	1.8	12.7	0.66	1.06	0.85	41.8
8	T1	All MCs	98	2.0	98	2.0	0.370	17.5	LOS B	1.8	12.7	0.66	1.06	0.85	41.8
9	R2	All MCs	94	2.0	94	2.0	0.248	15.5	LOS B	0.9	6.3	0.69	1.03	0.77	40.6
Approach			302	2.0	302	2.0	0.370	14.5	LOS A	1.8	12.7	0.67	1.05	0.83	41.4
West: Donald Street															
11	T1	All MCs	231	2.0	231	2.0	0.468	5.5	LOS A	3.4	24.5	0.67	0.76	0.94	45.4
12	R2	All MCs	121	2.0	121	2.0	0.468	11.0	LOS A	3.4	24.5	0.67	0.76	0.94	44.1
Approach			352	2.0	352	2.0	0.468	7.4	NA	3.4	24.5	0.67	0.76	0.94	44.9
All Vehicles			964	2.0	964	2.0	0.468	9.0	NA	3.4	24.5	0.64	0.80	0.82	44.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (3)] 2027 Without Dev - Sat Peak** (Intersection 2)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Donald Street / Stockton Street Intersection
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand		Arrival		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			Flows		Flows					Veh.	Dist				
			[Total HV]	%	[Total HV]	%				veh	m				km/h
East: Donald Street															
4	L2	All MCs	98	2.0	98	2.0	0.279	6.5	LOS A	1.4	9.6	0.54	0.54	0.54	45.8
5	T1	All MCs	132	2.0	132	2.0	0.279	3.6	LOS A	1.4	9.6	0.54	0.54	0.54	46.9
Approach			229	2.0	229	2.0	0.279	4.8	NA	1.4	9.6	0.54	0.54	0.54	46.4
North: Stockton Street															
7	L2	All MCs	85	2.0	85	2.0	0.267	9.9	LOS A	1.1	7.9	0.59	0.99	0.64	42.7
8	T1	All MCs	85	2.0	85	2.0	0.267	14.0	LOS A	1.1	7.9	0.59	0.99	0.64	42.7
9	R2	All MCs	80	2.0	80	2.0	0.181	13.1	LOS A	0.6	4.3	0.61	1.00	0.61	41.7
Approach			251	2.0	251	2.0	0.267	12.3	LOS A	1.1	7.9	0.60	1.00	0.63	42.4
West: Donald Street															
11	T1	All MCs	198	2.0	198	2.0	0.386	4.6	LOS A	2.4	17.3	0.63	0.67	0.77	46.1
12	R2	All MCs	103	2.0	103	2.0	0.386	9.2	LOS A	2.4	17.3	0.63	0.67	0.77	44.7
Approach			301	2.0	301	2.0	0.386	6.2	NA	2.4	17.3	0.63	0.67	0.77	45.6
All Vehicles			781	2.0	781	2.0	0.386	7.7	NA	2.4	17.3	0.59	0.74	0.66	44.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (6)] 2027 With Dev - Sat Peak (Intersection 2)**
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Donald Street / Stockton Street Intersection
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand		Arrival		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			Flows		Flows					[Veh. Dist]					
			[Total HV] veh/h	%	[Total HV] veh/h	%				v/c	sec				veh
East: Donald Street															
4	L2	All MCs	98	2.0	98	2.0	0.281	6.5	LOS A	1.4	9.7	0.54	0.54	0.54	45.8
5	T1	All MCs	133	2.0	133	2.0	0.281	3.6	LOS A	1.4	9.7	0.54	0.54	0.54	46.9
Approach			231	2.0	231	2.0	0.281	4.8	NA	1.4	9.7	0.54	0.54	0.54	46.4
North: Stockton Street															
7	L2	All MCs	85	2.0	85	2.0	0.268	9.9	LOS A	1.1	7.9	0.59	1.00	0.64	42.7
8	T1	All MCs	85	2.0	85	2.0	0.268	14.1	LOS A	1.1	7.9	0.59	1.00	0.64	42.7
9	R2	All MCs	80	2.0	80	2.0	0.181	13.2	LOS A	0.6	4.3	0.61	1.00	0.61	41.7
Approach			251	2.0	251	2.0	0.268	12.4	LOS A	1.1	7.9	0.60	1.00	0.63	42.4
West: Donald Street															
11	T1	All MCs	200	2.0	200	2.0	0.389	4.6	LOS A	2.5	17.6	0.63	0.67	0.77	46.1
12	R2	All MCs	103	2.0	103	2.0	0.389	9.2	LOS A	2.5	17.6	0.63	0.67	0.77	44.7
Approach			303	2.0	303	2.0	0.389	6.2	NA	2.5	17.6	0.63	0.67	0.77	45.6
All Vehicles			784	2.0	784	2.0	0.389	7.8	NA	2.5	17.6	0.59	0.74	0.66	44.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.
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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.